

USER'S GUIDE

Approach Release 3

Under the copyright laws, neither the documentation nor the software may be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form, in whole or in part, without the prior written consent of Lotus Development Corporation, except in the manner described in the documentation.

© Copyright 1994 Approach Software Corporation, a wholly owned subsidiary of Lotus Development Corporation. All rights reserved. Printed in the United States.

Approach Software Corporation
311 Penobscot Drive
Redwood City, CA 94063

Approach, PowerKey, and PicturePlus are trademarks of Approach Software Corporation, a wholly owned subsidiary of Lotus Development Corporation. SmartMasters is a trademark and Lotus, 1-2-3, Lotus Notes, Ami Pro, SmartIcons, and Symphony are registered trademarks of Lotus Development Corporation. Microsoft, Microsoft Access, and FoxPro are registered trademarks and ODBC, and Windows are trademarks of Microsoft Corporation. IBM, IBM-PC, OS/2 and DB2 are registered trademarks of International Business Machines Corporation. Novell and Advanced NetWare are registered trademarks and NetWare Lite is a trademark of Novell, Inc. LANtastic is a registered trademark of Artisoft, Inc. 3Com is a registered trademark of 3Com Corporation. Banyan and VINES are registered trademarks of Banyan Systems Incorporated. dBASE, dBASE III, dBASE IV and Paradox are registered trademarks of Borland International, Inc. Oracle is a registered trademark of Oracle Corporation. Avery is a registered trademark of Avery International Corporation. Q&A is a registered trademark of Symantec Corporation. SuperBase and Professional File are registered trademarks of Software Publishing Corporation. R:BASE is a registered trademark of Microrim, Inc. FileMaker is a registered trademark of Claris Corporation. Sybase is a registered trademark of Sybase Corporation. PostScript is a registered trademark of Adobe Systems Incorporated. DECnet is a trademark of Digital Equipment Corporation. Micro Decisionware Gateway is a trademark of Micro Decisionware, Inc.

Contents

Welcome to Approach 3.0	xi
About this manual	xi
About the online materials	xi
Online tutorial	xi
Online Help system.	xii
Sample applications	xii
Conventions	xii
Before you begin	xiii
System requirements	xiii
Network requirements	xiii
Backing up your disks	xiii
Installing Approach	xiv
1 An Overview of Approach	1-1
How Approach handles data	1-1
Approach files and database files	1-1
Joins between databases	1-2
Views of your data	1-3
Forms	1-4
Reports	1-4
Form letters	1-5
Mailing labels	1-6
Worksheets and crosstabs	1-7
Charts	1-8
The Approach work area	1-8
Environments in Approach	1-11
Design	1-11
Browse	1-13
Find	1-14
Preview	1-15
Basic steps for setting up a database	1-16
2 Managing Files	2-1
About files in Approach	2-1
Creating and opening files	2-3
Creating a new database file	2-3
Opening an Approach file for a database	2-5
Reopening one of the last Approach files used	2-7
Mapping fields in an Approach file	2-7
Opening a database created in another application	2-9
Opening a database table created in Microsoft Access	2-11
Creating a database from a spreadsheet	2-11
Creating a database from a delimited text file	2-14
Creating a database from a fixed-length text file	2-16
Saving and closing files	2-18
Saving a new Approach file	2-18
Saving changes to an existing Approach file	2-19
Saving a copy of an Approach file and a database file	2-19
Saving a copy of an Approach file only	2-22
Closing an Approach file	2-22
Deleting a file	2-22
3 Defining Fields	3-1
Types of fields	3-1
Text fields	3-1
Numeric fields	3-2
Memo fields	3-2
Boolean fields	3-2
Date fields	3-3
Time fields	3-3
PicturePlus fields	3-3
Calculated fields	3-3
Variable fields	3-4

iv User's Guide

Defining fields for a database	3-5	Zooming in and out	5-11
Adding fields to a database	3-5	Adding objects to the background of a	
Setting up a formula for a calculated		view	5-12
field	3-8	Drawing a geometric object	5-12
Editing fields in a database	3-11	Pasting a picture	5-13
Customizing a field for data entry	3-13	Entering text in a text object	5-14
Entering data automatically	3-13	Adding a macro button	5-15
Verifying the accuracy of entered		Selecting in Design	5-17
data	3-15	Selecting objects	5-17
Setting OLE options for a PicturePlus		Selecting text	5-17
field	3-17	Editing objects and text	5-18
Setting data options for a variable		Changing the basic properties	
field	3-18	of an object	5-19
Specifying a key field for a Paradox		Changing line or color settings for	
database	3-19	an object	5-19
Deleting a field	3-20	Resizing an object	5-21
		Moving an object	5-22
4 Joining Database Files	4-1	Sliding an object when you print	5-22
About joined databases	4-1	Changing text attributes	5-23
Why use joined databases?	4-1	Cutting or copying an object or text	5-24
How databases are joined	4-3	Deleting an object or text	5-25
How joined data appears in views	4-4	Applying properties from another object	5-25
Main and detail databases in a view	4-5	Working with named styles	5-26
One-to-many, many-to-one, and		Defining and saving a named style	5-27
one-to-one relationships	4-7	Editing or deleting a named style	5-31
Advanced joins	4-9	Working with more than one object	
Many-to-many relationships	4-9	at a time	5-32
Alias joins	4-11	Grouping and ungrouping objects	5-32
Joining and unjoining	4-13	Changing the stacking order of an	
Joining database files	4-13	object	5-33
Setting options for a join	4-17	Aligning and distributing objects	5-34
Unjoining database files	4-20	Editing views	5-35
		Changing the basic properties of a	
5 Working in Design	5-1	view	5-36
About Design	5-1	Adding a date or time to a view	5-37
Design icon bars	5-2	Resizing page margins	5-38
Design menu bar and status bar	5-3	Changing line or color settings for a	
Design objects	5-4	view	5-38
InfoBox and named styles	5-5	Duplicating a view	5-39
Pop-up menu with design commands	5-6	Deleting a view	5-40
Customizing the Design work area	5-7		
Showing a design grid	5-7	6 Adding and Editing Fields	
Snapping objects to the grid	5-8	in a View	6-1
Showing rulers	5-8	Adding a field to a form, report, or mailing	
Showing a Tools palette	5-9	label	6-1
Showing field names or actual data	5-9	Displaying values for a field	6-4
		Displaying a field as a drop-down list	6-4

Displaying a subset of data in a drop-down list 6-7
 Displaying a field as a checkbox 6-10
 Displaying a field as a set of radio buttons 6-12
 Formatting data in fields 6-14
 Setting a standard date format 6-15
 Setting a special date format for periods of a year 6-17
 Setting a time format 6-18
 Setting a numeric format 6-19
 Setting a text format 6-22
 Editing fields 6-22
 Changing the basic properties of a field 6-23
 Changing text attributes of data 6-24
 Changing border or color settings for a field 6-25
 Changing the wording, attributes, or position of a label 6-27
 Sliding or resizing a field when you print 6-28
 Working with PicturePlus fields 6-29
 Adding a PicturePlus field to a view 6-30
 Changing the basic properties of a PicturePlus field 6-31
 Changing display options for a PicturePlus field 6-32
 Changing the data entry order for fields 6-32

7 Designing Forms and Repeating Panels 7-1

About forms 7-1
 About repeating panels 7-3
 Creating a form 7-4
 Adding a repeating panel to an existing form 7-7
 Adding labels to a repeating panel 7-9
 Modifying a repeating panel 7-10
 Selecting a repeating panel 7-10
 Changing the basic properties of a repeating panel 7-11
 Changing line or color settings for a repeating panel 7-12
 Resizing a repeating panel 7-13
 Adding a field to a repeating panel 7-14

Rearranging fields in a repeating panel 7-15
 Summarizing data for records in a repeating panel 7-15
 Creating sample forms 7-16
 Example 1: Designing a form that looks up joined data 7-17
 Example 2: Designing a form with a repeating panel 7-19

8 Designing Reports 8-1

About reports 8-1
 Creating a report 8-3
 Creating a standard or columnar report 8-5
 Creating a report with summaries 8-8
 Creating a repeating panel report 8-11
 Summarizing data in a report 8-14
 Adding a summary panel to a report 8-16
 Adding a calculated field to a summary panel 8-19
 Editing a report 8-20
 About report panels 8-21
 Selecting a report panel 8-22
 Changing line or color settings for a report panel 8-22
 Changing the alignment or location of a summary panel 8-23
 Adding a header or footer 8-24
 Adding a title page 8-25
 Changing the number of columns in a report 8-25
 Keeping records together 8-27
 Moving and sizing report columns 8-27
 PowerClick reporting 8-28
 Adding a grand total to a report 8-29
 Grouping records and adding subtotals to a report 8-31

9 Designing Form Letters and Mailing Labels 9-1

About form letters 9-1
 Creating a form letter 9-3
 Working with form letters 9-9
 Formatting the text in a form letter 9-9

Changing the line and color settings
 for a form letter 9-10

Adding to form letter contents 9-11

Typing text in a form letter 9-12

Adding a field to a form letter 9-12

Moving or deleting form letter fields . . . 9-13

About mailing labels 9-13

Creating mailing labels 9-16

Creating custom mailing labels 9-18

Changing the appearance of mailing
 labels 9-20

Moving or resizing mailing label
 fields 9-21

Setting a field to slide 9-21

Typing text in a mailing label 9-22

Changing a mailing label layout 9-23

10 Entering and Editing Data . . 10-1

About Browse 10-1

Views for entering and editing data 10-3

Moving to another record 10-4

Moving one record at a time 10-4

Moving to the first or last record 10-5

Moving to a specific record 10-5

Adding records 10-5

Adding a new record 10-6

Duplicating a record 10-6

Entering data in fields 10-7

Selecting a field 10-7

Changing the insertion point or
 selection 10-8

Entering text in a text or memo field 10-8

Entering a value in a numeric field 10-9

Entering a value in a Boolean field 10-10

Entering a date in a date field 10-10

Entering a time in a time field 10-11

Duplicating a value from the last
 record modified 10-12

Selecting a value for a field 10-12

Selecting from a drop-down list 10-12

Turning on a radio button or a
 checkbox 10-13

Putting a picture in a field 10-14

Pasting a picture from a file 10-14

Pasting a picture from the Clipboard . . 10-15

Drawing lines with the pointer 10-16

Filling a field with a new value 10-16

Checking spelling 10-17

Running the spelling checker 10-18

Editing the user dictionary 10-20

Changing to another main dictionary . . 10-21

Setting options for checking spelling . . 10-21

Hiding and showing records 10-22

Hiding records 10-23

Showing hidden records 10-23

Deleting records 10-23

Deleting specific records 10-23

Deleting a found set of records 10-24

**11 Finding and Sorting
 Records 11-1**

Finding data in records 11-1

Creating a find request 11-2

Finding records with multiple criteria
 (And) 11-5

Finding records with one of several
 criteria (Or) 11-5

Finding text 11-6

Finding a word that sounds like
 another 11-7

Finding numbers, dates, and times 11-8

Finding values in a range 11-8

Finding today's date 11-9

Finding radio button and checkbox
 settings 11-9

Finding blank or nonblank fields 11-9

Using an If statement to find data 11-10

Repeating a search 11-11

Saving a find request as part of a macro . . 11-11

Finding duplicate or distinct values 11-12

Sorting records by data in fields 11-14

Sorting by a field 11-16

Specifying a sort order 11-16

Changing the sort order 11-18

Showing all records in original sort
 order 11-18

**12 Designing Worksheets and
 Crosstabs 12-1**

About worksheets and crosstabs 12-1

Creating a worksheet 12-3

Creating a crosstab	12-5	Previewing a view	14-3
Creating a crosstab with the Crosstab Assistant	12-5	Printing a view	14-5
Turning a worksheet into a crosstab	12-8		
Working with worksheets and crosstabs	12-10	15 Automating Your Work with Macros	15-1
Selecting in a worksheet or crosstab	12-13	Defining a macro	15-1
Copying a selection to the Clipboard	12-15	Adding and removing commands in a macro	15-4
Navigating in a worksheet or crosstab	12-16	Moving a command in a macro	15-4
Dividing a worksheet or crosstab into panes	12-16	About macro commands	15-5
Changing the appearance of a worksheet or crosstab	12-17	Creating a looping macro	15-8
Adding a database field to a worksheet or crosstab	12-17	Editing or deleting a macro	15-9
Moving or removing a field in a view	12-18	Attaching macros	15-10
Resizing columns and rows	12-19	Adding a macro button and attaching a macro	15-11
Inserting a formula or blank column in a worksheet	12-21	Attaching a macro to an object	15-13
Editing column header text	12-22	Attaching a macro to a field	15-14
Changing worksheet and crosstab settings	12-22	Attaching a macro to a view	15-15
Formatting a worksheet or crosstab for printing	12-23	Running a macro	15-15
Adding summaries to a crosstab	12-24	Creating sample macros	15-16
Adding a summary column or row	12-24	Example 1: Switching to another view	15-16
Editing a crosstab formula	12-25	Example 2: Finding a set of records	15-17
		Example 3: Setting a value in a field	15-19
13 Creating Charts	13-1	Example 4: Using an IF calculation in a macro	15-21
About charts	13-1	Example 5: Defining a conditional macro	15-23
Creating a chart	13-2		
Creating a bar, line, or area chart	13-3	16 Exchanging Data with Other Files or Applications	16-1
Creating a pie chart	13-7	About file formats	16-1
Creating an instant chart from a crosstab	13-9	Importing data or Approach files	16-2
Charting a different data set	13-10	Importing a database file	16-2
Changing the type of a chart	13-12	Importing an Approach file	16-10
Types of chart	13-12	Exporting data from Approach	16-12
Choosing the best type of chart	13-13	Copying a PicturePlus picture to a file	16-15
Using the Chart InfoBox	13-14	Sending e-mail from Approach	16-16
		About OLE and Approach	16-18
14 Previewing and Printing	14-1	Creating Approach OLE objects	16-19
How a view looks when printed	14-1	Creating an Approach OLE object in Approach	16-19
Specifying the printer, paper, and orientation	14-2	Creating an Approach OLE object from another application	16-20

Linking OLE objects from other applications	16-21
Inserting a linked object	16-21
Editing a linked object	16-23
Modifying a link	16-24
Embedding an OLE object	16-25
Embedding an existing OLE object	16-26
Embedding a new OLE object	16-27
Editing an embedded object	16-28

17 Working Together with Other Lotus Applications 17-1

Working together with Lotus Notes	17-1
Opening a view or form from a local Notes database	17-2
Opening a view or form from a Notes server database	17-2
Replicating a Lotus Notes database	17-4
Enabling Approach variable fields for Notes F/X 1.1	17-6
Working together with Lotus 1-2-3	17-7
Creating a database from a Lotus 1-2-3 spreadsheet	17-7
Opening a named range from a Lotus 1-2-3 spreadsheet	17-9
Creating an Approach view in Lotus 1-2-3	17-9

18 Sharing Data on a Network 18-1

About networking with Approach	18-1
Setting up your network environment	18-2
Setting file-sharing options for dBASE files	18-2
Specifying a locking protocol for shared dBASE files	18-4
Setting file-sharing options for Paradox files	18-4
Working with a database on a network	18-6
Changing your status to single-user	18-6
Entering a password	18-7
Refreshing the network data on your screen	18-8
Saving changes to a shared record	18-9

19 Customizing Approach 19-1

Setting Approach preferences	19-1
Setting display defaults	19-2
Setting a default order for records	19-5
Defining passwords for files	19-6
Setting dialing preferences	19-8
Setting database options for a dBASE or FoxPro file	19-9
Setting database options for a Paradox file	19-10
Setting database options for all SQL, Access, ODBC, and Lotus Notes tables	19-11
Maintaining external indexes for a dBASE or FoxPro database	19-12
Creating secondary indexes for a Paradox database	19-13
Setting general working preferences	19-14
Customizing the SmartIcons	19-16
Customizing menus	19-18
Creating a custom menu bar	19-18
Editing or deleting a custom menu bar	19-21

A Formulas for Calculated Fields A-1

Elements of a formula	A-1
Operators	A-1
Operands	A-2
Functions	A-3
Expressions	A-3
Types of expressions	A-4
Arithmetic expressions	A-4
Comparison expressions	A-5
Logical expressions	A-6
How to use functions	A-6
Parameters in functions	A-7
Functions within other functions	A-7
Summary of functions	A-8
Descriptions of functions	A-10
Abs (Absolute value)	A-10
Acos (Arc cosine)	A-10
Asc (ASCII)	A-10
Asin (Arc sine)	A-11
Atan (Arc tangent)	A-11
Atan2 (Arc tangent 2)	A-11

Avg (Average)	A-11	SAverage (Summary average)	A-25
Blank	A-12	SCount (Summary count)	A-25
Chr (Character)	A-12	Second	A-25
Combine	A-12	Sign	A-26
Cos (Cosine)	A-13	Sin (Sine)	A-26
CurrTime (Current time)	A-13	SLN (Straight-line depreciation)	A-26
Date	A-13	SMax (Summary maximum)	A-26
DateToText	A-13	SMin (Summary minimum)	A-27
Day	A-13	SNPV (Summary net present value)	A-27
DayName	A-14	Soundlike	A-27
DayOfWeek	A-14	Span	A-27
DayOfYear	A-14	SpanUntil	A-28
Degree	A-14	Sqrt (Square root)	A-28
Exact	A-15	SSTD (Summary standard deviation)	A-28
Exp (Exponentiation)	A-15	SSum (Summary sum)	A-28
Factorial	A-15	STD (Standard deviation)	A-29
Fill	A-15	SVAR (Summary variance)	A-29
FV (Future value)	A-15	Tan (Tangent)	A-29
Hour	A-16	TextToBool (Text to Boolean)	A-30
Hundredth	A-16	TextToDate	A-30
If	A-16	TextToTime	A-30
IsBlank	A-17	Time	A-30
IsLastRecord	A-17	Today	A-31
Left	A-17	Translate	A-31
Length	A-18	Trim	A-31
Like	A-18	Trunc (Truncate)	A-31
Ln (Natural logarithm)	A-19	Upper (Uppercase)	A-31
Log (Logarithm)	A-19	Var (Variance)	A-32
Lower (Lowercase)	A-19	WeekOfYear	A-32
Middle	A-19	Year	A-32
Minute	A-19		
Mod	A-20	B Supported File Types B-1	
Month	A-20	dBASE III+ and dBASE IV	B-1
MonthName	A-20	Restrictions on field definitions	B-2
NPeriods (Number of periods)	A-21	Index files	B-2
NumToText (Number to text)	A-21	Limits on files, records, and fields	B-3
Pi	A-21	Paradox 3.5 and Paradox 4.0	B-3
PMT (Payment)	A-22	Restrictions on field definitions	B-4
Position	A-22	Index files	B-4
Pow (Power)	A-22	Limits on files, records, and fields	B-5
Prefix	A-23	FoxPro 2.1	B-5
Proper	A-23	Restrictions on field definitions	B-5
PV (Present value)	A-23	Index files	B-6
Radian	A-24	Limits on files, records, and fields	B-6
Random	A-24	Microsoft Access 1.0, 1.1, and 2.0	B-7
Replace	A-24	Restrictions on field definitions	B-7
Right	A-24	Limits on files, records, and fields	B-8
Round	A-25		

Filename extensions. B-8
Files created or used by Approach. B-8
Text and spreadsheet files. B-10
Graphic files. B-10

C SQL Tables C-1

Oracle SQL C-1
Connecting to an Oracle server C-2
Connecting to Oracle on your local
drive C-4
Restrictions on field definitions C-5
Limits on tables, records, and fields C-5
SQL Server C-6
Connecting to a server in SQL Server C-6
Restrictions on field definitions C-7
Table names. C-8
Limits on tables, records, and fields C-8
IBM DB2 C-9
Connecting to an IBM DB2 or
SQL/DS server through ODBC. C-9
Connecting to an IBM DB2 server
through MDI C-10
Restrictions on field definitions C-12
Limits on tables, records, and fields C-12
SQL query files. C-13
Creating or editing a query file in
a text editor. C-13
Creating a query file by saving. C-14
Creating a query file by exporting. C-14
Opening a query file in Approach. C-15
Saving data from a query C-15
Exporting data from a query. C-16

D ODBC Data Sources. D-1

Restrictions and limits on ODBC D-1
Restrictions on field definitions D-2
Limits on tables, records, and fields D-3
Opening an ODBC data source D-3
Opening a database table through
ODBC D-4
Opening a database table on a server
through ODBC D-5
Opening an ODBC data source set up
on your system D-6
Installing an ODBC driver D-7
Setting up a data source for an ODBC
driver D-8

Glossary Glossary-1

Index Index-1

Welcome to Approach 3.0

Welcome to Lotus[®] Approach[®] 3.0 for Windows, a powerful but intuitive relational database application. Whether you are new to databases or a veteran information manager, Approach will help you handle your data as skillfully, efficiently, and easily as possible.

About this manual

This manual is your source for in-depth information about Approach. It covers the basic terms and concepts you need to know and gives step-by-step instructions for all of the Approach procedures. It also provides tips for making your work easier.

The manual assumes you know how to work with files and windows in the Microsoft[®] Windows[™] environment and that you are familiar with basic techniques such as clicking and dragging. If you need help with Windows, see your Windows *User's Guide*.

About the online materials

Approach comes with an online guided tutorial, a comprehensive online Help system, and sample applications for common business scenarios.

Online tutorial

After installing Approach, you may want to turn to the online tutorial to help you get started. The tutorial provides a quick overview of Approach and takes you through many of the most important features.

Each module in the tutorial addresses a particular part of Approach. You can go through the entire tutorial at once or use individual modules to learn specific procedures.

To start the tutorial with Approach running, choose Tutorial from the Help menu in the Approach menu bar.

Online Help system

Use the Approach Help system to get information quickly while working in Approach. The Help system provides the same procedures that are in this manual, but more concisely. It also contains keyboard shortcuts and technical information about SQL that is not in the manual.

You can search for topics in the Help system, and in many places you can click an icon or text to go to a page with related information. Once you have a basic familiarity with Approach, you may find the Help system the quickest and easiest means of getting the information you need.

To open the Help system, choose a topic from the Help menu. For instructions on navigating through Help, press F1 while the Help system is running.

Sample applications

Use the sample applications to explore and learn about Approach, or as a starting point for databases of your own. The samples are in the \APPROACH\SAMPLES directory (unless you specify otherwise when you install Approach).

Conventions

In this manual and in the online materials, the terms *click*, *double-click*, and *drag* refer to the left mouse button unless the right mouse button is specified.



Approach provides SmartIcons[®] in an icon bar at the top of the application window and in a floating palette in Design. In this manual, whenever you can apply a command by clicking an icon in a default icon bar (such as the Browse icon shown at the left), a picture of the icon appears to the left of the procedure.

Before you begin

Before installing Approach, check to see that you have the correct equipment and operating system, and make a backup copy of your disks.

System requirements

This is what you'll need to run Approach:

- An IBM-PC[®] or fully compatible personal computer with a 80386 or later processor, a hard drive, and at least one floppy disk drive (if you're installing from disks)
- At least 4 megabytes (MB) of random access memory (RAM) (6 MB is recommended)
- A color or grayscale VGA or higher resolution monitor
- For a full installation on a standalone computer, 19 MB of available disk space; for a minimum installation, 6.7 MB plus an additional 1.8 MB during install
- A mouse or other pointing device
- Microsoft Windows, version 3.1 or later

Network requirements

If you plan to use Approach on a network, you'll need one of the following networking systems and the associated Windows drivers:

- Novell[®] Advanced NetWare[®] network, version 2.0A or later (or NetWare 386)
- NetWare Lite[™]
- LANtastic[®]
- Windows for Workgroups
- Microsoft LAN Manager
- IBM-PC Local Area Network Program, version 1.12 or later
- 3Com[®] 3+Open, version 1.0 or later
- Banyan[®] VINES[®] network, version 2.1 or later

Backing up your disks

Make a backup copy of your Approach disks and use the backups to install Approach. Store the original disks in a safe, dry place.

The disks you use for the backup must be the same size as your install disks (that is, they must all be 3.5-inch or 5.25-inch). If you're backing up onto 5.25-inch disks, the disks must be high density.

To back up your disks, use the Copy Disk command in the Windows File Manager. For help with this, see your Windows *User's Guide*.

Installing Approach

You can install Approach on a standalone computer, a network node, or a network file server:

- If you install on a standalone computer, you can install the complete set of Approach files, a minimum configuration of files, or a custom set of files you specify. The minimum configuration installs only the program files and is useful for a laptop or other computer with limited disk space.
- If you install on a network node, only a few Approach files are installed. The rest of the files you need to run Approach reside on the network.
- If you install on a network file server, you can install a server version of Approach for other users to run on their network nodes, or a distribution version for other users to install on their standalone computers.

You must have SHARE.EXE to run Approach. If you do not have it, Approach installs it for you automatically.

Note that if you already have Approach 2.1 on your computer and do not specify a different location for the Approach 3.0 files, installing Approach 3.0 overwrites the 2.1 program files and sample applications. It does not affect your data files.

To install Approach:

1. If you're installing from disks, insert the first disk into a drive.
You can install Approach from disks or from install files on a network.
2. In the Windows Program Manager, choose Run from the File menu.
The Run dialog box appears.
3. Type the installation command in the Command Line text box and click OK.

If you're installing from disks, type `a:install` or `b:install`. If you're installing from a network, type `path\install`, where *path* is the location of the install files; for example, `f:\lotus\approach\install`.

4. Follow the instructions on the screen to install the application.
The Approach installation program guides you through the process. Click the Next button whenever you're ready to go on to the next set of instructions. For details about installation at any point along the way, click Help.
Approach alerts you when the installation is complete.

1

An Overview of Approach

Approach is a relational database application that is powerful and versatile, but easy to use. You can work with data from a variety of database files (and database file types) in Approach, and you can design attractive and efficient forms, reports, and other views—without programming.

How Approach handles data

A *database* is an organized collection of data. Like other database applications, Approach lets you manage data in sets called *records*; for example, everything about one customer is a record. The data in records is divided into *fields* such as name, address, and city.

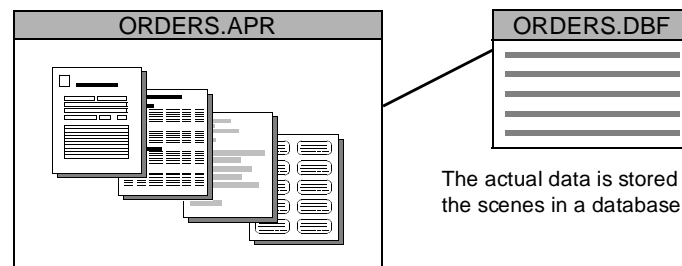
Approach handles data in a particularly flexible way. Your data is stored separately from your view of it. And because Approach is relational, you can pull together data from many different sources and use it in one place.

Approach files and database files

Approach uses two basic kinds of files: Approach files and database files. An *Approach file* stores the forms, reports, worksheets, crosstabs, form letters, and mailing labels you design to enter, organize, and present data. You do all your work through Approach files.

A *database file* stores the data you see in an Approach file. You do not work directly in a database file, but use the Approach file as a “window” into it.

You work with data through forms and other views in an Approach file.



The actual data is stored behind the scenes in a database file.

By storing data separately from the Approach file, Approach gives you enormous flexibility in the types of data you can work with and in the different ways you can bring it together. You can even have two or more Approach files read from the same database file.

With Approach's PowerKey technology, you can read and write to databases in a variety of formats: dBASE[®] III+ and dBASE IV, Paradox[®] 3.5 and Paradox 4.0 (including Paradox for Windows), FoxPro[®] 2.1, Microsoft Access[®], Oracle[®] SQL, Microsoft/Sybase SQL Server, and IBM[®] DB2[®]. And if you have other database applications that use an ODBC[™] driver, you can work with those databases in Approach. You can also open spreadsheets and text files and save them as database files.

Approach gives you convenient access to data in Lotus 1-2-3[®] spreadsheets and Lotus Notes[®] databases. You can open and view 1-2-3 and Notes files directly in an Approach file, create views to edit 1-2-3 data in Approach, and create and route Notes messages in Approach. Beginning with Lotus 1-2-3 for Windows versions later than 4.0, you can even create Approach views from 1-2-3. Approach also provides seamless integration with data and graphics in other applications through OLE 2.0.

The filename extension for Approach files is .APR. The extensions for database files vary depending on the file type; for example, if you use the dBASE IV file type, the extension is .DBF.

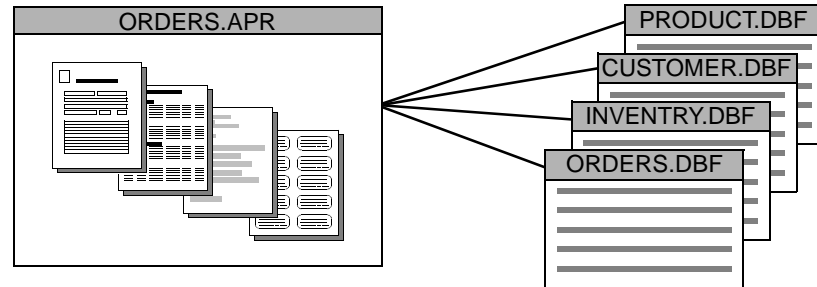
For more information about Approach files and database files, see "About files in Approach" on page 2-1.

Joins between databases

It's usually most efficient to split up data into separate, manageable database files—such as one for orders, one for inventory records, one for individual customer data, and another for product specifications. Even if you don't have a lot of data and complexity to begin with, data has a tendency to grow over time. A database design that groups data judiciously from the start can help you avoid problems later.

Approach is a *relational database application*, which means that you can bring together data from separate database files and use it as if it were all stored in one place. To do this, you *join* the database files within an Approach file that uses their data.

An Approach file can use data from a set of joined database files.



As you work with joined data in an Approach file, the underlying databases and the relationships between them are completely transparent. The databases can even be of all different file types; for example, a Paradox 4.0 file and three dBASE IV files can be joined together.

For more information about joins, see “About joined databases” on page 4-1.

Views of your data

You can work with data in Approach in a variety of different *views*, such as forms for entering data, summary reports for presenting data from a range of records, and form letters that retrieve names and addresses from a database. Views are stored in an Approach file, and can use data from all the databases joined in that Approach file.

When you create a new Approach file, it has a basic form and worksheet already set up. You can modify these views and add as many other views as you need.

Approach provides a rich set of predefined field layouts and color and style combinations called *SmartMasters™* for creating custom views quickly and easily. You can also use Approach’s design tools to modify views. In any view, you can put fields wherever you want them, import graphics and OLE objects, draw objects such as lines and rectangles, and customize the design in other ways for your own needs.

Forms

A *form* shows data about one record at a time, with as much or as little detail as you want. (You can browse through the database to see other records in the form.) Forms are usually used for entering and editing data about a record.

A form shows one record at a time. In this case, it shows one order.

The screenshot shows a form titled "Order" with a horizontal line below the title. The form contains the following fields and table:

Ship To		Order #	<input type="text" value="53"/>
Barcelona Cafe Attn: Jose Morales		Ship Date	<input type="text" value="9/1/94"/>
Item #	Item Name	Qty	Price
17	90 Cabernet	6	12.25

When you print a form, each printed page shows one record.

Forms are covered in Chapter 7, "Designing Forms and Repeating Panels."

Reports

A *report* can display more than one record on a single page. Reports let you organize and analyze information from multiple records in powerful ways. You can sort the records that are showing, calculate summaries for them, and lay out and arrange record data however you need to.

Reports are most often used for organizing and analyzing data and for presenting it to others. You can also use reports to enter and edit data.

A report has a header and footer that repeat at the top and bottom of each page. You can use the header and footer to display information about the report, such as title and page number. Between the header and footer is the *body* of the report. Approach displays as many records as will fit in the body.

If records have a field with a numeric value, such as the number of items sold, you can perform summary calculations on this field for a range or group of records. If a report has more than one summary range of records, you can also perform higher-level calculations, such as a grand total for the report.

A report can show more than one record at a time. In this case, each sales rep is a record.

Quarterly Report		
Product	Sales Rep	Amount
90 Cabernet	Lindsay	3,000
	Renault	2,200
	<i>Subtotal</i>	5,200
90 Merlot	Washington	1,500
	Wu	2,000
	<i>Subtotal</i>	3,500
Grand Total		8,700

You can calculate subtotals and a grand total in a report.

Reports are covered in Chapter 8, “Designing Reports.”

Form letters

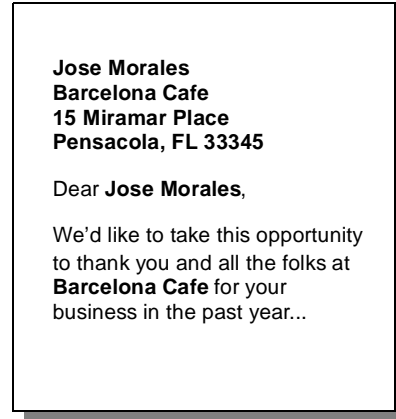
Form letters are usually a mixture of text you type and information from fields in a database.

Approach creates a copy of a form letter for each record you're working with and addresses the copies for you, using the name and address fields in the records. You type your text around the fields in the letter, as you would in a merge document in a word processing application.

You can also have Approach provide a salutation, closing, and return address, or you can type these items yourself.

For example, you might have Approach get a name and address for a form letter from a customer database. You type the text of the letter only once, but for each copy of the letter, Approach supplies a different name and address.

The name and business data come from one record. The rest of the letter is typed text.

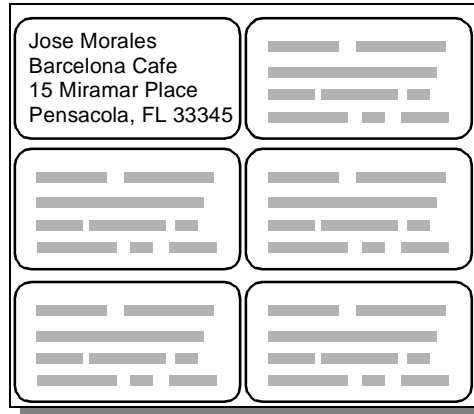


Form letters are covered in Chapter 9, "Designing Form Letters and Mailing Labels."

Mailing labels

You can also have Approach generate mailing labels from information in a database. Each region on the page is the label for one record. Approach provides standard Avery[®] formats for mailing labels, and you can also create other formats of your own.

Each label has data from one record.



Mailing labels are covered in Chapter 9, “Designing Form Letters and Mailing Labels.”

Worksheets and Crosstabs

In a worksheet, each row is a record, and each column is a field.

A *worksheet* presents database records in a grid of columns and rows. The columns are fields; the rows are individual records. Worksheets are often the most efficient and flexible type of view for displaying data.

Sales Rep	Product	# Cases
Lindsay	90 Cabernet	3,000
Lindsay	90 Merlot	1,600
Lindsay	90 Pinot Noir	1,500
Renault	90 Cabernet	2,700
Renault	90 Merlot	3,400
Wu	90 Merlot	2,000
Wu	90 Zinfandel	3,100

A cross-tabulation worksheet, or *crosstab*, expands on the worksheet model, allowing you to categorize and summarize database records. Instead of rows containing individual records, a crosstab shows you cells that summarize underlying records grouped or categorized by any fields you select.

You can summarize worksheet data in a crosstab. This one summarizes by product and sales rep.

	Lindsay # Cases	Renault # Cases	Wu # Cases	Total
90 Cabernet	3,000	2,700		5,700
90 Merlot	1,600	3,400	2,000	7,000
90 Pinot Noir	1,500			1,500
90 Zinfandel			3,100	3,100
Total	6,100	6,100	5,100	17,300

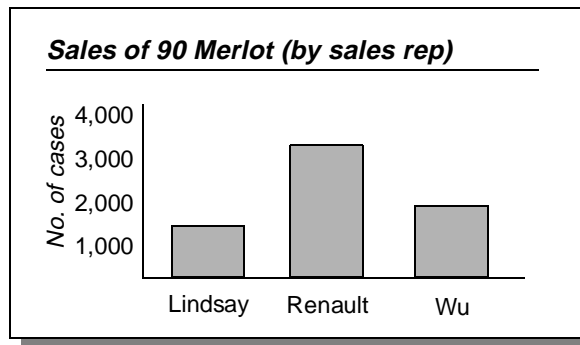
Worksheets and crosstabs are covered in Chapter 12, “Designing Worksheets and Crosstabs.”

Charts

Approach can generate presentation-quality charts from your reports, worksheets, or crosstabs. Charts make complex data easier to understand, and are often the best way to communicate and analyze data.

You can create bar charts, line and area charts, and pie charts in Approach. After you create a chart, you can easily change the chart's type to one of the 20 types supported by the Lotus Chart facility. You can also add, modify, and delete elements in the chart.

A chart displays
your data graphically.



Charts are covered in Chapter 13, "Creating Charts."

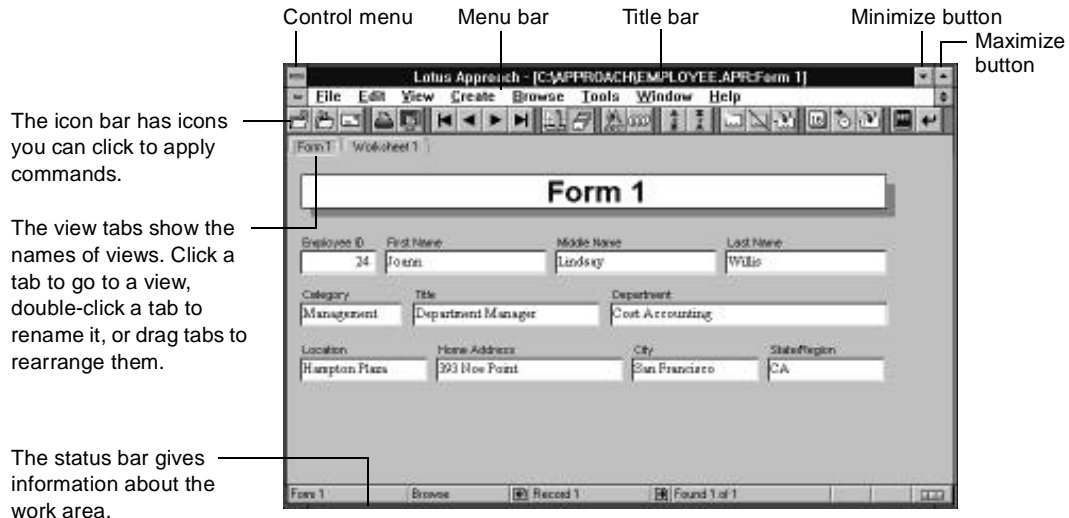
The Approach work area

The Approach *work area* contains file windows, menu commands, SmartIcons, view tabs, and a status bar for working with data and designing views.

Each Approach file you open appears in its own window inside the work area. You can enlarge the Approach file windows to fill the entire work area and manipulate windows in other ways. For information about the Control menu, the Minimize and Maximize buttons, and other window commands, see your *Windows User's Guide*.

The *SmartIcons* are a subset of the commands from the menu bar. You can click an icon in an icon bar as a quick and convenient way to apply a command. The SmartIcons that appear in the work area at any one time are only a few of those available.

Approach comes with a default icon bar for Browse, Find, and Preview, and for worksheets and crosstabs. For Design, Approach provides three default icon bars and a floating palette of icons that are used for drawing. You can also prepare custom icon bars of your own.



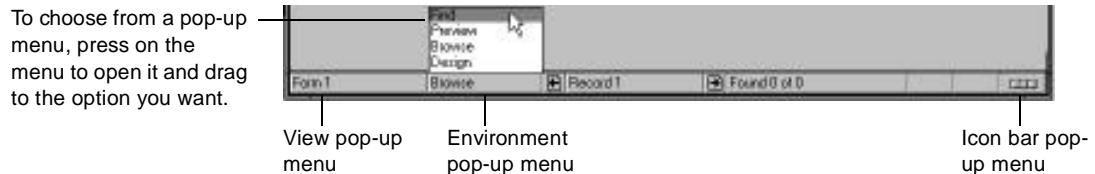
The icon bar has icons you can click to apply commands.

The view tabs show the names of views. Click a tab to go to a view, double-click a tab to rename it, or drag tabs to rearrange them.

The status bar gives information about the work area.

The names of views in an Approach file appear in *view tabs* at the top of the file's window. You can click one of these tabs to change to another view. In Design, you can also double-click a tab and then type in the tab to rename the view, and drag tabs horizontally to rearrange them.

The *status bar* at the bottom of the work area has pop-up menus for changing the view, the environment, and the icon bar. The rest of the information in the status bar varies depending on which environment you're in.



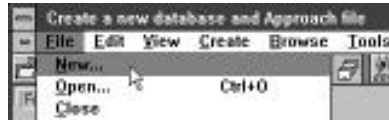
To choose from a pop-up menu, press on the menu to open it and drag to the option you want.

View pop-up menu

Environment pop-up menu

Icon bar pop-up menu

For a description of a menu command, move the pointer over the command in its menu. The description appears in the window title bar.



To see a description of a menu command, move the pointer over the command.

For a description of SmartIcons, move the pointer over the icon (or if your icon options are set this way, click the icon with the right mouse button). The description appears in a “bubble.”



To see a description of SmartIcons, move the pointer over the icon or right-click it.

Many commands open a dialog box. You can click the question mark (?) in the upper-right corner of a dialog box to go to online Help about it.



To get online Help about a dialog box, click the question mark.

If you want to increase the size of the work area in your Approach window, you can hide the icon bar, the view tabs, or the status bar. To change the display of one of these elements, choose Show SmartIcons, Show View Tabs, or Show Status Bar from the View menu. The commands have a checkmark by them when they are on.

Environments in Approach

You can work in four different environments in Approach: Design, Browse, Find, and Preview. The work area changes in several ways when you go to another environment.

Design

In *Design*, you edit the layout of forms, reports, form letters, and mailing labels in an Approach file. You do not work with actual data in Design, but you can see data and plan the arrangement of it.



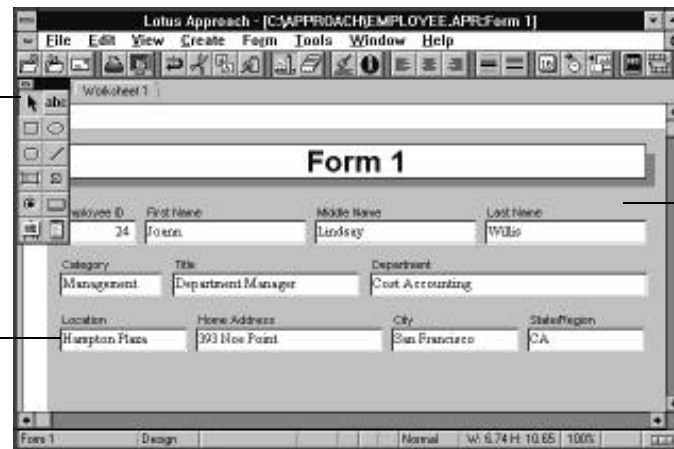
- To go to Design, click the Design icon in the icon bar, or choose Design from the View menu or from the environment pop-up menu in the status bar.

You can add and edit fields in Design; draw lines, rectangles, and other graphic items; write text on the background of a view; import graphics; and link or embed OLE objects. Everything on a view in Design is a *design object*. You can work with all objects in many of the same ways—such as moving and resizing them, grouping and aligning them, and adding line and fill colors.

When you're in Design, you can show data in fields as it appears in Browse, or show the names of fields and databases. If you show data, you see data from the first record (in a form or form letter) or first page of records (in other views).

The Tools palette has icons for drawing design objects.

Fields can show data or field names in Design.

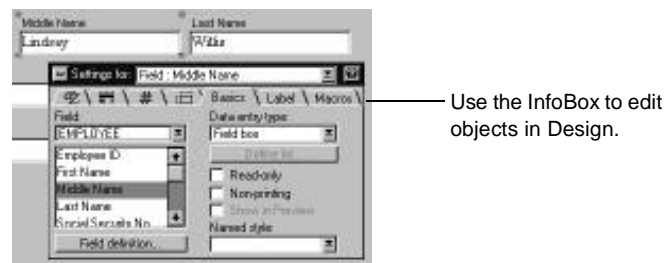


Views and objects can be filled with colors and patterns.

Approach provides three default icon bars for Design—the Design icon bar, the Text icon bar, and the Report icon bar—and a floating Tools palette that has icons for drawing objects. The Tools palette opens automatically when you go to Design; you can drag the palette by its title bar to move it around in the work area.

The status bar in Design has buttons for formatting selected text and pop-up menus for changing the view, the environment, the zoom setting, and the icon bar. It also shows the location of the insertion point or the selected object.

Each object on a view has a set of design properties, such as dimensions, text attributes, line and fill colors, and attached macros. The settings for an object are stored in an *InfoBox*. You can keep the InfoBox open on the screen as you work and use it to edit objects.



You can save a set of InfoBox properties in a *named style* and then apply the style to other objects.

For more information about the icon bars, Tools palette, status bar, and InfoBox in Design, see “About Design” on page 5-1.

Browse

In *Browse*, you work with the information in a database. You can enter and edit data here, find and sort records, and print views. You can also create views (but you need to go to *Design* to modify the design of forms, reports, form letters, and mailing labels).

You work in *Browse* most of the time. When you first create or open an Approach file, you see a view in *Browse*.



- To go to *Browse*, click the *Browse* icon in the icon bar, or choose *Browse* from the *View* menu or from the environment pop-up menu in the status bar.

In *Browse*, you enter and edit data.

The screenshot shows the Lotus Approach application window titled "Lotus Approach - [C:\APPROACH\EMPLOYEE.APR\Form 1]". The menu bar includes "File", "Edit", "View", "Create", "Browse", "Tools", "Window", and "Help". The toolbar contains various icons for navigation and editing. The main window displays "Form 1" with the following data:

Employee ID	First Name	Middle Name	Last Name
24	Jordan	Lindsay	Wells
Category	Title	Department	
Management	Department Manager	Cost Accounting	
Location	Home Address	City	State/Region
Hampton Plaza	393 Hoe Point	San Francisco	CA

The status bar at the bottom shows "Form 1", "Browse", "Record 1", and "Found 1 of 1".

The default icon bar in *Browse* has icons for entering and editing data, moving from one record to another, finding and sorting records, adding and deleting records, spell checking, and printing.

The status bar in *Browse* shows the position of the current record in the found set and the total number of records in the found set. It also has arrow buttons for moving to another record and pop-up menus for changing the view, the environment, and the icon bar.

For more information about *Browse*, see "About *Browse*" on page 10-1.

Find

In *Find*, you fill out a find request to search for records that meet certain criteria. A *find request* is a blank copy of the view you're currently using.



- To go to Find, click the Find icon in the icon bar, or choose Find from the Browse menu or from the environment pop-up menu in the status bar.

In Find, Approach opens a blank copy of the current view. You fill in the fields to use as search criteria.

For example, to find all employees who were hired after May 1, 1994, using the find request above, you would type >5/1/94 in the Date Hired field.

When you finish filling out a find request, Approach returns you to Browse and displays only the records that match the criteria you specified. This subset of records is the *found set*.

The default icon bar in Find has icons for inserting operators in search criteria. The status bar in Find is the same as it is in Browse.

For more information about Find, see "Finding data in records" on page 11-1.

Preview

The *Preview* environment shows what the current view will look like when it is printed. This gives you a chance to correct errors or make design changes before committing a view to paper.



- To go to Preview, click the Preview icon in the icon bar, or choose Preview from the File menu or from the environment pop-up menu in the status bar.

All of the data from Browse also appears in Preview. You can move through records in Preview as you can in Browse, but you cannot click in fields or edit data.

If a view has any fields that summarize data from multiple records, Approach calculates the summary in Preview and shows the results. If a view has fields or other objects that slide up or left, the fields slide into position in Preview and in Design if you're showing data.

When you first go to Preview, you see the current view reduced to 75 percent of its normal size. You can change to other zoom settings.

Preview shows what the current view will look like on a printed page.



The default icon bar in Preview has icons for moving through records, finding and sorting records, and printing. The status bar in Preview is the same as it is in Browse, except that it also has a pop-up menu for changing the zoom setting.

For more information about Preview, see “Previewing a view” on page 14-3.

Basic steps for setting up a database

These are the basic steps for setting up a new database in Approach. Turn to the chapters listed below for detailed procedures.

1. Create a new database file.

You can create an empty database file (without data) or start with an existing database, spreadsheet, or text file from another application. Approach automatically creates an Approach file for the database file.

See Chapter 2, "Managing Files."

2. Define the fields of the new database file.

A field definition specifies a name and type for the field, and in some cases additional information such as a length or a formula. When you create a new database file, you can select a template that has fields already defined. You can edit existing fields and add new fields to a database at any time.

See Chapter 3, "Defining Fields."

3. If you want to use data from other databases in your new Approach file, join the other databases to the new database file.

You can join two databases on any field they have in common.

See Chapter 4, "Joining Database Files."

4. If you want to use custom views, design the views for the new Approach file.

Approach supplies a standard form and worksheet for a new Approach file. You can also design custom forms, reports, form letters, mailing labels, worksheets, and crosstabs.

See Chapter 5, "Working in Design," Chapter 6, "Adding and Editing Fields in a View," Chapter 7, "Designing Forms and Repeating Panels," Chapter 8, "Designing Reports," Chapter 9, "Designing Form Letters and Mailing Labels," and Chapter 12, "Designing Worksheets and Crosstabs."

5. Enter data in the records.

Either type in data yourself, or import it from another file. You can enter the data in the standard form or worksheet that Approach provides, or in a custom view that you design.

See Chapter 10, "Entering and Editing Data," and Chapter 16, "Exchanging Data with Other Files or Applications."

2

Managing Files

The fields and records of a database are stored in a database file. Each database can have at least one Approach file with forms, reports, and other views that provide a “window” into the information.

This chapter describes how to create, open, save, close, and delete Approach files and database files within Approach.

The instructions in this chapter assume you know how to specify directory and disk locations in file dialog boxes in Windows applications. If you need help with this, see your Windows *User's Guide*.

About files in Approach

In Approach, you work in *Approach files* that have the forms, reports, worksheets, crosstabs, letters, and mailing labels you design. You do all your work in Approach files, including entering and editing data, finding and sorting records, and organizing and printing information for colleagues.

The data you see in Approach files is not actually stored there, but is kept behind the scenes in one or more *database files*. You do not work directly in these files, but use their data through the Approach files. With this arrangement, an Approach file can use data from a variety of database files—and a variety of database types.

Appendix B, Appendix C, and Appendix D give detailed information about file types.

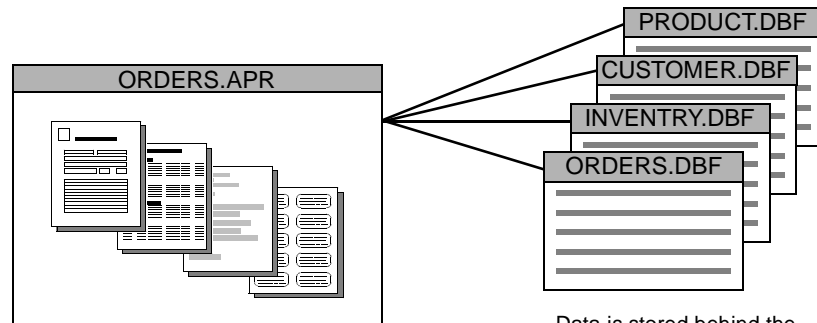
Approach can read database files directly in dBASE IV, dBASE III+, Paradox 3.5, Paradox 4.0 (including Paradox for Windows), FoxPro 2.1, Microsoft Access, Lotus Notes, Oracle SQL, Microsoft/Sybase SQL Server, and IBM DB2 formats. Other formats may be available if you have installed applications that use an ODBC driver. Approach can also create database files from Lotus 1-2-3 and Microsoft Excel spreadsheets, and from delimited and fixed-length text files.

The Approach files always have the same Approach format and interface, so the file type of an underlying database is invisible to you as you work. Approach files can provide a “front end” to many different sources of data, with a consistent and easy-to-use interface.

Approach files have the filename extension .APR. The filename extension for dBASE and FoxPro files is .DBF, for Paradox files it is .DB, for Lotus Notes files it is .NSF, and for Microsoft Access files it is .MDB. SQL tables do not have an extension.

A single Approach file can bring together data from more than one database at a time. To do this, you *join* the underlying databases in the Approach file. Joining allows you to synthesize information in more complex and flexible ways than you can with a single database. The joined databases for an Approach file can even be of different types.

An Approach file stores forms, reports, and other views for a database or for a set of joined databases. You do all your work in Approach files.



Data is stored behind the scenes in database files.

Whenever you create a new database file, or open an existing database file, Approach automatically creates and opens a new Approach file so that you can begin entering data. And when you want to work with an existing Approach database file, you open an Approach file for it, rather than the database file.

As you work in an Approach file, Approach automatically saves changes you make to data in the corresponding database file. If you make design changes to views, you save those changes in the Approach file yourself.

Approach creates additional files as needed for memos, indexes, and file format compatibility. You do not work directly in these files, but you may notice them in a file dialog box or in the Windows File Manager. See “Filename extensions” on page B-8 for a list of extensions for all the Approach files.

Creating and opening files

To set up a database in Approach, you can create a new database file, open a database file that has already been created (often in another application), or create a database from a spreadsheet or a text file. Approach automatically creates and opens an Approach file for each new database file. To open an existing database in Approach, you open the database's Approach file.

Approach is preset to display a Welcome dialog box whenever you start the application and whenever you close all Approach files but leave the application running. You can use this dialog box to create and open files. If you don't want the Welcome dialog box to appear, turn on "Don't show this screen again" at the bottom of it. (To show the dialog box again, turn on "Show Welcome dialog" in the Display panel of Preferences.)

Query files are text files that store log-on information and Select statements for SQL tables; they have the filename extension .QRY. For information about these files, see "Opening a query file in Approach" on page C-15.

Creating a new database file

Even if a template does not provide exactly what you need, you may find it quicker to start with one than to set up a database from scratch.

If you're setting up a database from scratch, begin by creating a database file for it. You need to give the file a name and location and specify a file type. Approach automatically creates and opens a new Approach file for the database file.

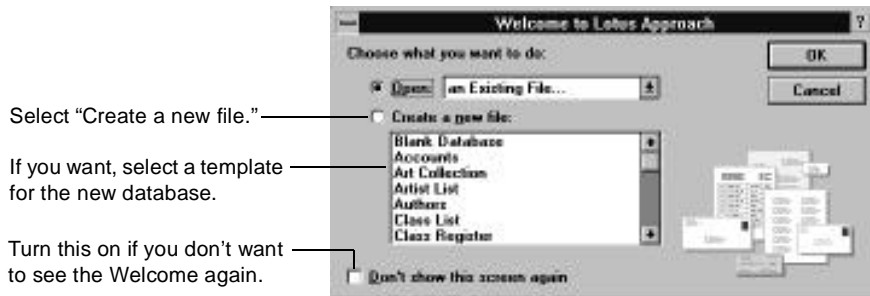
Approach comes with several *templates* that provide predefined fields for common types of databases. If you create a database using a template, the database will be a copy of the template; you can modify its predefined fields for your particular needs. If you create a database without using a template, you define the fields from scratch.

Make sure you save your Approach file. Approach does not automatically save an Approach file for a new database (though it saves any data in the database file).

To create a new database file:

1. If you just started Approach and the Welcome dialog box appears, select "Create a new file," select a template if you want, and click OK.

The Welcome dialog box appears if “Show Welcome dialog” is on in Preferences.



Select “Create a new file.”

If you want, select a template for the new database.

Turn this on if you don't want to see the Welcome again.

If you leave the template setting as Blank Database, the new database file will be empty, with no fields.

If you don't want the Welcome dialog box to appear after this, turn on “Don't show this screen again.”



2. If Approach is already running, click the New File icon or choose New from the File menu.

The New dialog box appears.



Type a name for the new database file.

Select a file type for the database file.

Specify a location for the database file.

You don't need to type an extension for a filename. Approach adds an extension based on the file type.

3. Type a name for the database file in the File Name text box. You can also change the directory and disk if you want to specify a different location for the file.
4. Select a database file type in the List Files of Type drop-down list. The list shows the file types you can use for a new database. The standard file types in the list are dBASE IV, dBASE III+, FoxPro 2.1, and Paradox. You do not need to have a dBASE, FoxPro, or Paradox application to use these file types with Approach.

If you plan to use a database only in Approach and not with other applications, leave the file type as dBASE IV.

If the ReadOnly line in your APPROACH.INI file is set to 0, the list also shows the types Access, Oracle, SQL Server, DB2-MDI, and Lotus Notes, and any ODBC drivers you have installed. For more information about these file types, see Appendix B, Appendix C or Appendix D.

5. Click OK.

If you created the file with a template, the file opens to a view specified by the template. The fields are already defined.

If you created the file without a template, the Field Definition dialog box appears so that you can define fields for it. For help with this, turn to “Adding fields to a database” on page 3-5.

Opening an Approach file for a database

If the file you want to open appears in the Approach files list in Welcome, just select the filename and click OK.

When you want to work with an existing Approach database, you open the Approach file rather than the database file; Approach files have the filename extension .APR. After opening the file, you can switch to the particular form, report, or other view you want. If multiple database files are joined in an Approach file, the Approach file gives you access to all of those databases.

If you open a database file (a file with an extension such as .DB or .DBF), Approach creates a new Approach file for the database. The Approach file has the same name as the database, but with the extension .APR.

In versions of Approach earlier than 3.0, the files that contain views are called view files rather than Approach files and have the filename extension .VEW. When you’re showing Approach files in the Open dialog box, any view files you have also appear. You can open a view file just as you open an Approach file.

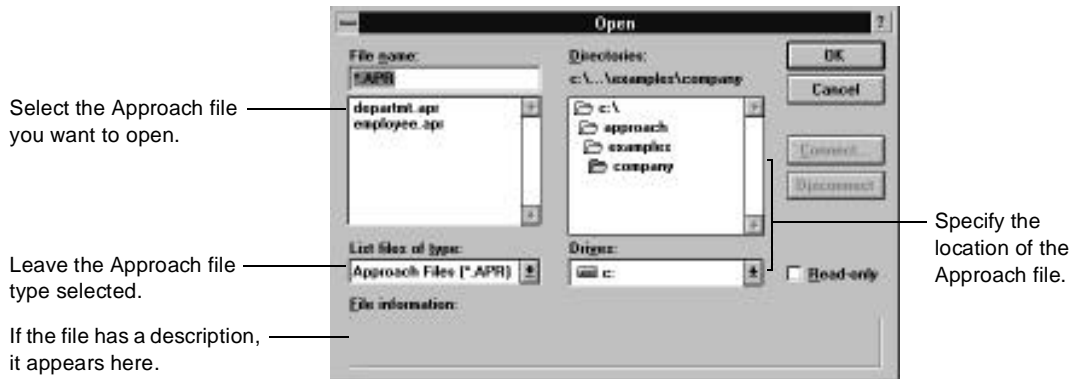
An .APT file contains views and data and is created when you attach an Approach file to a message in Lotus Notes, cc:Mail, or other VIM or MAPI mail packages. If you open one of these files, it is read-only. You can save the file as an Approach file if you need to edit it.

To open an Approach file for a database:



1. Click the Open File icon or choose Open from the File menu. Or if the Welcome dialog box is on the screen, select “Open an existing file” and click OK.

The Open dialog box appears.



2. Select the name of the Approach file in the File Name list.
The list is preset to show Approach files, so you don't need to select the file type to see them. You can change the directory and disk if you need to look for the file.
3. To open the Approach file only for reading, turn on Read-only.
If you turn on this setting, you will not be able to edit data or save design changes in the Approach file. This setting applies only to your current session with the file, and does not make it permanently read-only.
4. Click OK.

The Approach file opens to the form, report, or other view you were using when you last saved the file.

If the Approach file has fields that need to be mapped to fields in a database file, the Field Mapping dialog box appears. For information about this, see "Mapping fields in an Approach file" on page 2-7.

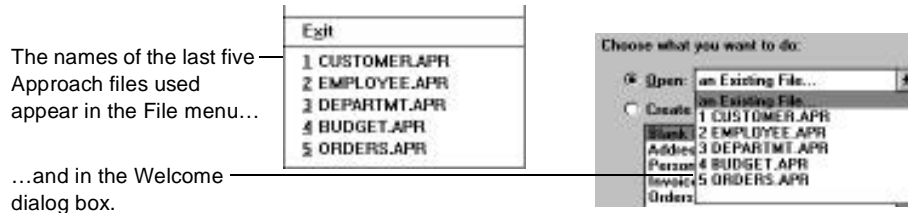
Passwords

If a database requires a password, Approach asks you to provide the password when you try to open an Approach file that uses that database. A database can have a read/write password or both a read/write and a read-only password. Approach opens the Approach file only if you type the password correctly. For more information, see "Entering a password" on page 18-7.

If you want to launch a macro every time you start Approach, create a macro called Open. See page 15-1.

Reopening one of the last Approach files used

Approach keeps track of the last five Approach files you opened or saved, and displays their names at the bottom of the File menu and in a drop-down list in the Welcome dialog box. You can quickly open one of these files by selecting its name.



To reopen one of the last five Approach files used:

- Select the name of the file in the bottom of the File menu. Or press ALT-F and the number (1 through 5) that appears for the Approach file in the menu.
- If the Welcome dialog box is on the screen, select the name of the file in the Open drop-down list and click OK.

The Approach file opens to the form, report, or other view you were using when you last saved the file.

If you open an Approach file with fields that need to be mapped, the Field Mapping dialog box appears. For information about this, see “Mapping fields in an Approach file,” next.

Mapping fields in an Approach file

If you make structural changes to fields and then do not save the Approach file, or if you make structural changes through another Approach file, the next time you open an Approach file you need to *map* the changed fields. This can happen if you have changed the name or type of a field or have deleted a field from the database file.

To map fields in an Approach file:

1. Open the Approach file.

An alert box appears if the Approach file has fields that need to be mapped.



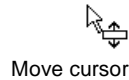
2. Click Yes.

The Field Mapping dialog box appears. (You can click No if you want to open the file without mapping the fields.)

3. Map an unmapped field to the database field right across from it by clicking between the two fields.

Fields with the same name are mapped automatically.

The fields on the left side of the Field Mapping dialog box are in the Approach file. The fields on the right side are in the database files. An arrow between two fields means that the fields are mapped.



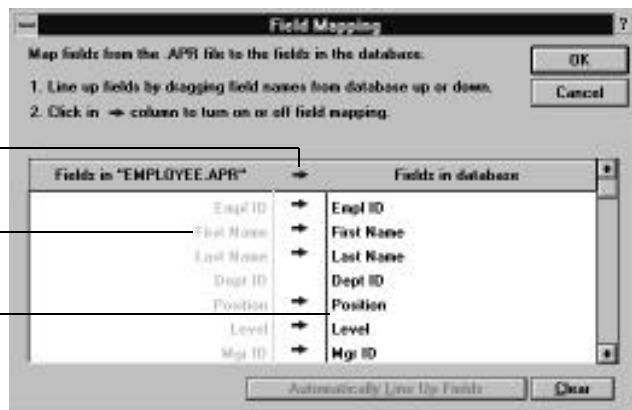
If necessary, you can drag a database field up or down to move it across from the Approach file field you want to map to. When you position the pointer over the database fields, it turns into a move cursor to show that you can drag the fields.

If two fields do not have an arrow between them, the field in the Approach file is unmapped. When you click between the fields, an arrow appears.

Click here to map two fields on the same line.

Fields that are mapped have an arrow between them.

If necessary, move database fields to align them with fields in the Approach file.



Follow these suggestions for mapping a field:

If you have

Do this

Changed the name of a field in the database file

Map the Approach file field to the new field name in the database.

Continued

<i>If you have</i>	<i>Do this</i>
Changed the type of the field in the database file	Map the Approach file field to its same name in the database, or map it to a different name to replace it with a different field.
Deleted the field from the database file	Map the Approach file field to a different field name in the database.

To remove all the mapping in the Approach file, click Clear. To restore the Approach file to its original mapping, click Automatically Line Up Fields.

4. Continue mapping unmapped fields in the same manner.

If you leave any fields unmapped, they will not show any data in the Approach file. In Design, the unmapped fields will have NO_FIELD_REFERENCE in them. In Browse, if you click in an unmapped field you get an error telling you that you cannot edit the field and must assign a database field to it.

5. When you're finished mapping fields, click OK.

The Approach file opens.

In Design, you can use the InfoBox to make a link on an unmapped field or to remove the field from the view.

Opening a database created in another application

Make sure you save a new Approach file. Approach does not save it automatically.

You can open a database that was created in another application. Approach automatically creates and opens a new Approach file for it, and you can work with the database as if it had been created in Approach. This makes it easy for you to share data with people who use other database applications.

After you open a database from another application, you save its Approach file with the forms, reports, and other views you've designed. The next time you need to work with the database, open the Approach file and proceed as you would with any other Approach database.

You can also save the database file in another file type. For example, if you open a database that's on a mainframe computer, you may want to save a copy of the database in dBASE IV to make it more suitable for use on your own computer. For more information, see "Saving a copy of an Approach file and a database file" on page 2-19.

This section describes how to open a database in most compatible applications. For information about opening a database table, see “Opening a database table created in Microsoft Access,” next, “Working together with Lotus Notes” on page 17-1, or “Opening an ODBC data source” on page D-3.

To open a database created in another application:



1. Click the Open File icon or choose Open from the File menu. Or if the Welcome dialog box is on the screen, select “Open an existing file” and click OK.
2. Select a database file type in the List Files of Type drop-down list. The drop-down list shows the file types of databases you can open. When you select a file type, the File Name list shows the databases in that type.

If you select Oracle, SQL Server, or DB2-MDI and are not already connected to a SQL server, a dialog box appears that lets you connect. For more information, see Appendix C.

3. Select the name of the database in the File Name list. You can change the directory and disk if you need to look for the file.
4. To open the new Approach file only for reading, turn on Read-only.
5. Click OK. Approach creates an Approach file for the database and opens the file to a standard form.

Read-only applies only to your current session with Approach and does not make a file permanently read-only.

Key fields for a Paradox database

If you try to open a Paradox database and Approach cannot find a key field, the Choose Key Field dialog box appears so that you can select a field to use as the key field. If the database does not have a unique field or a combination of fields you can use for this, click Add Key Field in the dialog box. For more information, see “Specifying a key field for a Paradox database” on page 3-19.

Opening a database table created in Microsoft Access

You can use Approach to open a table created in Microsoft Access. You need to see the contents of the database first and then select the table in it you want. Approach automatically creates and opens a new Approach file for it, and you can work with the table as if it had been created in Approach.

To open a database table created in Microsoft Access:

1. Click the Open File icon or choose Open from the File menu. Or if the Welcome dialog box is on the screen, select “Open an existing file” and click OK.

The Open dialog box appears.

2. Select Access in the List Files of Type drop-down list.

The names of Access databases appear in the Directories list with a filecard icon in front of them and with the filename extension .MDB.

3. Double-click the name of the database in the Directories list.

You can change the drive if you need to look for the database. When you double-click the name, the tables in the database appear in the File Name list.

4. Select the name of the table in the File Name list.
5. Click OK.
6. If an alert box appears, click OK to open the table.

The alert box appears if your preferences are set for displaying SQL and ODBC databases as read-only.

Creating a database from a spreadsheet

You can open a spreadsheet in a Lotus 1-2-3 or Excel format, and Approach will create a database file with a copy of the spreadsheet data. Approach also creates a new Approach file for the database.

The rows in the spreadsheet become records in the database, and the columns become fields.

The fields are initially named A, B, C, and so on, but you can rename them in the Field Definition dialog box. If the first row of the spreadsheet has text that identifies the rest of the contents, you can use this row to provide the field names.

	A	B	C	D
1	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr
2	101.97	97.42	93.69	84.32
3	57.22	118.93	89.15	103.99
4	83.48	79.00	98.75	93.79

In a spreadsheet, the data is divided into rows and columns.

The first row of a spreadsheet can provide field names for a database.

1st Qtr	2nd Qtr	3rd Qtr	4th Qtr
101.97	97.42	93.69	84.32
57.22	118.93	89.15	103.99
83.48	79.00	98.75	93.79

In a database, the rows become records, and the columns become fields.

If you're opening a Lotus 1-2-3 spreadsheet and do not want to use all of the spreadsheet data, you can specify a sheet or a named range to use. You can also work in a Lotus 1-2-3 spreadsheet directly in Approach without creating a database from the spreadsheet. For more about Approach and Lotus 1-2-3, see Chapter 17, "Working Together with Other Lotus Applications."

To create a database from a spreadsheet:



1. Click the Open File icon or choose Open from the File menu. Or if the Welcome dialog box is on the screen, select "Open an existing file" and click OK.
2. Select Lotus 1-2-3 or Excel in the List Files of Type drop-down list.
3. Select the name of the spreadsheet in the File Name list and click OK.

If you're opening a Lotus 1-2-3 spreadsheet, the Select Range dialog box appears.

Select a sheet or named range of data to use.

Turn this on if you want to use the first row as field names.

Select Range

Sheet 1994 Budget

Sheet Sales Analysis

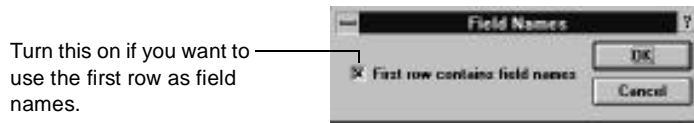
Sheet Expenses

INVENTORY

PRODUCT_SALES

First row contains field names

If you're opening an Excel spreadsheet, the Field Names dialog box appears.



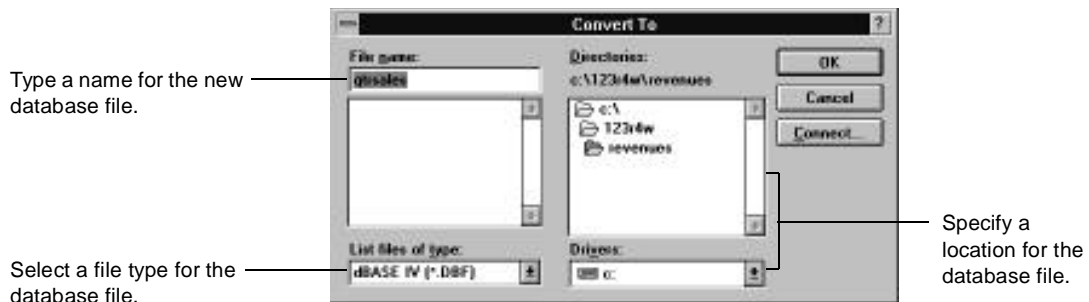
4. Specify how to open the spreadsheet in the dialog box.

In the Select Range dialog box for Lotus 1-2-3, select a sheet or named range with the data you want to use in the new database. Named ranges appear in all capital letters in the list. (With an Excel spreadsheet, all of the data is copied into the database.)

To use the text in the first row of the spreadsheet as field names, turn on "First row contains field names."

5. Click OK.

The Convert To dialog box appears.



6. Type a name for the database file in the File Name text box.

You can change the directory and disk if you want to specify a different location for the file.

7. Select a database file type in the List Files of Type drop-down list.

8. Click OK.

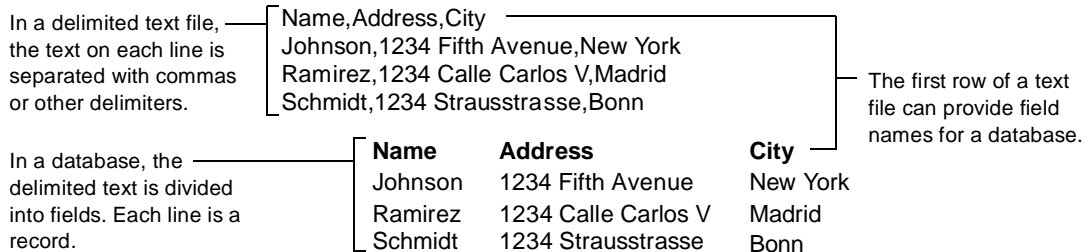
The Approach file for the new database opens to a standard form.

Creating a database from a delimited text file

You can open an ASCII text file with delimited text, and Approach will create a database with a copy of the file's data. Approach also creates a new Approach file for the database.

A *delimited text file* uses separators such as commas, spaces, or tabs to break up the text into discrete units. When you create a database from delimited text, these separators mark where one field ends and the next one begins. You specify the delimiter used when you open the text file in Approach. A paragraph return marks where one record ends and the next one begins.

The fields are initially named A, B, C, and so on, but you can rename them in the Field Definition dialog box. If the first row of the text file has text that identifies the rest of the file's contents, you can use this first row to provide the field names.



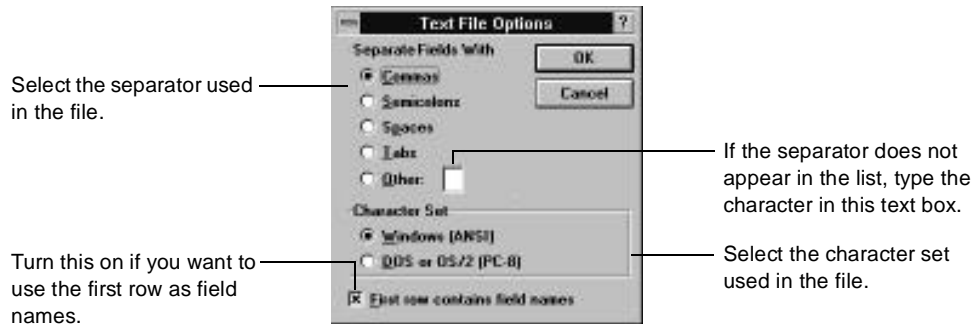
You can also use non-delimited, fixed-length text to create a database. See "Creating a database from a fixed-length text file," next.

To create a database from a delimited text file:



1. Click the Open File icon or choose Open from the File menu. Or if the Welcome dialog box is on the screen, select "Open an existing file" and click OK.
2. Select Text-Delimited in the List Files of Type drop-down list.
3. Select the name of the text file in the File Name list and click OK.

The Text File Options dialog box appears.



4. Select the separator used in the text file in the Separate Fields With area.

The separators mark where one field ends and the next one begins. Check the documentation for the file’s application to find out which separator is used.

If the separator you want does not appear in the list, select Other and type the character in the text box.

5. Select the character set used in the text file.
6. To use the text in the first row of the file as field names, turn on “First row contains field names.”
7. Click OK.

The Convert To dialog box appears.

8. Type a name for the database file in the File Name text box.
You can change the directory and disk if you want to specify a different location for the file.

9. Select a database file type in the List Files of Type drop-down list.
10. Click OK.

The Approach file for the new database opens to a standard form.

You don’t need to type an extension for a filename. Approach adds an extension based on the file type.

Creating a database from a fixed-length text file

You can open an ASCII text file with fixed-length text, and Approach will create a database with a copy of the file data. Approach also creates a new Approach file for the database.

In a *fixed-length text file*, the text on each line is broken into blocks of text a specific length. (If the text does not fill the entire length, it has spaces after it until the next block begins.) When you create a database from fixed-length text, you need to tell Approach how long each block of text is. Approach uses fixed-length fields for the text in the database—the fields are the same length in every record.

A paragraph return marks where one record ends and the next one begins. If the records do not have paragraph returns, the next record begins at the end of the block; you need to know the contents of the text file to define the blocks correctly.

You can name the fields when you create the database. Or if the first row of the text file has text that identifies the rest of the file contents, you can use this first row to provide the field names.

In this example, characters 1 through 12 become a 12-character field in the database, characters 13 through 40 become a 27-character field, and so on:

In a fixed-length text file, the text on each line is broken into blocks of fixed lengths.

1	12	13	40	41
Johnson	1234	Fifth Avenue	New York	
Ramirez	1234	Calle Carlos V	Madrid	
Schmidt	1234	Strausstrasse	Bonn	

In a database, the blocks become fixed-length fields. Each line is a record.

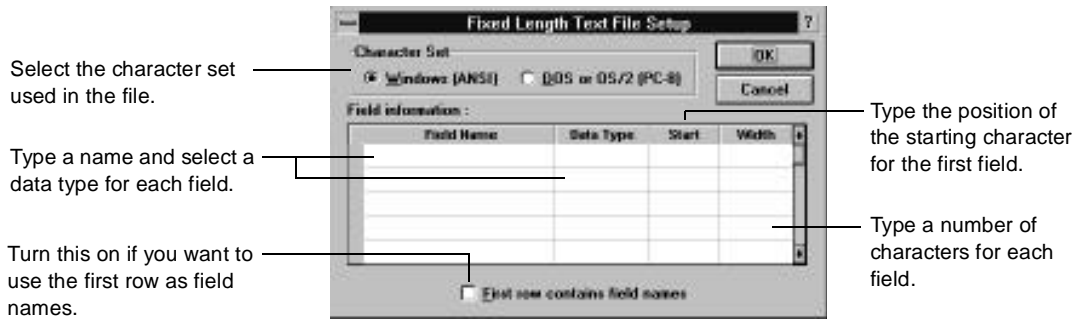
Name	Address	City	You name the fields
Johnson	1234 Fifth Avenue	New York	when you create the
Ramirez	1234 Calle Carlos V	Madrid	database.
Schmidt	1234 Strausstrasse	Bonn	

To create a database from a fixed-length text file:



1. Click the Open File icon or choose Open from the File menu. Or if the Welcome dialog box is on the screen, select "Open an existing file" and click OK.
2. Select Text-Fixed-Length in the List Files of Type drop-down list.
3. Select the name of the text file in the File Name list and click OK.

The Fixed Length Text File Setup dialog box appears.

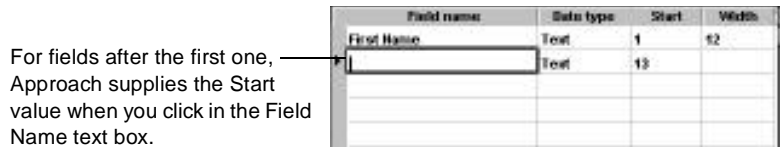


4. Select the character set used in the text file.
5. Type a name for the first field in the Field Name text box, or turn on “First row contains field names” to use text in the first row of the file as field names.

The restrictions on characters and on the length of the name depend on the file type of the database—for example, some file types allow spaces but others don’t. For details about these restrictions, see Appendix B, Appendix C, or Appendix D.

6. Select a data type for the first field in the Data Type drop-down list.
7. Type the starting position for the first field in the Start text box (if the position is different from 1).
8. Type the number of characters for the first field in the Width text box.
9. For the rest of the fields, type a field name (unless “First row contains field names” is on), select a data type, and type a width.

You don’t need to provide the starting position for fields after the first one. Approach calculates their starting positions.



10. Click OK.

The Convert To dialog box appears.

11. Type a name for the database file in the File Name text box.
You can change the directory and disk if you want to specify a different location for the file.
12. Select a database file type in the List Files of Type drop-down list.
13. Click OK.
The Approach file for the new database opens to a standard form.

Saving and closing files

Approach automatically saves changes to data in an underlying database file as you work and whenever you close a file. You need to save an Approach file manually after Approach creates the file (such as for a new database file) and whenever you make design or join changes in the Approach file.

You can also save a copy of a database file and an Approach file, either to back up a database or to prepare a template for other databases.

Saving a new Approach file

The first time you save an Approach file, you give the file a name and specify a location. Approach has one type of Approach file, regardless of the type of the associated database files.

To save a new Approach file:



1. Click the Save Approach File icon or choose Save Approach File from the File menu.

The Save Approach File dialog box appears.



2. Type a name for the file in the File Name text box.

Approach suggests a name based on the name of the database file, plus the extension .APR. You can keep this name or give the file a different one.

You can also change the directory and disk if you want to specify a different location for the file.

3. To give the Approach file a password, turn on “Set Approach file password” and type the password in the text box.

If an Approach file has a password, a user must enter the password before making design or join changes in the file. For information about Approach file passwords, see “Defining passwords for files” on page 19-6.

4. Click OK.

Saving changes to an existing Approach file

Save an Approach file often when making design or join changes.

Approach automatically saves your data as you work, so you don’t need to worry about saving it yourself. But if you make any changes to the design of forms, reports, worksheets, and other views in an Approach file, or if you join or unjoin databases, you need to save those changes.

When you open an Approach file, the file opens to the view you were using the last time you last saved the file. Before saving an Approach file, change to the view you want to appear when the file is opened or create an Open macro that automatically changes to the view you want.



- To save changes to an existing Approach file, click the Save Approach File icon or choose Save Approach File from the File menu.

If the Approach file has already been saved once, this command only saves the file, and does not open the Save Approach File dialog box.

Saving a copy of an Approach file and a database file

You can make a copy of an Approach file and its associated database file(s), either with or without the data:

- Include the data in the copy if you want the copy to be a backup of the original. The copy will be an exact duplicate of the original Approach file and database file.

- Leave the data out of the copy if you plan to use the copy as a template for other databases. The copy will have the same field definitions, views, macros, and setup options as the original, but no data.

To save a copy of an Approach file and a database file:

1. Choose Save As from the File menu.

The Save Approach File As dialog box appears. You use this dialog box to save the copy of the Approach file.



2. Type a different name or specify a different location for the copy of the Approach file.

The name and location of the original file appears in the dialog box. You need to change at least the name or the location.

3. To give the copy a password, turn on “Set Approach file password” and type the password in the text box.
4. Select “Exact copy” or “Blank copy” in the Databases area.

”Exact copy” makes an exact copy of the database, with all of its data. Use this setting to create a backup of a database.

”Blank copy” makes a copy of the database with everything except for the data. Use this setting to create a template for other databases.

If more than one database file is joined in the current Approach file, either of these settings makes a copy of each joined database.

“.APR file only” copies an Approach file but not a database file. This is described in “Saving a copy of an Approach file only,” next.

It's a good idea to create a backup before making extensive changes to a database. You can return to the backup if you need to.

5. Click OK.

The Save Database As dialog box appears. You use this dialog box to save the copy of the database file.



6. Type a different name or specify a different location for the copy of the database file.

The name and location of the original file appears in the dialog box. You need to change at least the name or the location.

7. To change the file type for the copy, select another type in the List Files of Type drop-down list.

8. Click OK.

Approach saves the copies of the Approach file and database files, and opens the new Approach file.

If more than one database file is associated with the Approach file, the Save Database As dialog box appears for every database file. Specify a different name or location for each file. The files do not all have to be the same type.

If you click Cancel rather than OK in Save Database As, no new Approach or database files are created.

Key fields for a Paradox database

If you use the Paradox file type for the new database file, the Choose Key Field dialog box appears so that you can select a field to use as the key field. If the database does not have a unique field or a combination of fields you can use for this, click Add Key Field in the dialog box. For more information, see “Specifying a key field for a Paradox database” on page 3-19.

Saving a copy of an Approach file only

You can save a copy of an Approach file that uses the same set of data as the original file. This allows you to quickly set up multiple Approach files for a single set of data.

To save a copy of an Approach file only:

1. Choose Save As from the File menu.
The Save Approach File As dialog box appears.
2. Type a different name or specify a different location for the copy of the Approach file.
The name and location of the original file appears in the dialog box. You need to change at least the name or the location, or the copy will overwrite the original file.
3. To give the copy a password, turn on "Set Approach file password" and type the password in the text box.
4. Select ".APR file only" in the Databases area.
This specifies that you want a new Approach file but not a new database file. Both the new Approach file and the original Approach file will be connected to the same database files.
5. Click OK.
Approach saves and opens the new Approach file.

Closing an Approach file

When you close an Approach file, if you've made any design or join changes you haven't saved, an alert box asks if you want to save the changes. (Changes to data are saved automatically as you work.)



- To close an Approach file, click the Close File icon, choose Close from the File menu, or double-click the control menu box in the upper-left corner of the file window.

Deleting a file

You can delete an Approach file or a database file from within Approach. When you delete a database file, all related files such as indexes are deleted along with it.

If you delete an Approach file, Approach can delete the associated database file (and its related files) for you. If you delete an Approach file that is based on more than one database file, Approach gives you a chance to delete or keep each joined database file.

You can delete an Approach file to delete a set of joined database files all at once.

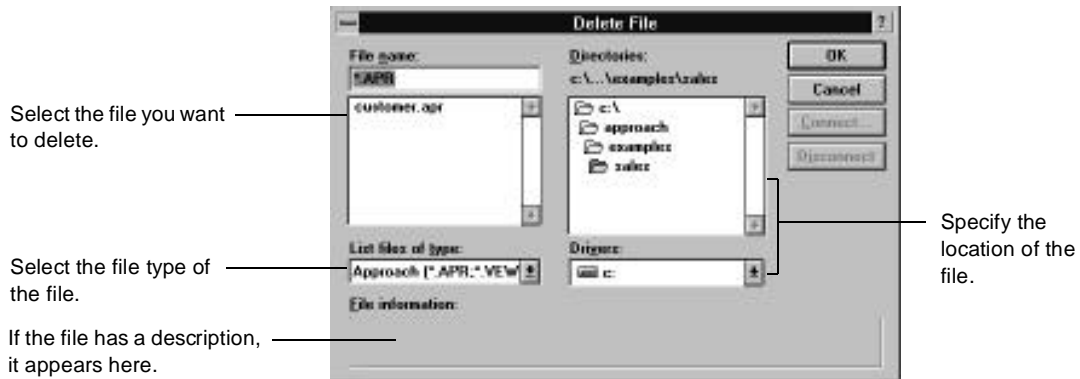
You can also delete files in the Windows File Manager, but you cannot delete an Approach file and its database files all in one step. If you want to be sure you're deleting a set of associated files, delete the files in Approach.

Approach files and database files must be closed before you can delete them.

To delete a file:

1. Choose Delete File from the File menu.

The Delete File dialog box appears.



2. To delete a database file, select the database file type in the List Files of Type drop-down list.

The File Name list is preset to show the Approach files, so if you want to delete a database file you need to select a different type.

3. Select the name of the file you want to delete in the File Name list.
4. Click OK.

Approach asks if you're sure you want to delete the file.

5. Click Yes to delete the file.

If you're deleting an Approach file, for each associated database file Approach asks if you're sure you want to delete that file. You can click No in any of these alert boxes to keep a particular database file.

Be especially careful when deleting database files from an Approach file. Other Approach files may also be based on them.

3

Defining Fields

A *field* in a database is an individual category of information, such as an invoice number, a customer name, or an amount due. When you create a new database, you define the fields for it. You can also redefine the fields in an existing database at any time.

This chapter describes the types of database fields in Approach. It also explains how to define fields, set options for entering data in fields, set a key field for some database types, and delete fields.

Types of fields

When you define a field, you specify the type of data the field can contain. The possible field types are text, numeric, memo, Boolean, date, time, PicturePlus, calculated, and variable.

A field's type determines what you can store in it. The type may also affect how you can use that field for finding and sorting records and whether its data can be used in calculations. In a form, report, or other view, you can also apply specific formatting characteristics to some types of fields.

Text fields

A *text field* can contain any characters you can type, including letters, numbers, and symbols. You can search on a text field using any character in the field. A sort on a text field is alphabetical in either ascending order (0 to 9, then A to Z) or descending order (Z to A, then 9 to 0).

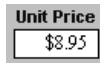
Item Name
Aqua spring water

Define text fields for text-based information such as names or for combinations of letters and numbers such as addresses. When you define a text field, you specify the number of characters allowed in it.

You cannot have more than 254 characters in a text field for most database file types. If you need to have more characters, use a memo field instead of a text field.

Numeric fields

Numeric fields are for storing numeric data that you need to use in calculations or to find or sort arithmetically. You can sort records by a numeric field in either ascending order (lowest to highest) or descending order (highest to lowest).



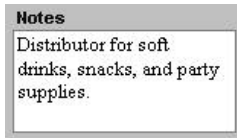
A screenshot of a database field. The field is labeled "Unit Price" and contains the value "\$8.95".

Set up a numeric field for strictly numeric data, such as a price or quantity. If you want to show a calculated result, define the field as calculated rather than as numeric. (You can use a value from a numeric field *in* a formula, however. For example, you might use a Unit Price value in a formula in an Amount field.)

With some database file types, you specify the number of characters to the left and the right of the decimal point when you define a numeric field. With others, you just need to set the numeric type.

Memo fields

Like text fields, *memo fields* can store any characters you can type. You can perform a search on a memo field, but you cannot sort records by data in a memo field or use a memo field in a formula.



A screenshot of a database field. The field is labeled "Notes" and contains the text "Distributor for soft drinks, snacks, and party supplies."

Use memo fields to keep notes or to provide supplemental information about individual records. Often, this is the kind of information that is for internal use and not included in reports. For example, you might use a memo field to record background notes about customers to maintain a customer contact log.

You can store much more data in a memo field than in a text field because the data is kept in a separate memo file. The maximum size of a memo varies depending on the file type of the database file. For details about memos for different file types, see Appendix B, Appendix C, or Appendix D.

Boolean fields

A *Boolean field* contains a value of Yes, No, Y, N, 1, or 0.

Define a Boolean field for information that requires a simple yes or no, such as whether a payment has been received. A Boolean field often uses a checkbox in a view to make data entry easier.

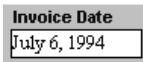


A screenshot of a database field. The field is labeled "Payment Received" and has a checked checkbox.

Boolean fields can be used in calculations. For example, if a Payment Received field contains the value No, you can use the value in the Total field for that record to calculate the next month's bill.

Date fields

A *date field* holds a single date. You can find and sort records on a date field, and you can use a date in some calculations. A sort on a date field is in either ascending order (earliest to latest) or descending order (latest to earliest).



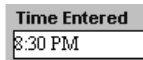
Invoice Date
July 6, 1994

You can type a date into a date field or have Approach enter the date for you automatically. If Approach provides the date, it is the date the record was either created or last modified (according to the system clock). You specify this when you define the field.

The order in which you type a month, day, and year into a date field is determined by the date format selected in the Windows International Control Panel.

Time fields

A *time field* holds a single time. You can find and sort records on a time field, and you can use a time in some calculations. A sort on a time field is in either ascending order (earliest to latest) or descending order (latest to earliest).



Time Entered
8:30 PM

You can type a time into a time field or have Approach enter the time for you automatically. If Approach provides the time, it is the time the record was either created or last modified (according to the system clock). You specify this when you define the field.

Approach allows precision of up to hundredths of a second.

PicturePlus fields

A *PicturePlus field* can hold a graphic or an object that comes from a Windows application that supports OLE (Object Linking and Embedding). Some common OLE objects are charts, sound files, and data ranges. You paste or import the graphic or object into the field in a record.

Define a PicturePlus field to display graphic information that is specific to individual records or to enter information you want to keep current through an OLE relationship.

When you define a PicturePlus field, you can specify a default OLE application for it.

Calculated fields

A *calculated field* stores the result of a formula. You set up the formula when you define the field, and Approach calculates the result and enters it in the field. The result can be a text string, a number, a date or time, or a Boolean value. You cannot edit a result in a calculated field.

Tax (6%)
\$1.55

The values in a formula can be constants you type into it or references to other fields. If a formula has a reference, Approach gets the value from the referenced field and uses it in the calculation. For example, you might define a calculated field called Tax and put this formula in it:

Subtotal*.06

A calculated field is part of an Approach file rather than an underlying database file.

For each record, Approach multiplies the value in the Subtotal field by 6 percent and enters the result in the Tax field.

You can use a summary calculation in a calculated field to compute a value from information in a range of records, such as to summarize the totals from all invoices for one month.

For more information about summaries, see “Summarizing data in a report” on page 8-14.

Variable fields

A *variable field* is a temporary storage area. Any data in a variable field is stored in memory, not on disk. A variable field is accessible whenever the Approach file in which it's defined is open.

Variable fields differ from other types of fields in that the value in a variable field is the same for every record in a database. They are like other fields, though, in that they can be displayed, formatted, and used in calculations and macros.

When you define a variable field, you specify the type of data it can contain: text, a number, a date or time, or a Boolean value. You can also assign an initial value for the variable field, which is used every time the Approach file is opened.

A variable field is part of an Approach file rather than an underlying database file.

You can use variable fields and macros to take data from one record and insert it in another. For example, you could use a variable field and two macros to reserialize existing records in a database. The first macro moves to the first record in the database and sets the variable field to 1. The second macro sets the serial number field to the current value in the variable field, moves to the next record, increments the variable field by 1 (by setting the variable field to the current value in the field plus 1), and then runs itself again. This continues for all the records in the database or current found set.

For more information about macros, see Chapter 15, “Automating Your Work with Macros.”

Defining fields for a database

For each field in a database, you need to assign a name, specify the type of data the field can store, and in some cases set a maximum length. If a field is calculated, you also need to set up a formula for it.

With most types of fields, you can also set data entry options (for example, to have data entered automatically or to have data validated). For information about these options, see “Defining fields for a database” on page 3-5.

Approach comes with templates that provide predefined fields for common business scenarios. You can use one of these templates when you create a database file. For more information, see “Creating a new database file” on page 2-3.

Adding fields to a database

If you create a database file without using a template, the Field Definition dialog box appears automatically so you can add fields to the database. You can also open the Field Definition dialog box at any time to add more fields to an existing database file.

When you add fields to a database, they do not automatically appear in any views. You can add fields to views by dragging them from the Add Field dialog box or by drawing them with the Field tool.

If “Show the Add Field dialog” is on in Preferences, when you close Field Definition you go to Design and the Add Field dialog box opens. For more information, see “Adding a field to a form, report, or mailing label” on page 6-1.

To add fields to a database:

1. Choose Field Definition from the Create menu, or create a new database file without using a template.

The Field Definition dialog box appears. If you chose Field Definition, the dialog box shows the fields in databases used in the current Approach file.

You can also click Field Definition in a field's InfoBox to open the dialog box.

For each field you're adding, type a name, select a type, and type a length (if required).

Field Name	Data Type	Size	Formula / Options
Employee ID	Numeric	5,0	
First Name	Text	10	
Middle Name	Text	10	
Last Name	Text	25	
Social Security No.	Text	11	
Natl Employment No.	Text	30	

If you created a database file without using a template, *Creating New Database* and the name of the file appear in the title bar of the dialog box. The dialog box is empty; you can select a template in the Template drop-down list if you want to fill it with predefined fields.

If you want, select a template with predefined fields.

For each field you're adding, type a name, select a type, and type a length (if required).



2. To add fields to a different joined database than the one with fields listed, select the name of the database in the Database drop-down list.

The drop-down list appears if you chose Field Definition to open the dialog box. The names of all databases joined in the current Approach file appear in the list.

3. For the first field you want to add to the database, click in the empty line at the bottom of the field list, or click Insert to put a new empty line above the line with the insertion point.
4. Type a name for the field in the Field Name text box in the empty line.

In a dBASE or FoxPro database created in Approach, the names of fields can be up to 32 characters long. You can use any characters in a field name, including letters, whole numbers, spaces, commas, periods, and arithmetic signs.

In a Paradox database created in Approach, the names of text, numeric, and date fields can be up to 25 characters long; the names of time, memo, Boolean, and PicturePlus fields can be up to 18 characters long. These characters can include letters, whole numbers, spaces, commas, periods, and arithmetic signs.

In an Access table created in Approach, the names of text, numeric, memo, and Boolean fields can be up to 32 characters long; the names of date, time, and PicturePlus fields can be up to 26 characters long. The first character must be a letter, but after that, a name can have letters and whole numbers.

You can edit an existing field by selecting it and changing the name, type, or length.

Use a field name that corresponds to the type of data the field will contain. A field name should be easy to recognize later.

The field names stored in a database file may be different from the field names you use with that file through Approach. For more details about field names, read about the type of your database in Appendix B, Appendix C, or Appendix D.

5. Select a type for the field in the Data Type drop-down list.

The possible field types are Boolean, calculated, date, memo, numeric, PicturePlus, text, time, and variable.

If you select the calculated, PicturePlus, or variable type, the bottom of the dialog box shows a panel for entering a formula or for setting options.

6. If necessary, type a length for the field in the Size text box.

You need to enter a maximum length for text fields in all types of databases and for numeric fields in some types of databases.

For a text field, type the number of characters you want allowed in the field. In dBASE, FoxPro, or DB2, a text field can have up to 254 characters; in Paradox, Access, Oracle SQL, or SQL Server, it can have up to 255 characters. (In Oracle 7, a text field can be up to 2,000 characters, but Approach treats any text field over 255 characters as a memo field.)

dBASE and FoxPro databases require a length for numeric fields. Type the number of digits you want to the left and the right of the decimal point. You can have up to 19 digits on the left and up to 15 on the right, but the total number of digits can't exceed 19.

7. Continue defining and adding fields in the same manner.

For each field, specify a name, a data type, and a length.

All of the fields except for calculated and variable ones appear in the order you add them. Calculated and variable fields are at the end of the list because they are part of the Approach file and not part of an underlying database file.

8. To change the order of the fields, select an order in the View Fields By drop-down list.

The possible field orders are Default Order, Field Name (alphabetical), Data Type (grouped by type), and Custom Order. If you select Custom Order, you can drag the fields up and down in the list to rearrange them.

9. To print a copy of the field definitions, click Print and use the Print dialog box to specify the settings.
10. When you're finished adding fields, click OK.

Make a field only as long as it needs to be. Field lengths can affect available disk space and the speed of finds and sorts.

The field order affects only how fields appear in Field Definition. In a database, fields are stored in the order they were created.

If “Show the Add Field dialog” is on in Preferences, you go to Design and the Add Field dialog box appears, showing the fields you just defined.

If you defined fields for a new Paradox database file, the Choose Key Field dialog box appears. See “Specifying a key field for a Paradox database” on page 3-19.

Setting up a formula for a calculated field

When you add a calculated field to a database, you need to set up a formula for the field. Approach calculates the result of the formula and displays the result in the field. The result can be a text string, a number, a date or time, or a Boolean value.

For example, you can use a simple calculated field to determine an amount due for each line item in an order. (Each line item is a record.)

For each item, Approach calculates an amount due.

Item Name	Quantity	Price	Amount
Diet Cola	64	0.15	\$48.00
Juice, 8ozk pack	12	2.59	\$31.08
Regular Cola	52	1.55	\$80.60

The Amount field uses the formula Quantity*Price.

Approach can also calculate a formula for a summary range of records. For example, to determine a total amount due for all the line items, you could use the function SSum(Amount). This adds up the values in the Amount fields for all the records in the order.

Approach calculates the total amount due for all the items.

Item Name	Quantity	Price	Amount
Diet Cola	64	0.15	\$48.00
Juice, 8ozk pack	12	2.59	\$31.08
Regular Cola	52	1.55	\$80.60
		Subtotal	\$159.68

The Subtotal field uses the function SSum(Amount).

Summary calculations are most often used in reports.

When applying a formula to a range of records, you need to use one of the functions defined specifically for summaries (such as SSum) and supply a field reference as the function's parameter. Because the value of a summary calculation field is not associated with a single record, the value can vary depending on the option you specify for the field in the Summarize On drop-down list.

In most cases, Approach does not calculate a summary value in Browse. The exception is a summary on records in a repeating panel. Approach displays a value for the repeating panel if it can calculate the value for the current record.

For more information about using summary calculations, see “Summarizing data in a report” on page 8-14.

To set up a formula for a calculated field:

1. Choose Field Definition from the Create menu, or create a new database file without using a template.

The Field Definition dialog box appears.

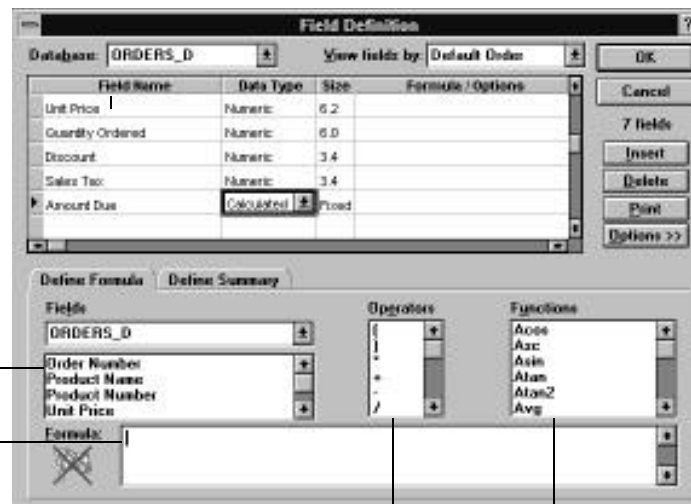
2. Type the name of the field and select Calculated in the Data Type drop-down list.

The bottom part of the Field Definition dialog box shows the options for setting up a formula. If you have set up other formulas in your current work session with Approach, you see the formula last defined.

The bottom part of the dialog box opens when you select certain data types or click Options.

Select a field to use as a reference.

Define the formula in this box.



Select an operator to manipulate or compare two values.

Select a function to apply a predefined operation.

3. Build the formula by clicking the elements you want or by typing in the Formula text box.

When you select a field name, a function name, or an operator in one of the lists, Approach copies it into the Formula text box. You can also type these elements directly into the text box, and you can type constants in the box. To move the insertion point in the Formula text box, click where you want it to go or press the left or right arrow key.

Appendix A explains the elements of a formula in much more detail, and it gives syntax and examples for all the functions.

Make sure functions are spelled correctly and have the right punctuation.

The Fields list shows the fields defined for the database except for PicturePlus and memo fields. Calculated and variable fields are in italics. To see the fields in a different joined database, select the database you want in the Fields drop-down list.

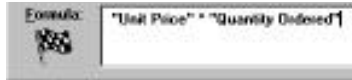
If you click a field name in the list, Approach provides the quotation marks for you.

Field names with spaces or other special characters such as hyphens must be enclosed in double quotation marks.

Enclose text, date, and time constants in single quotation marks. To change the order of evaluation, use parentheses to enclose the expressions you want evaluated first.

When the formula's syntax is complete and correct, the flag next to the Formula text box is no longer crossed out.

The flag shows that this formula's syntax is valid.

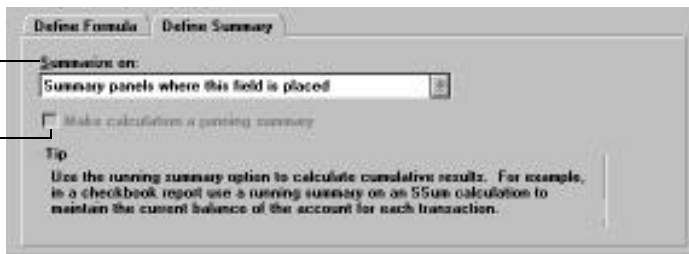


4. If the formula will summarize a set of records, click the Define Summary tab and specify the summary options.

The bottom part of the dialog box shows the summary options.

Specify how to apply the formula to a set of records.

Turn this on to maintain a running total for the formula.



Select from the Summarize On drop-down list to specify which records the formula should apply to.

The “where-placed” option (first in the list) allows you to use the same summary calculated field for more than one set of records and in more than one view.

<i>To apply a formula to</i>	<i>Select</i>
A set of records as defined by the summary panel with the calculated field	“Summary panels where this field is placed”
Every record in the current found set of a database	“Summary of all records in <i>database</i> ,” where <i>database</i> is the name of the database you want (This option appears for every database joined in the current Approach file.)
Every record in the current found set of all databases joined in the Approach file	“Summary of all records in all databases”

Continued

Use an option for a type of panel when you want to place a grand total or other summary outside the panels, on a report's body.

<i>To apply a formula to</i>	<i>Select</i>
A set of records as defined by a summary panel of a specific type	An option for a type of summary panel, such as "Left leading summaries of all records in <i>database</i> " (These options appear for every summary panel in the current Approach file.)

If you want Approach to maintain a running total for this formula in a view, turn on "Make calculation a running summary." (This is not available for the where-placed option.)

For examples of summaries with different settings, see "Summarizing data in a report" on page 8-14.

5. Continue adding or editing other fields in the Field Definition dialog box, or click OK to close the dialog box.

Editing fields in a database

You can edit the name, type, length, or formula of any existing field. The change applies to the field throughout the database, even if the field already has data in any of the records.

These are the effects of editing a field definition:

- If you change the name of a field, the new name appears wherever the name is used. This includes field references in formulas.
- If you change the type of a field that contains data, Approach tries to convert the data to the new type. If it cannot convert the data in a particular field, Approach warns you that the data will be deleted and asks if it's OK to delete the data.

You can change a field type from numeric to text or from text to numeric (if the field does not contain any text) without losing data. If you change a calculated field to another type of field, you lose the field's calculated result. If you change any other type of field, Approach warns you that data will be deleted and asks if it's OK to delete the data.

- If you decrease the length of a field that already contains data, the data is truncated after the new length.

It's often a good idea to make a backup of your database before changing a field type or length.

- If you change a formula, Approach recalculates the formula in all the records. If the result is used in formulas in other fields, those formulas are also recalculated. (Some summary calculations are not updated until you preview or print.)

To edit fields in a database:

1. Choose Field Definition from the Create menu.

The Field Definition dialog box appears.

2. To edit fields in a different joined database than the one with fields listed, select the name of the database in the Database drop-down list.
3. For each field you want to edit, select the part of the definition you want to edit and make the change.

You can type a new name or length or select a new data type.

For a calculated field, you can also change the formula. Select any part of the formula in the bottom of the Field Definition dialog box, and type or click elements in the lists to replace the selection. For more information about formulas, see "Setting up a formula for a calculated field" on page 3-8.

4. If an alert box appears, click OK to confirm the changes.

An alert box appears if you change a field type or decrease a length. It warns you that data in the field may be deleted or truncated.

5. To change the order of the fields, select an order in the View Fields By drop-down list.

The possible field orders are Default Order, Field Name (alphabetical), Data Type (grouped by type), and Custom Order. If you select Custom Order, you can drag the fields up and down in the list to rearrange them.

6. To print a copy of the field definitions, click Print and use the Print dialog box to specify the settings.
7. When you're finished editing fields, click OK.

You return to the view you were last using.

You can also click Field Definition in a field's InfoBox to open the dialog box.

Be careful about changing the type or length of a field that has data. You cannot retrieve data that is lost.

Customizing a field for data entry

Approach provides several ways to customize the entry of data in fields:

- For a text, numeric, date, time, or Boolean field, you can have Approach enter data automatically or check the accuracy of data that has been entered.
- For a PicturePlus field, you can specify whether to allow OLE objects and which application to use as a default OLE server.
- For a variable field, you can specify the type of data allowed and set an initial value.

You can specify data entry options when you create a field or anytime later. If you change an option for an existing field, it does not affect any data already in the field. (Approach checks data as you enter it, and not any data already in a field.)

You can also set a format for a field in a view to make data entry easier. For example, you can type numbers for a price and have Approach provide the currency signs and thousands separators. For more information, see “Formatting data in fields” on page 6-14.

Entering data automatically

Entering data automatically makes filling out records as quick, easy, and accurate as possible. For example, you might have Approach date revisions or number invoices for you, rather than typing in this information yourself.

Approach can enter a date, a time, fixed data you specify, data from the previous record, a serial number that increases or decreases from one record to the next, or the result of a formula.

To enter data automatically:

1. Choose Field Definition from the Create menu.
The Field Definition dialog box appears.
2. Add a new text, numeric, date, time, or Boolean field, or select an existing one.
3. If the bottom part of the dialog box is not open, click Options.

You can also click Field Definition in a field's InfoBox to open the dialog box.

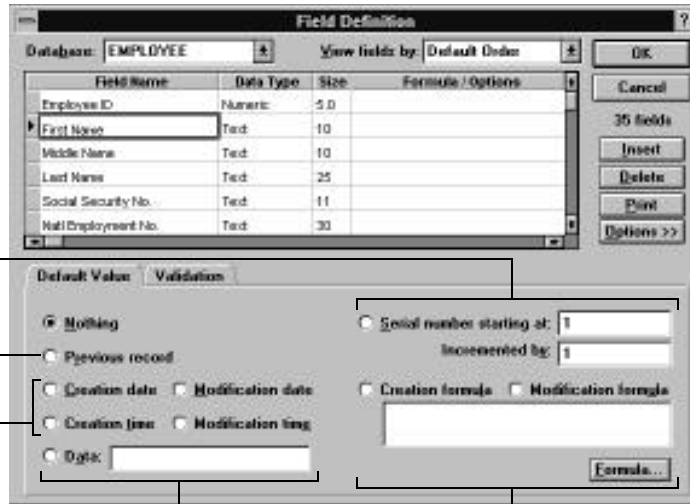
The bottom of the dialog box shows options for entering data automatically.

The bottom part of the dialog box opens when you select certain data types or click Options.

Assigns the field a unique value in each new record

Enters data from the last record added

Enters the date or time the record was created or modified



Enters specified data in the field in each new record

Enters a result when the record is created or modified

4. Set the option for the value you want entered automatically.

Some of the options may be dimmed. The options available vary depending on the type of field you're customizing.

You can set only one of these options for a field.

<i>To</i>	<i>Do this</i>
Remove a previously set option (in any field)	Click Nothing.
Enter the data from the same field in the last record added (in any field)	Click "Previous record."
Enter the date or time the record was created (in a date, time, or text field)	Click "Creation date" or "Creation time."
Enter the date or time the record was last modified (in a date, time, or text field)	Click "Modification date" or "Modification time."

Continued

<i>To</i>	<i>Do this</i>
Enter the same data in the field in each new record (in any field)	Click Data and type the data you want in the text box.
Enter a unique number in the field in each new record (in a numeric or text field)	Click "Serial number" and type a value for the first record in "Starting at" and an increment value in "Incremented by." The increment value can be positive (to increase the number from one record to the next) or negative (to decrease the number).
Enter the result of a formula when you create the record (in any field)	Click "Creation formula." Then click Formula and set up the formula in the dialog box that appears.
Enter the result of a formula when you create the record and update the result whenever you modify the record (in any field)	Click "Modification formula." Then click Formula and set up the formula in the dialog box that appears.

"Creation formula" and "Modification formula" let you use a formula without a calculated field.

5. Continue adding or editing other fields in the Field Definition dialog box, or click OK to close the dialog box.

Verifying the accuracy of entered data

You can have Approach verify that the data in a field is valid for that field. For example, Approach can check to see that a customer name in the current record is unique in the database, or that a numeric value falls within a certain range.

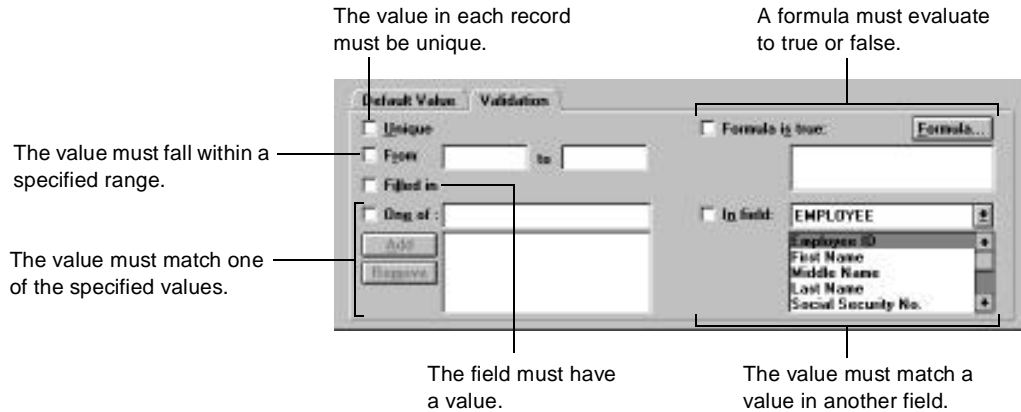
Approach verifies the accuracy of data as you enter it. If you try to enter data that Approach determines to be invalid, an alert appears describing the problem. You cannot move to another field until you correct the problem.

To verify the accuracy of entered data:

1. Choose Field Definition from the Create menu.
The Field Definition dialog box appears.
2. Create a new text, numeric, date, time, or Boolean field, or select an existing one.

3. If the bottom part of the dialog box is not open, click Options.
4. Click the Validation tab.

The bottom part of the dialog box shows the options for checking entered data.



5. Set the options you want for verifying the data in the field.
You can set as many of these options as you want for each field.

<i>To verify that</i>	<i>Do this</i>
The field in each record has a unique value.	Turn on Unique.
The value is within an alphabetical, numerical, or chronological range.	Turn on From/to and type values for the beginning and end of the range (inclusive) in the text boxes.
The field contains a value in each record.	Turn on "Filled in."
The value matches one of the values in a set.	Turn on "One of." Then for each value you want in the set, type the value in the text box and click Add. To remove a value, select it and click Remove.
A formula evaluates to True when the value is used as an operand.	Turn on "Formula is true." Then click Formula and set up the formula in the dialog box that appears (For example, the formula >100 accepts only values that are greater than 100.)

Continued

<i>To verify that</i>	<i>Do this</i>
The value matches a value in another field in this database or in a database joined to it.	Turn on “In field” and select the other field in the list. If the other field is in a different database, select the database in the drop-down list.

- Continue adding or editing other fields in the Field Definition dialog box, or click OK to close the dialog box.

Setting OLE options for a PicturePlus field

You can edit an OLE object using tools from the source application without leaving Approach. Double-click the object in the field.

An *OLE object* is an object created in another application that you can link or embed in a PicturePlus field in Approach. OLE objects let you include a variety of different kinds of information in your database—including graphics, charts, sounds, and text ranges.

When you *link* an OLE object, the object is not stored in the field, but a copy of the object appears there. The original object remains in its source file, and if the original object changes, the display of the object in the PicturePlus field is updated to match it. When you *embed* an OLE object, the object is stored in the field.

If you have a default OLE server application, that application starts when you double-click an empty PicturePlus field or when you press the space bar with an empty PicturePlus field selected. You can then create an object, and it will be embedded in the field.

To set OLE options for a PicturePlus field:

- Choose Field Definition from the Create menu.

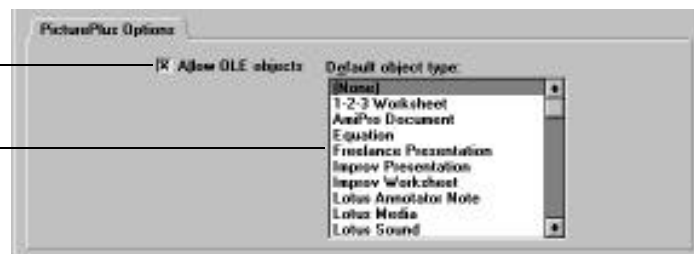
The Field Definition dialog box appears.

- Create a new PicturePlus field or select an existing one.

The bottom part of the dialog box shows the options for PicturePlus fields.

Turn this on to allow OLE objects in the field.

Select a default OLE server application for the field.



Even if you have a default application, you can still store objects from other applications in the PicturePlus field.

3. To allow OLE objects in the field, turn on "Allow OLE objects."
4. Select a default server application in the Default Object Type list.
The default application will start when you double-click an empty PicturePlus field or press the space bar with an empty PicturePlus field selected.
5. Continue adding or editing other fields in the Field Definition dialog box, or click OK to close the dialog box.

Setting data options for a variable field

You can specify what type of data to allow in a variable field. If you try to store the wrong type of data, Approach alerts you so that you can change it.

You can also set an initial value for a variable field.

To set data options for a variable field:

1. Choose Field Definition from the Create menu.

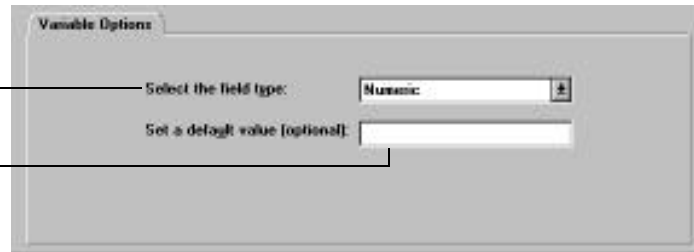
The Field Definition dialog box appears.

2. Create a new variable field or select an existing one.

The bottom part of the dialog box shows the options for variable fields.

Select the type of data the field can contain.

If necessary, type an initial value for the field.



3. Select a data type in the Select the Field Type drop-down list.
A variable field can store a text, numeric, date, time, or Boolean value.
4. To give the field an initial value, type the value in the Set a Default Value text box.
The initial value will appear in the field every time you open this Approach file.
5. Continue adding or editing other fields in the Field Definition dialog box, or click OK to close the dialog box.

Specifying a key field for a Paradox database

Instead of typing a unique key value in each record, you can have Approach enter serial numbers for you. See page 3-13.

A *key field* is a field or a combination of fields that uniquely identifies each record, such as an invoice number or a first name and last name together. Using a key field ensures that there are no duplicate records in a database.

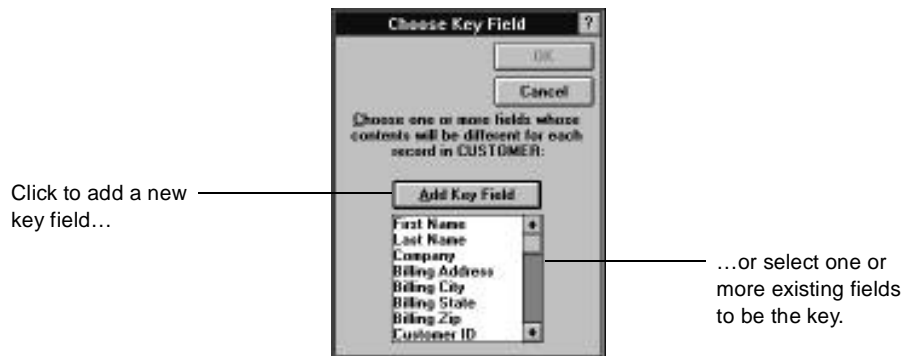
The Paradox database type requires a key field in Approach. If you use this file type, the Choose Key Field dialog box appears automatically when you finish adding fields to a new database. You can either add a new field to be the key or select an existing field or combination of fields.

If you want to change the key field in an existing Paradox database, you can either export the database in the Paradox file type, or save the database as a dBASE file, and then save it again as a Paradox file. The Choose Key Field dialog box appears when you export or save.

To specify a key field for a Paradox database:

1. Define fields for a new Paradox database file.

When you click OK in the Field Definition dialog box, the Choose Key Field dialog box appears.



In most cases, you should click Add Key Field and let Approach add the field.

2. Click Add Key Field to have Approach add a key field, or select the name of the field or fields you want to be the key.

The list shows all the text, numeric, date, and time fields defined for the database. To select more than one field, CONTROL-click the fields.

If the database file does not already have a field you can use for this, click Add Key Field. Approach inserts a numeric field named Key Field at the beginning of each record. The key field value is a serial number starting at 1, and it increments by 1 from one record to the next.

3. Click OK.

Deleting a field

When you delete a field, Approach removes the field and its data from every record in the database.

If you delete a field used in a formula, the formula will return a blank result. In views and in the Define Formula panel of the Field Definition dialog box, Approach replaces the deleted field name with NO_FIELD_REFERENCE. You need to edit the formula so that it no longer uses that field.

Before deleting a field, make sure that you do not need the data it contains and that you do not need the field in another Approach file.

To delete a field:

1. If the field you want to delete is used in a join, unjoin the field.
You must unjoin a field before you can delete it. Choose Join from the Create menu, select the field's join line in the Join dialog box, click Unjoin, and close the unjoined database in the dialog box if it has no more joins. For more information, see "Unjoining database files" on page 4-20.
2. Choose Field Definition from the Create menu.
The Field Definition dialog box appears.
3. Select the field you want to delete in the list of field definitions.
If the field is in a different database joined in the current Approach file, select the name of the database in the Database drop-down list.
4. Click Delete.
Approach warns you that deleting the field will remove the field's data in every record of the database.
5. Click OK to delete the field.

Be careful about deleting a field. You cannot retrieve data from a deleted field.

4

Joining Database Files

If you have multiple databases with related information, you can join the databases together in an Approach file. Joining lets you keep data in smaller, more manageable databases but work with the data as if it were all stored in one file.

This chapter gives an overview of joined databases, and it describes how to join and unjoin database files in an Approach file. For information about creating views that show data from joined databases, see Chapter 7, “Designing Forms and Repeating Panels,” Chapter 8, “Designing Reports,” and Chapter 9, “Designing Form Letters and Mailing Labels.”

About joined databases

It often makes sense not to keep your data all in one file, but to divide it into more specific databases. Approach is a *relational database application*, which means that you can bring together data from separate database files. To do this, you *join* the databases in the Approach file that uses their data.

The forms, reports, and other views in an Approach file can use data from any of the databases joined in that file. An Approach file can have up to 50 joined databases (if the underlying database file can support this capability).

Why use joined databases?

A set of joined databases offers much greater efficiency, accuracy, and flexibility than a single “flat-file” database.

With joined databases, you need to store only one copy of your data, even if you use a particular piece of data in more than one place. For example, suppose you’re maintaining a database of your company’s departments, and each department has more than one employee. If you store the department and employee data in a single flat-file database, you need to enter the department data for every employee. But if you use a set of joined databases, you need to enter the

4-2 User's Guide

department data only once, regardless of how many employees are in a department, and you simply display the department data as many times as necessary.

In a flat-file database, the department data is stored for each employee.

This data is redundant.

COMPANY			
Dept Name	Dept Location	First Name	Last Name
Cost Accounting	Hampton Plaza	Joann	Willis
Cost Accounting	Hampton Plaza	Keng	Wu
Cost Accounting	Hampton Plaza	Jean-Pierre	Renault
Cost Accounting	Hampton Plaza	Maria	Lopez y Garcia
Cost Accounting	Hampton Plaza	James	Maclane

In joined databases, the department data is stored only once even though it is used several times.

DEPARTMT		EMPLOYEE	
Dept Name	Dept Location	First Name	Last Name
Cost Accounting	Hampton Plaza	Joann	Willis
		Keng	Wu
		Jean-Pierre	Renault
		Maria	Lopez y Garcia
		James	Maclane

Storing one copy of data saves disk space and saves time in data entry and updating. It also ensures that shared data is consistent and makes it easy to maintain accuracy. If you need to update shared data (such as the location of a department), you make the change in one place, and the change automatically appears in all views where the data is used.

Joined databases are also efficient and flexible in how they let you display data. You can see and edit a record from one database and one or more related records from a joined database together in a single view. For example, you could display the Cost Accounting department data and a list of the employees in that department on a single form, rather than repeating the department data for each employee.

You can see department and employee data from joined databases together in a single view.

Cost Accounting, Hampton Plaza Joann Willis Keng Wu Jean-Pierre Renault Maria Lopez y Garcia James Maclane

The relationship between the department and employees in this example is called one-to-many. In general, with a flat-file database you cannot display a one-to-many relationship on a form; you would need to repeat the department data for each employee.

How databases are joined

Ideally, join fields should be the only duplicate fields in two joined databases.

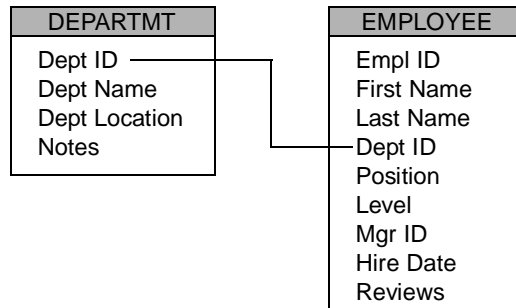
To design a set of joined databases, you divide the fields for the data into logical groups, each of which is a separate database file. Your goal should be to avoid unnecessarily duplicating any data from one database to another.

After creating the databases and defining the fields, you establish a relationship between two databases using one or more fields that the databases have in common. These are the *join fields*. It's usually best to define one field in each database specifically to be a join field and then enter an ID value in that field in the records. (If you do not have a field you can use as a join field, you can join databases on other fields they have in common. The fields must together uniquely identify records in one of the databases, such as first name, last name, and phone number.)

For example, suppose you want to compile a list of all the employees in each department in your company. Rather than putting all the data in one flat-file database, you divide the data into two smaller database files: one for departments and one for employees. In addition to the department and employee information, the databases have at least one join field with ID numbers that identify each department.

The department and employee databases use a join field called Dept ID:

The department and employee databases are joined on a department ID field.



When a record in one database has the same join value as a record in a joined database, the two records are “related” and can be used together in views. In the department and employee databases, records with a matching value in Dept ID are related.

DEPARTMT	
Dept ID	Dept Name
178	Marketing
245	Product Development
332	Cost Accounting
290	Customer Support

The Cost Accounting department and employee records are related. They all have 332 in their Dept ID join field.

EMPLOYEE		
Dept ID	First Name	Last Name
245	Indira	Kumar
332	Joann	Willis
290	Leo	Pavlovich
332	Keng	Wu
332	Jean-Pierre	Renault
178	Barbara	Taylor
332	Maria	Lopez y Garcia
245	Jose	Morales
332	James	Maclane
178	Yasunari	Murasaki

If your preferences are set this way, you can even use a calculated field as a join field. For example, suppose you have two employee databases, one with a First Name and Last Name field and the other with a Name field that combines first and last name. To join the databases on the employee names, you create a calculated field called Name for the first database and use a Combine function to enter the first and last name in the field. Then join the databases on their Name fields. (This is not available for Paradox database files.)

You cannot delete a field used in a join. (If the join field is a calculated field, you also cannot delete any fields referred to in the join field's formula.) If you need to delete a join field, you can first unjoin the databases or join them on a different field.

How joined data appears in views

Once databases are joined in an Approach file, you can design views that use related data from the databases joined in that file. As you work in a form, report, or other view in Browse, Approach looks for a matching value in join fields. If it finds a match, it displays data from each record that has the matching value, regardless of which joined database contains the record.

In a form that describes one department at a time, you see all the employees that have the same value in the department ID field as the current department.

This data comes from the department record with the department ID 332.

This data comes from employee records with the department ID 332.

Employees in This Department			Position
Joann	Wills		Comptroller
Keng	Wu		Senior Accountant
Jean-Pierre	Renault		Associate
Maria	Lopez y Garcia		Systems Analyst

Number of Employees in Department: 5

If you're in Design and are showing field names rather than data, each field in a view shows both the name of the joined database and the name of the field.

In Design, the names of the joined databases appear before the names of the fields.

A calculated field is part of an Approach file, so a database name does not appear with it.

Main and detail databases in a view

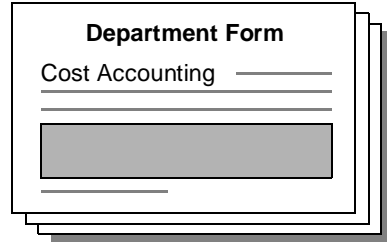
Each form, report, or other view that uses joined databases has one main database and one or more detail databases. The *main database* provides the basic information for that view—each record from the main database appears in it. A view “is based on” its main database. The other joined databases act as *detail databases*, providing additional, related information to display in the view.

4-6 User's Guide

Each view in an Approach file can have a different main database.

The department form is based on the department database. It has one page for each department.

In a form, each page of the view corresponds to one record in the main database. For example, the department form is based on the department database. The employee database is used as a detail database.



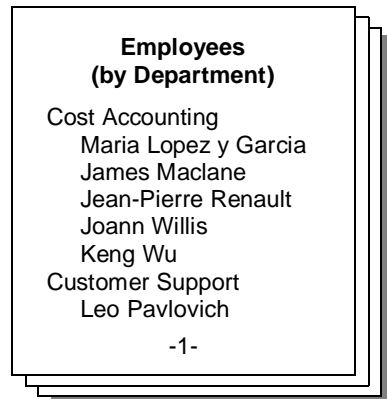
Department Form
Cost Accounting _____

To find the main database for a view, look at the Basics panel of the view's InfoBox.

This report is based on the employee database. It lists every employee in the company grouped by department.

A *repeating panel* in a form is always based on one of the form's detail databases. The panel shows all the records from the detail database that match the value in the main database's join field.

In a report, you see all the records from the main database as line items in the report body. For example, if you want to list all the employees in your company and group them by department, you design a report based on the employees database and then use summary panels for the department groupings. (For more information about summary panels, see "Summarizing data in a report" on page 8-14.)



**Employees
(by Department)**
Cost Accounting
Maria Lopez y Garcia
James Maclane
Jean-Pierre Renault
Joann Willis
Keng Wu
Customer Support
Leo Pavlovich
-1-

When you design a report that uses joined data, it's important to base the report on the database from which you want to display *all* the records. In the employee report above, you want to see all the records

from the employee database. If you base the report on the department database rather than on the employee database, you'll see all the departments and only *one* employee for each department.

If you base the report on the department database, only one employee appears for each department grouping.

Employees (by Department)	
Cost Accounting	Maria Lopez y Garcia
Customer Support	Leo Pavlovich
Marketing	Yasunari Murasaki
Product Development	Indira Kumar
-1-	

You specify which database is the main one for a view when you design the view. You can change to another main database later using the InfoBox.

For more information about creating forms and reports for joined data, see Chapter 7, “Designing Forms and Repeating Panels,” and Chapter 8, “Designing Reports.”

One-to-many, many-to-one, and one-to-one relationships

The relationship between records in two joined databases can be one-to-many, many-to-one, or one-to-one.

In a *one-to-many* relationship, a record in one database can be related to one or more records in the other database. For example, one department can have several employees; in other words, one record in the department database has the same department ID as several records in the employee database.

To show the result of a one-to-many relationship on a form, you add a repeating panel to a form that is based on the “one” database. The repeating panel is based on the “many” database, and each line in the panel is a record in that database.

The Cost Accounting department has a one-to-many relationship with five employee records.

Related records in the “many” database are displayed in a repeating panel.

Department Form

Department Name: Cost Accounting ID: 332 Location: Hampton Plaza, 2nd Floor, MS-50

Notes: Cost Accounting is currently part of the company's Operations division, and the Comptroller reports to the Vice President of Operations. Beginning this year, the Vice President will present a statement on the department's activities to the Board at the end of each fiscal year.

Employees in This Department		Position
Joann	Willis	Comptroller
Keng	Wu	Senior Accountant
Jean-Pierre	Renault	Associate
Maria	Lopez y Garcia	Systems Analyst

Number of Employees in Department: 5

This form is based on the department database.

The repeating panel is based on the employee database.

A *many-to-one* relationship is the reverse of one-to-many. For example, several employees can be in the same department; in other words, several records in the employee database have the same department ID as one record in the department database. On an employee form, the department data is the same for all employees in this many-to-one relationship.

Many-to-one relationships are often used as a *lookup*, to provide a convenient means of displaying data in a view. If you type a department ID on the employee form, the department name and location for that ID appear automatically.

This employee record and four others have a many-to-one relationship with Cost Accounting.

The department name and location are the same for the five employees. The data comes from the department database.

Employee Form

First Name: Keng Last Name: Wu ID: 21

Confidential: _____

Position: Senior Accountant Salary Level: D4 Date of Hire: 4/12/90

Department: Cost Accounting Dept ID: 332 Review History: Last reviewed on 1/1/93; promoted from Staff Accountant. Semi-annual reviews from 90 through 92.

Location: Hampton Plaza, 2nd Floor, MS-50

Manager: Willis Mgr ID: 74

This form is based on the employee database. The department database is used as a detail.

When you type the department ID, Approach displays the department data automatically.

For a lookup to work properly, the join field on the view must come from the main database, and the fields with the lookup data must come from a detail database. On the employee form, the department ID field comes from the employee database, and the other department fields come from the department database.

You can see which databases the fields come from when you look at a view in Design with field names showing:



The ID field comes from the main database (employee), not from the database with the lookup data.

In a *one-to-one* relationship, a record in one database is related to only one record in the other database. For example, a vehicle number in one database might be related to a license number for that vehicle in a joined database.

You don't normally need to use one-to-one relationships in Approach. You can store a set of data (such as everything about one vehicle) together in a single record.

Advanced joins

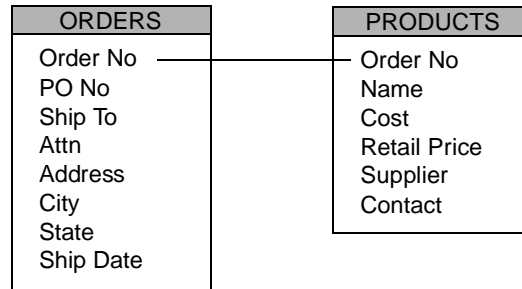
Once you're familiar with the basic concepts and techniques of joining data, you may want to set up many-to-many relationships and joins involving alias databases.

Many-to-many relationships

In a *many-to-many* relationship, many records in one database can be related to many records in the other database. A set of orders for products is a common application of this. Each order can include many products, *and* each product can appear on many orders. A many-to-many relationship is a one-to-many relationship in both directions.

You cannot set up a many-to-many relationship directly between two databases. For example, if you join an orders database and a products database directly on an order number, each product can appear on only one order (because the order number becomes part of the product record).

If you join orders and products on an order number, a product can be on only one order.

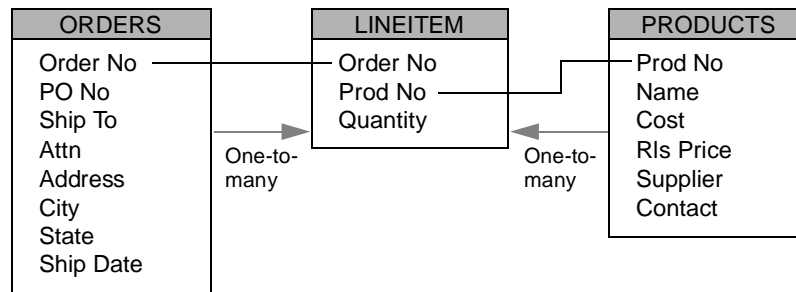


Similarly, if you join the two databases on a product number, each order can have only one product (because the product number becomes part of the order record).

To set up a many-to-many relationship between two databases, you need to add an intermediate database. The other databases each have a one-to-many relationship with this database.

For the orders and products databases, you might use a third database that stores the “many” line item data for the repeating panel on your order form. This keeps the orders data out of the products database and the products data out of the orders database.

Join the orders and products databases through an intermediate database.



Now each order can have many products, and each product can be on many orders. You can display one-to-many data both on order views and on product views.

An order form lists the many products...

Each row of the repeating panels is a record in the line item database.

...and a product form lists the many orders.

Alias joins

It's sometimes useful to join a database to itself. For example, suppose you want to keep track of which employees in your company are managers and who reports to them. The employee database can have employee IDs to identify each employee uniquely and manager IDs to identify each person's manager by employee ID.

The manager ID is the employee ID for each person's manager.

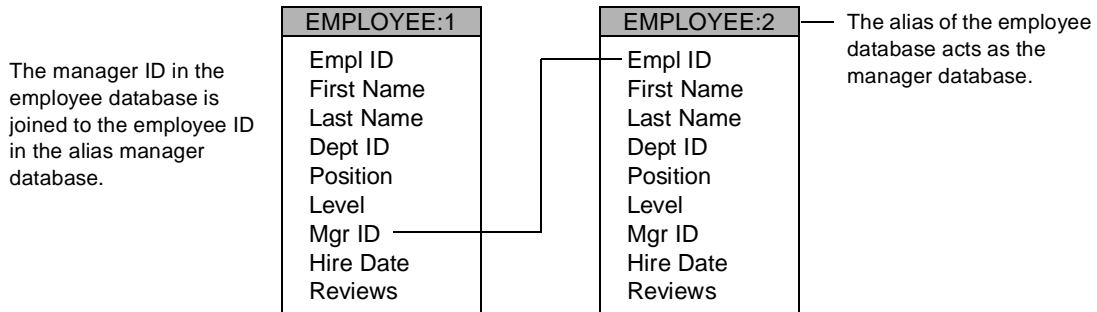
EMPLOYEE			
Empl ID	First Name	Last Name	Mgr ID
25	Indira	Kumar	81
74	Joann	Willis	97
95	Leo	Pavlovich	35
29	Keng	Wu	74
33	Jean-Pierre	Renault	74
49	Barbara	Taylor	43
85	Maria	Lopez y Garcia	74
35	Jose	Morales	28
63	James	Maclane	74
12	Yasunari	Murasaki	20

Joann Willis (74) is the manager for these employees.

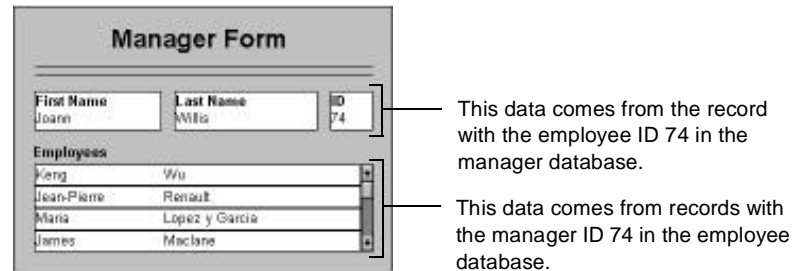
This can be an efficient way to use data because you don't need to duplicate the manager records in a separate database. But you do need a second database to express the join relationships properly.

To join a database to itself, you create a "copy" of the database in the Join dialog box. The copy is not an actual duplicate of the database, but just another listing of it called an *alias*. Once you've created the alias database, you can set up a join between the database and its alias as you do between any two databases.

For example, you can join the manager ID in an employee database to the employee ID in an alias manager database.



The alias manager database has a one-to-many relationship with the employee database. You can display the results of this self-join using a repeating panel on a form based on the manager database.



If you create more than one alias copy of a database, you can join one alias to another and even join an alias to a different database.

When you create an alias for a database, the name of the database is appended with a 1, and the alias has the same name as the database, plus a 2 (or a 3 and so on); for example, EMPLOYEE:1 and

EMPLOYEE:2. These names appear only in the Approach file with the joins, and they do not affect the name of the database file itself or the name of the database in any other Approach file.

Joining and unjoining

The forms, reports, and other views in an Approach file can use data from any of the databases joined in that file.

For each join, you can specify whether you want Approach to automatically insert or delete related records from a joined database when entering or editing data in a view based on a different database.

You need to save an Approach file after joining or unjoining database files in it or after setting join options. Approach does not save these changes automatically.

Joining database files

You join two databases by establishing a link on one or more fields common to both databases. Often, a join field is an ID field used specifically for joining the databases.

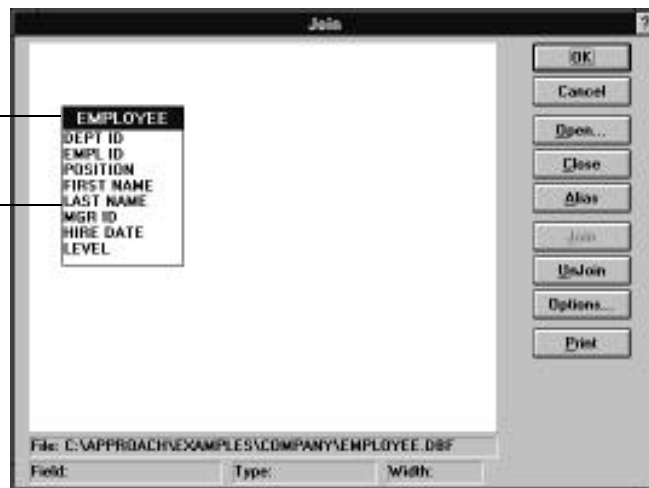
To join database files:

1. Choose Join from the Create menu.

The Join dialog box appears, showing a list of fields in the database file associated with the current Approach file. Approach takes you to Design if you were not already there.

Name of the current database file

Fields in the current database file



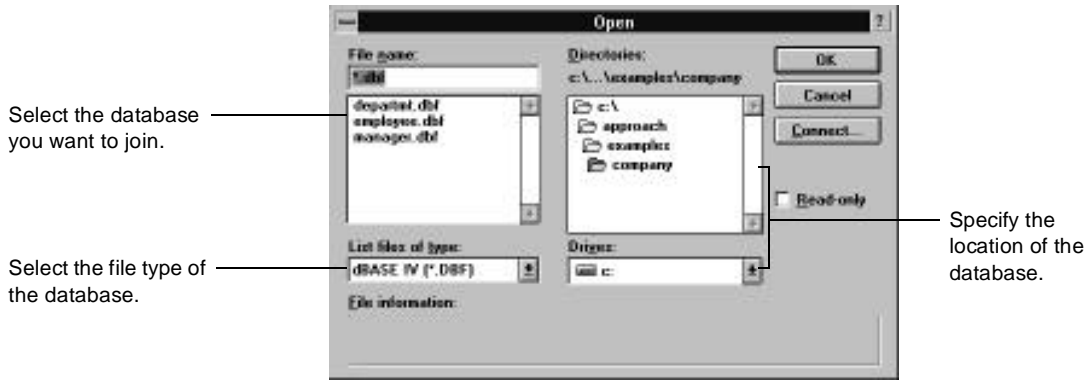
The names of calculated fields are italicized at the bottom of the list, after the database fields.

If “Show calculated fields in the Join dialog” is on in the Preferences dialog box, the list also includes calculated fields in the current Approach file so that you can join on one of these fields. For more information, see “Calculated fields in the field lists” on page 4-17.

2. Click Open to open another database or click Alias to create an alias of the current database.

You can join a database to another database or to an alias “copy” of itself.

If you click Open, the Open dialog box appears. Use this dialog box to select another database to join. When you click OK, a list of fields for the database appears in the Join dialog box.



You can join databases of different types. For example, you can join a dBASE IV file to a Paradox file.

An alias is not a copy of a database but just another listing of it.

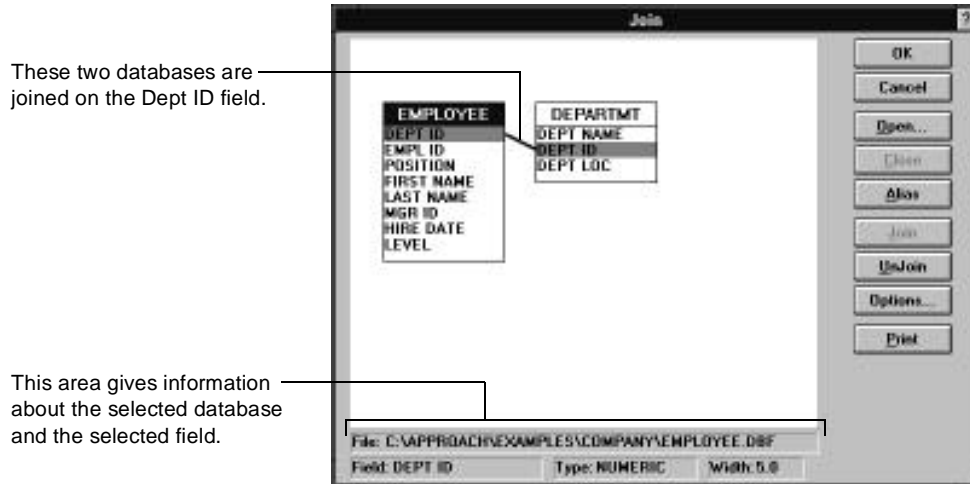
If you click Alias, a copy of the current database appears in the Join dialog box. The name of the database is appended with a 1, and the alias has the same name as the original, plus a 2 (or a 3 and so on); for example, EMPLOYEE:1 and EMPLOYEE:2.

You can join a database to its alias just as you can to any other database you open in the Join dialog box. For information about when to use aliases, see “Alias joins” on page 4-11.

3. Link the two databases on one or more join fields.

For each field you want to join on, click the field in the list for one database and then drag to the field in the other database. Or click the field in one database, click the field in the second database, and then click the Join button.

Approach joins the two databases on the join field. A line in the Join dialog box shows how the databases are related. The bottom of the dialog box shows the pathname of the selected database and the name, type, and width of the selected field.



A join field does not need to have the same name in the two databases, but it should usually be of the same type.

A join field must be common to the two databases. Most often, you link databases on a single field with ID numbers. If you do not have an ID field you can use for this, link the databases on other fields that together uniquely identify records in one of the databases, such as first name, last name, and phone number.

If you want Approach to insert or delete related records automatically between two joined databases, see “Setting options for a join” on page 4-17.

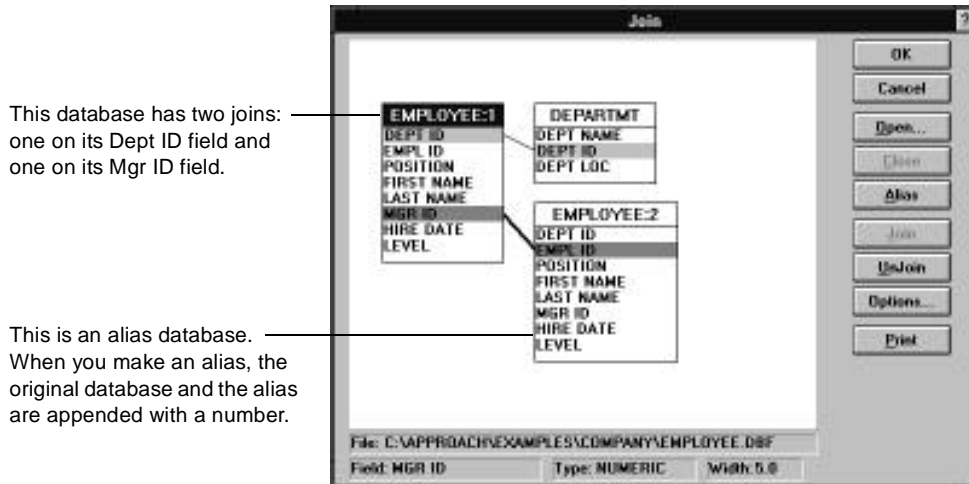
4. To join more databases in the Approach file, continue opening files and joining them in the same manner.

For each join, open the additional database in the Join dialog box or create an alias of an existing database, and link the databases on one or more join fields.

You must join each database you open to at least one other database before you can close the Join dialog box. If you open a database you decide not to join, click in its field list and click Close.

You can enlarge the Join dialog box if you need to make more room to see the field lists. Drag any border of the dialog box outward.

A single database can be joined to one or more other databases. You can use the same join field in all of its joins, or use different fields for different joins.



Be sure to save the Approach file after joining databases. Approach does not save joins automatically.

When you first join databases, the database at the farthest left in the Join dialog box is the main database for the view. You can drag the field lists in the dialog box to rearrange them, but this does not make a different database the main one for a view.

5. If you want a printed copy of the database fields and their join relationships, click Print.

The Print dialog box appears.

6. When you're finished joining databases, click OK.

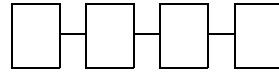
You return to the environment you were in when you chose the Join command.

The OK button is dimmed if any joins in the dialog box are invalid. When you correct the errors, you'll be able to click OK.

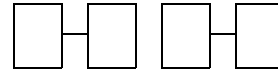
If the OK button is dimmed, you probably have an open database that is not joined.

Valid joins

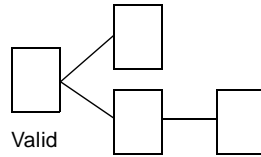
Every database you open in the Join dialog box must be joined to at least one other database in the dialog box. All the databases must be joined into a single set, and the join relationships cannot be circular.



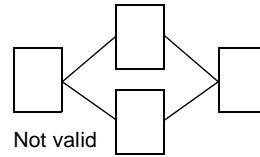
Valid



Not valid



Valid



Not valid

Calculated fields in the field lists

If “Show calculated fields in the Join dialog” is on in the Preferences dialog box, the field lists in the Join dialog box include calculated fields in the current Approach file. This allows you to join on one of these fields. For information about setting this option, see “Setting general working preferences” on page 19-14.

A field list shows *only* the calculated fields that refer to fields in the listed database, and it does not include summary fields. The calculated fields appear in italics at the bottom of the list, after the database fields.

If you want calculated fields to appear in a field list for a secondary database (one you display with the Open button in the Join dialog box), you must first join the database using a database field. Then create a calculated field in the Field Definition dialog box, using a formula that refers to a field in the secondary database. When you open the Join dialog box again, you’ll see the calculated field in the database’s field list.

Setting options for a join

You can have Approach insert or delete related records automatically in a database joined in the current Approach file.

For example, if you add a record for a new employee using a department form, you may also want to add a corresponding employee record at the same time (instead of going to an employee form to add the employee record). You can set up the department/employee join so that when you type in an employee field on the

department form, Approach automatically inserts a record in the employee database. The department and employee records will automatically have matching values in their Dept ID join field.

Approach can insert a new record in the employee database when you type in an employee field.

Employees in This Department			Position
Joann	White		Comptroller
Feng	Wu		Senior Accountant
Jean-Pierre	Renault		Associate
Maria	Lopez y Garcia		Systems Analyst

Number of Employees in Department: 5

Similarly, if you delete a department from the department database, you may want to delete all the department's employees at the same time so that you do not have "orphan" records in the employee database. You can set up the department/employee join so that when you delete a record from the department database, Approach deletes all the records from the employee database that have a matching value in the Dept ID join field.

The join options apply to a particular join, and you can set them differently for each join in an Approach file.

If you have a one-to-many join on a calculated field and the calculated field is based on fields in a repeating panel, Approach cannot insert new records in the panel, even if you have the option on for inserting records automatically. But if a calculated field used in a one-to-many join is based only on fields in the form's main database, Approach can insert records in the repeating panel.

You can set the options when you establish a join or anytime later.

To set options for a join:

1. In the Join dialog box, click the join line to select it.

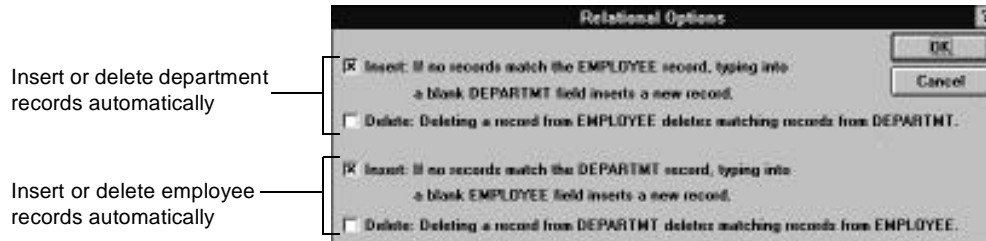
The join line is highlighted when it is selected. If the dialog box is not already open, choose Join from the Create menu.

2. Click Options.

The join line may already be selected if you have just established a join.

You can also double-click a join line to open this dialog box.

The Relational Options dialog box appears, listing options for inserting and deleting records. The options at the top and the bottom of the dialog box are the same; they apply to different directions of the join.



3. Turn on the options you want for the selected join.
You can turn on as many of these options as you want.

<i>This option</i>	<i>Specifies</i>
Insert	<p><i>If:</i> You type in a blank field for a detail database on a view, and the record for that field does not match a join value in the main database.</p> <p><i>Then:</i> Approach inserts a new record in the detail database.</p> <p><i>For example:</i> Suppose you turn on “Insert: If no records match the DEPARTMT record, typing into a blank EMPLOYEE field inserts a new record.” If you type on a new line in an employee repeating panel on a department form, Approach inserts a record for the new line in the employee database.</p>
Delete	<p><i>If:</i> You delete a record from the database listed first in the Delete option.</p> <p><i>Then:</i> In the database listed second in the Delete option, Approach deletes all records that have a join value matching the record you deleted.</p> <p><i>For example:</i> Suppose you turn on “Delete: Deleting a record from DEPARTMT deletes matching records from EMPLOYEE.” If you delete a department, Approach deletes all the employees for that department from the employee database.</p>

4. Click OK.
You return to the Join dialog box.

Unjoining database files

When you no longer need a relationship between data in two databases, you can unjoin the databases.

If you unjoin and close a database in the Join dialog box, Approach deletes all the forms, reports, form letters, mailing labels, and repeating panels that are based on that database.

To unjoin database files:

1. Choose Join from the Create menu.
The Join dialog box appears.
2. Click the join line connecting the databases you want to unjoin.
The join line is highlighted when it is selected.
3. Click Unjoin.
The line disappears from the dialog box, and the join between the two databases is removed.
4. To unjoin more databases in the Approach file, continue unjoining in the same manner.
For each pair of databases you want to unjoin, select the join line connecting them and click Unjoin.
5. For each database left without a join, click in its list of fields and click Close.
The list disappears when you click Close. You must close all the databases without joins before you can close the Join dialog box.
If you try to close a database that is the main database for any views or repeating panels, Approach warns you that the views or panels will be deleted. Click OK if you're sure you want to close the database.
6. When you're finished unjoining databases, click OK.
The OK button is dimmed if the joins in the dialog box are not valid. When you correct the errors, you'll be able to click OK. For more information, see "Valid joins" on page 4-17.

Make sure you close all unjoined databases and that the remaining databases are joined into only one set.

5

Working in Design

Approach provides powerful and easy-to-use tools and commands for creating attractive views. You work with these tools and commands in the Design environment.

This chapter describes how to customize Design, manipulate and edit design objects, prepare styles for consistent formatting, and edit entire views. The instructions here apply to forms, reports, form letters, and mailing labels. For more detailed information about designing a particular type of view, see the chapter about that type of view.

The instructions in this chapter assume you know how to use the mouse or keyboard to select objects on the screen. If you need help with this, see your *Windows User's Guide*.

About Design

In Design, you lay out forms, reports, form letters, and mailing labels for your data. You can add, edit, and delete these views at any time.



- To go to Design, click the Design icon, or choose Design from the View menu or from the environment pop-up menu in the status bar.

If an Approach file has a password, Approach asks you for the password when you try to change to Design.

As you work in Design, you need to save the changes you make to views. Although Approach automatically saves your data, it does not automatically save design changes for you.



- To save design changes, click the Save Approach File icon or choose Save Approach File from the File menu.

If you go to Design from a chart, the chart appears in a report. For more information, see Chapter 13, “Creating Charts.” For information about editing a worksheet or crosstab in Design, see Chapter 12, “Designing Worksheets and Crosstabs.”

Design icon bars

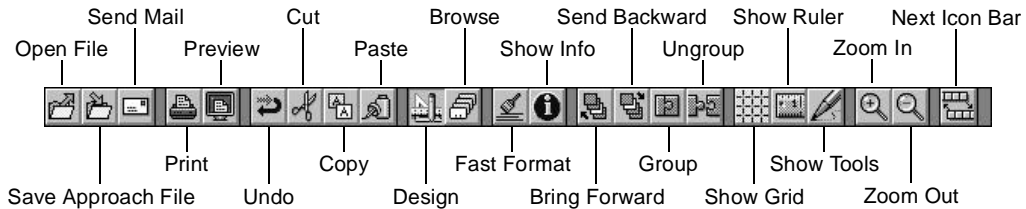
Approach provides three Design icon bars with SmartIcons for manipulating objects, editing text, preparing reports, and changing the Design work area. You click an icon to select it.



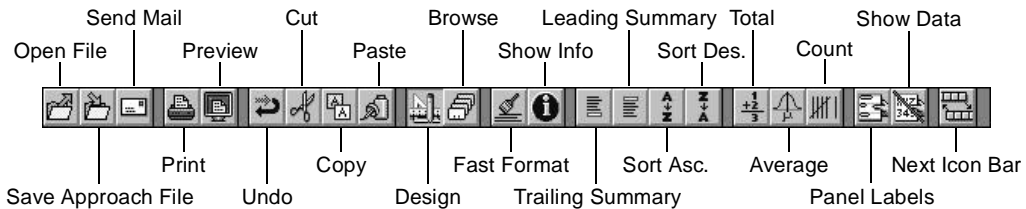
- To change to another icon bar, click the Next Icon Bar icon or choose from the icon bar pop-up menu at the right end of the status bar.

You can also use a floating palette in Design that has SmartIcons for drawing objects. For information about this, see “Showing a Tools palette” on page 5-9.

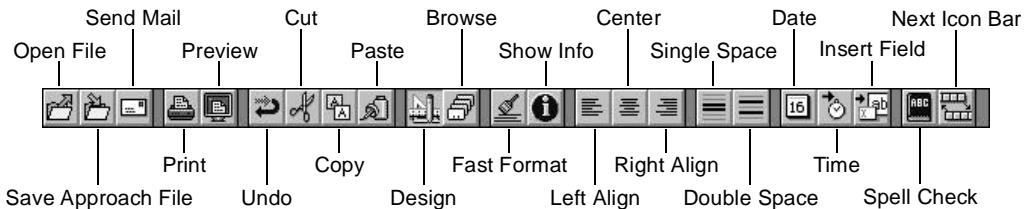
The icon bar that first appears when you go to Design or change to another view varies depending on the type of the view. If the current view is a form or set of mailing labels, the default Design icon bar is preset to appear:



If the current view is a report, the default Report icon bar is preset to appear:



If the current view is a form letter, the default Text icon bar is preset to appear:



The default Worksheet and Crosstab icon bars are the same in Design as they are in Browse. For information about them, see Chapter 12, “Designing Worksheets and Crosstabs.”

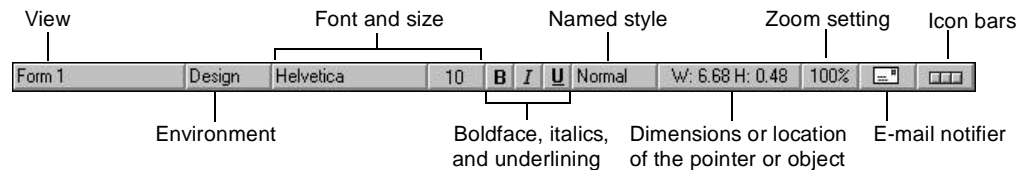
Design menu bar and status bar

The Design menu bar has a *context-sensitive menu* that changes depending on the current view or the current selection. If you have no current selection, this menu is called Form, Report, Letter, Mailing Label, Worksheet, Crosstab, or Chart and provides commands for working with the current type of view. But if an object is selected or if you’ve clicked in text, a repeating panel, or a summary panel, the menu changes to Object, Text, or Panel, and has commands for working with that type of element.



This menu can be Form, Report, Letter, Mailing Label, Worksheet, Crosstab, Chart, Object, Text, or Panel.

The status bar in Design gives information about the current view and the text and objects in it. Most parts of the status bar are pop-up menus or buttons you can use to change the selection or work area.



The parts of the status bar that show the view name, environment name, font, font size, named style, and zoom setting are pop-up menus. You can use them to change to another view, environment, and so on. The icon bar symbol at the right end of the status bar is also a pop-up menu, with the icon bars available in the current view.

You can click the boldface, italics, and underlining buttons to apply those attributes to selected text.

The dimensions area of the status bar shows either the width and height of the selected object or the coordinates of the top and left sides of the selected object. Click in the dimensions area to toggle to the other setting. If no object is selected, the dimensions area shows the current location of the pointer.

The e-mail notifier appears when you have new mail on Lotus Notes, cc:Mail, or other VIM or MAPI mail systems.

Design objects

In Design, everything on a view is a *design object*. You can select and manipulate all design objects in many of the same ways, including resizing the objects and applying line and color settings to them.

You can add these types of objects to a view:

- Geometric objects are lines, rectangles, ellipses, and other shapes you draw on a view.
- Pictures are images you paste onto a view from a graphics application.
- Text objects hold text you type directly onto a view, such as a name for the view or instructions for entering data.
- Macro buttons are rectangles you can click or tab to in Browse to run a macro.
- OLE objects are objects from another application that you can embed or link in Approach. Pictures, charts, sound files, and data ranges are common OLE objects.
- Field objects establish the area for data from records in a database. Normally, a field object is a text box that you type data into in Browse, but it can also be a drop-down list, a set of radio buttons, or a set of checkboxes that you use for selecting data.
- Some views can have regions, such as a repeating panel on a form or a summary panel on a report.

Geometric objects, pictures, text objects, macro buttons, and OLE objects form the unchanging background of a view.

This chapter describes how to add geometric objects, pictures, text objects, and macro buttons to a view. Fields are covered in Chapter 6, "Adding and Editing Fields in a View," and OLE objects are covered in Chapter 16, "Exchanging Data with Other Files or Applications." For information about regions, see the chapter about the appropriate type of view.

A view itself is also a special type of object. It is always in the background, behind other objects, and it can be edited in some of the same ways as other objects. It provides the page for the other design objects.

InfoBox and named styles

The design settings for objects are all stored in an *InfoBox*. You can keep the InfoBox open as you work in Design and use it to edit objects.

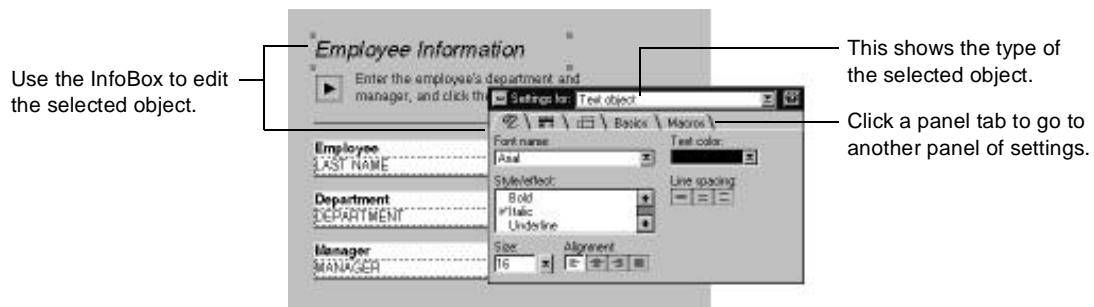


- To open the InfoBox in Design, click the Show Info icon, choose Style & Properties from the context-sensitive menu, or double-click an object or in the background of a view. The Show Info icon is in all three default icon bars in Design.

If a text object is not selected, you can double-click it to open the InfoBox. If a text object is selected, double-clicking it puts an insertion point in the object.

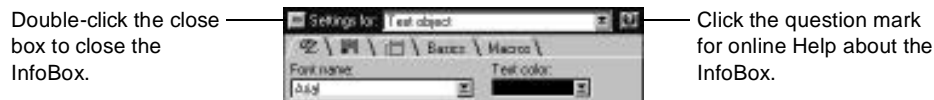
The InfoBox allows you to set all the properties for an object in one place.

The InfoBox shows panels of settings for the currently selected object. If no object is selected, it shows settings for the current view. You can use these settings to edit many different properties of an object, including line and color settings and text attributes. Click a panel tab at the top of the InfoBox to go to another panel.



When you click another object or click in the background of a view, the InfoBox changes to show the settings for that object or view.

You can close the InfoBox by double-clicking its close box in the upper-left corner. If you need help with the current panel, click the question mark in the upper-right corner.



If you want the InfoBox to be out of the way but still open, you can double-click the title bar to collapse the InfoBox to its title bar and panel tabs. When you're ready to return the InfoBox to full size, double-click the title bar again.

You can collapse the InfoBox to a smaller size.



Double-click the title bar to collapse or expand the box.

You can save a set of InfoBox properties together in a *named style*. If you want to change the properties of a particular object, you can apply a named style to it or use the InfoBox to change properties manually. You can also make one named style the default for views. For more information, see "Working with named styles" on page 5-26.

Pop-up menu with design commands

When you're in Design, you can quickly open a pop-up menu with some of the most commonly used design commands. These commands are a subset of the ones in the main menus.

- To choose a command from the pop-up menu, click an object or the page margin of a view with the right mouse button to open the menu and drag to the command you want.

The pop-up menu gives you quick access to a subset of commands.



Right-click an object to open the menu and drag to a command.

The pop-up menu closes after you choose a command.

Customizing the Design work area

Approach provides several ways to customize your Design work area. These are the things you can do:

- Show a design grid behind objects
- Make objects “snap” automatically to a grid
- Show a ruler along the top and left sides of the work area
- Show a floating palette of SmartIcon drawing tools
- Show field names or actual data in field objects
- Zoom in for a closer look, or zoom out for a larger perspective

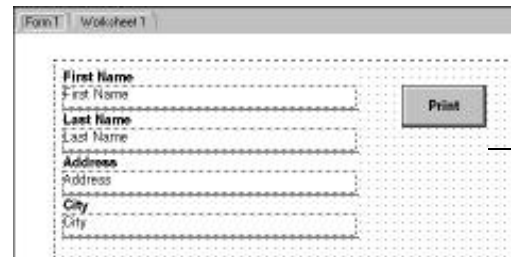
This section describes how to set these options for your current work session with Approach. If you’d like to set defaults for the grid, snap, rulers, and data or field names, see “Setting display defaults” on page 19-2.

Showing a design grid

A grid helps you plan and lay out objects visually.

You can show a design *grid* behind objects in the work area. The grid appears only in Design; it disappears when you go to Browse, and it does not print.

The design grid appears in your work area as dotted lines. On a color monitor, the lines are blue.



You can show a grid behind objects.



- To show a design grid, click the Show Grid icon or choose Show Grid from the View menu. To hide the grid, click the icon or choose Show Grid again.

The Show Grid icon is in the default Design icon bar.

When the command is on, the icon has a line across it and the command has a checkmark by it.

Snapping objects to the grid

Snapping makes it easier to align objects precisely.



When you draw, move, or resize objects, you can have the objects *snap* to the increments on the design grid. The objects snap to the grid whether or not the grid is showing.

Approach provides several possible increments for the grid, in inches and in centimeters. For information about changing to another increment, see “Setting display defaults” on page 19-2.

- To snap objects to the grid, choose Snap to Grid from the View menu. To remove the snap, choose Snap to Grid again.

If the Snap to Grid icon is in an icon bar, you can click the icon instead of choosing the command. (You add icons to the icon bar using the SmartIcons command in the Tools menu.)

When the command is on, the icon has a line across it and the command has a checkmark by it.

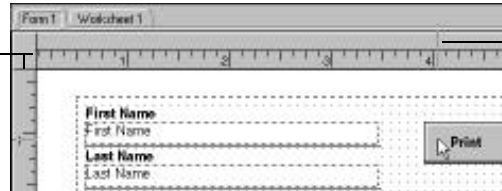
Showing rulers

The rulers are not drawn to scale on screen, but 1 inch or 1 cm on a ruler equals 1 inch or 1 cm on a printed page.

Approach can display rulers as guides for manipulating objects. The rulers appear along the top and left sides of the Design work area. Rulers appear only in Design; they disappear when you go to Browse.

As you move the pointer in the work area, lines in the rulers identify the pointer's position. If you move or resize an object, the lines show the dimensions of the object.

You can show rulers in the Design work area.



Lines mark the position of the pointer or the selected object.

If you have the insertion point in a text object (including the main part of a form letter), the top ruler also shows the left and right margins and any tab stops in the text object.



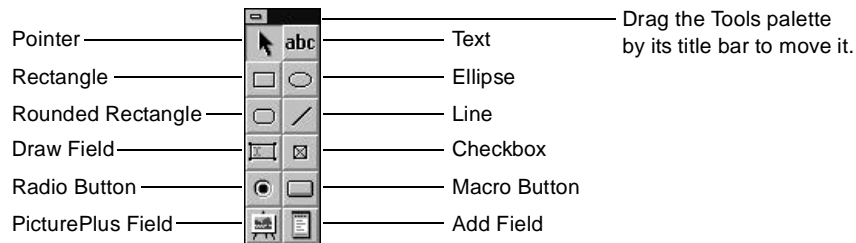
- To show rulers, click the Show Ruler icon or choose Show Ruler from the View menu. To hide the rulers, click the icon or choose Show Ruler again.

The Show Ruler icon is in the default Design icon bar.

When the command is on, the icon has a line across it, and the command has a checkmark by it.

Showing a Tools palette

You can show a floating *Tools palette* in Design, with SmartIcons for drawing objects. The Tools palette appears only in Design; it disappears when you go to Browse. You can drag the palette by its title bar to move it around in the work area.



You click an icon to select a tool for drawing. If you want to draw more than one object of that type, you can double-click an icon; the icon stays selected until you click another icon.



- To show the Tools palette, click the Show Tools icon or choose Show Drawing Tools from the View menu. To hide the palette, click the icon or choose Show Drawing Tools again.

The Show Tools icon is in the default Design icon bar.

When the command is on, the icon has a line across it and the command has a checkmark by it.

Showing field names or actual data

You can show either *field names* or actual data in field objects in Design.

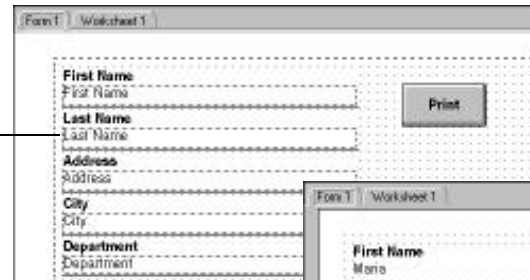
When you show field names in Design, the object borders also appear in the work area. If the Approach file has joined databases, the database names appear along with the field names (for example, EMPLOYEE.Address).

Work with data showing if you prefer to see how a view will look in Browse or when printed.

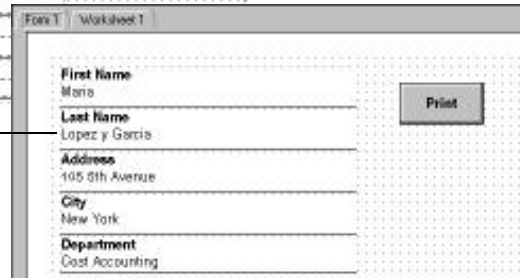
When you show data in the fields, in a form or form letter the data you see is from the first record in the current sort order of the found set. In a report or set of mailing labels, the data you see data is from the records at the beginning of the found set.

You can show field names in Design...

...or data from the first record or records in the found set.



If field names are showing, object borders also appear.



When you're showing data, an object set to non-printing does not appear in Design unless Show in Preview is also turned on for the object. These settings are in the Basics panel of an object's InfoBox.

- To show data in Design, choose Show Data from the View menu. To show field names, choose Show Data again.

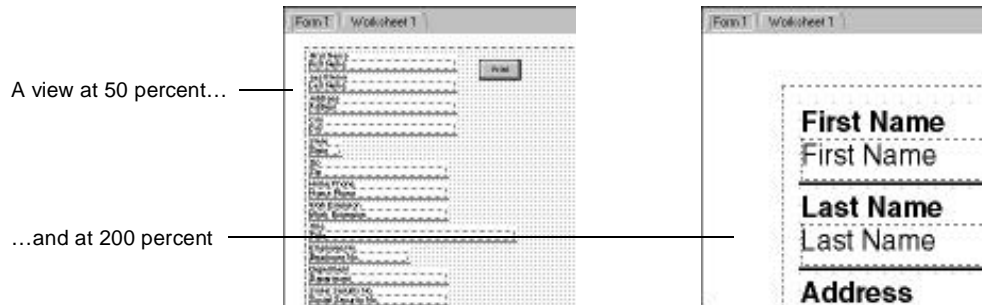


If the Show Data icon is in an icon bar, you can click the icon instead of choosing the command.

When data is showing, the icon has a line across it and the command has a checkmark by it.

Zooming in and out

As you work in Design, you can *zoom in* for a closer look at your view or *zoom out* for the big picture. The possible zoom settings are 25, 50, 75, 100, and 200 percent.



Zoom settings affect only how a view appears on the screen, and not how it is printed. Approach always prints at 100 percent.

You can change to another zoom setting in several ways:

- To change to a different zoom setting, click the zoom setting in the status bar to open the zoom pop-up menu and choose a setting.
- To zoom in or out one setting, click the Zoom In or Zoom Out icon, choose Zoom In or Zoom Out from the View menu, or press **CONTROL** and the up arrow or down arrow key.



The Zoom In and Zoom Out icons are in the default Design icon bar.

- To return to 100 percent in one step, choose Actual Size from the View menu or choose 100% from the Zoom pop-up menu in the status bar.

Adding objects to the background of a view

You can add geometric objects, pictures, text objects, and macro buttons to the background of a view. In Browse, these objects will look exactly the same on every page of the view. (By contrast, data in fields changes from record to record in Browse.)

The text, the line, and the picture of the icon appear on this form in every record.

The data in the fields changes from record to record.

Approach gives a new object the pen width, fill color, text attributes, and other properties of the style for the current view. You can change any of these properties after creating the object. For more information, see “Editing objects and text” on page 5-18 and “Working with named styles” on page 5-26.

Drawing a geometric object

You can draw straight lines, rectangles and squares, rounded rectangles and rounded squares, and ellipses and circles on a view. You can use these shapes to emphasize, separate, or “tie together” data, or just to enhance the appearance of the view.



To draw a geometric object:

1. Click the Line, Rectangle, Rounded Rectangle, or Ellipse icon, or choose Line, Rectangle, Rounded Rectangle, or Ellipse from the Create Drawing submenu.

The icons are in the Tools palette.

If you plan to draw more than one object of a type, double-click the icon. The icon stays selected until you select a different one. On a color monitor, the icon changes to blue.

2. Drag to draw the object.

You can press **SHIFT** while dragging to constrain the object's position or shape. This constrains a line to 0, 45, or 90 degrees; a rectangle to a square; a rounded rectangle to a rounded square; and an ellipse to a circle.

Pasting a picture

Keep in mind that pasting a picture in Design puts it on the background of the view. Pasting a picture in a PicturePlus field in Browse adds the picture to a record.

You can paste a picture created in a graphics application, either directly from the picture file or from the Clipboard. For example, you may want to show a graphic of an icon the user needs to click or have a company logo appear on a view in every record.

You can also link or embed an OLE object on a view. For information about this, see “About OLE and Approach” on page 16-18.

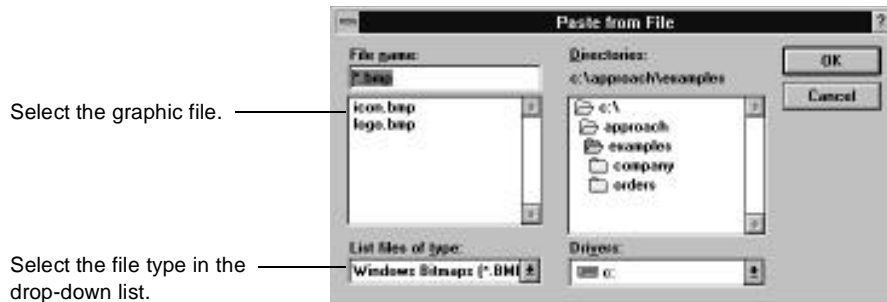
To paste a picture from a file:

1. Click where you want the upper-left corner of the picture.

If you don't click anywhere, the picture will be pasted in the upper-left corner of the view. You can drag the picture to move it.

2. Choose Paste from File from the Edit menu.

The Paste from File dialog box appears.



3. Select the file you want in the File Name list.

To limit the list to filenames of one type of file, select a file type in the List Files of Type drop-down list. You can paste these graphic file types in Approach:

<i>Graphic file type</i>	<i>Filename extension</i>
Encapsulated Postscript	.EPS
Graphics interchange	.GIF
Targa	.TGA
TIFF (Tagged Image File Format)	.TIF
Windows bitmap	.BMP
Windows Metafile	.WMF

Continued

<i>Graphic file type</i>	<i>Filename extension</i>
Windows Paintbrush	.PCX

If you don't know the file type, or want to display all the filenames, select All Files in the drop-down list.

4. Click OK.

To paste a picture from the Clipboard:

1. In the picture's source application, select the picture.
2. Choose Copy from the Edit menu.
3. In Approach, go to Design and click where you want the upper-left corner of the picture.

If you don't click anywhere, the picture is pasted in the upper-left corner of the view. You can drag the picture to move it.



4. Click the Paste icon, choose Paste from the Edit menu, or right-click and choose Paste from the pop-up menu.

The Paste icon is in all three default icon bars in Design.

Entering text in a text object

You can include text in a view, such as a name for the view or instructions for entering data. You first draw a text object and then type in the object. If you need to edit the text, first enter an insertion point in it, or select text you want to replace or delete.

For information about formatting text in a text object, see "Changing text attributes" on page 5-23.

To enter text in a text object:



1. Click the Text icon or choose Text from the Create Drawing submenu.

The Text icon is in the Tools palette.

If you plan to draw more than one text object, double-click the icon. The icon stays selected until you select a different one. On a color monitor, the icon changes to blue.

2. Click where you want the text to begin, or drag to define an area for the text object.

A text object appears with an insertion point in it, ready for you to start adding text.

If you want to edit an existing text object, click the Text icon and click in the object, or double-click a selected object.

You can resize a text object if your text won't fit. Click the Pointer icon, select the object, and drag a handle.



3. Enter the text.

You can type text, paste text from the Clipboard, and insert a date or time. The text appears at the insertion point. You don't need to press RETURN as you type text; the text wraps automatically from line to line to fit in the object.

To paste text that is on the Clipboard, click the Paste icon, choose Paste from the Edit menu, or right-click and choose Paste from the pop-up menu.

To insert the current date or current time, click the Date or Time icon, choose Date or Time from the Insert submenu in the Text menu, or right-click and choose Date or Time from the Insert submenu in the pop-up menu. (The Date and Time icons are in the default Text icon bar.) Approach updates a date or time whenever you open, preview, or print the Approach file.

Adding a macro button

You can add a button to a view and attach a *macro* to the button. In Browse, Approach will run the macro whenever you click, tab into, or tab out of the button (depending on how you set up the macro).



You click or tab to a button to run its macro.

To add a macro button:



1. Click the Macro Button icon or choose Macro Button from the Create Drawing submenu.

The Macro Button icon is in the Tools palette.

If you plan to draw more than one macro button, double-click the icon. The icon stays selected until you select a different one. On a color monitor, the icon changes to blue.

2. Drag to draw the button.

The InfoBox shows the Macros panel for the button.



3. Select one or more macros for the button in the drop-down lists in the Attached Macros area.

You can have Approach run a macro when you click the button or when you tab into or out of it.

4. If you need to define a macro, click Define Macro and use the dialog box that appears.

For more information, see “Defining a macro” on page 15-1.

5. Click the Basics tab in the InfoBox.

The InfoBox shows the Basics panel for the button.



6. Type a label for the button in the Button Text box.
7. If you're working with data showing, turn on Show in Preview to see the macro button in Design.

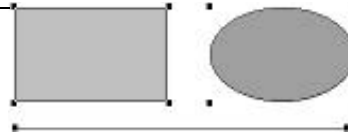
Selecting in Design

Before making design changes to a view, you need to select the object or text you're editing. Use the Pointer icon to select objects, and the Text icon to select text.

Selecting objects

A selected object has *handles* around it. You can drag one of these handles to resize the object.

Handles appear around selected objects.



If the object is rounded, the handles appear at imaginary rectangular boundaries.

If you select more than one object, you can move, cut, copy, delete, and apply properties (such as a fill color) to the selected objects all at once.

The Pointer icon is in the Tools palette.



- To select an object, click the Pointer icon and then click inside the object or on its border.
- To select more than one object, click the Pointer icon and then **SHIFT**-click the objects. Or point in an empty part of the view and drag diagonally to draw a selection rectangle around the objects. If you draw a selection rectangle, the objects must be completely inside the rectangle.
- To select all the objects in a view, choose Select All from the Edit menu.
- To deselect an object from several selected objects, click the Pointer icon and then **SHIFT**-click the object.
- To cancel a selection, click in another part of the view.

Selecting text




You need to select text before applying text attributes (such as italics or boldface) to it. Text is highlighted when it is selected.

You can select particular text in a text object or the entire object. If you select an entire text object, any attribute you use applies to all text in the object.

The Text icon is in the Tools palette.



- To select a range of text, click the Text icon or double-click the text object. Then drag through the text.

- To select a word, click the Text icon or double-click the text object. Then double-click the word.
-  ■ To select a text object, click the Pointer icon and then click the object.
-   ■ To enter an insertion point in text, click the Text icon and click in the text, or click the Pointer icon and double-click a selected text object.
- To cancel a selection, click in another part of the view.

Editing objects and text

You can edit objects and text in these ways:

- Change the basic properties of an object, such as the named style
- Change the pen width, pen color, fill color, and drop shadow, and put a three-dimensional frame around an object
- Resize an object
- Move an object to another part of the view
- Make an object slide up or left toward a field when you print
- Change the font, size, color, and other text attributes
- Cut or copy an object or text range, and then paste it to another part of the view or to a different view
- Delete an object or text range



Many of the procedures in this section use the InfoBox. If the InfoBox is not already open, click the Show Info icon, choose Style & Properties from the context-sensitive menu, or double-click the object you want to edit. (For a text object, use the icon or command.) The InfoBox appears; you can keep it on the screen as you work.

When you select an object or click in the background of a view in Design, the InfoBox changes to show the settings for that object or view. If you're editing an object and the settings you want disappear from the InfoBox, you have probably clicked outside the object. Select the object again, and the settings will reappear.

For information about editing a view, such as changing the background color, or resizing the page margins, see "Editing views" on page 5-35.

For information about attaching macros to an object, see "Attaching a macro to an object" on page 15-13.

Changing the basic properties of an object

An object’s basic properties are its named style and whether the object is non-printing and appears in Preview.

- To change the basic properties of an object, select the object, click the Basics tab in the InfoBox, and set the options in the Basics panel.



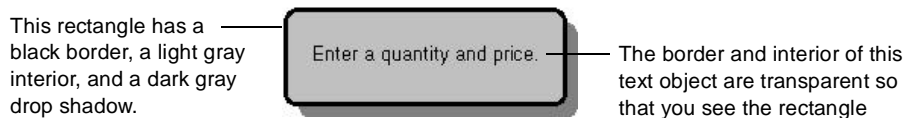
Keep in mind that the InfoBox shows settings for the selected object or (if no object is selected) the current view.

<i>To</i>	<i>Do this</i>
Make an object non-printing	Turn on Non-printing.
Show a non-printing object in Preview	Turn on Show in Preview. (This is available only if Non-printing is on.)
Apply a named style with line, color, and text properties already defined	Select a style in the Named Style drop-down list.

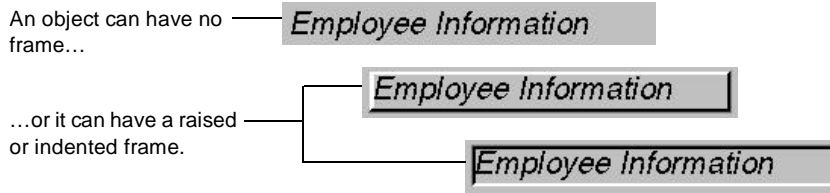
Changing line or color settings for an object

Most objects in Approach have a line as a border and an interior “fill” area. (Lines do not have an interior.) You can set a line width and color for an object’s border, a fill color for an interior, and a color for a drop shadow.

If you want to see through an object, you can make its border or interior transparent.



An object can also have a raised or indented frame to give it a three-dimensional look.



- To change line or color settings for an object, select the object, click the Lines and Colors tab in the InfoBox, and set the options in the Lines and Colors panel.

Select a width and color for the line or border. — Border width: 1 point, Border color: [Color palette]

Select a fill color for the interior. — Fill color: [Color palette]

Select a color for a drop shadow. — Shadow color: [Color palette]

Select a frame style. — Frame: [Frame style list]

If you plan to print a view on a black-and-white printer, use grays rather than colors to get the best-looking printouts.

A raised or indented frame works best against a solid gray or colored background.

<i>To</i>	<i>Do this</i>
Change the width of a line or of the border of another object	Select a width in the Border Width drop-down list.
Change the color of a line or of the border of another object	Select a color in the Border Color drop-down palette. Select T for transparent.
Change the fill color of the interior of an object	Select a color in the Fill Color drop-down palette. Select T for transparent. (This is not available for lines.)
Give an object a drop shadow	Select a color in the Shadow Color drop-down palette. Select T for transparent (no shadow).
Give an object a dashed, raised, or indented frame	Select a frame style in the Frame drop-down list.

Resizing an object

You can change the size and shape of any existing design object (including fields), using either the mouse or the InfoBox. You can also reshape ellipses into circles, circles into ellipses, rectangles into squares, and squares into rectangles without redrawing.

The dimensions area of the status bar shows either the width and height (W and H) of the selected object, or the left and top coordinates (L and T) of the object. If you're resizing with the mouse, you may want to see width and height. Click in the dimensions area to toggle from one setting to the other.



The status bar shows the size or the location of an object. Click to toggle to the other setting.

- To resize an object using the mouse, select the object and drag one of its handles.



Resize cursor

When you point on a handle, the pointer turns into a resize cursor to show that it is properly positioned for resizing. As you drag, you can look at the dimensions area in the status bar to see the object's width and height.

You may want to turn off Snap to Grid when resizing objects with the mouse.

If you want a rectangle, rounded rectangle, or ellipse to be in the shape of a square, rounded square, or circle, press **SHIFT** while dragging the handle.



- To resize an object using the InfoBox, select the object, click the Dimensions tab, and type values in the Width and Height text boxes.

Type a width and height for the object.

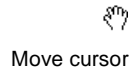


Moving an object

You can move any object to another part of a view using the mouse, the keyboard, or the InfoBox.

The dimensions area of the status bar shows either the width and height (W and H) of the selected object, or the top and left coordinates (T and L) of the object. If you're moving an object with the mouse, you may want to see the coordinates. Click in the dimensions area to toggle from one setting to the other.

- To move an object using the mouse, select the object and drag it by its border.



When you point on a border, the pointer turns into a move cursor to show that it is properly positioned for moving. As you drag, you can look at the dimensions area in the status bar to see the object's top and left coordinates.

- To "nudge" an object using the keyboard, select the object and press the up arrow or down arrow key.

At the 100-percent zoom setting, the object moves 1 pixel each time you press the key.

Nudging an object takes the object off the snap grid. You can use Align to Grid in the Align dialog box (Object menu) to move the object back onto the grid.

You may want to turn off Snap to Grid when moving objects with the mouse.



- To move an object using the InfoBox, select the object, click the Dimensions tab, and type values in the Top and Left text boxes.

Type the top and left coordinates for the object.



Sliding an object when you print

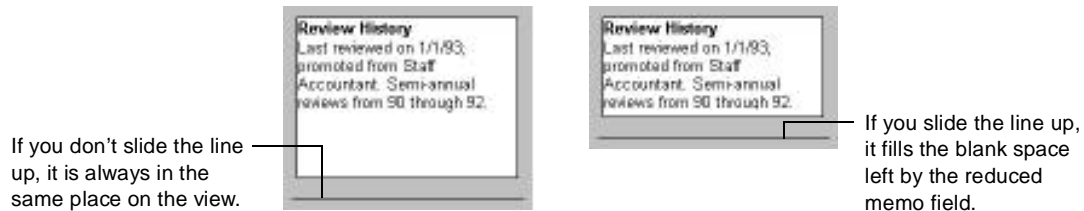
The data in a field can vary in length, so the distance between field data and an object to the right or below it can also vary from record to record.

If you want an object to be a consistent distance from a field's data in every record, you can have Approach *slide* the object to the left or up to fill blank space.

Sliding is used most often in mailing labels or with memo fields.

For sliding to work, you must have Reduce on (in the Dimensions panel of the InfoBox) for the field with the variable data. Approach resizes the field so that it is just large enough for the data in it, and then it slides the object to fill the space left by the reduced boundaries. For more information about reducing boundaries in the field, see “Sliding or resizing a field when you print” on page 6-28.

For example, if you have a memo field with a variable amount of data in it and a line beneath the memo field, you can slide the line up to be just below the data in every record. (The memo field must have Reduce on.)



- To make an object slide when you print, select the object, click the Dimensions tab in the InfoBox, and turn on Left or Up in the When Printing, Slide area.

Approach slides an object when you preview or print, and in Design if you're showing data.

Changing text attributes

You can change the font, size, color, and text style of all text in a text object or of text in a selected range. The fonts available in Approach are the TrueType fonts installed on your system. These are the text styles you can use:


Bold
Italic

Underline
~~Strikethrough~~

Use the Pointer icon to select a text object and the Text icon to select text.

You can also change the alignment and line spacing of all text in a text object.

If you have a named style with the text attributes you want, you can apply the style to an object rather than changing the attributes manually. The styles are in the Named Styles drop-down list in the Lines and Colors panel of the InfoBox.

- 
 ■ To change text attributes, select the text or text object, click the Text tab in the InfoBox, and set the options in the Text panel.



Alignment and line spacing affect all text in a text object, even if you've selected only some of the text in the object.

<i>To</i>	<i>Do this</i>
Change the font of text	Select a font in the Font Name drop-down list.
Apply boldface, italics, underlining, or strikethrough to text	Select one or more styles in the Style/Effect list.
Change the font size of text	Type a size in the Size text box or select in the Size drop-down list.
Apply a color to text	Select a color in the Text Color drop-down list.
Change line spacing to single space, one and a half space, or double space	Select an option in the Line Spacing area.
Change alignment to left, center, right, or justified	Select an option in the Alignment area.

Cutting or copying an object or text

You can cut an object or some text and paste it elsewhere in the view or in another view. You can also make a copy of an object or text and paste the copy.

To cut or copy an object or text:

1. Select the object or text.
2. Click the Cut or Copy icon, choose Cut or Copy from the Edit menu, or right-click and choose Cut or Copy from the pop-up menu.



The Cut and Copy icons are in all three default icon bars in Design.

The Clipboard stores only one item at a time. When you cut or copy, you erase the current contents of the Clipboard.

Cut removes the selection from the view and puts it on the Clipboard. Copy leaves the selection in place and puts a copy of it on the Clipboard.

3. Click where you want to paste the selection.

If you're pasting an object and don't specify a location, the object is pasted on top of the original object. If you paste into another view, the object is pasted at the same location as in the original view.

If you're pasting text, you must click in a text object. The text is pasted at the insertion point.



4. Click the Paste icon, choose Paste from the Edit menu, or right-click and choose Paste from the pop-up menu.

The Paste icon is in all three default icon bars in Design.

Deleting an object or text

You can permanently delete any object or range of text from a view. If you delete a field, the field is not deleted from the database, but only from the current view.

To delete an object or text:

1. Select the object or text.
2. Choose Clear from the Edit menu or press **DELETE** or **BACKSPACE**.

Applying properties from another object

You can copy the line and color settings and the text attributes from one object and apply them to another object with a click of the mouse. This is a fast and easy way to apply a set of properties.

If you plan to use the properties again later or in another view or Approach file, you may want to save them in a named style. For more information, see "Working with named styles," next.

To apply properties from another object:

1. Select the object with the properties you want to use.
2. Click the Fast Format icon or choose Fast Format from the context-sensitive view menu.



The Fast Format icon is in all three default icon bars in Design.



Format cursor

The pointer turns into a format cursor to show that you can format objects by clicking. The icon has a bar across it and the menu command has a checkmark by it.

3. Click the objects you want to apply properties to.
Each object you click takes the line and color settings and the text attributes of the selected object.
4. When you're finished applying properties, click the Fast Format icon, or choose Fast Format, or press ESC.

Working with named styles

Named styles allow you to apply consistent formatting to objects within an Approach file.

A named style is a set of object properties that you define and save. You can apply a named style to any object, and you can define one style to be the default for new views.

A named style can include these properties:

- Text attributes for field data and for text in text objects
- Line and color settings for all objects, and border and baseline settings for fields
- Text attributes for field labels
- Picture settings, such as cropping and shrinking, for PicturePlus fields
- Width and color settings for the background of views and panels

The properties in a named style are the same as they are in the InfoBox, but by saving properties in a style you can easily apply them to more than one object. If you change any properties of a named style, all objects that use the style are updated to match the changes automatically.

When you create a view using an Assistant, you can apply your current default style to the view or apply one of the predefined SmartMaster styles. After creating a view, you can change the style by using the Named Style drop-down list in the view's InfoBox. Approach uses the properties in a style for the background of the view and for all objects you add to the view.

You can also change the style of any particular object using the Named Style drop-down list in the object's InfoBox. When a named style is applied to an object, only the appropriate properties are used. For example, if you apply a named style to a rectangle, only the width, color, and frame settings apply even though the style may also have text attributes and picture settings.

Defining and saving a named style

When you define a named style, you can either create a new style from scratch or make a copy of an existing style and then modify it.

The properties in a named style are the same settings that are in the InfoBox.

To define and save a named style:

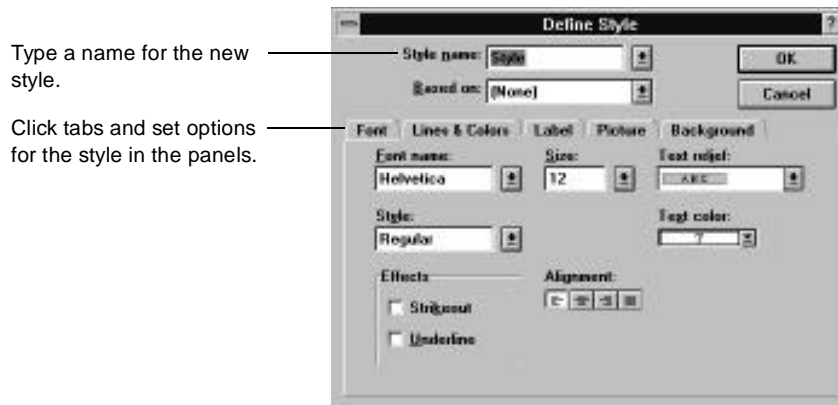
1. Choose Named Styles from the Tools menu.

The Named Styles dialog box appears, showing the names of all styles currently available in the Approach file.

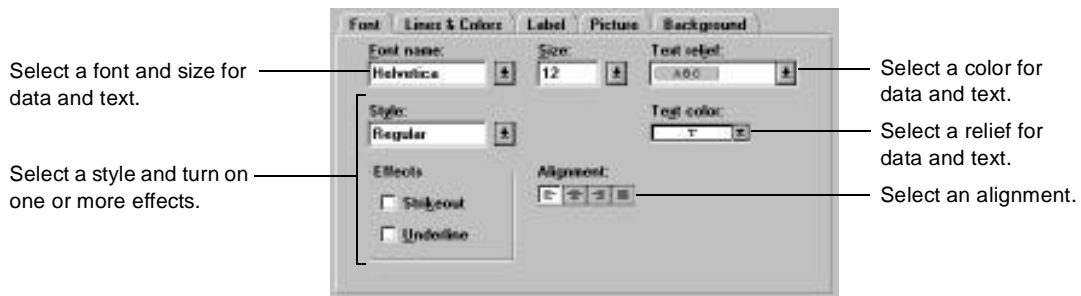


2. Click New or select an existing style and click Copy.

The Define Style dialog box appears. If you clicked New, the dialog box shows properties in their default “neutral” settings. If you selected a style and clicked Copy, the selected style’s properties appear in the panels of the dialog box.

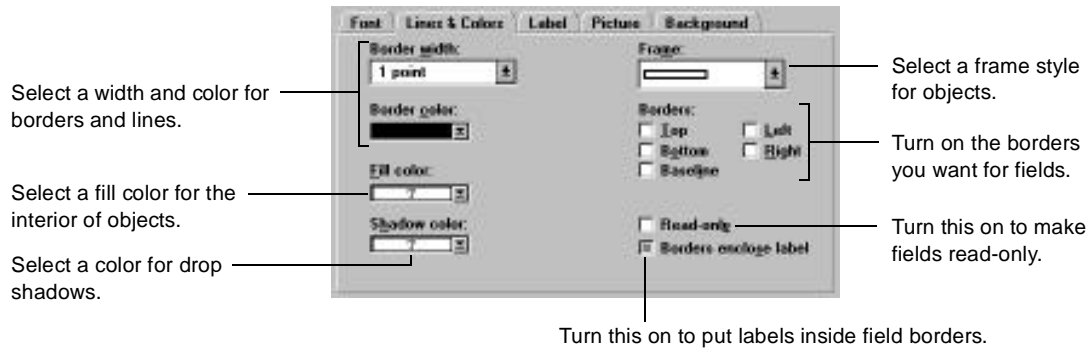


3. Type a name for the new style in the Style Name text box.
If you copied a style, the text box shows the name of the copied style, plus a number (for example, *Corporate 2*). You can edit this name.
4. If you want to base the style on an existing one, select the existing style in the Based On drop-down list.
The base style's properties appear in the panels of the dialog box. You can keep or change any of these properties for the new style.
The new style maintains a relationship with the base style. For any property you keep from the base style, if you later change that property in the base style, the change is also made in the new style.
5. To define text attributes for data in fields or for text in text objects, click the Font tab (if necessary) and set options in the Font panel.



For information about text attributes, see "Changing text attributes" on page 5-23.

- To define properties for widths, colors, frames, and field borders, click the Lines & Colors tab and set options in the Lines & Colors panel.



For information about line and color properties, see “Changing line or color settings for an object” on page 5-19.

- To define text attributes for field labels, click the Label tab and set options in the Label panel.



For information about text attributes, see “Changing text attributes” on page 5-23.

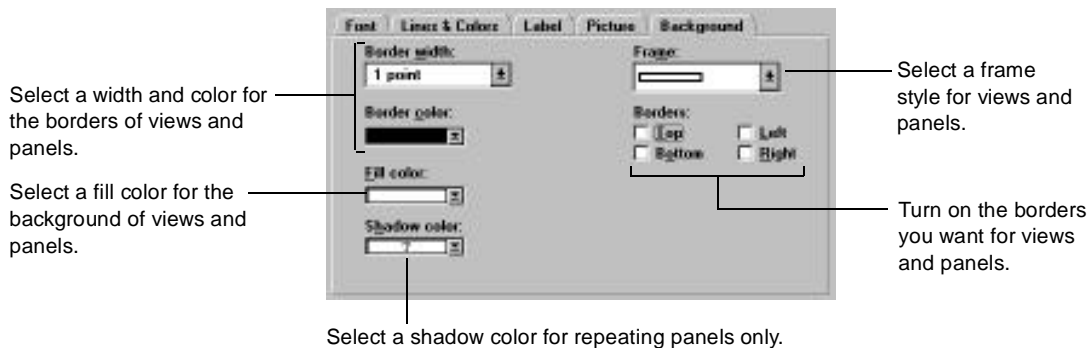
8. To define properties for PicturePlus fields, click the Picture tab and set options in the Picture panel.



For information about PicturePlus properties, see “Changing display options for a PicturePlus field” on page 6-32.

9. To define properties for the background of views and panels, click the Background tab and set options in the Background panel.

All of the settings in the Background panel apply to repeating panels. All of the settings except for Shadow Color apply to views and summary panels.



10. Click OK.

You return to the Named Styles dialog box.

11. To apply the new style to the current selection, click Apply.

The Apply button is available only if at least one object is selected in a view.

12. Click Done.

Editing or deleting a named style

You can edit the definition of a named style or delete a style at any time. If you edit a style, in general, any existing objects that use the style are updated automatically. But if you have changed any properties for an object using the InfoBox, those particular properties are not updated for that object.

Deleting a style does not affect the properties of any existing objects that use the style.

To edit or delete a named style:

1. Choose Define Style from the Tools menu.

The Named Styles dialog box appears.



2. Select the name of the style you want to edit or delete.
You can delete only styles you've created.
3. To redefine the style, click Edit and change the settings in the Define Style dialog box.
For information about working with Define Style, see "Defining and saving a named style" on page 5-27.
4. To remove the style, click Delete.
Approach asks if you're sure you want to delete the style. Click OK to delete the style.
5. Click Done.

Working with more than one object at a time

Approach makes it easy to quickly change more than one object at a time. After you select the objects you want to change, you can cut, copy, paste, or move the objects or change their properties just as you can with an individual object.

If you select more than one object at a time, the object name in the InfoBox is Multiple Objects. Any changes you make in the InfoBox affect all objects in the selection.

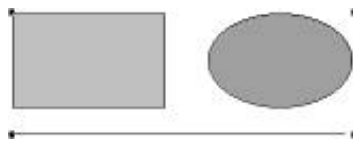
A few commands work only with multiple objects. These commands let you group objects, change their stacking order, and align and distribute the objects for accurate spacing.

Grouping and ungrouping objects

You can combine two or more objects so they act as a single object.

When you select a grouped object, one set of handles appears around the entire group, and the object name in the InfoBox is Grouped Object.

A group has a single set of handles.



You cannot edit text in a text object that is part of a group. You must first ungroup the text object from the other objects.

A group can include other grouped objects.

To group objects:

1. Select the objects.
2. Click the Group icon, choose Group from the Object menu, or right-click and choose Group from the pop-up menu.



The Group icon is in the default Design icon bar.

To ungroup a grouped object:

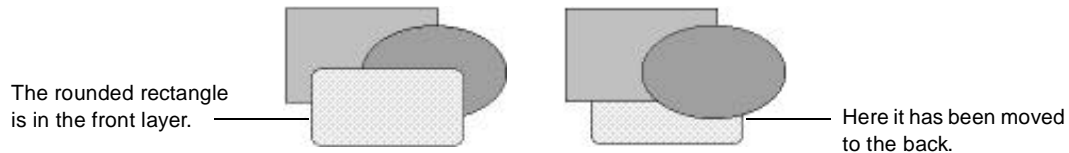
1. Select the object.
2. Click the Ungroup icon, choose Ungroup from the Object menu, or right-click and choose Ungroup from the pop-up menu.



The Ungroup icon is in the default Design icon bar.

Changing the stacking order of an object

Approach automatically stacks objects in layers. Each time you create a new object, it is placed “in front of” any other objects already on the view. You can change this stacking order, moving any object closer to the front or farther to the back.







To change the stacking order of an object:

1. Select the object.
2. Click one of the following icons, choose one of the commands from the Object Arrange submenu, or right-click and choose one of the commands from the Arrange submenu in the pop-up menu.

The Bring Forward and Send Backward icons are in the default Design icon bar.

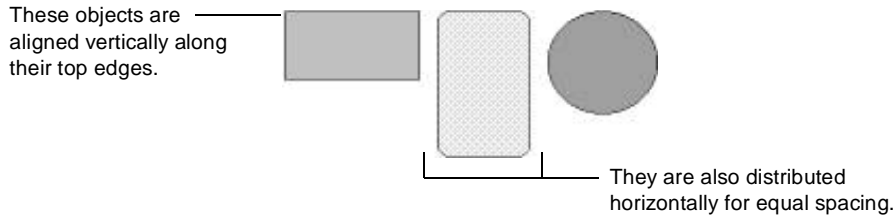
The stacking order affects the appearance of objects both on the screen and on a printed page.

<i>To do this</i>	<i>Click</i>	<i>Or choose</i>
Move an object to the front		Bring to Front
Move an object to the back		Send to Back
Move an object one layer forward		Bring Forward
Move an object one layer backward		Send Backward

Aligning and distributing objects

Approach lets you align objects vertically, horizontally, or both. You can specify alignment along the top, bottom, side, or center of the objects' boundaries. The objects can align to the position of one object or to the nearest point on the grid.

You can also distribute objects vertically, horizontally, or both. This places an equal amount of space between the objects.



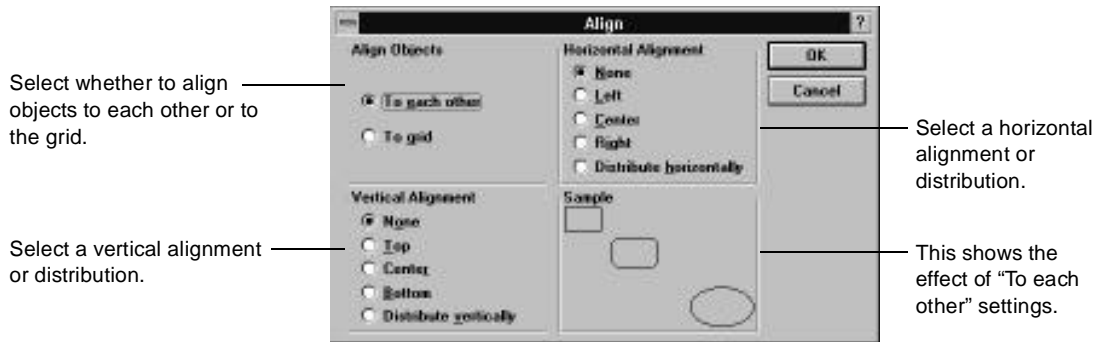
To align and distribute objects:

1. Select two or more objects.
2. Click the Align icon, choose Align from the Object menu, or right-click and choose Align from the pop-up menu.



The Align icon is in the default Design icon bar.

The Align dialog box appears.



3. Specify how you want the objects aligned and distributed.

<i>To do this</i>	<i>Select</i>
Align or distribute objects horizontally or vertically based on one of the objects	"To each other" and a horizontal or vertical alignment or distribution.

Continued

<i>To do this</i>	<i>Select</i>
Align or distribute objects to the nearest grid point	“To grid” and a horizontal or vertical alignment or distribution.

4. Click OK.

Editing views

In addition to editing individual objects on a view, you can make changes that affect the view as a whole. You can edit views in these ways:

- Change the basic properties, such as the name of a view and its main database
- Add the current date or time to a view
- Resize the page margins of a view
- Change the line width and color of page margins and the fill color of the page background
- Duplicate a view
- Delete a view

For information about making changes specific to a certain type of view, such as adding a repeating panel to a form, see the chapter about that type of view.



Many of the procedures in this section use the InfoBox. If the InfoBox is not already open, click the Show Info icon, choose Style & Properties from the context-sensitive menu, or double-click in the background of the view you want to edit. The InfoBox appears; you can keep it on the screen as you work.

When you select an object or click in the background of a view in Design, the InfoBox changes to show the settings for that object or view. If you're editing a view and the settings you want disappear from the InfoBox, you have probably clicked an object instead of the view. Click in the background of the view again or select the view name in the drop-down list in the title bar of the InfoBox, and the settings will reappear.

For information about attaching macros to a view, see “Attaching a macro to a view” on page 15-15.

Changing the basic properties of a view

Use the short menus when you want other users to be able to enter data in the view, but not change its design.

A view's basic properties are its name, the main database if the view uses joined data, the named style for its background, the set of menus, and whether the view appears in Browse. These properties are stored in the view's InfoBox.

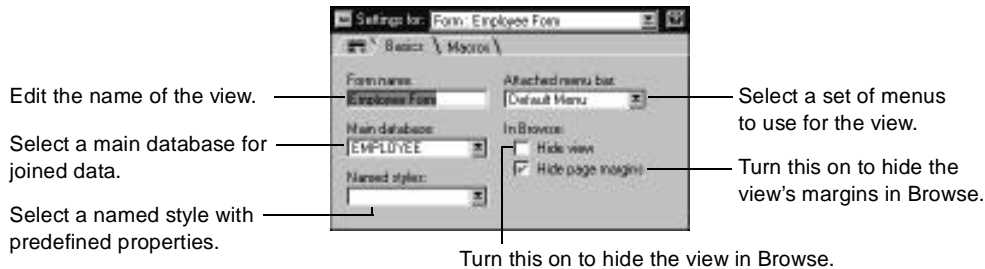
A main database provides the framework of data for a view; each record from the main database appears in the view. For more information about the purpose of the main database, see "Main and detail databases in a view" on page 4-5.

If you attach a set of menus to a view, the menus are available whenever you go to the view in Browse. You can attach the default menus, the Approach short menus, and any custom menus of your own.

The *short menus* are a subset of the default menus; they do not include commands for modifying the file. For example, the short menus do not have the Create Form and Define Macro commands. For information about setting up custom menus, see "Customizing menus" on page 19-18.

A report does not have named styles in its basic properties; instead, the panels in the report each have a named style. For more information, see "Changing line or color settings for a report panel" on page 8-22.

- To change the basic properties of a view, click in the background of the view, click the Basics tab in the InfoBox, and set the options in the Basics panel.



You can also rename a view in Design by double-clicking its view tab and then typing in the tab.

To	Do this
Change the name of a view	Edit the name in the Name text box.

Continued

You may want to hide a view in Browse when you're using the view to develop an application.

<i>To</i>	<i>Do this</i>
Change to a different main database	Select a database in the Main Database drop-down list.
Apply a named style with line and color properties already defined	Select a style in the Named Style drop-down list. (This is not available for reports.)
Change the menus for a view	Select a set of menus in the Attached Menu Bar drop-down list.
Hide a view in Browse	Turn on "Hide view."
Hide a view's page margins in Browse	Turn on "Hide page margins." (This is available for forms and form letters, and only if "Hide view" is off.)

Adding a date or time to a view

You can put a current date or current time on the background of a view. Approach will update the date or time whenever you open, preview, or print the Approach file.

When you first insert a date or time, Approach places it in a new text object in the upper-left corner of the view. You can move, resize, and otherwise edit the date or time just as you can any other text object. In Design, the object contains <<DATE>> or <<TIME>>, but in Browse you'll see the actual date or time.



- To add a date or time to a view, click the Date or Time icon, choose Date or Time from the Insert submenu in the context-sensitive menu, or right-click the margin of the view and choose Date or Time from the Insert submenu in the pop-up menu.

The Date and Time icons are in the default Text icon bar.

You can also insert a page number in the header or footer of a report, and Approach will increment the number for you automatically. For more information, see "Adding a header or footer" on page 8-24.

Resizing page margins

Page margins are the area between the printable part of a view and the edge of the paper. When you create a new view, Approach automatically sets margins appropriate for the current printer.

You can change any of the page margins to make the printable area larger or smaller, up to the maximum area allowed by the printer. Each view in an Approach file can have different margins.



- To resize page margins, click a border of the view and then drag the border.

⇔
Resize cursor

When you move the pointer over a selected border, the pointer turns into a resize cursor to show that it is properly positioned for resizing.

Use the Approach rulers to help you position the margins. It sometimes helps to zoom out, too.

If you cannot make a view as large as you'd like, change your current printer to one that allows for a larger printing area. For information about changing the default printer, see "Specifying the printer, paper, and orientation" on page 14-2.

If you want non-printing borders in a form or form letter, such as to have a color print to the edges of the view, turn on "Hide page margins" in the Basics panel of the view's InfoBox.

Changing line or color settings for a view

In a form, form letter, or mailing label, you can change the color or width of the page borders and the fill color of the page background. Objects such as fields and rectangles on the view are not affected by the view's background color (unless the objects are transparent).

In a report, you change the line and color settings in the InfoBox for the individual panels. For more information about this, see "Changing line or color settings for a report panel" on page 8-22.



- To change line or color settings for a form, form letter, or mailing label, click in the background of the view, click the Lines and Colors tab in the InfoBox, and set the options in the Lines and Colors panel.



	<i>To</i>	<i>Do this</i>
<i>Keep in mind that the InfoBox shows settings for the selected object, or (if no object is selected) the current view.</i>	Change the width of the page borders of a view	Select a width in the Border Width drop-down list.
	Change the color of the page borders of a view	Select a color in the Border Color drop-down palette. Select T for transparent.
	Change the fill color of the background of a view	Select a color in the Fill Color drop-down palette. Select T for transparent.
<i>If you apply a frame style, all four borders are turned on automatically.</i>	Give a view a dashed, raised, or indented frame	Select a frame style in the Frame drop-down list.
	Show borders around a view	Turn on options in the Borders area.

Duplicating a view

If you want to create a form, report, form letter, mailing label, worksheet, crosstab, or chart that is similar to one you already have, you can make a duplicate and then modify it.

When you duplicate a view, Approach gives the duplicate a name such as *Form 2* or *Report 2*. You can rename the view in the Basics panel of the view's InfoBox.

To duplicate a view:

1. Change to the view you want to duplicate.

You can click a view tab or choose from the view pop-up menu in the status bar.

2. Choose the Duplicate command from the Edit menu.

The name of the Duplicate command changes, depending on the type of the current view (or example, Duplicate Form and Duplicate Report).

When you choose the command, Approach displays a duplicate of the view. You can make changes to the duplicate without affecting the original.

Deleting a view

You can delete a form, report, form letter, mailing label, worksheet, crosstab, or chart.

To delete a view:

1. Change to the view you want to delete.

2. Choose the Delete command from the Edit menu.

The name of the Delete command changes, depending on the type of the current view (for example, Delete Form and Delete Report).

Approach asks if you're sure you want to delete the view.

3. Click Yes to delete the view.

6

Adding and Editing Fields in a View

When you create a view, you specify which fields you want in it. You can add more fields to a view or delete them from a view, and you can format and edit fields in a view in many ways.

This chapter describes how to add fields to a view; display possible values for fields in drop-down lists, checkboxes, and radio buttons; edit the properties of fields; work with PicturePlus fields; and change the data entry order of fields in a view.

Adding a field to a form, report, or mailing label

You can add a field to a form, report, or mailing label using either the Add Field dialog box or the Draw Field tool. (You can also use Add Field in a worksheet or crosstab.) The field must already be defined in a database used in your Approach file.

When you add a field to a view, the field appears as a *field box* for entering and editing data in Browse. Approach gives the field box the border width, text attributes, and other properties of the named style for the current view.

This section describes how to add a field to a form, report, or mailing label. For information about adding a field to other kinds of views, see “Adding a field to a form letter” on page 9-12 and “Adding a database field to a worksheet or crosstab” on page 12-17. For information about defining a field, see “Defining fields for a database” on page 3-5.

You can delete fields from a view just as you delete other kinds of design objects. Deleting a field from a view does not remove the field from the underlying database file. For more information, see “Deleting an object or text” on page 5-25.

You must be in Design to add a field to a form, report, or mailing label.

To add a field using the Add Field dialog box:



1. In Design, click the Add Field icon, choose Add Field from the Form, Report, or Mailing Label menu, or right-click an object and choose Add Field from the pop-up menu.

The Add Field icon is in the Tools palette.

The Add Field dialog box appears, showing the fields defined for databases used in the Approach file. Calculated fields and variable fields in the Approach file appear in italics at the bottom of the list.

Add Field shows all the existing fields you can add to a view.



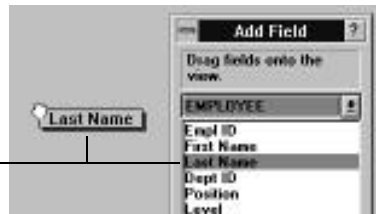
Click here if you need to define a new field.

If you need to define a new field, click Field Definition and use the dialog box that appears.

2. Drag the database field you want from the Add Field dialog box to the view.

If the field you want is in a different joined database, select the database in the drop-down list above the list of fields.

Drag the database field to the view.

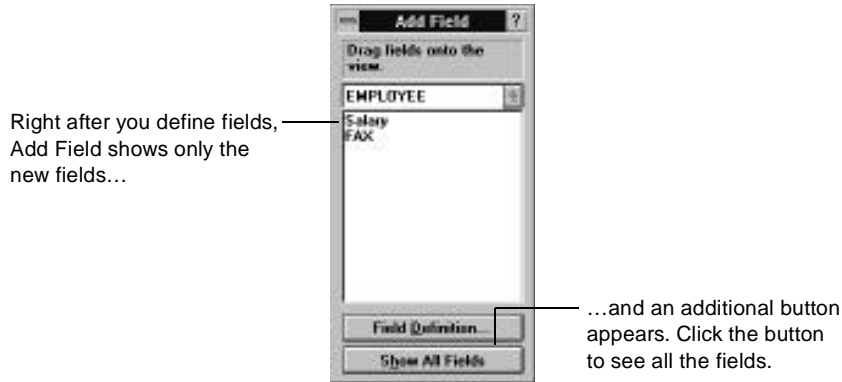


A field box appears in a predefined size and shape.

To add a field right after defining it:

1. After closing the Field Definition dialog box, drag the field from the Add Field dialog box to the view.

If “Show Add Field dialog” is on in the Display panel of the Preferences dialog box, when you close the Field Definition dialog box Add Field appears and you go to Design. For the moment, Add Field shows only the fields you just defined.



2. When you’ve finished adding new fields, click Show All Fields. The list shows all the fields defined for databases used in the Approach file, and Show All Fields changes to Show New Fields. You can click the button again to see only the new fields.

To add a field using the Draw Field tool:

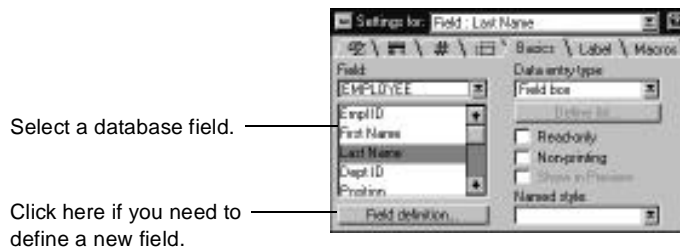


1. In Design, click the Draw Field icon or choose Field from the Create Drawing submenu.

The Draw Field icon is in the Tools palette.

2. Drag diagonally to draw a field box.

The InfoBox shows the settings for the new field. So far, the field is based on the first database field listed in the InfoBox.



If you need to define a new field, click Field Definition and use the dialog box that appears.

3. Select the database field you want in the Field list.

If the field you want is in a different joined database, select the database in the drop-down list above the Field list.

Displaying values for a field

You can display a field as a drop-down list, as one or more checkboxes, or as one or more radio buttons in Browse. Use one of these elements to limit the values a user can enter in the field, and to make entering data much easier and more accurate.



Lists, checkboxes, and radio buttons are especially helpful in a form or report used for entering data.

Some of the procedures in this section use the InfoBox. If the InfoBox is not already open, click the Show Info icon, choose Style & Properties from the context-sensitive menu in Design, or double-click the field you want to edit. The InfoBox appears; you can keep it on the screen as you work.

You must be in Design to set up these display elements for a field.

Displaying a field as a drop-down list

You can have a field appear in Browse as a *drop-down list* or as a combination of a drop-down list and a field box.

If a field appears as a list, a user can select a value to enter in the field; the list shows all the possible values for the field. If the field appears as a list and a field box, a user can either select in the list or type a value in the box to enter data.

A drop-down list shows values you can select to enter in a field.



If a list is combined with a field box, you can either select in the list or type in the box.

When you set up a drop-down list, you can type custom values you want to appear in the list, or use existing values from a database field.

If you use values from a field, Approach pastes the unique values from that field into the list. For example, the values appearing in the list of employees in the example might be data already in the Last Name field in the employee database. You can also filter a drop-down list to display only a subset of the data from a database field.

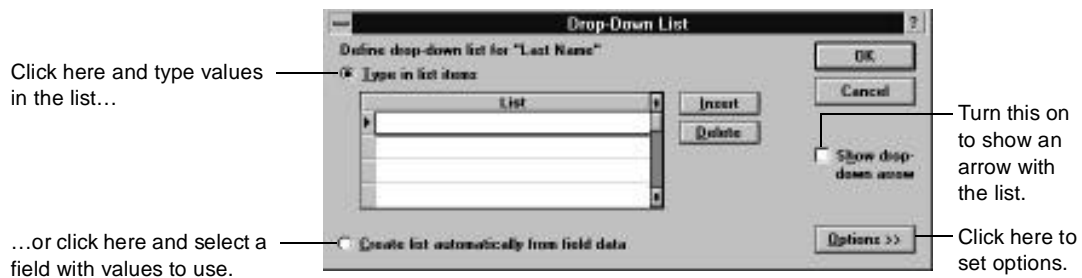
A drop-down list can show up to nine items at a time. If a list has more than nine items, Approach gives it a scroll bar.

The values you display in a list do not have to be the data that is entered in the field. You can show data simply as descriptions of what to enter. For example, suppose a field with a drop-down list stores an employee ID. To make it easier to enter the employee IDs, you could display the employees' last names in the list rather than their IDs. Then, when you select a name in the list in Browse, the ID corresponding to that name is entered into the field.

To display a field as a drop-down list:

1. In Design, select the field you want to display as a list.
2. In the Basics panel of the field's InfoBox, select Drop-Down List Only or Field Box & List in the Data Entry Type drop-down list.

The Drop-Down List dialog box appears.



3. To use custom values in the drop-down list, click “Type in list items” and type the values you want in the value list.

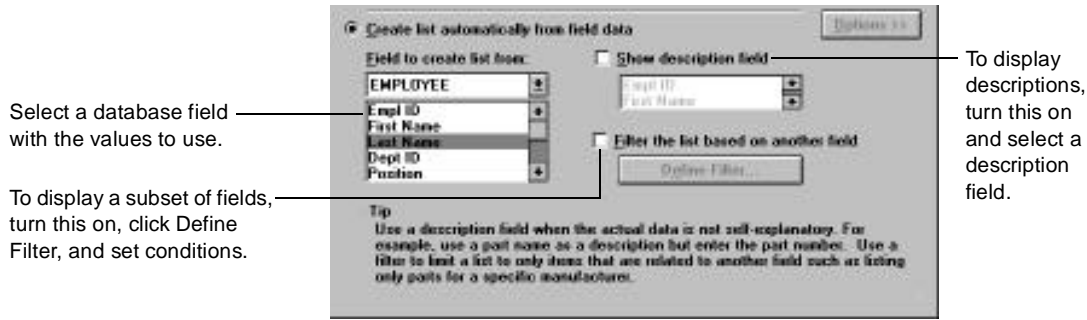
For each value, click in an empty line and type. If you want to put a new line between two existing values, click Insert to add a line above the one with the insertion point.

To remove a value from the list, click in its line and click Remove.

4. To use values from a database field, click “Create list automatically from field data.”

Approach finds the unique values for the current field and displays them in the value list.

5. To show an arrow button with the drop-down list, turn on "Show drop-down arrow."
6. To set options for the values in the drop-down list, click Options. The bottom part of the dialog box opens.



7. To use values from a database field other than the current field, select the field you want in the field list on the left. If the field is in a different joined database, select the database in the drop-down list above the field list.

Approach finds the unique values for the field you select and displays them in the value list.

8. To display a subset of values from a database field, turn on "Filter the list based on another field," set the conditions in the dialog box that appears, and click OK. For details, see "Displaying a subset of data in a drop-down list," next.
9. To show values from another field as descriptions rather than as actual data to enter, turn on "Show description field" and select a field in the description field list.

When you select a description in the drop-down list in Browse, Approach enters the field value from the same record as the description.

For example, if you want to show employee names in the drop-down list, but enter employee IDs in the field, select Last Name in the description list and Empl ID in the field list (at the left). When you select a name in Browse, Approach enters the employee ID from the record with the name you selected.

10. Click OK.

You'll see the list when you go to Browse.

Displaying a subset of data in a drop-down list

When you set up a drop-down list, you can use existing values from a database field. The list normally shows all the unique values from the field, but you can define a set of conditions if you want to display only a subset of data from the field.

For example, suppose a database stores information about all of your employees. If you'd like a drop-down list to show only the names of employees with the same job title, you can limit the list to names from records that have the same value in the Position field as the current record.

If a drop-down list uses data from a database field, it can show all the unique values from the field...

...or a subset of values from the field.



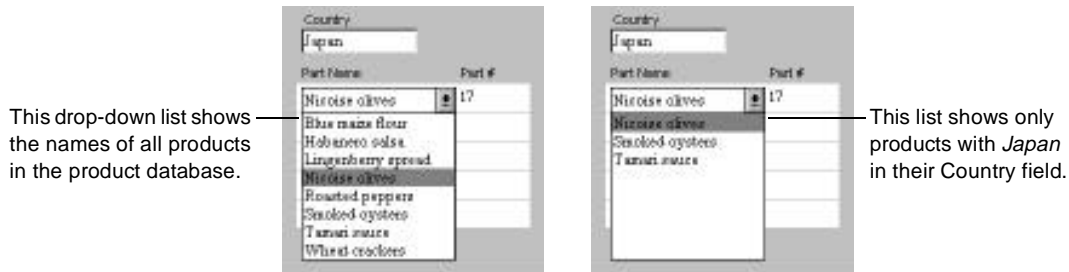
These records all have *Staff Accountant* in their Position field.



If you're working with joined databases, you can use a match between fields in two of the databases to limit a drop-down list. For example, suppose you have three joined databases: one for orders, one for the line items in orders, and one for product data. (For basic information about joins of this type, see "Many-to-many relationships" on page 4-9.)

In a repeating panel for entering products on an order form, you might use a drop-down list of product names to make it easier to fill out the form. If, in particular countries, only some of the products are available, you can add a Country field to the product and order

databases. Then limit the drop-down list to products that have the same value in their Country field (in the product database) as the Country field in the current record (in the order database).



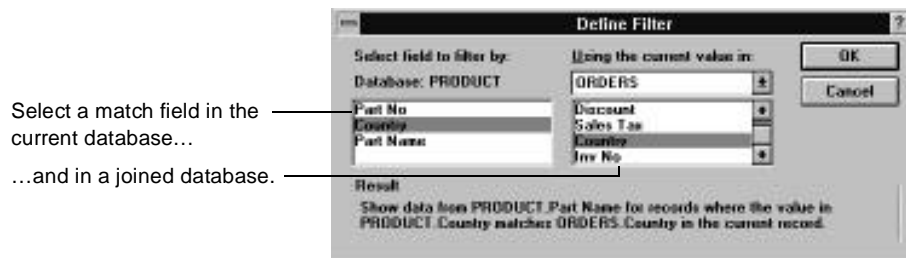
To display a subset of data in a drop-down list:

1. Display a field on a view as a drop-down list.
Follow the instructions in “Displaying a field as a drop-down list” on page 6-4.
2. In the Define Drop-Down List dialog box, click “Create list automatically from field data.”
3. Click the Options button.
The bottom part of the dialog box opens.
4. Turn on “Filter the list based on another field.”
The Define Filter dialog box appears.
If the current Approach file uses one database file, the Define Filter dialog box shows the fields in the database. If the Approach file uses joined database files, the dialog box shows fields from all the joined databases.
5. Select the field or fields with the value you want to match.
In Browse, the drop-down list will show only values from records that have the same data in the match field as the current record.

If the Approach file uses one database file, select a field in the database. For example, if you want the drop-down list to show only the names of employees who have the same job title as the current employee record, select the Position field.



If the Approach file uses joined database files, select a field to match between the current database (with the field that has the drop-down list) and a joined database. For example, if you want the drop-down list to show only products that have the same country data as the current order record, select the Country field in the product and order databases.



6. Click OK.
You return to the Define Drop-Down List dialog box.
7. Click OK.

Displaying a field as a checkbox

You can display a field as one or more checkboxes. A *checkbox* has two values: a Checked value, which is entered in the field if the checkbox is on, and an Unchecked value, which is entered if the checkbox is off. You click a checkbox in Browse to turn it on or off. A field with checkboxes can be a text field, numeric field, date field, or Boolean field.

For example, you might use a checkbox to identify a product as backordered. The checkbox's Checked value would be *Backordered*, and its Unchecked value would be *In Stock*.



Turning on this checkbox enters *Backordered* in the field. Turning it off enters *In Stock*.

If you want a set of clickable options in which one option is always on, use radio buttons instead of a checkbox.

You can have Approach enter an Unchecked value automatically in a new checkbox. See page 3-13.

Because each checkbox has two values, you should typically set up only one checkbox for a field. When you click the checkbox, you go back and forth between its two values.

If a field has more than one checkbox, only one checkbox can be on at a time (but it is possible for no checkbox to be on). When you turn on a checkbox, any box already on in the set is turned off. You can turn off a checkbox to enter its Unchecked value in the field.

If you never click a checkbox, its value is Null. You must click a checkbox to turn it on, and then click it again to turn it off to enter its Unchecked value.

You can add a field to a view as a checkbox or display a field already in a view as a checkbox. Checkboxes can have custom values that you provide or values from the current database field.

To add a field to a view as a checkbox:

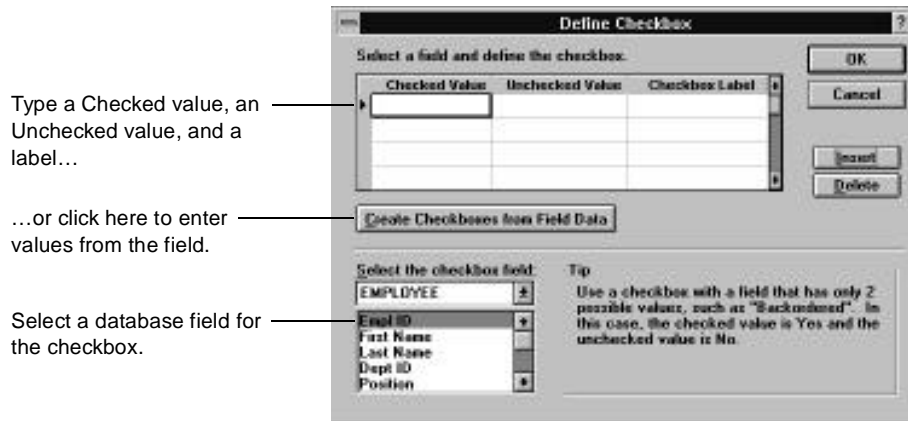


1. In Design, click the Checkbox icon or choose Checkbox from the Create Drawing submenu.

The Checkbox icon is in the Tools palette. If you plan to add more than one field as a checkbox, double-click the icon. The tool stays selected until you click another icon. On a color monitor, the icon changes to blue.

2. Drag diagonally to draw an area for the checkbox.

The Define Checkbox dialog box appears.



3. Select a database field for the checkbox in the field list.

If the field you want is in a different joined database, select the database in the drop-down list above the field list.

4. To use custom values for the checkbox, type a Checked value, an Unchecked value, and a checkbox label in the value list.

For each checkbox, click in an empty line and type. If you want to put a new line between two existing checkboxes, click Insert to add a line above the one with the insertion point.

To remove a checkbox, click in its line and click Delete.

5. To use values from the database field, click Create Checkboxes from Field Data.

Approach finds all the unique values for the field you selected and displays them as Checked values and labels in the list. You need to provide the Unchecked values.

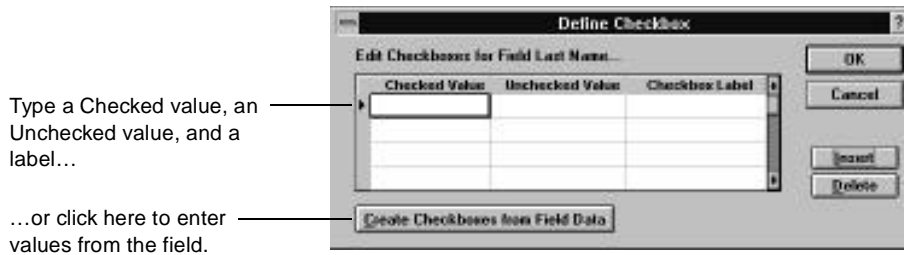
6. Click OK.

To display a checkbox for a field already in a view:

1. In Design, select the field you want to display as a checkbox.
2. In the Basics panel of the field's InfoBox, select Checkboxes in the Data Entry Type drop-down list.

Normally, you use only one checkbox for a field.

The Define Checkbox dialog box appears. The dialog box is smaller than it is when you add a field as a checkbox; it does not have the database list at the bottom.



3. To use custom values for the checkbox, type a Checked value, an Unchecked value, and a checkbox label in the value list.
4. To use values from the database field, click Create Checkboxes from Field Data.

Approach finds all the unique values for the current field and displays them as Checked values and labels in the list. You need to provide the Unchecked values.

5. Click OK.

Displaying a field as a set of radio buttons

You can display a field as a set of *radio buttons*. Each radio button can provide a Clicked value. You click a radio button in Browse to enter its value in the field. A field with radio buttons can be a text field, numeric field, date field, or Boolean field.

For example, you might use radio buttons to list the possible types of customers.



You can turn on one radio button in a set to enter its value in the field.

Radio buttons are initially laid out in a vertical column. To rearrange buttons, first ungroup them (use Ungroup in the Object menu).

Because each radio button has only one value, you should normally use a set of two or more radio buttons for a single field. In a set of radio buttons, only one button can be on at a time. When you turn on a radio button, any button that is currently on in the set is turned off.

You can add a field to a view as radio buttons, or display a field already in a view as radio buttons. Radio buttons can have custom values that you provide or values from the current database field.

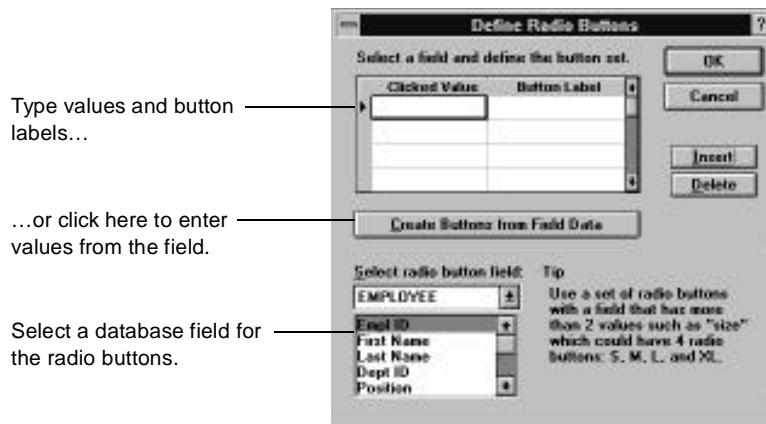
To add a field to a view as a set of radio buttons:

1. In Design, click the Radio Button icon or choose Radio Button from the Create Drawing submenu.

The Radio Button icon is in the Tools palette. If you plan to add more than one field as radio buttons, double-click the icon. The tool stays selected until you click another icon. On a color monitor, the icon changes to blue.

2. Drag diagonally to draw an area for the radio buttons.

The Define Radio Buttons dialog box appears.



3. Select a database field for the radio buttons in the field list.

If the field you want is in a different joined database, select the database in the database drop-down list above the field list.

4. To use custom values for the radio buttons, type the Clicked values and button labels in the value list.

For each radio button, click in an empty line and type. If you want to put a new line between two existing buttons, click Insert to add a line above the one with the insertion point.

To remove a radio button, click in its line and click Delete.

5. To use values from the database field, click Create Buttons from Field Data.

Approach finds all the unique values for the selected field and displays them as Clicked values and button labels in the list.

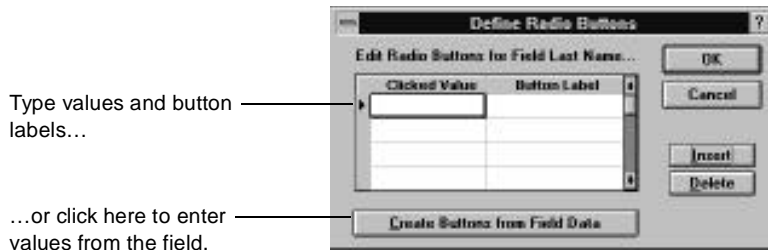
6. Click OK.

Give each radio button a unique value in the set.

To display radio buttons for a field already in a view:

1. In Design, select the field you want to display as radio buttons.
2. In the Basics panel of the field's InfoBox, select Radio Buttons in the Data Entry Type drop-down list.

The Define Radio Buttons dialog box appears. The dialog box is smaller than it is when you add a field as radio buttons; it does not have the database list at the bottom.



3. To use custom values, type the values and button labels in the value list.
4. To use values from the database field, click Create Buttons from Field Data.

Approach finds all the unique values for the current field and displays them as Clicked values and button labels in the list.

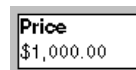
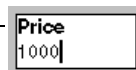
5. Click OK.

Formatting data in fields

Approach provides predefined formats for displaying and printing date, time, numeric, and text data in a field. You must be in Design to set a format for a field.

When you enter data in a field with a format, you enter only the data itself. Approach automatically provides formatting characters, such as currency signs or thousands separators. You see the data in its format when you move out of the field.

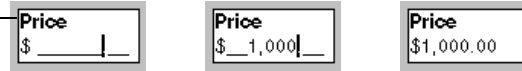
As you type, the data appears the way you enter it.



The data is formatted when you move out of the field.

If you turn on “Show data entry format” for a date, time, or numeric field, formatting characters appear in the field when you click in it to enter data, and underlines show the maximum number of characters. You can press the space bar to move past a separator.

With “Show data entry format,” fixed characters appear as you enter data.



If you turn on “Show data entry format” for a text field, you see the data in its capitalization style as you type. For more about entering data with a format, see “Entering data in fields” on page 10-7.

For date, time, and numeric fields, a format affects only how data appears in a view, and not how it is stored in the database. For text fields, if “Show data entry format” is on the data is stored in its format.



The procedures in this section use the InfoBox. If the InfoBox is not already open, click the Show Info icon, choose Style & Properties from the context-sensitive menu in Design, or double-click the field you want to edit. The InfoBox appears; you can keep it on the screen as you work.

A field’s formatting information is stored in the Format panel of the InfoBox. When you select a format type, the panel shows the options for that type. (The formats available depend on the data type of the database field.)



Select a format type to see its formatting options.

Setting a standard date format

A standard date format can display the day of a week, a month, a date, and a year. You identify which of these elements you want to include and in what order you want the month, date, and year to appear.

The format can spell out the day or use an abbreviation; spell out the month, use an abbreviation, or use a numeral; use a fixed two-digit date or a flexible one- or two-digit date; and use a four-digit year or a two-digit year.

- # ■ To set a standard date format for a field, select the field, click the Format tab in the InfoBox, select Date in the Format Type drop-down list, and set the options in the Format panel.



The default order for entering the parts of a date is set in the Windows International Control Panel.

<i>To</i>	<i>Do this</i>
Change to another order for month, day, and year	Select an order in the Current Format drop-down list.
Change the spelling of days (spelled out or abbreviated) or turn off the display of days	Select an option in the Day drop-down list. Select the blank option to turn off the display.
Change the spelling of months (spelled out, abbreviated, or numeral) or turn off the display of months	Select an option in the Month drop-down list. Select the blank option to turn off the display.
Change the number of digits for dates (fixed two digits or flexible one or two digits) or turn off the display of dates	Select an option in the Date drop-down list. Select the blank option to turn off the display.
Change the number of digits for years (four or two) or turn off the display of years	Select an option in the Year drop-down list. Select the blank option to turn off the display.
Change a separator between days, months, and years	Edit the character in the text box to the right of the element.
Show the format in a field when you click in the field in Browse	Turn on "Show data entry format."

Setting a special date format for periods of a year

Follow the syntax rules carefully when creating a custom format.

A special date format can display a quarter, a trimester, or a semiannual period, along with a year. You can use a predefined date format or create a custom format of your own. All special date formats, both predefined and custom, use a specific set of characters in their syntax.

A numeral in a special date format represents the period displayed: 4 means a quarter, 3 means a trimester, 2 means a semiannual period, and 1 means an entire year. The number of times the numeral appears in the format specifies how the numeral is displayed in the field: one numeral means a cardinal number (1, 2, and so on), two numerals means an ordinal number (1st, 2nd, and so on), and three numerals means spelled out (First, Second, and so on).

If a special date format includes the year, YYYY specifies all four digits of the year (such as 1994) and YY specifies the last two digits (such as 94).

A format can also include literal text (such as Quarter). If the literal text includes the character D, M, Y, 2, 3, or 4, enclose the text in double quotation marks (").

Numerals specify the period of time. (4s mean a quarter.)

44 Qtr. YY

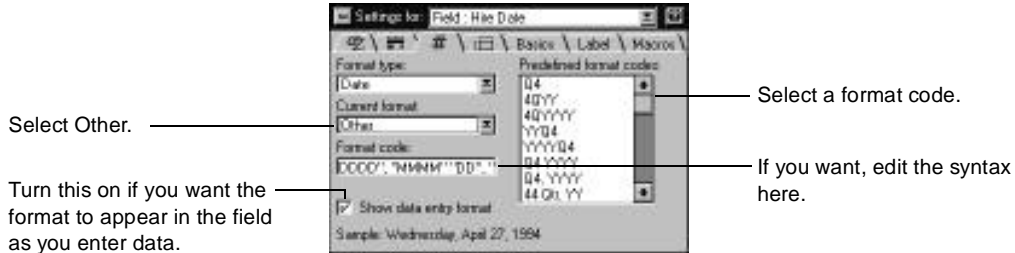
Ys show the year for the period of time. (Two Ys mean a two-digit year.)

This is text that will appear literally in the formatted data.

These are some of the predefined special date formats:

<i>Format</i>	<i>With the date 5/1/94</i>
Q4	Q2
YYQ4	94Q2
44 Qtr. YY	2nd Qtr. 94
444 Quarter, YYYY	Second Quarter, 1994

- # ■ To set a special date format for a field, select the field, click the Format tab in the InfoBox, select Date in the Format Type drop-down list, select Other in the Current Format drop-down list, and set the options in the Format panel.



Editing the syntax creates a new format. It does not change the predefined one.

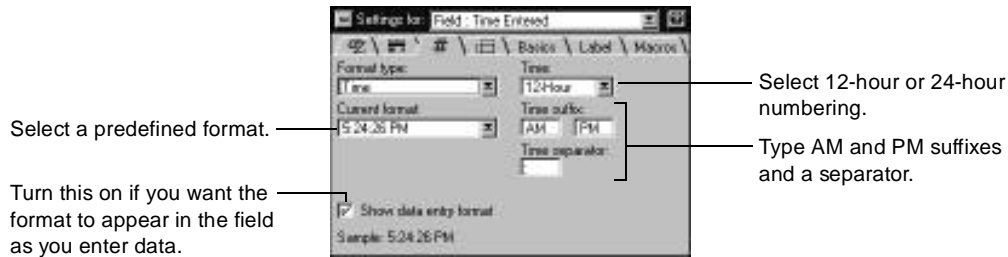
<i>To</i>	<i>Do this</i>
Change to another predefined format for a quarter, trimester, or semiannual period	Select a format in the Predefined Format Codes list.
Create a custom format	Edit the format's syntax in the Format Code text box.
Show the format in a field when you click in the field in Browse	Turn on "Show data entry format."

Setting a time format

A time can appear as hours and minutes (HH:MM); as hours, minutes, and seconds (HH:MM:SS); or as hours, minutes, seconds, and hundredths of a second (HH:MM:SS.00). Approach is preset to use a colon as the separator between hours, minutes, and seconds, but you can change the separator to another character.

You can use either a 12-hour system or a 24-hour system for numbering hours. If you use 12-hour numbering, Approach displays an AM or PM suffix with the time.

- # ■ To set a time format for a field, select the field, click the Format tab in the InfoBox, select Time in the Format Type drop-down list, and set the options in the Format panel.



The default order for entering the parts of a time is set in the Windows International Control Panel.

<i>To</i>	<i>Do this</i>
Change to another predefined format	Select a format in the Current Format drop-down list.
Change to 12-hour or 24-hour numbering for hours	Select an option in the Time drop-down list.
Change the AM and PM suffixes that appear with 12-hour numbering	Type a suffix in one of the text boxes in the Time Suffix area.
Change the separator between hours, minutes, and seconds	Edit the text in the Time Separator text box.
Show the format in a field when you click in the field in Browse	Turn on "Show data entry format."

Setting a numeric format

Follow the syntax rules carefully when creating a custom format.

You can use a predefined numeric format for data or create a custom numeric format of your own. All numeric formats, both predefined and custom, use a specific set of characters in their syntax.

Zeroes (0) in a numeric format represent required digits, number signs (#) represent optional digits, and a period (.) specifies the position of the decimal point. If a comma is surrounded by zeroes or number signs, it acts as a thousands separator.

Dollar signs (\$), minus signs (-), plus signs (+), colons (:), and parentheses are literal characters. Other literal characters must be enclosed in double quotation marks (") in the format.

A percent sign (%) converts a number to a percentage.

If a format has two parts divided by a semicolon (;), the part to the left of the semicolon is a format for positive numbers, and the part to the right is a format for negative numbers.

Number signs specify optional digits. Zeroes specify required digits.

\$#,##0.00;(\$#,##0.00)

Dollar signs and parentheses are literal characters.

A semicolon separates a positive numeric format from a negative numeric format.

If a format begins with an integer and an equal sign (=), greater-than sign (>), or less-than sign (<), the format applies only to data that has the number of digits specified by the integer and sign. A format line can have more than one of these conditional formats together, with each format separated by a vertical "or" sign (|). For example, suppose a field has this format:

=7 000-0000|<7 "x"000

If you enter 1234567, the data appears as *123-4567*. If you enter 12345, the data appears as *x123*.

These are some of the predefined numeric formats:

<i>Format</i>	<i>With 8000</i>	<i>With -8</i>	<i>With .8</i>
Integer #,##0;(#,##0)	8,000	(8)	1
General #,##0.00;(#,##0.00)	8,000.00	(8.00)	0.80
Currency \$#,##0;(\$#,##0)	\$8,000	(\$8)	\$1
Currency Decimal \$#,##0.00;(\$#,##0.00)	\$8,000.00	(\$8.00)	\$0.80
Percent 0%	800000%	-800%	80%
Percent Decimal 0.00%	800000.00%	-800.00%	80.00%
Scientific 0.00e+00	8.00e+03	-8.00e+0	8.00e-01

The other predefined formats provide a required number of digits for several types of numeric information:

The quotation marks in the telephone format mark where a space goes.

- Telephone: >7 (###) "000-0000|=7 000-0000

This format is for a U.S. telephone number. If a field has seven digits, no area code appears (###) and all the numerals appear in the 000-0000 part of the format. If a field has more than seven digits, the numerals begin with the area code.

- Social Security: 000-00-0000

This format is for a U.S. social security number.

- Zip Code: >5 00000-0000|=5 00000

This format is for a U.S. zip code. If a field has more than five digits, the code includes the -0000 extension.

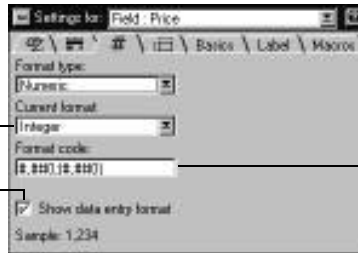
When you select a format in the Current Format drop-down list in the InfoBox, you see the syntax of the format in the Format Code text box.



- To set a numeric format for a field, select the field, click the Format tab in the InfoBox, select Numeric in the Format Type drop-down list, and set the options in the Format panel.

Select a predefined format.

Turn this on if you want the format to appear in the field when you enter data.



If you want, edit the syntax here.

Editing the syntax creates a new format. It does not change the predefined one.

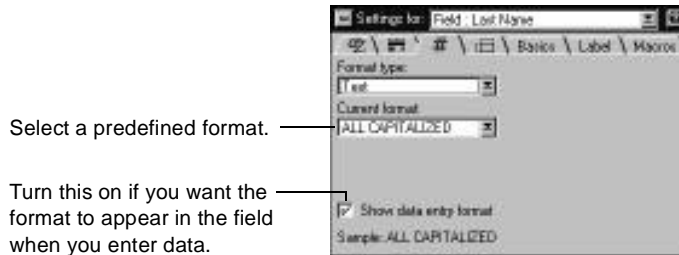
<i>To</i>	<i>Do this</i>
Change to another predefined format	Select a format in the Current Format drop-down list.
Create a custom format	Edit the format's syntax in the Format Code text box.
Show the format in a field when you click in the field in Browse	Turn on "Show data entry format."

Setting a text format

A text format can specify all capital letters, all lowercase letters, or capital letters for the first letter in each word.

If you turn on “Show data entry format” for a text field, the formatted data is stored in the database; otherwise, the data is stored without its format.

- # ■ To set a text format for a field, select the field, click the Format tab in the InfoBox, select Text in the Format Type drop-down list, and set the options in the Format panel.



<i>To</i>	<i>Do this</i>
Change to another predefined format	Select a format in the Current Format drop-down list.
Show the format in a field when you click in the field in Browse, and store the formatted data in the database	Turn on “Show data entry format.”

Editing fields

You can edit fields in these ways:

- Change the basic properties of a field, such as the named style and the data entry type
- Change the font, size, color, and other attributes of data in a field
- Change the border and color properties for a field, and show borders or a text baseline
- Change the wording, text attributes, or position of a field's label
- Slide a field or resize a field's boundaries when you print

You can also move, resize, cut, copy, paste, and delete fields as you can other types of objects. For more information about this, see “Editing objects and text” on page 5-18.



The procedures in this section use the InfoBox. If the InfoBox is not already open, click the Show Info icon, choose Style & Properties from the context-sensitive menu in Design, or double-click the field you want to edit. The InfoBox appears; you can keep it on the screen as you work.

For information about attaching macros to a field, see “Attaching a macro to a field” on page 15-14.

You must be in Design to edit a field.

Changing the basic properties of a field

A field’s basic properties are the field definition, the data entry type, the named style, and whether the field is read-only or non-printing.

- To change the basic properties of a field, select the field, click the Basics tab in the InfoBox, and set the options in the Basics panel.

<i>To</i>	<i>Do this</i>
Change the definition of a database field	Click Field Definition and edit the definition in the dialog box.
Change to another data entry type, such as a drop-down list or a set of radio buttons	Select the data type in the Data Entry Type drop-down list. If a dialog box appears, specify the values.
Change the values used in a drop-down list or a set of checkboxes or radio buttons	Click Define List or Define Buttons and edit the values in the dialog box.
Make a field read-only in the current view	Turn on Read-only.

Continued

<i>To</i>	<i>Do this</i>
Make a field non-printing in the current view	Turn on Non-printing.
Show a non-printing field in Preview	Turn on Show in Preview. (This is available only if Non-printing is on.)
Apply a named style with width, color, and text properties already defined	Select a style in the Named Style drop-down list.

Changing text attributes of data

You can change the font, size, color, text style, text relief, and alignment of data in a field. The fonts available in Approach are the TrueType fonts installed on your system.

Text reliefs give a three-dimensional look to your data. You can use a raised text relief or an indented one.



- To change text attributes of data, select the field, click the Text tab in the InfoBox, and set the options in the Text panel.



<i>To</i>	<i>Do this</i>
Change the font of data	Select a font in the Font Name drop-down list.
Apply boldface, italics, underlining, or strikethrough to data	Select one or more styles in the Style/Effect list.

A text relief works best against a solid gray or colored background.

Continued

<i>To</i>	<i>Do this</i>
Change the font size of data	Type a size in the Size text box or select in the Size drop-down list.
Apply a color to data	Select a color in the Text Color drop-down list.
Apply a raised or indented look to data	Select a relief in the Text Relief drop-down list.
Change the alignment of data to left, center, or right	Select an option under Alignment.

Changing border or color settings for a field

All fields have an interior “fill” area and can also have a border on each side. You can set a fill color for a field’s interior, a width and color for the borders, and a color for a drop shadow.

You can turn on any borders you want, and add a dotted line as a text baseline for data.




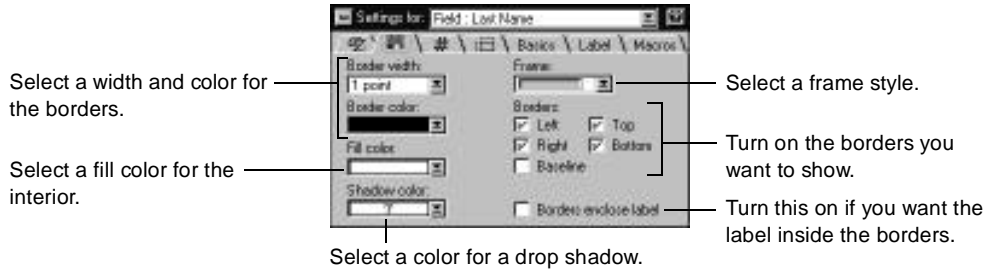
A field can also have a raised or indented frame for a three-dimensional look. If you give a field a frame, all four borders are automatically turned on.



The label for a field can go inside or outside the field’s borders.



- 
 To change border or color settings for a field, select the field, click the Lines and Colors tab in the InfoBox, and set the options in the Lines and Colors panel.



A raised or indented frame works best against a solid gray or colored background.

<i>To</i>	<i>Do this</i>
Change the width of the borders of a field	Select a width in the Border Width drop-down list.
Change the color of the borders of a field	Select a color in the Border Color drop-down palette. Select T for transparent.
Change the fill color of the interior of a field	Select a color in the Fill Color drop-down palette. Select T for transparent.
Give a field a drop shadow	Select a color in the Shadow Color drop-down palette. Select T for transparent (no shadow).
Give a field a dashed, raised, or indented frame	Select a frame style in the Frame drop-down list.
Show borders or a baseline for a field	Turn on options in the Borders area.
Include the field label inside borders	Turn on "Borders enclose label."

Changing the wording, attributes, or position of a label

A *field label* is the descriptive title for a field that you see in Browse. A label is initially set to have the same wording as the field name, but you can edit the label to use any text you want.

A label can be above or below the field's data, or to the left or right of it. You can also remove a label altogether.

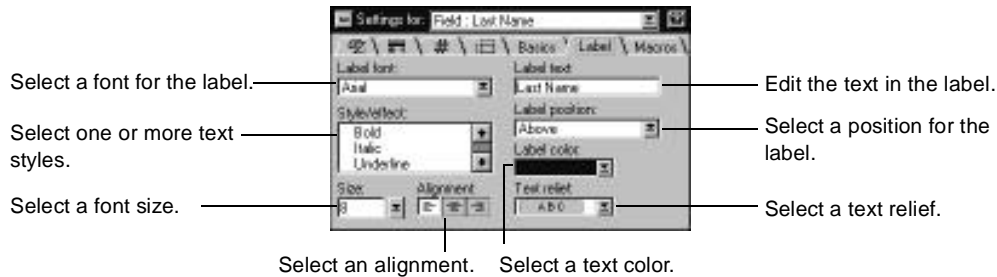
A label doesn't have to be above the data.



If you have a named style with the properties you need, apply the style rather than setting properties manually.

You can also change the font, size, color, text style, text relief, and alignment of a label. The attributes available are the same as they are for data in a field.

- To change the wording, attributes, or position of a label, select the field, click the Label tab in the InfoBox, and set the options in the Label panel.



Alignment applies only to labels that are above or below the data.

<i>To</i>	<i>Do this</i>
Change the font of a label	Select a font in the Label Font drop-down list.
Apply boldface, italics, underlining, or strikethrough to a label	Select one or more styles in the Style/Effect list.
Change the font size of a label	Type a size in the Size text box or select in the Size drop-down list.
Change the alignment of a label to left, center, or right	Select an option in the Alignment area.
Change the wording of a label	Edit the text in the Label Text box.

Continued

<i>To</i>	<i>Do this</i>
Change the position of a label relative to the data	Select a position in the Label Position drop-down list.
Hide a label	Select No Label in the Label Position drop-down list.
Apply a color to a label	Select a color in the Label Color drop-down list.
Apply a raised or indented look to a label	Select a relief in the Text Relief drop-down list.

Sliding or resizing a field when you print

When sliding a field left, you may want to turn off the two fields' borders or show only the bottom border.

Because data in fields can vary in length, you may end up with too much blank space in a view. You can slide fields and reduce their boundaries to eliminate some of the extra space.

If you have two fields next to each other and don't want a gap between the data in them, you can mark the fields to slide left. This moves one field to the left to fill the blank space in the other field. For sliding left to work, you must mark both fields to slide left, and the two fields must be aligned along the bottom.

Reducing a field's boundaries makes the field smaller so that is just large enough for the data in it. (When you slide fields left, Approach automatically reduces the boundaries of the field on the left.)

If fields do not slide left, you may have a gap between data in them.



Sliding left moves the second field left to fill the blank space.




You may also want to reduce the boundaries in the second field.

Sliding is used most often in mailing labels or with memo fields.

You can also slide a field up to fill blank space left by a field above it. The field on the top might be a memo field with a variable amount of data in it. You must mark both fields to slide up.

If a field has more data than it can display, you can also expand the field's boundaries just enough to show the data. If any other fields are under the expanded boundary, they slide down to make room.

Approach slides fields or resizes their boundaries when you preview or print, and in Design if you are showing data.

- 
 To slide or resize a field when you print, select the field, click the Dimensions tab in the InfoBox, and set the options in the Dimensions panel.



If sliding left doesn't seem to work, make sure the two fields are aligned along the bottom.

<i>To</i>	<i>Do this</i>
Slide a field to the left or up over a field with reduced boundaries when you print	Turn on Left or Up in the When Printing, Slide area.
Reduce or expand a field's boundaries to the size of the data when you print	Turn on Reduce or Expand in the When Printing, Boundaries area.

For information about other settings in the Dimensions panel, see “Resizing an object” on page 5-21 and “Moving an object” on page 5-22.

Working with PicturePlus fields

You can add a PicturePlus field to a form, report, form letter, or mailing label to hold a picture, an OLE object, or an image you draw with the mouse in Browse. The graphic appears only in the PicturePlus field in that record. It is part of the record's data, not part of the design of a view.



A PicturePlus field holds a graphic that is part of a record's data.

You can change the width, color, and frame properties of a PicturePlus field, and move, resize, cut, copy, paste, and delete the field as you can other types of objects. For more information about this, see “Editing objects and text” on page 5-18.

You must be in Design to add and edit a PicturePlus field.



Some of the procedures in this section use the InfoBox. If the InfoBox is not already open, click the Show Info icon, choose Style & Properties from the context-sensitive menu in Design, or double-click the field you want to edit. The InfoBox appears; you can keep it on the screen as you work.

Adding a PicturePlus field to a view

You can add a PicturePlus field to a view using either the Add Field dialog box or the PicturePlus tool.

A PicturePlus field specifies a fixed area for the graphic in it; Approach can shrink, crop, or stretch the graphic to fit in the area. If you add a PicturePlus field using the Add Field dialog box, the field is a predefined size and shape. If you add the field using the PicturePlus tool, you drag to define the area for the field. You can resize a PicturePlus field as you can other types of objects.

This section describes how to use the PicturePlus tool. For information about the Add Field dialog box, see “Adding a field to a form, report, or mailing label” on page 6-1.

To add a PicturePlus field to a view:



1. In Design, click the PicturePlus icon or choose PicturePlus from the Create Drawing submenu.

The PicturePlus icon is in the Tools palette.

2. Drag diagonally to draw the PicturePlus field.

The InfoBox shows the settings for the new field. So far, the field is based on the first PicturePlus field listed in the InfoBox.

Select a PicturePlus field in the database.

Click here if you need to define a new field.



If you need to define a new field, click Field Definition and use the dialog box that appears.

3. Select the PicturePlus field you want in the Field list.

If the field you want is in a different joined database, select the database in the drop-down list above the Field list.

Changing the basic properties of a PicturePlus field

The basic properties of a PicturePlus field are the named style and whether the field is read-only or non-printing.

- To change the basic properties of a PicturePlus field, select the field, click the Basics tab in the InfoBox, and set the options in the Basics panel.



Turn these on to make the field read-only or non-printing.

Select a named style with predefined properties.

If you draw in a PicturePlus field, the drawn image appears on top of any graphic in the field.

<i>To</i>	<i>Do this</i>
Make a field read-only in the current view	Turn on Read-only.
Allow drawing with the mouse in a field in Browse	Turn on "Allow drawing." (This is available only if Read-only is off.)
Make a field non-printing in the current view	Turn on Non-printing.
Show a non-printing field in Preview	Turn on Show in Preview. (This is available only if Non-printing is on.)
Apply a named style with width, color, and PicturePlus properties already defined	Select a style in the Named Style drop-down list.

Changing display options for a PicturePlus field

A PicturePlus field is a fixed size. When you insert a graphic that is too large for the field, Approach can either crop the graphic or shrink it. When you insert a graphic that is too small, Approach can either leave the graphic as it is or stretch it to fill the field.

- To change display options for a PicturePlus field, select the field, click the Options tab in the InfoBox, and set the options in the Options panel.



To	Do this
Change the position of a picture in a field	Drag the image in the PicturePlus Data Position area.
Crop or shrink a picture that is too large for a field	Select "Crop it" or "Shrink it."
Stretch a picture that is too small for a field	Turn on "Stretch if too small."

Changing the data entry order for fields

When you enter data in Browse, you can press **TAB** to move through the fields of a record. (You can also press **ENTER** to tab through fields if your Preferences are set this way.) The order in which you move through fields is the *data entry order*.

Radio buttons and checkboxes each have a separate position in the data entry order. If your view has any macro buttons, they are also included in the order.

Approach initially sets the data entry order to be the order in which fields (and macro buttons) were added to a view, but you can change the order whenever you want. You can change the order of a few items or reorder all the items.

To change the data entry order of a few items:

1. In Design, choose Show Data Entry Order from the View menu. Numbered squares show the data entry position of each field, radio button, checkbox, and macro button.

Edit a number, or double-click the border of a square to delete the numbers and start over.

2. Edit numbers in the squares to change the order. When you edit the number in one square, Approach rennumbers the rest of the squares as soon as you click in another square.

To change the data entry order of all items:

1. In Design, choose Show Data Entry Order from the View menu.
2. Move the I-beam cursor over the border of a numbered square and double-click. The numbers are deleted from all of the squares.
3. Click in the squares in the order you want to tab through fields. Numbers appear in the squares as you click in them.

7

Designing Forms and Repeating Panels

A *form* is a view that shows one record at a time. Forms are often used for entering and editing data. If an Approach file uses data from joined databases, you can put a *repeating panel* on a form to show data from detail records that are related to the form's main record.

This chapter describes how to create forms with and without repeating panels, how to add repeating panels to existing forms, and how to modify repeating panels. At the end of the chapter you'll find examples of forms and steps for creating them.



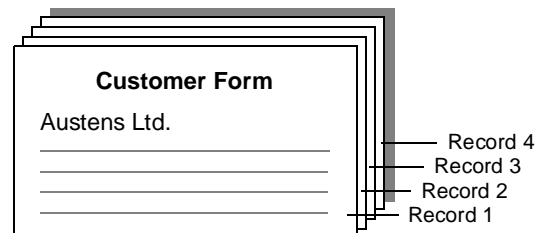
Most of the instructions in this chapter require you to be in Design. To go to Design, click the Design icon or choose Design from the View menu or from the environment pop-up menu in the status bar.

You can modify the design of forms as you can other types of views. For example, you can rearrange fields, assign macros, and change color properties in a form. For information about editing views, see Chapter 5, "Working in Design," and Chapter 6, "Adding and Editing Fields in a View."

About forms

You can use forms to enter and edit records and to browse through a database one record at a time. For example, you might use a form to maintain information about your customers. The form would show data for one customer record at a time.

In a customer form, you see one customer record at a time.



When you print a form, each printed page shows one record.

If you're using only one database in the current Approach file, a form displays each record from that database. This is the simplest case of a form.

The data in this form comes from one customer database.

A screenshot of a form titled "Customer Form". The form contains the following fields and data:

Company	
Austara Ltd.	
Address	
12 Christopher Street	
City	County/State
London	Wiltshire
Contact	
Emma Woodhouse	

If you have joined databases in the Approach file, you can use data from any of those databases in a form. One of the databases must be the *main database* for the form. A form displays each record from its main database and is said to be "based on" this database. Other joined databases that provide related information for a form are the form's *detail databases*.

For example, consider an employee form that shows a record for each employee. The main database is an employee database, and the form also has related department and manager information from detail databases.

This form is based on an employee database. It shows records from that database.

The department and manager data come from related records in detail databases.

A screenshot of a form titled "Employee Form". The form contains the following fields and data:

First Name	Last Name	ID
Keng	Wu	21
Confidential		
Position	Salary Level	Date of Hire
Senior Accountant	04	4/12/90
Department	Dept ID	Review History
Cost Accounting	332	
Location		Last reviewed on 1/1/93; promoted from Staff Accountant. Semi-annual reviews from 90 through 92.
Hampton Plaza, 2nd Floor, MS-90		
Manager	Mgr ID	
Wills	74	

To see steps for creating a similar employee form, turn to "Example 1: Designing a form that looks up joined data" on page 7-17.

About repeating panels

If you want to show data from a *one-to-many* join in a form, you can use a repeating panel. In a one-to-many join, one record in a database is related to two or more records in a joined database. The repeating panel shows the “many” records that are related to the form’s main record.

For example, one department can have many employees. To list the employees for each department, you set up a form based on a department database and then give the form a repeating panel for the employees. The panel lists all the employees in the department (employees with the same department ID as the department).

Like a form, a repeating panel must have a main database that provides the framework of records; this database is one of the detail databases for the form. Each line in the panel displays a record from its main database. (A repeating panel can also have fields from other databases for additional, detail information.) The records in the panel all have the same value in the *join field* as the form’s main record.

In a department form, the repeating panel is based on an employee database. The join field is a department ID in both databases.

This form is based on a department database.

The repeating panel is based on an employee database. Each line is a record in that database.

Department Form

Department Name Cost Accounting	ID 332	Location Hampton Plaza, 2nd Floor, MS-50
Notes Cost Accounting is currently part of the company's Operations division, and the Comptroller reports to the Vice President of Operations. Beginning this year, the Vice President will present a statement on the department's activities to the Board at the end of each fiscal year.		
Employees in This Department		
Joann Wilis	Comptroller	+
Keng Wu	Senior Accountant	+
Jean-Pierre Renault	Associate	+
Maria Lopez y Garcia	Systems Analyst	+
Number of Employees in Department: 5		

The employees listed in the panel have 332 in their department ID field.

If you change from a form with a repeating panel to a report that has the same main database as the panel, the report shows only the set of records that were in the repeating panel. For example, if you change to an employee report from the department form above, the report will show only employees in the Cost Accounting department. You can click the Show All icon to see all the records in a report.

If you use a repeating panel to display records from a database that is joined on a calculated field, be aware that the value in the join field can change because of a recalculation. If the value in a record's calculated field no longer matches the form's join value, the record will disappear from the repeating panel. (This does not affect the record itself, only whether it appears in the panel.)

To see steps for creating a similar department form, turn to "Example 2: Designing a form with a repeating panel" on page 7-19.

Creating a form

The Approach Form Assistant guides you as you create new forms. You use the Assistant to apply styles and layouts to a new form and to specify which fields go on the form. If the form has a repeating panel, you also use the Form Assistant to add fields for the panel.

A predefined *SmartMaster style* gives a form a set of InfoBox properties, such as background color, text attributes, and specifications for field borders. You can apply a SmartMaster style to a new form, or you can use your own default style.

You can drag fields and repeating panels to rearrange them after creating a form.

The two basic *SmartMaster layouts* are Standard and Columnar. In the Standard layout, fields are added to the form horizontally from left to right; in the Columnar layout, fields are added vertically from top to bottom. In both layouts, the fields are added in the order you list them in the Fields panel of the Assistant.

In a new form, fields are laid out in the order they are listed in the Form Assistant.

Standard layout arranges the fields horizontally.

Columnar layout arranges the fields vertically.

If your Approach file uses joined databases, you can include a repeating panel with the Standard layout. The panel appears at the bottom of the form, under the fields for the main record. Approach gives the panel as many lines as will fit comfortably on the form. You can change the number of lines in the repeating panel's InfoBox.

If you want to show more records than will fit nicely in a form with a repeating panel, consider creating a repeating panel report instead.

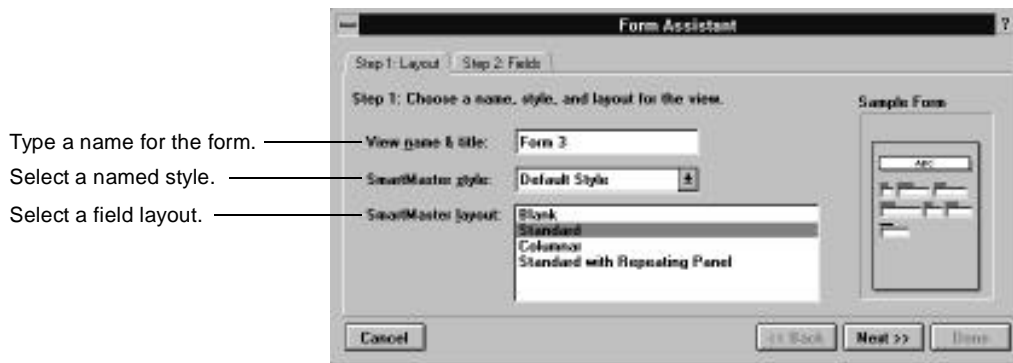
A new repeating panel does not have any field labels, but you can add labels after creating the form. For information about this, see “Adding labels to a repeating panel” on page 7-9.

You can also create a blank form, with no fields or repeating panel.

To create a form:

1. Choose Form from the Create menu.

The Form Assistant appears.



Type a name for the form.

Select a named style.

Select a field layout.

To go to the other panels in the Form Assistant, you can either click tabs or click the Back and Next buttons.

2. Type a name for the form in the View Name & Title text box.

A new form automatically has the name *Form* and a number; you can use any name you want, up to 30 characters. The name appears at the top of the form and on the form’s view tab.

3. Select the default style or a SmartMaster style in the SmartMaster Style drop-down list.

The styles set properties such as background color for the form and text attributes for data and field labels.

The default style is specified in the Display panel of the Preferences dialog box. The SmartMaster styles are provided by Approach.

4. Select a field layout in the SmartMaster Layout list.

A new form can have a Standard or Columnar layout, or it can be blank. If the Approach file uses joined databases, a form can also be Standard with Repeating Panel.

When you select a style or a layout, the sample form on the right side of the Assistant shows an approximation of it.

If a predefined layout isn’t quite what you need, you can easily fine-tune the layout after creating the form.

- Click the Fields tab and add the fields you want to show in the form.

When you click the tab, the Fields panel appears.

Add the fields for the main part of the form.



To add a field to the Fields to Place on View list, select the field name in the Database Fields list and click Add, or double-click the name. If you want to add a field from a different joined database, select the database in the drop-down list. Approach displays the fields in the form in the order they appear in the Form Assistant.

To remove a field from the Fields to Place on View list, select the field name in the list and click Remove, or double-click the name.

- If you're creating a form with a repeating panel, click the Panel tab and add the fields you want for the panel.

The Panel tab appears in the Form Assistant if you selected the layout with a repeating panel.

Add the fields for the repeating panel.



You can change the main database of a form or repeating panel in the Basics panel of the InfoBox.

To add a field to the Fields to Place in Panel list, select the field name in the Database Fields list and click Add, or double-click the name. If you want to add a field from a different joined database, select the database in the drop-down list. Approach will display the fields in the panel in the order they appear in the Assistant.

The first database you add a field from will be the default main database for the panel. The panel must be based on one of the detail databases for the form.

To remove a field from the Fields to Place in Panel list, select the field name in the list and click Remove, or double-click the name.

7. Click Done.

The Define Main Database dialog box appears if you select fields from more than one joined database in the Fields panel. Otherwise, Approach displays the new form.

8. If the Define Main Database dialog box appears, select a database in the Main Database drop-down list and click OK.

Select a main database for the form.



Adding a repeating panel to an existing form

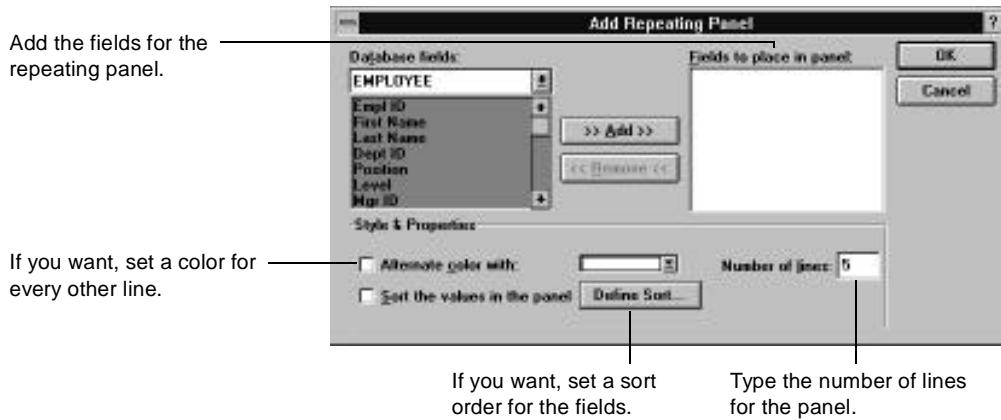
In addition to creating a repeating panel with the Form Assistant, you can add a panel to a form after creating the form. When you add a panel to an existing form, you can specify the number of lines in the panel, an alternating background color for lines, and a sort order for records in the panel.

A new repeating panel does not have any field labels, but you can add labels after creating the form. For information about this, see “Adding labels to a repeating panel” on page 7-9.

To add a repeating panel to an existing form:

1. In Design, click where you want the repeating panel on the form.
The upper-left corner of the panel will be where you click.
2. Choose Repeating Panel from the Create menu.
The Approach file must have joined database files for this command to be available.

The Add Repeating Panel dialog box appears.



Add the fields for the repeating panel.

If you want, set a color for every other line.

If you want, set a sort order for the fields.

Type the number of lines for the panel.

3. Add the fields you want in the repeating panel to the Fields to Place in Panel list.

To add a field to the Fields to Place in Panel list, select the field name in the Database Fields list and click Add, or double-click the name. If you want to add a field from a different joined database, select the database in the drop-down list. Approach displays the fields in the panel in the order they appear in the Form Assistant.

The first database you add a field from will be the default main database for the panel. The panel must be based on one of the detail databases for the form.

To remove a field from the Fields to Place in Panel list, select the field name in the list and click Remove, or double-click the name.

4. To use a background color in every other line of the panel, turn on “Alternate color with” and select a color in the drop-down palette.

You can change the main database of a form or repeating panel in the Basics panel of the InfoBox.

An alternating color can make it easier to distinguish lines in a repeating panel.

The lines without the color are transparent and appear in the background color of the form.

- To set a sort order for the records in the panel, turn on “Sort the values in the panel,” click Define Sort, specify the order in the dialog box that appears, and click OK.

For example, you may want to sort the records to list employees in alphabetical order by last name.

When you click Define Sort, the Sort dialog box appears. For information about this dialog box, see “Sorting records by data in fields” on page 11-14. When you click OK, you return to Add Repeating Panel.

- Type the number of lines for the panel in the Number of Lines text box.

Use the number of matching records you want displayed at one time. You can show up to 30 lines in a repeating panel.

- Click OK.

The new repeating panel appears where you clicked in the form.

You don't need to show as many lines as you have records. Approach adds a scroll bar if necessary.

Adding labels to a repeating panel

When you create a repeating panel with the Form Assistant or the Add Repeating Panel dialog box, the new panel does not have field labels. You may want to add labels to make it easier to enter and identify data in the panel in Browse.

The fields in a repeating panel are initially laid out in a row. You can add the labels you want above the fields.

Put the labels above the fields.

Customer	Order #	Date	Qty
Miramar Kitchens Catering	53	3/18/94	7
Barcelona Cafe	72	3/21/94	12
Majolica Quicherie	89	4/12/94	19
Sara's Home Cooking	91	4/18/94	4

To add labels to a repeating panel:

- In Design, use the Text tool to type the labels above the fields and outside the borders of the panel.

Click the Text icon in the default Design icon bar or choose Text from the Create Drawing submenu to select the tool.

If you're adding more than one label, double-click the icon. The icon will stay selected until you select a different one.



If you plan to move the panel, group the labels together after arranging them.

2. Select the labels and align them along the bottoms.
For information about working with multiple objects, see “Working with more than one object at a time” on page 5-32.

Modifying a repeating panel

You can modify a repeating panel in these ways:

- Change the basic characteristics of a panel, such as the main database, the named style, and the number of lines
- Change the line and color settings for a panel, including adding a background color to every other line
- Resize a panel
- Add more fields to a panel
- Rearrange fields in a panel
- Summarize data for records in a panel

You can also move, cut, copy, paste, and delete panels and their fields as you can other types of design objects. For more information, see “Editing objects and text” on page 5-18.



Some of the procedures in this section use the InfoBox. If the InfoBox is not already open, click the InfoBox icon, choose Style & Properties from the context-sensitive menu, or double-click an object. The InfoBox appears, and you can keep it on the screen as you work.

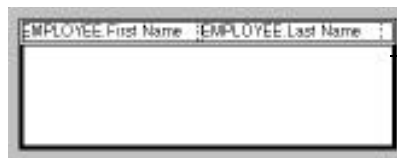
You must be in Design to modify a repeating panel.

You can also modify forms as you can other types of views. For example, you can change the main database, apply a color to the background, and resize the page margins. For information about this, see “Editing views” on page 5-35.

Selecting a repeating panel

Before you can modify a repeating panel, you sometimes need to select the panel in Design. Be careful to select the panel itself and not one of the fields inside it.

A repeating panel has a dark border around it when it is selected.



A selected panel has a black border.

- To select a repeating panel, click in any part of the panel except for the top line.
If you click in the top line of the panel, you select a field rather than the entire panel.

Changing the basic properties of a repeating panel

The basic properties of a repeating panel are its main database, a sort order for records, the named style, and the number of lines that display. These properties are stored in the panel's InfoBox.

A main database provides a framework of records for a repeating panel. Each line in the panel is a record from the main database.

You can sort records in a repeating panel just as you can sort records in a view. For information about the Sort dialog box, see "Sorting records by data in fields" on page 11-14.

- To change the basic properties of a repeating panel, select the panel, click the Basics tab in the InfoBox, and set the options in the Basics panel.



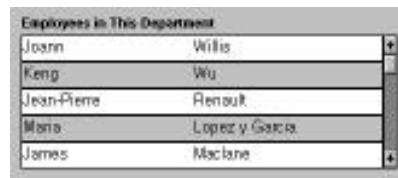
You don't need to show as many lines as you have records. Approach adds a scroll bar if necessary.

<i>To</i>	<i>Do this</i>
Change to a different main database	Select a database in the Main Database drop-down list.
Apply a sort order to records in a panel	Turn on "Sort panel values," click Define Sort, and specify the sort order in the dialog box.
Apply a named style with line and color properties already defined	Select a style in the Named Style drop-down list.
Change the number of visible lines in a panel	Type the number in the Number of Lines text box.

Changing line or color settings for a repeating panel

Like most other design objects, a repeating panel has borders and an interior fill area. You can set a line width and color for the borders between lines and around the outside of the panel, and a fill color for the background of the interior. You can also apply a three-dimensional frame to each line and a drop shadow to the entire panel. The sets of colors include several patterns for each color.

You can apply the fill color to every other line in a repeating panel to make it easier to distinguish individual lines in Browse, especially if the panel has many lines. The lines that do not use the fill color are transparent and appear in the background color of the form.



You can alternate a fill color in a repeating panel. The fill color for this panel is white.



- To change line or color settings for a repeating panel, select the panel, click the Lines and Colors tab in the InfoBox, and set the options in the Lines and Colors panel.

Select a width and color for the borders.

Select a fill color for the interior of the panel.

Select a color for a drop shadow.

Select a three-dimensional frame for the lines.

Turn on the outside borders you want.

Turn this on to apply the fill color to every other line.

The border width and color apply to outside borders and borders between lines.

To	Do this
Change the width of borders in a panel	Select a width in the Border Width drop-down list.
Change the color or pattern of borders in a panel	Select a color or pattern in the Border Color drop-down palette. Select T for transparent.
Change the fill color or pattern of the interior of a panel	Select a color or pattern in the Fill Color drop-down palette. Select T for transparent.

Continued

When you alternate a fill color, the lines without the color are transparent.

<i>To</i>	<i>Do this</i>
Give a panel a drop shadow	Select a color or pattern in the Shadow Color drop-down palette. Select T for transparent.
Give the lines in a panel a raised or indented frame	Select a frame style in the Frame drop-down list.
Show outside borders around a panel	Turn on options in the Borders area.
Show the current fill color or pattern in every other line of a panel	Turn on "Alternate fill color."

Resizing a repeating panel

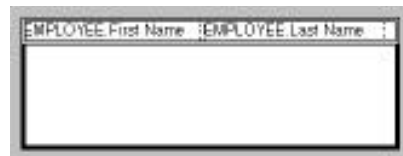
You may need to resize a panel horizontally when adding or deleting a field in it. Resize a panel vertically to change the height of lines.

You can resize a repeating panel horizontally or vertically.

Resizing a repeating panel horizontally changes the width of only the panel and not the fields in it. If you're making a panel more narrow, be sure that the fields are still inside the borders of the panel.

Resizing a panel vertically changes the height of lines in the panel. It does not change the number of lines and does not affect the size of the fields or the data in them. If you want to change the number of lines, use the Basics panel in the InfoBox.

When resizing a repeating panel, you select and drag only the top line of the panel. (The line has a border around it when selected.) Dragging the entire panel moves the panel rather than resizing it.



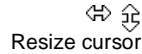
The top line of a repeating panel has a gray border when the panel is selected.

To resize a repeating panel:

1. Select the panel by clicking in any part of it except for the top line.

If you click in the top line of the panel, you select a field rather than the entire panel.

2. Drag the gray border of the top line in the panel.



When you point on a gray border, the pointer turns into a resize cursor to show that it is properly positioned for resizing.

If you drag the black border of the main part of the panel rather than the gray line border, you move the panel rather than resizing it.

Adding a field to a repeating panel

You can add more fields to a repeating panel. A new field must be entirely inside the borders of the panel and in the top line along with the other fields.



Put a new field inside the panel's borders and in the top line of the panel.

If a field does not repeat in a panel in Browse, go back to Design and move the panel. If the field does not move with it, the field is not inside the panel and in the top line.

To accommodate additional fields in a repeating panel, you may need to make the panel larger or make existing fields in the panel smaller.

A new field takes the field style properties associated with the repeating panel. For example, a field is usually transparent, with its label and borders hidden.

You can add a field by dragging it from the Add Field dialog box or by drawing with the Field tool. This section describes how to use the dialog box. For information about the Field tool, see “Adding a field to a form, report, or mailing label” on page 6-1.

To add a field to a repeating panel:

1. Choose Add Field from the Panel or Form menu.



If the Add Field icon appears in an icon bar, you can click it instead of choosing the command. You add icons to the icon bars using the SmartIcons command in the Tools menu.

The Add Field dialog box appears, showing the fields defined for databases used in the Approach file.

2. Drag the database field you want from the Add Field dialog box to the repeating panel.
3. Move and resize the new field or the repeating panel so that the field fits inside the borders of the repeating panel and in the top line of the panel.

You may find it easier to work with field names showing in Design when adding fields to a panel.

Rearranging fields in a repeating panel

A repeating panel is initially laid out with the fields for each record all in a row. You can rearrange the fields to stack or stagger them any way you want inside their line in the panel. This sometimes makes each line look like a small form.

When you rearrange the fields in a repeating panel, you'll probably want to show field labels inside the panel rather than above it. Usually, the labels go on the left side of the field.

You can rearrange the fields inside a line of a repeating panel.

First Name	Joern	Last Name	Wills
Position	Comptroller	Extension	4662
First Name	Kang	Last Name	Wu
Position	Senior Accountant	Extension	7162
First Name	Jean-Pierre	Last Name	Reneault
Position	Associate	Extension	5890

Show each label with its field rather than at the top of the panel.

The field labels appear in Browse in rows that contain data. In blank rows, the labels appear when you click in the row.

Be sure you're showing borders between lines to separate the lines of the panel visually. Use the Lines and Colors panel in the repeating panel's InfoBox to turn on a border color.

To rearrange fields in a repeating panel:

1. Resize the panel to make the lines tall enough and wide enough to accommodate the fields.

For details, see "Resizing a repeating panel" on page 7-13.

2. If you want field labels to appear inside the lines of the panel, show the label for each field.

Use the Label Position drop-down list in the Label panel of the field's InfoBox.

3. Drag the fields to the layout you want.

Summarizing data for records in a repeating panel

You can add a calculated field to a form to show a total, average, count, or other summary on data in a repeating panel. For example, if you have a panel that lists all the invoices for a customer, you might use a calculated field to show the total sales for the customer's invoices. Or if a panel lists all the employees in a department, a calculated field can show the total number of employees in the department.

A summary on data in a repeating panel is calculated in Browse and Preview, and in Design if you're showing data rather than field names.

To see an example of a form that summarizes data in a panel, turn to "Example 2: Designing a form with a repeating panel" on page 7-19.

To summarize data for records in a repeating panel:

1. Define a calculated field with a summary functions for the repeating panel.

In the Define Formula panel of the Field Definition dialog box, enter a summary function and use a field from the repeating panel as the parameter; for example, SSum(Invoice_Number).

In the Define Summary panel, select "Summary of all records in *database*," where *database* is the name of the main database for the panel; for example, "Summary of all records in INVOICE."

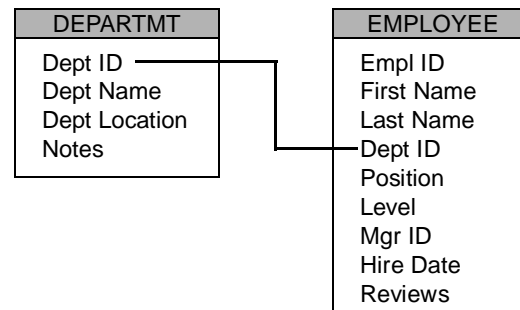
For more information about formulas, see "Setting up a formula for a calculated field" on page 3-8.

2. Add the calculated field to the form with the repeating panel.
Place the field outside the panel, on the form.

Creating sample forms

This section gives examples of forms you can create in an Approach file with two joined databases. The databases store information about departments and employees in a company, and they are joined on a department ID field. Departments and employees with the same value in the department ID field are related.

The department and employee databases are joined on a department ID field.



Because one department can have more than one employee, the relationship from a department record to employee records is one-to-many. The relationship from employee records to a department record is many-to-one.

The first sample form shows information about each employee. When you type the employee's department ID in the form, the name and location of the appropriate department appear automatically. This automatic display of information is sometimes called a *lookup*. Many-to-one relationships are often set up as lookups in a form, to provide a convenient means of retrieving data from the "one" record.

The second sample form shows information about each department. A repeating panel on the form lists all the employees in the current department. Using a repeating panel is the best way to display the "many" records from a one-to-many relationship.

For more information about a department and employee join, see "About joined databases" on page 4-1.

If you want to design the forms in this section, set up department and employee databases with the fields shown above.

**Example 1:
Designing a form
that looks up joined
data**

A form can show data from any databases joined in the Approach file. One database must be the main database for the form, and the others are detail databases. A form shows data from one record at a time in its main database.

The employee form in this example is based on an employee database, but has detail information from a department database.

The join field is stored in both databases. The one from the main database is used on the form.

The screenshot shows a form titled "Employee Form" with the following fields and values:

First Name	Last Name
John	PAES
Position	
Controller	
Dept ID	Dept Name
332	Cost Accounting
Dept Location	
Hampton Plaza, 2nd Floor, MS-50	

This data is from the employee database (the main database).

This data is from the department database.

This form provides a lookup to data in the department database. When you type in the department ID field, the rest of the information about the department with that ID appears automatically.

Although the ID field is stored in both databases, for the lookup to work properly the form must use the ID field in its main database (employee). The fields with the lookup data come from the detail database (department).

To design a form that looks up joined data:

1. Create or open an Approach file that has a department database joined to an employee database on a department ID field.
2. Choose Form from the Create menu and create an employee form with related department data.

In the Layout panel of the Form Assistant, type the name Employee Form and select the Standard form layout.

In the Fields panel, add the fields First Name, Last Name, Position, and Dept ID from the employee database. Then add the fields Dept Name and Dept Location from the department database.

When you click Done in the Form Assistant, the Define Main Database dialog box appears because you selected fields from more than one database in the Fields panel.

3. In the Define Main Database dialog box, leave the employee database selected as the main database.

The new form appears when you click OK. If you're showing data in Design, you see data from the form's first record.

The employee database is preset to be the main database because you selected fields from it first.

The fields are arranged in rows, in the order you added them in the Form Assistant.

First Name	Last Name	Position	Dept ID
Joan	Wells	Controller	332
Dept Name	Dept Location		
Cost Accounting	Hempden Plaza, 2nd Floor		

The name you typed appears at the top of the form and in the view tab.



4. Go to Design, and arrange and format the fields and other objects the way you want them.

To move an object, select the object and drag it by its border. To resize an object, select the object and drag one of its handles.

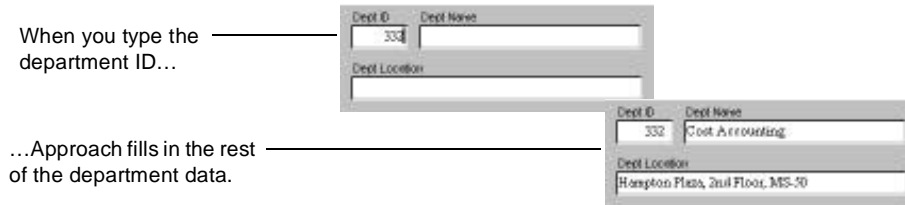
To change the label, text attributes, three-dimensional frame, or other properties of an object, use the object's InfoBox.

Look at the figure on page 7-17 for a suggestion on how to style the form.



5. Return to Browse, and enter an employee's name, position, and department ID in a new record to see the lookup.

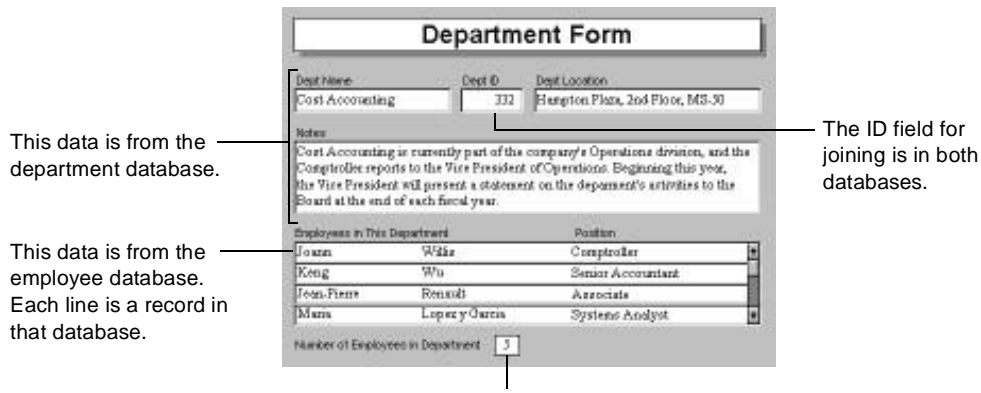
When you tab or click outside the department ID field, Approach “looks through” the detail (department) database for a record with that ID and displays data from the record.



**Example 2:
Designing a form
with a repeating
panel**

Approach can display records from the “many” side of a one-to-many join in a repeating panel. This example uses a department form based on a department database and a repeating panel based on an employee database.

The panel lists all the employees in the current department (that is, all employees with the same value in the department ID field as the department). Each line in the repeating panel is a record from the employee database.



A calculated field counts the records in the panel.

Although the ID field is stored in both databases, for the repeating panel to work properly the form must use the ID field that is stored in the department database.

The form also has a calculated field that counts the number of employees in the department.

To design a form with a repeating panel:

1. Create or open an Approach file that has a department database joined to an employee database on a department ID field.
2. Choose Form from the Create menu and create a department form with a repeating panel for employees.

In the Layout panel of the Form Assistant, type the name Department Form and select the layout Standard with Repeating Panel.

In the Fields panel, add the fields Dept Name, Dept ID, Dept Location, and Notes from the department database.

In the Panel panel, add the fields First Name, Last Name, and Position from the employee database.

When you click Done in the Form Assistant, the new form appears.

The name you typed appears at the top of the form and in the view tab.

The fields are arranged in rows, in the order you added them in the Form Assistant.

The repeating panel appears at the bottom of the form.

Department Form			
Dept Name	Dept ID	Dept Location	Notes
Cost Accounting	332	Hampton Plaza, 2nd Floor	Cost Accounting is currently po
Joann	Willis	Comptroller	
King	Wu	Senior Accountant	
Jean-Pierre	Renault	Associate	
Maria	Lopez y Garcia	Systems Analyst	
James	Maclane	Staff Accountant	



3. Go to Design, and type the labels Employees in This Department and Position above the repeating panel.
Click the Text icon in the Tools palette, click where you want the text, and type.
4. Change the number of lines showing in the repeating panel to 4.
This setting is in the Basics panel of the repeating panel's InfoBox. Double-click the border of the repeating panel to open the InfoBox, or just click the border if the box is already open.
5. Arrange and format the fields and other objects the way you want them.

To move an object, select the object and drag it by its border. To resize an object, select the object and drag one of its handles.

Look at the figure on page 7-20 for a suggestion on how to style the form.

To change the label, text attributes, three-dimensional frames, or other properties of an object, use the object's InfoBox.

6. Choose Field Definition from the Create menu, and define a calculated field with a summary function that counts the number of employees in the department.

In the Define Formula panel of the Field Definition dialog box, enter the formula `SCount(EMPLOYEE."Last Name")`.

In the Define Summary panel, select "Summary of all records in EMPLOYEE" in the Summarize On drop-down list. This tells Approach to count all the records from the employee database. (Because of the join on the department ID, the function counts only the records that appear in the panel.)

For instructions on how to define a formula, see "Setting up a formula for a calculated field" on page 3-8.

When you click OK, the Add Field dialog box.

7. Add the calculated field to the form, right under the repeating panel.

Drag the field from the Add Field dialog box to the form.

8. Type the label Number of Employees in Department and place it to the left of the field.

The label settings are in the Label panel of the field's InfoBox.



9. Return to Browse to use the form.

8

Designing Reports

A *report* is a view that shows data from multiple records on a single page. Reports can display field data, summary information, or a combination of the two. When you display field data, it's located in the body of a report, where you can view or edit it in Browse. Summary information is located in a *summary panel*, which you create in Design and view in Preview or in Design if data is showing.

This chapter describes how to create reports, how to use a summary panel to summarize data, and how to change the format of a report. At the end of the chapter you'll find information about an exciting new Approach feature: PowerClick reporting. PowerClick reporting gives you a fast and easy way to sort, group, and calculate data. It also allows you to see how your report will look as you design it.



Most of the instructions in this chapter require you to be in Design. To go to Design, click the Design icon, or choose Design from the View menu or from the environment pop-up menu in the status bar.

You can modify reports as you can other types of views. For example, you can rearrange fields, assign macros, and change color properties in a report. For information about modifying views and fields in views, see Chapter 5, “Working in Design.”

About reports

You can use Approach reports for a variety of different purposes: to enter and edit data, to view or print multiple records on the same page, and to organize and summarize data.

Reports can show data from database fields, summary information that is calculated from selected field data, or both. Database fields appear in the body of the report. You can view and edit them in Browse. Summary information appears in special summary panels.

You can view summary information only in Preview (or in Design when you have Show Data turned on). Summary information cannot be edited. You can however, search and sort on it.

Approach gives you a great deal of flexibility when you design reports. For example, you might have a report that allows quick data entry of sales records in a columnar format. This type of report shows only database fields.

Database records

Product	Sales Rep	Amount
90 Cabernet	Lindsay	3,000
90 Merlot	Wu	2,000
90 Zinfandel	Renault	1,200
90 Merlot	Washington	1,500
90 Cabernet	McLane	2,200
90 Zinfandel	Watanabe	1,000

A second report might summarize those same sales records by product, showing a combination of database records and totals.

Database records

Product	Sales Rep	Amount
90 Cabernet		
	Lindsay	3,000
	McLane	2,200
	Subtotal	5,200
90 Merlot		
	Washington	1,500
	Wu	2,000
	Subtotal	3,500
90 Zinfandel		
	Watanabe	1,000
	Renault	1,200
	Subtotal	2,200
	Grand Total	10,900

Totals

A third report might show only subtotals and a grand total for the same sales records.

Subtotals

Product	Amount
90 Cabernet	5,200
90 Merlot	3,500
90 Zinfandel	2,200
Grand Total	10,900

Creating a report

The Approach Report Assistant steps you through creating a report. You use the Report Assistant to give the new report a name, a SmartMaster style, and a SmartMaster layout. You also select the fields that appear on the report, and if the report contains summary information, you define the summary groupings and calculations.

A SmartMaster style gives a report a set of InfoBox properties, such as background color, text attributes, and specifications for field borders and frames. Approach provides predefined SmartMaster styles for reports.

The SmartMaster layouts determine where fields and summary information appear in a report. You can use any of the SmartMaster layouts just as they are, or use the SmartMaster layout as a starting point and design your own custom report.

The first SmartMaster layout creates a blank report, without any fields. You might use this SmartMaster layout when you intend to create a custom report and want to start with a blank slate.

The next two SmartMaster layouts, Standard and Columnar, display only database field information. A standard report displays each field in its own row. You might use a standard report to group database fields together into mini-data entry forms.

Standard report

Record 1

Record 2

Product: 90 Cabernet
Sales Rep: Lindsay
Amount: 3,000
Product: 90 Merlot
Sales Rep: Wu
Amount: 2,000

Each field is in its own row.

8-4 User's Guide

A columnar report displays each field in its own column and each record in its own row. You might use a columnar report for quick data entry or editing. This type of report is also a good starting point for adding subtotals and a grand total.

Columnar report

Product	Sales Rep	Amount
90 Cabernet	Lindsay	3,000
90 Merlot	Wu	2,000

Record 1

Record 2

Each field is in its own column.

The next two SmartMaster layouts, Leading Grouped Summary and Trailing Grouped Summary, show a combination of database fields in columns (like a columnar report) with the addition of subtotals (where appropriate) and a grand summary at the end of the report.

Product	Sales Rep	Amount
90 Cabernet	Lindsay	3,000
	McLane	2,200
	Subtotal	5,200
90 Merlot	Washington	1,500
	Wu	2,000
	Subtotal	3,500
	Grand Total	8,700

Leading summary

Product	Sales Rep	Amount
	Lindsay	3,000
	McLane	2,200
90 Cabernet		5,200
	Washington	1,500
	Wu	2,000
90 Merlot		3,500
	Grand Total	8,700

Trailing summary

Grand summary

The sixth SmartMaster report layout, Columnar with Grand Summary, also shows a combination of database fields in columns (like a columnar report) with the addition of a grand summary at the end of the report.

Product	Sales Rep	Amount
90 Cabernet	Lindsay	3,000
90 Merlot	Wu	2,000
90 Merlot	Washington	1,500
90 Cabernet	McLane	2,200
	Grand Total	8,700

Grand summary

The seventh SmartMaster layout, Summary Only, creates a summary-only report that displays a single column of summary data and a grand summary at the end.

Summaries	Product 90 Cabernet	5,200
	Product 90 Merlot	3,500
Grand summary	Grand Total	8,700

The final SmartMaster layout, Repeating Panel, creates a report that is very similar to the repeating panel you can create in a form (see “About repeating panels” on page 7-3). This SmartMaster layout is available only when you’re working with joined databases and allows you to display data from a “one-to-many” relationship in the same report.

In appearance, the Repeating Panel report is very similar to a leading summary report. However, in a repeating panel report, the leading summary field comes from the database representing the “one” side of a “one-to-many” relationship. The bulk of the report shows the “many” records that are related to the “one” record in the leading summary.

Product	Invoice	Date	Amount
90 Cabernet	1002	5/16/94	3,000
	1003	5/20/94	2,200
	Total		5,200
90 Merlot	1005	7/23/94	1,500
	1006	8/27/94	2,000
	Total		3,500
Grand Total			8,700

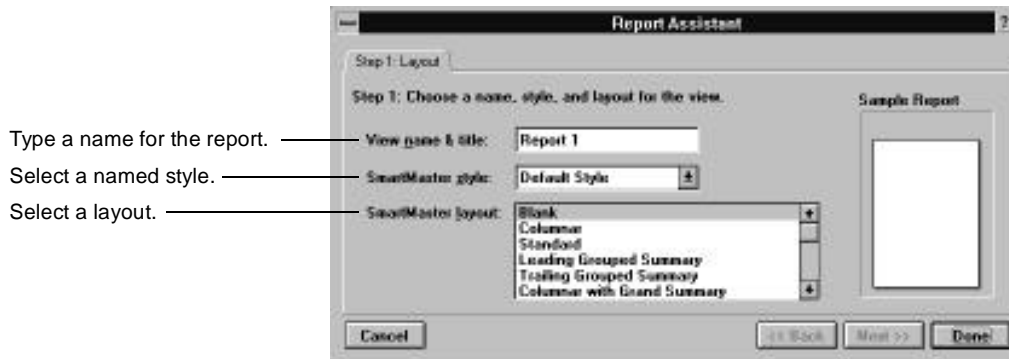
Creating a standard or columnar report

Standard and column reports present database field information only.

To create a standard or columnar report:

1. Choose Report from the Create menu.

The Report Assistant appears.

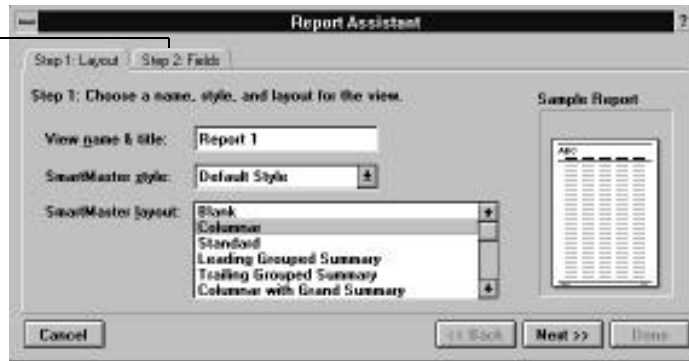


2. Type a name for the report in the View Name & Title text box.
A new report automatically has the name *Report* and a number; you can use any name you want, up to 30 characters. The name you use appears on the report's view tab and as a default on printed reports.
3. Select a SmartMaster style for the report in the SmartMaster Style drop-down list.
The drop-down list shows SmartMaster styles that Approach provides. The styles specify properties such as background color for the report and text attributes for data and field labels.
4. Select Standard or Columnar in the SmartMaster Layout list.

<i>This SmartMaster layout</i>	<i>Displays</i>
Standard	Database fields you select in one continuous column, with each field in its own row
Columnar	Database fields you select in columns, with each record in its own row

Approach adds a Fields tab and an illustration in the Sample Report area to the Report Assistant.

The Fields tab appears when you select a SmartMaster layout that contains fields.



You can click a tab or use the Next and Back buttons to go to other tabs.

5. Click the Fields tab and add the fields you want to show in the report.

When you click the tab, the Fields panel appears.

Add the fields for the body of the report to the Fields to Place on View list.

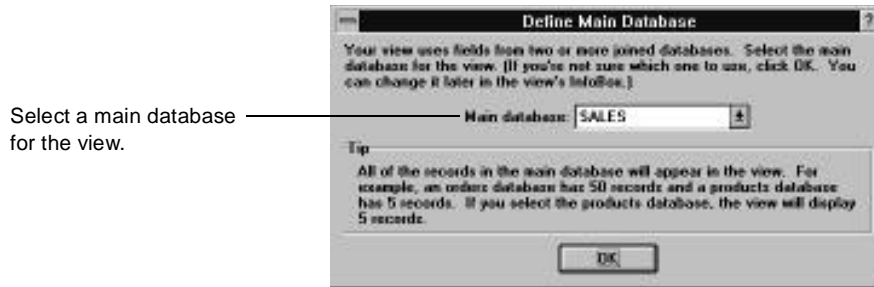


To add a field to the Fields to Place on View list, select the field name in the Database Fields list and click Add, or double-click the name. If you want to add a field from a different joined database, select the database in the drop-down list. Approach displays the fields in the report in the order they appear in the Report Assistant.

To remove a field from the Fields to Place on View list, select the field name in the list and click Remove, or double-click the name.

6. Click Done.

The Define Main Database dialog box appears if you select fields from more than one joined database. Otherwise, Approach displays the new report.



Select a main database for the view.

7. If the Define Main Database dialog box appears, select a database in the Main Database drop-down list and click OK.

Approach displays the new report.

Creating a report with summaries

You can create reports that contain a combination of database field information and summaries, or you can create reports that contain summary information only. The initial steps for creating a summary report are the same as those for creating a standard or columnar report. For more information, see “Creating a standard or columnar report” on page 8-5.

You can also add summaries to an existing columnar report using either the Summary command or Approach SmartIcons. The Summary command allows you to add a summary panel and define its calculation using a dialog box that looks very much like the summary panels in the Report Assistant. See “Adding a summary panel to a report” on page 8-16. Or, you can use PowerClick reporting to sort database records, add summary panels, and add calculated fields to summary panels. See “PowerClick reporting” on page 8-28.

To create a report with summaries:

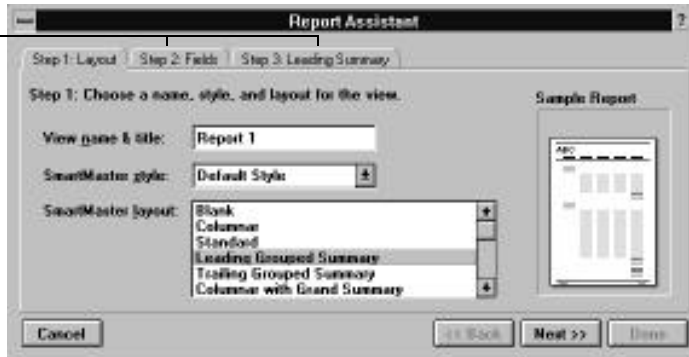
1. Choose Report from the Create menu.
The Report Assistant appears.
2. Type a name for the report in the View Name & Title text box.
3. Select a SmartMaster style for the report in the SmartMaster Style drop-down list.

4. Select one of the summary report layouts in the SmartMaster Layout list.

<i>This SmartMaster layout</i>	<i>Displays</i>
Leading Grouped Summary	A columnar report sorted and subtotaled by the field you select with the sorting field in a leading summary panel and the subtotal in a trailing summary panel
Trailing Grouped Summary	A columnar report sorted and subtotaled by the field you select with the sorting field and the subtotal in a trailing summary panel
Columnar with Grand Summary	A columnar report with a grand total at the end
Summary Only	Summaries of records grouped by the field you select, with a grand summary

Approach adds the Fields tab to the Report Assistant (for all but Summary Only reports) and either the Leading or Trailing Summary tab. Approach also adds an illustration in the Sample Report area.

The Fields and either Leading or Trailing Summary tabs appear when you select a SmartMaster layout that contains fields and a summary. If you select the Summary Only SmartMaster, only the Trailing Summary tab appears.



You can click a tab or use the Next and Back buttons to go to other tabs.

5. Click the Fields tab and add the fields you want to show in the report.

When you click the tab, the Fields panel appears.

Add the fields for the body of the report to the Fields to Place on View list.



To add a field to the Fields to Place on View list, select the field name in the Database Fields list and click Add, or double-click the name. If you want to add a field from a different joined database, select the database in the drop-down list. Approach displays the fields in the report in the order they appear in the Report Assistant.

To remove a field from the Fields to Place on View list, select the field name in the list and click Remove, or double-click the name.

6. Click the Leading or Trailing Summary tab and define the summary.

When you click the tab, the Leading or Trailing Summary tab appears. These two tabs are identical except for the location of the summary panel they create.

Select a field for grouping records.

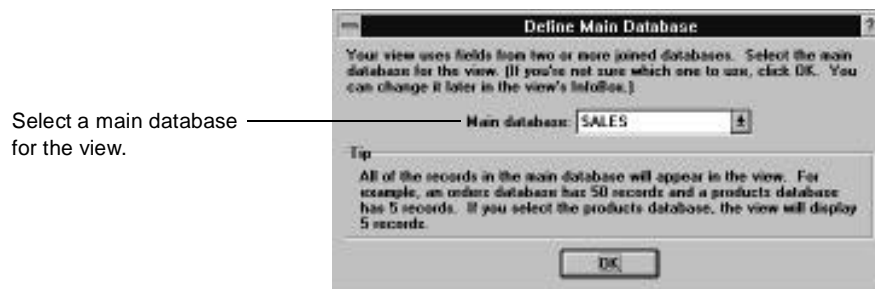


To define the summary, first select the field by which you want to group records in the summary. Next, select the calculation that you want to use. Finally, select the field you want to calculate.

Be sure to select different fields for grouping and calculating. For example, if you want to see a subtotal of amounts by product, select Product as the field to group by and Amount as the field to calculate.

7. Click Done.

The Define Main Database dialog box appears if you select fields from more than one joined database. Otherwise, Approach displays the new report.



8. If the Define Main Database dialog box appears, select a database in the Main Database drop-down list and click OK.

When you design a report that uses joined data, it's important to base a report on the database from which you want to display *all* of the records. For more information about joined databases, see "Main and detail databases in a view" on page 4-5.

Creating a repeating panel report

You can create a repeating panel report that contains a combination of database fields from joined databases. It is the report equivalent to a form with a repeating panel (see "About repeating panels" on page 7-3). The initial steps for creating a repeating panel report are the same as those for creating a standard or columnar report. For more information, see "Creating a standard or columnar report" on page 8-5.

To create a repeating panel report:

1. Choose Report from the Create menu.

The Report Assistant appears.

2. Type a name for the report in the View Name & Title text box.
3. Select a SmartMaster style for the report in the SmartMaster Style drop-down list.
4. Select Repeating Panel Report in the SmartMaster Layout list.

Approach adds the Fields tab, the Repeating Fields tab, and the Trailing Summary tab to the Report Assistant. Approach also adds an illustration in the Sample Report area.

The Fields, Repeating Panel and Trailing Summary tabs appear when you select the Repeating Panel Report SmartMaster layout.



You can click a tab or use the Next and Back buttons to go to other tabs.

5. Click the Fields tab and select a database and the field you want to show in the main section of the report.

When you click the tab, the Fields panel appears.

Select a database for the main section of the report.

Select one field for the main section of the report.

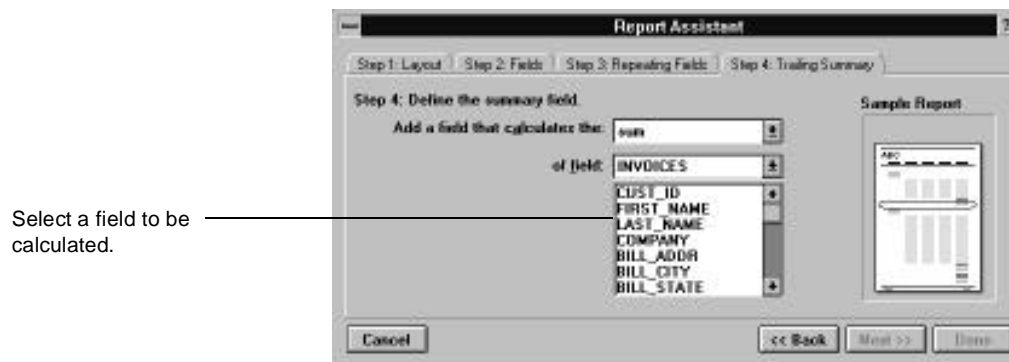


6. Click the Repeating Fields tab and select the database and fields you want for the repeating portion of the report.

When you click the tab, the Repeating Fields panel appears.



- Click the Trailing Summary tab and define the summary. When you click the tab, the Trailing Summary tab appears.



To define the summary, select the calculation that you want to use and the field you want to calculate.

Be sure to select different fields for grouping and calculating. For example, if you want to see a subtotal of amounts by product, select Product as the field to group by and Amount as the field to calculate.

- Click Done. Approach displays the new report.

Summarizing data in a report

The ability to display many different types of summary information is a powerful Approach reporting feature. Summary information might include subtotals, grand totals, and running totals, averages, counts, and many other types of calculations. You can summarize data from records in a single database or from records in joined databases.

Approach uses a summary panel to display summary and other information, and you can have more than one summary panel in a report. Each summary panel can include fields from the database, text you type, and calculated fields. Although a summary panel does not need to contain a calculated field, you must use a calculated field if you want to perform any type of calculation.

You can place a summary panel in a leading position (at the beginning of a group of records) or in a trailing position (at the end of a group of records). This illustration shows some of the kinds of information you can display in a summary panel.

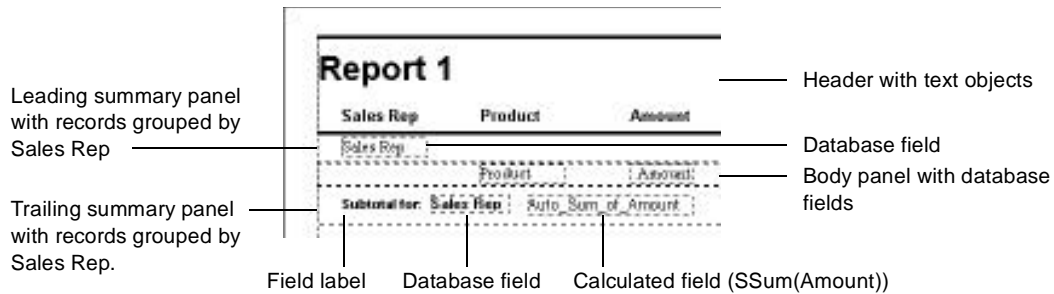
This leading summary panel contains a database field (Sales Rep). It displays the sales rep name just once for each group.

Report 1		
Sales Rep	Product	Amount
Lindsay		
	90 Merlot	1000
	91 Cabernet	350
	91 Merlot	1000
	90 Cabernet	500
	91 Zinfandel	500
Subtotal for: Lindsay		3350

This trailing summary panel contains a text object, a database field (Sales Rep), and a calculated field (SSum(AMOUNT)).

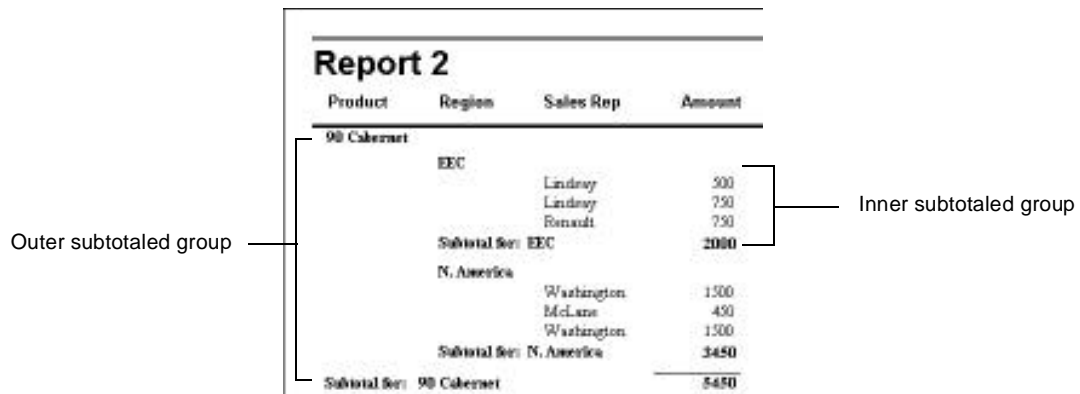
The above report contains two summary panels, a leading summary panel at the beginning of each group of sales reps and a trailing summary panel at the end of each group of sales reps. However, there is only one calculation: the group subtotal in the trailing summary.

If you look at the same report with Show Data turned off, you can see how fields and other objects are placed in different panels.



Another way to use summary panels is for nested subtotals. You might, for example, sort and subtotal a report first by sales reps and then by product for each sales rep. When you use more than one summary panel, Approach starts calculating at the top of the report and calculates each subtotal in order to the end of the report.

This illustration shows a report with nested subtotals. It contains two leading summary panels that display database fields and two trailing summary panels that each hold a database field and a calculated field. The text *Subtotal for* is the label for the database fields.



Without data showing, the previous report looks like this. Notice that the trailing summary panel for the inner group, Region, is above the trailing summary panel for the outer group, Product.

Summary panel for outer group (by Product)

Summary panel for inner group (by Region)

Product	Region	Sales Rep	Amount
Product	Region		
	Subtotal for: Region	Auto Sum of Amt	
Subtotal for: Product		Auto Sum of Amount	

If you don't want any detail line items on a report, you can create a *summary report* that is made up entirely of summary panels.

Adding a summary panel to a report

Approach gives you two ways to add a summary panel to a report: through the Summary dialog box or with the Leading Summary and Trailing Summary icons.

The Summary dialog box lets you specify how you want records to be summarized, where the summary is to appear, how the panel is aligned with the rest of the report, and whether you want a page break after the summary panel.



The Leading and Trailing Summary icons automatically place a centered leading or trailing summary panel in the report. The summary panel summarizes records grouped by whatever field you select before clicking the appropriate icon. For more information about using these and other PowerClick reporting icons, see "PowerClick reporting" on page 8-28.

When you add a summary panel to a report using the Summary dialog box, Approach gives you three ways to define summaries:

- For a specified number of records
- For all records on the report

- For groups of records that are sorted according to any field you select

Product	Sales Rep	Amount
90 Cabernet	Lindsay	3,000
90 Merlot	Wu	2,000
	Summary	5,000
90 Merlot	Washington	1,500
90 Cabernet	McLane	2,200
	Summary	3,700

This report has a summary after every two records. If you know how many records will appear on a page, you can calculate page subtotals.

Product	Sales Rep	Amount
90 Cabernet	Lindsay	3,000
	McLane	2,200
	Subtotal	5,200
90 Merlot	Washington	1,500
	Wu	2,000
	Subtotal	3,500
	Grand Total	8,700

This report is sorted by product and has a summary after every group of records for the same product.

The summarization option that you select affects the way Approach sorts records and summarizes data in the summary panel. For example, if you define a summary panel that summarizes groups of records grouped by product, Approach sorts records by product, even if you don't actually calculate a summary for the records.

To add a summary panel to a report:

1. Choose Summary from the Create menu.

The Summary dialog box appears.

The Summary dialog box contains the following options and annotations:

- Summarize:**
 - Every 1 record(s) — Summarizes a specified number of records
 - All records — Summarizes an entire group of records
 - Records grouped by: SALES — Summarizes the values in a group of records that are sorted on the selected field
- Alignment:**
 - Left
 - Center — Inserts the summary on the left or right of the body, or above or beneath it if you click Center
 - Right
- Location:**
 - Leading
 - Trailing — Inserts the summary above (leading) or below (trailing) the records in the group
- Insert page break after each summary group — Inserts a page break after each summarized group
- Field Selection:** A list box containing SALES, Sales Rep, Region, Quarter, and Product. An annotation points to this list: "Specifies a field for sorting and grouping".

2. Click an option in the Summarize area.

You can use this option to calculate a page subtotal.

If you summarize a group of records sorted on a specified field, Approach sorts the records in ascending order.

<i>To insert a summary</i>	<i>Click</i>
After a specified number of records	"Every <i>n</i> records" and type the number of records you want summarized
For an entire group of records	"All records"
After unique values in a sorted group of records	"Records grouped by" and select a field to use when sorting for the summary (Select the database carefully to be sure you are sorting on the correct field in the database you want.)

3. Specify an alignment for the summary panel.

You can place the summary panel to the left of the report body, to the right of the report body, or centered above or below the report body.

4. Specify a location for the summary panel.

Leading places the summary panel before its group of records. Trailing places the summary after its group of records.

5. To display one summary per page, turn on "Insert page break after each summary group."

Approach inserts a page break after the summary panel each time it appears.

6. Click OK.

Approach displays the summary report in Design.

To move a summary panel, CONTROL-click the panel and drag it into position. To delete a summary panel, CONTROL-click the panel and press DELETE.

Adding a calculated field to a summary panel

You can use a summary calculated field to show a subtotal, total, average, count, or other summary on data in a summary panel. For example, if you have a summary panel that summarizes records grouped by product, you might use a calculated field to show the total sales amount for each product. Or, you can use a calculated field that has been defined as a running total to calculate a running sales total for each sales rep. You can specify a field as a running total in the Field Definition dialog box.

You can define a new summary calculated field for each summary panel, or you can use a field that has already been defined. If you define a field specifically for a summary panel, the summarize options for the field and those for the summary panel must match and you generally use the calculated field only in the summary panel you defined it for. For example, if you define a calculated field that summarizes records grouped by Sales Rep, you would use the field only in summary panels grouped by Sales Rep.

For more flexibility, however, you can use a calculated field that has been defined as where-placed, which you can reuse as often as you wish. A where-placed calculated field looks at the summary panel it's placed in and automatically summarizes records based on how the summary panel is defined. You can specify a field as where-placed in the Field Definition dialog box.

This illustration shows a where-placed calculated field, Subtotal, used in two different summary panels. The formula for this field is `SSum (Amount)`. The first trailing summary panel summarizes on records grouped by region, so the Subtotal field in this panel summarizes records by region. The second trailing summary panel summarizes on records grouped by product, so the Subtotal field here summarizes records by product.

Product	Region	Sales Rep	Amount
Product			
Region			
Subtotal for: Region			Subtotal
Product			
Subtotal for: Product			Subtotal

The same Subtotal field appears in two summary panels. But because it's a where-placed field, it summarizes according to the panel where it's located.

A calculated field in a summary panel is calculated when you preview the report or when you view the report in Design with data showing.

Try working with Show Data turned off when you create a new summary field.

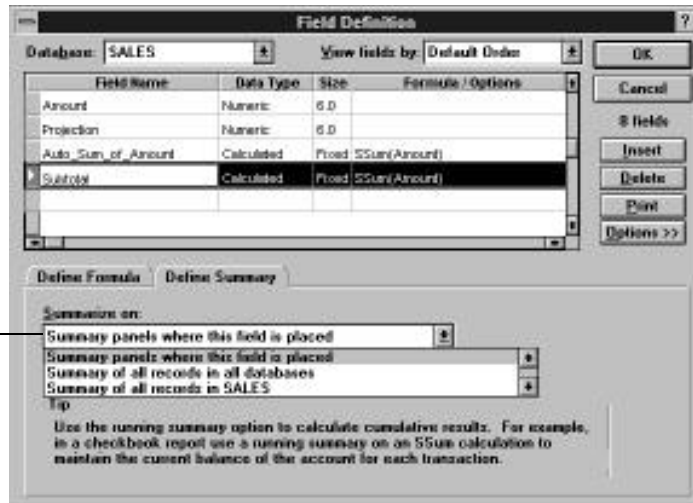
To add a calculated field to a summary panel:

1. If you're using a field that has already been defined, choose Add Field from the Summary menu and drag the field into the summary panel.

Be sure that the field is entirely within the borders of the summary panel.

2. If you're creating a new field, use the Field Definition dialog box to name the field, define the formula the field uses, and define how the field summarizes records.

This list shows all of the summary panels in any report in the Approach file.



For more information about defining a field, see “Setting up a formula for a calculated field” on page 3-8.

After you define the field, it appears in the Add Field dialog box and you can drag it into the summary panel.

Editing a report

You can edit reports in a number of ways to change their appearance and their arrangement of data. You can:

- Change line and color setting to alter the appearance of the different panels that make up a report
- Change the alignment and location of summary panels
- Add a header or footer to a report

- Add a special title page to a report (The title page can contain different information than the subsequent pages.)
- Change the number of columns on a standard report
- Keep the fields in a record together on the same page or in the same column
- Move or resize report columns and their headers



Some of the procedures in this section use the InfoBox. If the InfoBox is not already open, click the Show Info icon, choose Style & Properties from the context-sensitive menu, or double-click the object you want to format. The InfoBox appears, and you can keep it on the screen as you work.



You must be in Design to format a report or summary panel. You may find it easier to format a report that has field names showing rather than data. To toggle between showing data and showing field names in Design, click the Show Data icon or choose Show Data from the View menu.



About report panels

A report can be composed of several different panels, including a body panel, a header, a footer, and one or more summary panels. The body panel displays line items from the database. The header can display the report title, column headers, text you type, or the date, time, or page number. The footer can also display text you type, page numbers, the date, or the time. A summary panel displays any type of summary calculation you specify plus any text or graphics you add.

This illustration shows typical report elements labeled for easy identification by choosing the Panel Labels command from the View menu.

The header displays the report name and column names.

The body displays database line items.

The summary panel displays a subtotal by Sales Rep.

The formula is SSum(Amount).

The footer displays the page number.

Sales Rep	Product	Amount
Lindsay	90 Merlot	1000
Lindsay	91 Cabernet	350
Lindsay	91 Merlot	1000
Lindsay	90 Cabernet	300
Lindsay	91 Zinfandel	300
Lindsay's Subtotal by Sales Rep		3850

Page 1

Selecting a report panel

Before you can modify a report panel, you need to select the panel in Design. Be careful to select the panel itself and not one of the fields inside it.

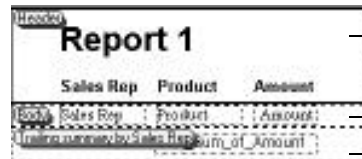
A report panel has a dark border around it when it is selected.

A selected panel has a dark border.



- To select a panel, click a border of the panel, **CONTROL**-click anywhere in the panel, or click the panel label.

If you're showing field names rather than data in Design, you can also click any part of the panel's interior that does not contain fields.



You can click in any of these areas.

Changing line or color settings for a report panel

Like most other design objects, a report panel has borders and an interior fill area. You can set a line width and color for the borders between lines and around the outside of the panel, and a fill color for the background of the interior. You can also apply a three-dimensional frame to each line and a drop shadow to the entire panel.

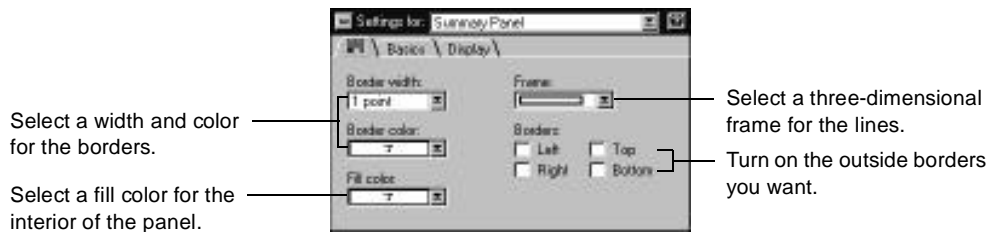
Each type of report panel has its own InfoBox that you can use for changing the appearance of the panel. The settings in the InfoBox apply to all panels of a type.

To change line or color settings for a report panel:



1. Select a report panel and click the Show Info icon to open the panel's InfoBox.

2. Click the Lines and Colors tab in the InfoBox and set options in the Lines and Colors panel.



<i>To</i>	<i>Do this</i>
Change the width of borders in a panel	Select a width in the Border Width drop-down list.
Change the color of borders in a panel	Select a color in the Border Color drop-down palette. Select "T" for transparent.
Change the fill color of the interior of a panel	Select a color in the Fill Color drop-down palette. Select "T" for transparent.
Give the lines in a panel a raised or indented frame	Select a frame style in the Frame drop-down list.
Show outside borders around a panel	Turn on options in the Borders area.

Changing the alignment or location of a summary panel

When your report includes a summary panel, you can change the alignment or location of the summary panel relative to the body panel.

To change the alignment or location of a summary panel:



1. Select a summary panel and click the Show Info icon to open the panel's InfoBox.

2. Click the Display tab in the InfoBox and set options in the Display panel.



<i>To</i>	<i>Do this</i>
Change the alignment of the summary panel relative to the report body	Select an alignment in the Alignment drop-down list.
Change the position of the summary panel	Select Leading or Trailing in the Location area.

Adding a header or footer

When you create a report, Approach automatically adds a header and footer. The preset header contains either the report name (on standard and summary-only reports) or column headers (on columnar reports). The preset footer contains the date on the left and the page number on the right.



If you're working with a report that doesn't already contain a header or footer, you can easily add one. You can also easily change the contents of a header or footer by adding or removing text, graphics, or other objects.

- To add a header or footer, choose Insert Header or Insert Footer from the Report menu.

Approach adds the header at the top of the page or the footer at the bottom of the page. You may have to scroll down to the bottom of the page to see the footer.

- To have Approach automatically insert the date, time, or page number in a header or footer, draw a text block and then, with the cursor still active in the text block, choose Date, Time, or Page # from the Report Insert submenu.

Use Show Panel Labels in the View menu to identify the header and footer panels.

Approach inserts a placeholder for the date, time, or page number. The placeholders are <<DATE>>, <<TIME>>, and <<#>>.

Adding a title page

Use the Show Panel Labels command in the View menu to identify the blank header and footer panels on the title page.

A title page is a special first page that you can add to a report. It contains all the information that appears on the rest of the report pages, as well as a unique header and footer. You might, for example, have a report title or a special graphic in the header on the title page but have column names in the header on all following pages.

- To add a title page, choose Add Title Page from the Report menu.

Approach adds a title page, which looks exactly like a regular report page, except that the header and footer are blank. In Preview, the window's title bar displays *Title Page*. You can resize the header and footer, add the date, time, or page number, or add graphics or text.

To remove a title page, choose Add Title Page from the Report menu again.

- To view the title page of a report, choose Show Title Page from the Report menu.

To return to the standard page of your report, choose Show Title Page from the Report menu again.

Changing the number of columns in a report

When you create a standard or columnar report, Approach places fields in a single column that runs the length of each page. In a standard report, that single column contains only one field per row. In a columnar report, that single column may contain more than one field in a row. If it's appropriate for your report, you can increase the number of columns in order to reduce the number of pages. When you have more than one column, Approach "snakes" records from one column to the next.

If you use multiple columns in a standard report, Approach automatically makes sure that records are not split between columns or pages.

1	Mc
2	Li
3	Re
4	Wa
5	Wu

Columnar report with one set of two columns.

1	Mc	6	Wu	11	Wa
2	Li	7	Mc	12	Wu
3	Re	8	Mc		
4	Wa	9	Li		
5	Wu	10	Re		

Columnar report with three sets of two columns each.

Records
"snake" into
the next
column

To change the number of columns in a report:



1. Click the Show Info icon to open the InfoBox for the report.



2. Change the number in the Number of Columns text box in the Basics panel.

Approach displays your report with the new number of columns. If you're showing field names instead of data, a vertical dashed line indicates the edge of each column.

Keeping records together

If your data spans more than one page in a standard report, you might want to keep them from starting on one page and ending on another. Approach automatically keeps the fields in a record together in one column if you have multiple columns on a page.

To keep records together:



1. Click the Show Info icon to open the InfoBox for the report.



2. Turn on “Keep records together” in the Basics panel.

Moving and sizing report columns

When you first create a columnar report, Approach displays the columns in the order you listed the fields in the Report Assistant. Approach automatically sets the width of each column and column header to the field size. However, you can easily move a column to a different position or resize it.

Approach lets you work in Design with whole report columns or with individual fields. When you work with whole columns, you can move or resize both the column and its header at the same time. Otherwise, the column fields and the column header behave like separate objects that you can resize or move independently.



To turn columns on, choose Turn On Columns from the Report menu. If the Column Mode icon appears in an icon bar, you can click it instead of choosing the command. You add icons to the icon bars using the SmartIcons command in the Tools menu.

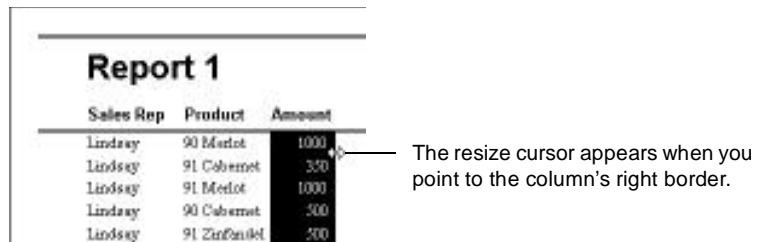


Move cursor

- To move a column, click the column to select it (the pointer changes to the move cursor) and drag it to another position.

Approach moves both the column and its header to the new position.

- To resize a column, click in the column to select it and drag its right border to a new position.



Sales Rep	Product	Amount
Lindsay	90 Merlot	1000
Lindsay	91 Cabernet	300
Lindsay	91 Merlot	1000
Lindsay	90 Cabernet	500
Lindsay	91 Zinfandel	200

Approach resizes both the column and the column header, displaying as much data as will fit.

PowerClick reporting

PowerClick reporting is a powerful Approach feature that allows you to organize and summarize data with just a few clicks. PowerClick reporting is WYSIWYG, which means that you can instantly see the results of your actions as you design a report. You can use PowerClick reporting to sort records, quickly add a summary panel to a report, or add a calculated field to a summary panel.

You can also achieve the same results by manually adding summary panels and calculated fields. For more information about adding a summary panel to a report, see “Adding a summary panel to a report” on page 8-16. For more information about adding a calculated field, see “Adding a calculated field to a summary panel” on page 8-19.

This section gives two examples of PowerClick reports you can build. Each of these reports is based on a columnar report created using the Report Assistant.

The first example shows how to add a grand total to a simple columnar report. The second example starts with the same report and shows how to sort and subtotal by product.

Adding a grand total to a report

This example shows you how to add a grand total to a simple columnar report. The fields on the following sales report show the product name, the sales rep who sold it, and the amount sold.

The report you start with looks something like this:

Product	Sales Rep	Amount
90 Cabernet	Lindsay	3,000
90 Merlot	Wu	2,000
90 Zinfandel	Renault	1,200
90 Merlot	Washington	1,500
90 Cabernet	McLane	2,200
90 Zinfandel	Watanabe	1,000

The finished report looks something like this:

Product	Sales Rep	Amount
90 Cabernet	Lindsay	3,000
90 Merlot	Wu	2,000
90 Zinfandel	Renault	1,200
90 Merlot	Washington	1,500
90 Cabernet	McLane	2,200
90 Zinfandel	Watanabe	1,000

The words *Grand Total* are the field label for the summary field.

	Grand Total	10,900
--	-------------	--------

Grand summary

You can also create this report using the Report Assistant and the Columnar with Grand Summary SmartMaster layout (see “Creating a report with summaries” on page 8-8).

To add a grand total to a report:

1. Use the Report Assistant to create a columnar report.
For more information about creating a columnar report, see “Creating a report” on page 8-3.
2. In Design with Show Data turned on, click in the column that contains the values you want to summarize.



To turn Show Data on, click the Show Data icon or choose Show Data from the View menu.

Report 1

Product	Sales Rep	Amount
90 Merlot	Lindsay	1000
91 Cabernet	Lindsay	350
91 Merlot	Lindsay	1000
90 Cabernet	Lindsay	500

Select a column to be summed.



3. Click the Sum icon.

Approach places a summary panel at the end of the report and automatically adds a calculating field that sums the values in the field you select. In Design, the first sample report looks like this.

You can display the field label and edit its contents using the summary field's InfoBox.

Report 1

Product	Sales Rep	Amount
90 Merlot	Lindsay	1000
91 Cabernet	Lindsay	350
91 Merlot	Lindsay	1000
90 Cabernet	Lindsay	500
91 Zinfandel	Lindsay	500
90 Cabernet	Lindsay	750
91 Cabernet	McLane	750
⋮	⋮	⋮
90 Cabernet	Wu	750
		17350

Summary panel with calculated grand total

Grouping records and adding subtotals to a report

This example starts with the previous report. It sorts and groups records by product and adds a subtotal at the end of each group of records. It also shows you how to show repeated data only once in each group.

The finished report looks something like this:

Product	Sales Rep	Amount
90 Cabernet	Lindsay	3,000
	McLane	2,200
		5,200
90 Merlot	Washington	1,500
	Wu	2,000
		3,500
90 Zinfandel	Watanabe	1,000
	Renault	1,200
		2,200
Grand Total		10,900

Summary panel with calculated grand total from Example 1

Subtotals calculated by a summary calculated field in the summary panel.

You can also create this report using the Report Assistant and the Leading grouped summary SmartMaster layout (see “Creating a report with summaries” on page 8-8).

To group records and add subtotals to a report:

1. Start with the report from the first example and in Design with Show Data turned on, click in the column that you want to group on (in this example, it’s Product).



To turn Show Data on, click the Show Data icon or choose Show Data from the View menu.

Select the column you want to sort on.

Product	Sales Rep	Amount
90 Merlot	Lindsay	1000
91 Cabernet	Lindsay	350
91 Merlot	Lindsay	1000
90 Cabernet	Lindsay	500
91 Zinfandel	Lindsay	500
90 Cabernet	Lindsay	750



2. Click the Trailing Summary icon.

Approach places a trailing summary panel below the body of the report. If Approach asks if you want to sort the records displayed on the report according to the column you selected, click OK.

3. Click in the column that contains the values you want to summarize (in this example, it's Amount).

Report 1

Product	Sales Rep	Amount
90 Cabernet	Watanabe	1300
90 Cabernet	Lindsay	500
90 Cabernet	Watanabe	1100
90 Cabernet	Wu	750
90 Cabernet	Lindsay	750

Select a column to be summed.



4. Click the Sum icon.

Approach adds a calculating field to the trailing summary panel. The calculating field sums the values in the column you select.

Report 1

Product	Sales Rep	Amount
90 Cabernet	Watanabe	1300
90 Cabernet	Lindsay	500
90 Cabernet	Watanabe	1100
90 Cabernet	Wu	750
90 Cabernet	Lindsay	750
90 Cabernet	McLane	450
90 Cabernet	Renaud	750
90 Cabernet	Washington	1300
		7300

Subtotal of records for the same product



5. To display the product name only once per group, click the column you first used for sorting (in this case, Product), and click the Leading Summary icon.

Approach places a leading summary panel at the beginning of each product group.

Blank leading summary panel

Report 1		
Product	Sales Rep	Amount
90 Cabernet	Watanabe	1500
90 Cabernet	Lindsay	500
90 Cabernet	Watanabe	1100
90 Cabernet	Wu	750
90 Cabernet	Lindsay	750
90 Cabernet	McLane	450
90 Cabernet	Renaudi	750
90 Cabernet	Washington	1500
		7300

6. Choose Turn on Columns from the Object menu to turn columns off (make sure the command is unchecked).
7. Select the first product item and move it into the leading summary panel you just created.

The final sample report looks like this.

Leading summary with product name

Trailing summary with automatically calculating subtotal

Report 1		
Product	Sales Rep	Amount
90 Cabernet		
	Watanabe	1500
	Lindsay	500
	Watanabe	1100
	Wu	750
	Lindsay	750
	McLane	450
	Renaudi	750
	Washington	1500
		7300

You may want to choose Turn on Columns from the Object menu again to turn columns on before doing any formatting on your report.

9

Designing Form Letters and Mailing Labels

A form letter is a one-page view that displays a combination of fields from the database and text you type in any of several typical business letter formats. A mailing label is a view that displays database fields and text you type in a typical mailing address format. A single page can contain multiple labels, depending on the label size you use.

This chapter describes how to create and modify form letters and mailing labels.



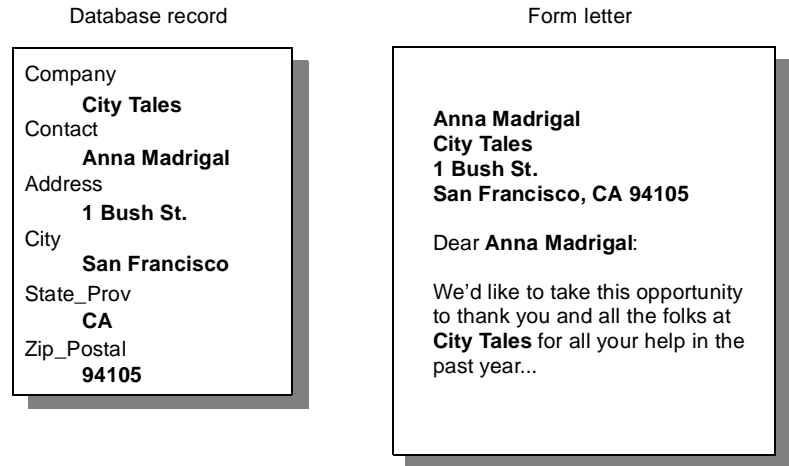
Most of the instructions in this chapter require you to be in Design. To go to Design, click the Design icon, or choose Design from the View menu or from the environment pop-up menu in the status bar.

You can modify form letters and mailing labels as you can other types of views. For example, you can rearrange fields, assign macros, and change color properties in a form letter or mailing label. For information about modifying views, see Chapter 5, “Working in Design,” and Chapter 6, “Adding and Editing Fields in a View.”

About form letters

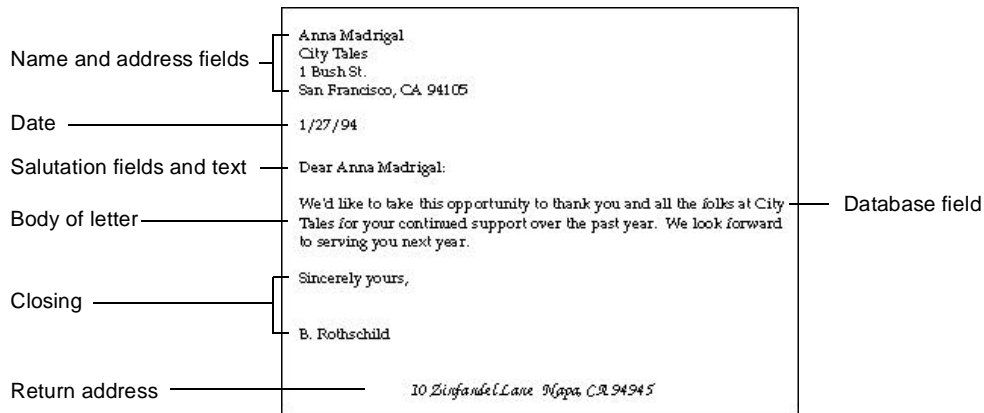
You can combine data that Approach retrieves from name and address fields with text that you type to produce customized one-page form letters. Approach creates a copy of the form letter for each record in the current found set, adding the name and address information from each database record to the standard letter text you type when you create the form letter.

For example, you might want to send a year-end letter to each customer that you've done business with in the past year. Using the name and address data stored in your customer database, you can have Approach create a personalized letter for each customer.



A typical Approach form letter consists of database fields for the recipient's name and address plus a salutation (also composed of database fields), the date, a closing that you type, and your return address. You can use all of these elements, or just select the ones that are appropriate. For example, if you plan to print your letter on company or personal letterhead, you'd omit the return address information.

This illustration shows a formatted form letter with all possible components (including a database field in the body of the letter).



Because database fields might contain information of varying lengths, Approach automatically adjusts the space around fields (for example, the Company field in the illustration above) to create a smooth flow between typed text and database fields.

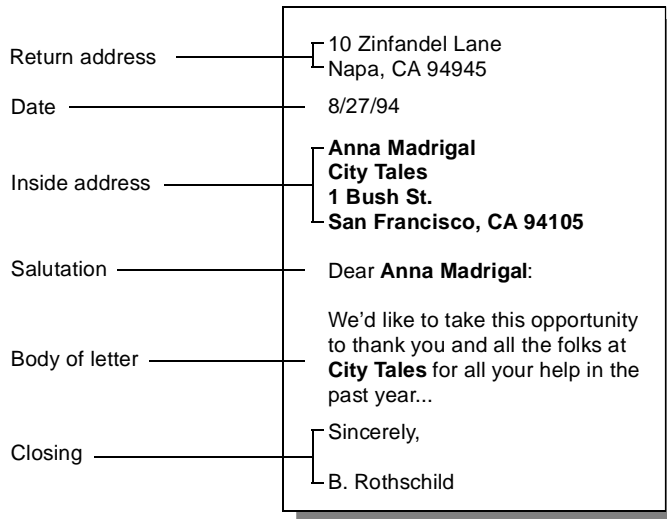
Creating a form letter

The Approach Form Letter Assistant guides you through the process of creating the skeleton of the form letter (all of the fields, but no text). You use the Form Letter Assistant to give the new form letter a name, a SmartMaster style, and a SmartMaster layout. You also select the fields that appear on the form letter, and add a return address, salutation, and closing if you wish to use them.

A SmartMaster style gives a form letter a set of properties, such as background color, text attributes, and specifications for field borders and frames. Approach provides predefined SmartMaster styles for form letters.

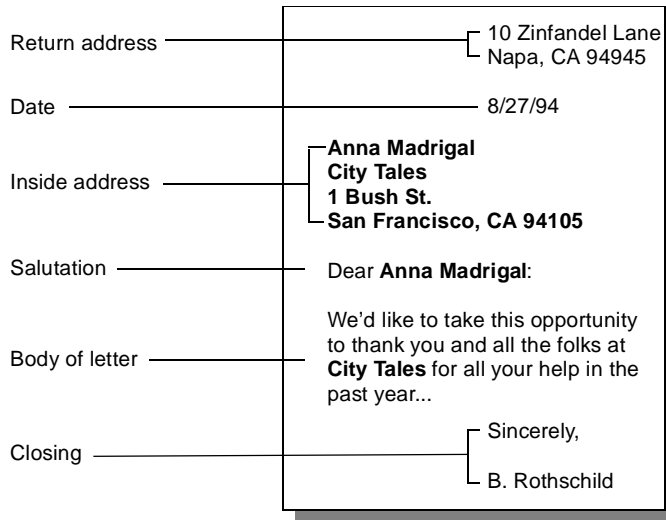
The three SmartMaster layouts determine where the date, the inside address, the return address, and the closing appear. You can use any of these SmartMaster layouts exactly as they are, or you can use a SmartMaster layout as the starting point and design your own custom form letter.

The first SmartMaster layout, Block, creates a standard blocked business letter with all elements aligned on the left. This all-purpose layout includes a return address and the date at the top of the page.

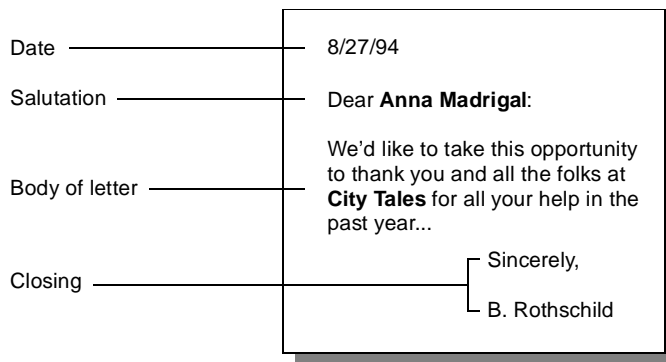


9-4 User's Guide

The second SmartMaster layout, Modified Block, creates a slight variation on a standard blocked business letter, with the return address, date, and the closing in blocks on the right side of the letter. You might use this layout when you're printing on letterhead that contains a logo in the upper left.



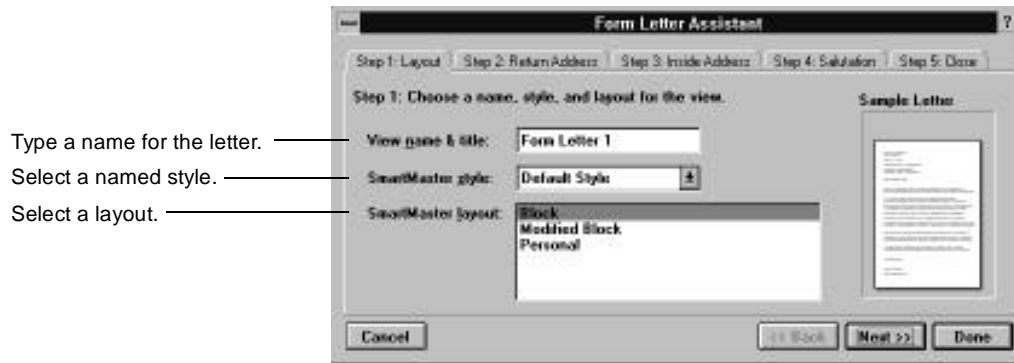
The third SmartMaster layout, Personal, creates a letter that contains only the date, a salutation, and a closing. This type of letter is more suited for personal correspondence when you don't need an inside address or a return address.



To create a form letter:

1. Choose Form Letter from the Create menu.

The Form Letter Assistant appears.



2. Type a name for the form letter in the View Name & Title text box.

A new form letter automatically has the name *Form Letter* and a number; you can use any name you want, up to 30 characters. The name you use appears on the form letter's view tab.

3. Select a SmartMaster style for the form letter in the Style drop-down list.

The drop-down list shows SmartMaster styles that Approach provides. The styles specify properties, such as font and font size for text and fields.

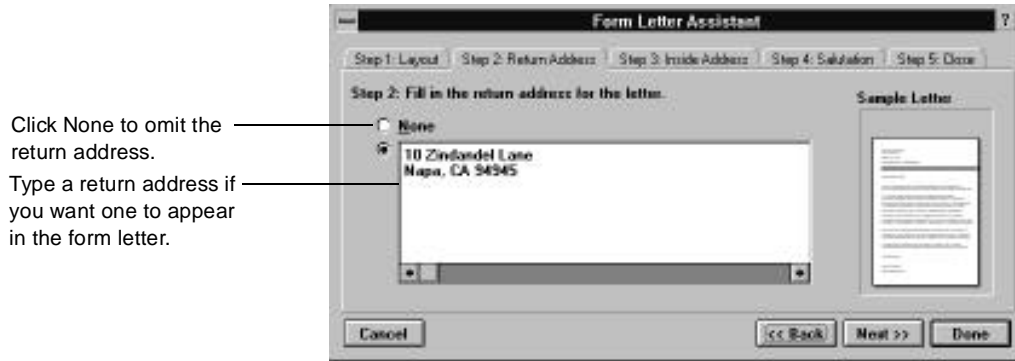
4. Select a SmartMaster layout for the form letter from the Layout list.

Approach displays a sample form letter at the right of the dialog box so you can see what the layout looks like.

5. Click the Return Address tab and type a return address if you wish to use one.

You can click a tab or use the Next and Previous buttons to go to other tabs.

When you click the tab, the Return Address panel appears. If you select the Personal SmartMaster layout, Approach removes the Return Address and Inside Address tabs from the Form Letter Assistant.



Click None to omit the return address, or type a return address.

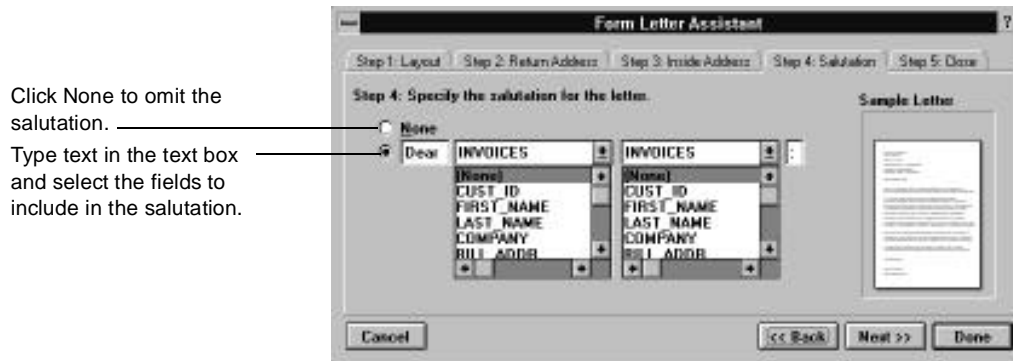
6. Click the Inside Address tab, select an address layout, and add the fields for the inside address section of the letter.

When you click the tab, the Inside Address panel appears.



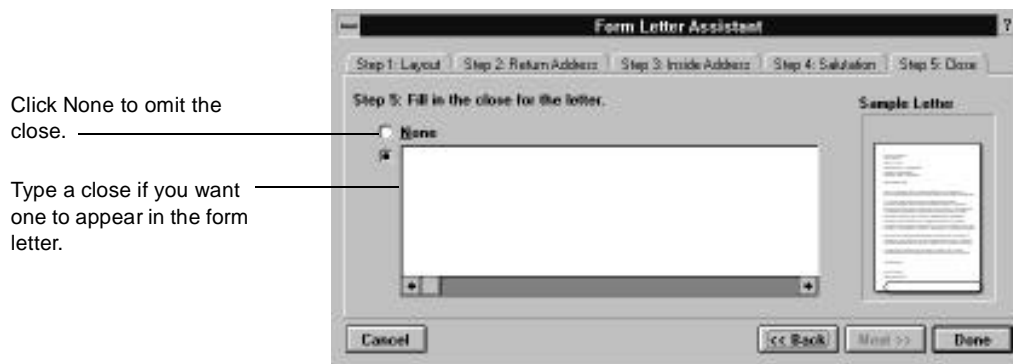
The address layout determines the number of lines in the inside address area. To add a field to a box in the Fields for the Address layout, select a box, select the field name in the Database Fields list and click Add, or double-click the name. If you want to add a field from a different joined database, select the database in the drop-down list.

- Click the Salutation tab and specify the salutation.
When you click the tab, the Salutation panel appears.



Click None to omit the salutation, or type a salutation and select the fields to be included.

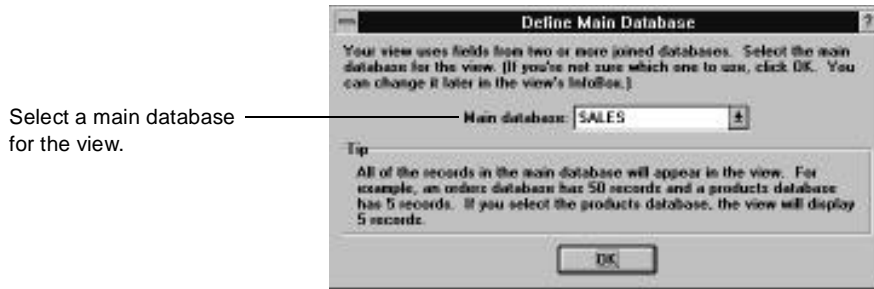
- Click the Close tab and type a closing.
When you click the tab, the Close panel appears.



Click None to omit the close, or type a close.

9. Click Done.

The Define Main Database dialog box appears if you select fields from more than one joined database. Otherwise, Approach displays the new form letter.

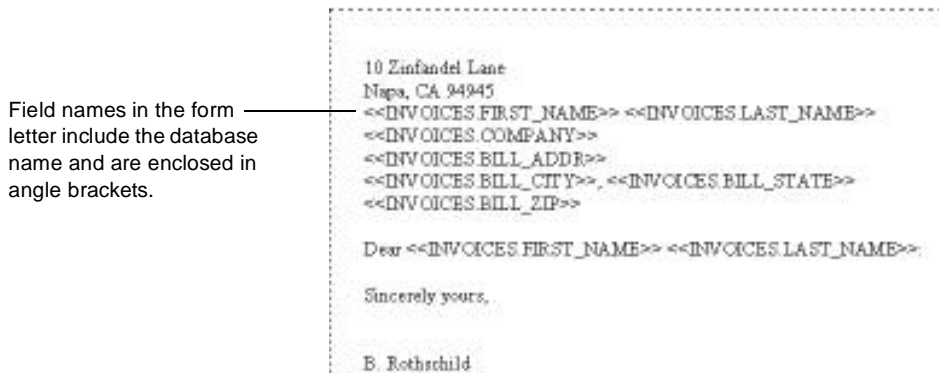


Select a main database for the view.

10. If the Define Main Database dialog box appears, select a database in the Main Database drop-down list and click OK.

Approach creates and opens the form letter, arranging the fields you selected in the layout you specified.

The form letter appears on your screen as a text object. The field names appear between angle brackets in this format: <<Database.Field>>.



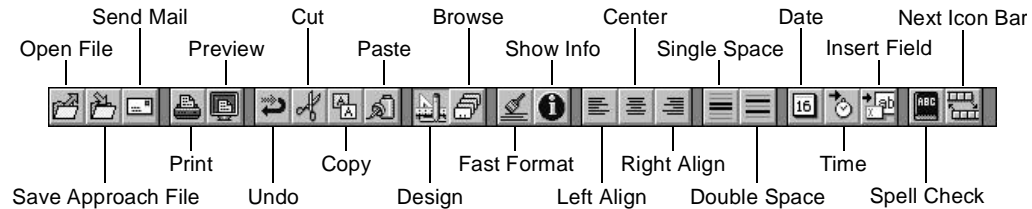
Field names in the form letter include the database name and are enclosed in angle brackets.

Working with form letters

Most of the work you'll do with form letters is in Design, where you'll find a special icon bar that is tailored for the task of working with form letters.

The default Design icon bar contains SmartIcons that make it easy to set the alignment or spacing of text, or to add such elements as the date or page number. You can also turn off horizontal and vertical rulers to help you with the placement of text on a page.

When you work in Design, this is the default icon bar you'll see.



- To turn on rulers for text placement, choose Show Ruler from the View menu.

For more information about using the rulers, see “Showing rulers” on page 5-8.

Formatting the text in a form letter

An Approach form letter is basically a single very large text object that contains text and fields (field names enclosed in angle brackets). Therefore, you can format the letter text the same way you would any text object. The text format changes you make can apply to the entire form letter or just to selected text.

For information about changing the format of the date, see “Setting a standard date format” on page 6-15.

To format the text in a form letter:



1. Select the text object or the text you want to format. Click the Show Info icon to open the form letter's InfoBox.

2. If necessary, click the Text tab and set the options in the Text panel.



<i>To</i>	<i>Do this</i>
Change the font of text	Select a font in the Font Name drop-down list.
Apply boldface, italics, underlining, or strikethrough to text	Select one or more styles in the Style/Effect list.
Change the font size of text	Select a size in the Size drop-down list.
Apply a color to text	Select a color in the Text Color drop-down list.
Change line spacing to single space, one and a half space, or double space	Select an option under Line Spacing.
Change alignment to left, center, right, or justified	Select an option under Alignment.

Alignment and line spacing affect all text in a text object, even if you've selected only some of the text in the object.

Changing the line and color settings for a form letter

The line and color settings for a form letter can apply to the letter as a whole, or to the form letter's text object.

To change the line and color settings for a form letter:

1. Select the form letter as a whole or select the text object and click the Show Info icon to open the form letter's InfoBox.

-  2. Click the Lines and Colors tab in the InfoBox, and set the options in the Lines and Colors panel.



If you plan to print a view on a black-and-white printer, use grays rather than colors to get the best-looking printouts.

A three-dimensional frame works best against a solid gray or colored background.

<i>To</i>	<i>Do this</i>
Change the width of a line or of the border of another object	Select a width in the Border Width drop-down list.
Change the color of a line or of the border of another object	Select a color in the Border Color drop-down palette. Select T for transparent.
Change the fill color of the interior of an object	Select a color in the Fill Color drop-down palette. Select T for transparent. (This is not available for lines.)
Give an object a raised or indented frame	Select a frame style in the Frame drop-down list.

Adding to form letter contents

When you first create a form letter, it contains the text and fields that you specified in the Form Letter Assistant panels, arranged according to the SmartMaster layout you selected. After you create the form letter with the Form Letter Assistant, the next step is to add the rest of the letter's contents: text and additional fields.

You add text simply by clicking where you want the text to appear and typing. You add fields either by typing field names or by choosing a field from the Add Field dialog box.

Typing text in a form letter

The text you add around fields is the standard part of the form letter that doesn't change unless you edit it. Because a form letter is a single large text object, you can add text wherever you want simply by clicking with the Text tool and typing. You can edit the text just as you would any other text in a text object, using Cut, Copy, and Paste. Text automatically wraps from one line to the next, so there's no need to press ENTER unless you want to start a new line.

To type text in a form letter:



1. Double-click anywhere in the form letter to get the Text tool and click where you want to add text.
2. Type the text.

That's all there is to it. You can type text before and after fields or anywhere else you wish.

Adding a field to a form letter

Although you can select fields for a form letter using the Form Letter Assistant, you can also add fields to a form letter later. For example, you might want to include the company name in the body of the letter. Approach displays fields in this format: <<Database.Field>>.

One way to add a field is to simply type the database and field names separated by a period and enclosed in double angle brackets. The other way is to use the Insert Field dialog box.

To add a field to a form letter:

1. In Design, double-click to get the Text tool and click where you want the field to appear.
2. Click the Insert Field icon or choose Field from the Text Insert submenu.



The Insert Field dialog box appears.

Select a field from this list to add to the form letter.



3. Click a field in the list and click OK to add it to the form letter.

Moving or deleting form letter fields

You can easily move or remove fields from a form letter. Because the fields you see in a form letter are just placeholders, you can use standard text editing commands (Cut and Paste) to move them. You can also add or delete text and space to position the fields where you want them.

You cannot move a field in a form letter by dragging it.

To move a field in a form letter:

1. Select the field that you want to move and choose Cut from the Edit menu.

Approach places the field placeholder on the Clipboard.

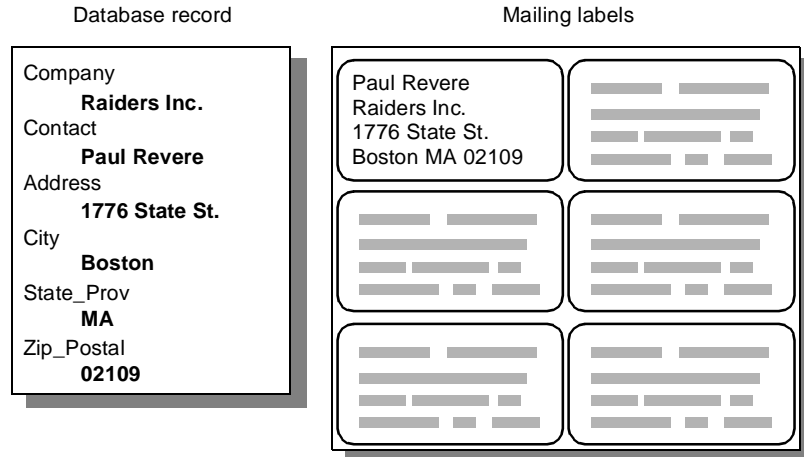
2. Click where you want to place the field and choose Paste from the Edit menu.

Approach inserts the field at the insertion point.

- To delete a field in a form letter, select it and choose Cut or press **BACKSPACE** or **DELETE**.

About mailing labels

Mailing labels are a collection of database fields; they're similar to a report in that data from multiple records appears on a single page, one record per label.



The number of mailing labels you see on a page depends on the label size and the page layout you select when you create mailing labels. You can choose from more than 50 standard Avery mailing label formats or you can create other formats of your own. Either way, Approach automatically positions the fields you select to match your format and removes any extra space between fields.

Your mailing labels can be as plain or as fancy as you wish. Using the preset Approach mailing label style, you can quickly create simple mailing labels that contain just the names and addresses in your database. However, by adding text, background colors, or graphics, or by using different fonts, you can create highly specialized and attractive mailing labels.



You can use any of the three Approach environments—Preview, Browse, or Design—to view and work with your mailing labels.

In Preview, you can see how your mailing labels will appear when they're printed, with the extra space between fields automatically removed.

In Preview, you can see how printed labels will appear.



In Browse, you can move from field to field and record to record, editing data as necessary. For information about editing the data in a mailing label, see “Entering data in fields” on page 10-7.

In Browse, you can edit the data that appears on labels.

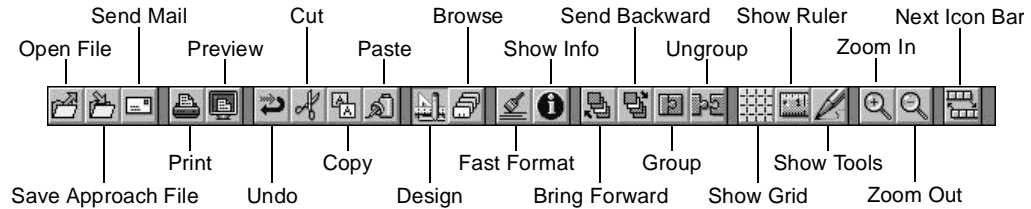


In Design, you can resize or move the fields around and add text (such as a comma between address fields or a message at the top of the label). You can also add colors or field borders, draw objects, change the font or font size, or add or remove fields. For information about the many ways you can change the appearance of a view, see “Editing objects and text” on page 5-18; for information about changing the appearance of fields, see “Editing fields” on page 6-22.

In Design, you can move fields, resize them, or add text.



When you work in Design, this is the default icon bar you’ll see.



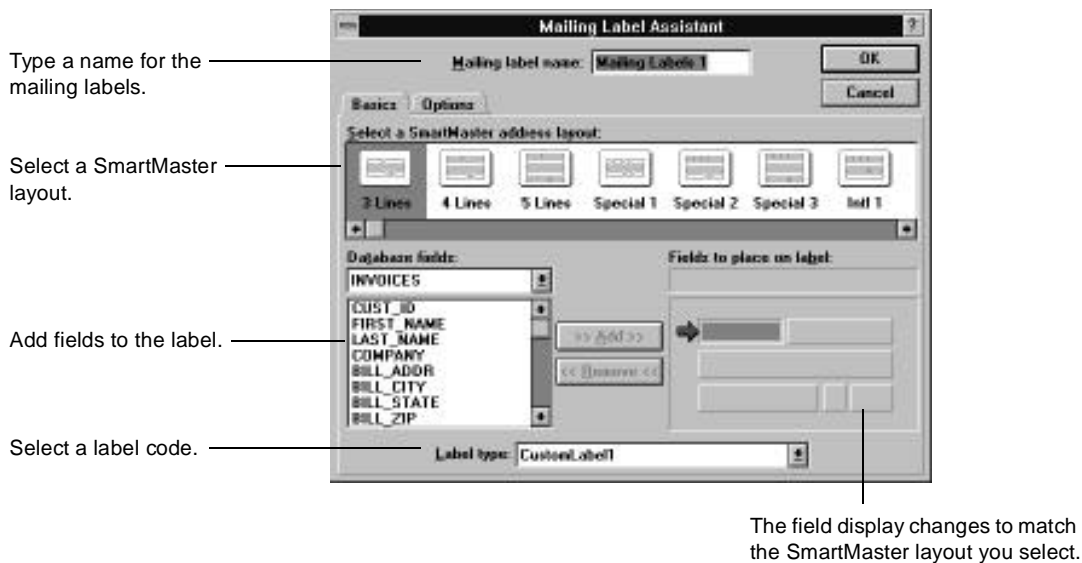
Creating mailing labels

Approach provides a Mailing Label Assistant to help you create either standard-sized or custom mailing labels. When you create a mailing label, you select the SmartMaster layout you want to use, the fields to be included on the mailing label, and the mailing label format. You can use one of the predefined Avery label formats or create custom labels of your own. For information about creating custom mailing labels, see “Creating custom mailing labels” on page 9-18.

To create mailing labels:

1. Choose Mailing Labels from the Create menu.

The Mailing Label Assistant appears.



2. Type a name for the mailing labels in the Mailing Label Name text box.

A new mailing label automatically has the name *Mailing Label* and a number; you can use any name you want up to 30 characters. The name you use appears on the mailing label's view tab.

3. Select a SmartMaster layout.

The SmartMaster layout determines how many lines of text appear on the labels. You can select from among 3-line, 4-line, 5-line, and special formats.

4. If necessary, select the main database in the Database Fields drop-down list.

Each record from the main database appears as a label.

5. Move fields from the Database Fields list to the boxes in the Fields to Place on Label area.

You can remove a field name from a box by selecting the slot and clicking Remove.

To add a field to a Fields to Place on Label box, click the box to select it and then either double-click the field name or select the field name and click Add. The focus arrow automatically moves to the next box.



Focus arrow Click a box to select it.

6. Select a label code in the Label Type drop-down list.

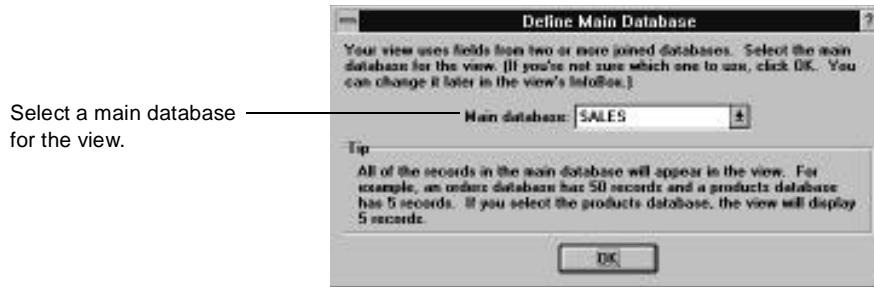
The list includes more than 50 different label formats. If you've defined any custom label formats, they can also appear in the list.

7. To create your own custom labels, click the Options tab and set options in the Options panel.

For information about creating custom mailing labels, see "Creating custom mailing labels," next.

8. Click OK.

The Define Main Database dialog box appears if you select fields from more than one joined database. Otherwise, Approach displays the new mailing labels.



9. If the Define Main Database dialog box appears, select a database in the Main Database drop-down list and click OK.

Approach creates and displays the mailing labels. You may want to go to Preview to see how the labels will appear when printed. For information about moving fields or adding text to mailing labels, see “Changing the appearance of mailing labels” on page 9-20. If you want to use a different Avery label setting, you can create a new set of mailing labels.

Creating custom mailing labels

If your mailing labels do not match any of the more than 50 standard Avery label formats, you can create your own custom mailing label and use it whenever you wish. Approach automatically displays the names of all custom label formats in the Mailing Label Assistant Label Type drop-down list.

When you design a custom mailing label, you specify the label size, the page margins and space between labels, the number of labels on a page, the order in which the labels are printed, and printer options (if necessary).

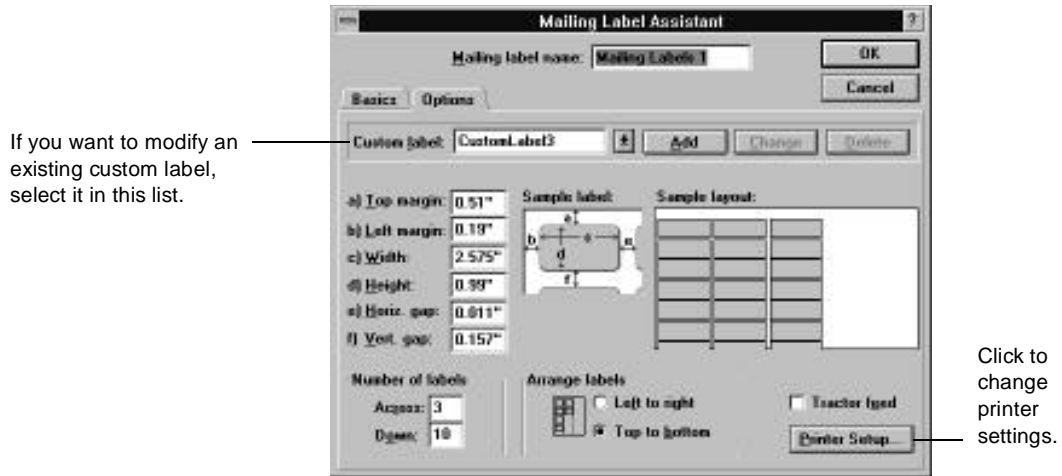
To create custom mailing labels:

1. Choose Mailing Labels from the Create menu, type a name for the mailing labels, select a SmartMaster layout, and assign fields to the Fields to Place on Label boxes.

If you need more information about any of these steps, see “Creating mailing labels” on page 9-16.

2. Click the Options tab.

The Options panel appears in the Mailing Label Assistant.



3. Type a name for the custom labels in the Custom Label text box.
4. Type new values for margin, label size, and gap dimensions.

<i>This setting</i>	<i>Controls</i>
Top Margin	The space between the top of the page and the first label
Left Margin	The space between the left edge of the page and the left column of labels (not including tractor holes in tractor feed paper)
Width and Height	The size of the mailing label
Vert. Gap	The space between each label and the one below
Horiz. Gap	The space between each label and the one beside it

As you change these values, the Sample Layout shows you how the labels will appear on a page. The Sample Layout area border turns red if the measurements you enter are not valid.

5. Specify the number of labels on each page.
The Across value sets the number of columns, and the Down number sets the number of rows.

6. Select a printing order.
“Left to right” prints labels across the page, “Top to bottom” prints labels in columns.
7. If you're using continuous feed labels, turn on “Tractor feed.”
Approach disables the top margin and vertical gap settings for continuous feed labels. You may also want to adjust printer settings for the correct paper size.
8. Click Add to add a new custom label layout.
9. Click OK.
Approach creates and displays the mailing labels. You may want to go to Preview to see how the labels will look on the printed page.

For information about moving fields or adding text to mailing labels, see “Changing the appearance of mailing labels,” next.

If the labels you specified won't fit on a page, Approach alerts you so that you can readjust the label size.

Changing the appearance of mailing labels

Once you've created mailing labels, you can change their appearance the same way you would a change form. You can:

- Move or resize fields manually, or set them to automatically slide to remove excess space.
- Add text to the label.
- Change the label size, the number of labels on a page, the gaps between labels, and their printing order.

In Design, you can also change the overall look of a mailing label by adding objects, changing the fonts used for field data, adding fill colors to objects, fields, or labels as a whole, or adding other graphic elements.

- For more information about adding design elements, see “Adding objects to the background of a view” on page 5-12.
- For more information about formatting text, see “Formatting the text in a form letter” on page 9-9.
- For more information about changing line and color settings, see “Changing the line and color settings for a form letter” on page 9-10.
- For more information about changing the appearance of fields, see “Editing fields” on page 6-22.

Moving or resizing mailing label fields

Go to Preview to see how Approach slides fields to eliminate any empty space.

When you first create a mailing label, Approach automatically slides fields over or up to eliminate any empty space between them; this feature works both for fields that don't contain data and for fields in which the data doesn't fill all of the space allocated to it.

If, however, you want to adjust the space between fields yourself, you can easily do so by dragging a field to a different location. You can also resize a field by dragging one of its handles. However, if you make a field too small, Approach shows only as much data as will fit.

- To move a mailing label field, drag the field to the desired location.

You can also use the left, right, up, and down arrow keys to move a field. Make sure that the whole field fits inside of the label boundaries so that all of its contents will be printed.

The rounded rectangle shows the label's boundaries.



- To resize a mailing label field, drag a handle to the desired size.

Drag a handle to resize the field.



Setting a field to slide

When you create mailing labels, Approach automatically slides fields up and to the left to remove any extra space. However, if you add a field to a mailing label after the labels have been created, you'll need to set the field to slide.

To set a field to slide:

1. In Design, select a field and open its InfoBox.

You can double-click the field or click the Show Info icon.

2. Click the Dimensions tab.



Turn these options on to remove extra space between fields.

3. In the When Printing, Slide area, turn on Up and Left.

Approach slides the field you changed to remove the extra space. You'll see the change in Preview.

Typing text in a mailing label

In addition to the database fields that appear on a mailing label, you can also add text, such as a comma between address fields or a general message, to each label. Working in Design, you create text objects and type text in them. Once you've created a text object, you can use the InfoBox to change its appearance.

To type text in a mailing label:

1. In Design, create a text object on the label.
For more information about creating a text object, see "Entering text in a text object" on page 5-14.
2. Type in the object.
The text appears on every label.

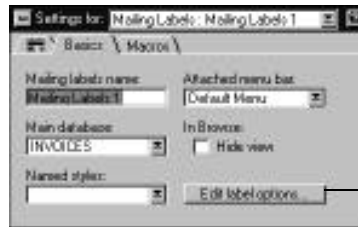
Changing a mailing label layout

When you create mailing labels, you can either select an Avery label layout or create a customized layout of your own. Thereafter, you can change the size and arrangement of labels on a page using the Edit Label Settings button on the Basic panel of the mailing label InfoBox.

To change the mailing label layout:



1. In Design, click the Show Info icon to open the InfoBox for mailing labels.



Click to change mailing label size or layout.

2. Click Edit Label Settings in the Basics panel.

The Mailing Label Options dialog box appears. This dialog box is identical to the Options panel of the Mailing Label Assistant.

If you want to modify an existing custom label, select it in this list.



Click to change printer settings.

You can change the current custom label definition, select a different label definition, or create a new one. You can also delete a custom label definition.

3. Select the label layout you want to change in the Custom Label drop-down list.

If you're adding a new label layout, type a name in the Custom Label text box.

4. Change the settings for the label as necessary.
These settings are described in "Creating custom mailing labels" on page 9-18.
5. Click Add to add a new label definition, or click Change to apply changes to the current label definition.
6. Click OK.
Approach applies the revised definition to the current mailing labels.
 - To delete a label layout, select it in the Custom Label drop-down list and click **DELETE**.

10

Entering and Editing Data

After you have created a database and defined fields for it, you're ready to enter information for the specific records.

This chapter describes how to add and duplicate records, move to other records and fields, enter data in different types of fields, check the spelling in a database, and hide and delete records.

The information in this chapter applies generally to all types of views. For more detailed information about entering and editing data in worksheets, see Chapter 12, "Designing Worksheets and Crosstabs."

You can also enter data by importing it from another file or application or by inserting an OLE object in a field. For information about entering data in these ways, see Chapter 16, "Exchanging Data with Other Files or Applications."

About Browse

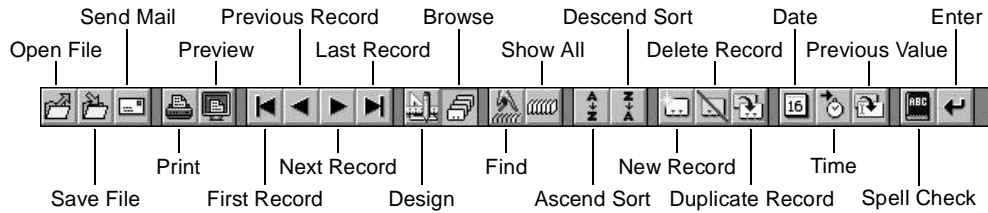
In Browse, you work with the information in a database rather than with the design of views. You can enter and edit data, add and delete entire records, find and sort records, and see different perspectives of your database.

As soon as you finish defining fields for a new database, Approach automatically takes you to a standard single-record form in Browse so that you can begin entering data. You can also change to Browse from another environment at any time.



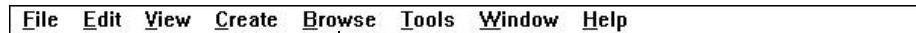
- To go to Browse, click the Browse icon or choose Browse from the View menu or the environment pop-up menu in the status bar.

The default icon bar in Browse has SmartIcons for many of the most commonly used commands for working with data and records. Click an icon to apply the command.



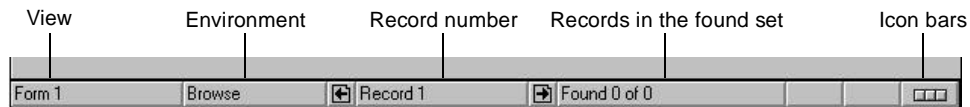
If the current view is a worksheet or a crosstab, the icon bar changes to provide commands specific to that type of view. For information about the worksheet and crosstab icon bars, see Chapter 12, “Designing Worksheets and Crosstabs.”

In the Browse menu bar, a *context-sensitive menu* changes depending on the current selection or the current view. Most often, this menu is named Browse and provides standard commands for finding, sorting, and editing records. But if a PicturePlus field is selected or if the current view is a worksheet or a crosstab, the menu changes names and has commands for working with that type of element.



This menu changes to PicturePlus, Worksheet, or Crosstab.

The status bar in Browse gives information about the current Approach file. Most parts of the status bar have pop-up menus or other options you can use to navigate in the file or to modify your work area.



Click an arrow to go to the previous or next record. Click the record number to go to a record by number.

The parts of the status bar that show the view name and environment are pop-up menus. You can choose from them to change to another view or environment. The icon bar symbol at the right end of the status bar is also a pop-up menu, with the icon bars available in the current view.

Views for entering and editing data

Approach is very flexible in how it lets you work with data. You can enter and edit data in a variety of views—forms, reports, worksheets, form letters, and mailing labels. The type of view you use depends on how many records you want to see at a time and how you want their fields organized.

- To change to another view, click the view tab or choose the name of the view from the view pop-up menu in the status bar.

If you use a particular view often, you may want to define a macro for changing to it.

The view tabs and the pop-up menu in the status bar show all the views in the current Approach file.

Forms are often the best type of view for entering data. A form shows one record at a time, so it can provide many fields for each record. You can design your forms in a graphic, easy-to-understand format for entering data.

But there may be occasions when you want to see more than one record at a time, perhaps to enter data quickly and with less detail for each record. In these cases, you can use a list-style report or a worksheet for entering data. Reports and worksheets can show multiple records on a single page, so they are often much more concise than forms.

In a worksheet, each column corresponds to a field. If you're not interested in a particular field when entering data, you can collapse the field's column to hide it from view. You can also rearrange columns to make entering data more convenient.

Moving to another record

When entering and editing data, you work with one record at a time—the *current record*. In a form or form letter, the current record is the one showing; in a report or mailing label, the current record is the one with a solid border; in a worksheet, the current record is the line with the active field.

In a report, the current record has a border.

Acct. No.	Company	First Name	Last Name	City	Phone
ES03	East Street Distributors	George	Whalley	Cincinnati	(512) 555-0933
SD05	Simpson Distributors	Janet	Kingsley	Chicago	(244) 555-2245

This section describes how to use commands to move through the records of a found set, in their current order in the Approach file. In a report, worksheet, or mailing label, you may also click in a visible record to move to it or tab to the next record from the last field of the current one.

If you have a field selected before you move to another record, the same field is selected in the other record.

You can set a default order for records from a database as they appear in an Approach file, and you can set a temporary sort order for the records. For information, see “Setting a default order for records” on page 19-5 and “Sorting records by data in fields” on page 11-14.

Moving one record at a time

You can move forward or backward through a view one record at a time.



- To move forward one record, click the Next Record icon, click the right arrow in the status bar, or press **PAGE DOWN**.

You can hold down the mouse button on the Next Record icon to “fast forward” through the records.



- To move backward one record, click the Previous Record icon, click the left arrow in the status bar, or press **PAGE UP**.

You can hold down the mouse button on the Previous Record icon to “rewind” through the records.

Moving to the first or last record

You can also move quickly to the first record or the last record in the current order of records.



- To move to the first record, click the First Record icon or press CONTROL-HOME.



- To move to the last record, click the Last Record icon or press CONTROL-END.

Moving to a specific record

Each record has a number in the current order of records in an Approach file (from front to back). If you know the number of the record you want to go to, you can give Approach the number to move directly to that record. This is especially helpful in a large database.

Keep in mind that the record number can change when you find or sort.

The number of the current record appears in the status bar.

To move to a specific record:

1. Click the record number in the status bar.

The Go To Record dialog box appears.

Type the number of the record.



2. Type the number of the record you want to move to.
3. Click OK.

Adding records

You can put another record in a database by either adding a new record or making a duplicate of an existing one. You must be in Browse to add a record.

If you have set a default order for the records in a view, after you add data to a new record the record is placed in its proper position in the sequence. (It appears at the end of the database in your view until the first refresh.)

If you have not set an order for the records, a new record remains at the end of the database.

Adding a new record

When you add a new record to a database, the record is initially blank, except for fields that are defined to have data entered automatically.



- To add a new record, click the New Record icon or choose New Record from the Browse, PicturePlus, or Worksheet menu.

The new record is active, with the insertion point in the first field in the tab order.

In a repeating panel

When you're working in a repeating panel on a form, you can add a record to the database the panel is based on.

If the join options are set for inserting a record automatically, you can just click in a field in the first blank line in a repeating panel to add a record. For information about this option, see "Setting options for a join" on page 4-17.

A new record appears at the bottom of a repeating panel. If the displayed rows in a panel are already full when you add a record, a scroll bar appears at the side of the panel.

Duplicating a record

Duplicating a record is a quick way to create records with similar data.

You can make a duplicate of any existing record. Approach copies each field from the original record and places them in the duplicate.

If any fields are defined to have data entered automatically, note that they may not match the original record (such as if they specify a unique serial number or the time the record was created).

To duplicate a record:

1. Select the record you want to duplicate.

If you're using a form, show the record. In a report, worksheet, repeating panel, or mailing label, click in a field in the record.



2. Click the Duplicate Record icon or choose Duplicate Record from the Browse, PicturePlus, or Worksheet menu.

The duplicate record is active, with the insertion point in the first field in the tab order.

Entering data in fields

In most respects, you can enter and edit data in Approach as you do in a word processing application.



If you need to make a field larger, drag a handle in Design. In a worksheet, make the column wider.

You can enter and edit data in the fields of a record when you're in Browse.

Any data you enter appears at the insertion point or replaces the current selection. You can choose Cut or Copy from the Edit menu to remove or copy a selection and place it on the Clipboard; then specify a location and choose Paste from the Edit menu to put the selection there. Press **DELETE** or choose Clear from the Edit menu to remove data without placing it on the Clipboard.

Approach saves the data you enter or edit as soon as you click in or tab to another field, move to another record, change to another view, click the Enter icon, or press **ENTER**. You do not need to save data yourself.

Approach may enter data automatically in a field because of how the field was defined—for example, a date or serial number is often entered this way. You can edit data that was entered automatically (unless the field is read-only or the Approach file has a password). You cannot edit data in a calculated field, however.

In a form, report, worksheet, or other view with specified field boundaries, you see only as much data as fits in a field's boundaries even though the field may contain more data than is visible.

This section explains how to enter data in different types of fields. To enter data in a variable field, follow the instructions for the type defined for the variable field.

Selecting a field

You need to select a field before you can enter or edit data in it. When a field is selected, it has a solid border around it. In a report or mailing label, the border for a selected field is inside the border for the current record.

Acct. No.	Company	First Name
E803	East Street Distributors	George
E805	Empire Distributors	Janet

In a report, the field border is inside the record border.

*Approach lets you use either the **TAB** key or the **ENTER** key to move between fields for fast data entry.*

You cannot select a calculated field.

- To select a field, click in a field, or press **TAB** to go to the next field in the data entry order or **SHIFT-TAB** to go to the previous field in the data entry order.

If your preferences are set this way, you can also press **ENTER** or **SHIFT-ENTER** to tab to the next or previous field. For more information, see "Setting general working preferences" on page 19-14.

Clicking in a field selects the field and places an insertion point in it. Any data you enter will appear at the insertion point.

Tabbing to a field selects the field and its entire contents. Any data you enter will replace the selected contents. If you tab out of the last field in the last record, Approach asks if you want to create a new record. Click **OK** to create the record.

Changing the insertion point or selection

Once a field is selected, you can move the insertion point or select other data in the field.

- To change the insertion point, click where you want the insertion point to go, or press the left arrow key or right arrow key to move the insertion point one character at a time.
- To change the selection, drag to select a range, double-click to select a word, or press **SHIFT** and the left arrow key or right arrow key to extend a selection by one character.

Entering text in a text or memo field

You can type letters, numbers, and symbols in a text or memo field.

- To enter data in a text or memo field, type any letters, numbers, or symbols, up to the limit of the text field length or the memo file size.

A sort on a text field is alphabetical. If you want to sort on a numeral, a date, or a time, use a numeric, date, or time field instead.

In a text field, the text must fit in the length specified in the field's definition. Approach alerts you if you try to type characters beyond the length allowed.

You can type more text in a memo field because the text is stored in a separate file. The maximum size of a memo file depends on the file type of the database. For limits on the size of text and memo files, see Appendix B and Appendix C.

A text format can specify all capitals, all lowercase, or first-letter capitals, and it applies only to letters in a field. If a field has a text format, the text changes to the format when you move out of the field.

As you type text, it appears the way you enter it.

Item Name	Item Name
AQUA SPRING	AQUA SPRING WATER
Juice, snack pack	JUICE, SNACK.PACK

The text is formatted when you move out of the field.

If a field has a text format and “Show data entry format” is on for the field, the text is formatted as you type and the formatted text is stored in the database.

You can also enter today’s date or the current time in a text or memo field, but you will not be able to sort the field chronologically on the date or time. Choose Today’s Date or Current Time from the Insert submenu in the Browse or Worksheet menu.

Entering a value in a numeric field

The “Show data entry format” setting is in the Format panel of a field’s InfoBox.

You can type numeric data in a numeric field. Approach does not save any text or non-numeric characters (such as * and ") in a numeric field.

- To enter a value in a numeric field, type numeric data up to the length specified in the field’s definition.

Approach alerts you if you try to type characters beyond the length allowed.

If a field has a numeric format, the data is formatted when you move out of the field. Type a decimal point if the data needs one, but don’t type other characters like currency signs and commas. Let the format provide them.

If a field has a numeric format and “Show data entry format” is on, the fixed characters of the format appear in the field and underlines show the maximum number of characters. You can press the space bar to move the insertion point past the next separator.

With “Show data entry format,” fixed characters appear in the field.

Price	Price	Price
\$1.79	\$1.79	\$1.79
\$1.79	\$008.95	\$8.95

The data is formatted when you move out of the field.

A numeric format can specify currency signs, separators, a fixed number of digits, and other properties. For more about numeric formats, see “Setting a numeric format” on page 6-19.

Entering a value in a Boolean field

A Boolean field holds a value of true or false. If you refer to a Boolean field in a formula, Approach uses 1 for a true value and 0 for a false value to calculate the result.

- To enter a value in a Boolean field, type **Yes, Y, yes, y,** or **1** for *true*. Type **No, N, no, n,** or **0** for *false*.

When you move out of the field, the value appears in the field as Yes or No.

Entering a date in a date field

You can type up to ten characters in a date field to represent one date, or you can use shortcuts to have Approach enter a date for you. Do not mix the date with other kinds of information.

- To type a date in a date field, type the month, day, and year as numbers separated by non-numeric characters.
- To enter the current date, click the Date icon or choose Today's Date from the Insert submenu in the Browse or Worksheet menu.
- To enter another day for the current month and year, type a single number.



For example, in June 1994 you can type **15** to enter *June 15, 1994*.

When typing a date, you can type one, two, three, or four digits for the year. One-digit and two-digit years are assumed to mean the twentieth century. If you don't type a year, Approach assumes the current year (based on your system settings) and enters it for you.

If a field has a date format, the date changes to the format when you move out of the field. Type the separators along with the numbers for the month, day, and year.

If a field has a date format and “Show data entry format” is on, slashes appear in the field as separators and underlines show the maximum number of characters. You can press the space bar to enter the current month, day, or year and move past the next slash.

With “Show data entry format,” slashes appear in the field.

Invoice Date

Invoice Date

Invoice Date

The date is formatted when you move out of the field.

A date format can specify the order of the month, day, and year as they appear in views, whether the month appears as a word or a number, and other properties. For more about date formats, see “Setting a standard date format” on page 6-15.

International formats

Your system may require a different order for entering dates (such as “day, month, year” or “month, day, year”). Enter the date numbers in the order specified in your Windows International Control Panel.

Entering a time in a time field

You can type up to twelve characters in a time field to represent one time, or you can use shortcuts to have Approach provide a time for you. Do not mix the time with other kinds of information.

- To type a time in a time field, type the time as hours and minutes separated by colons (HH:MM); as hours, minutes, and seconds separated by colons (HH:MM:SS); or as hours, minutes, seconds, and hundredths of a second separated by colons and a decimal (HH:MM:SS.00).



- To enter the current time, click the Time icon or choose Current Time from the Insert submenu in the Browse or Worksheet menu.
- To enter only an hour, type a single number.

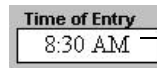
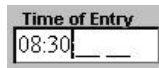
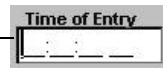
For example, type **8** to enter *8:00*.

When typing a time, you can use either a 12-hour or a 24-hour format. If you enter an hour less than 12 without a suffix of AM or PM, Approach assumes AM.

If a field has a time format, the time changes to the format when you move out of the field. Type the separators along with the numbers for the parts of the time.

If a field has a time format and “Show data entry format” is on, colons appear in the field as separators and underlines show the maximum number of characters. You can press the space bar to enter the current hour, minute, or second and move past the next colon.

With “Show data entry format,” colons appear in the field.



The time is formatted when you move out of the field.

A time format can specify which separators appear in views, whether seconds and hundredths appear, and other properties. For more about time formats, see “Setting a time format” on page 6-18.

International formats

Your system may require a different time separator than the colon for entering times. Use whatever separator was specified in your Windows International Control Panel.

Duplicating a value from the last record modified



Duplicating a value is a quick way to enter repeating data in a field.

You can duplicate a value from another record in the database. For example, you may need to enter your name in the Sales Rep field in several orders in a row.

You can duplicate data in any type of field and with any type of value.

- To duplicate a value from the last record modified, click the Previous Value icon or choose Previous Value from the Insert submenu in the Browse or Worksheet menu.

This enters the value from the same field in the last record you modified in your current session with Approach. If you have not entered or edited any data in the current session, the command does not enter a value.

Selecting a value for a field

In a form or report, a field can have a drop-down list, a set of radio buttons, or a checkbox. You enter a value by choosing from the list or by turning on a radio button or checkbox.

If you're designing a view, you can set up a drop-down list, a set of radio buttons, or a checkbox as part of the view.

Selecting from a drop-down list

A drop-down list shows the possible values for a field. When you move to a field with a drop-down list, the list opens so that you can select a value. In some cases, a list is combined with a field box so that you can either select from the list or type a value.

A drop-down list shows the values you can enter in a field.



If a list is combined with a field box, use either the list or the text box.

If you want the cursor in the next field when you finish choosing, use an arrow key to make your selection and then press TAB.

- To select from a drop-down list, click the value you want. Or begin typing the value or press the up arrow key or down arrow key until the value is selected and then press TAB or ENTER.

A list can display up to nine items. If the list has more than nine items, Approach inserts a scroll bar.

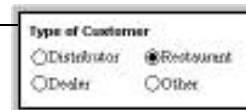
For information about adding a drop-down list to a view, see “Displaying a field as a drop-down list” on page 6-4.

Turning on a radio button or a checkbox

A radio button or checkbox assigns an on or off value to a field. You can enter a value in a field by turning on its radio button or checkbox.

Radio buttons identify a set of possible values for a field. Only one value in a set can be on at a time; when you turn on a radio button, if another button is on it is automatically turned off. A checkbox is normally used by itself to define two possible values for a field (Checked and Unchecked values).

You can turn on one radio button in a set, as long as the buttons are based on the same field.



You can turn an individual checkbox on or off.

- To turn on a radio button or checkbox, click the radio button or checkbox. Or tab to the set of radio buttons or the checkbox and then press the space bar.

Once you have turned on a radio button, the only way to turn it off is by turning on another button in its set.

The value in a field with radio buttons or a checkbox is null until you turn the settings on or off.

If you turn a checkbox on and then off, you enter the Unchecked value in the field.

For information about adding radio buttons or a checkbox to a view, see “Displaying a field as a checkbox” on page 6-10 and “Displaying a field as a set of radio buttons” on page 6-12.

Putting a picture in a field

To use a graphic in a PicturePlus field, you can paste a picture from another application, or you can draw in the field to create your own image. The graphic appears only in the PicturePlus field in the current record. It is part of the record's data, not part of the design of a view.



Be sure to work in Browse when adding graphics. If you are in Design, you're adding the picture to a view rather than to a field in a record.

When a pasted picture is too large for a field, the picture is either cropped or reduced, depending on how this option is set for the field. Approach can also enlarge a picture to fit a field. For information about these settings, see "Changing display options for a PicturePlus field" on page 6-32.

For information about OLE objects in fields, see "About OLE and Approach" on page 16-18.

Pasting a picture from a file

You can paste a picture directly into a PicturePlus field. The type of the graphic file can be Windows bitmap (.BMP), Encapsulated PostScript (.EPS), graphics interchange (.GIF), Windows Paintbrush (.PCX), Targa (.TGA), Tagged Image File Format (.TIF), or Windows metafile (.WMF).

To paste a picture from a file:

1. In Browse, select the PicturePlus field.
2. Choose Paste from File from the Edit menu.

The Paste from File dialog box appears.



3. Select a graphic file type or *.* in the List Files of Type drop-down list.
4. Select the name of the graphic file you want in the File Name list. You can change the directory and disk if you need to look for the file.
5. Click OK.
Approach pastes a copy of the picture in the field.

Drag and drop

You can also use the drag-and-drop feature in Windows to paste a picture from a file. Open the Windows File Manager and the Approach file on your screen at the same time. Then drag the file icon for the picture from the File Manager to the PicturePlus field in the Approach file.

Pasting a picture from the Clipboard

You can also paste a picture by copying it to the Clipboard in its source application. The Clipboard stores one item at a time.

To paste a picture from the Clipboard:

1. In the picture's source application, select the picture and choose Copy from the Edit menu.
This places a copy of the picture on the Clipboard.
2. In Approach, select the PicturePlus field in Browse and click the Paste icon or choose Paste from the Edit menu.
Approach pastes the copy of the picture in the field.



Paste Special

When a picture is stored on the Clipboard in more than one format, the Paste Special command is available in the Edit menu. You can choose Paste Special rather than Paste and select the format you want in the dialog box that appears.

If you select the object-type format in Paste Special, the picture is added to the field as an OLE object. For more information, see “Embedding an existing OLE object” on page 16-26.

Drawing lines with the pointer

If a PicturePlus field is defined to allow drawing, you can draw freehand lines in it. For information about setting fields to allow drawing, see “Changing display options for a PicturePlus field” on page 6-32.

To draw lines with the pointer:

1. In Browse, select the PicturePlus field.
2. While holding down the left mouse button, drag to draw the lines.

Lines appear wherever you drag in the field.

Pen colors and line widths

When you select a PicturePlus field, the Browse menu changes to the PicturePlus menu. If you want to change the pen color or line width for your freehand lines, choose PicturePlus Properties from the PicturePlus menu, and then select the color or width in the InfoBox. The color or width will be applied to any lines you draw until you choose a different color or width.

Filling a field with a new value

You can have Approach enter the same value in a particular field in every record you're working with.

If you're showing a found set of records, Approach enters the value in the field for those records. If you're showing the entire database, Approach enters the value for all the records.

For example, suppose a customer in your Orders database changed its company name from Barcelona Cafe to Caliente Cafe. You could use the Find command to show only the records with Barcelona Cafe in the ShipTo field, and then fill the ShipTo field in the found set with Caliente Cafe.

Filling a field is a quick way to enter repetitive data, either in new records or in existing records in which you need to replace old data.

To fill a field with a new value:

1. If you want to fill the field only in a set of records, use the Find command to isolate the records.

For information about this command, see “Finding data in records” on page 11-1.

2. In one of the records, click in the field you want to fill.

If a record already has the value you want to use for the fill, click in the field in that record. The value will appear in the Fill Field dialog box.

3. Choose Fill Field from the Browse or Worksheet menu.

The Fill Field dialog box appears. The list in Fill Field shows the fill value for the selected field.

You can edit the fill value.



4. If necessary, edit the fill value.

For example, type **Caliente Cafe** to fill the field with *Caliente Cafe*.

5. Click OK.

Approach fills the field in every record in the database or the current found set.

Checking spelling

Approach can check the spelling of text in your databases and Approach files. The text it checks depends on which environment you're in:

- In Browse, Approach checks the spelling of data in records, including text in memo fields.
- In Design, Approach checks the spelling of text in field labels and text objects, including text in the body of form letters.

The spelling checker is not available in Find and Preview.

When you check spelling, Approach compares the text with entries in a main dictionary and a user dictionary. Lotus provides the main dictionary for your language; you cannot edit this dictionary. The user dictionary is for words that are not in the main dictionary, such as proper nouns and technical terms; you can add and delete words in this dictionary at any time.

You can use both the main dictionary and the user dictionary with other Lotus applications that have a spelling checker. The dictionaries are normally stored in your Lotus directory.

Running the spelling checker

You must be in Browse or Design to run the spelling checker.

To run the spelling checker:

1. If you want to check the spelling in only some text, select the text to check.

In Browse, you can select any text in a record.

In Design, you can select text in a text object or an entire text object. If you select an entire object, Approach will check all the text in the object.



2. Click the Spell Check icon or choose Spell Check from the Tools menu.

The first Spell Check dialog box appears.

Select a scope for the spell check.



3. Select the scope of the text you want to check.

Selection checks the spelling only in the selected text or text object.

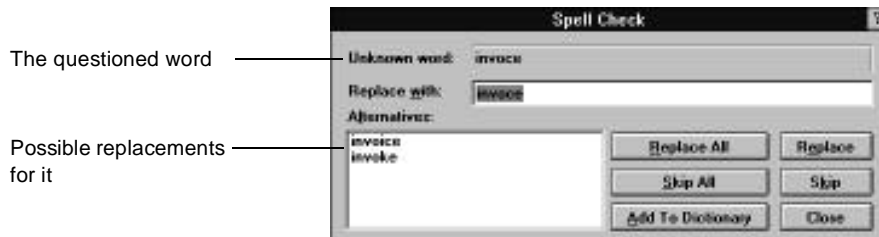
“Current record” (in Browse) checks the spelling in all fields of the current record. “Current view” (in Design) checks the text in all text objects in the active view.

The options that appear depend on whether you're in Browse or Design.

“Found set” (in Browse) checks the spelling of all text in all records in the current found set; if a field is selected, it checks only that field in each record. “Selection across found set” (in Browse) checks the selected text or text object in all records in the found set.

4. Click OK.

If Approach finds a word that is not in its dictionaries, the second Spell Check dialog box appears. It shows the questioned word and possible replacements for it.



If Approach does not question any words, an alert box appears letting you know that the spell check is complete.

5. For each questioned word, specify what to do by responding to the dialog box.

To replace the word, either edit the text in the Replace With text box or select another word in the Alternatives list, and then click Replace All or Replace. Replace All changes the word wherever it occurs in the text you’re checking, and Replace changes only this occurrence of it.

You can click Close to quit a spell check before Approach reaches the end of the text.

To accept the word, click Skip All or Skip. Skip All accepts the word wherever it occurs in the text you’re checking, and Skip accepts only this occurrence of it.

To accept the word and add it to the user dictionary, click Add To Dictionary. Approach will not question the word in future spell checks.

After you respond to the dialog box, Approach continues checking and displays the next word it questions. When Approach finishes checking all the text, an alert box appears letting you know that the spell check is complete.

6. Click OK in the alert box.

Editing the user dictionary

A user dictionary is helpful when you have terms that do not appear in the main dictionary. Most often, these are proper nouns like product and company names or technical terms that aren't found in a general-purpose dictionary.

If you click Add To Dictionary for a questioned word when you run the spelling checker, the word is added to your user dictionary. You can also add words directly to the user dictionary, and you can delete words from the dictionary.

To edit the user dictionary:

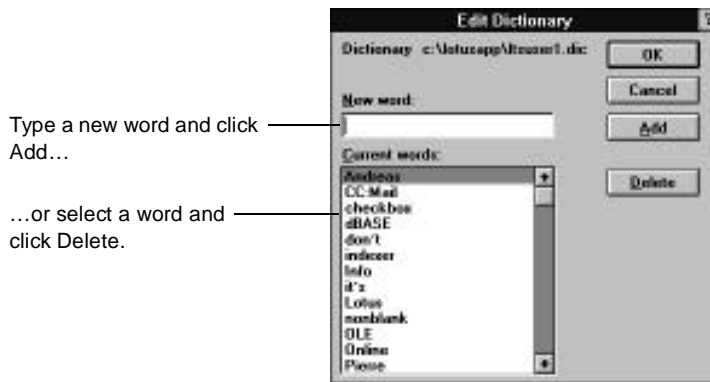


1. Click the Spell Check icon or choose Spell Check from the Tools menu.

The Spell Check dialog box appears.

2. Click Edit Dictionary.

The Edit Dictionary dialog box appears.



3. Add or delete the words you want.

To add a word to the dictionary, type the word in the New Word text box and click Add.

To delete a word from the dictionary, select the word in the Current Words list and click Delete. The Current Words list shows symbols first, then numbers, and then words in alphabetical order.

4. Click OK to return to the Spell Check dialog box.
5. Click OK to run the spelling checker or click Cancel to close the Spell Check dialog box.

If you want to edit a word, you can delete the word and then re-add it with the new spelling.

Changing to another main dictionary

Approach comes with a main dictionary for your language. If you have another dictionary you want to use as the main dictionary, you can change to it within Approach.

To change to another main dictionary:



1. Click the Spell Check icon or choose Spell Check from the Tools menu.
2. In the Spell Check dialog box, click Language Options.
The Language Options dialog box appears.

Specify the path of the new dictionary.



Select the language of the dictionary.

3. Type the pathname of the new main dictionary in the Directory Path text box.
4. If a single dictionary file has more than one language in it, select the language you want in the Language drop-down list.
5. Click OK to return to the Spell Check dialog box.
6. Click OK to run the spelling checker or click Cancel to close the Spell Check dialog box.

Setting options for checking spelling

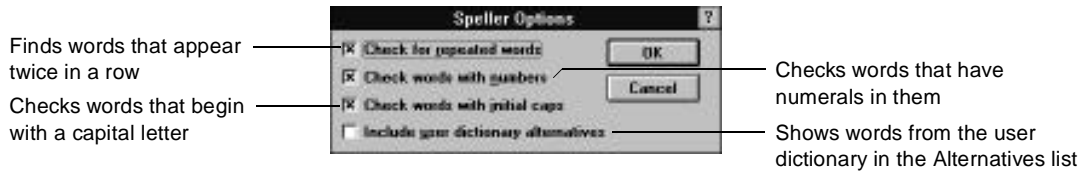
You can specify several options for checking spelling, such as whether you want Approach to find repeated words. The options become a new default for the spelling checker and remain in effect until you change them.

To set options for checking spelling:



1. Click the Spell Check icon or choose Spell Check from the Tools menu.
2. In the Spell Check dialog box, click Options.

The Speller Options dialog box appears.



3. Turn on the options you want.

<i>To</i>	<i>Turn on</i>
Find words that appear twice in a row, such as <i>the the</i>	Check for repeated words
Check the spelling of words with numerals, such as <i>Invoice2</i>	Check words with numbers
Check the spelling of words that begin with a capital letter, such as <i>London</i>	Check words with initial caps
Show words from the user dictionary in the Alternatives list during a spell check	Include user dictionary alternatives

Approach checks words at the beginning of sentences even if "Check words with initial caps" is off.

4. Click OK to return to the Spell Check dialog box.
5. Click OK to run the spelling checker or click Cancel to close the Spell Check dialog box.

Hiding and showing records

You can hide records from view to make them unavailable. This does not delete the records from the database, but just temporarily hides them from the group of records you're browsing.

When a record is hidden, it is not included in sorts and calculations, and it is not printed or exported along with other records.

Hiding records

To select records that meet certain criteria in a report or worksheet, use Find to isolate the records and then choose Select All from the Edit menu.

You can hide one record at a time in a form and more than one record at a time in a report or a worksheet.

To hide records:

1. Specify the records you want to hide.
If you're using a form, show the record. If you're using a report or worksheet, click in any field in the record. To select more than one record, **SHIFT**-click or **CONTROL**-click in the records.
2. Choose Hide Record from the Browse, PicturePlus, or Worksheet menu.
The records disappear from view.

Showing hidden records



When you're ready to use hidden records, you can show them again. You can show either all the records in the database or only the records in the found set you used most recently.

- To show all the records in the database, click the Show All icon or choose Show All from the Browse or PicturePlus menu or the Worksheet Find or Crosstab Find submenu.
- To show the records in the found set you were using before you hid the records, choose Find Again from the Browse or PicturePlus menu or the Worksheet Find or Crosstab Find submenu. Then press **ENTER**.

Deleting records

You can delete individual records or a set of records from a database. The records are permanently removed from the database, not just from the Approach file you're browsing. Deleting records also removes them from other Approach files that use the database.

Deleted records cannot be retrieved.

Deleting specific records

You can delete one record at a time in a form and more than one record at a time in a report or a worksheet.

To delete specific records:

1. Specify the records you want to delete.
If you're using a form, show the record. If you're using a report, click in any field in the record. To select more than one record, **SHIFT**-click or **CONTROL**-click in the records.



2. Click the Delete Record icon or choose Delete Record from the Browse, PicturePlus, or Worksheet menu.

Approach asks if you're sure you want to delete the records.

3. Click Yes to delete the records.

The records are permanently removed from the database.

In a repeating panel

When you're working in a repeating panel on a form, you can delete a record from the database the panel is based on. Click in the record in the panel, and delete the record. Approach asks if you're sure you want to delete it. Click Yes to delete the records.

Deleting a found set of records

If you want to delete records that have certain criteria in common, you first fill out a find request that specifies the criteria. You can delete *all* records in a database this way by first finding all the records.

To delete a found set of records:

1. Use the Find command to isolate the records you want to delete.

If you want to delete all the records in a database, type an asterisk (*) in any field in the find request. The asterisk acts as a wildcard for any characters in the field.

For information about the Find command, see "Finding data in records" on page 11-1.

2. Choose Delete Found Set from the Browse, PicturePlus, or Worksheet menu.

Approach asks if you're sure you want to delete the records.

3. Click Yes to delete the records.

The records are permanently removed from the database.

It's a good idea to back up a database before deleting records, especially when deleting a found set.

11

Finding and Sorting Records

You can specify which records to view in Browse or Preview and in what order by finding and sorting. *Finding* isolates and displays a set of records based on data in one or more fields; *sorting* reorganizes the current set of records in the order you prescribe.

This chapter explains how to use a find request to look for data in records, how to sort the records, and how to return a data set to its original sort order.

If you want to automate a particular find or sort, you can save the instructions for it in a macro. For information about this, see “Saving a find request as part of a macro” on page 11-11.

Finding data in records

Approach can find the records in a database that match certain criteria, such as records for all products more than \$200 or for all customers in San Francisco. When Approach finds records that match your criteria, it displays only those records rather than the entire database.

Before searching, you see all the records in a database.

Agent No.	Company	First Name	Last Name	City
ED03	Pensacola Bowling	David	Miller	Pensacola
AC47	ACC Distributor	Nancy	Smith	San Francisco
E301	East Coast Distributor	George	Whitely	Cincinnati
ND06	Norton Dwellier Co.	Lois	Miller	San Francisco
SD05	Simpson Dist.	Jane		
S004	Seagon Corp.	Laura		

In this report, Approach found and displayed only the records for customers in San Francisco.

Agent No.	Company	First Name	Last Name	City
AC47	ACC Distributor	Nancy	Smith	San Francisco
ND06	Norton Dwellier Co.	Lois	Miller	San Francisco

Finding records allows you to focus on a subset of your data. You may want to view, edit, print, delete, or export only those records that have a particular aspect in common. Or you may want to find records that have errors, such as blank fields or fields with values that are less than a specified minimum.

The group of records that Approach isolates is called the *found set*. The Browse or Preview status bar shows the number of records in the current found set and the number of records in the entire database.



Number of records in the found set, in relation to the entire database

When Approach searches for records, it looks through all the records in a database, not just those in the current found set. Thus, if you have Approach find a set of records while you're already viewing another found set, the new set may include records you haven't been viewing.

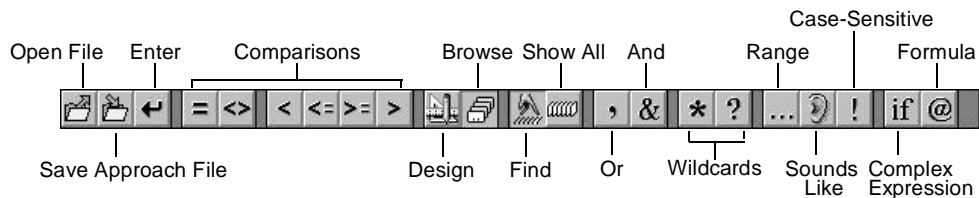


When you're finished working with a found set, you can go back to seeing all the records in the database by clicking the Show All icon or by choosing Show All from the Browse menu. (In a worksheet or crosstab report, you'll find Show All in the Worksheet Find or Crosstab Find submenu.) Show All also returns records to their original sort order.

Creating a find request

You tell Approach what to search for by filling out one or more *find requests*. Each request has *search criteria*—the specific information to look for in the records.

You create a find request in Find. When you're in Find, the default icon bar has icons you can click to insert operators in search criteria.



Searching is faster in a main database than in a detail one. If possible, use a form or report that is based on the database you want to search.

A new find request is a blank copy of the view—the form, report, worksheet, or crosstab—you’re currently using. You enter the criteria in fields of the find request. If the view contains a summary field, you see the summary field along with all of the other fields in the find request.

The first time you use a particular field for a find (or for a sort), Approach compiles all values in the field into a Smart Index. Once a field has an index, any future finds or sorts go much faster. After Approach has found the records that match the criteria, it returns to Browse and displays the found set in the current view.

This section provides general instructions for creating a find request. See the sections that follow for specifics about different types of requests.

To create a find request:

1. Change to the form or report you want to use for finding records.
2. Click the Find icon or choose Find from the Browse menu. In a worksheet or a crosstab, Find appears in the Worksheet Find or Crosstab Find submenu.



You go to Find, and a find request appears.

A find request is a blank copy of the view you’re using.

Employee info		Personal Information			Notes
First Name	Last Name	Home Address			
Department		City	St	Zip	-----
Supervisor	Supervisor's Est.	Contact in Emergency			-----
Home Phone	Work Extension	Relationship	Phone		-----
Hire Date	Next Review	Status			-----
Soc. Security #	Review Every <input type="radio"/> 6 Mo. <input type="radio"/> 12 Mo.	Review Date	Title	Grade	-----

3. Type search criteria in the appropriate fields.

You can type criteria in a find request just as you type data in a regular form or report. Type criteria in as many fields as necessary to define the search.

The more fields you use for search criteria, the more limited the search will be.

You can find on a summary field only when it summarizes a group of records sorted by a field. You can't find on a grand total summary field or one that summarizes by a number of records.

You can use the following operators with search criteria. Either type an operator in the field, or click where you want the operator to go and then click its icon in the icon bar.

<i>This operator</i>	<i>Specifies</i>
<	Less than
>	Greater than
<=	Less than or equal to
>=	Greater than or equal to
=	Equal to (if alone, finds blank fields)
<>	Not equal to (if alone, finds nonblank fields)
,	Or criteria within a field
&	And criteria within a field
...	Range of values (for example, A...D)
*	Wildcard for zero or more characters
?	Wildcard for one character
@	Comparison with the result of a formula (used with another operator, such as in =@Today() or another fieldname (=@Fieldname))
!	Case-sensitive text search
~	Sounds like
If	Complex expressions

If you want to cancel a find while Approach is still searching, press ESC.

If you have Or criteria in more than one field, you need to set up a find request for each field. For more information, see "Finding records with one of several criteria (Or)" on page 11-5.



4. Click the Enter icon, click the OK button at the top of the find request, or press ENTER to begin the search.

Approach finds the records that match the search criteria and displays the found set of records. When Approach finishes searching, you return to Browse, where you see the first record in the new found set.

Finding records with multiple criteria (And)

When you enter criteria in more than one field in a find request, Approach finds the records that match all the criteria. This is known as an And search.

- To find records with multiple criteria, type criteria in more than one field in a find request.

This request finds employees who work in Finance *and* live in San Francisco.

First Name	Last Name	Home Address		
Department		City	St	Zip
Finance		San Francisco		

You can also use an If statement to specify an And search. For details, see “Using an If statement to find data” on page 11-10.

Finding records with one of several criteria (Or)

You can specify several criteria and have Approach find the records that match at least one of the criteria. This is known as an Or search.

If the Or search involves data in only one field, you can separate the criteria with a comma in that field of the find request. If the Or search involves data in more than one field, you need to set up a separate find request for each field. In this second case, a *set* of find requests defines the search criteria.

- To find records with Or criteria in one field, separate the criteria with a comma in that field in one find request.

This request finds employees who work in Finance *or* Payroll and live in San Francisco.

First Name	Last Name	Home Address		
Department		City	St	Zip
Finance, Payroll		San Francisco		

- To find records with Or criteria in more than one field, create a separate find request for each field.

After creating a find request for the first field, choose Find More from the Browse menu, click the Find More button at the top of the find request, or click the Find icon again to get a new blank

request for the next field. Do not click the Enter icon or the OK button or press ENTER until you're finished creating the entire set of find requests.

This pair of requests finds invoices that are more than \$200 *or* dated before April 30, 1994.

Invoice		
No.	Date	Amount
		>\$200

Invoice		
No.	Date	Amount
	<4/30/94	>\$200

When you're viewing a find request in a set, you can change to other requests in the same set by clicking the Previous Record, Next Record, First Record, or Last Record icons in the icon bar or the arrow buttons in the status bar.

You can also use an If statement to specify an Or search. For details, see "Using an If statement to find data" on page 11-10.

Finding text

Approach can find text that matches a string of characters, a word, or a phrase in a text field.

- To find text, type the characters in a text field.



Precede the characters with an equal sign (=) if you want the match to be exact.

For example, the search text *Payroll* finds *Payroll*, *Payroll Dept.*, and any other text that begins with the search text. *=Payroll* in a field finds only *Payroll*.

Wildcard characters



You can include asterisks (*) and question marks (?) as wildcards in a text search.

The asterisk matches any number of characters in the field, including no characters. For example:

- **past** finds records that contain the text *past* anywhere in the search field. (This is the best way to find text in a memo field, because it finds text beyond the first word in the field.)
- *san** can find *San Francisco* and *Santa Rosa*.
- **r** can find *red* and *green* but not *blue*. (*blue* has no *r*)
- **o* can find *solo* and *trio* but not *dot*. (*dot* does not end in *o*)
- *g*s* can find *grants* and *goods* but not *green*. (*green* starts with *g* but does not end in *s*)

Be careful not to type any extra spaces in search text.

The question mark matches any single character. For example:

- `to?` can find *toy* and *Tom* but not *today*. (*today* has more than one letter after *to*)
- `?an` can find *ran* and *pan* but not *plan*. (*plan* has more than one letter before *an*)
- `to??y` can find *today* and *Tommy* but not *toy* and *Tom*. (*toy* and *Tom* start with *to* but they don't have two letters and a *y*)
- `?o?` can find *Tom* and *son* but not *today* and *Troy*. (*today* has more than one letter after the *o*, and *Troy* has more than one letter before the *o*)



You can include an ampersand (&) in search text to look for a string that contains two text values. This is especially useful with wildcards. For example, the search text `*Barb*&*Susan*` finds records that contain both *Barb* and *Susan* anywhere in the search field.

Case-sensitive searches

Whether a search is case-sensitive depends on the file type of your database. A search in a dBASE, FoxPro, or Paradox 4.0 database is not normally case-sensitive, but a search is case-sensitive in a Paradox 3.5 database, a SQL table, or a database you open through ODBC. An Approach preference lets you make searches in a Paradox 4.0 database case-sensitive (see “Setting database options for a Paradox file” on page 19-10 for instructions).



If you want to limit a search to be case-sensitive, you can precede the characters with an exclamation mark (!).

For example, in a database that is not case-sensitive, the search text *Madrid* finds text that begins with *Madrid*, *madrid*, and any other combination of uppercase and lowercase letters in the search text. `!Madrid` finds only text that begins with *Madrid*, with a capital *M*. (You cannot use the equal sign and the exclamation mark together.)

Finding a word that sounds like another

Approach can locate words that sound like other words. This is particularly useful when you know how a name or other proper noun sounds, but aren't sure how to spell it.



- To find a word that sounds like another, precede the search text with a tilde (~).

For example, the search text `~Philip` finds *Philip*, *Filip*, *Philippe*, and similar-sounding words.

Finding numbers, dates, and times



You can type a single number to find a date for the current month and year.

You can type a single number to enter only an hour.

You can find a value in a numeric, Boolean, date, or time field or in a calculated field that returns a number, Boolean value, date, or time.

Typing numeric, date, and time search criteria is similar to entering these kinds of values in the fields of a regular view. For more detailed information about entering numbers, dates, and times, see “Entering data in fields” on page 10-7.

If you have a number, date, or time as search criteria, the match will be exact so you don't need to precede the criteria with an equal sign. But you may want to use the operator <>, <, <=, >=, or > with the criteria. For example, >200 finds numbers that are greater than 200, and <>8:30 finds times that are not 8:30 AM.

- To find a number, type the number in a numeric or calculated field.
Do not type other characters such as currency signs or commas with the number. If the field has a format, Approach provides these characters automatically.

- To find a Boolean value, type 0 or 1 in a Boolean or calculated field.

- To find a date, type the date as numbers in a date or calculated field. Separate the numbers with non-numeric characters such as slashes (/).

Type one, two, three, or four digits for the year. One-digit and two-digit years are assumed to mean the twentieth century. If you don't type a year, Approach assumes the current year (based on your system settings) and enters it for you.

- To find a time, type the time as numbers in a time or calculated field. Separate the numbers with colons.

You can use either a 12-hour or a 24-hour format. If you enter an hour less than 12 without a suffix of AM or PM, Approach assumes AM.

Finding values in a range



Approach can look for values that fall within an inclusive range in a text, numeric, date, or time field or in a calculated field that returns a number, date, or time.

- To find values in a range, enter an ellipsis (...) between the beginning value and the ending value of the range.

For example, H...J in a text field finds all text strings that begin with H, I, or J. 7...9 in a numeric field finds the values 7, 8, and 9.
5-1-94...5-31-94 finds all dates in the month of *May 1994*.

You cannot mix wildcards and other text operators with the ellipsis.

Finding today's date



You can find the current date in a date field or in a calculated field that returns a date.

- To find today's date, enter a comparison operator and @Today() in a date or calculated field.

The operators you can use are =, <>, <, <=, >=, and >.

The Today function returns the current date on your system clock, and the at sign (@) tells Approach to compare the system date from the Today function with values in the records.

For example, =@Today() specifies that you want an exact match with the system date.

Finding radio button and checkbox settings

You can look for all records that have a particular combination of radio button and checkbox settings.

- To find radio button and checkbox settings, turn on the radio buttons and checkboxes in the find request to specify the combination you want to find.

This request finds invoices that are for restaurants *and* for which payment has been received.

If you want to specify a No value for a checkbox, such as “payment not received” in the example above, click the checkbox to turn it on and then click it again to turn it off. A checkbox is Null until it is clicked at least once.

Finding blank or nonblank fields

Approach can isolate records with blank values in a particular field. This can help you identify errors in data entry or find records that don't have complete information yet. A field is considered blank if it has a Null value or no value.

Approach can also find fields that are not blank.

Enclose a field name in double quotation marks if it begins with a number, or if it contains a space, a period, a comma, or one of the following characters:

/, #, +, -, <, >, (,)

Repeating a search

Note that if you have added or deleted records, you may get a different found set this time.

Approach keeps track of your most recent search so that you can easily repeat it, as long as you are still in a view based on the same database and you have not used the Show All command.

To repeat a search:

1. Choose Find Again from the Browse menu. In a worksheet or crosstab, Find Again appears in the Worksheet Find or Crosstab Find submenu.

The find request appears. You can edit the request if you'd like to redefine the found set.



2. Click the Browse icon or press ENTER.

Saving a find request as part of a macro

If you've created a find request that you'd like to preserve for future use, Approach allows you to save that find request as part of a macro. When you create the macro, you can include the Find command in the macro and attach the current find request to the macro.

To save a find request as part of a macro:

1. Create a new macro.
See "Defining a macro" on page 15-1 for information about creating a new macro. You might want to use a name for the macro that describes the find request.
2. In the Define Macro dialog box, select the Find command and add it to the command grid.
See "Example 2: Finding a set of records" on page 15-17 for information about creating a macro that finds records.
3. In the Find a Set of Records area, click "Perform a stored find when the macro is run."
4. Click OK to create the macro and click Done to close the Macros dialog box.

To execute the stored find, simply run the macro.

Finding duplicate or distinct values

In addition to searching for specific information, you can also find all records that have either the same value in a field or a distinct value. With this type of find, Approach searches in the current found set (not the entire database) either for duplicates of *any* value or for each occurrence of a distinct value.

Finding records with duplicate values can help you check for errors in data entry or remove redundant records from your database. Approach lets you find all records that share duplicate values or just the extra ones.

Before finding duplicate records, you see all the records in a database.

Customers				
Acct. No.	Company	City	First Name	Last Name
SD05	Simpson Dist.	Vancouver	Elaine	Chen
FD03	AB Distributors	Pensacola	David	Miller
SD04	Seaport Corp.	Bay City	Lance	Johnson
SD03	Simpson Dist.	Chicago	Janet	Kingsley
AC47	ACC Distributors	San Francisco	Nancy	Smith
EB03	East Street Distributors	Cincinnati	George	Whitley
ND06	Noton Developer Co.	San Francisco	Lois	Miller
ND06	Noton Developer Co.	Baltimore		
SD05	Simpson Dist.	Montreal		

After finding duplicate records, you can see either all duplicate records or just the extra duplicates.

Customers		
Acct. No.	Company	City
ND06	Noton Developer Co.	San Francisco
ND06	Noton Developer Co.	Baltimore
SD05	Simpson Dist.	Chicago
SD05	Simpson Dist.	Montreal
SD05	Simpson Dist.	Toronto
SD05	Simpson Dist.	Vancouver

This report shows all duplicate records.

Customers		
Acct. No.	Company	City
ND06	Noton Developer Co.	Baltimore
SD05	Simpson Dist.	Montreal
SD05	Simpson Dist.	Toronto
SD05	Simpson Dist.	Vancouver

This report shows all extra duplicate records after the first one.

For information about deleting records after finding them, see “Deleting a found set of records” on page 10-24.

Finding records with distinct values lets you weed out duplicate values to see what your unique value set is. For example, when you have multiple customer records for a company that has several locations, finding distinct records lets you see how many unique companies are in your customer database.

Before finding distinct records, you see all the records in a database.

Customers				
Acct. No.	Company	City	First Name	Last Name
SD05	Simpson Dist.	Vancouver	Elaine	Chan
FD03	AB Distributors	Pensacola	David	Miller
SC04	Seaport Corp.	Bay City	Leslie	Johnson
SD05	Simpson Dist.	Chicago	Janet	Kingsley
AC47	ACC Distributors	San Francisco	Nancy	Smith
EB03	East Street Distributors	Cincinnati	George	Whalley
ND06	Norton Dwelller Co.	San Francisco	Lesli	Miller
ND06	Norton Dwelller Co.	Baltimore		
SD05	Simpson Dist.	Montreal		

In this report, Approach found and displayed one record for each distinct account number.

Customers				
Acct. No.	Company	City	First Name	Last Name
FD03	AB Distributors	Pensacola	David	Miller
SC04	Seaport Corp.	Bay City	Leslie	Johnson
SD05	Simpson Dist.	Chicago	Janet	Kingsley
AC47	ACC Distributors	San Francisco	Nancy	Smith
EB03	East Street Distributors	Cincinnati	George	Whalley
ND06	Norton Dwelller Co.	San Francisco	Lesli	Miller

In an Approach file with joined databases, you can find duplicates or distinct records only in the current view's main database.



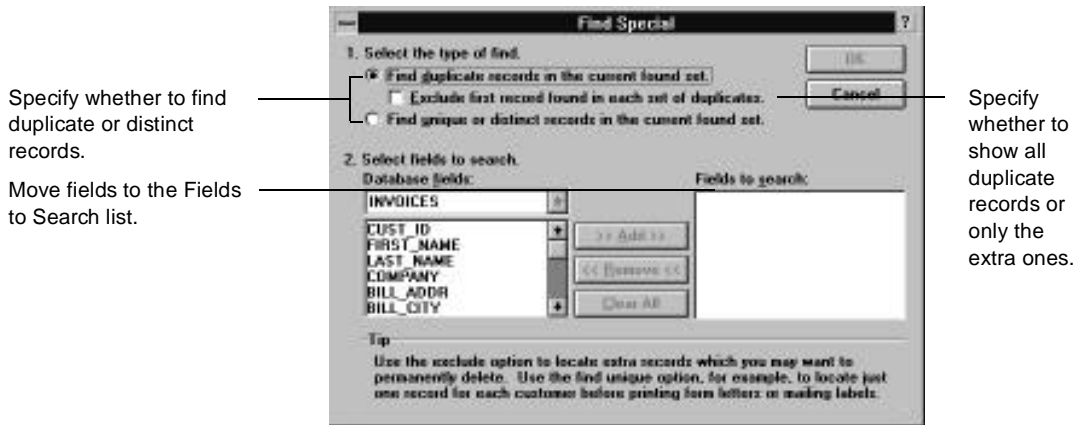
When you're finished working with a found set, you can go back to seeing all the records in the database by clicking the Show All icon or by choosing Show All from the Browse menu. In a worksheet or crosstab, Show All appears in the Worksheet Find or Crosstab Find submenu. This also returns records to their original sort order.

To find duplicate or distinct values:

If you want to cancel a find while Approach is still searching, press ESC.

1. Find the records in which you want to look for duplicate or distinct values, or show all records in the database.
2. Choose Find Special from the Browse menu. In a worksheet or crosstab, Find Special appears in the Worksheet Find or Crosstab Find submenu.

The Find Special dialog box appears.



Specify whether to find duplicate or distinct records.

Move fields to the Fields to Search list.

Specify whether to show all duplicate records or only the extra ones.

3. Click “Find duplicate records in the current found set” or “Find unique or distinct records in the current found set.”

Turn on “Exclude first record found in each set of duplicates” if you plan to delete the extras so that you’ll still have one of each set of duplicates.

If you select “Find duplicate records in the current found set,” you can exclude the first duplicate record in each set of duplicates. Otherwise, Approach finds all records that have the duplicate values in the fields you specify.

4. Move the fields you want to check from the Database Fields list to the Fields to Search list.

To move a field to the Fields to Search list, select the field name and click Add, or double-click the field name.

Memo and calculated fields do not appear in the Database Fields list. You cannot find duplicates with these fields.

To move a field back to the Database Fields list, select the field name and click Remove, or double-click the field name. To move all the fields back to the Database Fields list, click Clear.

5. Click OK.

Approach finds records that have a duplicate or distinct value in any of the fields you specified. You see the first record in the new found set.

Sorting records by data in fields

Approach stores records either in the order in which you add them to the database (creation order) or according to an order that you set as an Approach preference (see “Setting a default order for records” on page 19-5 for instructions).

If neither of these is the order you want for viewing or for working with the records, you can sort the database to rearrange records according to data in a field or a set of fields.

You can sort records by text fields in alphabetical order, by numeric fields in numerical order, and by date and time fields in chronological order. A sort can be in either *ascending order* (A to Z, lowest to highest, earliest to latest) or *descending order* (Z to A, highest to lowest, latest to earliest).

Before sorting, records appear in the order they were added to the database.

6/28/93	Southgate Corp.	Kim Wu	Company Info	
7/21/93	Atlantic Distributors	Jack Edinger	Literature Req.	
9/13/93	AB Distributors	Jarace Miller		
9/16/93	Stangson Distributors	Marie Bonet		
10/15/93	Frio Bottling	Jose Martinez		
1/12/94	AB Distributors	Jarace Miller		
2/23/94	AB Distributors	David Adams		

In this report, the records are sorted by company name in ascending order.

9/13/93	AB Distributors	Jarace Miller	Account Info	Needed to know their current credit limit.
1/12/94	AB Distributors	Jarace Miller	Literature Req.	Send info about cola line and pricing.
2/23/94	AB Distributors	David Adams	Literature Req.	
7/21/93	Atlantic Distributors	Jack Edinger	Literature Req.	
10/15/93	Frio Bottling	Jose Martinez	Literature Req.	Send info about packaging standards.
9/16/93	Stangson Distributors	Marie Bonet	Account Info	
6/28/93	Southgate Corp.	Kim Wu	Company Info	

When you're working with a found set of records, a sort applies only to the records in the set rather than to the entire database.

The Browse status bar shows the position of the current record in the sort order.



Position of the current record in the sort order.

Sorting only temporarily changes the order of records. You can re-sort records a different way or go back to the original order at any time. Approach also keeps track of the last sort you did so that you can perform the same sort again (as long as you are still in a view based on the same database).



When you're ready to return records to their original order, you can click the Show All icon or choose Show All from the Browse menu. This also shows all records in the database.

Sorting by a field

You can sort records according to the contents of any field that appears in a view. You can sort in ascending order or descending order.

To sort records by a field:

1. Click the field to select it.

In a report or worksheet select the field column.



2. Click the Ascending Sort or Descending Sort icon.

Approach sorts the records in the found set according to the contents of the field you selected.

Specifying a sort order

You need to tell Approach which field or fields to use for sorting and whether the sort in each field should be ascending or descending.

The first field you specify is the primary sort field. Approach sorts the records by the contents of that field. You can also specify other sort fields for Approach to use in case any records have the same value in the primary field. For example, you might use Last Name as a primary sort field and First Name as an additional sort field.

If you want to cancel a sort while Approach is still sorting, press ESC.

A sort field can be a text, numeric, Boolean, date, time, or calculated field.

To specify a sort order:

1. Find the records you want to sort, or show all records in the database.
2. Choose Define from the Browse Sort submenu. In a worksheet, Define appears in the Worksheet Sort submenu. In Preview, you can click the Sort icon.



To save a sort, perform the sort once and then attach it to a macro.

The Sort dialog box appears.

Move the sort Fields to the Sort On list.

Specify a sort direction for each sort field.



Click to sort on a summary field.

- Specify the primary sort field by moving a field from the Database Fields list to the Fields to Sort On list.

To move a field to the Fields to Sort On list, select the field name and click Add, or double-click the field name.

To move a field back to the Database Fields list, select the field name and click Remove, or double-click the field name. To move all the fields back to the Database Fields list, click Clear.

The Database Fields list shows the names of fields for the database selected in the Database Fields drop-down list (just above the list). If a field you want is in a different database joined to the current Approach file, select the name of the database in the drop-down list. The Database Fields list shows the fields for that database.

- Click Ascending or Descending for the primary sort field.

Ascending sorts text from A to Z, numbers from lowest to highest, and dates and times from earliest to latest. If a text field has numbers and text, the sorting is 0 to 9 and then A to Z.

Descending sorts data in the opposite direction. If a text field has numbers and text, the sorting is Z to A and then 9 to 0. Leading spaces are sorted after text and numbers.

- If necessary, specify additional sort fields in the same way.

For each field, move the field name to the Fields to Sort On list, and click Ascending or Descending for each field.

You can have as many sort fields as you need. Approach sorts the records using the fields in the order in which they appear in the Fields to Sort On list.

- To sort on a summary field, click Summaries.

The Sort dialog box expands to show a list of summary fields.

If a number, date, or time sort doesn't seem right, make sure the field is defined as numeric, date, or time rather than as text.



The Summary Fields list shows all summary fields in the current view.

7. Move any summary fields you want to sort on to the Fields to Sort On list.
8. If you want to sort on a summary field that appears in more than one summary panel, select an option in the Summarized On drop-down list to identify the field.
9. Click OK.

Approach rearranges the records in the found set or the entire database. You see the first record in the new sort order.

Changing the sort order

The Sort dialog box stores the instructions you specified the last time you sorted. If you want to sort records a different way, you can open the dialog box again and make changes to it.

- To add another field to the end of the sort order, select the field name in the Database Fields list and click Add, or double-click the field name.
- To remove a field from the sort order, select the field name in the Fields to Sort On list and click Remove, or double-click the field name.
- To remove all the fields from the sort order, click Clear.
- To change the direction in which a field is sorted, select the field name and click Ascending or Descending.

Showing all records in original sort order

You can show all the records in a database again, in their original sort order. This is the order in which they were entered, unless you've set the Approach preference for sorting order. Showing all records removes the effect of the most recent find and most recent sort you performed.



- To show all records in their original order, click the Show All icon or choose Show All from the Browse menu.

In a worksheet or crosstab, Show All appears in the Worksheet Find or Crosstab Find submenu.

Approach shows all the records in the database. You see the first record.

12

Designing Worksheets and Crosstabs

Worksheets and cross-tabulation worksheets (crosstabs) are tabular views you can use to view and work with information from your database. The worksheet view presents database records in a grid of columns and rows. The columns are database fields; the rows are individual records.

The crosstab view takes the worksheet one step further. It allows you to summarize data over two or more categories and to group records into hierarchies based on database fields, giving you a different perspective on your data. In a worksheet, for example, you might look at a found set of sales records. In a crosstab, you could view summaries of those same sales records, grouped and subtotaled by sales region, by product, or by product within a region.

This chapter describes how to create and modify worksheets and crosstabs.

About worksheets and crosstabs

An Approach worksheet is composed of columns that show database fields and rows that show individual database records. When you first create a worksheet, the column headers are the same as the field names, but you can change the headers to show any text you wish.

The column header shows the field name or other text.

Sales Rep	Product	Amount
Lindsay	90 Merlot	1000
Lindsay	91 Cabernet	350
Renault	90 Merlot	350
Renault	91 Merlot	350
Wu	90 Merlot	1000
Wu	91 Merlot	1000
Watanabe	90 Cabernet	1500
Watanabe	90 Zinfandel	1100
Washington	90 Merlot	1000
Washington	90 Zinfandel	1150
McLane	91 Cabernet	750

A column shows values for a field.

A row shows values for a single record.

An Approach crosstab expands on the worksheet model, allowing you to categorize and summarize database records. Instead of rows containing individual records, a crosstab shows you cells that summarize underlying records grouped or categorized by any fields you select. You can create a simple crosstab that either counts or summarizes data for groups of records, or a multiple-level crosstab that summarizes data for different groups of records by categories. A group (like a found set) is any set of records that have a common value in the field you specify. A category is a database field.

This illustration shows a simple crosstab that counts the number of records for each product where the Sales Rep field is filled in and summarizes the total amounts sold for each product.

	Sales Rep	Amount	
90 Cabernet	8	7300	Summary of all 90 Cabernet sold
90 Merlot	5	2850	
90 Zinfandel	2	2250	
91 Cabernet	2	1100	Count of all 91 Cabernet records with a value in the Sales Rep field
91 Merlot	3	2350	
91 Zinfandel	1	500	

Unique values in Product field

SCount(Sales Rep per product)

SSum(Amount per product)

This illustration shows a multiple-level crosstab, which summarizes sales by product and sales rep.

	Lindsay Amount	McLane Amount	Hensuk Amount	Washington Amount	Watanabe Amount	Wu Amount
90 Cabernet	1250	450	750	1500	2500	750
90 Merlot	1000	500	350	1000		1000
90 Zinfandel				1150	1100	
91 Cabernet	350	750				
91 Merlot	1000		350			1000
91 Zinfandel	500					

Summary of all cases sold by Lindsay

Summary of all 90 Zinfandel sold

Summary of all 91 Zinfandel sold by Lindsay

Worksheets and crosstabs give you a great deal of flexibility for viewing data. For example, you can move columns from one position to another, add or remove fields, or add columns (or crosstab rows) that perform calculations. You can also select a range of cells in a worksheet to edit multiple records at the same time.

A new worksheet or crosstab automatically opens in Browse, where you can edit your data and change the layout at the same time.

In Browse, you can edit data, change the worksheet layout, edit column headers, and add color.

Sales Rep	Product	Amount
Lindsay	90 Merlot	1000
Lindsay	91 Cabernet	350
Renault	90 Merlot	350
Renault	91 Merlot	350
Wu	90 Merlot	1000
Wu	91 Merlot	1000
Watanabe	90 Cabernet	1500
Watanabe	90 Zinfandel	1100
Washington	90 Merlot	1000
Washington	90 Zinfandel	1150
McLane	91 Cabernet	750

You can change the way a worksheet or crosstab is organized by adding, removing, or moving fields. You can also change the worksheet's appearance by resizing columns or rows, by editing the column header text, or by adding color to text or background.

You can perform all of the same data functions in a worksheet that you can in other Approach views, including finding and sorting records, duplicating them, and editing database field values. Data in a crosstab cannot be edited or duplicated.

When you print a worksheet or crosstab, Approach automatically adds a title, page number, and date.

Creating a worksheet

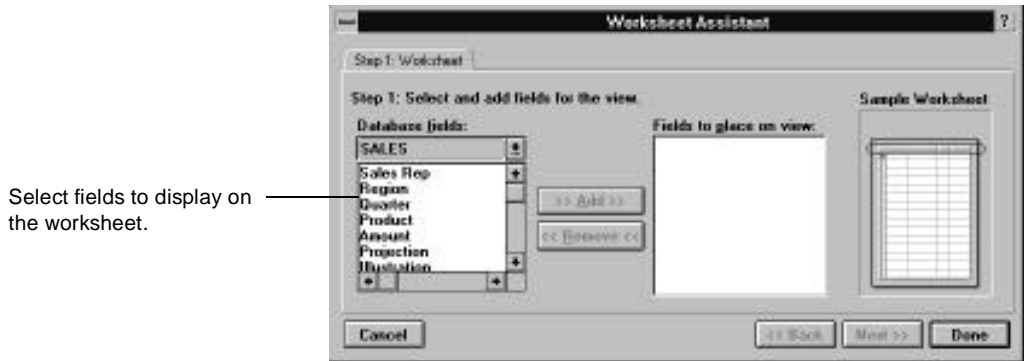
Approach provides a Worksheet Assistant to help you create a worksheet view. Using the Worksheet Assistant, you select the fields that will initially appear on the worksheet. You can easily add or remove fields once the worksheet has been created.

Approach automatically creates a worksheet when you open a database file directly (instead of opening an Approach file).

To create a worksheet:

1. Choose Worksheet from the Create menu.

The Worksheet Assistant appears.



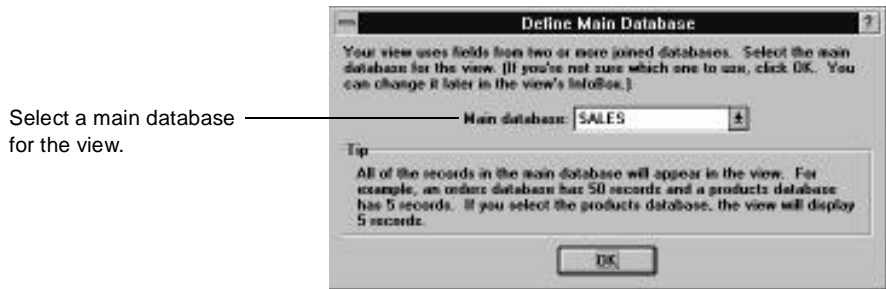
2. Select a different main database if necessary in the Database Fields drop-down list.
3. Add the fields you want to show on the worksheet to the Fields to Place on View list.

To add a field to the Fields to Place on View list, select the field in the Database Fields list and click Add, or double-click the field. Approach displays the fields in the order listed.

To remove a field from the Fields to Place on View list, select the field and click Remove, or double-click the field.

4. Click Done.

The Define Main Database dialog box appears if you select fields from more than one joined database. Otherwise, Approach displays the new worksheet.



5. If the Define Main Database dialog box appears, select a database in the Main Database drop-down list and click OK.

Approach creates the worksheet and opens it in Browse.

Creating a crosstab

Approach gives you two ways to create a crosstab: with the Crosstab Assistant or by dragging fields in a worksheet to summarizing positions.

Creating a crosstab with the Crosstab Assistant

Approach provides a Crosstab Assistant to help you create a crosstab. The Crosstab Assistant allows you to name the crosstab and select the fields that are displayed in the crosstab rows, those in the crosstab columns, the field whose data is summarized in the body of the crosstab, and the formula used to calculate body cells.

Field selected for crosstab columns is Sales Rep.
 Field selected for crosstab body is Amount.
 Formula for body cells is SSum(Amount).
 Field selected for crosstab rows is Product.

	Lindsay Amount	McLane Amount	Henzlik Amount	Washington Amount	Watanabe Amount	Wu Amount
90 Cabernet	1250	450	750	1500	2500	750
90 Merlot	1000	500	350	1000		1000
90 Zinfandel				1150	1100	
91 Cabernet	350	750				
91 Merlot	1000		350			1000
91 Zinfandel	500					

In addition to columns and rows for the fields that you select, Approach adds a summary row at the bottom of the crosstab and a summary column at the far right. You can remove these summaries if you don't want them.

When you select more than one field for either columns or rows, Approach nests the fields in the order you list them, with the first field listed at the highest or outermost level. For example, if you list Country first and then City, Approach groups the cities within the countries.

Crosstab headers when Country is listed first, and then City

Country 1			Country 2			Country 3		
City 1	City 2	City 3	City 1	City 2	City 3	City 1	City 2	City 3

If you want to create a simple crosstab (one without any categories), select a field for rows and one for body cell values, but don't select a field for columns. Approach creates a simple crosstab with counts if

the Value field is text and with summaries if the Value field is numeric.

	Amount
90 Cabernet	7300
90 Merlot	3850
90 Zinfandel	2250
91 Cabernet	1100
91 Merlot	2350
91 Zinfandel	500
Total	17350

Field selected for crosstab rows is Product.

Field selected for crosstab body is Amount.

Formula for body cells is SSum.

When you create a simple crosstab, you can drag fields from the Add Field dialog box to create additional columns or to convert the simple crosstab to a multiple-level crosstab.

To create a crosstab:

1. Choose Crosstab from the Create menu.

The Crosstab Assistant appears.



2. Select a different main database if necessary.
3. Add the fields you want to show as crosstab rows to the Fields to Place on View list.

To add fields to the Fields to Place on View list, select the fields in the Database Fields list and click Add, or double-click a field.

Approach nests the fields in the order listed, with the first field at the highest level.

To remove a field from the Fields to Place on View list, select the field and click Remove, or double-click the field.

4. Click the Columns tab and add the fields you want to show as crosstab columns to the Fields to Place on View list.

You can click a tab or use the Next and Back buttons to go to other tabs.

When you click the tab the Columns panel appears.



Approach nests the fields in the order listed, with the first field at the highest level.

5. Click the Values tab.

When you click the tab the Columns panel appears.

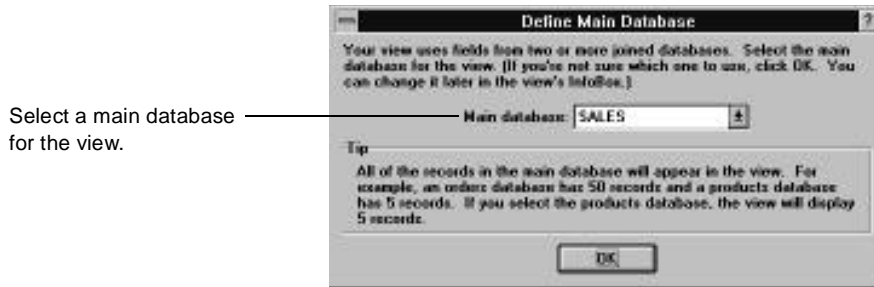


6. Select a formula in the Calculate list and a field in the Of Field list.

This is the formula Approach will use to calculate the values that appear in body cells. The same formula applies to all body cells except for special summary rows.

7. Click Done.

The Define Main Database dialog box appears if you select fields from more than one joined database. Otherwise, Approach displays the new crosstab.

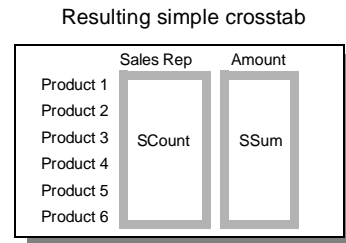
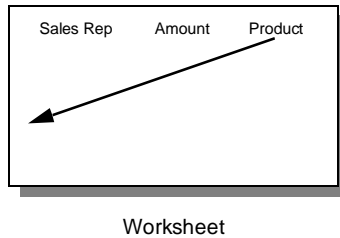


8. If the Define Main Database dialog box appears, select a database in the Main Database drop-down list and click OK.

Approach creates the crosstab and opens it in Browse.

Turning a worksheet into a crosstab

To turn a worksheet into a simple crosstab, just drag a column header to a grouping position.



Then, you can turn a simple crosstab into a multiple-level one by dragging other fields into the body of the crosstab, or into grouping

positions in the row gutter or in the column gutter at the top of the worksheet.

To turn a simple crosstab into a multiple-level one, drag a column header into a grouping position at the top of the crosstab.

	Sales Rep	Amount
Product 1		
Product 2		
Product 3		
Product 4		
Product 5		
Product 6		

Simple crosstab

Resulting multiple-level crosstab

	Sales 1 Amount	Sales 2 Amount	Sales 3 Amount	Sales 4 Amount
Product 1	SSum(Amount)			
Product 2				
Product 3				
Product 4				
Product 5				
Product 6				

Approach is preset to calculate a summary sum for each crosstab body cell. If you want the crosstab to calculate a different value, you can edit the crosstab formula (see “Editing a crosstab formula” on page 12-25).

To turn a worksheet into a crosstab:

1. Drag a field from the column gutter at the top of the worksheet or from the Add Field dialog box to the row gutter on the left side of the worksheet.

If you drag too far, the move cursor becomes a trashcan and you remove the field from the worksheet.

Field dragged to row gutter

Sales Rep	Product	Amount
Lindsay	90 Merlot	1000
Lindsay	91 Cabernet	350
Lindsay	91 Merlot	1000
Lindsay	90 Cabernet	500
Lindsay	91 Zinfandel	500
Lindsay	90 Cabernet	750

Approach creates a simple crosstab as soon as you release the field, with all of the unique values for the field that you dragged to the row gutter along the left side. In the body of the crosstab, Approach displays counts for text fields and sums for numeric fields.

Unique values in Product field

	Sales Rep	Amount
90 Cabernet	8	7300
90 Merlot	5	3850
90 Zinfandel	2	2250
91 Cabernet	2	1100
91 Merlot	3	2350
91 Zinfandel	1	500

Summary of numeric Amount field values for all 90 Merlot records

Count of all 91 Zinfandel records with a value in the Sales Rep text field

- To turn the simple crosstab you just created into a multiple-level one, drag a field (column or row header) to the column gutter at the top of the crosstab.

Approach displays guide lines to show when the database field is positioned correctly.



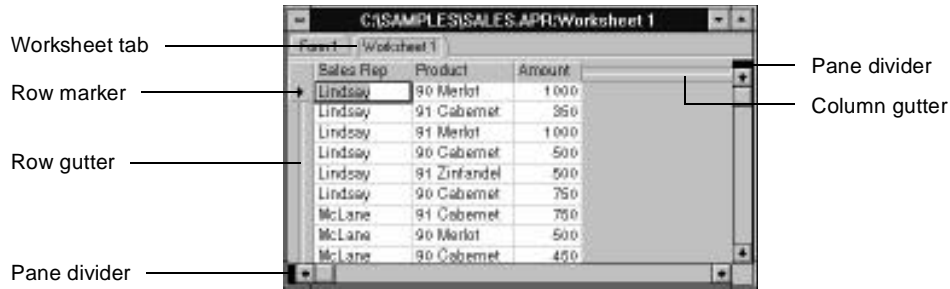
Approach groups and summarizes records by sales rep and displays calculated summary values in the crosstab cells.



Working with worksheets and crosstabs

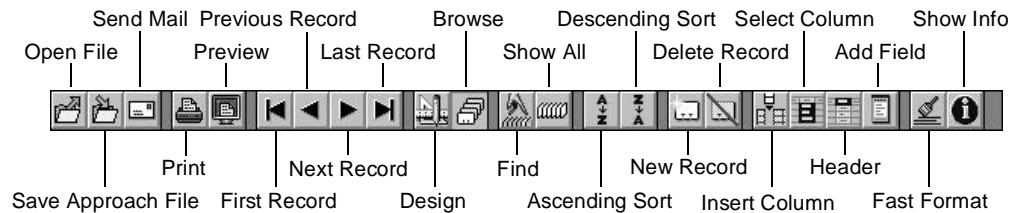
Approach automatically opens a new worksheet or crosstab in Browse, where you can both edit your data and change the layout of the worksheet or crosstab. If there's a password attached to the Approach file, you won't be able to change the format in Browse (you won't see any of the formatting tools, for example); you must go to Design to make formatting changes.

This illustration shows the different parts of a typical worksheet.

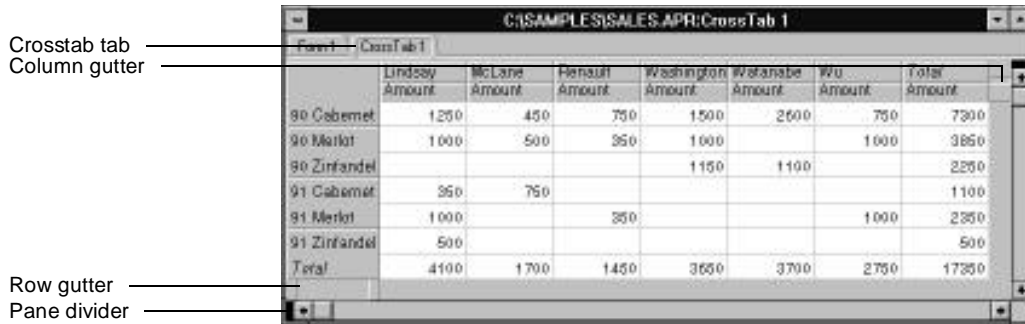


<i>This element</i>	<i>Does this</i>
Worksheet tab	Displays the worksheet name and turns to the worksheet when you click it
Row marker	Shows that the entire row, or one of its cells, is selected
Row gutter	Holds row headers when you convert a worksheet to a crosstab; you drag a column header from the column gutter or from the Add Field dialog box and drop it in the row gutter
Pane dividers	Divide the worksheet into independently scrolling panes when you drag them into place
Column gutter	Holds column headers; you drag a field to the column gutter to add it to the worksheet

When you work with a worksheet in Browse, these are the preset SmartIcons you'll see.

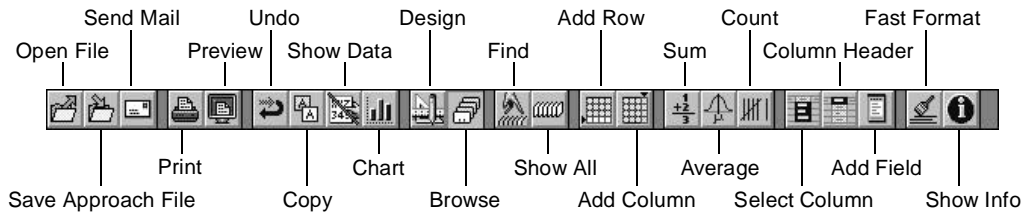


This illustration shows the different parts of a typical crosstab.

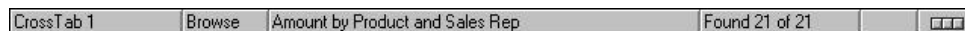


<i>This element</i>	<i>Does this</i>
Crosstab tab	Displays the crosstab name and turns to the crosstab when you click it
Column gutter	Holds column headers; you drag a field to the column gutter to add it to the crosstab
Row gutter	Holds row headers; you drag a column header from the column gutter or from the Add Field dialog box and drop it in the row gutter
Pane dividers	Divides the crosstab into independently-scrolling panes when you drag them into place

When you work with a crosstab in Browse, these are the preset SmartIcons you'll see.



Approach also provides information about the crosstab in the status bar at the bottom of the Approach window.



This area displays a description of the crosstab or a selected field.

Selecting in a worksheet or crosstab

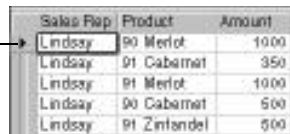
In an Approach worksheet or crosstab, you can select one or more contiguous columns, one or more contiguous rows, one or more column headers, individual cells, or a range of cells. You can also select all column headers and row markers or the entire worksheet or all columns and rows in a crosstab.

You might, for example, want to select a column to resize it, or select its header to add a fill color. You might select a row to resize it, or a select range of cells in a worksheet to quickly edit several records at once.

- To select a single cell, click in the cell.

In a worksheet, double-click to select the text in the cell for editing. The pointer changes to the text cursor.

Worksheet row marker shows that a cell in this row is selected.

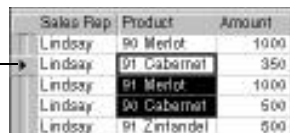


A screenshot of a worksheet with three columns: Sales Rep, Product, and Amount. The first row of data is selected, indicated by a dark background. An arrow points from the text 'Worksheet row marker shows that a cell in this row is selected.' to the first row marker on the left side of the table.

Sales Rep	Product	Amount
Lindsay	90 Merlot	1000
Lindsay	91 Cabernet	350
Lindsay	91 Merlot	1000
Lindsay	90 Cabernet	500
Lindsay	91 Zinfandel	500

- To select a range of cells, click in a cell and drag in any direction.

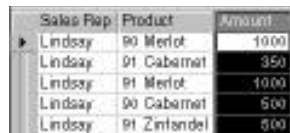
Worksheet row marker shows that a cell in this row is selected.



A screenshot of a worksheet with three columns: Sales Rep, Product, and Amount. A range of three cells in the second row is selected, indicated by a dark background. An arrow points from the text 'Worksheet row marker shows that a cell in this row is selected.' to the second row marker on the left side of the table.

Sales Rep	Product	Amount
Lindsay	90 Merlot	1000
Lindsay	91 Cabernet	350
Lindsay	91 Merlot	1000
Lindsay	90 Cabernet	500
Lindsay	91 Zinfandel	500

- To select a column, click the column header and keep the mouse down. Drag to select multiple columns.



A screenshot of a worksheet with three columns: Sales Rep, Product, and Amount. The 'Amount' column header is selected, indicated by a dark background. An arrow points from the text 'Click a header to select the column.' to the 'Amount' header.

Sales Rep	Product	Amount
Lindsay	90 Merlot	1000
Lindsay	91 Cabernet	350
Lindsay	91 Merlot	1000
Lindsay	90 Cabernet	500
Lindsay	91 Zinfandel	500

Click a header to select the column.



- To select just the column header, select the column and click the Column Header icon.

You can also double-click the header, or select the column and then choose Header Only from the Worksheet Select or Crosstab Select submenu.

Sales Rep	Product	Amount
Lindsay	90 Merlot	1000
Lindsay	91 Cabernet	350
Lindsay	91 Merlot	1000
Lindsay	90 Cabernet	500
Lindsay	91 Zinfandel	500

Double-click a header to select it.



- To select just the column cells (and not the column header), click the column header to select the column and click the Column icon.

You can also select the column and choose Cells Only from the Worksheet Select or Crosstab Select submenu.

Sales Rep	Product	Amount
Lindsay	90 Merlot	1000
Lindsay	91 Cabernet	350
Lindsay	91 Merlot	1000
Lindsay	90 Cabernet	500
Lindsay	91 Zinfandel	500

Shading indicates that the column header is not selected.

- To select a worksheet row, click to the left of the row. Shift-click to select multiple rows.

A row marker appears to show that the worksheet row is selected.

Sales Rep	Product	Amount
Lindsay	90 Merlot	1000
Lindsay	91 Cabernet	350
Lindsay	91 Merlot	1000
Lindsay	90 Cabernet	500
Lindsay	91 Zinfandel	500

Row marker

Click here to select a row.

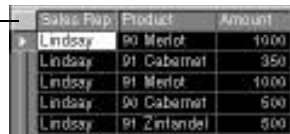
- To select a crosstab row, click the row header. Shift-click to select multiple rows.

	Sales Rep	Amount
90 Cabernet	8	7000
90 Merlot	6	3850
90 Zinfandel	2	2250
91 Cabernet	2	1100

Click here to select a row.

- To select the entire worksheet or crosstab, click in the upper-left corner of the worksheet.

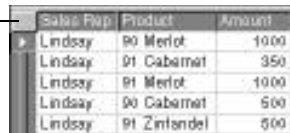
Click here to select the entire worksheet.



Sales Rep	Product	Amount
Lindsay	90 Merlot	1000
Lindsay	91 Cabernet	350
Lindsay	91 Merlot	1000
Lindsay	90 Cabernet	500
Lindsay	91 Zinfandel	500

Click the upper-left corner of the worksheet a second time to select all of the column headers and all rows (but not the data). You might want to select the column headers and rows, for example, to resize all of the columns at the same time to the same size.

Click here a second time to select all column headers and rows.



Sales Rep	Product	Amount
Lindsay	90 Merlot	1000
Lindsay	91 Cabernet	350
Lindsay	91 Merlot	1000
Lindsay	90 Cabernet	500
Lindsay	91 Zinfandel	500

Copying a selection to the Clipboard

Once you've selected all or part of a worksheet or crosstab, you can copy the selection to the Clipboard for pasting, linking, or embedding in a document created by another applications. When you copy the entire worksheet or crosstab, Approach places several forms of the worksheet or crosstab on Clipboard:

- An object that you can embed
- A Windows Metafile format (WMF) image that you can paste as a graphic
- Tab-delimited text that you can paste into a spreadsheet program

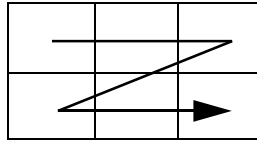
When you select a range of cells in a worksheet, Approach places it on the Clipboard as a pastable WMF object and as tab-delimited text.

- To copy a selection to the Clipboard, select the portion of the worksheet or crosstab that you want to copy and choose Copy from the Edit menu.

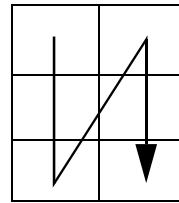
For more information about linking and embedding object, see Chapter 16, "Exchanging Data with Other Files or Applications."

Navigating in a worksheet or crosstab

When you select a range of cells in a worksheet, you can use either the **TAB** key or the **ENTER** key to move from one cell to the next. **TAB** moves you from left to right in a row before moving to the beginning of the next row; **ENTER** moves you down one column before moving to the top of the next. In either case, Approach selects the contents of the cell so that you can edit it.



TAB moves from left to right across rows.



ENTER moves from top to bottom in columns.

Dividing a worksheet or crosstab into panes

If you're looking at a worksheet or crosstab that contains a great deal of data, you might not be able to see all of the columns or rows on the screen at the same time. When data that you want to view is out of sight, you can divide a worksheet or crosstab horizontally or vertically into independently scrolling panes.

You can, for example, divide a worksheet horizontally into two panes so that you can see the first few records and the last few. If you divide the worksheet vertically, you might be able to see the first and last columns.

When a worksheet is divided into panes, you can scroll any pane to display a particular cell you want to view, and you can select a cell in any pane just by clicking the cell.

This illustration shows a crosstab divided into four panes, each with its own scroll bar.

Drag here to adjust the location of both divider bars at the same time.

	Lindsay Amount	Wu Amount	Total Amount
90 Cabernet	1250	750	7900
90 Merlot	1000	1000	3850
90 Zinfandel	500	2250	500
Total	4100	2750	17350

- To divide a worksheet into panes, drag the pane divider to the desired location.



You can adjust the position of the pane dividers by dragging them to a new position. You can adjust both pane dividers at the same time by dragging the point where they intersect.

Changing the appearance of a worksheet or crosstab

Approach gives you many different ways to change the appearance of a worksheet or crosstab without affecting the data that's displayed. You can:

- Add database fields
- Move or delete columns to a different location
- Resize columns and rows
- Insert a blank column (or crosstab row) for a special calculation
- Edit and format column header text
- Use the InfoBox to change the background color, or add borders to worksheet columns (and to crosstab columns or rows)

You can accomplish all of these tasks in Browse. If there's a password associated with the Approach file, you must be in Design to alter the appearance of a worksheet.

Adding a database field to a worksheet or crosstab

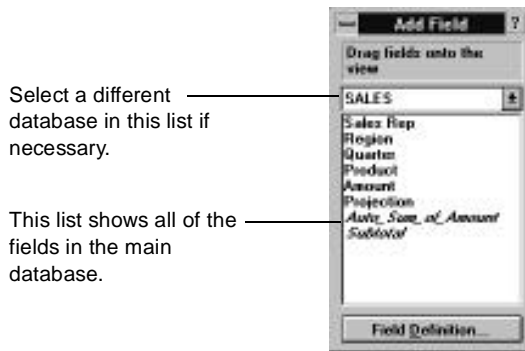


You can easily add fields to either a worksheet or a crosstab using the Add Field dialog box.

To add a database field to a worksheet or crosstab:

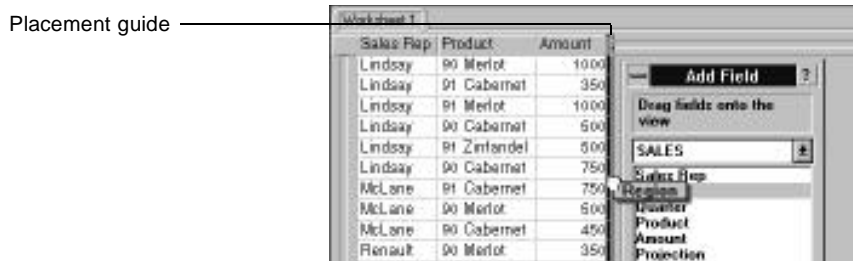
1. Click the Add Field icon or choose Add Field from the Worksheet or Crosstab menu.

The Add Field dialog box appears. It shows all of the fields in the current main database.



2. Drag a field from the Add Field dialog box to the worksheet column gutter, or to either the column gutter or the row gutter of a crosstab.

Release the field name where you want the column to appear. A vertical guide line shows you where the column will be located.



You can move the column to another position later if you wish.

Moving or removing a field in a view

When you create a worksheet or crosstab, Approach arranges fields in the order you list them in the Worksheet Assistant or Crosstab Assistant. However, you can easily move a field from one location to another without affecting your data. If you no longer want to see a particular database field displayed on a worksheet or crosstab, you can easily remove it from the view.

To move a column:

1. Select the field that you want to move.

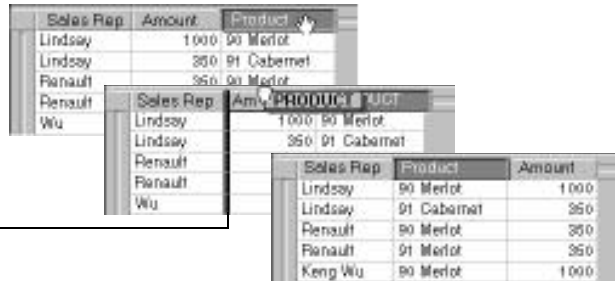
You can select multiple worksheet columns by dragging to select additional column headers and have Approach move them as a block. You can move only one crosstab field at a time.

Move Cursor

- Place the pointer on a selected column header. When the pointer becomes the move cursor, drag the column to the position you want.

A vertical guide shows you where the column will be placed when you release it.

Drag the column header to the position you want.



Vertical guide shows you where column will appear.

- To remove a field from a worksheet or crosstab, select the column or row header and drag it above the column gutter (the pointer shows a wastebasket).

You can also select the column or row header and press **DELETE**. Approach removes the column from the worksheet or crosstab.

The wastebasket shows that a field will be removed.



Resizing columns and rows

Approach initially sizes worksheet and crosstab columns so that they are just large enough to display the field data. Worksheet and crosstab rows are also just large enough to display their data. If the data in a field is longer than the field name, you'll only see as much data as will fit.

Sales Rep	Product	Amount
Lindsay	90 Merlot	1000
Lindsay	91 Cabernet	350
Lindsay	91 Merlot	1000
Lindsay	90 Cabernet	500
Lindsay	91 Zinfandel	500

If the column is too narrow, Approach shows only as much data as will fit.

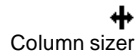
If you want to display hidden data or just improve the appearance of a worksheet or crosstab, you can easily resize columns or rows to meet your needs. In a worksheet, you can resize a single column or multiple columns to the same size. You can also resize all rows to the same size. In a crosstab, you can resize rows individually or as a group.

Approach uses two special resizing tools—the column sizer and the row sizer. The pointer changes to the column sizer when you position it between two column headers. It changes to the row sizer when you position it on the border between rows.

To resize columns:

1. Select the columns that you want to resize.

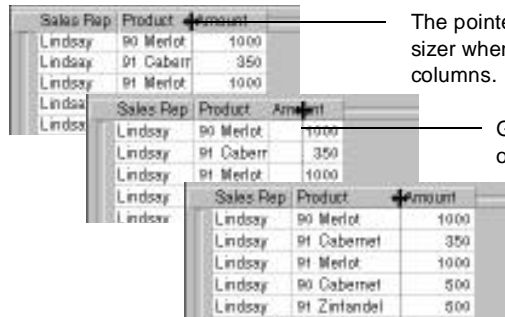
If you select more than one column, Approach will make them all the same size.



2. Place the pointer between column headers to the right of the column you want to resize and when the pointer becomes the column sizer, drag the column to the size you want.

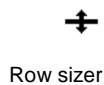
A vertical guide shows you the right edge of the column as you drag it.

Drag the right column border to resize a column.



The pointer becomes the column sizer when you position it between columns.

Guide shows right edge of column as you drag.



- To resize rows, place the pointer in the row gutter at the bottom border of any row and when the pointer becomes the row sizer, drag the row to the size you want.

In a worksheet, Approach resizes all rows to the same size. In a crosstab, Approach resizes only the row you drag. To resize all crosstab rows, select them before dragging a row (**SHIFT**-click to select multiple rows).

Drag the bottom row border to resize all worksheet rows to the same size.

Sales Rep	Product	Amount
Lindsay	90 Merlot	1000
Lindsay	91 Cabernet	350
Lindsay	91 Merlot	1000
Lindsay	90 Cabernet	500
Lindsay	91 Zinfandel	500

Inserting a formula or blank column in a worksheet

In addition to columns that display data from database fields, you can add a formula column to a worksheet or a blank column and use it for spacing. You might, for example, add a formula column that summarizes data, one that averages data, or one that shows the variance between two columns of data.



Approach uses the wedge tool to add blank or formula columns to a worksheet. The pointer changes to the wedge when you position it between the tops of column headers.

To add a formula column:

1. Position the pointer between the tops of column headers where you want the column to appear. When the pointer changes to the wedge, click.

You can add a column between columns or at either end of the worksheet.

Pointer positioned to add a column

Sales Rep	Product	Amount
Lindsay	90 Merlot	1000
Lindsay	91 Cabernet	350
Lindsay	91 Merlot	1000
Lindsay	90 Cabernet	500
Lindsay	91 Zinfandel	500

The Formula dialog box appears.

2. Create the formula you want to use in the Formula dialog box and click OK.

To add a blank column, click Cancel in the Formula dialog box.

- To remove a blank or formula column, select the column header and drag it above the column gutter (the pointer shows a wastebasket). You can also select the column header and press **DELETE**.

- To edit the formula in a formula column, double-click any cell in the column to open the Formula dialog box.

Approach calculates the formula for each cell in the column. You can use any of the Approach functions or compose your own formula.

Sales Rep	Product	Amount	Projection	Variance
Lindsay	90 Merlot	1000	750	Amount-Projection
Lindsay	91 Cabernet	350	350	
Lindsay	91 Merlot	1000	750	
Lindsay	90 Cabernet	500	500	
Lindsay	91 Zinfandel	500	350	

Formula typed in cell subtracts projected sales from actual sales.

Sales Rep	Product	Amount	Projection	Variance
Lindsay	90 Merlot	1000	750	250
Lindsay	91 Cabernet	350	350	0
Lindsay	91 Merlot	1000	750	250
Lindsay	90 Cabernet	500	500	0
Lindsay	91 Zinfandel	500	350	150

Column shows the resulting calculated value for each record.

Editing column header text

Approach is preset to use field names as column headers in worksheets and crosstabs. However, you can change the header text to be anything you want—a more descriptive name, perhaps, or a shorter one.

To edit column header text:

1. Select the header you want to change.

To select header text, triple-click the header, or choose Edit Column Label from the Worksheet or Crosstab menu.

The column header text is selected for editing.

Sales Rep	Amount
90 Cabernet	8 7300
90 Merlot	5 2850
90 Zinfandel	2 2250
91 Cabernet	2 1100
91 Merlot	3 2350

2. Edit the text.

Changing worksheet and crosstab settings

Worksheets and crosstabs, like all other Approach views, have access to an InfoBox that lets you:

- Change the worksheet or crosstab name. The worksheet or crosstab name appears on the view tab and serves as the view title when you print it (See “Changing the basic properties of a view” on page 5-36.)

- Attach a macro or custom menu to the view (See “Attaching a macro to a view” on page 15-15 or “Creating a custom menu bar” on page 19-18.)
- Add a background color to column headers or column cells and crosstab rows (See “Changing line or color settings for an object” on page 5-19.)
- Add a border to the cells in a column or in a crosstab row (See “Changing line or color settings for an object” on page 5-19.)
- Change the font, font size, or color of text that appears anywhere in a worksheet or crosstab (See “Changing text attributes” on page 5-23.)

This illustration shows some of the cosmetic changes you can make to a worksheet using the InfoBox.

Sales Rep	Product	Amount	Projection	Variance
Lindsay	90 Merlot	1000	750	250
Lindsay	91 Cabernet	350	350	0
Lindsay	91 Merlot	1000	750	250
Lindsay	90 Cabernet	500	500	0
Lindsay	91 Zinfandel	500	350	150

Although you add color to a crosstab the same way you do to a worksheet, the results are slightly different. In a crosstab, when you assign color to a column or row header, all columns or rows that are nested within that column or row also take on the new color.

For example, when you assign a color to Country 1, all City columns in Country 1 take on the same color. If you move Country 1 to another position, it still retains its color.

All columns nested in Country 1 take on the same color.

Country 1			Country 2			Country 3		
City 1	City 2	City 3	City 1	City 2	City 3	City 1	City 2	City 3

Formatting a worksheet or crosstab for printing

When you print a worksheet or a crosstab, you can add a header that contains the worksheet or crosstab title, and a footer that contains the page number (in the lower-right corner) and the current date (in the lower-left corner).

To format a worksheet or crosstab for printing:



1. Click the Show Info icon to open the InfoBox for the worksheet or crosstab.

2. Click the Printing tab.

The InfoBox displays settings that affect how a worksheet or crosstab looks when it's printed.

Type a new title for the worksheet or crosstab.



3. Change the settings as necessary and close the InfoBox.

Adding summaries to a crosstab

Approach lets you add special summary columns or rows to a crosstab. A summary column uses the same formula as the other body cells in the crosstab. A summary row can use any formula you choose. You might, for example, add a row that averages all entries in a group. When you have nested fields in a crosstab, Approach adds a summary column or row to each nested field. For example, if you insert a summary column for Sales Reps, Approach adds the column to each Sales Rep group.

Approach adds a summary column to each group.

	Lindsay					McLane				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount
B0 Cabernet		1250			1250				450	450
B0 Merlot	1000				1000				500	500
B0 Zinfandel										
B1 Cabernet		350			350			750		750
B1 Merlot	1000				1000					
B1 Zinfandel			500		500					

Adding a summary column or row

You can insert a summary column or row in three ways: by using the wedge, by using the Summarize Columns or Summarize Rows commands, or by using the Add Row or Add Column icons. Adding a column or row to a crosstab with the wedge is like adding a column to a worksheet. You simply position the pointer until it turns into the wedge and click. Approach inserts the appropriate columns or rows and uses the current summary function for calculations.

When you add a column or row using an icon or a Crosstab menu command, Approach automatically places summaries at the end of each group in the crosstab.



- To add summaries to a crosstab, choose Summarize Columns or Summarize Rows from the Crosstab menu, or click the Add Column or Add Row icon.

Approach adds the appropriate blank columns or rows. You can then use the Formula command to select the calculation you want the column or row to perform.

New summary column

	Lindsay				Total	McLane				Total
	Q1	Q2	Q3	Q4		Q1	Q2	Q3	Q4	
	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount
D0 Cabernet		1250			1250			450		450
D0 Merlot	1000				1000				500	500
D0 Zinfandel										
D1 Cabernet		350			350			750		750
D1 Merlot	1000				1000					
D1 Zinfandel			500		500					

- To remove a summary from a crosstab, select the column or row and press the **DELETE** key.

Editing a crosstab formula

Approach uses a single formula to calculate summary columns and the body cells in a crosstab. In addition, Approach can use different formulas to calculate special summary rows that you can add to crosstabs.

Approach gets its initial formula when you create the crosstab. If you create a crosstab from a worksheet, Approach automatically uses the summary sum calculation for numeric fields and the summary count calculation for text fields. If you use the Crosstab Assistant, you can select a formula when you create the crosstab.

You select the formula that Approach uses for special columns or rows when you insert them.

If you want to perform a different set of calculations, either for body cells or for special summary columns or rows, you can easily change the formula at any time.

To edit a crosstab formula:

1. Select a value header or the header for a summary row.

If you select a group column header, Approach applies the new formula to all body cells. If you select a summary row, Approach applies the new formula to that row.



2. Click the Show Info icon to open the InfoBox for the crosstab and click the Formula tab.



You can also click one of the summary icons.

Select a formula in the list.



3. Select a formula in the Formula list.

Approach calculates the appropriate cells and displays the new results.

13

Creating Charts

A chart is a view that shows data in a visual representation. In Approach, you create and work with charts using the Lotus Chart™ facility. You can create many popular chart types in two and three dimensions and in color. And after you create a chart, you can easily change the chart's type, enhance it by working with its parts, and add text and graphics to it. A chart, like any other type of view, is stored in the Approach file.

This chapter describes how to create charts using the Chart Assistant, how to create an instant chart, how to change the type of a chart, and how to enhance the appearance of a chart.



Most of the instructions in this chapter require you to be in Design. To go to Design, click the Design icon or choose Design from the View menu or from the environment pop-up menu in the status bar.

You can select and manipulate charts the same way you do other types of design objects—for example, you can resize, move, and group them. For information about working with design objects in general, see Chapter 5, “Working in Design.”



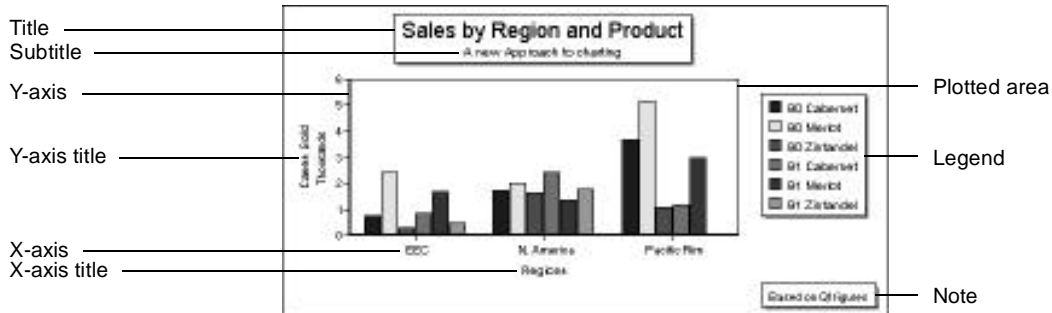
A great deal of the Lotus Chart documentation is online in Chart Help (click the Help icon or press F1 from a chart to open it). Chart Help contains information on enhancing charts, as well as a glossary of chart terms. It describes how to use the Chart InfoBox, how to decide which type of chart best displays your data, and how to change the attributes of chart components.

About charts

A chart is a graphic representation of data. Charts reveal the significance of data and often make complex data easier to understand. If you're analyzing data, charts can help you identify trends and relationships. Charts are also dynamic; if you change the data a chart is based on, Approach updates the chart automatically.

All charts except pie charts plot data against a horizontal x-axis and a vertical y-axis. The x-axis can include a scale or categories such as years, geographic areas, or age ranges. The y-axis can define the scale of values plotted in the chart. You can show tick marks and labels for units of measure with an axis, and you can title each axis to describe the data plotted against it.

In addition to graphic information, a chart can also include a title, a subtitle, a legend, and a note.



When you create a chart directly from a crosstab (it's called an instant chart), Approach uses a preset chart type (initially set to bar chart). When you create a chart using the Chart Assistant, you can choose from four types of charts: bar, line, area, or pie. Regardless of how you create a chart, you can easily use the Chart InfoBox to change the chart's type to one of the 20 chart types supported by Lotus Chart. You can also add, modify, or delete other chart elements using the InfoBox.

Creating a chart

Approach gives you two ways to create a chart: by using the Chart Assistant or directly from a crosstab. For more information about creating an instant chart, see "Creating an instant chart from a crosstab" on page 13-9.

The Approach Chart Assistant guides you through creating a chart. You use the Chart Assistant to give the chart a name, a SmartMaster style (two-dimensional or three-dimensional), and a SmartMaster layout (a chart type). You also select the fields that appear on the chart's x-axis and y-axis, define the calculated values to be plotted, and if the chart contains a series (a set of values plotted along the x-axis), you select the field for grouping the series. If you're creating a pie chart, you select the field that appears as pie wedges.

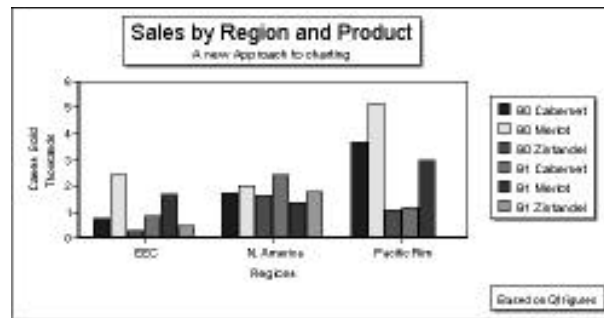
A SmartMaster style determines whether the chart is two- or three-dimensional. The SmartMaster layout determines the chart type. When you create a chart using the Chart Assistant, you can choose from among four chart types: bar, line, area, and pie.

Creating a bar, line, or area chart

Bar, line, and area charts each display information along the x-axis and y-axis.



Bar charts are the most common type of business chart. The SmartMaster Bar chart layout is a standard vertical bar chart, where each bar represents a single value in a series. The height of each bar shows a value at a point in time. The left-to-right orientation gives the viewer a sense of movement with time. Bar charts are good for comparing individual values.

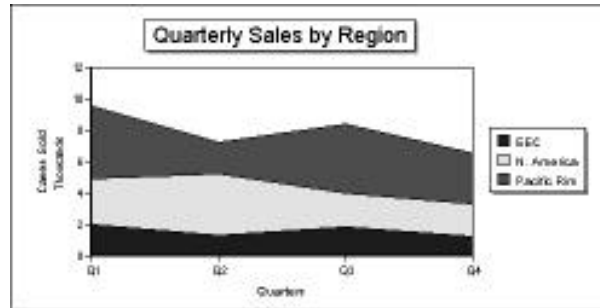


Line charts trace the changes in sets of data over time. Each point along a line represents a value at a particular time period or point in time, and each line represents a category of data. Line charts are often the best choice for time series data, especially when you have a lot of data points. You might use a line chart, for example, to show daily sales over two months.





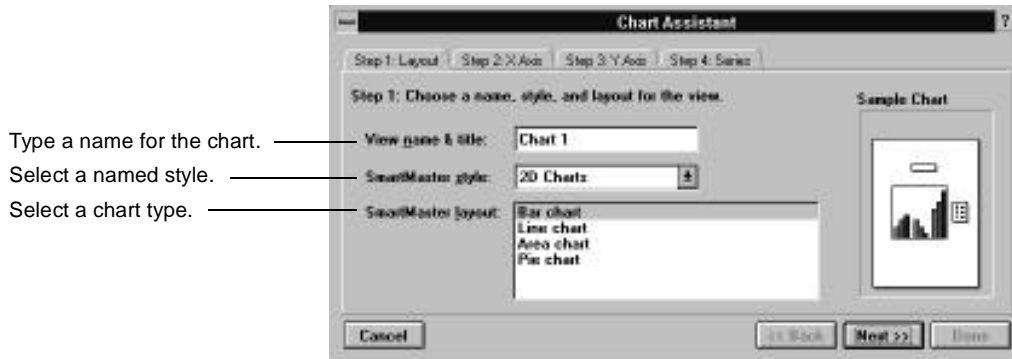
Area charts show trends in data over time by emphasizing the area under the curve created by each data series. Like line charts, area charts downplay individual values and emphasize trends and totals. Use area charts to see relationships between sets of data rather than the individual data points. You might use an area chart to show trends in sales from one quarter to the next.



To create a bar, line, or area chart:

1. Choose Chart from the Create menu.

The Chart Assistant appears.



2. Type a name for the chart in the View Name & Title text box. A new chart automatically has the name *Chart* and a number; you can use any name you want, up to 30 characters. The name you use appears on the chart's view tab and as a default on printed charts.
3. Select a SmartMaster style for the chart in the SmartMaster Style drop-down list.

The drop-down list shows SmartMaster styles that Approach provides. The styles specify properties such as background color for the chart and text attributes for data and field labels.

You can click a tab or use the Next and Back buttons to go to other tabs.

4. Select a SmartMaster layout for the chart in the SmartMaster Layout list.
5. Click the X-axis tab and select a field for the x-axis of the chart. When you click the tab, the X-axis panel appears.

Select a field for the chart's x-axis.



6. Click the Y-axis tab and define the calculation for the y-axis. When you click the tab, the Y-axis panel appears.

Select a field for the chart's y-axis.



To define the y-axis calculation, first select the calculation that you want to use. Next, select the field that you want to calculate.

If you want to calculate a field from a different joined database, select the database in the drop-down list.

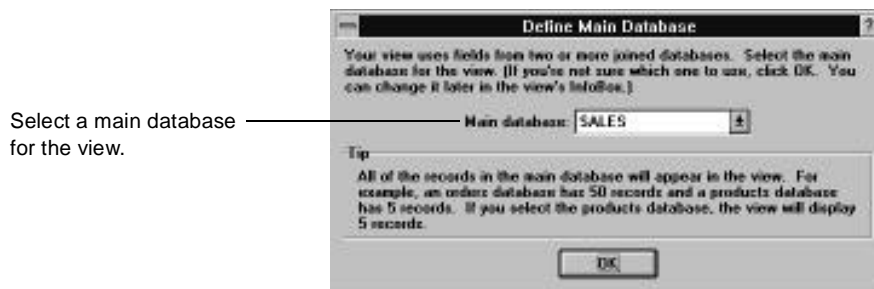
- If you want to include a series in the chart, click the Series tab and select a field for the series.

When you click the tab, the Series panel appears. A series is a set of values plotted in a chart along the x-axis.



- Click Done.

The Define Main Database dialog box appears if you select fields from more than one joined database. Otherwise, Approach displays the new chart.



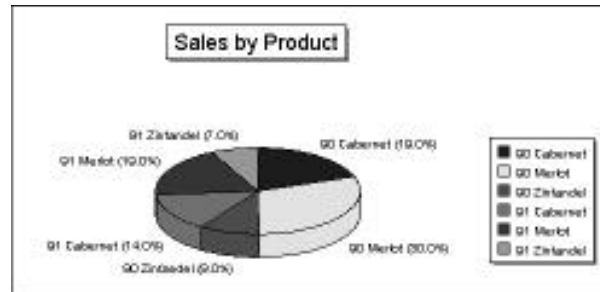
- If the Define Main Database dialog box appears, select a database in the Main Database drop-down list and click OK.

Approach creates the chart, and because the chart displays summary information, Approach places it in a large summary panel.

Creating a pie chart



Pie charts show the relationships of various parts to the whole. Each data value is represented by a slice of the pie, and the size of the slice corresponds to the percentage of the total. Use a pie chart when you want to compare five or six values in a single series to a total.



To create a pie chart:

1. Choose Chart from the Create menu.
The Chart Assistant appears.
2. Type a name for the chart in the View Name & Title text box.
A new chart automatically has the name *Chart* and a number; you can use any name you want, up to 30 characters. The name you use will appear on the chart's tab card and as a default on printed charts.
3. Select a SmartMaster style for the chart in the SmartMaster Style drop-down list.
The drop-down list shows SmartMaster styles that Approach provides. The styles specify properties such as background color for the chart and text attributes for data and field labels.
4. Select Pie chart in the SmartMaster Layout list.

Approach adds a Pie Fields tab and changes the illustration in the Sample Chart area.

The Pie Fields tab appears when you select the Pie chart type.



You can click a tab or use the Next and Back buttons to go to other tabs.

5. Click the Pie Fields tab, select a field for each pie wedge, select a calculation, and select a field to be calculated.

When you click the tab, the Pie Field panel appears.

Select a calculation and a field to be calculated for the pie wedges.

Select a field for the pie wedges.



6. Click Done.

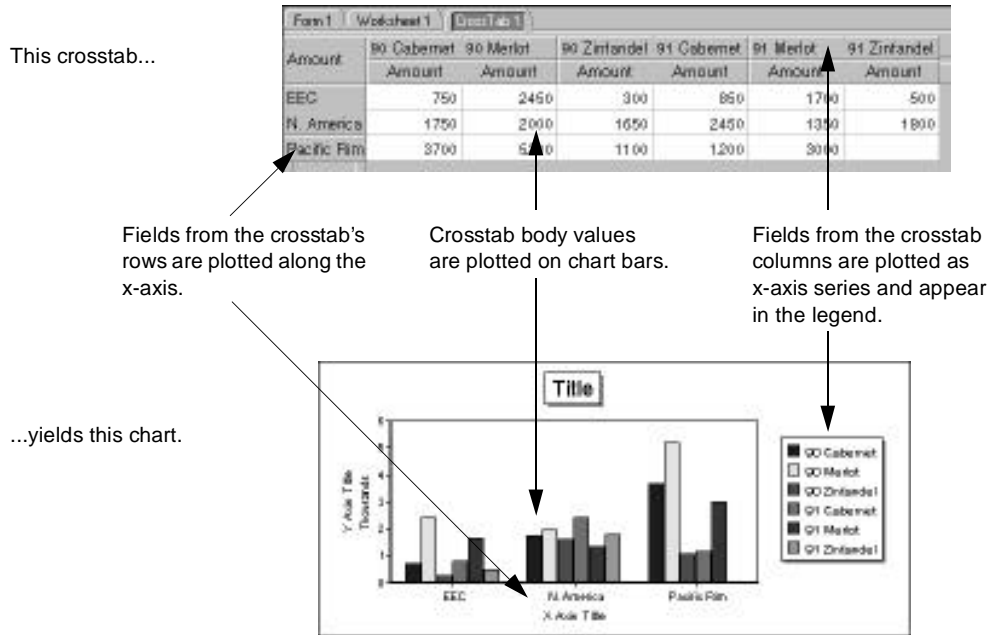
The Define Main Database dialog box appears if you select fields from more than one joined database. Otherwise, Approach displays the new chart.

7. If the Define Main Database dialog box appears, select a database in the Main Database drop-down list and click OK.

Approach creates the chart, and because the chart displays summary information, Approach places it in a large summary panel.

Creating an instant chart from a crosstab

You can also create a chart directly from a crosstab by clicking the Chart icon. Approach creates a vertical bar chart displaying the data in the crosstab. The values in the body of the crosstab are plotted as the chart bars. The crosstab rows are charted along the x-axis with crosstab groups (from columns) as the series. This illustration shows a crosstab and the resulting instant chart.



Approach creates a default title, axis titles, and legend.

To create an instant chart from a crosstab:

1. Make sure that the crosstab contains the data that you want to chart.

If necessary, you can change to a different set of data later. See “Charting a different data set,” next.



2. Click the Chart icon.

Approach creates the chart and displays it with a default title and default axis titles.

Charting a different data set

Once you've created a chart, you can change the set of data that it displays by specifying a new data source. If you use the Find command to create a found set of records, Approach automatically charts the found set.

To chart a different data set:

1. Choose Chart Data Source from the Chart menu.

The Chart Data Source Assistant appears. This dialog box contains three panels that are identical to the last three panels of the Chart Assistant.

Select a field for the chart's x-axis.



2. Select a field to appear on the x-axis.
3. Click the Y-axis tab and define the calculation for the y-axis. When you click the tab, the Y-axis panel appears.

Select a field for the chart's y-axis.



To define the y-axis calculation, first select the calculation that you want to use. Next, select the field that you want to calculate.

If you want to calculate a field from a different joined database, select the database in the drop-down list.

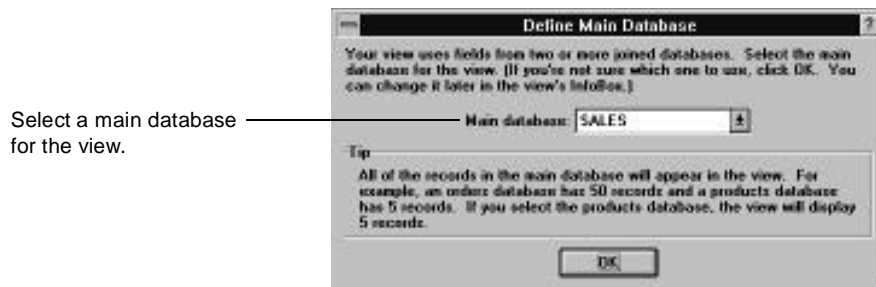
4. Click the Series tab and select a field for the series.

When you click the tab, the Series panel appears. A series is a set of values plotted in a chart along the x-axis.



5. Click Done.

The Define Main Database dialog box appears if you select fields from more than one joined database. Otherwise, Approach charts the new data.



6. If the Define Main Database dialog box appears, select a database in the Main Database drop-down list and click OK.

Approach charts the new data.

Changing the type of a chart

Approach provides a total of 20 different chart types, including three-dimensional bar, line, area, mixed, and pie charts. After creating a chart, you can change it to the type you want. Which type you use depends on how you want to present your data.

This section describes how to change the type of an existing chart. For information about the different chart types see the online Chart Help; for advice on which chart type to use, see “Choosing the best type of chart” on page 13-13.

To change the type of a chart:



1. To open the Chart InfoBox, select the chart and click the InfoBox icon or double-click the chart.

The Chart InfoBox appears.



Click here to open the palette of chart types.



2. Select a chart type from the palette.

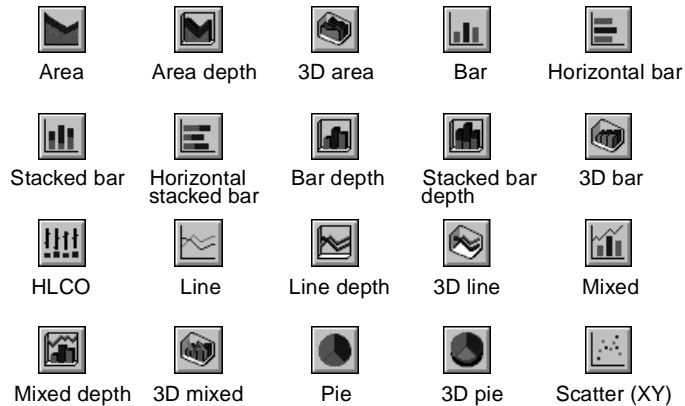
Approach displays the chart as the new type.

Types of chart

This section illustrates the different types of charts you can use in Approach. “Choosing the best type of chart,” next, is a table with advice about which type of chart to use for your needs.

Keep in mind that Approach offers three-dimensional versions of bar, line, area, mixed, and pie charts. Three-dimensional charts look dramatic and are ideal for presentations.

You can select from these 20 types of charts.



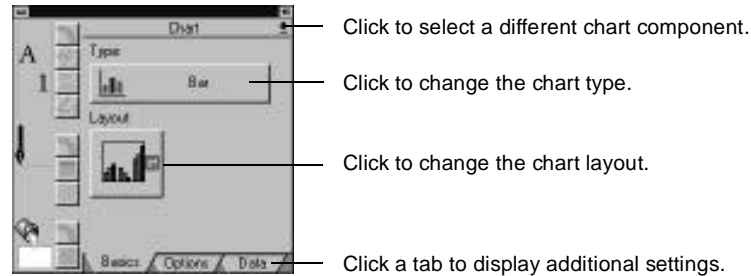
Choosing the best type of chart

When charting data, think about which chart type most clearly represents the data. The table below provides some suggestions for choosing the right chart for the job.

<i>To show</i>	<i>Use this chart type</i>	<i>For example</i>
Items that change over time	Bar, line, stacked bar, area	Annual sales from 1988–1993; 30-day stock trend
Items at a specific point in time	Horizontal bar, horizontal stacked bar	1993 sales for five products; 1993 costs by month
Parts of the whole	Pie, 100% horizontal stacked bar, 100% area	Market share by company; percentage of office space used in New York by an industry
Frequency distributions	Bar	Number of homes in various price ranges; number of employees in various age ranges
Relationships between variables	Bar, Scatter (XY)	Level of education compared to hours spent watching TV; average drop in asking price for home versus length of time on market
Ranges of data	Bar	Daily temperature ranges in February for Juneau, Alaska

Using the Chart InfoBox

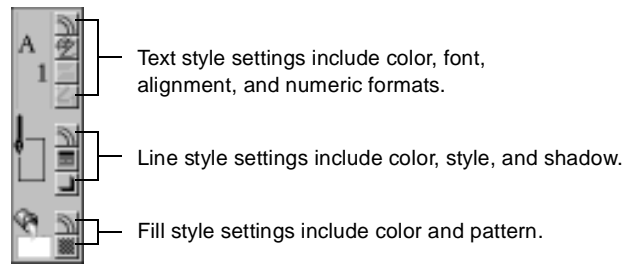
The Chart InfoBox provides you with tremendous flexibility in styling your charts. With separate panels for each chart component, the Chart InfoBox lets you make a wide variety of stylistic changes to a chart. For more information about using the Chart InfoBox, see the comprehensive online Chart Help.



The table that follows lists the types of settings you can change for each chart element.

<i>For this element</i>	<i>You can</i>
Whole chart	Change the chart type and layout, data presentation, and other options that vary with the chart type
Title	Select the first line, second line, or title frame for formatting, and change the title's position on the chart
Legend	Select the text or frame for formatting, change the layout of the legend, and change its position
X-axis	Change parts of the x-axis, including the title, subtitle, line, tick mark labels, and major and minor tick marks and grid lines
Y-axis	Change parts of the y-axis, including the title, subtitle, line, tick mark labels, and major and minor tick marks and grid lines
Series	Select a series and plot it against a second y-axis on the right side of the chart using a different symbol and change other elements depending on chart type
Plot	Change the position of the plot area
Note	Select the first line, second line, or note frame for formatting, and change the note's position at the bottom of the chart

A second section of the Chart InfoBox, the Style Panel, controls text, line, and fill styles.



- To open the Chart InfoBox, select the chart and click the Show Info icon or double-click the chart.

14

Previewing and Printing

You can print all the records in a database or a found set of records, in any view. You can also print a single record if you're using a form.

This chapter explains how to specify printer and print setup options and how to preview and print views.

How a view looks when printed

A form has one record per printed page. If you want to show more records per page, use a report or worksheet.

When you print a view in Approach, the data and design objects appear in the printed copy as they do on screen in Preview. If you have any objects you don't want to appear in printed copy (such as buttons to click to run a macro), you can define those objects as non-printing using their InfoBox in Design.

When you print a report, worksheet, or crosstab that has a header or footer, the header or footer appears on every printed page. The area between a header and footer is the *body* of the view. Approach prints as many records on a page as will fit in the body.

If a view has a header or footer, it appears on every printed page.

The diagram shows a stack of three pages. The top page is titled "Annual Report" with a page number "1" in the top right corner. Below the header is a table with two columns: "Region" and "Sales". The "Region" column has a sub-header "District" and four rows of horizontal lines below it. The "Sales" column has four rows of horizontal lines below it. At the bottom of the table is a row labeled "Region Total" with a shaded gray box to its right. A line from the text "Approach calculates summaries when you preview or print." points to this shaded box.

Annual Report		1
<i>Region</i>		
District	Sales	
_____	_____	
_____	_____	
_____	_____	
_____	_____	
Region Total		

Approach calculates summaries when you preview or print.

If a view has any summary calculations that apply to a range of records, in most cases Approach calculates the summaries only when you preview or print. (The exception is a summary for line items in a

repeating panel, which is summarized in Browse and in Design if you're showing data.) A summary panel in a report can appear before or after the records it summarizes.

If a view has fields or other objects that need to slide up or left, the fields slide when you preview or print.

If a report has a title page, Approach prints a copy of the page at the beginning of the view. A title page can have its own header and footer.

Specifying the printer, paper, and orientation

Before printing a view, you need to select a printer and specify other print setup options. The printer, paper size, and page orientation together determine the printable area on a page.

When you start Approach, the default printer is the one selected in the Windows Control Panel. If you are working on a network, you may also have other printers available.

To specify the printer, paper, and orientation:

1. Choose Print Setup from the File menu.

The Print Setup dialog box appears.



2. Select a printer in the Printer area.

Default Printer uses the printer selected in the Windows Control Panel.

If you want a different printer, select Specific Printer and select the name of the printer in the drop-down list. The list shows up to eight printers set up for use with your computer.

3. Select a page orientation in the Orientation area.

If a view won't fit on a printed page, check the page orientation.

Portrait places the view on the page vertically, and Landscape places the view on the page horizontally.

4. Select a paper size and a source in the drop-down lists in the Paper area.
5. Click OK.

Additional settings

The Options button in Printer Setup displays an Options dialog box with more settings specific to your printer. For information about these settings, click the Help button in the Options dialog box.

Previewing a view

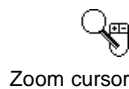
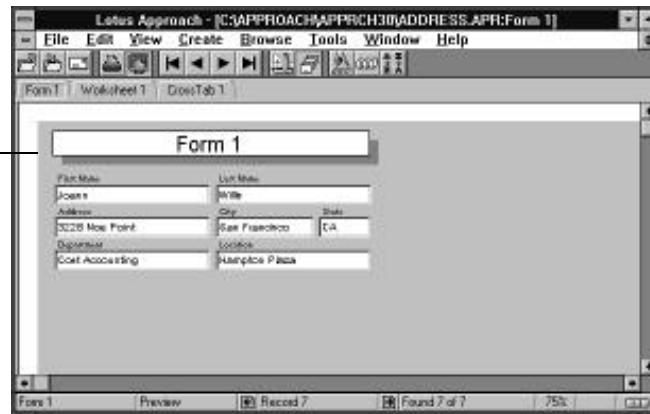
The Preview environment shows what a view will look like when printed. It's good practice to preview a view before printing so that you can make any necessary corrections—this may save you some time and paper later.



- To go to Preview, click the Preview icon or choose Preview from the File menu or from the environment pop-up menu in the status bar.

When you first go to Preview, you see your current view reduced to 75 percent of its normal size.

The current view initially appears at 75 percent of its normal size.



The pointer turns into a zoom cursor in Preview. You can change to another zoom setting by clicking the left mouse button to zoom in or the right mouse button to zoom out, by choosing Zoom In or Zoom Out from the View menu, by pressing CONTROL and the up arrow or

Zoom settings affect only how a view appears on the screen. Approach always prints at 100 percent.

You may want to show a non-printing button in Preview so that you can run its macro.

down arrow key, or by choosing from the zoom pop-up menu in the status bar. The possible zoom settings in Preview are 25, 50, 75, 100, and 200 percent.

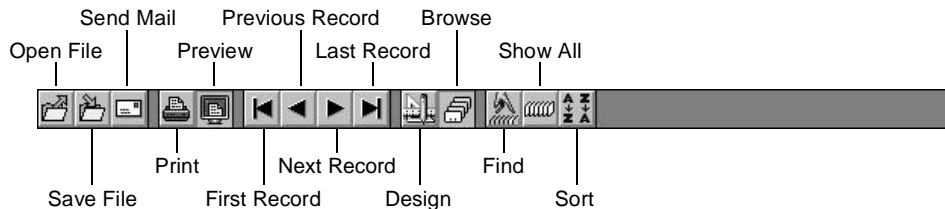
You can change to 100 percent in one step by choosing Actual Size from the View menu or 100 from the zoom pop-up menu.

All of the data from Browse also appears in Preview. You can move through records in Preview as you can in Browse, but you cannot click in fields, edit data, or edit design objects. Go to Browse if you need to make changes to data, and go to Design if you need to make changes to objects.

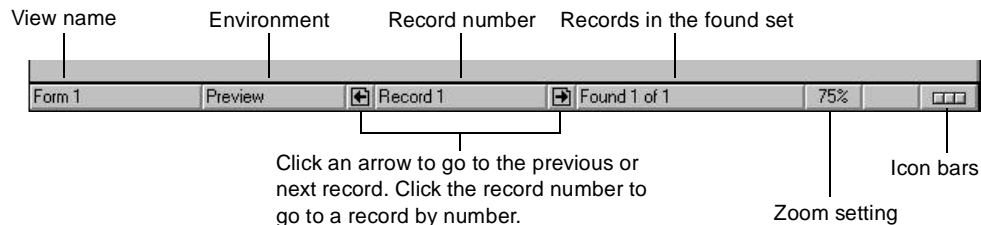
You can make a non-printing object appear in Preview by turning on Non-printing in the Basics panel of the object's InfoBox. If a macro button appears in Preview, the zoom cursor turns into a pointer when you move over the button so that you can click it to run a macro.

If a view has any fields that summarize data from multiple records, Approach calculates the summary in Preview and shows the results. If a view has fields or other objects that slide up or left, the fields slide into position in Preview and in Design if you're showing data.

The default icon bar in Preview has icons for creating and opening files, printing, moving from one record to another, and finding and sorting records. You click an icon to apply the command.



The status bar in Preview is the same as it is in Browse, except that it shows the zoom setting. If the view is paginated, you see the page numbers in the status bar rather than the record numbers.



The parts of the status bar that show the view name, environment, and zoom setting are pop-up menus. You can choose from them to change to another view, environment, or zoom setting. The icon bar symbol at the right end of the status bar is also a pop-up menu, with the icon bars available in the current view.

If you're working on a network database along with other users, the data in the database may change after you go to Preview. You can have Approach download a copy of the database on your hard disk every time you go to Preview to make sure you're looking at the data that will actually be printed. For more information, see "Setting general working preferences" on page 19-14.

Printing a view

Before previewing, make sure you've already selected a printer, paper size, and orientation so that the preview will be accurate.

When you're ready to print, you specify the view, the range of records, and the number of copies you want.

To print a view:

1. If necessary, specify the printer and print setup options.

These items determine the printable area of the page. For more information, see "Specifying the printer, paper, and orientation" on page 14-2.

2. Browse the records you want to print.

Approach prints from the set of records you're currently using. You can show all the records in a database or use a find request to show only a found set of records.

3. Change to the view you want to print.
4. If necessary, sort the records.

Approach prints records in the current sort order.



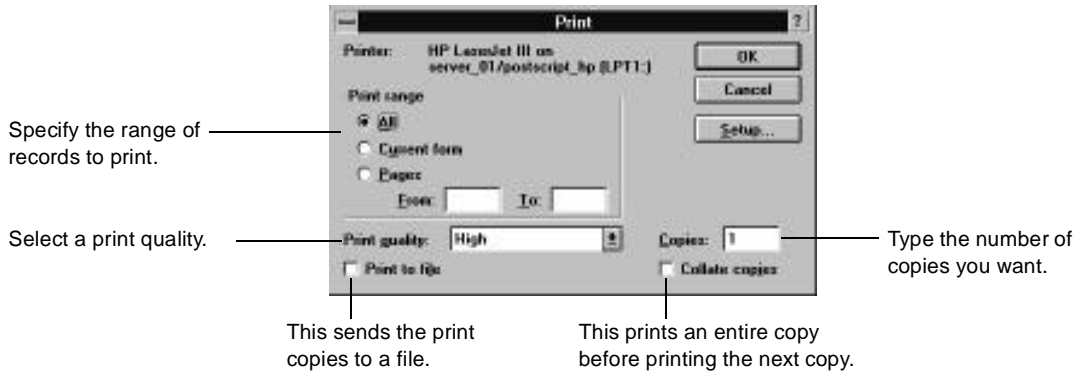
5. Preview the view and make any corrections you need.

Previewing shows how the view will look when printed. For more information, see "Previewing a view" on page 14-3.



6. Click the Print icon or choose Print from the File menu.

The Print dialog box appears.



7. Specify a range of records in the Print Range area.

All prints all the records you're currently browsing. "Current form" prints the current record (this is available only when you're using a form).

Pages prints a range of pages. Type the number of the first page of the range in From and the number of the last page in To.

8. Select a print quality in the Print Quality drop-down list.

The choices available depend on the printer.

9. Type the number of copies you want in the Copies text box.

10. If necessary, turn on printing options.

"Print to file" sends the print copies to a file rather than to a printer. If you turn this setting on, the Print to File dialog box appears when you click OK in the Print dialog box. Specify a name and location for the print file.

"Collate copies" prints an entire copy before printing the next copy. Otherwise, Approach prints all copies of page 1, then all copies of page 2, and so on.

11. Click OK.

Approach prints the records you requested in the current view.

Print to a file on disk if you want to use a printer not connected to your computer.

If you want to cancel a print job, press ESC or click Cancel in the print alert box.

15

Automating Your Work with Macros

A *macro* is a single command that instructs Approach to carry out a sequence of tasks. The sequence can be a single step, such as switching from a form to a report, or it can involve multiple steps, such as finding all unpaid invoices, sorting them by date in ascending order, switching to a past-due notice form letter, and printing individual past-due notices.

By chaining macros together (instructing one macro to run another macro), you can automate a sophisticated series of tasks; and by attaching a macro to a button or a field, you can put the full power of a wide variety of Approach commands right in the middle of a form or report.

In another creative way of using macros, you can create an otherwise blank form containing a series of macro buttons that substitute for menu commands. The macro buttons can take users to a different view, for example, for data entry.

This chapter explains how to define a macro, run a macro, and attach a macro to a button or other object, to a field, or to a view. It also describes how to set Approach to run specific macros when you open or close an Approach file.

Defining a macro

You can use Approach macros to perform many different types of tasks—from finding a set of records to fully automating your data entry or invoicing process. Your only limit is your imagination.

You define a macro using the Define Macro dialog box, in which you list the tasks you want the macro to do in the order you want them performed. Depending on the commands you select, you can also set the appropriate options. For example, if your macro definition includes the Find command, you can specify the find criteria you want.

To define a macro:

1. Choose Macros from the Tools menu.

The Macros dialog box appears. You can also open the Macros dialog box by clicking the Define Macro button in a field's InfoBox.



Click to create a new macro.

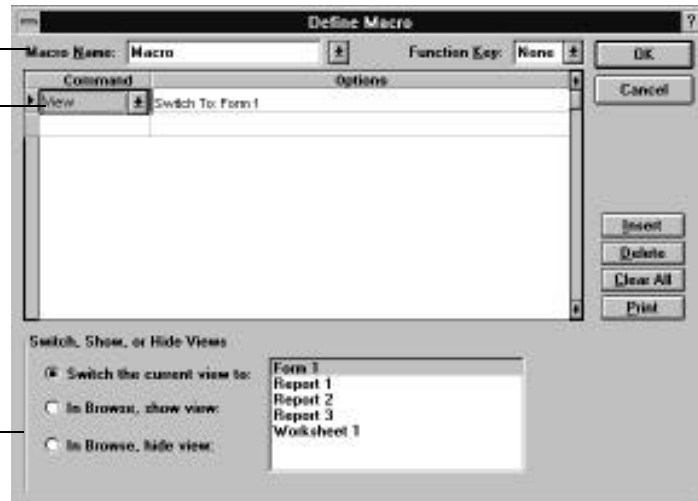
2. Click New.

The Define Macro dialog box appears. Approach is preset to show View as the first command in all new macros.

Enter a name and assign a function key.

The commands you select here...

...determine which options you can set here.



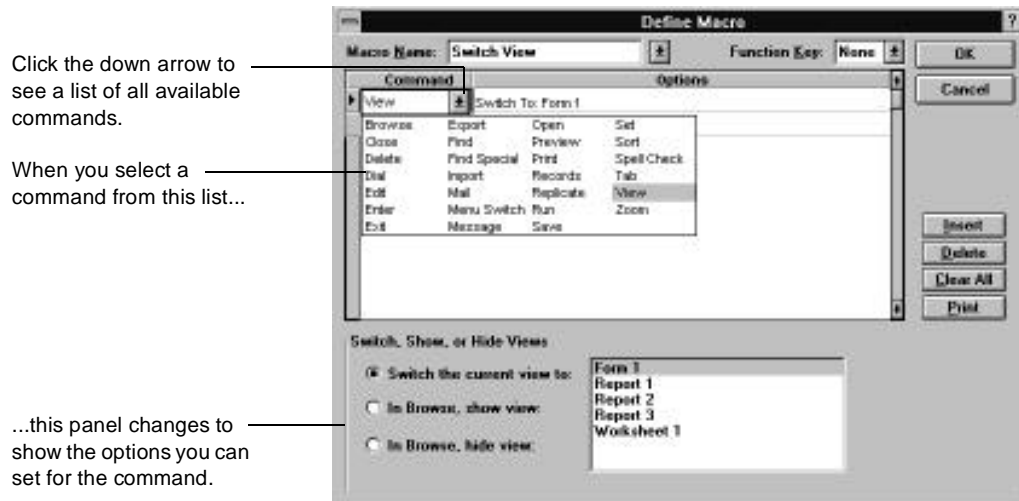
If you want to automatically run a macro when you open or close an Approach file, name it Open or Close.

3. Type a name for the macro in the Macro Name text box.
4. If you want to execute the macro using a function key, select a key in the Function Key drop-down list.

Defining a function key allows you to run the macro directly from the keyboard. Therefore, the drop-down list shows only the function keys you haven't already used. Leave the drop-down list set to None if you don't want to use a function key.

5. Define the actions you want the macro to perform by adding commands to the Command grid and specifying the appropriate options.

To add a command, click in any cell in the Command column and click the down arrow to display a list of available commands. Click a command to select it.



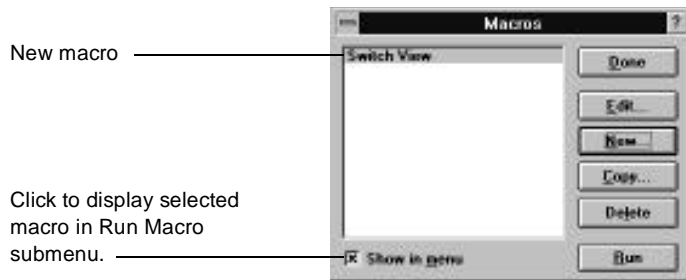
Each time you add a command, Approach displays the options for that command in the bottom half of the Define Macro dialog box and adds a blank line at the end of the Command grid. To add another command, click in the next blank cell in the Command column and select a command.

Be sure to list commands in the order you want them carried out. For example, if you want Approach to go to the next record before printing, make sure that Records appears before Print in the Command grid.

You can click the Insert button to add a line within the Command grid, or click Delete to delete a selected one.

6. When your macro definition is complete, click OK.

You return to the Macros dialog box, and the macro you just defined appears in the Macros list.



7. To display the new macro in the Run Macro menu, select the macro name and turn on “Show in menus.”
8. Click Done to close the Macros dialog box.

Adding and removing commands in a macro

If you need to add or remove commands in a macro, you can use the Insert and Delete buttons to add a new row in the middle of the Command grid or to remove a selected row.

- To add a command row to a macro, select the row where you want the new command to be inserted (click to the left of the command to select the row) and click Insert.



Approach adds a blank row above the one you selected.

- To remove a command row from a macro, select the command row (click to the left of the command) and click Delete.

Moving a command in a macro

If you need to change the order of the commands you've listed in a macro, you can easily drag a command to a new location.

To move a command in a macro:

1. Select the row that holds the command you want to move.

Click to the left of the command to select the row. The row marker indicates that the row is selected.



2. Position the pointer over the selected command.

The pointer changes to a move cursor.



3. Drag the command to the new position.

Guide lines show you where the row will be positioned when you release the mouse.



About macro commands

There are more than two dozen commands you can include in an Approach macro, many of which have options you can set. These options affect the way Approach carries out the command.

You can select these commands and set these options:

<i>Use this command</i>	<i>To do this</i>
Browse	Switch to Browse.
Close	Close the current Approach file. You can set Approach to automatically disconnect from the server while the macro runs.
Delete	Delete the current record, found set, or Approach file. The “Show warning” option opens alert boxes while the macro runs that you need to OK before deleting.
Dial	Dial the telephone number in the field you select. Approach uses the modem settings you specify in the Dialer panel of the Preferences dialog box. See “Setting dialing preferences” on page 19-8.

Continued

<i>Use this command</i>	<i>To do this</i>
Edit	Use these commands from the Edit menu: Cut, Copy, Paste, or Select All. You can also have the macro open the Paste Special dialog box and wait for input while the macro runs. The Edit command is used mostly for putting data on the Clipboard or pasting it.
Enter	Accept the current record (this is the same as pressing the ENTER key or clicking the Enter icon).
Exit	Exit Approach.
Export	Set export options now (click Edit Export to select the records and fields to be exported as well as the filename) or set Approach to open the Export Data dialog box and wait for input while the macro runs. For more information about export options, see "Exporting data from Approach" on page 16-12.
Find	Perform a stored Find request, show all records in the database file, or refresh the found set. You can also set Approach to open a Find request or the Find Again dialog box and wait for input while the macro runs. The stored Find request can be a new one that you define now (click New Find) or one that has already been defined. You can also edit a stored find by clicking Edit Find. If no records are found, you can select another macro for Approach to run. See "Example 2: Finding a set of records" on page 15-17 for an example of a macro that finds a set of records. See also "Creating a find request" on page 11-2.
Find Special	Set Find Special options now (click Edit Find Special) or set Approach to open the Find Special dialog box and wait for input while the macro runs. For more information about Find Special options, see "Finding duplicate or distinct values" on page 11-12.
Import	Set import options now or set Approach to open the Import Data dialog box and wait for input while the macro runs. You can set up a new import (click New Import) or edit an existing import set up (click Edit Import). For more information about import options, see "Importing a database file" on page 16-2.

Continued

<i>Use this command</i>	<i>To do this</i>
Mail	Set mailing options now (click Edit Send Mail) or set Approach to open the Send Mail dialog box and wait for input while the macro runs. See “Sending e-mail from Approach” on page 16-16 for more information.
Menu Switch	Switch to the menu bar you specify. You can also create a custom menu now (click Customize Menus). For more information on customizing a menu, see “Customizing menus” on page 19-18.
Message	Display a message box that contains the title and the text you enter.
Open	Set file opening options now (click Files) or set Approach to open the File Open dialog box and wait for input while the macro runs. The file can be another Approach file, a different database file, or another application, such as Lotus 1-2-3. You could even open a communication application that uses a script to upload your data to another computer. For more information about opening files, see “Creating and opening files” on page 2-3.
Preview	Go to Preview.
Print	Set printing options now (click Edit Print) or set Approach to open the Print dialog box and wait for input while the macro runs. For more information about printing, see “Printing a view” on page 14-5.
Records	Go to a record, hide a record, duplicate a record, or create a new record.
Replicate	Set replication options now (click Edit Replicate) or set Approach to open the Replicate with Notes Server dialog box and wait for input while the macro runs. For more information about replicating, see “Replicating a Lotus Notes database” on page 17-4.
Run	Run another macro you select (or continue running the current macro) under the conditions that you specify in a formula (click Define Formula). You can also select a macro to be run when the condition is false and you can return to the current macro after running that macro. You might also want to use Run to perform an initial check before running a second macro (see “Example 5: Defining a conditional macro” on page 15-23).

Continued

<i>Use this command</i>	<i>To do this</i>
Save	Set file saving options now (click Files) or set Approach to open the Save As dialog box and wait for input while the macro runs. For more information about Save As options, see "Saving a copy of an Approach file and a database file" on page 2-19.
Set	Set the field you specify to the value you enter or the formula you define (click the Formula button). You can use Set for any uncalculated field. For more information about formulas, see "Setting up a formula for a calculated field" on page 3-8.
Sort	Set sort criteria now or set Approach to open the Sort dialog box and wait for input while the macro runs. For more information, see "Sorting by a field" on page 11-16.
Spell Check	Check the spelling of data in records and text in memo fields (in Browse) or text in text objects (in Design). For more information, see "Checking spelling" on page 10-17.
Tab	Tab to field or macro button number. Use the Show Data Entry Order command (View menu) in Design to view or change the data entry order for fields and buttons in a form. For more information about data entry order, see "Changing the data entry order for fields" on page 6-32.
View	Go to another view in the Approach file, show a view, or hide a view.
Zoom	Scale the current window by zooming in or out.

Creating a looping macro

You can create a macro that loops through all the records in a found set and either ends when it encounters the last record in the found set, or continues running. As the macro loops, it can perform operations you specify, such as setting a field to a value. Looping macros use the Records command to go to the next record and the Run command to repeat the same macro.

To create a looping macro that ends when it reaches the last record:

1. Add commands to the macro to be performed within the loop.
2. Select the Records command and use the next record option.

3. Select the Run command and run the current macro again.

Approach automatically ends a looping macro when it encounters the last record.

For faster running loops, remove any commands from the macro that switch to another view each time the macro is run.

To create a looping macro that runs another macro after it reaches the last record:

1. Select the Records command and use the next record option.
2. Select the Run command and click If. Type `IsLastRecord()` in the If formula box.
3. Select “run macro” in the Is True drop-down list and select the macro to be run when the last record is encountered in the drop-down list to the right.
4. Select the Run command and run the current macro again.
5. Click OK in the Formula dialog box.

Editing or deleting a macro

After you define a macro, you can edit it to change any aspect of the macro. You edit a macro definition the same way you create it—using the Macro and Define Macro dialog boxes. You can also use the Macros dialog box to delete a macro you no longer need.

To edit a macro:

1. Choose Macros from the Tools menu.

The Macros dialog box appears.



If you want to add a new macro that performs the same tasks as the current macro, click Copy instead of Edit.

2. Select the macro you want to edit and click Edit.
The Define Macro dialog box appears.
3. Make your changes.

You can change any aspect of the macro. To change the macro name, type the new name. To add or delete commands, use the Insert or Delete buttons.

4. Click OK to close the Define Macro dialog box.
You return to the Macros dialog box.
5. Click Done.

To delete a macro:

1. Choose Macros from the Tools menu.
The Macros dialog box appears.



2. Select the macro you want to delete and click Delete.
3. Click Done.

If the macro is attached to a macro button, the button no longer does anything. You may want to delete the button or attach another macro to it.

Attaching macros

Approach lets you attach a macro to a macro button or an object (text or graphic), to a field, or to a view.

If you attach a macro to a button or object, you can run the macro simply by clicking the button or object. Macro buttons make it easy to run macros if you're automating a complex procedure that uses lots of macros or setting up a file for other users.

In addition to attaching a macro to a button or object, you can also attach a macro to a field in a view or to the view itself. This allows you to set up macros that run automatically when you tab into or out of a specific field, when the data in a field changes, or when you switch to or from a view.

Adding a macro button and attaching a macro

You can add a button to a view and attach a macro to the button. In Browse, Approach will run the macro whenever you click, tab into, or tab out of the button (depending on how you set up the macro).



You can add a macro button to a view and either attach an existing macro or define a new macro for the button. If both the button and the macro already exist, you can also attach the macro to the button.

To add a macro button:



1. In Design, click the Macro Button icon or choose Macro Button from the Create Drawing submenu.

The Macro Button icon is in the Tools palette.

If you plan to draw more than one macro button, you can double-click the icon. The icon stays selected until you select a different one. On a color monitor, the icon changes to blue.

2. Drag to draw the button.

The InfoBox shows the Macros panel for the button.

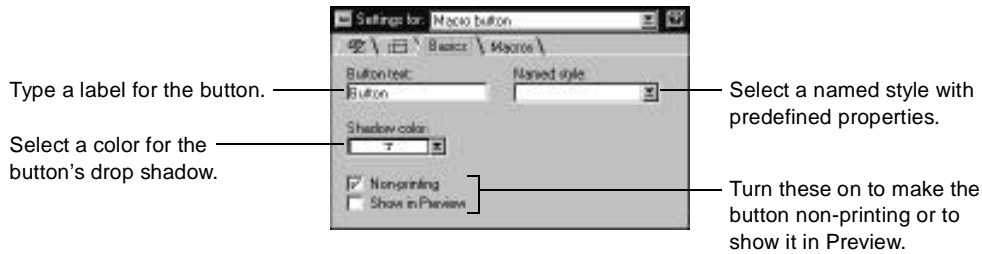


3. Select one or more macros for the button in the drop-down lists in the Attached Macros area.

You can have Approach run a macro when you click the button or when you tab into or out of it.

4. If you need to define a macro, click Define Macro and use the dialog box that appears.
5. Click the Basics tab in the InfoBox.

The InfoBox shows the Basics panel for the button.



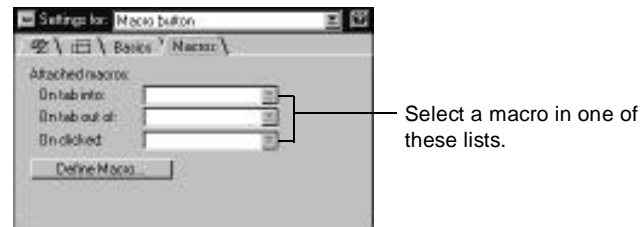
6. Type a label for the button in the Button Text box.
7. If you want, set options to change the appearance of the button.

<i>To</i>	<i>Do this</i>
Give a button a drop shadow	Select a color in the drop-down palette. Select T for transparent (no shadow).
Apply a named style with width, color, and text properties already defined	Select a style in the Named Style drop-down list.
Make a button non-printing	Turn on Non-printing.
Show a non-printing button in Preview	Turn on Show in Preview. (This is available only if Non-printing is on.)

To attach a macro to an existing button:



1. In Design, select the button and open its InfoBox.
You can click the Show Info icon or double-click the button.
2. Click the Macros tab.
The InfoBox shows the macro settings for the button or object.



3. Select a macro name in one of the three lists.

<i>To attach a macro that runs</i>	<i>Select a macro name in the</i>
When you tab to the button	“On tab into” list
When you tab away from the button	“On tab out of” list
When you click the button	“On clicked” list

If you include the macro button in the view’s data entry order you can have a macro activated when you tab to the button or away from it. Use the Show Data Entry Order command in Design to view or change the data entry order for fields and buttons in a form. For more information about data entry order, see “Changing the data entry order for fields” on page 6-32.

Attaching a macro to an object

You can attach a macro to any object. In Browse, Approach will run the macro when you click the object. (You must click a part of the object that does not have a transparent border or fill color to run the macro.)

To attach a macro to an object:



1. In Design, select the object and open its InfoBox. You can click the Show Info icon or double-click the button.
2. Click the Macros tab in the InfoBox, and set the options in the Macros panel.

Select a macro for the object.



Click here if you need to define a macro.

<i>To</i>	<i>Do this</i>
Run a macro when you click an object in Browse	Select a macro in the Attached Macros drop-down list.

Continued

<i>To</i>	<i>Do this</i>
Define a new macro or redefine an existing one	Click Define Macro and use the dialog box that appears.

Attaching a macro to a field

You can attach up to three macros to a field. In Browse, Approach will run a macro whenever you tab into or out of the field or edit data in it (it depends on how you set up the macro).

You might set up a macro that sets an initial value in a field when you tab into it, or one that skips fields in a form based on the data entered. For example, in an order entry form, you might run a macro when you leave the last address field that skips the sales tax field when the order is being shipped to a location that does not collect sales tax.

To attach a macro to a field:



1. In Design, select the field and click the Show Info icon.
You can also double-click the field.
2. Click the Macros tab and set the options in the Macros panel.

Select macros for the field.



Click here if you need to define a macro.

3. Select the macros you want to run

<i>To attach a macro that runs</i>	<i>Select a macro name in the</i>
When you tab or click into the field	“On tab into” list
When you tab out of the field or click another field	“On tab out of” list
When the value in the field changes	“On data change” list

4. If you want to define a new macro, click Define Macro and use the Define Macro dialog box to name and define the macro.

Attaching a macro to a view

You can attach up to two macros to a view. In Browse, Approach will run a macro whenever you change into or out of the view (depending on how you set up the macro).

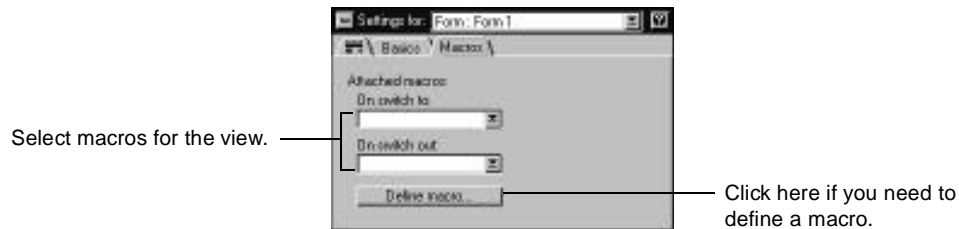
To attach a macro to a view:



1. In Design, click in the background of the view and open its InfoBox.

You can click the Show Info icon or double-click in the background of the view.

2. Click the Macros tab in the InfoBox, and set the options in the Macros panel.



<i>To</i>	<i>Do this</i>
Run a macro when you change into or out of a view in Browse	Select a macro in one or both drop-down lists under Attached Macros.
Define a new macro or redefine an existing one	Click Define Macro and use the dialog box that appears.

Running a macro

Approach gives you four ways to run a macro: from a function key, from a menu command, from the Macros dialog box, or from a button (or other object). If a macro is attached to a field or a view, Approach automatically runs the macro at an appropriate time. You don't need to do anything else to run it.

The way you run the macro depends on how it is defined. For example, to run a macro from a function key the macro must have a function key assigned. Likewise, to run a macro from the Run Macro submenu the macro must be defined to appear in the menu.

Press Esc to cancel a macro that's running.

- To run a macro from the menu, choose Run Macro from the Tools menu and choose the macro you want from the submenu.
If you have more macros than fit in the submenu, choose More Macros. Approach opens a dialog box that lists your macros.
- To run a macro using an assigned function key, press the function key.
- To run a macro that's attached to a button or other object, click the button or object.
- To run a macro that's attached to a field, tab to or from the field or change data in the field.
- To run a macro that's attached to a view, switch to or from the view.
- To run any macro, choose Macros from the Tools menu, select the macro in the Macros dialog box, and click Run.

Creating sample macros

A good way to learn about macros (and to get ideas for ways you can use them) is to look at some sample macros.

In the sections that follow, you'll find five sample macros that perform different types of tasks, ranging from switching from one view to another (the simplest example), to updating fields based on a conditional formula (a more complex example), to a macro that performs an initial check before either continuing or running another macro (the most complex example).

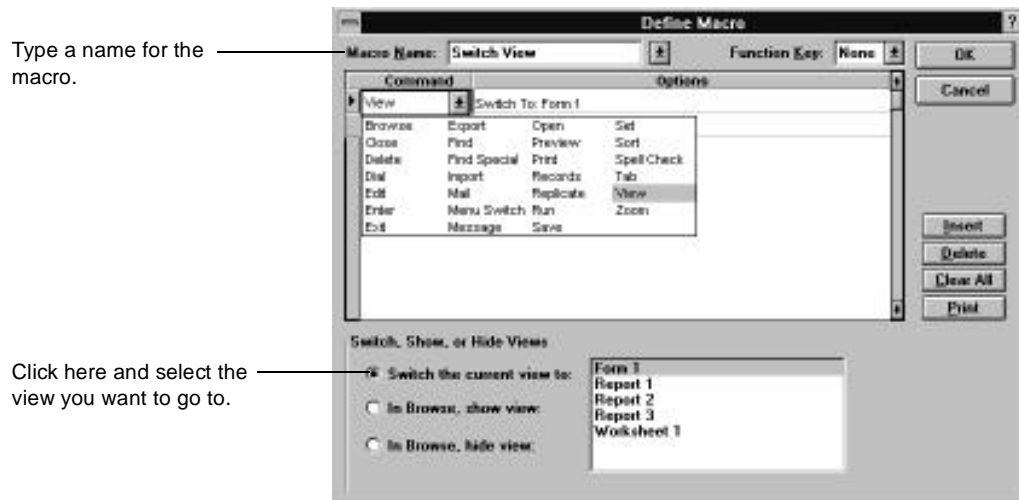
Example 1: Switching to another view

The first sample macro simply takes you from the starting view to another view in the same Approach file. You might use a macro like this any time you need to switch from one view to another.

To create a macro that switches to another view:

1. Choose Macros from the Tools menu.
The Macros dialog box appears.
2. Click New.
The Define Macro dialog box appears.
3. Type a name for the macro and assign a function key if you wish.
Approach is preset to show View as the first command in all new macros.

The Define Macro dialog box shows the options you can set for the View command.



4. In the options area, click “Switch the current view to” and select a view in the list.
You can also show or hide a view.
5. Click OK to create the macro.
6. Click Done to close the Macros dialog box.

Example 2: Finding a set of records

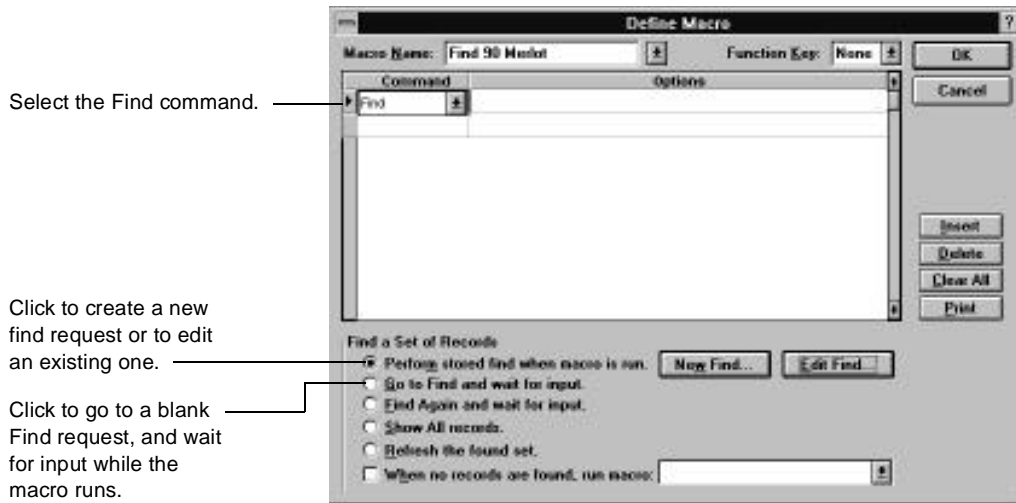
Approach gives you several different ways to find a set of records using a macro. You can perform a stored find (one that was in effect when you created the macro), you can edit an existing find request, you can create a new find request, or you can create a macro that goes to a blank find request and waits for you to supply the criteria while the macro is running. You can also use the Find command to show all records or to refresh the database.

This sample macro defines a new find request. You might use a macro like this when you want to work with a specific found set of records, for example, all records for sales in N. America.

To create a macro that finds a set of records:

1. Choose Macros from the Tools menu.
The Macros dialog box appears.

2. Click New.
The Define Macro dialog box appears.
3. Type a name for the macro and assign a function key if you wish.
4. In the Command grid, select Find in the list of commands.
The Define Macro dialog box shows the options you can set.



5. Select “Perform stored find when macro is run” and click New Find.

Approach opens a find request for the current form. These are the other Find options you might select.

<i>To</i>	<i>Select this option</i>
Edit an existing find request for the macro.	“Perform stored find when macro is run” and click Edit Find
Go to a blank find request while the macro runs and wait for criteria to be entered.	Go to Find and wait for input
Go to a partially filled in find request while the macro runs and wait for additional criteria to be entered.	Find Again and wait for input
Show all records in the database.	Show All records

Continued

To *Select this option*

Update the current state of the database with regard to the found set. Refresh the found set

6. Complete the find request and click OK.

This find request shows criteria in the Product field.

7. In the Define Macro dialog box, click OK to create the macro.
8. Click Done to close the Macros dialog box.

Using a variable field in a Find macro—Power tip

Using a variable field in a find request, you can create a flexible macro that allows users to find differing sets of records. For example, you can create a macro that allows users to find all records that have a customer ID that they enter. You begin by defining a variable field with a text option. Next, you place the variable field in a view and type a customer ID in it. Then, you create a macro that includes a find request with this criterion =@ *Variable field* in the customer ID field. You might want to add a view that contains the variable field and a macro button that says *Find Customer*. The view could also include instructions to type the customer ID you want to find in the variable field.

Example 3: Setting a value in a field

The third sample macro changes the value in a field for all records in a database file, in this case setting the tax rate to 8.25 percent. It also automatically goes to the next record and repeats itself until all records are updated. The macro stops running when it reaches the last record in the database file. A macro that repeats itself is called a looping macro.

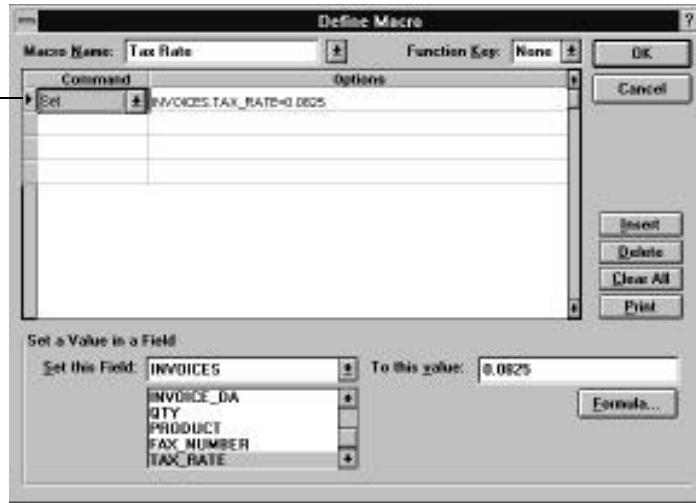
Macros run starting from the current record. Be sure to move to the first record if you want to update all records.

To create a macro that sets a value in a field:

1. Choose Macros from the Tools menu.
The Macros dialog box appears.

2. Click New.
The Define Macro dialog box appears.
3. Type a name for the macro and assign a function key if you wish.
4. In the Command grid, make Set the first command, select a field in the Set this Field list, and type a value in the To This Value box.

This command sets the value of the field you select in the Set This Field list to the value you specify in the To This Value text box.



5. In the Command grid, add Records to the list and click Next Record.

This command moves to the next record.



6. In the Command grid, add Run to the list and select the current macro.

This command causes the macro to continue repeating itself until it encounters the last record in the found set.

The Define Macro dialog box should look something like this:

This command runs the current macro again. The current macro repeats until it reaches the last record in the found set.



7. Click OK to save the changes to the new macro and click Done in the Macros dialog box.

Example 4: Using an IF calculation in a macro

The fourth sample macro has a conditional formula associated with the Set command that sets different tax rates depending on the value in the State field. Like the previous sample macro, this macro also loops through all the records in the database file until it reaches the last record.

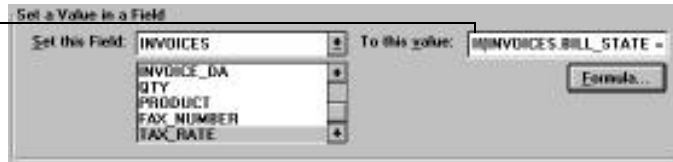
You define the condition by composing a formula in the Formula dialog box.

To define a macro that uses an IF calculation:

1. Choose Macros from the Tools menu.
The Macros dialog box appears.
2. Click New.
The Define Macro dialog box appears.
3. Type a name for the macro and assign a function key if you wish.
4. In the Command grid, make Set the first command in the list, select a field, click Formula, and type a value in the To This Value text box.

In this case, the formula is: If (BILL_STATE = 'CA', 0.0825,0.075). If you're working with percentages in a formula, be sure to enter the decimal value you need to multiply by, and not the percentage. Also, be sure to allow enough decimal places in the field to show the results of the calculation.

You can type a formula here or click the Formula button and enter a formula in the Formula dialog box.



5. In the Command grid, add Records to the list and click Next Record.

This command moves to the next record.



6. In the Command grid, add Run to the list and select the current macro to continue running it until it reaches the last record in the found set.

The Define Macro dialog box should look something like this:

The full formula appears in the Options cell.

This command runs the current macro again. The current macro repeats until it reaches the last record in the found set.



- Click OK to save the changes to the new macro and click Done in the Macros dialog box.

Example 5: Defining a conditional macro

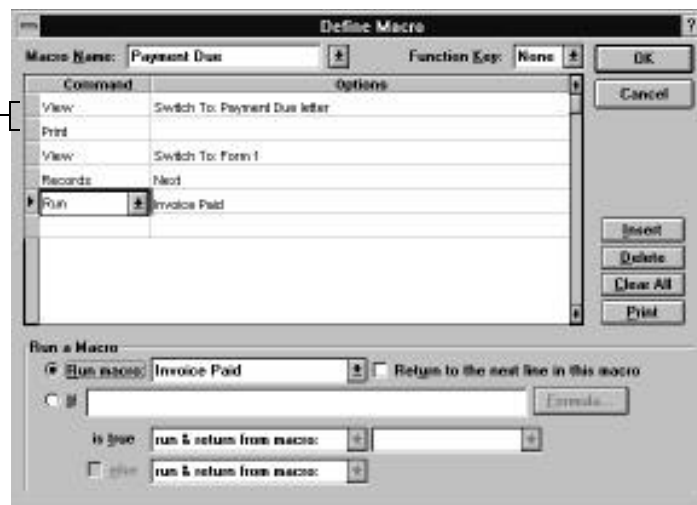
A conditional macro verifies that a certain condition exists in the current record before either continuing with the current macro or running a second macro. An example of a condition might be a specific value in a certain field. If the initial check condition is not met, you can instruct Approach to run a second macro instead of continuing with the current one.

You set up a conditional macro using the Run command, and you define the condition by selecting a field and typing a value or by defining a formula (click the Formula button).

As part of the Run command options, you specify the macro to be run when the check condition is True, as well as the macro to be run if the condition is False.

In this example, the first macro (Invoice Paid) checks to see if a customer has paid the latest invoice. If so, Approach prints a “thank you” form letter. If not, Approach runs a second macro, Payment Due, which prints a form letter asking for payment.

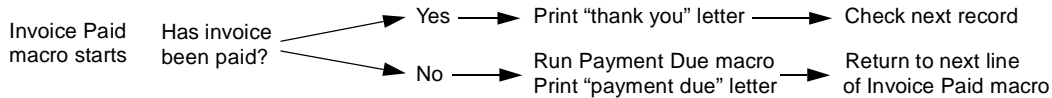
These commands print the “payment due” form letter for the current record.



The Payment Due macro switches back to the view that displays the field you’re checking (in this case Paid), goes to the next record, and runs Invoice Paid again.

After Payment Due runs, Approach returns to Invoice Paid and goes to the next record. In order to run the Payment Due from the Invoice Paid, you must define Payment Due before you create the Invoice Paid.

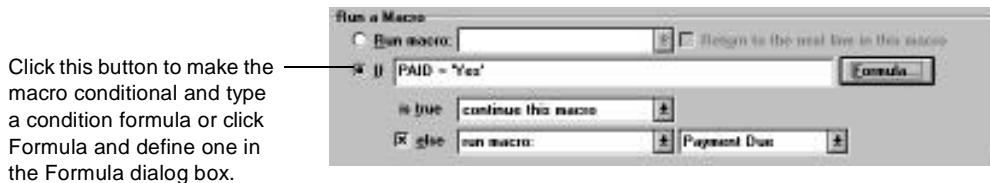
Here's a map of the logic in these two sample macros:



To use an initial check in a macro:

1. Choose Macros from the Tools menu.
The Macros dialog box appears.
2. Click New.
The Define Macro dialog box appears.
3. Type a name for the macro and assign a function key if you wish.
4. In the Command grid, make Run the first command in the list of commands. In the Run a Macro area, click If, click Formula, and type the formula in the Formula dialog box.

This step sets up the condition. In this sample macro the condition is the value in the Paid field.



5. To specify the action to take when the condition is true, select "continue this macro" in the Is True drop-down list.
This instructs Approach to continue running the current macro when the condition is true (the Paid value is "Yes").
6. To run a different macro when the condition is false, turn on "else," select "run macro" in the Else drop-down list, and select the macro you want to run.

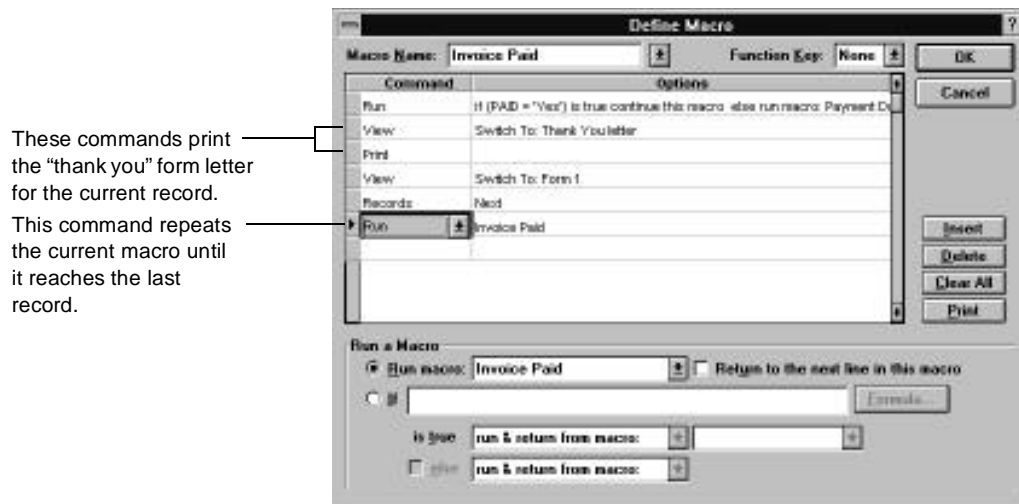
This option instructs Approach to run the Payment Due macro when the value in Paid is “No.” Other Run command options let you run another macro, run another macro and return to the current one, or end the macro.

7. Add the other actions you want Approach to perform if the initial check is true.

In this example, Approach switches to a form letter, prints the current record, and returns to the starting form (the one that displays the field you’re checking).

8. In the Command grid, add Records to the list and click Next Record.
9. In the Command grid, add Run to the list and select the current macro.

The Define Macro dialog box should look something like this:



10. Click OK to save the changes to the new macro and click Done in the Macros dialog box.

16

Exchanging Data with Other Files or Applications

Approach is designed to make it easy for you to work with data created in other Windows applications.

This chapter explains how to import data or views into Approach, export data from Approach in a format that other applications can read, copy a picture currently in a PicturePlus field to a separate file, link or embed OLE objects from other applications, and create an OLE object in Approach that can be used in another application.

One of the key ways that Approach works with other database applications is by opening their files directly. For more information about opening files created in other applications, see “Opening a database created in another application” on page 2-9.

About file formats

Approach lets you open database files in a wide variety of formats. Because Approach does not use a proprietary file format, there's no need to convert data into a different format before opening the database file. For example, you can open an existing database or Lotus 1-2-3 file and work in it directly in Approach.

When you want to use data from one database file to add to or update the information in another database file, you can import and export the data. You might also want to import a spreadsheet file to convert it to a database. Approach allows you to import or export data using the same database file formats you can open directly in Approach.

If you want to work with a spreadsheet file other than Lotus 1-2-3 or Excel, first create a new Approach file and then import your spreadsheet data into the Approach file.

You can import data from these database file formats: dBASE III+, dBASE IV, Paradox 3.5, Paradox 4.0 (and Paradox for Windows), FoxPro 2.1, Access, and SQL. Approach can also import data from other applications that can save or export to the above formats, such as Q&A[®], SuperBase[®] IV, AceFile[™], Professional File[®], r:Base[®], FileMaker[®] Pro, and Lotus Works or Microsoft Works.

If you have the appropriate server software, you can import Oracle SQL, Microsoft/Sybase SQL Server, or IBM DB2 tables. In addition, you can also import data from fixed-length or delimited ASCII text files and from Lotus 1-2-3 and Microsoft Excel spreadsheets.

If you want to write to a SQL database, set the `ReadOnly` line to 0 in your `APPROACH.INI` file.

When you export data, you can use any of these formats: dBASE III, dBASE IV, FoxPro, Paradox, Access, Lotus 1-2-3, Excel, 1-2-3 Ranges, Lotus Notes, Text-Fixed-Length, Text-Delimited, Oracle, SQL, DB2, and ODBC.

For more information about the file formats that Approach supports, turn to Appendix B. For more information about SQL tables, turn to Appendix C.

Importing data or Approach files

You can import data into an existing database file in Browse or you can transfer the views from one Approach file to another in Design. Importing data allows you to add to or update the records in your database without changing the appearance of any of the views in your Approach file. Importing views lets you add the views from another Approach file without affecting your data.

When you import data, Approach can update existing records and add imported records to the existing database, matching fields according to the relationships you define (this is called *field mapping*). If fields in the imported database have the same names as fields in the Approach database file, Approach automatically maps them. If the names don't match, you can indicate how the fields correspond to each other.

You can't import data into a calculated field. The values in a calculated field must come from the Approach formula for the field. However, you can export the value in a calculated field.

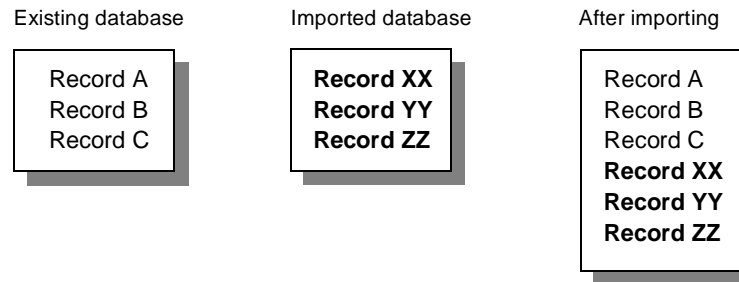
When you import views from one Approach file to another, you also map the relationships between the fields referenced in the imported Approach file and those used in the current Approach file.

Importing a database file

When you import into a database, Approach can either update existing records with the data that you're importing, add the data from the import file in new records at the end of the current database file, or do a combination of the two: update existing records and import new ones.

Adding records places all of the records in the imported file at the end of the existing database (unless you have a custom default sort order). For example, if the existing database starts with 30 records and you import 20 records, the existing database will contain 50 records after importing.

Adding records places the imported records after any existing records.

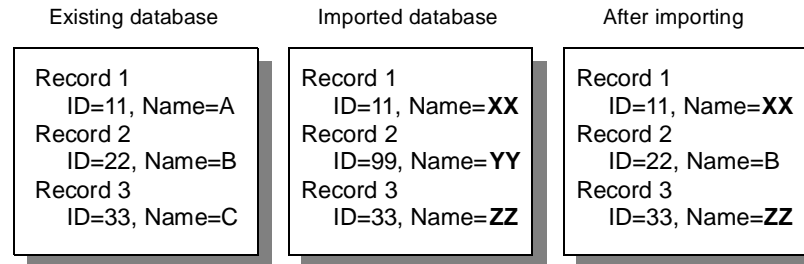


As an alternative to adding the records in the imported database to the existing database, Approach lets you use selected data in the imported database to update records in the existing database. A third option combines the first two, allowing you to update records that have matching data and add new records for data that doesn't match.

When you update records at import, Approach checks the data in match fields that you specify looking for any records in the existing database that contain a value that matches a record in the imported database. When Approach finds a match, it uses imported data to update only the fields you specify in the matching records.

This powerful feature lets you update only the records you want, using only the fields you specify. For example, you can update the customer names only in the records where the customer IDs match. In the illustration below, Approach looks for ID numbers and then updates just the name field when the ID numbers match.

Updating records that have matching data updates only the fields you specify and only in matching records. Updating does not add records to the database.



Notice that the ID in the imported Record 2 doesn't match any IDs in the existing database, so Record 2 is not updated. However, the IDs for Records 1 and 3 do match, so Approach has updated the Name fields.

The third import alternative combines the actions of the first two. Approach looks for records that have matching values and updates them as appropriate. Any records in the imported database that don't match the existing database are added at the end of the existing database.

In this example, the IDs in Records 1 and 3 match, so Approach updates the existing records with the imported data. Record 2 in the imported database doesn't match any records in the existing database, so Approach adds it to the end of the existing database as a new record: Record 4.

Updating and adding records updates records that have matching data and adds new records for data that doesn't match.

Existing database	Imported database	After importing
Record 1 ID=11, Name=A	Record 1 ID=11, Name=XX	Record 1 ID=11, Name=XX
Record 2 ID=22, Name=B	Record 2 ID=99, Name=YY	Record 2 ID=22, Name=B
Record 3 ID=33, Name=C	Record 3 ID=33, Name=ZZ	Record 3 ID=33, Name=ZZ
		Record 4 ID=99, Name=YY

Because you're adding data to a database file, you must be in Browse. If you're working with a found set rather than the entire database, Approach updates only the found set.

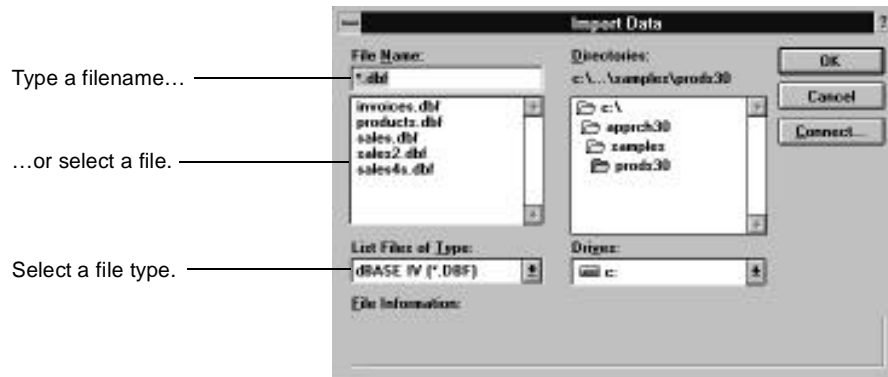
The first step in importing a database file is to select the type of file you want to import. Then you select the file to be imported, specify the way you want to import data (by adding records, updating records, or both), and map the fields in the import file to those in the current Approach database file.

To import a database file:

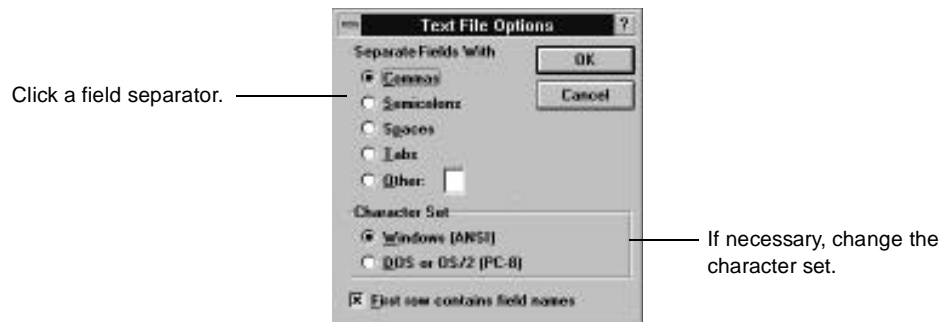
1. Open the database file into which you want to import data.

You can open the database file or one of its Approach files. If you have joined database files, you can import into only one file at a time.

- In Browse, choose Import Data from the File menu.
The Import Data dialog box appears.



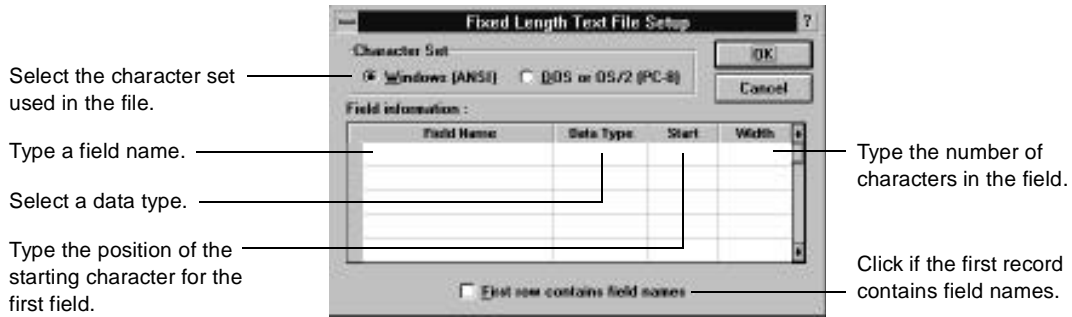
- Select the file type of the import file if necessary.
If you select the Text - Delimited file type, Approach opens the Text File Options dialog box.



A delimited ASCII text file uses separators—special characters in the text file—to show where one field ends and the next one begins. You may want to refer to the manual for the application that was used to create the delimited ASCII text file to see what field separator it uses.

You can also specify which character set is used in the import file. If you're importing DOS text with international characters, change the character set of the current database before importing into it. DOS text with international characters uses the DOS or OS/2 (PC-8) character set.

If you select the Text - Fixed-Length file type, Approach opens the Fixed Length Text File Setup dialog box.

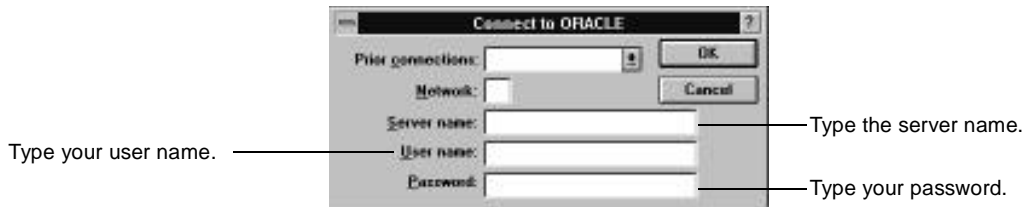


In a fixed-length text file, a specific field is always the same length in each record, regardless of how much data it contains. When you import a fixed-length text file, you must provide the names, data types, and widths of each field. You enter the starting position of the first field and the widths of each subsequent field. Approach automatically calculates the starting position for all fields after the first one.

For example, the first field might be Name with a fixed-length of 30 characters. Approach calculates that the next field begins with character 31. This illustration shows typical records in a fixed-length file.

Field names	Name	Address	City
Character numbers	1	30 31	50 51 70
Records	Johnson	1234 Fifth Ave.	New York
	Schmidt	1234 Strausstrasse	Bonn
	Ramirez	1234 Calle Carlos V	Madrid

If you select Oracle, SQL Server, DB2, or a server-based ODBC application, Approach opens the appropriate Connect dialog box. Use this dialog box to connect to the server. For more information, see Appendix C.

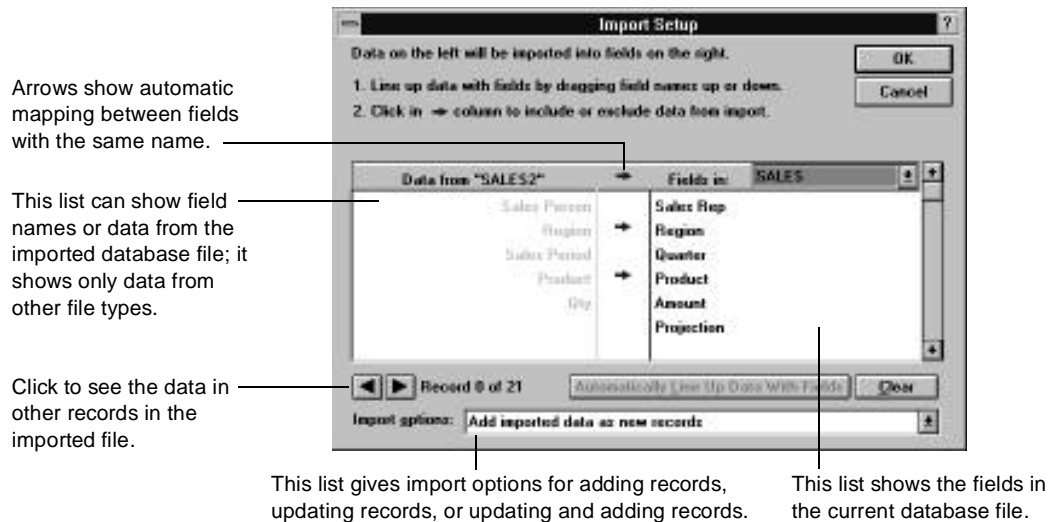


- In the Import Data dialog box, select the file you want to import in the File Name list.

You can also type the filename in the File Name text box. If necessary, you can change the directory and disk if you need to look for the file.

- Click OK.

The Import Setup dialog box appears. The fields on the left, in the Data From list, are from the imported file. Those on the right, in the Fields In list, are from the current file. Arrows between the two sets of fields show automatic mapping of fields that have matching names. If you're working with joined databases, you can select another database in the Fields In drop-down list.

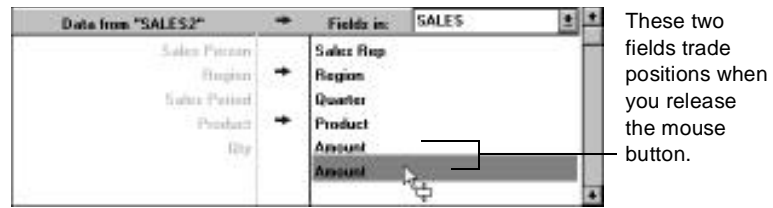


If you're importing a database file, Approach initially displays the field names on the left side of the Import Setup dialog box. If you're importing a spreadsheet file, Approach shows the data in the first row of the spreadsheet. If you're importing a delimited text file, Approach shows *Field* for each field it detects.

You can also view the actual data that will be imported, record by record, by clicking the previous and next record buttons at the bottom left.

- Arrange the fields in the Fields In list so that they align with the corresponding data in the imported file's Data From list.

To move a field, drag it up or down to a new position. When you release the mouse button, the two fields exchange positions.



7. Map the fields in the imported file's Data From list with the fields that you want to update in the current database file's Fields In list.

Field mapping tells Approach which imported data matches fields in the current database.

To map two fields, double-click in the mapping column between them to turn on an arrow.

To unmap specific fields, double-click the mapping arrow beside the field name to turn it off. To unmap all fields, click Clear. To remap any fields with matching names, click Map Fields.

If you want to map the import fields to those in a joined database, select the database file in the Fields In drop-down list.

If a field in the imported file is not mapped to a field in the current database file, Approach ignores the field. Approach also ignores any fields in the current database that are not mapped. Therefore, if you want to update only specific fields when you import data, be sure that those fields are the only ones mapped (a mapped field has an arrow connecting it to a field in the imported file).

8. Select an import option in the Import Options drop-down list.

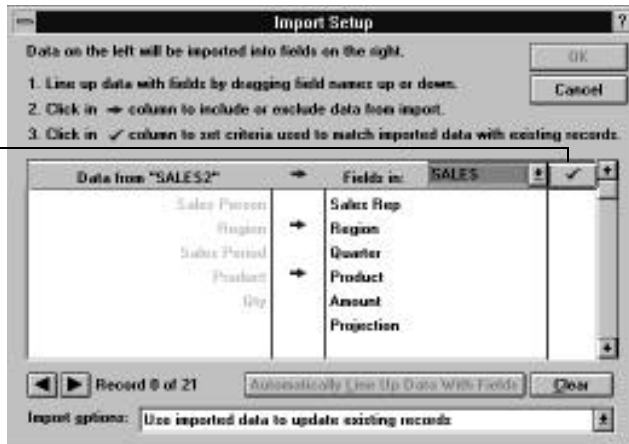
<i>This option</i>	<i>Does this</i>
Add imported records as new records	Adds the imported data as new records at the end of the database; the new records have data only in the fields that you map

Continued

<i>This option</i>	<i>Does this</i>
Use imported data to update existing records	Updates the data in existing records (only for the fields you map) when the records contain data (in the fields you specify) that matches the data in the imported file
Use imported data to update & add to existing records	Updates the data in matching records and adds new records for the data that does not match existing records

If you select either of the update options, a new column appears on the right side of the Import Setup dialog box. You use this column to select the fields that must have matching data before their records can be updated.

Click in this column to select fields for matching.



9. If you're updating matching records, select the fields you want to match.

To select a field for matching, click in the check mark column to the right of the Fields In column.

10. Click OK.

Approach imports the database file, either adding records, updating records, or both. The status bar shows the new number of records. If you import the same file twice using the Add

option, you'll get duplicate records. For information about deleting duplicate records, see "Finding duplicate or distinct values" on page 11-12.

How to reserialize an incrementing numerical field

You can also use import to reserialize an incrementing numerical field. Choose Save As from the File menu and save the file using the New Data option. This creates a blank copy of your file. In the Field Definition dialog box, reset the starting number for the incrementing field. In Browse, import the original data without the numbered field (don't map that field). Approach increments the numeric field as records are imported.

Importing an Approach file

Field mapping does not add data to a database file. It merely tells Approach where the new data fits into the existing structure.

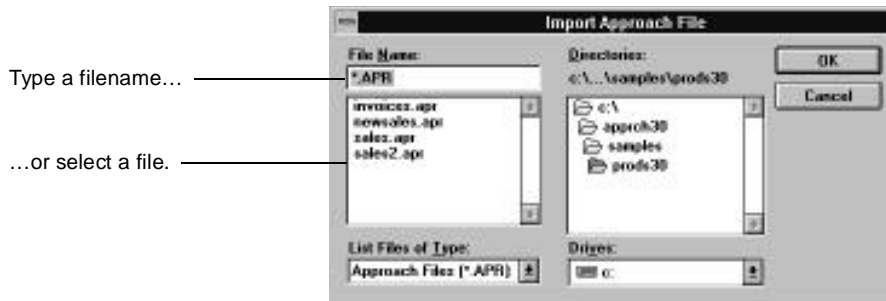
If you have views in an Approach file that you want to reuse with other databases, you can easily import the Approach file (including all of its forms, reports, tables, charts, letters, and mailing labels) and add it to an existing Approach file. Because this is essentially a design function, you must be in Design to import an Approach file.

As part of the import process, you map fields of the imported Approach file to those in the current Approach file.

To import an Approach file:

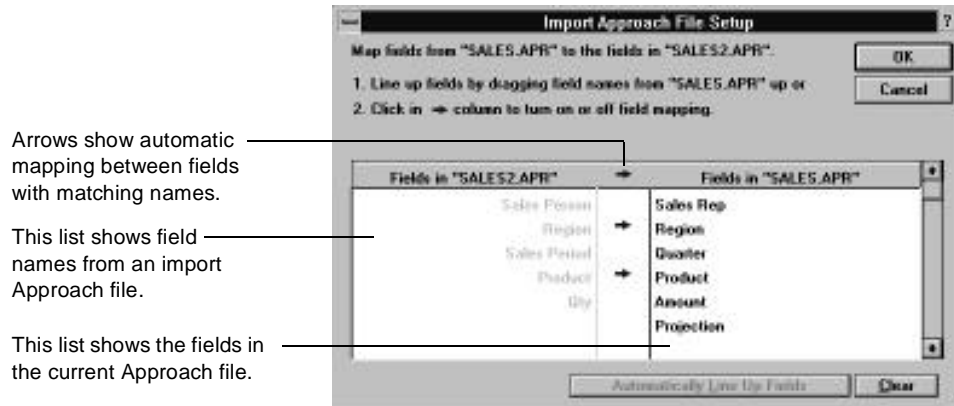
1. Open the Approach file you want to import into.
2. In Design, choose Import Approach File from the File menu.

The Import Approach File dialog box appears.



3. Select the Approach file you want to import and click OK.

The Import Approach File Setup dialog box appears. The fields listed on the left are from the imported Approach file. Those on the right are from the current Approach file. Arrows between the two sets of fields show automatic mapping of fields that have matching names.



4. Arrange the fields in the current file's Fields In list so that they align with the corresponding fields in the imported file's Fields In list.
5. Map the fields in the import file's Fields In list with the fields that you want to update in the current Approach file.

Field mapping tells Approach which imported fields match fields in the current Approach file.

To map two fields, double-click in the mapping column between them to turn on an arrow.

To unmap specific fields, double-click the mapping arrow beside the field name to turn it off. To unmap all fields, click Clear. To remap any fields with matching names, click Map Fields.

If a field in the imported Approach file is not mapped to a field in the current Approach file, Approach displays the message NO_FIELD_REFERENCE in Design instead of a name for the field. In Browse, you get an error telling you that you cannot edit the field and must assign a database field to the current field.

6. When you're finished mapping fields, click OK.

Approach imports the Approach file. You return to Design, where you can switch to a newly-imported view.

Exporting data from Approach

A calculated or variable field is part of an Approach file. Approach converts it to a database field in the export file during export.

When you export an Approach database file, you take selected data and save it in a format that can be used by other applications. You can export all the records in a database or use Find to select a subset to export. You can also export all of the fields in a record or just some of them.

Exporting creates a new database file that can include all types of fields except calculated fields that perform a summary function. You can export other calculated fields, but their values are converted to a set text, numeric, date, or time value before exporting. If you export a variable field, Approach creates a database field with the same value for each record.

PicturePlus fields can be exported, but only another Approach database file can read them. Macros cannot be exported.

If you want to reuse an existing Approach file, complete with calculated and PicturePlus fields, you don't need to export it. Just choose Save As from the File menu and use the "New data" option to save a copy of the complete Approach file with a blank database. Your calculated, variable, and PicturePlus fields remain part of the Approach file. Then you can import data into the new file.

To export a database:

1. In Browse, open the database file you want to export and select the records to be exported.

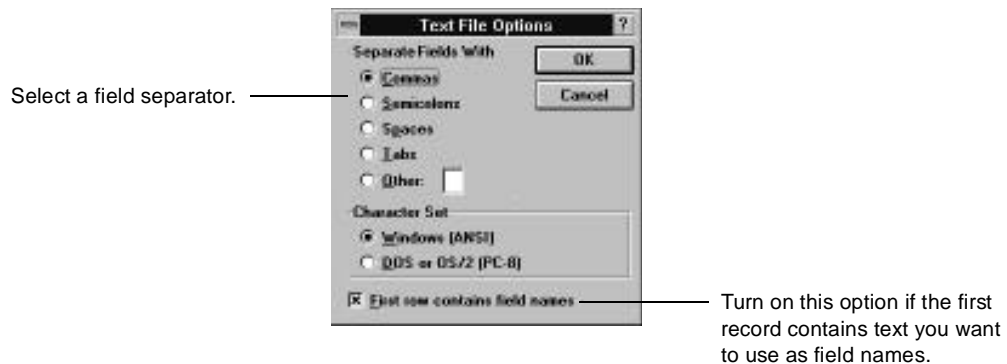
If necessary, use Find to locate specific records you want to export. Approach exports records in the default database order. If you want to export records in a different order, use Sort to arrange them in the order you want.

2. Choose Export Data from the File menu.

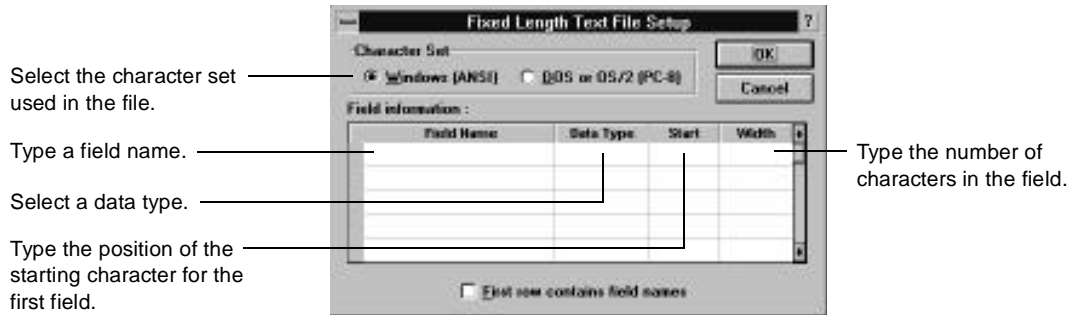
The Export Data dialog box appears.



3. Type a name for the file to which you're exporting data and specify where you want the file to be saved.
4. Select a database file type in the List Files of Type drop-down list. If you select the Text file type, Approach opens the Text File Options dialog box. You can specify the character used to separate fields in the export file.



If you select the Text - Fixed-Length file type, Approach opens the Fixed Length Text File Setup dialog box so that you can specify the names, data types, and widths of each field.



If you select Oracle, SQL Server, DB2, or a server-based ODBC application, Approach opens the appropriate Connect dialog box. Use this dialog box to connect to the server. For more information, see Appendix C.

5. Click "Found set only" or "All records" in the Records to Export area of the Export Data dialog box.

"Found set only" exports only the records you've located with the current find request. "All records" exports all records in the database.

6. Move the fields you want to export to the Fields to Export list.

To move a field to the Fields to Export list, select the field name in the Database Fields list and click Add, or double-click the field name. Approach exports fields in the order you list them. If you're working in joined databases, you can select a different database and select files from the second database as well.

To move a field back to the Database Fields list, select the field name in the Fields to Export list and click Remove, or double-click the field name.

7. Click OK.

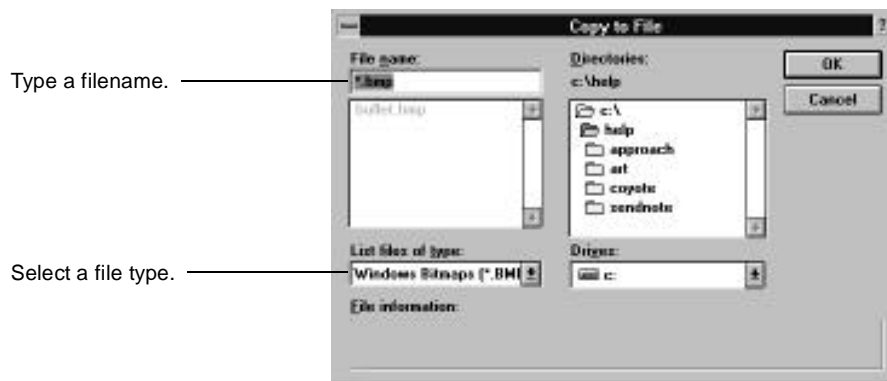
Copying a PicturePlus picture to a file

You can easily copy a picture in a PicturePlus field to a new file in whatever graphics file type you specify. You can then edit the picture if you wish, or use it for another purpose. You must be in Browse to copy a PicturePlus picture to a file.

To copy a PicturePlus picture to a file:

1. In Browse, select the PicturePlus field that contains the image you want to copy.
2. Choose Copy to File from the Edit menu.

The Copy to File dialog box appears.



3. Type a filename for the file you're creating in the File Name text box.
4. Select the file type you want in the List Files of Type drop-down list.

The file types available depend on the type of picture you're copying.

5. Click OK.

Sending e-mail from Approach

If you are connected to a network and have access to an e-mail package (such as Lotus Notes or cc:Mail), you can include Approach views and data in your e-mail messages. Approach lets you e-mail an image of the current view, or attach all or part of the current Approach file. If you attach the current view to a mail message, you can include the current record or the current found set. If you attach the entire Approach file, you can include all data, or just the empty database file (without any data).

After you select the data to be e-mailed, Approach opens your e-mail package so that you can specify the recipient, add comments, and actually send the mail.

To send e-mail from Approach:

1. Open an Approach file and use the Find command to locate the set of records you want to mail.

If you want to mail all records, use the Show All command.

2. Choose Send Mail from the File menu.

The Send Mail dialog box appears.

The Send Mail command is not available unless you have an e-mail package installed.

Click to send an image of the current view.

Click to attach the current Approach file with the data you select.

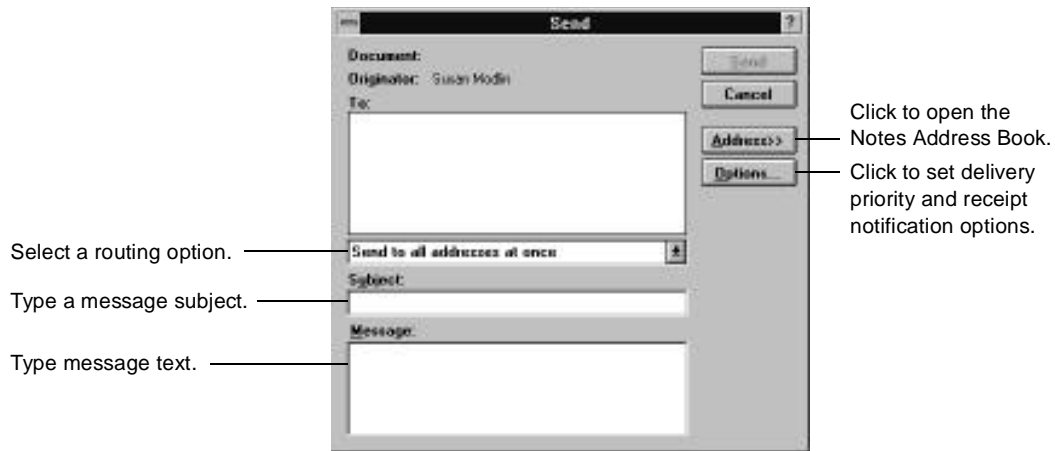


3. Select the amount of information you want to send.

“Send snapshot of the current view” sends a Windows Metafile (WMF) image of the current Approach file view. “Attach Approach file with” sends the current Approach file with the views and data you select. You can send the current view or all of the views in the file. You can also select the level of data you want to include in the drop-down list.

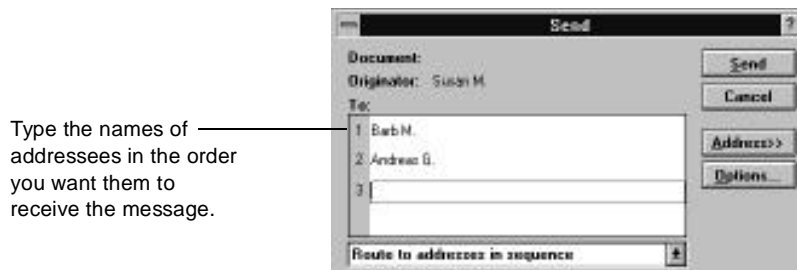
4. Click OK.

Send dialog box appears so that you can specify the recipient and add a message.



5. Select "Route to addressees in sequence" in the drop-down list.
6. Type the names of the addressees in the order you want them to receive the message in the To text box.

Press ENTER after each addressee to add a new line.



7. Type a subject in the Subject text box and a message in the Message text box if you wish.

The subject you type appears as the subject of the e-mail message, the message appears as the body of the e-mail message, and the Approach file appears as an attachment in the message.

8. Click Options to set return notification and delivery priority options.
9. Click Send.

Notes routes the message to the first addressee on your list. When the first addressee reads and closes the message, Notes prompts the first addressee to send the message on to the second addressee.

About OLE and Approach

You can double-click an OLE object to activate a linked or embedded sound or video.

Object Linking and Embedding (OLE) is a system that allows different Windows applications to share live data freely. You create the data to be shared (the *object*) in the *server application*. Objects can be reports, forms, graphics, charts, sounds, or text.

The application in which the object is linked or embedded is the *container application*, and the document that holds it is a *compound document*.

Approach can be either a server application or a container application. When you use Approach as a container application, you can place OLE objects in a PicturePlus field in Browse (this is the most common way) or directly on a form, report, letter, or mailing label in Design. An object embedded or linked in Design appears as a design element in the background of every record in a form, form letter, or mailing label, or on every page of a report, worksheet, or crosstab.

Depending on the server application, you see the actual linked or embedded object, such as a Lotus 1-2-3 graph, or you see an icon that represents the object, such as an Ami Pro icon.

This icon represents an Ami Pro object.



The main difference between linking and embedding is where the data is stored. If you link to an object from Approach, the object stays in its original source file, with a link to the Approach field. You must have the server application installed in order to edit the object. Linking is useful when you want to maintain the object in a separate file, or if the object is a sound or video.

If you embed an OLE object, the entire object is stored in the field, along with all of the information required for you to be able to edit the object. An embedded object becomes part of your Approach file or database (depending on where it's embedded).

In either case, the object maintains its connection to its server application. This connection allows you to edit the object using the tools from the server application without ever leaving Approach.

Creating Approach OLE objects

You can create Approach objects that consist of either an individual view (such as a report or form) or an entire Approach file. When you insert an Approach OLE object into another application, it generally appears as an Approach icon.

You can create an Approach object from within Approach or from another application.

Creating an Approach OLE object in Approach

When you create an Approach OLE object from within Approach, it becomes available to any other application for linking. You can create two types of Approach objects: a data object or a view object. A data object consists of a worksheet or crosstab that you CONTROL-drag and drop into an OLE 2 *drop target application*. You might use a data object to place a range of Approach worksheet cells in a Lotus 1-2-3 worksheet.

A view object can be either a single view, such as a worksheet or chart, or the entire Approach file. You can also choose whether to include data in a view object and which data is included.

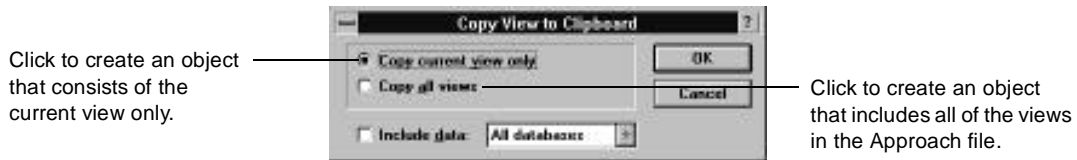
If you include data in a view object, the object and its data are a self-contained unit. This format is convenient for sending an Approach form to someone via e-mail. The recipient could then enter data into the form and send it back to you.

If you choose not to include data in the object, Approach adds references to the data source so that you can still see data in the OLE object as long as the object and the database file it points to are on the same network or local hard drive. If the database file cannot be located, Approach allows you to open a new database with the view object.

To create an Approach OLE object in Approach:

1. Open your Approach file in Browse or Preview and go to a view that you want to include in the OLE object.
2. Make sure that nothing is selected in the view.
3. Choose Copy View from the Edit menu.

The Copy View to Clipboard dialog box appears.



4. To create an object that consists only of the current view, click "Copy current view only."
5. To create an object that includes all of the views in the current Approach file, click "Copy all views."

The object will also include the Approach application so that the object can be edited from the container application.

6. To include data in the object, turn on "Include data" and select a data option.

You can send a new blank record, the current record, the current found set, or all data in the database.

Creating an Approach OLE object from another application

When you create an Approach OLE object from within another application, it can contain the entire Approach application or only a single view. You begin by selecting the type of object: the Approach application or a type of view. Next, you select the database that you want to use. And finally, if you select a view, you create the view using the appropriate Approach Assistant dialog box.

To create an Approach OLE object from another application:

1. Follow any instructions that are available for embedding a new OLE object in the container application.

As part of this process, you must select either the Approach application or the type of Approach view you want to use in the object. After you select the type of view, Approach opens a dialog box that looks very much like the standard Approach Open dialog box. The only difference is that this dialog box lists only database files and not .APR files.

2. Select the database that you want to use.
If you selected a view, Approach opens an Assistant for the type of view you select. For example, if you select Approach Report, the Report Assistant appears.
3. Use the Assistant to create the view and click Done.
Approach creates the view and opens it.
4. Close Approach.
You return to the container application, which will now contain an embedded Approach object.

Linking OLE objects from other applications

When you add a linked OLE object to a record in a PicturePlus field, you create a connection between the PicturePlus field and an object created by another application. A copy of the object appears in the Approach file, but the original object remains in its own format. Updating the OLE object in Approach automatically updates the original. And changes made to the original are reflected in Approach.

OLE lets you include different kinds of information in your database—including graphics, charts, sounds, and text—limited only by the server applications installed on your computer.

Inserting a linked object

Linking places a reference to the OLE object in your Approach file. You can place a linked object as a design element on every record or in a PicturePlus field on a single record. Depending on the server application, the object appears right in the record or as an icon. Any change you make to the linked object from within Approach updates the original object.

Before you can link, however, you must first create the object in the server application. You can then either copy the object to the Clipboard or create a link to the object's file.

To insert a linked object from the Clipboard:

1. In the server application, create the object you want to link to.
Create the object by selecting the chart, graphic, range of data, or other information, and then copy it to the Clipboard.

The server application must be running, and you must use the Copy command (not the Cut command) to place the OLE object on the Clipboard. Most server applications require you to save the source file before you can create an object.

2. Prepare the Approach file to receive the linked object.

Open the Approach file in which you want to insert the object, and go to the view you want to use.

If you plan to paste the OLE object as a design element, go to Design and click where you want the object to appear.

If you're placing the linked object in a PicturePlus field, go to Browse, go to the record, and select the field.

3. Choose Paste Special from the Edit menu.

The Paste Special dialog box appears.



4. Click Paste Link. Turn on Display As Icon if you want the OLE object to appear as an icon.

The linked object may appear as an icon, depending on the server application. For example, if the server application is Lotus 1-2-3, you see the object. If the server application is Ami Pro, you see an icon that you can double-click to open the object.

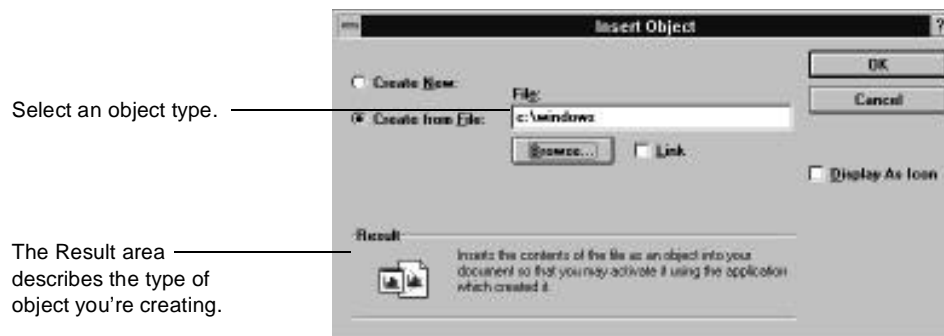
5. Click OK.

Approach displays the object in the current view.

To delete a linked object, select the object and choose Cut or Clear from the Edit menu.

To link to an object's file:

1. Prepare the Approach file to receive the linked object.
Open the Approach file in which you want to insert the object, and go to the form, report, or other view you want to use. In Browse, go to the record, and select a PicturePlus field.
2. Choose Object from the Create menu.
The Insert Object dialog box appears.
3. Click "Create from File."
The Insert Object dialog box displays a text box where you can type the filename of the file you want to link to.



4. Type the name of the file you want to link to or click Browse and select a file in the Browse dialog box.
5. Turn on Link to create a linked object (instead of an embedded object).
6. If you want the linked object to appear as an icon, turn on Display As Icon.
7. Click OK.

Editing a linked object

You can easily edit a linked object by double-clicking it. If the container application is an *in-place server* (Approach is not), you can edit the object without leaving the container application. The menus from the server application simply replace those in the container application until you finish editing. If the container application is not an in-place server, the server application actually opens so that you can edit the object.

To edit a linked object:

1. Double-click the object to open the source document.
2. Make your changes to the object.
3. Choose Update from the File menu of the server application.
4. Choose Exit or Exit & Return from the File menu of the server application.

The server application closes and you return to the Approach view. The server application also updates the source file.

Modifying a link

When you break a link, the object remains in the view but you can no longer use it to open its server application.

Once a link is inserted, you can modify it in a number of ways. You can specify when the object is updated, you can manually update an object, you can activate a linked object, you can link the object to another source (when you change the name of the source file, for example), and you can break the link altogether.

You can update a linked object either automatically or manually. Automatic updating means that the object is updated whenever the source object changes. Manual updating means that the object is updated only when you specifically update it. If you're making frequent changes to an object, you might want to wait until you're finished before manually updating it.

When Approach is the container application, it updates linked objects only if the source application is running. If you have a linked object in a PicturePlus field, Approach updates the object only when you manually update it.

To modify a link:

1. Open the Approach file that contains the linked object.
If the object is a design element, go to Design. If the object is in a PicturePlus field, go to the record that contains the object and select the PicturePlus field.
2. Choose Links from the Edit menu.

The Links dialog box appears.



3. Select the link you want to modify and make the necessary changes.

<i>To do this</i>	<i>Click</i>
Change when the link is updated	Automatic or Manual
Manually update the link	Update Now
Activate a linked object	Open Source
Change the link to another source file (if, for example, you change the name or location of the source file)	Change Source and select a new file or path for the link in the Change Link dialog box
Break a link and convert the object to a graphic element	Break Link

Embedding an OLE object

Embedding an OLE object in an Approach file creates a link to the server application the same way linking to an object does. The main difference between linking and embedding is that an embedded object is the only version of the object, whereas a linked object refers back to and can update the original source object.

When you embed an object, you simply paste it into an Approach view. You can embed an object as a design element on a report or on every record of a form, or in a PicturePlus field on a single record. You can embed an object that already exists, or embed and create the object at the same time. Either way, you can easily edit and update an embedded OLE object in an Approach file.

Embedding an existing OLE object

The server application does not need to be running when you paste.

You can create an OLE object by copying from any application that supports OLE, and you embed it by pasting it in an Approach file.

To embed an existing OLE object:

1. In the server application, create the object you want to embed.
Create the object by selecting the chart, graphic, range of data, or other information, and then copy it to the Clipboard.

You must use the Copy command (not the Cut command) to place the OLE object on the Clipboard. Most server applications require you to save the source file before you can create an object.

2. Prepare the Approach file to receive the embedded object.

Open the Approach file in which you want to insert the object, and go to the view you want to use.

To paste the OLE object as a design element, go to Design and click where you want the object to appear.

If you're placing the embedded object in a PicturePlus field, go to Browse, go to the record, and select the field.

3. Choose Paste Special from the Edit menu.

The Paste Special dialog box appears.

Select a format for the object.



4. Click Paste.

Approach embeds the object in the view you selected. The embedded object may appear as an icon, depending on the server application. For example, if the server application is Lotus 1-2-3, you see the object. If the server application is Ami Pro, you see an icon that you can double-click to open the object.

To delete an embedded object, select the object and choose Cut from the Edit menu.

Embedding a new OLE object

You can embed an OLE object without actually creating the object first. Instead, you can create and embed an object at the same time.

To embed a new OLE object:

1. Prepare the Approach file to receive the embedded object.

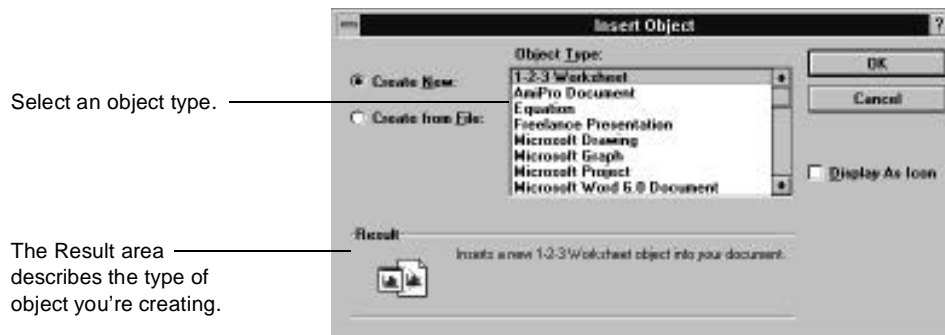
Open the Approach file in which you want to insert the object, and go to the form, report, or other view you want to use.

To paste the OLE object as a design element, go to Design and click where you want the object to appear.

If you're placing the embedded object in a PicturePlus field, go to Browse, go to the record, and select the field.

2. Choose Object from the Create menu.

The Insert Object dialog box appears. The Object Type list contains all the formats that can be created by server applications installed on your computer.



3. To create an object from a specific file, click "Create from File" and select a file.
4. To create a totally new object, click "Create New" and select the type of object you want to create.
5. Click OK.

Approach opens the application you select in a new blank window.
6. Create the object in the server application window and choose Update from that application's File menu.
7. Close the server application window and return to Approach.

Editing an embedded object

Once you've embedded an object, you can easily edit it.

To edit an embedded object:

- 1.** Double-click the object you want to edit.
In a PicturePlus field, you can also right-click the object and choose Edit Object from the pop-up menu.
- 2.** Make the changes you want in the embedded object and choose Update from the server application's File menu.
- 3.** Close the server application window and return to the Approach.

17

Working Together with Other Lotus Applications

Approach is designed to work together closely with other Lotus applications, such as Lotus Notes and Lotus 1-2-3. The strategy is called “Working Together,” and its goal is to connect you to the information you need.

Working together with Lotus Notes

You can use Approach to open views or forms in a Lotus Notes database, and to replicate a Notes database. You can also use the powerful Notes F/X 1.1 feature to share key information between Notes and Approach.

When you open a Notes view (such as the list of messages in an e-mail database), the view is read-only. You can see the view’s contents, but you cannot edit them.

When you open a Notes form (such as an individual message), the form is normally read/write. You can edit its contents or add new records to create new documents. To create a new document, just add a record and fill in the fields that appear on the form.

If you want to make Notes forms read-only in Approach, turn on “Open all SQL tables as read-only” in the SQL Database panel of Preferences. For more information, see “Setting database options for all SQL, Access, ODBC, and Lotus Notes tables” on page 19-11.

A Notes text field is displayed in an Approach text field, which can show up to 254 characters. When you open an existing Notes form, you may see only the first 254 characters of any text field. Likewise, when you create a new document, its text fields can be only 254 characters long.

Opening a view or form from a local Notes database

You can open a view or form from a Notes database stored on your local drive. The data from the view or form appears in a standard Approach form.

To open a view or form from a local Notes database:



1. Click the Open File icon or choose Open from the File menu. Or if the Welcome dialog box is on the screen, select "Open an existing file" and click OK.

The Open dialog box appears.

2. Select Lotus Notes – Local in the List Files of Type drop-down list.

The names of Notes databases on your local drive appear in the Directories list with a filecard icon in front of them and with the filename extension .NSF.

3. Double-click a Notes database in the Directories list.

The names of the views and forms in that database appear in the File Name list.

4. Select the name of the view or form you want to open in the File Name list and click OK.
5. If an alert box appears, click OK.

An alert box appears if you open a Notes form and your preferences are set for displaying Notes forms read-only.

Opening a view or form from a Notes server database

You can open a view or form from a database stored on a Notes file server. The data from the view or form appears in a standard Approach form.

When you quit Approach, you are disconnected from any Notes servers you connected to in that session. You can also use the Open dialog box to disconnect from a particular server. Select the connection name in the Server drop-down list and click Disconnect.

To open a view or form from a Notes server database:



1. Click the Open File icon or choose Open from the File menu. Or if the Welcome dialog box is on the screen, select "Open an existing file" and click OK.

2. Select Lotus Notes – Server in the List Files of Type drop-down list.

The Drives drop-down list changes to Server and shows the names of Notes servers you can connect to.

3. Select a server in the Server drop-down list.

The Notes databases and subdirectories on the server appear in the Directories list. The names of Notes databases have a filecard icon in front of them and have the filename extension .NSF. The names of Notes subdirectories are enclosed in brackets.

4. If a Setup dialog box appears, fill in the information and click OK.

The dialog box appears if you are not already connected to the server.

5. Double-click a Notes database in the Directories list, or double-click a Notes subdirectory to see its contents and then double-click a database.

If you double-click a subdirectory, the names of databases in that subdirectory appear in the Directories list, indented below the subdirectory.

When you double-click a database, the names of the views and forms in that database appear in the File Name list.

6. Select the name of the view or form you want to open in the File Name list and click OK.

7. If an alert box appears, click OK.

An alert box appears if you open a Notes form and your preferences are set for displaying Notes forms read-only.

“Quick connecting” to a Notes server database

Once you specify the name of a Notes server and database in the Open dialog box, Approach keeps track of that connection for your current work session. The next time you open the dialog box and select Lotus Notes – Server, the name of the connection you used before will appear in the Server drop-down list; for example, *AccountsPayable @ Accounting*.

If you select the connection name in the Server drop-down list, the File Name list shows the views and forms in the Notes database you used before on that server. This way, you don't need to establish a connection and select a name in the Directories list.

Replicating a Lotus Notes database

Lotus Notes uses the process of database replication to distribute and update copies of the same database, stored on different servers. This allows users on different networks, in different time zones, or even in different countries to share information.

Replication makes all copies of a database essentially identical, over time. If you make changes in one copy of a database, replication ensures that those changes are added to all copies.

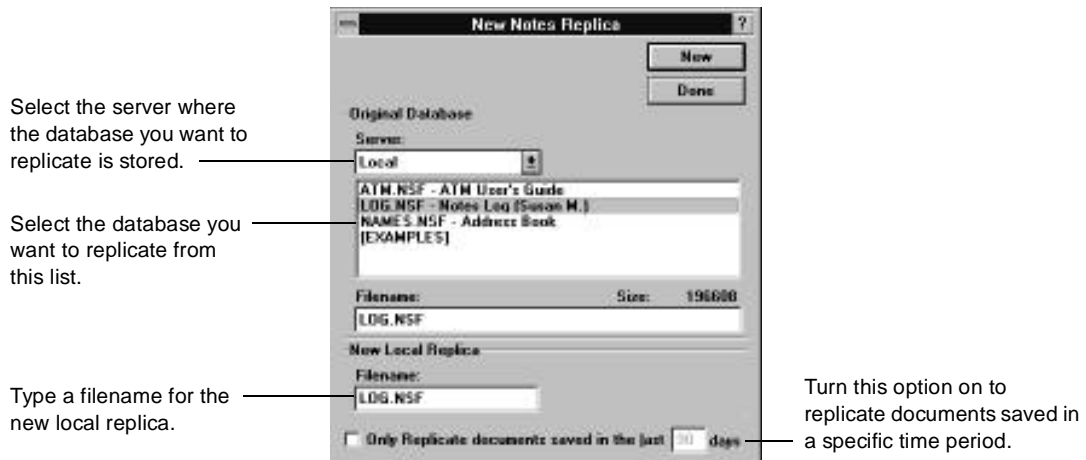
Approach offers two types of replication: replication of a new database, which essentially creates a new copy of an existing database on your local hard drive, and replication with server, which updates both your replica and the server's replica with changes made to either.

The two Approach replication commands are available only when you create a custom menu or a macro that includes them. For more information about creating a custom menu, see "Customizing menus" on page 19-18.

To replicate a new Notes database:

1. Choose the Notes New Replica command from its custom menu.

The New Notes Replica dialog box appears.



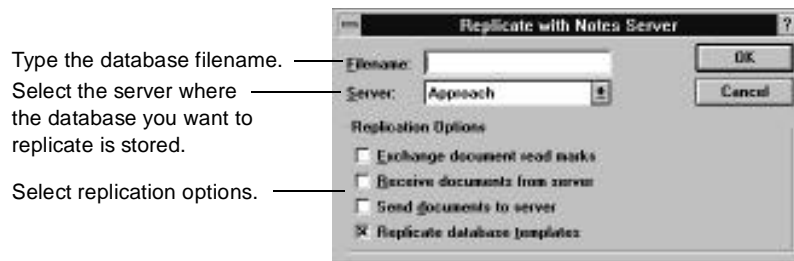
2. Select the server where the database you want to copy is stored in the Server drop-down list.
3. Select the database file in the list of files or type the filename in the FileName box.

4. Type a filename for the new replica in the Filename text box in the New Local Replica area.
5. If you want to replicate only those documents replicated in a specific period of time, turn on “Only replicate documents saved in the last *nn* days” and type the number of days.
6. Click New to replicate the database.
Click Done to leave the New Notes Replica without replicating a database.

To replicate a Notes database with the server:

1. Choose the Notes Replicate with Server command from its custom menu.

The Replicate with Notes Server dialog box appears.



2. Type the database replica filename in the Filename text box.
3. Select the server where the database you want to copy is stored in the Server drop-down list.
4. Turn on Replication Options as appropriate.

<i>Turn this option on</i>	<i>To</i>
Exchange document read marks	Update both the local replica and the server replica with read marks on documents (Read marks tell whether a document has been read.)
Receive documents from server	Update the local replica with documents from the server replica
Send documents to server	Update the server replica with documents from the local replica

Continued

<i>Turn this option on</i>	<i>To</i>
Replicate database templates	Replicate database templates associated with the database.

5. Click OK.

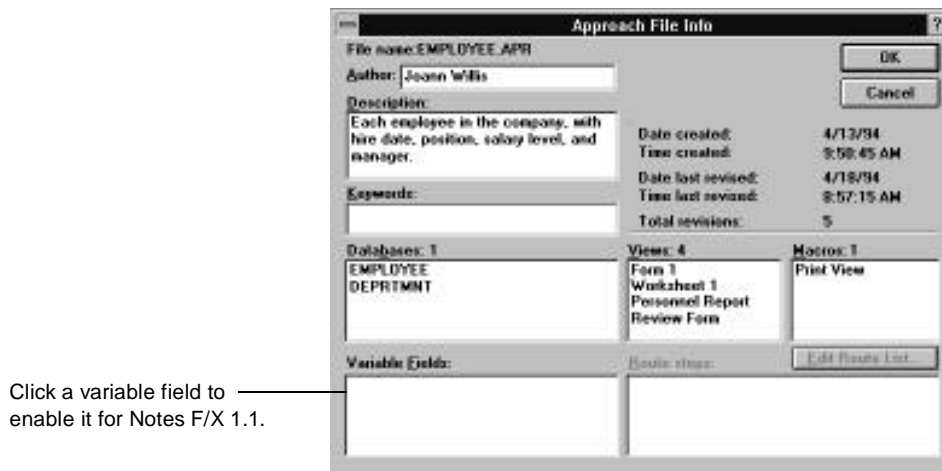
Enabling Approach variable fields for Notes F/X 1.1

Notes F/X 1.1 is a powerful feature that allows Notes and Approach to share information. From the Approach end, the sharing is accomplished with variable fields that have been enabled for Notes F/X 1.1. When a variable field is enabled, Notes can write to the field and can read its contents without having to open an Approach view.

To enable variable fields for Notes F/X 1.1:

1. Choose Approach File Info from the File menu.

The Approach File Info dialog box appears. It shows information that you supply about the Approach file (Author, Description, and Keywords) as well as lists of databases, views, macros, and variable fields.



2. Click a variable field to enable it.
3. Click OK.

Working together with Lotus 1-2-3

Approach and Lotus 1-2-3 can share data in a number of ways. For example, you can open Lotus 1-2-3 spreadsheets in Approach and have Approach create a database file from the spreadsheet.

A second set of alternatives lets you work with “live” 1-2-3 data in Approach, starting either from 1-2-3 or from Approach. Working in Approach, with 1-2-3 running in the background, you can open a named 1-2-3 range. If you wish to start from 1-2-3, you can create an Approach view in 1-2-3 that allows you to display, edit, or report on selected spreadsheet data.

Creating a database from a Lotus 1-2-3 spreadsheet

You can open a Lotus 1-2-3 spreadsheet, and Approach will create a database file with a copy of the spreadsheet data. Approach also creates a new Approach file for the database.

When you open the spreadsheet in Approach, you specify a sheet or range of data you want to use for the new database. The rows in the spreadsheet data become records in the database, and the columns become fields.

The fields in the new database file are initially named A, B, C, and so on, but you can rename them in the Field Definition dialog box. If the first row of the spreadsheet has text that identifies the rest of the contents, you can use this row to provide the field names.

	A	B	C	D
1	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr
2	101.97	97.42	93.69	84.32
3	57.22	118.93	89.15	103.99
4	83.48	79.00	98.75	93.79

In a spreadsheet, the data is divided into rows and columns.

The first row of a spreadsheet can provide field names for a database.

1st Qtr	2nd Qtr	3rd Qtr	4th Qtr
101.97	97.42	93.69	84.32
57.22	118.93	89.15	103.99
83.48	79.00	98.75	93.79

In a database, the rows become records, and the columns become

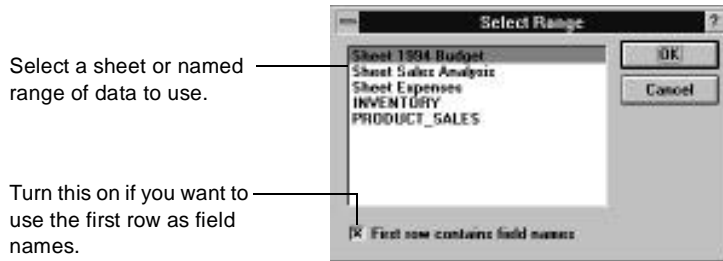
To create a database from a Lotus 1-2-3 spreadsheet:



1. Click the Open File icon or choose Open from the File menu. Or if the Welcome dialog box is on the screen, select “Open an existing file” and click OK.
2. Select Lotus 1-2-3 in the List Files of Type drop-down list.
3. Select the name of the spreadsheet in the File Name list and click OK.

You can change the directory and disk if you need to look for the file.

The Select Range dialog box appears.

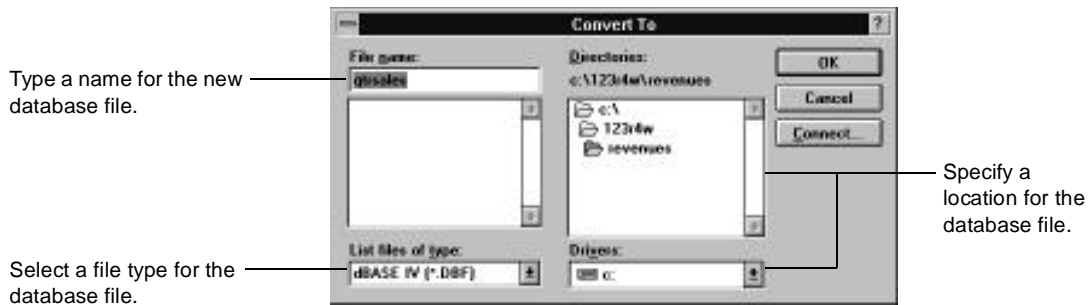


4. Select a sheet or named range with the data you want to use in the new database.

Named ranges appear in all capital letters in the list.

5. To use the text in the first row of the spreadsheet as field names, turn on "First row contains field names."
6. Click OK.

The Convert To dialog box appears.



7. Type a name for the database file in the File Name text box.
You can change the directory and disk if you want to specify a different location for the file.
8. Select a database file type in the List Files of Type drop-down list.
9. Click OK.

The Approach file for the new database opens to a standard form.

Opening a named range from a Lotus 1-2-3 spreadsheet

You can open a “live” named range from a Lotus 1-2-3 spreadsheet in Approach and view or edit the range in an Approach file. This does not convert the range to a database file. If you make any changes to data in the range, the changes are saved in the spreadsheet.

For you to be able to open a named range in Approach, Lotus 1-2-3 must be running and the spreadsheet with the range must be open.

To open a named range from a Lotus 1-2-3 spreadsheet:



1. Click the Open File icon or choose Open from the File menu. Or if the Welcome dialog box is on the screen, select “Open an existing file” and click OK.
2. Select 1-2-3 Ranges in the List Files of Type drop-down list. The Directories list shows the open 1-2-3 spreadsheets.
3. Select the name of the spreadsheet with the range you want in the Directories list. The File Name list shows the named ranges in the selected spreadsheet.
4. Select the named range in the File Name list.
5. Click OK.

If you want to convert a range to a database, use Save As to save it as a database.

Creating an Approach view in Lotus 1-2-3

When you work in Lotus 1-2-3 (any version later than 4.0), you can create four types of Approach views to display selected worksheet data: reports, forms, dynamic crosstabs, and mailing labels. The Approach views appear as icons embedded in the 1-2-3 worksheet.

You can modify data in your Approach view. When you refresh the view these changes appear in your 1-2-3 database table. However, you can't modify formulas or field definitions while working with data in the view, nor can you create a chart from an Approach dynamic crosstab. If you wish to chart data that appears in a dynamic crosstab, you can copy the data back to 1-2-3 and chart it from there.

1-2-3 allows up to 512 characters of text in a database table field. Approach allows up to 256 characters of text in a field. If you refresh the Approach view, any text longer than 256 characters in a field will be truncated in your 1-2-3 database table.

To create an Approach view in Lotus 1-2-3:

1. Select the 1-2-3 database table range you want to view in the Approach form.

Be sure to include column headings when you select the database table range.

2. Choose Form, Report, Dynamic Crosstab, or Mailing Label from the Tools Database submenu.
3. Click OK.

The appropriate Approach Assistant opens.

<i>For information about the</i>	<i>See</i>
Form Assistant	"Creating a form" on page 7-4
Crosstab Assistant	"Creating a crosstab" on page 12-5
Mailing Label Assistant	"Creating mailing labels" on page 9-16
Report Assistant	"Creating a report" on page 8-3

4. Modify the view if you wish and return to 1-2-3.

Choose Exit and Return from the File menu to close Approach. Choose Close and Return from the File menu to leave Approach running in the background.

1-2-3 embeds the Approach view as an icon in your 1-2-3 worksheet. To connect to Approach and open the view again, double-click the icon. If you've changed data in your 1-2-3 database table, Approach updates the view.

18

Sharing Data on a Network

You can keep an Approach database on a network and share it with other users. This is a powerful and efficient way to work. A network saves disk space by storing files in a central location, and it lets you use data simultaneously with other members of your work group.

This chapter describes how to set up your network environment and work with a database on a network.

Most of the information in this chapter applies to databases of any file type. If you're using a SQL table on a network, see Appendix C for additional details.

About networking with Approach

You can store any Approach file and any database file supported by Approach on a network. Users who work on the network can create, open, and save files and work with data in them just as if the files were stored on their own local drives.

Most often, you set up a *server* by placing files on a central device that users have access to through the network. The server is usually a more powerful computer than the local devices, with a large drive and network software to process users' requests. The users will work with the files on their own *client* computers.

With some network systems, users can also have access to files on other local drives. See "Network requirements" on page xiii for the types of network software you can use with Approach.

In general, each Approach user must have his or her own license, even if Approach is run from a server. For details on restrictions on network use, see your Approach license agreement.

As you work with a database on a network, the original database remains in its network location—what you see on the screen is just a copy of those records in your computer's memory. If you have write access to the database, you can make changes to the data and the changes are saved in the original database on the network.

Setting up your network environment

Before sharing dBASE and Paradox files on a network, you need to specify several network settings. (You can open FoxPro files on a network, but you cannot share them concurrently with other users in Approach.)

The network settings are saved in the APPROACH.INI file, a text file in your Windows directory that stores default settings. Once you've made the settings, they'll stay in effect from one work session to another unless you change them.

You can set options in Preferences to use optimistic record locking on a network and to download your working set of network data whenever you change to Preview. For more information about these options, see "Setting general working preferences" on page 19-14.

Setting file-sharing options for dBASE files

For dBASE files, you can specify whether other users can open network files you already have open, whether your local files are available to other users, and whether to optimize performance for Approach-only files.

If you have any files open when you set the file-sharing options, you need to close those files for the settings to affect them.

To set file-sharing options for dBASE files:

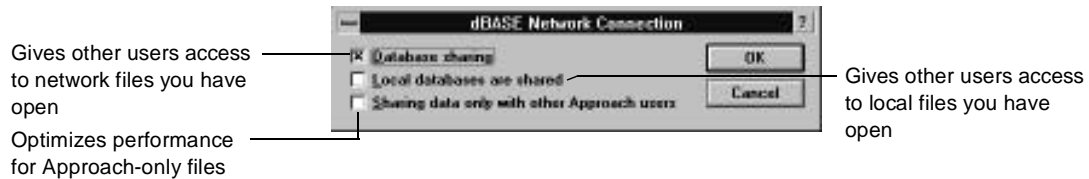
1. Open the New, Open, Save Database As, Import Data, or Export Data dialog box, and select dBASE IV or dBASE III+ in the List Files of Type drop-down list.

You can specify the options at the same time that you create, open, or save a database file or import or export data. Or you can open one of these dialog boxes just to use its Connect button.

2. Click Connect.

It doesn't matter which file is active. The options will affect all dBASE files you open.

The dBASE Network Connection dialog box appears.



3. To allow other users to work with network files you have open, turn on “Database sharing.”

This setting lets other users open and make changes to a network dBASE file you already have open. If the setting is off, no one else will be able to open the file until you close it.

If this setting is on, you need to make sure that everyone you work with on a network uses the same protocol for dBASE files. For more information about this, see “Specifying a locking protocol for shared dBASE files,” next.

4. To make open files on your local drive available to other users, turn on “Local databases are shared.”

If you’re using a peer-to-peer network system such as LANtastic and the system is set up for sharing local files, this setting allows other users to open dBASE files on your local drive that you already have open.

If this setting is off, other users will be able to open a dBASE file on your local drive only if you do not already have the file open. This is true even if “Database sharing” is on and your network software allows you to share local files.

5. To optimize performance for files used only with Approach, turn on “Sharing data only with other Approach users.”

Turn this setting off only if you or other network users plan to use dBASE files with other applications.

6. Click OK.

You return to the New, Open, Save Database As, Import Data, or Export Data dialog box.

7. Close and reopen any dBASE files for the changes to affect them.

Specifying a locking protocol for shared dBASE files

The Approach protocol will usually give you the best performance.

If you're sharing dBASE files with other users, you and the other users must all specify Approach, dBASE IV, or dBASE III+ as the locking protocol for the files. The default protocol is Approach.

To maintain the integrity of data, make sure that all the users specify the *same* protocol.

To specify a locking protocol for shared dBASE files:

1. Use a text editor to open the APPROACH.INI file.
The APPROACH.INI file is in your Windows directory.
2. Set the sdBASEFileSharingMethod line to Approach, dBASE4, or dBASE3.

For example,

```
sdBASEFileSharingMethod=Approach
```

If all users are working with the dBASE files only through Approach, leave the locking protocol as Approach.

If any of the users are working through a dBASE IV application, change the protocol to dBASE4. If any users are working through a dBASE III+ application, change the protocol to dBASE3.

3. Save and close the APPROACH.INI file.
4. Restart Approach for the change to take effect.

Setting file-sharing options for Paradox files

Users of Paradox 4.x cannot share data concurrently with users of Paradox 3.5.

For Paradox files, you can specify Paradox 3.5 or Paradox 4.x networking and the location of the Paradox control files.

Paradox databases use network control files to monitor user count and to control database sharing on a network. In Paradox 4.x (including Paradox for Windows), the network control file is called PDOXUSRS.NET; in Paradox 3.5, the file is called PARADOX.NET.

The location of the Paradox control files is stored in APPROACH.INI. When you open a Paradox database on a network, Approach gets the location from APPROACH.INI and looks for the appropriate control file. If Approach cannot find the file, it creates one in the specified location. The file will remain there for future use.

If you do not specify a location for the control files, you will open Paradox databases on a network as a single user.

To set file-sharing options for Paradox files:

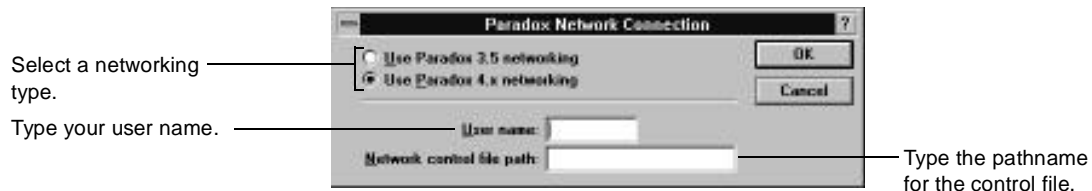
1. Open the New, Open, Save Database As, Import Data, or Export Data dialog box, and select Paradox from the List Files of Type drop-down list.

It doesn't matter which file is active. The options will affect all Paradox files you open.

You can specify the options at the same time that you create, open, or save a database file or import or export data. Or you can open one of these dialog boxes just to use its Connect button.

2. Click Connect.

The Paradox Network Connection dialog box appears.



3. To change the type of networking, select “Use Paradox 3.5 networking” or “Use Paradox 4.x networking.”

Paradox 4.x includes Paradox for Windows.

If “Use Paradox 3.5 networking” is selected, you can open Paradox 3.5 files but not Paradox 4 files on a network. When you create or export Paradox files (whether or not you are using a network), the files are in the 3.5 type.

If “Use Paradox 4.x networking” is selected, you can open both Paradox 3.5 and Paradox 4.x files on a network. When you create or export Paradox files (whether or not you are using a network), the files are in the 4.x type.

4. Type your user name in the User Name text box.
5. Type the directory location for the control files in the Network Control File Path text box.

If you don't want other users to have access to a Paradox file you have open, leave the text boxes blank.

Give only the pathname and not a filename. For example, if the control files are in the SHARE directory on the f drive, type f:\SHARE (not f:\SHARE\PDOXUSRS.NET). Check with your network administrator for the location of these files.

The network control files for Paradox 3.5 and Paradox 4.x should be in the same directory.

6. Click OK.

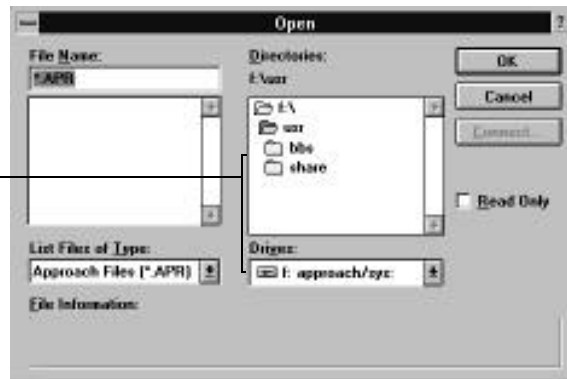
You return to the New, Open, Save Database As, Import Data, or Export Data dialog box.

7. Close and reopen any Paradox files for the changes to affect them.

Working with a database on a network

In most ways, you can create, open, and save databases and import and export data on a network just as you can on your local drive. Use the same dialog boxes you use with your local files, and provide the location of the network drive and directory.

You can specify a network drive and directory in Approach dialog boxes.



If you try to use a SQL table and are not yet connected to a SQL server, a dialog box appears that lets you connect to the server. For information about this, see Appendix C.

You can find and sort records, specify printing options, and change to Browse, Design, Find, and Preview in a network database as you can with local files. And if you have read/write access to the database, you can also enter and edit data in it.

This section covers the ways in which using a network database can differ from using a local database.

Changing your status to single-user

In general, you'll probably want to share network databases with other users because this is the most efficient way to work. But there may be times when you want to open a particular database as a single user—for example, if you need to make structural changes to the database or if you have a lot of previewing and printing to do. You can temporarily change your network environment to let you open databases as a single user.

- To change your status to single-user for a dBASE database, turn off “Database sharing” in the dBASE Network Connection dialog box.

For details, see “Setting file-sharing options for dBASE files” on page 18-2.

- To change your status to single-user for a Paradox database, delete the text in the User Name and Network Control File Path text boxes in the Paradox Network Connection dialog box.

For details, see “Specifying a locking protocol for shared dBASE files” on page 18-4.

Change the settings back to the way they were when you’re finished working with a database as a single user.

Entering a password

Database passwords protect data, and Approach file passwords protect the design of views.

Files on a network often have one or more passwords so that only some users can read or edit the files. In Approach, both database files and Approach files can have passwords:

- A database file can have two passwords: a *read/write password* that gives users complete access to the file, and a *read-only password* that allows users to read data but not modify it. Each database can have a read/write password or both a read/write and a read-only password.
- An Approach file can have one password. In this case, the password gives users the ability to modify the design of forms, reports, and other views.

For information about setting passwords, see “Defining passwords for files” on page 19-6.

If a database has passwords, the Enter Password dialog box appears when you try to open an Approach file that uses the database. If an Approach file has a password, Enter Password appears when you try to change to Design, join database files, or create a view.



— Type the password.

- To enter a password, type the password in the Enter Password text box and click OK.

You must spell a password exactly as it was defined, except that a password is case-insensitive.

Refreshing the network data on your screen

Refresh data periodically as you work, to be sure you're seeing the most recent version of it.

As you work in a network database, Approach places a copy of the data you see on the screen in your computer's memory. If other users are working in the database at the same time you are and make changes to its data, their changes do not always appear instantly in the image on your screen.

Approach refreshes the data from a network database when you edit, find, or sort data, when you preview or print, and when you change what you see on the screen (such as move to another record or go to Design). You can also refresh the data yourself.

- To refresh the network data on your screen, choose Refresh from the Browse menu. (If a PicturePlus field is selected or if the current view is a worksheet or crosstab, the command is in the PicturePlus, Worksheet, or Crosstab menu.)

The data on your screen is updated to match the database on the network. If you've made any changes that you haven't entered, this command also enters those changes.

If you're working with a found set or with sorted data, Refresh inserts any new records into the found set or the sort order as appropriate.

About downloading data in Preview

Downloading is helpful when you preview a report that uses a summary or any view or data set that many users are working on.

When you print data from a network, Approach normally refreshes the data from the network database. If you preview data before printing and other users make changes to the database after you preview, the data you print may not be the same as the data you previewed.

You can have Approach download a copy of the current set of network data to your hard disk whenever you change to Preview to "freeze" the data you see on the screen. The copy of the data that Approach downloads is only temporary, and is deleted when you change to Browse or Design.

When you download data in Preview, the data set you print will be the version on your hard disk rather than refreshed data from the network. This way, you can be sure you're looking at what will actually be printed.

For information about setting this option, see "Setting general working preferences" on page 19-14.

Saving changes to a shared record

It's usually possible for more than one network user to edit a record at the same time. This method of data-sharing, called *optimistic record locking*, is an efficient way to work—and Approach helps you make careful use of it.

If you have optimistic record locking set for your network environment, other users will be able to edit a record at the same time you do. When two users edit the same record, the changes are saved in the database for the *first user* to enter the changes. When the second user tries to enter his or her changes, an alert box warns that the changes may overwrite those made by the first user.

Saves your changes and overwrites those of other users



Refreshes your data to see changes made by other users

Approach runs faster with optimistic record locking because it does not have to check whether to lock a record when a user tries to view it.

- To save changes to a shared record, click Yes to save your changes and overwrite changes made by other users. This overwrites all changes made to the record since your view of it was last refreshed.
- To cancel your changes and refresh your copy, click No. This lets you see changes made to the record by other users. You can then make your changes on top of theirs.

If you don't want other users to edit a record at the same time as you, you can turn off optimistic record locking. This way, once you've clicked in a record, other network users can view the record but not make changes to it until you go to another record.

For information about setting this option, see "Setting general working preferences" on page 19-14.

19

Customizing Approach

Defaults are the preset values that Approach uses for a number of settings, such as units of measure for rulers, spacing of grid lines, pen color and width for new objects, and treatment of oversized pictures in a PicturePlus field.

You can change any of these values as you work, but the next time you choose a drawing icon or create a field, Approach reverts back to its default settings. The defaults are stored in the APPROACH.INI file in your Windows directory.

If you change settings only once in a while, you may want to leave the defaults as they are. But if you find that you always adjust the same setting, such as the pen width, you may want to change the default so that Approach automatically uses the setting you like.

This chapter explains how to change the default settings for a wide variety of features in the Approach work area, how to change the SmartIcons that appear in the icon bar, and how to create or modify custom menus.

To specify a working directory for Approach, use the Properties command in the File menu of the Windows Program Manager.

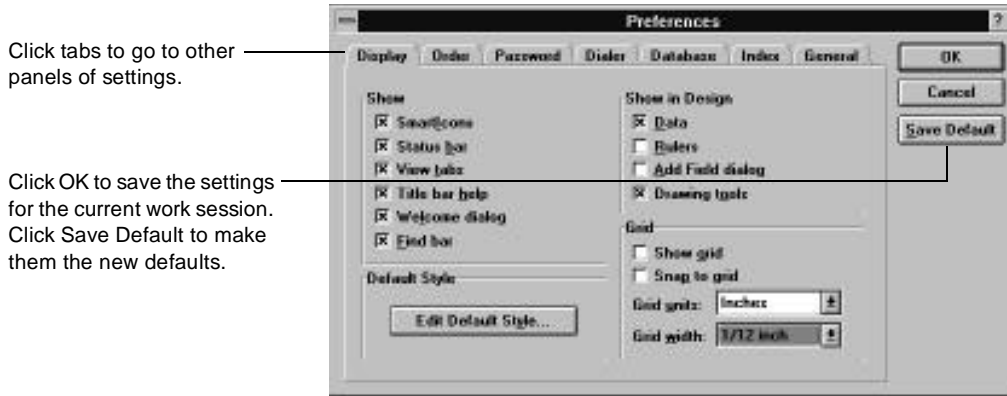
Setting Approach preferences

You can customize many aspects of your work area in Approach using the Preferences dialog box. These settings include a default sort order for records, window elements that appear in the work area, passwords for database files and Approach files, and database settings such as indexes and character sets.

To set Approach preferences:

1. Choose Preferences from the Tools menu.

The Preferences dialog box appears.



2. Set the options in the panels of the dialog box.
The sections that follow describe each panel. Click a tab in the dialog box to go to another panel.
3. Click OK or Save Default.
If you click OK, the settings are saved only for your current session with Approach. If you click Save Default, the settings become the new defaults.

Setting display defaults

The display defaults determine the window elements that appear in the Approach work area (such as icon bars, view tabs, and the status bar), the default style available in Assistants (for creating views), and the design elements that appear in Design.

You can also show or hide SmartIcons, view tabs, the status bar, data, rulers, and the grid using commands in the View menu. These commands show or hide the elements only for the current work session and do not change the defaults.

For more information about working with data, rulers, and the grid showing, see “Customizing the Design work area” on page 5-7.

To set display defaults:

1. Click the Display tab in the Preferences dialog box.

The Display panel appears.



2. In the Show area, turn on the window elements you want to display.

<i>Turn on</i>	<i>To display</i>
SmartIcons	An icon bar (preset to appear at the top of the Approach window)
Status bar	A status bar at the bottom of the Approach window
View tabs	Tabs with view names at the top of the Approach window
Title bar help	Command descriptions in the title bar, whenever you point on a menu command
Welcome dialog	A dialog box for opening and creating files, whenever you start Approach or close all open files
Find bar	A bar with buttons for finding records, whenever you go to Find

3. In the Style area, click Edit Default Style and define a default style to be available in the Assistants when you create views. A style specifies design properties, such as colors and text attributes, for all new objects and for the background of new views. When you create a new view, you can use the default style or select a predefined SmartMaster style in the Assistant.

When you click Edit Default Style, the Define Style dialog box appears. For information about it, see "Working with named styles" on page 5-26.

4. In the Show in Design area, turn on the design elements you want to display.

<i>Turn on</i>	<i>To display</i>
Data	Data from the first record or page of records in field boxes in Design (Otherwise, field names appear in the boxes.)
Rulers	Rulers along the top and left sides of the Design work area
Add Field dialog	The Add Field dialog box in Design
Drawing tools	A floating palette of icons for drawing tools in Design

5. In the Grid area, specify the grid settings.

<i>Use the option</i>	<i>To do this</i>
Show grid	Show a design grid behind objects in the Design work area
Snap to grid	Make objects align with increments on the grid, when you draw, move, or resize the objects
Grid units	Specify a unit of measure (inches or centimeters) for the increments on the grid
Grid width	Specify a width for the increments on the grid (First select a grid unit to see a list of widths here.)

Setting a default order for records

If you want to change the order of records only temporarily, use the Sort command instead.

Approach stores records in a database file in the order you add them to the database (the creation order). But for each Approach file, you can set a particular order for the records and then move through them in that order in Browse.

When you specify an order for records, this becomes the new default order in that Approach file (replacing the creation order). If you later rearrange the records with the Sort command in the Browse menu, when you click the Show All icon, the records return to their default order.

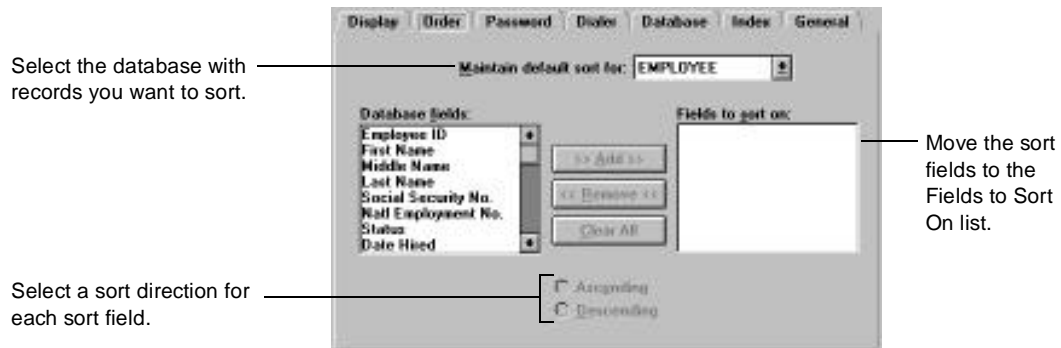
You specify one or more sort fields for reordering records and whether the sort in each field should be ascending or descending. The first field is the primary sort field. Approach sorts the records by the contents of that field. You can also specify other sort fields for Approach to use in case any records have the same value in the primary field. For example, you might use Last Name as the primary sort field and First Name as an additional sort field.

The order of records in an Approach file does not affect the order of records in the actual database. A database still stores records in their creation order.

To set a default order for records:

1. Click the Order tab in the Preferences dialog box.

The Order panel appears.



2. If you need to change to another database, select a database in the Maintain Default Sort For drop-down list.

The list shows all databases joined in the current Approach file.

3. Specify the primary sort field by moving a field name to the Fields to Sort On list.

To move a field to the Fields to Sort On list, select the field name and click Add, or double-click the field name.

To move a field back to the Database Fields list, select the field name and click Remove, or double-click the field name. To move all the fields back to the Database Fields list, click Clear.

4. Click Ascending or Descending for the primary sort field.

Ascending sorts text from A to Z, numbers from lowest to highest, and dates and times from earliest to latest. If a text field has numbers and text, the sorting is 0 to 9 and then A to Z. Leading spaces are sorted before numbers and text.

Descending sorts data in the opposite direction. If a text field has numbers and text, the sorting is Z to A and then 9 to 0. Leading spaces are sorted at the end.

5. If necessary, specify additional sort fields in the same way.

For each field, move the field name to the Fields to Sort On list and click Ascending or Descending.

You can have as many sort fields as you need. Approach sorts the records using the fields in the order in which they appear in the Fields to Sort On list.

If a record appears to be sorted out of order, check for leading spaces.

Defining passwords for files

You can define passwords for database files and Approach files. This allows you to share data and views with other users—without compromising the security of your data or the design of your views.

A database file can have two kinds of passwords. A *read/write password* gives users complete access to the file, including the ability to modify data. A *read-only password* allows users to read data, but not modify it. A database file password you assign in Approach encrypts the data in the file, so you will not be able to read and edit the data in another application.

You can give a database file a read/write password or both a read/write and a read-only password. (The file needs the read/write password because at least one user should have write access to it.) When you try to open an Approach file that uses a database file with one or both passwords, a dialog box appears asking for a password.

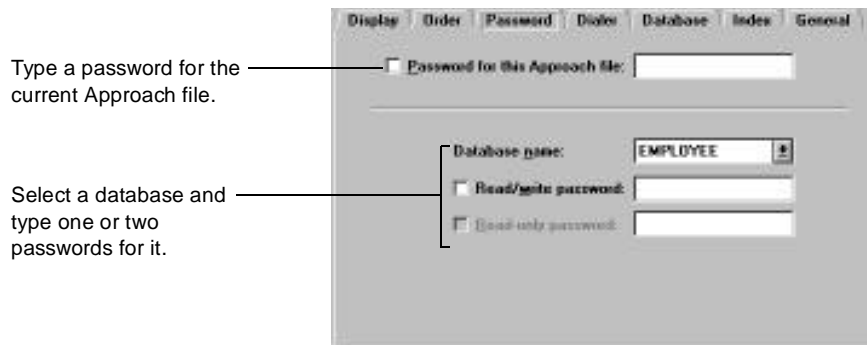
You can also set an Approach file password in Save As.

An Approach file password protects the design of views in the file. In this case, a dialog box asks for the password when you try to join database files, go to Design, or use an Assistant to create a view.

To define passwords for files:

1. Click the Password tab in the Preferences dialog box.

The Password panel appears.



Type a password for the current Approach file.

Select a database and type one or two passwords for it.

2. To define a password for the current Approach file, type the password in the Password for This Approach File text box.

Passwords are not case-sensitive and can have up to 16 characters. Asterisks appear in the text box as you type the characters of the password.

If a user enters this password correctly, he or she will be able to join database files, create new views, and redesign existing views in the file.

When you click in or tab to another text box, click a panel tab, or close the Preferences dialog box, the Confirm Approach File Password dialog box appears. Type the password a second time and click OK.

Database passwords protect data. Approach file passwords protect the design of views.

Type the password a second time to confirm it.



3. To define passwords for a database file, type the passwords in the Read/Write Password and Read-Only Password text boxes.

If you want to make a file read-only without setting a password, use the Database panel instead.

If you need to change to another database, select a database in the Database Name drop-down list. The list shows all databases joined in the current Approach file.

A read/write password gives a user complete access to a database. A read-only password allows a user to read data in the database, but not to modify it.

When you click in or tab to another text box, click a panel tab, or close the Preferences dialog box, the Confirm Password dialog box appears. Type the password a second time and click OK.

Type the password a second time to confirm it.



Setting dialing preferences

The Approach dialing preferences let you define standard modem settings to be used whenever you have Approach dial a telephone number. Modem settings include the name of the serial port, the modem's baud rate (speed), and the type of dialing service to use.

To set dialing preferences:

1. Click the Dialer tab in the Preferences dialog box.

The Dialer panel appears.

Select a communications port.

Type a prefix and suffix for dialing.

Type a command for initializing your modem.

Type numbers to omit while dialing.



Set the speed of the modem.

Type a command for hanging up.

Specify a dial type for your modem.

Type numbers to dial for access to a phone system or outside line.

2. Set the modem options you want to be used whenever Approach dials a telephone number.

For more information about the options, see the documentation that came with your modem.

<i>Use this option</i>	<i>To set</i>
Modem port	The communications port your modem is connected to
Baud rate	The speed of the modem
Dial prefix/suffix	The command string for both before (prefix) and after (suffix) you dial
Hangup	The command string you use to hang up
Initialize	The command string that initializes your modem
<i>Use "Do not dial" to remove the area code or international dialing code from the beginning of a phone number.</i>	Access code Any numbers you need to dial to get access to a particular exchange or phone system, and (if necessary) a comma for a pause (For example, to dial 9 for an outside line, type 9 and then a comma; the comma inserts a pause to wait for the outside line.)
<i>Most telephones use the tone dial type.</i>	Do not dial Any numbers to omit while dialing
	Dial type Whether your modem line is tone or pulse

Setting database options for a dBASE or FoxPro file

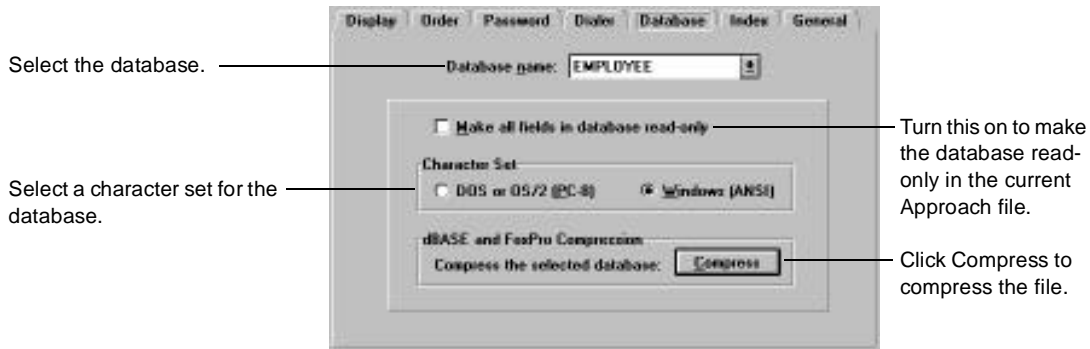
For a dBASE or FoxPro database file, you can make the file read-only in the current Approach file, change to another character set, and compress the file for more efficient storage.

You can use either the DOS character set or the Windows character set in Approach. The character set you use determines how you type special characters that are not on the keyboard. For example, if you're using the DOS set and want to type the symbol for Yen (¥), you press ALT and type 157 on the numeric keypad; with the Windows character set, you press ALT and type 165 on the numeric keypad.

To set database options for a dBASE or FoxPro file:

1. Click the Database tab in the Preferences dialog box.

The Database panel appears.



You may want to compress a database if you've deleted many records. Approach does not remove the space left by deleted records.

2. If you need to change to another database, select a database in the Database Name drop-down list.

The list shows all databases joined in the current Approach file.

When you change to another database, the panel shows options for databases of that type.

3. To set the database to read-only in the current Approach file, turn on "Make all fields in database read-only."
4. To change the character set for the database, click an option in the Character Set area.
5. To compress the database, click Compress.

Setting database options for a Paradox file

For a Paradox database file, you can make the file read-only in the current Approach file, change to another character set, and (for Paradox 4.0) change case-sensitivity for searches.

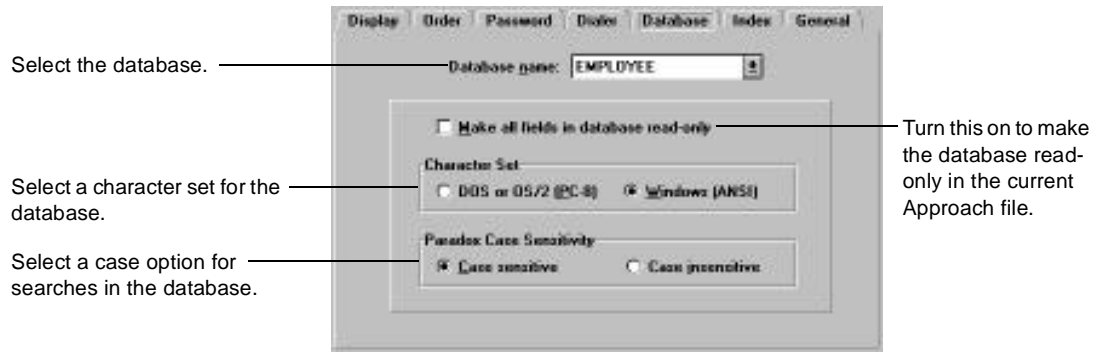
You can use either the DOS character set or the Windows character set in Approach. The character set you use determines how you type special characters that are not on the keyboard. For example, if you're using the DOS set and want to type the symbol for Yen (¥), you press ALT and type 157 on the numeric keypad; with the Windows character set, you press ALT and type 165 on the numeric keypad.

Searches in Paradox 3.5 files are always case-sensitive. In Paradox 4.0 files searches are initially not case-sensitive, but you can change them to case-sensitive in Approach.

To set database options for a Paradox file:

1. Click the Database tab in the Preferences dialog box.

The Database panel appears.



2. If you need to change to another database, select a database in the Database Name drop-down list.
3. To set the database to read-only in the current Approach file, turn on “Make all fields in database read-only.”
4. To change the character set for the database, click an option in the Character Set area.
5. To change the case-sensitivity for searches in the database, click an option in the Paradox Case Sensitivity area.

These options are not available for Paradox 3.5 files.

Setting database options for all SQL, Access, ODBC, and Lotus Notes tables

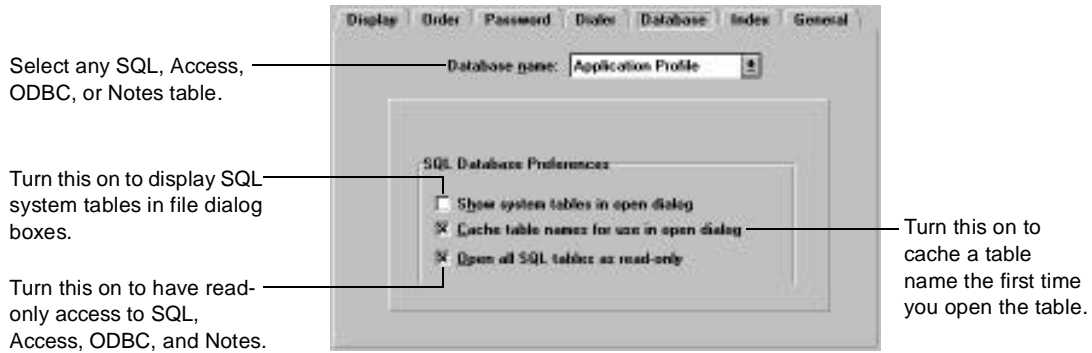
For SQL, Microsoft Access, and ODBC tables, you can specify read-only access, display SQL system tables in the lists of filenames in dialog boxes, and cache the names of tables. The read-only setting in these options also applies to Lotus Notes tables.

The database options for SQL, Access, ODBC, and Lotus Notes affect all of the tables you create or open in Approach, not just the table selected in Preferences.

To set database options for all SQL, Access, ODBC, and Lotus Notes tables:

1. Click the Database tab in the Preferences dialog box.

The Database panel appears.



2. If you need to change to a SQL, Access, ODBC, or Lotus Notes table, select a table in the Database Name drop-down list.

The options will apply to all of these tables you open or create through Approach.

3. To display SQL system tables in the lists of filenames in Approach dialog boxes, turn on “Show system tables in Open dialog.”

4. To cache a table name the first time you open a table, turn on “Cache table names for use in Open dialog.”

5. To set tables to read-only in Approach, turn on “Open all SQL tables as read-only.”

If you cache table names, each table will open faster after the first time.

Maintaining external indexes for a dBASE or FoxPro database

In dBASE and FoxPro database files, Approach uses and maintains its own indexes to keep track of records. If you have any indexes created in dBASE or FoxPro that you want Approach to maintain, you can associate those indexes with your database file.

Approach does not use these external indexes, but maintains them for the other applications.

To maintain external indexes for a dBASE or FoxPro database:

1. Click the Index tab in the Preferences dialog box.

The Index panel appears.



2. If you need to change to another database, select a database in the Database Name drop-down list.
3. To add an external index to the database so that it will be maintained for other applications, click Add Index, select the index in the dialog box that appears, and click OK.

When you click Add Index, the Add Index dialog box appears.



After you add the index, it appears in the list in the Index panel.

4. To close an external index so that it will no longer be maintained, select the index in the list of indexes and click Close Index.

Creating secondary indexes for a Paradox database

In a Paradox database file, a primary index is built on the *key field* specified when the file is created. You can create additional, secondary indexes for the file in Approach.

Approach automatically uses and maintains all indexes for Paradox database files.

To create secondary indexes for a Paradox database:

1. Click the Index tab in the Preferences dialog box.

The Index panel appears.



2. If you need to change to another database, select a database in the Database Name drop-down list.
3. To add a secondary index to the database, click Add Index, type the name in the Paradox Secondary Index text box, and move the index fields to the Fields to Index list.

To move a field to the Fields to Index list, select the field name in the Database Fields list and click Add, or double-click the field name.

To move a field back to the Database Fields list, select the field name and click Remove, or double-click the field name. To move all the fields back to the Database Fields list, click Clear.

4. To delete a secondary index from the database, select the index in the Paradox Secondary Index drop-down list and click Delete Index.

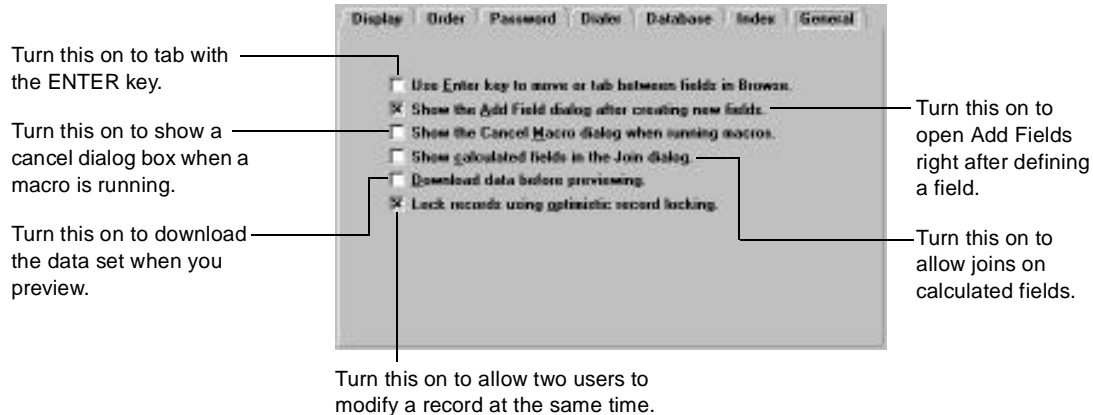
Setting general working preferences

Approach provides other options that make working with data as efficient as possible. You can make the **ENTER** key work in Browse just like the **TAB** key, open the Add Field dialog box automatically right after you define a field, show a Cancel Macro dialog box whenever you run a macro, allow joins on calculated fields, download the current data set whenever you go to Preview, and allow two network users to edit a record at the same time using optimistic record locking.

To set general working preferences:

1. Click the General tab in the Preferences dialog box.

The General panel appears.



2. To make the ENTER key work in Browse just like the TAB key, turn on “Use Enter key to move or tab between fields in Browse.”

When you press ENTER, any new data in the current field is entered and you move to the next field in the data entry order.

If this setting is off, pressing ENTER enters the data but does not move you to the next field.

3. To open the Add Field dialog box automatically whenever you define new fields or edit existing ones, turn on “Show the Add Field dialog after creating new fields.”

When you close the Field Definition dialog box, the Add Field dialog box appears in the work area so that you can easily add the fields to a view. In this case, Add Field shows only the fields you just defined or edited; it has an additional Show All Fields button that you can click to list all the fields. For information about using Add Field this way, see “Adding a field to a form, report, or mailing label” on page 6-1.

4. To show the Cancel Macro dialog box whenever you run a macro in Approach, turn on “Show the Cancel Macro dialog when running macros.”

You can click Cancel in the dialog box to cancel a macro in progress.

It takes time to download a copy of data, so you may not want to do it when network activity is heavy.

5. To allow joins on calculated fields in the current Approach file, turn on "Show calculated fields in the Join dialog."

Join fields appear italicized in a field list in the Join dialog box, after other fields in the database. You can join on calculated fields as you do with other types of fields.

6. To have Approach download a copy of the current data set to your hard disk whenever you preview, turn on "Download data before previewing."

If you download data in Preview, the data set you print will be the version on your hard disk rather than the one in the network database, so you can be sure you're printing what you previewed. For more information, see "About downloading data in Preview" on page 18-8.

7. To allow two network users to edit a record at the same time, turn on "Lock records using optimistic record locking."

With *optimistic record locking*, when two users edit the same record, the changes are saved in the database for the first user to enter them. When the second user tries to enter changes, Approach asks if he or she wants to save the changes and overwrite those of the first user, or cancel the changes.

If this setting is off, two users can view a record at the same time, but only the first user to go to the record can edit it. This is sometimes called *full record locking*.

Approach runs faster with optimistic record locking on because it does not have to check whether to lock a record when a user tries to view it.

Customizing the SmartIcons

SmartIcons give you single-click access to common Approach functions such as opening, saving, and closing files; going to Browse, Design, and Preview; finding and sorting records in Browse; and choosing drawing tools in Design.

Approach comes with a default set of SmartIcons for Browse, Find, and Preview. For Design, Approach provides three default sets of icons for the icon bar and a floating palette of icons that are used for drawing. You'll also find sets of icons for Browse and Design that duplicate the Approach 2.0 look that may already be familiar to you.

Because not everyone likes to work the same way, you can add or remove icons in any of the default sets of icons or create your own set of icons. You can also change the location of the icon bar in the Approach window and change the size of icons in the icon bar.



The icon bar pop-up menu at the right end of the status bar lists all the sets of icons you can use in the current environment, including any custom icon bars you've created. You can choose from this pop-up menu to change to another icon bar.



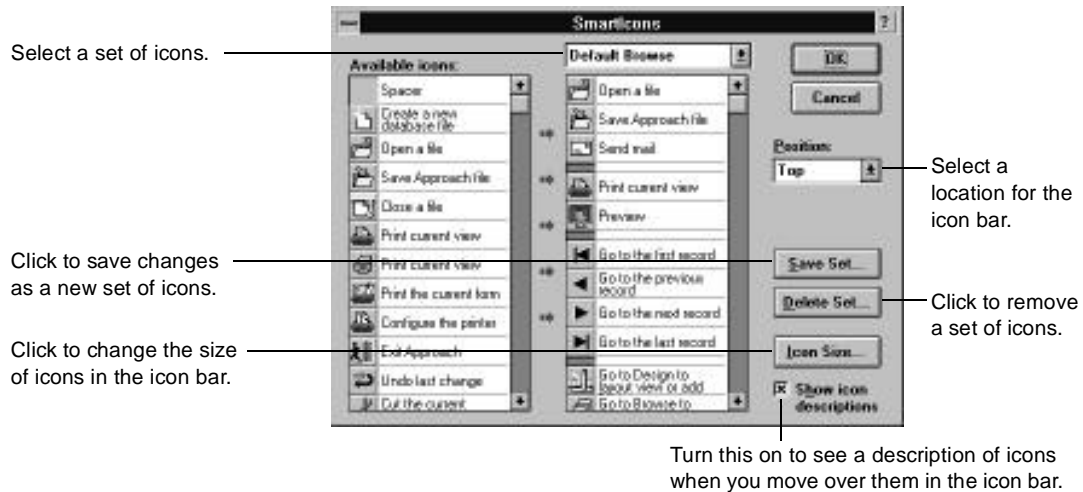
You can also click the Next Icon Bar icon to change to the next bar in the list.

To customize the SmartIcons:

1. Go to Browse, Design, Find, or Preview, and choose SmartIcons from the Tools menu.

You see only the icons that are appropriate for the current environment.

The SmartIcons dialog box appears, displaying a list of the available icons (on the left) and the set of icons in the current icon bar (on the right).



2. If you need to change to a different set of icons, select a set in the drop-down list at the top of the dialog box.
3. Add, remove, and arrange icons in the order you want them in the current set (the list on the right).

Use spacers (1/2-size blank icons) to separate logical groupings of icons.

To add an icon, drag it from the Available Icons list to the position you want in current set.

To remove an icon from the current set, drag it from the current set to the Available Icons list.

To change the position of an icon in the current set, drag it up or down to the position you want.

4. To save changes to the current set as a new icon bar, click Save Set, specify a name and file location in the Save Set of SmartIcons dialog box, and click OK.
5. To remove a set of icons, click Delete Set, select a set of icons to delete in the Delete Sets dialog box, and click OK.
6. To change the size of all icons in the icon bar, click Icon Size, select a size in the Icon Size dialog box, and click OK.
7. To change the location of the icon bar, select an option in the Position drop-down list.

If you select Floating, you can move or resize the icon bar in the Approach work area.
8. To see descriptions of icons when you move the pointer over them in the icon bar, turn on "Show icon descriptions."

An icon description appears in a "bubble." If this setting is off, you can still see the description by right-clicking the icon.
9. Click OK.

Customizing menus

Approach allows you to create your own custom menu bars, which you can attach to selected views in an Approach file. You can base a new menu bar on an existing one, or you can create a menu bar from scratch.

Each menu can have as many or as few commands as you want. For example, if you've designed a data entry form, you might also create a menu that contains only the commands that the people entering data will need.

A custom menu bar can appear only in Browse.

Creating a custom menu bar

Creating a custom menu bar is a two-step process. First you decide whether to base your menu bar on an existing one, and then you specify the menus and items it will contain. You must be in Design to create a menu bar.

Short menus are assigned to an Approach file with a password, unless you assign custom menus to it.

You can base a custom menu bar on the default Approach menu bar, a default set of short menus, or any other menu bar you've already created. The *short menus* are a subset of the default menus; they do not include commands for modifying the Approach file. For example, the short menus do not have the Create Form and Define Macro commands.

To create a custom menu bar:

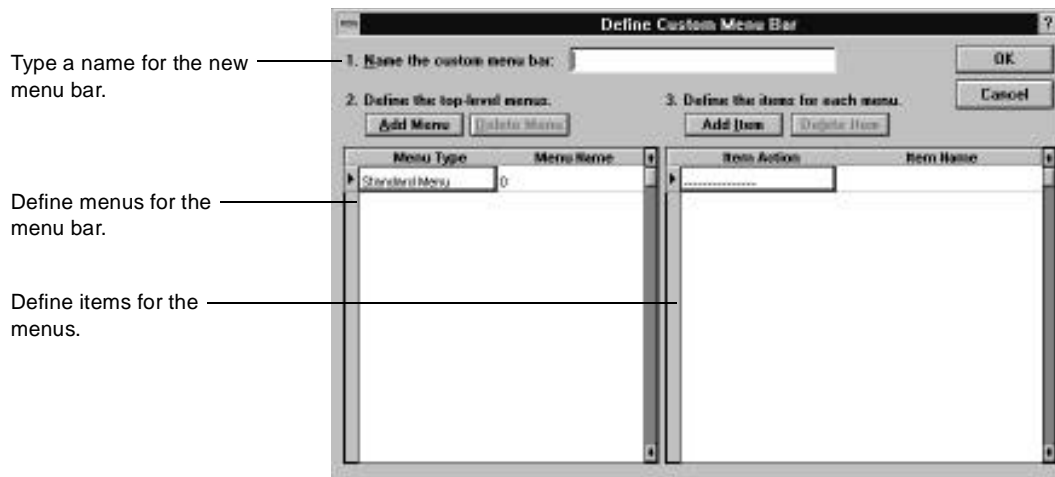
1. In Design, choose Customize Menus from the Tools menu.
The Customize Menu dialog box appears.



Unless the menus you're creating have few commands, it's usually most efficient to base them on existing menus.

2. Click New or select an existing menu bar and click Copy.

The Define Custom Menu Bar dialog box appears. If you clicked Copy, the dialog box shows the menus and items for the selected menu bar. If you clicked New, the dialog box does not have any menu information.



3. Type a name for the menu bar.

The name appears in the list of menu bars in the Basics panel of the InfoBox for views. You use this list to attach a custom menu bar to a view.

- For the first menu in the menu bar, select a type in the Menu Type drop-down list and enter a name in the Menu Name text box.

<i>Use this menu type</i>	<i>To display</i>
Standard	A list of commands
Menu + Files	A list of commands, followed by the filenames of the last four Approach files used
Window Menu	A list of commands, followed by the pathname of the current Approach file
Macro List	A list of macros
View List	A list of views

You'll also see the type Context Menu in the drop-down list. This is used by Approach for menus that appear only in certain environments or only with certain types of views active. It is not an editable menu type for custom menu bars.

To underline a letter in a menu name, type an ampersand (&) right before the letter in the name; for example, &File underlines the letter *F*. You'll be able to open the menu in Browse by pressing ALT and the underlined letter.

- For each item in the menu, select an action in the Item Action drop-down list and enter a name in the Item Name text box.

The Item Action drop-down list shows all the commands you can use, the names of the main sections in the on-line Help, the names of all views and macros in the Approach file, a blank line, and a menu divider (with a line of hyphens).

You can also type keyboard shortcuts for items along with their names.

To underline a letter in an item name, type an ampersand (&) right before the letter in the name; for example, Save &As underlines the letter *A*. You'll be able to choose the item in Browse by pressing ALT and the underlined letter for the menu and then pressing the underlined letter for the item.

To add a new item to the menu, click Add Item. To remove an item, select it and click Delete Item.

To move an item to another position in the menu, select the item by clicking in the cell to the left of it, and then drag the item up or down. You can select more than one item to move by **SHIFT**-clicking the items.

6. Continue adding and defining menus in the same manner.

For each menu, specify a type and a name, and define items for the menu.

These are the menus and items for the default menu bar.

An ampersand (&) signifies that the next letter is underlined as an ALT-key shortcut.

Menu Type	Menu Name	Item Action	Item Name
Menu + File	&File	New	&New...
Standard Menu	&Edit	Open	&Open... Ctrl+O
Standard Menu	&View	Close	&Close
Standard Menu	&Create	Save View File	&Save Approach File Ctrl+S
Context Menu	Fo&rm	Save As...	Save &As...
Standard Menu	&Tools	Delete File...	&Delete File...
Window Menu	&Window	Import Data...	Import Approach File...
Standard Menu	&Help	Export Data...	&Export Data...

To add a new menu to the menu bar, click Add Menu. To remove a menu, select it and click Delete Menu.

To move a menu to another position in the menu bar, select the menu by clicking in the cell to the left of it and then drag the menu up or down. You can select more than one menu to move by **SHIFT**-clicking the menus.

7. Click OK.
8. Attach the menu bar to a view using the Basics panel of the view's InfoBox.

For information about this, see “Changing the basic properties of a view” on page 5-36.

Editing or deleting a custom menu bar

Once you've created a custom menu bar, you can easily edit it or delete it. If you delete a menu bar that is attached to a view, Approach substitutes the default menu bar for the view. You must be in Design to edit or delete a custom menu bar.

To edit or delete a custom menu bar:

1. In Design, choose Customize Menus from the Tools menu.

The Customize Menu dialog box appears.



2. Select the name of the menu bar you want to edit or delete.
You can edit or delete only menu bars you've created.
3. To redefine the menu bar, click Edit and change the menus or items in the Define Custom Menu Bar dialog box.
For information about working with Design Custom Menu Bar, see "Creating a custom menu bar" on page 19-18.
4. To remove the menu bar, click Delete.
Approach asks if you're sure you want to remove the menu bar. Click OK in the alert box.
5. Click Done.

A

Formulas for Calculated Fields

This appendix covers what you need to know to use formulas in calculated fields. It gives an overview of formulas and functions and describes the types of expressions you can create.

At the end of this appendix are syntax descriptions and examples for the predefined functions that come with Approach.

Elements of a formula

To use a calculated value in a field, you need to define a formula that specifies the operation to perform and the values to operate on. Approach evaluates the formula and returns the result to the field.

A formula can be made up of operators, operands, functions, and expressions.

Operators

Operators are symbols that specify the type of calculation or other evaluation you want to perform. Approach provides operators for arithmetic calculations (such as addition and multiplication), comparisons (such as greater than and equal to), and logical operations (such as AND and OR).

For example, in the following formulas the multiplication sign (*) and greater-than sign (>) are the operators:

```
Subtotal * .06  
ShipDate > '1/1/93'
```

The Approach operators are covered in more detail in “Types of expressions” on page A-4.

Operands

Operands are the values in a formula. An Approach formula can use constants or field references as operands. Very often, formulas use a mix of the two.

Constants

A *constant* is a value that you enter directly in a formula. This value will be used exactly as you type it and will not change from one record to another.

For example, in the formula

$48 * 8.95$

the numbers 48 and 8.95 are numeric constants.

In many cases, you can also use a text, date, or time string as a constant. You must enclose one of these values in single quotation marks, like this:

$'1/1/94' + 15$

When entering date and time constants, use the separator specified in the Windows International Control Panel for your system. For dates, also enter the month, day, and year in the order given in the International Control Panel. For example, the standard numerical date format for the United States is 4/30/94 but for Sweden it is 1994-04-30.

Field references

A *field reference* is a pointer to the contents of a field. You supply the field name as the reference, and Approach uses the value from that field for the current record in the formula. The value for a field reference can change from record to record.

For example, in the formula

$Quantity * 8.95$

the name *Quantity* is a reference to a field. In one record, this formula might calculate $48 * 8.95$; in another, it might calculate $31 * 8.95$.

Normally, a field name does not need any delimiters. But you must enclose the name in double quotation marks if it begins with a number, or if it contains a space, a period, a comma, or any of the following characters:

$/, *, +, -, <, >, (,)$

For example,

"Monthly Expenses" * 12

If a field reference is to a field in a joined database, you include the name of the database in the reference. Separate the database name and the field name with a period. For example,

ORDERS.Quantity * 8.95

The name of the database must be in all capitals. If you select a field in the Formula panel of the Field Definition dialog box, Approach provides the database name for you.

If you use a reference to a calculated field or a variable field, you do not include the database name. These fields are part of an Approach file rather than part of a database file.

Functions

Functions are predefined routines that perform specific operations. Approach provides functions for many common tasks you may need in your work—for example, to calculate a monthly payment on a loan or to compare two fields for different spellings of a name. Rather than defining a routine yourself, you can use one of these functions to tell Approach what to do.

For example, the function

SSum(AmtDue)

calculates a total for the values in the AmtDue field in a range of records.

You can use a function by itself or combine it with operators, operands, and other functions to build a more complex formula.

For more detailed information about working with functions, see “How to use functions” on page A-6. “Descriptions of functions” on page A-10 gives syntax and examples for all the Approach functions.

Expressions

An *expression* is a combination of operators, operands, and functions that yields a single result. A formula can consist of one expression—or it can be made up of many expressions.

For example, in the formula

If(Orders > (Inventory + 50), 'Reorder', 'In Stock')

Inventory + 50 is one expression, Orders > (Inventory + 50) is another expression, and the entire formula is also an expression.

If a formula has more than one expression, Approach evaluates each expression until it reaches a single, final result for the entire formula. Approach goes through the formula from left to right, evaluating the expressions in the innermost parentheses first and working its way out. Thus, to evaluate the If formula above, Approach evaluates `Inventory + 50` first, uses that result to evaluate `Orders > (Inventory + 50)`, and so on.

Types of expressions

You can create three types of expressions in Approach: arithmetic, comparison, and logical. The three types use different operators and operands and return different kinds of results. You can combine different types of expressions in a single formula.

Arithmetic expressions

Arithmetic expressions perform basic calculations on two numeric, date, or time values. These are the operators you can use:

<i>Operator</i>	<i>Definition</i>
+	Adds the two values
-	Subtracts the second value from the first
*	Multiplies the two values
/	Divides the first value by the second

For example,

Use a function for more complex calculations, such as to calculate an interest rate on a loan.

- `60000 / 12` equals 5,000
- `Subtotal * .06` multiplies the value in the current record's Subtotal field by 6 percent
- `ShipDate + 15` returns a date equal to 15 days from the date in the current record's ShipDate field

If a formula has more than one arithmetic expression, Approach evaluates the expressions from left to right, performing multiplication and division first and then addition and subtraction. To change the order of evaluation, put the expressions you want evaluated first in parentheses. For example,

- `4 + 8 * 3` equals 28
- `(4 + 8) * 3` equals 36

Comparison expressions

Comparison expressions compare two values and return a result of Yes or No. The values can be numbers, text, dates, or times, but they should both be of the same type. These are the operators you can use:

<i>Operator</i>	<i>Definition</i>
<	Returns Yes if the value on the left is less than the value on the right
<=	Returns Yes if the value on the left is less than or equal to the value on the right
=	Returns Yes if the two values are equal
<>	Returns Yes if the two values are not equal
>	Returns Yes if the value on the left is greater than the value on the right
>=	Returns Yes if the value on the left is greater than or equal to the value on the right

For example,

Use a function for more complex comparisons, such as to see if two strings match in part.

- 75 >= 50 equals Yes
- Total < 100 equals Yes if the value in the current record's Total field is less than 100, and No if the value is 100 or greater
- Contact = 'Marcus' equals Yes if the current record's Contact field contains the text Marcus, and No if the field is blank or has any other contents

Comparison expressions are often used to define conditions that must be met before a calculation or other operation can be performed. For example, this formula specifies that if the price of an item is \$20 or more (if Price >= 20 equals Yes) the shipping cost is 15 percent of the price:

If(Price >= 20, Price * .15, 4)

If the price is under \$20 (if Price >= 20 equals No), the shipping cost is \$4.

Logical expressions

Logical expressions compare or change the result of comparison expressions and return a result of Yes or No. A logical expression allows you to define more complex conditions than you can with comparison expressions alone. Approach provides three logical operators:

<i>Operator</i>	<i>Definition</i>
AND	Returns Yes only if both expressions are true
OR	Returns Yes if either or both of the expressions are true
NOT	Converts a comparison result from Yes to No or from No to Yes

AND and OR require an expression operand on both sides. NOT requires only one operand.

For example, suppose the Orders field contains 462 and the ShipDate field contains the date 1/15/94:

- Orders >= 500 AND ShipDate >= '1/1/94' equals No
- Orders >= 500 OR ShipDate >= '1/1/94' equals Yes
- NOT (Orders >= 500) equals Yes

With NOT, you put the expression to the right of the operator and in parentheses. In a formula with more than one expression, Approach evaluates a NOT expression first, before the arithmetic, comparison, and other logical expressions.

How to use functions

A function has a name, a pair of parentheses, and usually a set of values called *parameters* for the function to evaluate. Functions are really a type of formula. The operator is implicit in the function name, and the parameters specify the operands.

Parameters in functions

For the parameters in a function, you can use constants (such as 28.5, 'Cola', or '1/1/94'), field references (such as the field name PartNo), and other functions. Enclose a set of parameters in parentheses, and separate individual parameters in a set with commas.

For example, the following function tells Approach to retrieve the value in the Total field, or to use the value 50 if the field is blank.

Enclose parameters in parentheses.

Blank(Total,50)

Separate parameters with commas.

If you're using Approach in a language other than U.S. English, your system may require a different delimiter than the comma. Use whatever list separator is specified in the Windows International Control Panel. Also enter date and time parameters using the format specified in the International Control Panel.

You treat parameters as you do operands in a formula: Enclose text, date, and time constants in single quotation marks. Enclose a field name in double quotation marks if it begins with a number, or if it contains a space, a period, a comma, or any of the following characters:

/, *, +, -, <, >, (,)

A few functions do not use any parameters, but you must include parentheses with them. For example, this function returns the current time on the system clock, so it does not need any information from you:

CurrTime()

Every function has a syntax description that defines whether each parameter should be text, a number, a date, or a time. These descriptions begin on page A-10.

Functions within other functions

You can use functions as parameters in other functions, thus manipulating your data in powerful ways. Approach calculates the nested, or inner, function first and then uses its result as a value in the outer function.

In this formula, the Like function checks to see if the value in the SalesRep field matches the value in the Contact field:

```
If(Like(SalesRep,Contact),'Match','No Match')
```

If the Like function returns Yes, the If function inserts the string Match in the field with the formula; if Like returns No, the If function inserts the string No Match.

You can nest functions more than two levels. Approach always solves the innermost functions first and then works its way out until it reaches a single, final result.

To determine whether you can use a function as a parameter, look at the syntax description for the outer function (with the parameter). The inner function must return a result that matches the type specified for the parameter. For example, this is the syntax for the If function used above:

```
If(condition,true value,false value)
```

The syntax shows that first parameter must be a condition, so a function that returns Yes or No (such as Like) is appropriate here.

Summary of functions

Approach provides functions in ten categories: conversion, date, financial, logical, mathematical, statistical, summary, text, time, and trigonometric. This section summarizes the functions by category.

<i>Functions</i>			
<i>Conversion</i>	DateToText(<i>date,format</i>)	NumToText(<i>number,format</i>)	TextToBool(<i>text</i>)
	TextToDate(<i>text</i>)	TextToTime(<i>text</i>)	
<i>Date</i>	Date(<i>month,day,year</i>)	Day(<i>date</i>)	DayName(<i>number or date</i>)
	DayOfWeek(<i>date</i>)	DayOfYear(<i>date</i>)	Month(<i>date</i>)
	MonthName(<i>date or number</i>)	Today()	WeekOfYear(<i>date</i>)
	Year(<i>date</i>)		
<i>Financial</i>	FV(<i>payment,rate,periods</i>)	NPeriods(<i>rate,principal,payment</i>)	PMT(<i>principal,rate,periods</i>)

Continued

<i>Functions</i>			
<i>Financial</i>	PV(<i>payment,rate,periods</i>)	SLN(<i>cost,salvage,lift</i>)	
<i>Logical</i>	Blank(<i>text1,text2</i>)	If(<i>condition,true value,false value</i>)	IsBlank(<i>field</i>)
<i>Mathematical</i>	Abs(<i>number</i>)	Exp(<i>number</i>)	Factorial(<i>number</i>)
	Ln(<i>number</i>)	Log(<i>number</i>)	Mod(<i>number1,number2</i>)
	Pi()	Pow(<i>number1,number2</i>)	Random()
	Round(<i>number,precision</i>)	Sign(<i>number</i>)	Sqrt(<i>number</i>)
	Trunc(<i>number,precision</i>)		
<i>Statistical</i>	Avg(<i>number list</i>)	STD(<i>number list</i>)	Var(<i>number list</i>)
<i>Summary</i>	SAverage(<i>number field</i>)	SCount(<i>field</i>)	SMax(<i>number field</i>)
	SMin(<i>number field</i>)	SNPV(<i>value,discount rate</i>)	SSTD(<i>number field</i>)
	SSUM(<i>number field</i>)	SVAR(<i>number field</i>)	
<i>Text</i>	Asc(<i>character</i>)	Chr(<i>number</i>)	Combine(<i>list</i>)
	Fill(<i>text,number</i>)	Left(<i>text,number</i>)	Length(<i>text</i>)
	Like(<i>text1,text2</i>)	Lower(<i>text</i>)	Middle(<i>text,start,size</i>)
	Position(<i>text,search string,start</i>)	Prefix(<i>text1,text2</i>)	Proper(<i>text</i>)
	Replace(<i>original text, start size, replacement text</i>)	Right(<i>text,number</i>)	Soundlike(<i>text1,text2</i>)
	Span(<i>text1,text2</i>)	SpanUntil(<i>text1,text2</i>)	Translate(<i>text,character1,character2</i>)
	Trim(<i>text</i>)	Upper(<i>text</i>)	
<i>Time</i>	CurrTime()	Hour(<i>time</i>)	Hundredth(<i>time</i>)
	Minute(<i>time</i>)	Second(<i>time</i>)	Time(<i>hours,minutes,seconds,hundredths</i>)
<i>Trigonometric</i>	Acos(<i>number</i>)	Asin(<i>number</i>)	Atan(<i>number</i>)
	Atan2(<i>number1,number2</i>)	Cos(<i>angle</i>)	Degree(<i>radians</i>)
	Radian(<i>degrees</i>)	Sin(<i>angle</i>)	Tan(<i>angle</i>)

Descriptions of functions

If the flag in the Define Formula panel is crossed out, the formula you're defining has a syntax error.

This section describes the functions that come with Approach. When you add one of these functions to a formula, you can click the function name in the Define Formula panel of the Field Definition dialog box or type the function name and its parentheses.

Replace the parameter names shown in the function's syntax with the actual parameters you want to use. You must use the same number of parameters given in the syntax and match the order shown for them. Separate multiple parameters with commas (or with another list separator specified in the Windows International Control Panel).

For example, you could enter the function

```
Left(text,number)
```

as

```
Left('California',2)
```

Abs (Absolute value)

Returns the absolute value of a *number*. The absolute value is the positive equivalent of the *number*.

Format Abs(*number*)

Examples

Abs(6.8) equals 6.8

Abs(0) equals 0

Abs(Total) equals 10, where the Total field contains -10

Acos (Arc cosine)

Returns the trigonometric arc cosine of a *number* between -1 and 1. The arc cosine is expressed in radians in the range 0 to pi.

Format Acos(*number*)

Example

Acos(0.75) equals 0.7227342478134

Asc (ASCII)

Returns the ASCII numeric value of a *character*. If a string is entered as a parameter, Asc returns a value only for the first character in the string.

Format Asc(*character*)

Examples

Asc('a') equals 97

Asc('Aqua') equals 65

Asin (Arc sine)

Returns the trigonometric arc sine of a *number* between -1 and 1. The arc sine is expressed in radians in the range $-\pi/2$ to $\pi/2$.

Format Asin(*number*)

Example

Asin(0.5) equals 0.5235987755983

Atan (Arc tangent)

Returns the arc tangent of a *number*. The arc tangent is expressed in radians in the range $-\pi/2$ to $\pi/2$.

Format Atan(*number*)

Example

Atan(-1.25) equals -0.8960553845713

Atan2 (Arc tangent 2)

Returns the arc tangent of *number1*/*number2*. The arc tangent is expressed in radians in the range $-\pi$ to π .

Format Atan2(*number1*,*number2*)

Example

Atan2(0.75,-1.25) equals 2.6011731533192

Avg (Average)

Calculates the average of values in a *number list* within a record. If any fields in the *number list* are blank, those fields are not included in the average.

The fields for Avg must all be in the same record. To average values over a range of records, use the SAverage (summary average) function.

Format Avg(*number list*)

Examples

Avg(2.8,-5.6,14,5.9) equals 4.275

Avg(Score1,Score2,Score3) equals 4, where the Score1 field contains 3, Score2 contains 8, and Score3 contains 1

Avg(Score1,Score2,Score3) equals 5.5, where the Score1 field contains 3, Score2 contains 8, and Score3 is blank

Blank

Returns a *value* if the *field* is blank; otherwise, returns the value in the *field*.

Format Blank(*field,value*)

Examples

Blank(Cost,2.75) equals 3.95, where the Cost field contains 3.95

Blank(Cost,Minimum) equals 2.5, where the Cost field is blank and Minimum contains 2.5

Chr (Character)

Returns the ASCII character for a *number*.

Format Chr(*number*)

Examples

Chr(97) equals a

Chr(65) equals A

Combine

Concatenates all text strings in a *list* to form one text string.

Format Combine(*list*)

Examples

Combine('Monthly ','Expenses') equals Monthly Expenses

Combine(FirstName,' ',LastName) equals Mary Jones, where the FirstName field contains Mary and LastName contains Jones (The second parameter is a space; you can enclose a space in single quotation marks, as you can any other text string.)

Combine(City,' ',State,' ',Zip) equals San Francisco, California 94504, where the City field contains San Francisco, State contains California, and Zip contains 94504

Combine(Company,Chr(10),Chr(13)) equals Blue Moon followed by a return and a new line, where the Company field contains Blue Moon

Cos (Cosine)

Returns the trigonometric cosine of an *angle*. The *angle* must be expressed in radians. The result is always between -1 and 1.

Format Cos(*angle*)

Example

Cos(1.243) equals 0.3219574751143

CurrTime (Current time)

Returns the current time on the system clock. This function does not use any parameters.

Format CurrTime()

Example

CurrTime() equals 1:15:00, when the system-clock time is 1:15:00

Date

Returns a date corresponding to numbers in the *month*, *day*, and *year* parameters.

Format Date(*month,day,year*)

Example

Date(10,31,1993) equals October 31, 1993

DateToText

Converts a *date* to a text string, for use with formulas involving text or text-oriented functions or for display or export.

The format of the string is determined by the *format* parameter.

Format DateToText(*date,format*)

Example

DateToText(Date,'MMM DD, YYYY') equals Jan 11, 1994, where the Date field contains the date 1/11/94

Day

Returns a number from 1 to 31 representing the day of the month for a *date*.

Format Day(*date*)

Examples

Day('10/31/93') equals 31

Day(Date) equals 25, where the Date field contains the date 3/25/94

DayName

Returns the name of the day corresponding to a *number* or a *date*. The *number* must be from 1 to 7, with 1 being Sunday.

Format DayName(*number*) or DayName(*date*)

Examples

DayName(5) equals Thursday

DayName('1/1/94') equals Saturday

DayName(Date) equals Sunday, where the Date field contains the date 1/2/94

DayOfWeek

Returns a number representing the day of the week in a *date*. The number is from 1 to 7, with 1 being Sunday.

Format DayOfWeek(*date*)

Examples

DayOfWeek('1/1/94') equals 7

DayOfWeek(Date) equals 7, where the Date field contains the date 1/1/94

DayOfYear

Returns a number representing the number of days since January 1 of the year in a *date*.

Format DayOfYear(*date*)

Example

DayOfYear('2/1/94') equals 32

Degree

Converts a number from *radians* to degrees. Radians are the result of all trigonometric functions.

The formula used is

$$\frac{\text{radians} * 180}{\text{pi}}$$

Format Degree(*radians*)

Example

Degree(2) equals 114.5915590261646

Exact

Performs a case-sensitive comparison of *text1* and *text2*. If the two strings match exactly, the function returns Yes; if they do not match, the function returns No.

Format Exact(*text1*,*text2*)

Examples

Exact('receipts','receipts') equals Yes

Exact ('ORDER','Order') equals No

**Exp
(Exponentiation)**

Calculates the constant e to the power of a *number*. The constant e is the base of the natural logarithm, equal to 2.718281828545904.

Format Exp(*number*)

Example

Exp(5) equals 148.413159102657660

Factorial

Returns the factorial of a *number*.

Format Factorial(*number*)

Example

Factorial(4) equals 4*3*2*1 equals 24

Fill

Returns a text result containing repeated instances of *text*. The *text* is repeated the number of times specified by a *number*.

Format Fill(*text*,*number*)

Example

Fill('Baden',2) equals BadenBaden

FV (Future value)

Calculates the future value of an investment given a *payment*, a periodic interest *rate*, and a number of *periods*.

The formula used is

$$\frac{(\textit{payment} * ((\textit{rate} + 1)^{\textit{periods}} - 1))}{i}$$

Format FV(*payment*,*rate*,*periods*)

Example

To calculate the value of an investment in which you pay \$50 per month for five years at 11% annual interest, the formula is as follows:

$FV(50,.11/12,5*12)$ equals 3975.90 (The second parameter specifies the rate as 11% over 12 months.)

Hour

Returns a number representing the hours in a *time*.

Format Hour(*time*)

Examples

Hour('10:12:19') equals 10

Hour(Time) equals 9, where the Time field contains the time 9:12:19

Hundredth

Returns a number representing the hundredths of a second in a *time*.

Format Hundredth(*time*)

Examples

Hundredth('12:15:23.34') equals 34

Hundredth(Time) equals 14, where the Time field contains the time 8:15:30.14

If

Evaluates a *condition* for true or false, and returns a *true value* or a *false value*.

You can nest another If function inside the main If function to evaluate a *true value* or *false value*.

Format If(*condition,true value,false value*)

Examples

If(State='CA','Yes','No') equals No, where the State field contains the text AZ

If(Total>=1000,50,0) equals 50, where the Total field contains a value greater than or equal to 1000

If(Amount<1000,0,If(Amount<2000,50,100))

equals 0, where the Amount field contains a value less than 1000

equals 50, where the Amount field contains a value greater than 1000 and less than 2000

equals 100, where the Amount field contains a value greater than 2000

If(Amount>1000 AND Type='B',200,100)

equals 200, where the Amount field contains a value greater than 1000 and the Type field contains B

equals 100, where the Amount field contains a value less than 1000 or the Type field does not contain B

IsBlank

Returns Yes if a *field* is blank; otherwise, returns No.

Format IsBlank(*field*)

Examples

IsBlank(Customer) equals No, where the Customer field contains a value

If(IsBlank(Quantity),0,100)

equals 0, where the Quantity field is blank

equals 100, where the Quantity field contains a value

IsLastRecord

Returns Yes if the current record is the last record in the sort order of the found set; otherwise, returns No.

Format IsLastRecord()

Left

Returns a text result containing the specified *number* of characters in *text*, counting from the left.

Format Left(*text,number*)

Examples

Left('Mississippi',2) equals Mi

Left(State,2) equals Ca, where the State field contains California

Combine(Alpha1,Left(Alpha2,3)) equals ABCDEF, where the Alpha1 field contains ABC and the Alpha2 field contains DEFG

Length

Returns the number of characters in a *text* string, including all spaces, numbers, and special characters.

Format Length(*text*)

Examples

Length('Customer No.') equals 12

Length(SalesRep) equals 5, where the SalesRep field contains Jerry

Length(Combine(Item1,Item2)) equals 11, where the Item1 field contains Orange and the Item2 field contains Lemon

Like

Performs a case-insensitive comparison of *text1* and *text2*. If the two strings match (without considering case), the function returns Yes; if they do not match, the function returns No.

You can use a wildcard in *text2*. An asterisk (*) represents any number of characters including zero or no characters, and a question mark (?) represents one character.

Format Like(*text1*,*text2*)

Examples

Like('Cola','cola') equals Yes

Like ('their', 'th*r') equals Yes

Like('their', 'th?r') equals No

Like(Color1,Color2) equals Yes, where the Color1 field contains red and Color2 contains R?D

Like(SalesRep,Combine('*','Contact','*'))

equals Yes, where the SalesRep field contains Jerry and Contact contains er (evaluated as *er*)

equals No, where the SalesRep field contains Jerry and Contact contains H (evaluated as *H*)

If(Like(SalesRep,Contact),'Match','No Match')

equals Match, where the SalesRep field contains Sue and Contact contains Sue

equals No Match, where the SalesRep field contains Sue and Contact contains Marcus

**Ln (Natural
logarithm)**

Returns the natural logarithm of a positive *number*. This is the logarithm to the base e.

Format Ln(*number*)

Example

Ln(10) equals 2.302851

Log (Logarithm)

Calculates the logarithm of a *number* to the base 10 (decimal logarithm). The value calculated is the power to which 10 is raised to produce the *number*.

Format Log(*number*)

Example

Log(1000) equals 3

**Lower
(Lowercase)**

Converts all letters in *text* to lowercase.

Format Lower(*text*)

Examples

Lower('Gourmet Emporium') equals gourmet emporium

Lower(Country) equals usa, where the Country field contains USA

Middle

Extracts characters from *text*, beginning at the *start* position and containing the number of characters specified by *size*.

Format Middle(*text,start,size*)

Examples

Middle('Germany',4,3) equals man

Middle(Product,2,4) equals ppro, where the Product field contains Approach

Minute

Returns a number representing the minutes in a *time*.

Format Minute(*time*)

Examples

Minute('12:10:05') equals 10

Minute(Time) equals 11, where the Time field contains the time 12:11:05

Mod

Divides *number1* by *number2* and returns the remainder. The result is the modulus.

Format Mod(*number1*,*number2*)

Examples

Mod(12,5) equals 2

Mod(Order,3) equals 1, where the Order field contains 16

Mod(Order,Stock) equals 3, where the Order field contains 8 and Stock contains 5

If(Mod(Total,2)=0,'Even','Odd')

 equals Even, where the Total field contains 8

 equals Odd, where the Total field contains 3

Month

Returns a number representing the month in a *date*.

Format Month(*date*)

Examples

Month('10/20/93') equals 10

Month(Date) equals 12, where the Date field contains the date 12/05/94

MonthName

Returns the name of the month corresponding to a *number* or a *date*. The *number* must be from 1 to 12, with 1 being January.

Format MonthName(*number*) or MonthName(*date*)

Examples

MonthName(9) equals September

MonthName('10/20/93') equals October

MonthName(Date) equals March, where the Date field contains the date 3/29/94

Combine('Sales for ',MonthName(Date),' ',Year(Date)) equals Sales for July 1994, where the Date field contains the date 7/6/94

NPeriods
(Number of periods)

Calculates the number of periods necessary to pay off a *principal* with a periodic *payment* at a given periodic interest *rate*.

The formula used is

$$\frac{\log (\text{payment} / \text{payment} - (\text{principal} * \text{rate}))}{\log (1 + \text{rate})}$$

Format NPeriods(*rate,principal,payment*)

Example

To calculate the number of \$100 monthly payments required to pay off a \$1000 loan with a monthly interest rate of 1 percent, the formula is as follows:

NPeriods(.01,1000,100) equals 11

NumToText
(Number to text)

Converts a *number* to a text string, for use with formulas involving text or text-oriented functions or for display or export.

The format of the string is determined by the *format* parameter. A zero (0) in the parameter specifies a required digit, and a number sign (#) specifies a non-required digit. For more information about the syntax of a number format, see “Setting a numeric format” on page 6-19.

Format NumToText(*number,format*)

Examples

NumToText(200, '##0.00') equals the text string 200.00

NumToText(5694.08, '\$##,##0.00') equals the text string \$5,694.08

Pi

Returns the constant 3.14159. This function does not use any parameters.

Format Pi()

Example

Pi() * 15 equals 47.124

PMT (Payment)

Calculates the payment required to pay off a loan given a *principal*, a periodic interest *rate*, and a number of *periods*.

The formula used is

$$\frac{\text{principal} * \text{rate} * (1 + \text{rate})^{\text{periods}}}{(1 + \text{rate})^{\text{periods}} - 1}$$

Format PMT(*principal,rate,periods*)

Example

To finance \$92,000 toward the purchase of office equipment at an annual interest rate of 6.9% over 48 monthly payments, the formula is as follows:

PMT(92000,.069/12,48) equals \$2198.79 (The second parameter specifies the rate as 6.9% over 12 months.)

Position

Beginning at the *start* position, scans *text* for the first occurrence of a *search string* and returns a number indicating where the string was found in *text*. If *text* does not contain the *search string*, the result is zero.

Format Position(*text,search string,start*)

Examples

Position('Mississippi','iss',3) equals 5

Position(City,' ',1) equals 7, where the City field contains Mexico City (The space is the *search string*.)

Left(Region,Position(Region,' ',1)-1) equals West, where the Region field contains West Central

Pow (Power)

Returns the value of *number1* raised to the power of *number2*.

Format Pow(*number1,number2*)

Examples

Pow(2,3) equals 8

Pow(30,8) equals 656,100,000,000

Prefix

Returns Yes if all the characters in *text1* match the same number of characters at the start of *text2*; otherwise, returns No.

Format Prefix(*text1*,*text2*)

Example

Prefix('quo','quantity') equals No

Prefix(Item1,Item2) equals Yes, where the Item1 field contains Aqua and the Item2 field contains Aqua Spring Water

Proper

Converts the first letter of each word in *text* to uppercase and all other letters to lowercase.

Format Proper(*text*)

Examples

Proper('SOS') equals Sos

Proper('europe') equals Europe

Proper(Region) equals Asia, where the Region field contains asia

PV (Present value)

Calculates the present value of an ordinary annuity given a *payment*, a periodic interest *rate*, and a number of *periods*. An ordinary annuity is a series of payments to be made at equally spaced intervals. The present value is the value in today's dollars of the payments to be made or received later.

The formula used is

$$\frac{\textit{payment} * ((1 + \textit{rate})^{\textit{periods}} - 1)}{\textit{rate} * (1 + \textit{rate})^{\textit{periods}}}$$

Format PV(*payment*,*rate*,*periods*)

Example

If an annuity returns \$250.50 per year for 5 years and the discount rate is 12%, the formula is as follows:

PV(250.5,0.12,5) equals 902.996438

This means that the present value of the annuity is \$903.

Radian

Converts a number from *degrees* to radians.

Format Radian(*degrees*)

Examples

Radian(90) equals 1.5708

Radian(30) equals 0.5236

Random

Returns a random number between 0 and 1. This function does not use any parameters.

Format Random()

Examples

Random() equals a random number between 0 and 1

Trunc(Random()*10)+1 equals a random number between 1 and 10

Replace

Beginning at the *start* position, substitutes the series of characters in *original text* with others in *replacement text*. The *size* parameter specifies the number of characters to replace in the *original text*. The *replacement text* can be longer or shorter than the number specified in *size*, resulting in a new character string of a different length.

Format Replace(*original text,start,size,replacement text*)

Example

Replace('Alan',3,1,'le') equals Allen

Right

Returns a text result containing the specified *number* of characters in *text*, counting from the right.

Format Right(*text,number*)

Examples

Right('sideview',4) equals view

Right(Region,4) equals Asia, where the Region field contains Southeast Asia

Right(Item,Length(Item)-Position(Item,' ',1)) equals Cola, where the Item field contains Diet Cola (This returns the text to the right of the space in Item, as specified by the Position function.)

Combine(Alpha1,Right(Alpha2,3)) equals ABCGHI, where the Alpha1 field contains ABC and the Alpha2 field contains DEFGHI

Round

Rounds a *number* to the number of decimal places specified by *precision*. If the *precision* is zero or not specified, Approach rounds the *number* to the nearest integer.

Format Round(*number,precision*)

Examples

Round(23.789) equals 24

Round(Amount,1) equals 23.8, where the Amount field contains 23.789

SAverage (Summary average)

Returns the average of the values in a *number field* for a summary range of records. If the field is blank in any of the records, those records are not included in the average.

Format SAverage(*number field*)

Example

SAverage(Amount) equals 3, where the Amount field contains 2, 3, 1, and 6 in a summary range of records

SAverage(Amount) equals 2, where the Amount field contains 2, 3, and 1 in three records and is blank in the fourth record in a summary range of records

SCount (Summary count)

Returns the number of nonblank occurrences in a *field* for a summary range of records. Fields with blank values are not counted.

Format SCount(*field*)

Example

SCount(Paid) equals 2, where the Paid field contains a value in two records in a summary range of records

Second

Returns a number representing the number of seconds in a *time*.

Format Second(*time*)

Examples

Second('10:35:18') equals 18

Second(Time) equals 20, where the Time field contains the time 8:45:20

Sign

Returns -1, 0, or 1, representing whether a *number* is negative, zero, or positive.

Format Sign(*number*)

Examples

Sign(21) equals 1

Sign(-21) equals -1

Sin (Sine)

Returns the trigonometric sine of an *angle*. The *angle* must be expressed in radians.

Format Sin(*angle*)

Example

Sin(1.243) equals 0.946754131

SLN (Straight-line depreciation)

Calculates the straight-line depreciation of an asset for a single period, given a *cost*, *salvage*, and *life*.

The formula used is

$$\frac{\text{cost} - \text{salvage}}{\text{life}}$$

Format SLN(*cost*,*salvage*,*life*)

Example

SLN(7500,3000,10) equals 450

SMax (Summary maximum)

Returns the largest number or latest date or time in a *field* for a summary range of records. The *field* can be a number, date, or time field.

Format SMax(*field*)

Example

SMax(Amount) equals 200, where the Amount field contains 25, 40, 200, and 75 in a summary range of records

SMin (Summary minimum)

Returns the smallest number or earliest date or time in a *field* for a summary range of records. The *field* can be a number, date, or time field.

Format SMin(*field*)

Example

SMin(Amount) equals 25, where the Amount field contains 25, 40, 200, and 75 in a summary range of records

SNPV (Summary net present value)

Calculates the net present value of an investment based on a series of periodic cash flows (*value*) and a *discount rate*. The net present value of an investment is today's value of a series of future payments (negative values) and income (positive values).

Format SNPV(*value,discount rate*)

Example

Suppose that if you invested \$12,000 one year from today, the investment would generate an annual income of \$1500, \$4000, \$3500, and \$4100 in the four following years. Assuming an annual discount rate of 8 percent, the formula is as follows:

SNPV(Payment,.08) equals -1286.78

where the Payment field contains the values -12000, 1500, 4000, 3500, and 4100.

Soundslike

Returns Yes if *text1* sounds phonetically like *text2*.

Format Soundslike(*text1,text2*)

Example

Soundslike('fill','Phil') equals Yes

Span

Returns the number of characters in *text1* that also exist in *text2* until a character is found that is not in *text2*.

Format Span(*text1,text2*)

Examples

Span('automobile','muato') equals 6

Span(OrderNo,PartNo) equals 0, where the OrderNo field contains 23241 and the PartNo field contains 413

SpanUntil

Returns the number of characters in *text1* that are not in *text2* until a character is found that is also in *text2*.

Format SpanUntil(*text1*,*text2*)

Example

SpanUntil('radio','eiu') equals 3

Sqrt (Square root)

Returns the square root of a *number*.

Format Sqrt(*number*)

Examples

Sqrt(13.69) equals 3.7

Sqrt(100) equals 10

SSTD (Summary standard deviation)

Calculates the standard deviation of a population given the entire population as a field within a summary range of records. The standard deviation is a measure of how widely values are dispersed from the average value (the mean).

The formula used is

$$\sqrt{\frac{(n\sum x^2 - (\sum x)^2)}{n^2}}$$

where *x* is the values in a *number field* in a summary range of records and *n* is the number of these values.

Format SSTD(*number field*)

Examples

SSTD(Score) equals 1.87, where the Score field contains 2, 3, 1, and 6 in a summary range of records

SSum (Summary sum)

Returns the sum of all the values in a *number field* for a summary range of records.

Format SSum(*number field*)

Examples

SSum(Amount) equals 375, where the Amount field contains 100, 25, 50, and 200 in a summary range of records

STD (Standard deviation)

Calculates the standard deviation of a population given the entire population as parameters. The standard deviation is a measure of how widely values are dispersed from the average value (the mean).

The formula used is

$$\sqrt{\frac{(n\sum x^2 - (\sum x)^2)}{n^2}}$$

where x is the values in a *number list* within a record and n is the number of these values.

To calculate for a field over a range of records, use the SSTD function instead.

Format STD(*number list*)

Example

STD(4,5,9,2) equals 2.549510

SVAR (Summary variance)

Calculates the variance of a population given the entire population as a summary range of records.

The formula used is

$$\frac{(n\sum x^2 - (\sum x)^2)}{n^2}$$

where x is the values in a *number field* in a summary range of records and n is the number of these values.

Format SVAR(*number field*)

Example

SVar(Score) equals 3.5, where the Score field contains 2, 3, 1, and 6 in a summary range of records

Tan (Tangent)

Returns the trigonometric tangent of an *angle*. The *angle* must be expressed in radians.

Format Tan(*angle*)

Example

Tan(1) equals 1.557407725

TextToBool (Text to Boolean)

Returns No if the first character in *text* is F, f, N, n, or zero; otherwise, returns Yes.

Format TextToBool(*text*)

Example

TextToBool(False) equals No

TextToDate

Converts *text* to a date value, for use with formulas involving dates or date-oriented functions.

The date string must be in the format MM/DD/YY (or whatever date format is specified in the Windows International Control Panel).

Format TextToDate(*text*)

Example

TextToDate('1/11/94') + 30 equals 2/10/94

TextToTime

Converts *text* to a time value, for use with formulas involving times or time-oriented functions.

The time string must be in the format HH:MM:SS.00 (the seconds are optional). You can also use AM or PM at the end of the time. (Some countries use a different separator than the colon. Use whatever time separator is specified in the Windows International Control Panel.)

Format TextToTime(*text*)

Example

TextToTime('11:30PM') equals 23:30:0.0

Time

Returns a time corresponding to numbers in the *hours*, *minutes*, *seconds*, and *hundredths* parameters.

Format Time(*hours,minutes,seconds,hundredths*)

Example

Time(2,15,30,0) equals 2:15:30

Today

Returns the current system date. This function does not use any parameters.

Format Today()

Example

Today() equals 2/14/94, when the system date is February 14, 1994

Translate

Replaces all occurrences of *character1* with *character2* in *text*.

Format Translate(*text,character1,character2*)

Example

Translate('grey','e','a') equals gray

Trim

Returns a *text* string without its leading and trailing spaces.

Format Trim(*text*)

Examples

Trim('New York ') equals New York

Trim(City) equals Paris, where the City field contains ' Paris '

Trunc (Truncate)

Truncates a *number* to the number of decimal places specified by *precision*. If the *precision* is zero or not specified, Approach truncates the *number* to an integer.

Format Trunc(*number,precision*)

Examples

Trunc(13.1374,2) equals 13.13

Trunc(13.1374) equals 13

**Upper
(Uppercase)**

Converts all letters in *text* to uppercase.

Format Upper(*text*)

Examples

Upper('Ca') equals CA

Upper(Country) equals KENYA, where the Country field contains Kenya

Var (Variance)

Returns the variance of a population given the entire population as parameters.

The formula used is

$$\frac{(n\sum x^2 - (\sum x)^2)}{n^2}$$

where x is the values in a *number list* within a record and n is the number of these values.

To calculate for a field over a range of records, use the *SVar* function instead.

Format *Var(number list)*

Example

Var(1,4,7) equals 6

WeekOfYear

Returns a number representing the number of weeks since January 1 of the year in a *date*.

Format *WeekOfYear(date)*

Example

WeekOfYear('11/15/1993') equals 47

Year

Returns a number representing the year within which a *date* occurs.

Format *Year(date)*

Examples

Year('10/21/93') equals 1993

Year(Date) equals 1994, where the Date field contains the date 1/1/94

B

Supported File Types

A database in Approach can be a dBASE, Paradox, or FoxPro file, a Microsoft Access table, a SQL table, or an ODBC data source. This allows you to share data with people who use other applications. With any type of database, you work with the data through an Approach file, which is always in the same Approach file type.

Approach also supports several graphic file types for importing graphics and several text and spreadsheet file types for importing and exporting data.

This appendix describes the dBASE, Paradox, FoxPro, and Access file types. It also lists the filename extensions you're likely to see when working in Approach. See Appendix C for information about SQL tables and Appendix D for information about ODBC data sources.

dBASE III+ and dBASE IV

Approach lets you create and use dBASE III+ and dBASE IV files. When you create a new database in Approach, the default file type for it is dBASE IV. The filename extension for dBASE database files is .DBF.

These are the main differences between viewing dBASE files in Approach and in other dBASE applications:

- In a dBASE file created in Approach, you can use field names with any characters, up to 32 characters long. If you view the file in other dBASE applications, you may see a modified version of your field names.
- Memo fields greater than 5000 characters cannot be viewed in the internal memo editor for dBASE III+.
- Memo fields greater than 64,000 characters cannot be viewed in the internal memo editor for dBASE IV.
- Approach PicturePlus fields cannot be viewed in other dBASE applications.

You can share Approach dBASE files on a network. For information about network options, see "Setting file-sharing options for dBASE files" on page 18-2.

Restrictions on field definitions

dBASE files in Approach have the following restrictions on field names and field lengths.

Field names

The names of fields can be up to 32 characters long. You can use any characters in a field name, including letters, whole numbers, spaces, commas, periods, and arithmetic signs.

Other dBASE applications have more restrictions on the length of field names and on the characters you can use. For field names that do not satisfy other applications, Approach saves both the name you give the field and a modified name that other applications can read. If you open the database in another dBASE application, you'll see the modified field names.

Field lengths

You must specify a field length for text and numeric fields. The length for a text field can be from 1 to 254. The length for a numeric field can be from 1 to 19. If you want to display numbers with high precision, you can also specify up to 15 decimal places for a numeric field.

The other fields are fixed in length or do not require a specified length.

Index files

Approach uses its own indexes for keeping track of records in a dBASE file.

If you have any other dBASE-type index files you want Approach to maintain, you can associate those indexes with a dBASE file in Approach. Approach does not use the external indexes but maintains them for other dBASE applications. For more information, see "Maintaining external indexes for a dBASE or FoxPro database" on page 19-12.

**Limits on files,
records, and fields**

These are the limits on files, records, and fields for the dBASE file types.

<i>Item</i>	<i>Limit</i>
File size	2GB
Database files open at a time	Up to 255 (depending on available memory)
Records per database	1,000,000,000
Record size	4KB
Fields per record	128 (dBASE III+) or 255 (dBASE IV)
Fields used in a sort	255
Size of a memo field	5KB (dBASE III+) or 64KB (dBASE IV)
Indexes per database	255

**Paradox 3.5 and
Paradox 4.0**

You can create and use Paradox 3.5 and Paradox 4.0 database files in Approach. The filename extension for Paradox database files is .DB.

All of the characteristics of Paradox 4.0 described in this section also apply to Paradox for Windows.

This is the main difference between viewing Paradox files in Approach and in other Paradox applications:

- Memo and PicturePlus fields cannot be viewed in Paradox 3.5. You can view PicturePlus fields and view and edit memo fields in Paradox 4.0, unless the database was created in the Paradox 3.5 file type.

The Paradox file types require a *key field*—a field or group of fields that uniquely identifies each record in the database. When you create a Paradox database in Approach or try to use one that does not have a key field, a dialog box appears so that you can assign one. For more information, see “Specifying a key field for a Paradox database” on page 3-19.

You can share Approach Paradox files on a network. For information about network options, see “Setting file-sharing options for Paradox files” on page 18-4.

Restrictions on field definitions

Paradox files in Approach have the following restrictions on field names and field lengths.

Field names

The names of text, numeric, and date fields can be up to 25 characters long. The names of time, memo, Boolean, and PicturePlus fields can be up to 18 characters long in Paradox. These characters can include letters, whole numbers, spaces, commas, periods, and arithmetic signs.

A field name in Paradox cannot begin with a space and cannot contain these characters anywhere in the name:

[,], { }, (), ", ->

You cannot use a number sign (#) by itself in a field name, but you can combine it with other characters, such as Invoice #.

When using a Paradox field name in a formula, you must enclose it in double quotation marks if it contains a space, a period, a comma, or any of the following characters:

/, *, +, -, <, >

Field lengths

You must specify a field length for text fields. The length for a text field can be from 1 to 255.

The other fields are fixed in length or do not require a specified length.

Index files

In a Paradox database file, a primary index is built on the key field specified when the file is created. You can create additional, secondary indexes for the file in Approach. For more information, see "Creating secondary indexes for a Paradox database" on page 19-13.

Approach automatically uses and maintains all indexes for Paradox database files.

Indexes, searches, and sorts in Paradox 3.5 are case-sensitive and in Paradox 4.0 are case-insensitive. If you want to change a Paradox 4.0 search to case-sensitive, see "Setting database options for a Paradox file" on page 19-10.

**Limits on files,
records, and fields**

These are the limits on files, records, and fields for the Paradox file types.

<i>Item</i>	<i>Limit</i>
File size	4GB
Database files open at a time	2 to 10 (depending on the number of secondary index files open)
Records per database	2,000,000,000
Record size	1350 bytes
Fields per record	255
Fields used in a sort	255
Indexes per database	255

FoxPro 2.1

You can create and use FoxPro 2.1 database files in Approach. The filename extension for all FoxPro files is .DBF. The FoxPro file type is similar to dBASE IV but uses a different format for memo files.

These are the main differences between viewing FoxPro files in Approach and in other FoxPro applications:

- In a FoxPro file created in Approach, you can use field names with any characters, up to 32 characters long. If you view the file in other FoxPro applications, you may see a modified version of your field names.
- Approach PicturePlus fields cannot be viewed in other FoxPro applications.

Unlike dBASE and Paradox database files, FoxPro files cannot be shared on a network in Approach. (You can open a FoxPro file on a network, but other users will not be able to open it at the same time.)

**Restrictions on
field definitions**

FoxPro files in Approach have the following restrictions on field names and field lengths.

Field names

The names of fields can be up to 32 characters long. You can use any characters in a field name, including letters, whole numbers, spaces, commas, periods, and arithmetic signs.

Other FoxPro applications have more restrictions on the length of field names and on the characters you can use. For field names that do not satisfy other applications, Approach saves both the name you give the field and a modified name that other applications can read. If you open the database in another FoxPro application, you'll see the modified field names.

Field lengths

You must specify a field length for text and numeric fields. The length for a text field can be from 1 to 254. The length for a numeric field can be from 1 to 19. If you want to display numbers with high precision, you can also specify up to 15 decimal places.

The other fields are fixed in length or do not require a specified length.

Index files

Approach uses its own indexes for keeping track of records in a FoxPro file.

If you have any other FoxPro-type index files you want Approach to maintain, you can associate those indexes with a FoxPro file in Approach. Approach does not use the external indexes but maintains them for other FoxPro applications. For more information, see "Maintaining external indexes for a dBASE or FoxPro database" on page 19-12.

Limits on files, records, and fields

These are the limits on files, records, and fields for the FoxPro file type.

<i>Item</i>	<i>Limit</i>
File size	2GB
Database files open at a time	Up to 255 (depending on available memory)
Records per database	1,000,000,000
Record size	4KB
Fields per record	255
Fields used in a sort	255
Size of a memo field	64K
Indexes per database	255

Microsoft Access 1.0, 1.1, and 2.0

To see the Access file type in the New dialog box, set the ReadOnly line to 0 in your APPROACH.INI file.

You can create and use Microsoft Access database tables in Approach. The filename extension for Access databases is .MDB.

To be able to create an Access table in Approach, you need to have an Access database already set up. You add the table to your database using the Approach New dialog box. The table is in the Access file type version 1.0, 1.1, or 2.0, depending on the version of the database.

These are the main differences between viewing Access tables in Approach and in the Microsoft Access application:

- Approach PicturePlus fields cannot be viewed in Access.
- In Approach, fields in the Access currency field type are converted to numeric fields.
- Timestamp fields in Access include both a date and a time. In Approach, these fields appear as two fields: a date field and a time field. The extension “_Time” is added to the time field.

For example, suppose an Access timestamp field Shipped has the value “5/10/94 10:35PM”. Approach displays a date field Shipped with the value “5/10/94” and a time field Shipped_Time with the value “10:35PM”.

If you read an Access table without a unique index, Approach opens a read-only copy of the file.

You can share Access tables on a network in Approach. To set up an Access database for multiple users, see the Access documentation.

Restrictions on field definitions

Access files in Approach have the following restrictions on field names and field lengths.

Field names

The first character in a field name must be a letter. After that, the name can have letters and whole numbers. Spaces and ODBC keywords are not allowed.

The names of text, numeric (numeric/currency), memo, and Boolean (bit) fields can be up to 32 characters long. The names of date, time, and PicturePlus (OLE object) fields can be up to 26 characters long.

Field lengths

You must specify a field length for text fields, from 1 to 255.

The other fields are fixed in length or do not require a specified length.

**Limits on files,
records, and fields**

These are the limits on files, records, and fields for the Access file type.

<i>Item</i>	<i>Limit</i>
File size	1GB (1.1/2.0), 128MB (1.0)
Database files open at a time	Up to 255 (depending on available memory)
Records per database	Limited by the size of the database
Record size	Limited by the number of fields
Fields per record	255
Fields used in a sort	10
Size of a memo field	32KB
Size of a PicturePlus field	1GB (1.1/2.0), 128MB (1.0)
Indexes per database	32

**Filename
extensions**

The filename extensions you'll probably see most often in Approach are .DBF for dBASE and FoxPro database files, .DB for Paradox database files, .APR for Approach files, and .MDB for Access files. You may see additional extensions in the file dialog boxes if you select a different file type or All Files in the List Files of Type drop-down list.

**Files created or
used by Approach**

These are the extensions for Approach files and data-related files that Approach creates or uses. The *n*'s in some of the extensions are wildcards for individual numbers; for example, the extension .Xnn might appear in a filename as .X24.

You may see other extensions for files that a dBASE, Paradox, or FoxPro application has created for its own purposes. For information about those extensions, see the documentation that came with the application.

<i>Extension</i>	<i>Approach file type</i>
.ADX	Approach dBASE index
.APR	Approach file (for storing views)

Continued

<i>Extension</i>	<i>Approach file type</i>
.APT	Approach data and views (created when you attach an .APR file to Notes)
.APX	Approach-specific Paradox information file
.CDX	FoxPro compound index
.DB	Paradox database file
.DBF	dBASE or FoxPro database file
.DBQ	Paradox 3.5 memo file (Approach only)
.DBT	dBASE memo file
.FPT	FoxPro memo file
.IDX	FoxPro 2.0 index
.LCK	Paradox lock file
.MB	Paradox 4.0/Windows memo file
.MDB	Microsoft Access database file
.MDX	Maintained dBASE index
.NDX	Non-maintained dBASE index
.NSF	Notes database file
.OYZ	Approach alternate dBASE index
.PX	Paradox primary index
.QRY	Approach query file
.SMI	Lotus SmartIcon file
.VEW	Approach file (for storing views; versions earlier than 3.0)
.Xnn	Paradox single secondary index
.Ynn	Paradox single secondary index
.XGn	Paradox composite secondary index
.YGn	Paradox composite secondary index

Approach creates an .OYZ file only if it needs to create an index and an .ADX file already exists for another application.

Text and spreadsheet files

You can use text and spreadsheet files for creating database files and for importing and exporting data. These are the filename extensions for supported file types.

<i>Extension</i>	<i>Text or spreadsheet file type</i>
.TXT	Delimited or fixed-length ASCII text
.WKS	Lotus 1-2-3 release 1A
.WK1	Lotus 1-2-3 release 2
.WK3	Lotus 1-2-3 release 3
.WK4	Lotus 1-2-3 release 4
.WRK	Symphony [®] release 1 or 1.01
.WR1	Symphony release 1.1, 1.2, or 2
.XLS	Microsoft Excel release 3.0, 4.0, or 5.0

Graphic files

You can use graphic files for importing images into a PicturePlus field and for putting an object on a view as a design element. These are the filename extensions for supported file types.

<i>Extension</i>	<i>Graphic file type</i>
.BMP	Windows bitmap
.EPS	Encapsulated Postscript
.GIF	Graphics interchange
.PCX	Windows Paintbrush
.TGA	Targa
.TIF	TIFF (Tagged Image File Format)
.WMF	Windows metafile

C

SQL Tables

You can use Approach to view and work with SQL data right at your desktop. The data can be stored in Oracle SQL, Microsoft/Sybase SQL Server, or IBM DB2 tables. If you have other SQL tables that can be opened through an ODBC driver, you also have access to those tables in Approach.

When you use Approach with SQL tables, you work in the same intuitive Approach interface you use with any other type of database. Rather than having to build report and query definitions in SQL, you can use Approach as a quick tool for all your reporting and querying.

The online Help has troubleshooting tips and other technical information about SQL tables.

This appendix describes how to set Approach options for working with SQL tables; how to connect to Oracle, SQL Server, and DB2; and how to use Select statements. For information about the file types for applications you use through ODBC, see the documentation that came with the applications.

Oracle SQL

You can use Approach to work with tables in Oracle SQL, versions 6 and 7. These are the main differences between viewing tables in Approach and in other Oracle SQL applications:

- Approach PicturePlus fields cannot be viewed in other Oracle SQL applications.
- In Oracle SQL, null and blank field values sort greater than nonblank field values.
- Date fields in Oracle SQL include both a date and a time. In Approach, these fields appear as two fields: a date field and a time field. The extension “_Time” is added to the time field.

For example, suppose an Oracle SQL date field Shipped has the value “5/10/94 10:35PM”. Approach displays a date field Shipped with the value “5/10/94” and a time field Shipped_Time with the value “10:35PM”.

- When reading Oracle SQL 7 tables, Approach treats varchar2 fields with more than 255 characters as memo fields.

If you read an Oracle view file based on more than one Oracle table, Approach opens a read-only copy of the view file.

In Oracle, each table is assigned a user as its owner. When Oracle tables are showing in file dialog boxes, the names of tables appear in the File Name list, the names of table owners appear in the Directories list, and the names of servers you're connected to appear in the Drives drop-down list.

You can work with an Oracle table on a server or on your local drive.

Connecting to an Oracle server

You can connect to an Oracle server from within Approach. If you're not already connected to one when you select Oracle in a List Files of Type drop-down list, Approach opens a dialog box to let you connect. You can be connected to more than one server at a time.

You can disconnect from an Oracle server in the Approach Open dialog box. When you quit Approach, you are disconnected from all the servers at once.

Before connecting to an Oracle server, you must have SQL*Net drivers installed for the type of server and client you're using. For more information, see the Oracle SQL section under *File Types* in the online Help.

To connect to an Oracle server:

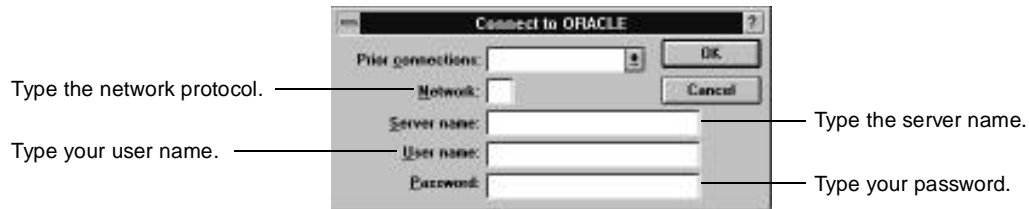
1. Open the New, Open, Save Database As, Import Data, or Export Data dialog box.

You can connect to a server at the same time you create, open, or save a table or import or export data. Or you can open one of these dialog boxes just to establish the connection.

2. Select Oracle in the List Files of Type drop-down list.

To see the SQL file types in the New dialog box, set the ReadOnly line to 0 in your APPROACH.INI file.

If you are not connected to an Oracle server, the Connect to Oracle dialog box appears. If you are already connected to a server but want to connect to an additional one, click Connect after selecting Oracle to see the dialog box.



The Prior Connection drop-down list shows the last eight SQL servers you connected to. If you're connecting to one of these servers again, you can select the connection from the list rather than typing the protocol, server name, and user name.

3. Type a letter identifying the protocol you want in the Network text box.

Check with your system administrator to find out which protocol you should use. These are some of the most common ones:

<i>For this protocol</i>	<i>Type</i>
Named Pipes	P
SPX	X
NetBIOS	B
TCP/IP	T
DECnet™	D
ORACLE Async	A

If you leave this text box blank, Approach defaults to the Local protocol setting in your CONFIG.ORA or ORACLE.INI file. For example, Local=X:ORASRV automatically sets the protocol to X.

4. Type the name of the server in the Server Name text box.

If you leave this text box blank, Approach defaults to the Local server setting in your CONFIG.ORA or ORACLE.INI file. For example, Local=X:ORASRV automatically sets the server to ORASRV.

5. Type your user name in the User Name text box.
6. Type your password in the Password text box.
Asterisks appear in the text box as you type the password.
7. Click OK.
You return to the New, Open, Save Database As, Import Data, or Export Data dialog box.

Connecting to Oracle on your local drive

You can also connect to an Oracle table on your local drive. To do this, you must be running Windows 3.0a or later in Standard mode.

Before you connect to a local Oracle table, type the following commands in DOS to start Oracle and Windows. Replace c with the letter of your drive that contains the Oracle table.

```
c:\>sqlpme (loads the Oracle memory manager)
c:\>oracle6 or c:\>oracle7 (starts the Oracle application)
c:\>sqldba (starts SQL for Oracle)
c:\>startup (starts the Oracle database)
c:\>exit (exits the SQL command mode)
c:\>win/s (starts Windows in Standard mode)
```

Once you have Oracle, Windows, and Approach running, you're ready to connect to the table.

To connect to Oracle on your local drive:

1. Open the New, Open, Save Database As, Import Data, or Export Data dialog box.
2. Select Oracle in the List Files of Type drop-down list.

If you are not connected to an Oracle server, the Connect to Oracle dialog box appears. If you are already connected to a server but want to connect to an additional one, click Connect after selecting Oracle to see the dialog box.

Leave the Network and Server Name text boxes blank.

3. Type your user name in the User Name text box.
4. Type your password in the Password text box.
5. Click OK.

Restrictions on field definitions

Oracle SQL tables have the following restrictions on field names and field lengths.

Field names

The names of text, numeric, and memo fields can be up to 30 characters long. The names of date, time, Boolean, and PicturePlus fields can be up to 23 characters long. An Oracle field name can include any character except for the double quotation mark (").

When using an Oracle field name in a formula, you must enclose it in double quotation marks if it contains a space, a period, a comma, or any of the following characters:

/, *, +, -, <, >, (,)

Field names in Oracle are not case-sensitive.

Field lengths

You must specify a field length for text fields. The length for a text field can be from 1 to 255. (In Oracle SQL 7, a text field can be up to 2000 characters. If you create a text field that is longer than 255 characters, Approach treats it as a memo field.)

The other fields are fixed in length or do not require a specified length.

Limits on tables, records, and fields

These are the limits on tables, records, and fields for Oracle SQL in Approach.

<i>Item</i>	<i>Limit</i>
Table size	Limited only by disk space
Tables open at a time	255
Records per table	Limited only by disk space
Record size	Limited by the number of fields and the size of the field type
Fields per record	254
Fields used in a sort	As many fields as are in the table
Size of a memo or picture field	64KB (Oracle 6) or 2GB (Oracle 7)

Continued

<i>Item</i>	<i>Limit</i>
Memo and picture fields per table	1 memo field or 1 picture field (but varchar2 fields already in an Oracle 7 table are treated as memo fields)

SQL Server

You can use Approach to work with tables in Microsoft/Sybase SQL Server. These are the main differences between viewing tables in Approach and in other SQL Server applications:

- Approach PicturePlus fields cannot be viewed in other SQL Server applications.
- SQL Server has a field type for money. In Approach, this is converted to a numeric field.
- Date fields in SQL Server include both a date and a time. In Approach, these fields appear as two fields: a date field and a time field. The extension “_Time” is added to the time field.

For example, suppose an SQL Server date field Shipped has the value “5/10/94 10:35PM”. Approach displays a date field Shipped with the value “5/10/94” and a time field Shipped_Time with the value “10:35PM”.

If you read a SQL Server view file or a SQL Server table without a unique index or timestamp, Approach opens a read-only copy of the view file or table.

When SQL Server tables are showing in file dialog boxes, the names of tables appear in the File Name list, the names of databases (groups of tables) appear in the Directories list, and the names of servers you're connected to appear in the Drives drop-down list.

Connecting to a server in SQL Server

You can connect to a server in SQL Server from within Approach. If you're not already connected to one when you select SQL Server in a List Files of Type drop-down list, Approach opens a dialog box to let you connect. You can be connected to more than one server at a time.

You can disconnect from a server in SQL Server in the Approach Open dialog box. When you quit Approach, you are disconnected from all the servers at once.

To see the SQL file types in the New dialog box, set the ReadOnly line to 0 in your APPROACH.INI file.

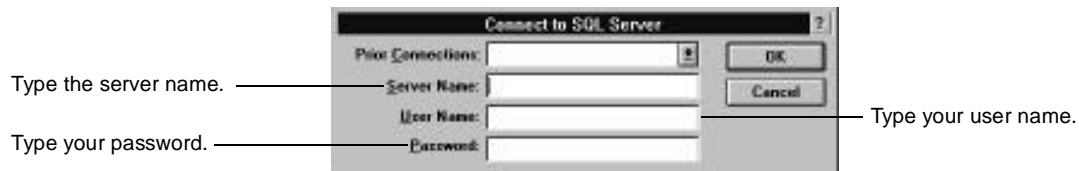
To connect to a server in SQL Server:

1. Open the New, Open, Save Database As, Import Data, or Export Data dialog box.

You can connect to a server at the same time you create, open, or save a table or import or export data. Or you can open one of these dialog boxes just to establish the connection.

2. Select SQL Server in the List Files of Type drop-down list.

If you are not connected to a server in SQL Server, the Connect to SQL Server dialog box appears. If you are already connected to a server but want to connect to an additional one, click Connect after selecting SQL Server to see the dialog box.



The Prior Connection drop-down list shows the last eight SQL servers you connected to. If you're connecting to one of these servers again, you can select the connection in the list rather than typing the server name and user name.

3. Type the name of the server in the Server Name text box.
4. Type your user name in the User Name text box.
5. Type your password in the Password text box.
Asterisks appear in the text box as you type the password.
6. Click OK.

You return to the New, Open, Save Database As, Import Data, or Export Data dialog box.

Restrictions on field definitions

SQL Server tables have the following restrictions on field names and field lengths.

Field names

The names of text, numeric, memo, and Boolean fields can be up to 30 characters long. The names of date, time, and PicturePlus fields can be up to 24 characters long.

The first character in a field name must be a letter, the number sign (#), or the underscore character (_). After that, the name can have letters, whole numbers, and the symbols #, _, and \$. Spaces are not allowed.

Field lengths

You must specify a field length for text fields. The length for a text field can be from 1 to 255.

The other fields are fixed in length or do not require a specified length.

Table names

A table name that begins with a number sign (#) is for a temporary table. Other object names cannot begin with a #.

Table names have the same restrictions as field names.

Limits on tables, records, and fields

These are the limits on tables, records, and fields for SQL Server in Approach.

<i>Item</i>	<i>Limit</i>
Table size	Limited only by disk space
Tables open at one time	255
Records per table	Limited only by disk space
Record size	1962 bytes, not including picture and memo fields
Fields per record	250
Fields used in a sort	16
Size of a memo or picture field	2GB
Memo and picture fields per table	Limited only by disk space

IBM DB2

You can open IBM DB2 tables through ODBC support or through the Micro Decisionware Database Gateway™ (MDI), version 2.0 or later.

These are the main difference between viewing DB2 tables in Approach and in other DB2 applications:

- Date fields in DB2 include both a date and a time. In Approach, these fields appear as two fields: a date field and a time field. The extension “_Time” is added to the time field.

For example, suppose a DB2 date field Shipped has the value “5/10/94 10:35PM”. Approach displays a date field Shipped with the value “5/10/94” and a time field Shipped_Time with the value “10:35PM”.

- You can create memo and PicturePlus fields in a DB2 table you open through ODBC support, but not in a DB2 table you open through MDI. Approach PicturePlus fields cannot be viewed in other DB2 applications.

If you read a DB2 table without a unique index, Approach opens a read-only copy of the table.

In DB2, each table is assigned a user as its owner. When DB2 tables are showing in file dialog boxes, the names of tables appear in the File Name list, the names of table owners appear in the Directories list, and the names of servers you’re connected to appear in the Drives drop-down list.

Connecting to an IBM DB2 or SQL/DS server through ODBC

You can open IBM DB2/2, DB2/6000, and DB2/HP-UX tables directly in Approach through ODBC support, or IBM DB2, DB2/400, and SQL/DS tables via IBM Distributed Database Connection Services (DDCS) through ODBC support. You can be connected to more than one server at a time.

You can disconnect from an DB2 server in the Approach dialog box. When you quit Approach, you are disconnected from all the servers at once.

To connect to an IBM DB2 or SQL/DS server through ODBC:

1. Open the New, Open, Save Database As, Import Data, or Export Data dialog box.

You can connect to a server at the same time you create, open, or save a table or import or export data. Or you can open one of these dialog boxes just to establish the connection.

To see the SQL file types in the New dialog box, set the ReadOnly line to 0 in your APPROACH.INI file.

2. Select DB2 in the List Files of Type drop-down list.
The Drives drop-down list changes to Server and shows the names of DB2 servers you can connect to.
3. Select a server in the Server drop-down list.
The names of owners on the server appear in the Directories list.
4. If a Setup dialog box appears, fill it in and click OK.
The dialog box appears if your ODBC.INI file does not have setup information for DB2.
5. Double-click the name of the owner in the Directories list.
When you double-click the name, the tables in the database appear in the File Name list.
6. Select the name of the table in the File Name list.
7. Click OK.
8. If an alert box appears, click OK to open the table.
The alert box appears if your Preferences are set for displaying SQL and ODBC databases as read-only.

Connecting to an IBM DB2 server through MDI

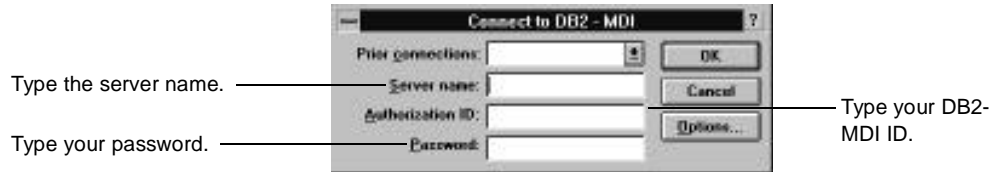
You can connect to an IBM DB2 server in Approach through MDI. If you're not already connected to a DB2-MDI server when you select DB2-MDI in a List Files of Type drop-down list, Approach opens a dialog box to let you connect. You can be connected to more than one server at a time.

You can disconnect from an DB2 server in the Approach Open dialog box. When you quit Approach, you are disconnected from all the servers at once.

To connect to an IBM DB2 server through MDI:

1. Open the New, Open, Save Database As, Import Data, or Export Data dialog box.
You can connect to a server at the same time you create, open, or save a table or import or export data. Or you can open one of these dialog boxes just to establish the connection.
2. Select DB2-MDI in the List Files of Type drop-down list.

If you are not connected to a DB2 server, the Connect to DB2-MDI dialog box appears. If you are already connected to a server but want to connect to an additional one, click Connect after selecting DB2-MDI to see the dialog box.



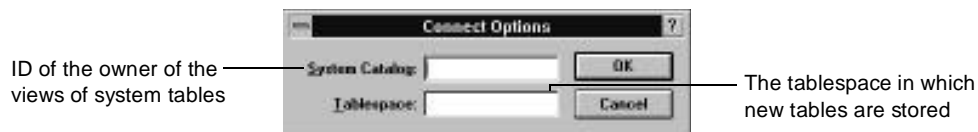
The Prior Connection drop-down list shows the last eight SQL servers you connected to. If you're connecting to one of these servers again, you can select the connection in the list rather than typing the server name and authorization ID.

3. Type the name of the server in the Server Name text box.
4. Type your authorization ID in the Authorization ID text box.
Check with your system administrator to find out what ID you should use.
5. Type your password in the Password text box.
Asterisks appear in the text box as you type the password.
6. Click OK.

You return to the New, Open, Save Database As, Import Data, or Export Data dialog box.

Options for DB2-MDI connections

You may need to set some options when connecting to a DB2 server through MDI. To do this, click Options in Connect to DB2-MDI, type the information in the Connect Options dialog box, and click OK.



System Catalog is the ID of the account that owns the views of system tables. Normally, the tables are owned by SYSIBM. If you do not have access to SYSIBM, the system administrator should create a view of the tables in another account. Type the authorization ID for that account here.

Tablespace is the name of the database that stores new tables. Tables are normally created in the DSNDB04 database. If you receive errors when creating or modifying tables, you may not have permission to create tables in DSNDB04. For more information about where to store new tables, read about the Create Table statement in the reference manual for your DB2 system.

Restrictions on field definitions

IBM DB2 tables have the following restrictions on field names and field lengths.

Field names

In a DB2 table you open through ODBC, the names of PicturePlus fields can be up to 12 characters long and of Boolean fields can be up to 11 characters long. The names of other types of fields can be up to 18 characters long. The first character in a field name must be a letter. After that, the name can have letters and whole numbers. Spaces and ODBC keywords are not allowed.

In a DB2 table you open through MDI, the names of Boolean fields can be up to 11 characters long, and the names of other types of fields can be up to 18 characters long. These characters can include letters, whole numbers, and the underscore character (_). The first character in a field name must be a letter.

Field lengths

You must specify a field length for text fields. The length for a text field can be from 1 to 254.

The other fields are fixed in length or do not require a specified length.

Limits on tables, records, and fields

These are the limits on tables, records, and fields for IBM DB2 in Approach.

<i>Item</i>	<i>Limit</i>
Table size	Limited only by disk space
Tables open at one time	255
Records per table	Limited only by disk space
Record size	2KB or 4KB
Fields per record	300

Continued

<i>Item</i>	<i>Limit</i>
Fields used in a sort	As many fields as are in the table
Memo and picture fields per table	Limited only by disk space (available only for DB2 tables you open through ODBC)

SQL query files

Query files allow you to quickly connect to a server and get access to specific information in a SQL table.

Make sure you have enough space in the TEMP directory for the query data file.

A SQL *query file* is a text file that contains log-on information and a Select statement for a SQL table.

When you open a query file in Approach, you automatically connect to a server using the log-on information in the file. Then the Select statement in the file is sent to the server, and the data requested by the statement is returned and downloaded into a read-only data file on your local drive.

You can create a query file in a text editor or in Approach when a SQL table is active. If you create a query file in Approach, the file stores the log-on information you used when you connected to the current table's server. And if you have executed a find or sort in the table, the search and sort conditions are stored in the query file as the Select statement (if they can be translated into SQL).

A query file creates a temporary data file in your Windows TEMP directory and deletes the file when you close it. If you want to keep a copy of the data file, you can save it or export it.

The filename extension for query files is .QRY.

Creating or editing a query file in a text editor

You can create or edit a query file using any text editor.

These are the commands for a query file:

Type=Oracle *or* SQLServer *or* DB2 *or* Notes *or* ODBC type

Network=*protocol letter* (for Oracle only)

Path=*name of the database server*

User=*your name*

Password=*your password*

Database=*name of the database* (for SQL Server only)

Select *valid Select statement*

The commands for a query file are case-insensitive. They can be in any order except that the Select statement must be last.

You can leave the Password command out, and the user will be prompted for a password.

All of the commands except for Type and Select are optional. If the query file does not contain enough log-on information, a Connect dialog box appears when you open the file so that you can fill in the remaining information.

If you include spaces or non-alphanumeric characters in a parameter, the parameter must be enclosed in double quotation marks (").

This is an example of an Oracle query file:

```
Type=Oracle  
Network=X  
Path=ORASRV  
User=Rich  
Password=sequoia  
Select Name,Address,City From Employee
```

Creating a query file by saving

If you have a SQL table open in Approach, you can save a query file for it. When you create a query file this way, the file has an Approach file. You'll be able to open the query file by opening its Approach file.

To create a query file by saving:

1. With a SQL table active, choose Save As from the File menu.
The Save Approach File As dialog box appears.
2. Specify a name and location for the Approach file.
3. Select "Exact copy" in the Databases area and click OK.
The Save Database As dialog box appears.
4. Select Query in the List Files of Type drop-down list.
5. Specify a name and location for the query file and click OK.

Creating a query file by exporting

If you have a SQL table open in Approach, you can create a query file for it by exporting. When you create a query file this way, the exported data does not have an Approach file. You can create an Approach file by using the Save As command.

When exporting data, you can specify the particular fields you want stored for the Select statement.

To create a query file by exporting:

1. With a SQL table active, choose Export Data from the File menu.
The Export Data dialog box appears.
2. Select Query in the List Files of Type drop-down list.

If you export only some fields, the query file will open faster because it won't have to find or sort every field in the table.

3. Specify a name and location for the query file.
4. In the Database Fields list, select the fields you want returned when the Select statement is executed.
To select a field, click the field name and click Add, or double-click the name.
5. Click OK.

Opening a query file in Approach

You can open a query file as you can any other type of file in Approach. When you open the query file, you are automatically connected to a SQL server using the file's log-on information, and the Select statement in the file executes a find or sort.

To open a query file in Approach:

1. Choose Open from the File menu.
The Open dialog box appears.
2. Select Query in the List Files of Type drop-down list.
If the query file you want has an Approach file, you can leave this as Approach Files.
3. Select the file you want to open in the File Name list and click OK.

If the query file does not have all the log-on information it needs to connect to a server, a Connect dialog box appears so that you can fill in the rest of the information. For information about these dialog boxes, see the relevant section about connecting to a SQL server earlier in this appendix.

Saving data from a query

A query file's Select statement returns data to a temporary read-only file on your local drive. You can save the data in a read/write database file. This also saves an Approach file for the data.

To save data from a query:

1. With the temporary data file active, choose Save As from the File menu.
The Save Approach File As dialog box appears.
2. Specify a name and location for the Approach file.
3. Select "Exact copy" in the Databases area and click OK.
The Save Database As dialog box appears.

4. Select a database file type in the List Files of Type drop-down list.
5. Specify a name and location for the database file and click OK.

Exporting data from a query

A query file's Select statement returns data to a temporary read-only data file on your local drive. You can export the data to a new database file. Exporting allows you to save only the particular fields you want.

To export data from a query:

1. With the temporary data file active, choose Export Data from the File menu.
The Export Data dialog box appears.
2. Specify a name and location for the database file.
3. Select a database file type in the List Files of Type drop-down list.
4. In the Database Fields list, select the fields you want to export.
To select a field, click the field name and click Add, or double-click the name.
5. Click OK.

D

ODBC Data Sources

Approach is fully compatible with the Open Database Connectivity standard (ODBC). If you have databases in applications that use an ODBC driver, you can work with those databases in Approach.

An ODBC driver installed on your system appears in the List Files of Type drop-down list in Approach file dialog boxes. In most cases, the name of the driver appears just like other names in the list; for example, Btrieve. But if the application is also available as a PowerKey in Approach, the name is prefixed with “ODBC”; for example, ODBC:Oracle.

This appendix explains restrictions and limits on ODBC data sources in Approach, and it describes how to open an ODBC data source, install ODBC drivers, and set up data sources on your system. You must already have the appropriate drivers from the vendors of the other database applications.

Restrictions and limits on ODBC

You can use a Level 1 Tier 1 ODBC drive engine or a Level 1 Tier 2 ODBC driver to get access to ODBC data sources in Approach. These are the main differences between working with ODBC data in Approach and in other applications:

- You can add PicturePlus fields to an ODBC data source in Approach only if the driver supports the Long Var Binary field type. You can add memo fields only if the driver supports the Long Var Char field type.
- You cannot view Approach PicturePlus fields in other ODBC applications.
- In Approach, fields in the ODBC field types Big Int, Tiny Int, Small Int, Real, Numeric, Decimal, Integer, Double, and Float are converted to numeric fields.

- Timestamp fields in ODBC include both a date and a time. In Approach, these fields appear as two fields: a date field and a time field. The extension “_Time” is added to the time field. For example, suppose an ODBC timestamp field Shipped has the value “5/10/94 10:35PM”. Approach displays a date field Shipped with the value “5/10/94” and a time field Shipped_Time with the value “10:35PM”.

If you read an ODBC data source without a unique index or timestamp, Approach opens a read-only copy of the view file or table.

Restrictions on field definitions

ODBC data sources have the following restrictions on field names and field lengths.

Field names

The first character in a field name must be a letter. After that, the name can have letters and whole numbers. Spaces and ODBC keywords are not allowed.

The limits on the length of a field name depend on whether the ODBC driver supports the field's data type:

<i>Data type (ODBC data types in parentheses)</i>	<i>If the driver supports the data type</i>	<i>If the driver does not support the data type</i>
Text (Char or Var Char)	30 or limit of driver	Not applicable
Numeric (Big Int, Tiny Int, Small Int, Real, Numeric, Decimal, Integer, Double, or Float)	30 or limit of driver	30 or limit of driver; stored as text
Memo (Long Var Char)	30 or limit of driver	Field is disabled
Boolean (Bit)	30 or limit of driver	(30 or limit of driver) – 7; stored as text
Date (Date)	30 or limit of driver	(30 or limit of driver) – 6; stored as timestamp (if supported) or as text

Continued

<i>Data type (ODBC data types in parentheses)</i>	<i>If the driver supports the data type</i>	<i>If the driver does not support the data type</i>
Time (Time)	30 or limit of driver	(30 or limit of driver) – 6; stored as timestamp (if supported) or as text
PicturePlus (Long Var Binary)	(30 or limit of driver) – 6	Field is disabled

If two lengths are given for a field name (such as “30 or limit of driver”), the field name can be the *shorter* of the two lengths.

Field lengths

You must specify a field length for text fields, from 1 to the limit of the ODBC driver. Most drivers have a limit of 255.

The other fields are fixed in length or do not require a specified length.

Limits on tables, records, and fields

In an ODBC data source, the size of the table and the number of records in it are limited only by disk space. You can have up to 255 tables open at a time.

The limits on record size, fields per record, fields in a sort, and memo and picture fields are determined by the database application for the ODBC data source. For more information, consult the documentation for the ODBC driver or for the database application.

Opening an ODBC data source

You can open an ODBC data source you have access to within Approach.

The List Files of Type drop-down list in the Open dialog box lists all the ODBC drivers installed on your system and the option ODBC Data Sources, which gives you quick access to data sources set up on your system.

In most cases, the name of an ODBC driver appears in List Files of Type just like other names in the list; for example, Access. But if the application is also available as a PowerKey in Approach, the name is prefixed with “ODBC”; for example, ODBC:Oracle.

The procedure for opening an ODBC data source varies slightly depending on the type of the data source. Some sources are database files like .DBF files. In these cases, you can open the file just as you open a dBASE, Paradox, or FoxPro file: After selecting the ODBC driver in the List Files of Type drop-down list, you find and select the file in the Open dialog box. For more information, see “Opening a database created in another application” on page 2-9.

ODBC data sources can also be database tables, tables in server applications, and data sources set up on your system.

Opening a database table through ODBC

You can use ODBC to get access to data that is organized in database tables. You need to see the contents of the database first and then select the table in it you want.

To open a database table through ODBC:



1. Click the Open File icon or choose Open from the File menu. Or if the Welcome dialog box is on the screen, select “Open an existing file” and click OK.

The Open dialog box appears.

2. Select an ODBC driver for a database table application in the List Files of Type drop-down list.

The databases in the application appear in the Directories list with a filecard icon in front of them.

3. Double-click the name of the database in the Directories list.

You can change the the drive if you need to look for the database. When you double-click the name, the tables in the database appear in the File Name list.

4. Select the name of the table in the File Name list.
5. Click OK.
6. If an alert box appears, click OK to open the table.

The alert box appears if your preferences are set for displaying SQL and ODBC databases as read-only.

Opening a database table on a server through ODBC

You can use ODBC to open a database table on a server. You may be prompted to connect to a server if Approach cannot find the server information in your ODBC.INI file. You can be connected to more than one server at a time.

When you select an ODBC driver for a server application in the List Files of Type drop-down list, the information that appears in the Open dialog box varies depending on the driver:

- If an ODBC driver supports qualifiers for table names, the names of the qualifiers appear in the Directories list. If the driver also supports ownership, the names of owners and the names of tables appear in the File Name list (such as DBA.EMPLOYEE); if the driver does not support ownership, only the names of tables appear in File Name.
- If an ODBC driver supports ownership but not qualifiers, the names of owners appear in the Directories list and the names of tables appear in the File Name list.
- If an ODBC driver supports neither qualifiers nor ownership, the names of servers appear in the Directories list and the names of tables appear in the File Name list.

To open a database table on a server through ODBC:



1. Click the Open File icon or choose Open from the File menu. Or if the Welcome dialog box is on the screen, select “Open an existing file” and click OK.
2. Select an ODBC driver for a server application in the List Files of Type drop-down list.
The Drives drop-down list changes to Server and shows the names of servers you can connect to through the ODBC driver.
3. Select a server in the Server drop-down list.
The names of databases, qualifiers, or owners on the server appear in the Directories list.
4. If a Setup dialog box appears, fill in the information and click OK.

The dialog box appears if your ODBC.INI file does not have setup information for the selected server. See the documentation that came with the driver for details.

5. Double-click the name of the database, qualifier, or owner in the Directories list.

When you double-click the name, the tables in the database appear in the File Name list.

6. Select the name of the table in the File Name list.
7. Click OK.
8. If an alert box appears, click OK to open the table.

The alert box appears if your Preferences are set for displaying SQL and ODBC databases as read-only.

“Quick connecting” to a server database

Once you specify the name of a server and database in the Open dialog box, Approach keeps track of that connection for your current work session. The next time you open the dialog box and select the ODBC driver, the name of the connection you used for it before will appear in the Server drop-down list; for example, Joann Willis @ Accounting.

If you select the connection name in the Server drop-down list, the File Name list shows the tables you used before on that server. This way, you don't need to establish a connection and select in the Directories list.

When you quit Approach, you are disconnected from any servers you connected to in that session. You can also use the Open dialog box to disconnect from a particular server. Select the connection name in the Server drop-down list and click Disconnect.

Opening an ODBC data source set up on your system

If you have an ODBC data source already set up on your system, you can open it quickly with very little navigating through the Open dialog box.

For information about setting up a data source to open this way, see “Setting up a data source for an ODBC driver” on page D-8.

To open an ODBC data source set up on your system:



1. Click the Open File icon or choose Open from the File menu. Or if the Welcome dialog box is on the screen, select “Open an existing file” and click OK.

2. Select ODBC Data Sources in the List Files of Type drop-down list.
The names of the data sources you have set up appear in the Directories list.
3. Double-click the name of a data source in the Directories list.
The tables in the data source appear in the File Name list.
4. If a Setup dialog box appears, fill it in and click OK.
The dialog box appears if your ODBC.INI file does not have all of the required information about the data source for the driver.
5. Select the name of the table in the File Name list.
6. Click OK.
7. If an alert box appears, click OK to open the table.
The alert box appears if your preferences are set for displaying SQL and ODBC databases as read-only.

Installing an ODBC driver

If ODBC is installed on your computer, you can usually install an ODBC driver in the Windows Control Panel following the instructions in this section.

Some vendors of ODBC drivers have a different procedure for installation. In those cases, see the documentation that came with the driver.

To install an ODBC driver:

1. In the Main group in the Windows Program Manager, double-click the Control Panel icon to open the Control Panel.
An ODBC icon appears in the Control Panel if ODBC is installed.
2. Double-click the ODBC icon.
The Data Sources dialog box appears.
3. Click Drivers.
The Drivers dialog box appears.
4. Click Add.
The Add Driver dialog box appears.
5. Type the name of the drive and directory for the driver in the text box, or click Browse to select a drive and directory name.

6. Click OK.
The Install Drivers dialog box appears.
7. Select the driver you want to install in the Available ODBC Drivers list.
8. Click OK.

Setting up a data source for an ODBC driver

After installing an ODBC driver, you can set up data sources for the driver within Approach. This stores information about the data's location in your ODBC.INI file and tells Approach where to find the data when you try to open it.

To set up a data source for an ODBC driver:



1. Click the Open File icon or choose Open from the File menu. Or if the Welcome dialog box is on the screen, select "Open an existing file" and click OK.
2. Select the ODBC driver in the List Files of Type drop-down list.
3. Click Setup.
The Setup dialog box for the selected driver appears.
4. Fill in the Setup dialog box.
For information about the dialog box, see the documentation that came with the driver.
5. Click OK.

Glossary

alias	A “copy” of a database file, for use in special types of joins. An alias is not an actual duplicate of a database, but another listing of it for the purposes of joining. Most often, you use an alias to join a database to itself.
Approach file	A file that stores forms, reports, and other views. The Approach file does not store any data, but provides a window into data in associated database files. When you create a database file, Approach automatically creates an Approach file for it. Compare <i>database file</i> .
Approach file password	A text string a user must enter to be able to create views, join databases, or go to Design in an Approach file. You can give your Approach files a password to keep other users from making design changes to them. Compare <i>database password</i> .
area chart	A chart that shows trends in data over time by emphasizing the area under the curve created by each data series. See also <i>bar chart</i> , <i>line chart</i> , and <i>pie chart</i> .
arithmetic expression	An expression that performs a basic calculation on two numeric, date, or time values. See also <i>expression</i> . Compare <i>comparison expression</i> and <i>logical expression</i> .
ascending order	A sort order that sorts records from A to Z for text (case-insensitive), lowest to highest for numbers, and earliest to latest for dates and times. Compare <i>descending order</i> .
bar chart	A chart that shows individual values represented by bars. See also <i>area chart</i> , <i>line chart</i> , and <i>pie chart</i> .
body	The part of a report that shows data from records. A body appears between a header and footer.
Boolean field	A field that stores a value of True or False.

Glossary-2

Browse	The environment in Approach that you use to work with information in a database. You can enter and edit data, find and sort records, and print views in Browse. Compare <i>Design</i> , <i>Find</i> , and <i>Preview</i> .
calculated field	A field that stores the result of a formula. You enter the formula as part of the field's definition, and Approach calculates the result and displays it in the field. A calculated field is stored in an Approach file.
checkbox	A type of field object that has a Checked value and an Unchecked value. You turn the checkbox on or off in Browse to enter the value in the field. Usually, a field has only one checkbox. See also <i>radio button</i> .
client	A computer used to get access to files or applications on a network. Compare <i>server</i> .
column gutter	The area near the top of worksheets and crosstabs. You drag fields into the column gutter to add them to a worksheet or crosstab. See also <i>row gutter</i> .
comparison expression	An expression that compares two values and returns a result of Yes or No. See also <i>expression</i> . Compare <i>arithmetic expression</i> and <i>logical expression</i> .
compound document	A document that contains a linked or embedded OLE object. If you have an OLE object from another application in an Approach file, the Approach file is a compound document. See also <i>container application</i> and <i>server application</i> .
constant	A literal value in a formula. When calculating a formula, Approach uses the constant in every record. Compare <i>field reference</i> .
container application	An application that contains an OLE object. If you have an OLE object from another application in an Approach file, Approach is the container application. See also <i>compound document</i> . Compare <i>server application</i> .
context-sensitive menu	A menu in Design that changes depending on the current view or the current selection. The context-sensitive menu can be called Form, Report, Letter, Mailing Label, Worksheet, Crosstab, Chart, Object, Text, Panel, or Summary.

crosstab	A view used for organizing and summarizing data from many records into categories and groups. A crosstab shows summaries of underlying database records that are grouped by any database field. Compare <i>form</i> , <i>report</i> , and <i>worksheet</i> .
current record	The active record in a view in Browse. You can enter and edit data in the current record.
data entry order	The order in which you move through the fields in a view when you press TAB . (You can also press ENTER to move through fields if your preferences are set this way.) Sometimes referred to as <i>tab order</i> in other applications.
data object	An OLE object you can create in Approach from a range of worksheet or crosstab cells. See also <i>view object</i> .
database	A collection of data organized into fields and records. See also <i>field</i> and <i>records</i> .
database file	A file that stores data. The data you see and work with in an Approach file is stored in one or more database files. Compare <i>Approach file</i> .
database password	A text string a user must enter to be able to open an Approach file. The password grants the user read-only access or read/write access to data associated with the file. See also <i>read-only access</i> and <i>read/write access</i> . Compare <i>Approach file password</i> .
date field	A field that can hold a single date. You can perform finds and sorts on dates in a date field.
default style	A named style that you define to be the preset style for new views. When you create a view using an Assistant, you can apply the default style or one of the SmartMaster styles to the view. See also <i>named style</i> and <i>SmartMaster style</i> .
descending order	A sort order that sorts records from Z to A for text (case-insensitive), highest to lowest for numbers, and latest to earliest for dates and times. Compare <i>ascending order</i> .
delimited text file	A text file that uses separators such as commas, spaces, or tabs to break up the text into discrete units. If you open a delimited text file as a database in Approach, the units of text become fields. See also <i>fixed-length text file</i> .

Glossary-4

Design	The environment in Approach that you use for laying out forms, reports, form letters, and mailing labels. Compare <i>Browse</i> , <i>Find</i> , and <i>Preview</i> .
design object	A graphic element that you can move, resize, and modify as a whole in Design. Fields, lines, rectangles, and macro buttons are examples of design objects.
detail database	A joined database that provides secondary information in a view. For example, a detail database for an invoice form might provide customer names and addresses. A view can have one main database and many detail databases. Compare <i>main database</i> .
drop-down list	A predefined list of values from which you select in Browse to enter data in a field. The drop-down list appears when you click in or tab to the field.
embed	To insert an OLE object in Approach. You can embed an object in a PicturePlus field or in the background of a view. See also <i>OLE object</i> . Compare <i>link</i> .
expression	A combination of operators, operands, and functions that yields a single result. A formula can consist of one or more expressions. See also <i>arithmetic expression</i> , <i>comparison expression</i> , and <i>logical expression</i> .
field	A category of information in a database. For example, in an invoice database the fields might be for invoice number, date, and amount due. Compare <i>record</i> .
field box	An editable area in a view that holds a field value. You type in the field box in Browse to enter data in the field.
field definition	A set of attributes that includes the field name, the type of data the field can contain, a maximum field length for some field types, and optional data entry settings. Every field in a database must have a definition.
field label	The text used to identify a field in a view. A field label often corresponds to the field name.
field mapping	The relationship between fields in two databases (when importing data) and between fields in an Approach file and a database file. See also <i>map</i> .

field name	A name for a field stored as part of the field definition.
field reference	In a formula, a reference to another field. When calculating the formula, Approach uses the value in the referenced field from the current record. Compare <i>constant</i> .
field type	A specification for the type of data you can enter in a field. The possible field types are Boolean, calculated, date, memo, numeric, PicturePlus, text, time, and variable.
file	See <i>Approach file</i> and <i>database file</i> .
file type	A specification for the way a program stores and organizes data in files. In Approach, you can use a variety of database file types.
find	To search for and display a set of records based on data in one or more fields. See also <i>Find</i> , <i>find request</i> , <i>found set</i> , and <i>search criteria</i> .
Find	The environment in Approach that you use to search for data in records. You specify search criteria in Find; when Approach finds records that match the criteria, it returns you to Browse and displays only those records. See also <i>find</i> , <i>find request</i> , <i>found set</i> , and <i>search criteria</i> . Compare <i>Browse</i> , <i>Design</i> , and <i>Preview</i> .
find request	A blank view used for entering search criteria.
fixed-length text file	A text file in which the text is broken into blocks of a specific length. If you open a fixed-length text file as a database in Approach, the blocks of text become fixed-length fields. See also <i>delimited text file</i> .
font	A set of characters in one design, size, and style.
footer	A design element that repeats at the bottom of each page in a previewed or printed report, worksheet, or crosstab. Compare <i>header</i> .
form	A view typically used for entering data. When working in a form, you see one record at a time. Compare <i>crosstab</i> , <i>report</i> , and <i>worksheet</i> .
form letter	A letter view that usually combines typed text with names and addresses from a database record.
found set	A group of records that match your search criteria. When Approach finds records that match the criteria, it displays them in Browse as the found set.

Glossary-6

full record locking	A method of network data-sharing in which only one user at a time can edit a record. Compare <i>optimistic record locking</i> .
function	A predefined formula you can use in a calculated field. Approach provides functions for conversion, date, financial, logical, mathematical, statistical, summary, text, time, and trigonometric operations.
grid	A non-printing matrix of dotted lines that you can show in Design. The grid provides a background to help you lay out objects in a view. See also <i>snap</i> .
handles	Squares at the edges of a selected design object. You can drag a handle to resize the object.
header	A design element that repeats at the top of each page in a previewed or printed report, worksheet, or crosstab. Compare <i>footer</i> .
icon bar	A bar at the top of the Approach work area that has SmartIcons you can click to apply a command. Approach provides default icon bars, and you can create custom icon bars of your own. See also <i>SmartIcons</i> .
index	A compilation of all the values in a field. Finds and sorts on a field go faster if the field has an index. Approach can compile the index as you enter data or when you first find or sort.
InfoBox	A window that stores object properties, such as lines and colors, text attributes, and macro settings. Every design object in a view has an InfoBox with properties. You can keep the InfoBox open as you work, and use it to edit objects. See also <i>named style</i> .
join	To link two databases on a common field. When multiple databases are joined in an Approach file, the file can have views that use data from all the joined databases.
join field	The linked field in two joined databases. Often, a join field is an ID field created specifically for joining.
key field	A field or group of fields with a value that uniquely identifies each record (for example, an invoice number). Paradox database files in Approach require a key field.
line chart	A chart that shows each value in a data series as a data point connected by a line. See also <i>area chart</i> , <i>bar chart</i> , and <i>pie chart</i> .

link	To place a copy of an OLE object in Approach, with a connection to the original object in the source application. If the original object changes, the copy also changes in Approach. You can link an OLE object in a PicturePlus field or in the background of a view. See also <i>OLE object</i> . Compare <i>embed</i> .
logical expression	An expression that compares or changes the result of comparison expressions and returns a result of Yes or No. A logical expression allows you to define more complex conditions than you can with comparison expressions alone. See also <i>expression</i> . Compare <i>arithmetic expression</i> and <i>comparison expression</i> .
lookup	An automatic display of data from a many-to-one or one-to-one relationship.
macro	A single command that executes a sequence of other commands. You define this sequence when you create the macro.
macro button	An object that you can add to a form, report, or other view. When you click a button, it executes an attached macro. See also <i>macro</i> .
mailing label	A view that displays database fields and text you type in a mailing address format.
main database	A joined database that provides the basis for a view. For example, an invoice view would use an invoice database as its main database. A view shows all of the records from the main database. Compare <i>detail database</i> .
many-to-many	A relationship in which two or more records in one database are related to two or more records in a joined database. For example, each order can include several products, and each product can appear on several orders. Compare <i>many-to-one</i> , <i>one-to-many</i> , and <i>one-to-one</i> .
many-to-one	A relationship in which two or more records in one database are related to only one record in a joined database. For example, several employees can be in the same department. Compare <i>many-to-many</i> , <i>one-to-many</i> , and <i>one-to-one</i> .
map	To associate fields in an Approach file with fields in a database file. You need to map fields when importing data or an Approach file. You may also need to map fields when opening an Approach file if you have made changes to a database file without saving them in the Approach file. See also <i>field mapping</i> .

Glossary-8

memo field	A field that corresponds to a memo file. Because the data is stored in a separate file, you can store much more data in a memo field than you can in other types of fields.
named style	A set of InfoBox properties that you name and save as a group. You can apply a named style to an object, rather than applying individual properties to it using the InfoBox. See also <i>InfoBox</i> .
numeric field	A field that can hold numbers and numeric symbols (such as a decimal point and a currency sign). You can perform arithmetic calculations on data in a numeric field.
object	See <i>design object</i> .
(OLE) Object Linking and Embedding	A method for transferring and sharing objects between applications. See also <i>OLE object</i> .
OLE object	An object you embed or link in Approach through OLE. You can double-click an OLE object to edit it using the tools from the source application without leaving Approach. Charts, sound files, and data ranges are examples of OLE objects. See also <i>embed</i> and <i>link</i> .
one-to-many	A relationship in which a record in one database is related to two or more records in a joined database. For example, one department can have several employees. In a form, you use a repeating panel to represent the “many” data from a one-to-many relationship. Compare <i>many-to-many</i> , <i>many-to-one</i> , and <i>one-to-one</i> .
one-to-one	A relationship in which a record in one database is related to only one record in a joined database. For example, a vehicle number can be related to a license number for a single vehicle. Compare <i>many-to-many</i> , <i>many-to-one</i> , and <i>one-to-many</i> .
operand	A value to be operated on in a formula. Operands can be either constants or field references. See also <i>constant</i> and <i>field reference</i> .
operator	A symbol in a formula that defines the calculation or other evaluation to be performed. A plus sign (+) and a less-than sign (<) are examples of operators.
optimistic record locking	A method of network data-sharing in which two users can edit a record at the same time. When the second user tries to enter changes, Approach warns that they will overwrite those of the first user. Compare <i>full record locking</i> .

page margins	When printing a view, the area between the printable part of the view and the edge of the paper.
parameter	A value to be operated on in a function. Parameters are enclosed in parentheses after the function name and can be either constants or field references. See also <i>constant</i> and <i>field reference</i> .
PicturePlus field	A field that can contain graphics and OLE objects. You can also allow drawing in a PicturePlus field.
pie chart	A chart that shows each value in a data series as a slice of a pie. See also <i>area chart</i> , <i>bar chart</i> , and <i>line chart</i> .
point	A typographic unit of measure; about 1/72 inch.
Preview	The environment in Approach that shows views on the screen as they will appear when printed. Compare <i>Browse</i> , <i>Find</i> , and <i>Design</i> .
query file	A text file that contains log-on information and a Select statement for a SQL table. Query files allow you to quickly connect to a server and get access to specific information in a table.
radio button	A field object that can have a Clicked value. You usually use a set of two or more radio buttons for a field; you turn on one button in the set in Browse to enter its value in the field. See also <i>checkbox</i> .
read-only access	Permission to read data in a database but not to modify it. You can assign a database password to your files to grant read-only access to users who know the password. See also <i>database password</i> . Compare <i>read/write access</i> .
read/write access	Permission to read and modify data in a database. You can assign a database password to your files to grant read/write access to users who know the password. See also <i>database password</i> . Compare <i>read-only access</i> .
record	One set of related information in a database. For example, in an invoice database each invoice is a record. Compare <i>field</i> .
relational database application	A database application that lets you bring together data from more than one database in a single form, report, or other view. Approach is a relational database application.

Glossary-10

repeating panel	A design element that displays the “many” side of a one-to-many relationship. You use a repeating panel in a form to show data from multiple records in a detail database. For example, a repeating panel in a department form might list all the department’s employees.
report	A view used for organizing, summarizing, and presenting data from many records. A report shows all the records in the database or the current found set on one page (or on a series of pages). Compare <i>crosstab</i> , <i>form</i> , and <i>worksheet</i> .
row gutter	The area at the left side of a worksheet or crosstab that holds row headers. You drag a column header from a worksheet and drop it in the row gutter to convert a worksheet to a crosstab. See also <i>column gutter</i> .
search criteria	A set of data to look for in a database, such as Tokyo in the City field. When Approach finds records that match the search criteria, it displays only those records.
server	A central computer that stores files and applications to which users have access across a network. Compare <i>client</i> .
server application	An application used to create an OLE object. See also <i>compound document</i> . Compare <i>container application</i> .
slide	To move data up or left to fill empty space in a view.
SmartIcons	Icons appearing in a bar at the top of the Approach work area. Each of the SmartIcons represents a command; you can click an icon to apply the command. See also <i>icon bar</i> .
SmartMaster layout	A predefined layout of fields on a view. You select a SmartMaster layout when you create a new view. See also <i>SmartMaster style</i> .
SmartMaster style	A predefined set of InfoBox properties for a view. You select a SmartMaster style when you create a new view. See also <i>SmartMaster layout</i> .
snap	To align objects automatically to increments on a grid in Design. The grid does not have to be showing for objects to “snap” to it. See also <i>grid</i> .
sort	To organize records alphabetically, numerically, or chronologically by data in a field. See also <i>ascending order</i> and <i>descending order</i> .

sort field	A text, numeric, date, or time field used for sorting records in a database.
status bar	A bar at the bottom of the Approach work area. The status bar has pop-up menus for changing the view, the environment, and the icon bar. It also provides information such as the number of records and the point size of text.
summary function	A function that applies to a range of records. For example, the SSum(Amount) summary function adds the values in the Amount field in a range of records you specify.
summary panel	An area in a report containing a calculated field that summarizes data.
summary report	A report that omits record-by-record detail and displays only summary information.
template	A predefined set of field definitions. Approach comes with templates already set up for several common business applications, such as a customer database and an employee database. You can use a template to create a new database rather than defining all of your fields from scratch.
text field	A field that can hold any characters you can type, including letters, numbers, and symbols. You can search on a text field using any character in the field.
time field	A field that can hold a single time. You can perform finds and sorts on times in a time field.
Tools palette	A set of tools in Design for drawing lines, fields, and other objects. You can drag the title bar of the Tools palette to move the palette around in the work area.
variable field	A field that temporarily stores a value used in calculations and macros. A variable field is part of an Approach file.
view	A form, report, form letter, set of mailing labels, worksheet, crosstab, or chart. Views are stored in an Approach file. Approach provides a standard form and worksheet in each Approach file, and you can also design as many custom views as you need.

Glossary-12

view object	An OLE object you can create in Approach from a single view or an entire Approach file. You can also include data in a view object. See also <i>data object</i> .
view tabs	“Folder” tabs that appear at the top of the window for each view in the Approach file. You can click a tab to go to that view.
worksheet	A view used for organizing, summarizing, and presenting data from many records in a grid of columns and rows. A worksheet shows all the records in the database or the current found set on one page (or on a series of pages). Each record occupies a single row in the worksheet. Compare <i> Crosstab</i> , <i> form</i> , and <i> report</i> .
x-axis	The horizontal axis in an area, bar, or line chart. An x-axis usually shows categories that represent information from the database, such as years or geographic areas. Compare <i> y-axis</i> .
y-axis	The vertical axis in an area, bar, or line chart. A y-axis defines the scale of values plotted in the chart. Compare <i> x-axis</i> .
zoom	To change the magnification of a view on the screen. You can zoom in for a closer look or zoom out for the big picture. Zooming does not affect the size of a view when you print it, only how it appears on the screen.

Index

Symbols

& (ampersand) as search operator 11-4, 11-7

<< >> (angle brackets)

- on form letters 9-8, 9-12
- in report headers and footers 8-24
- on views 9-8

* (asterisk)

- as arithmetic operator A-4
- as search operator 11-4, 11-6

@ as search operator 11-4

:

- (colon) in numeric formats 6-19

,

- (comma)
- in numeric formats 6-19
- as search operator 11-4

<<DATE>>. *See* Date, current

.

- (decimal point) in numeric formats 6-19

\$ (dollar sign) in numeric formats 6-19

" (double quotation marks) in numeric formats 6-19

... (ellipsis) as search operator 11-4

= (equal to)

- as comparison operator A-5
- in numeric formats 6-20
- as search operator 11-4

! (exclamation point)

- as search operator 11-4

> (greater than)

- as comparison operator A-5
- in numeric formats 6-20
- as search operator 11-4

>= (greater than or equal to)

- as comparison operator A-5
- as search operator 11-4

< (less than)

- as comparison operator A-5

- in numeric formats 6-20
- as search operator 11-4

<= (less than or equal to)

- as comparison operator A-5
- as search operator 11-4

- (minus sign)

- as arithmetic operator A-4
- in numeric formats 6-19

◇ (not equal to)

- as comparison operator A-5
- as search operator 11-4

(number sign) in numeric formats 6-19

<<#>>. *See* Page numbers

() (parentheses) in numeric formats 6-20

% (percent sign) in numeric formats 6-19

.

- (period) in numeric formats 6-19

+ (plus sign)

- as arithmetic operator A-4
- in numeric formats 6-19

? (question mark)

- as search operator 11-4, 11-7

;

- (semicolon) in numeric formats 6-20

/ (slash) as arithmetic operator A-4

~ (tilde) as search operator 11-4

<<TIME>>. *See* Time, current

| (vertical bar) in numeric formats 6-20

0 (zero) in numeric formats 6-19

A

Abs (Absolute value) function A-10

Accuracy of data, verifying

- automatically 3-15

Acos (Arc cosine) function A-10

Activating linked OLE objects 16-25

Add Field dialog box, displaying

- automatically 19-14

Adding

See also Creating; Displaying

- calculated fields to summary panels 8-19
- columns to crosstabs 12-17
- columns to worksheets 12-17, 12-21
- commands to macros 15-4
- current date 5-37
- current time 5-37
- design objects to views 5-12
- embedded OLE

 - objects 16-26–16-28

- fields to crosstabs 12-17
- fields to databases 3-1–3-20
- fields to form letters 9-12
- fields to views 6-1
- to form letter contents 9-11–9-13
- formulas to crosstabs 12-24
- geometric objects 5-12
- linked OLE objects 16-21
- macro buttons 15-11
- page numbers on report headers and footers 8-24
- pictures as design objects 5-13
- records 10-5–10-6
- records automatically, join options for 4-17
- records by importing data.

 - See* Importing

- repeating panels to forms.

 - See* Repeating panels

- rows to crosstabs 12-17
- series on charts 13-6
- summary columns and rows to crosstabs 12-24
- summary panels to reports 8-14
- text as design objects 5-14

Index-2

- text to mailing labels 9-22
 - Addition operator (+) A-4
 - Address labels. *See* Mailing labels
 - Addresses
 - on form letters. *See* Form letters, addresses on
 - on mailing labels. *See* Mailing labels
 - .ADX filename extension B-8
 - Alias joins 4-11
 - Aligning
 - data in fields 6-24
 - design objects 5-34
 - field labels 6-27
 - summary report panels 8-18
 - text in text objects 5-23
 - Ampersand (&) as search operator 11-4, 11-7
 - AND operator in logical expressions A-6
 - “And” searches 11-5
 - Angle brackets (<<>>)
 - on form letters 9-8, 9-12
 - in report headers and footers 8-24
 - on views 5-37
 - ANSI. *See* Character sets
 - Approach
 - customizing 19-1–19-22
 - filename extensions B-8–B-10
 - Approach files 1-1, 2-1
 - closing 2-22
 - creating, automatically 2-3, 2-5
 - creating backups of 2-19
 - creating several, for one set of data 2-22
 - defining passwords for 19-6
 - deleting 2-22
 - entering passwords for 2-6, 18-7
 - importing 16-10
 - importing text files into 2-14–2-18
 - inserting OLE objects in 16-21, 16-26–16-28
 - mailing, electronically 16-16
 - mapping changed fields when opening 2-7
 - opening 2-5–2-7
 - saving 2-18–2-22
 - saving copies of 2-19–2-22
 - updating, by importing. *See* Importing
 - Approach OLE objects, creating
 - See also* OLE (Object Linking and Embedding) objects
 - in Approach 16-19
 - from other applications 16-20
 - APPROACH.INI file 19-1
 - .APR filename extension 2-5, B-9
 - .APT filename extension 2-5, B-9
 - .APX filename extension B-9
 - Arc cosine (Acos) function A-10
 - Arc sine (Asin) function A-11
 - Arc tangent/Arc tangent2 (Atan/Atan2) functions A-11
 - Area charts 13-4
 - Arguments in functions A-6
 - Arithmetic expressions A-4
 - Asc (ASCII) function A-10
 - Ascending sort order 11-15
 - ASCII files
 - creating databases from 2-14–2-18
 - filename extension for B-10
 - importing 2-16, 16-5
 - Asin (Arc sine) function A-11
 - Asterisk (*)
 - as arithmetic operator A-4
 - as search operator 11-4, 11-6
 - Atan/Atan2 (Arc tangent/Arc tangent2) functions A-11
 - Attaching macros
 - to design objects 15-13
 - to fields 15-14
 - to macro buttons 15-12
 - to views 15-15
 - Automatic data entry, setting up 3-13
 - Automatic data verification, setting up 3-15
 - Averages
 - for data in repeating panels 7-15
 - in summary panels 8-19
 - Avery formats for mailing labels 9-16
 - Avg (Average) function A-11
- ## B
- Back, moving design objects to 5-33
 - Background, page 5-38
 - Backup files, creating 2-20
 - Bar charts 13-3
 - Baseline for fields, showing 6-25
 - Baud rate, modem 19-8
 - Bitmap (Windows) filename extension B-10
 - Blank
 - columns, adding, to worksheets 12-21
 - database files, creating 2-4
 - fields, finding 11-9
 - function A-12
 - .BMP filename extension B-10
 - BMP pictures
 - adding, to views 5-13
 - pasting, into fields 10-14–10-16
 - Body cells. *See* Cells
 - Boolean fields 3-2
 - See also* Entering data
 - adding, to databases 3-2
 - automatic data entry in, setting up for 3-13
 - automatic data verification of, setting up for 3-15
 - editing definitions of 3-11
 - entering data in 10-10
 - Boolean values, finding 11-8
 - Borders
 - of design objects 5-19
 - of fields 6-25
 - named styles for 5-26–5-31
 - of page margins 5-38
 - of repeating panels 7-12
 - of report panels 8-22
 - of views 5-38
 - of worksheet cells 12-22
 - Bottom, moving design objects to 5-33
 - Branch. *See* Conditional

- Browse environment 1-13, 10-1
 - appearance of joined data in 4-4
 - checking spelling in 10-17–10-22
 - context-sensitive menu in 10-2
 - customizing icon bar for 19-16
 - default icon bar for 10-2
 - entering and editing data in.
 - See* Entering data
 - formatting worksheets and crosstabs in 12-17
 - hiding page margins in 5-36
 - hiding views in 5-36
 - insertion point in 10-7, 10-8
 - selecting in 10-7
 - status bar in 10-2
 - Business letters. *See* Form letters
 - Buttons
 - See also* Pushbuttons
 - See also* Radio buttons
 - Buttons, macro. *See* Macro buttons
- C**
- Caching SQL tables 19-11
 - Calculated fields 3-3
 - See also* Formulas; Functions
 - adding, to databases 3-3
 - creating formulas for 3-5
 - displaying, for repeating panel data 7-15
 - displaying, in summary panels 8-19–8-20
 - editing definitions of 3-11
 - example of, on forms 7-19
 - joining on 4-17
 - where-placed option for 8-19
 - Calculations
 - See also* Calculated fields; Formulas; Functions
 - excluding records from 10-22
 - when performed 14-1
 - Cancel Macro dialog box, displaying when running macros 19-14
 - Capitalization in text fields 6-22
 - Case-sensitivity of searches 11-7
 - in Paradox files 19-10
 - Categories on crosstabs 12-2
 - cc:Mail 16-16
 - .CDX filename extension B-9
 - Cells
 - crosstab 12-12
 - crosstab, changing formula for 12-25
 - worksheet 12-16
 - worksheet, border and fill of 12-22
 - Centering
 - data in fields 6-24
 - design objects 5-34
 - field labels 6-27
 - summary panels in reports 8-23
 - text in design objects 5-23
 - Changing. *See* Editing
 - Character (Chr) function A-12
 - Character sets
 - for dBASE files 19-9
 - for FoxPro files 19-9
 - for Paradox files 19-10
 - Chart notes 13-2
 - Charts 1-8, 13-1–13-12
 - axes on 13-2, 13-5, 13-14
 - changing data for 13-10
 - changing layout of 13-14
 - changing type of 13-12, 13-14
 - creating 13-2–13-9
 - creating, from crosstabs 13-9
 - formatting components on 13-14
 - formatting text on 13-15
 - instant, from crosstabs 13-9
 - legends on 13-2, 13-14
 - main databases for 13-6
 - notes on 13-2, 13-14
 - online help for 13-1
 - parts of 13-2
 - plotted area on 13-2, 13-14
 - position of components on 13-14
 - properties of 13-14
 - series on 13-2, 13-14
 - SmartMaster styles and layouts
 - for 13-3
 - titles on 13-2, 13-14
 - x-axis on 13-2, 13-5, 13-14
 - y-axis on 13-2, 13-5, 13-14
 - format and position of 13-14
 - Chart types 13-12–13-13
 - area charts 13-3
 - bar charts 13-3
 - line charts 13-3
 - pie charts 13-7
 - switching 13-12, 13-14
 - three-dimensional 13-12
 - tips for choosing 13-13
 - Checkboxes for fields
 - changing values for 6-23
 - creating 6-10
 - finding 11-9
 - turning on and off 10-13
 - Checking
 - data accuracy automatically 3-15
 - data type automatically 3-15
 - spelling 10-17–10-22
 - Chr (Character) function A-12
 - Circles
 - See also* Design objects
 - drawing on views 5-12
 - reshaping 5-21
 - Clipping graphics in PicturePlus fields (cropping) 6-32
 - Closing
 - Approach files 2-22
 - on form letters 9-2
 - Colon (:) in numeric formats 6-19
 - Color
 - See also* Fill color
 - of data in fields 6-24
 - of design objects 5-19–5-20
 - of field borders 6-25
 - of field labels 6-27
 - of lines drawn in PicturePlus fields 10-16
 - of page background 5-38
 - of repeating panels 7-12

Index-4

- of report panels 8-22
- of text in text objects 5-23
- of worksheet column headers and cells 12-22
- Column gutters on worksheets 12-9
- Column headers on worksheets 12-1
 - background color of 12-22
 - editing text in 12-22
 - selecting 12-13
- Columnar forms 7-4
- Columnar reports 8-3, 8-5
- Columns on crosstabs 12-12
 - adding, for fields 12-17
 - adding summary 12-24
 - changing formulas for 12-25
 - deleting 12-18
 - moving 12-19
 - resizing 12-19
- Columns on reports
 - changing number of 8-25
 - moving 8-27
 - resizing 8-28
- Columns on worksheets 12-1
 - adding, blank 12-21
 - adding, for fields 12-17
 - adding, for formulas 12-21
 - background color of 12-22
 - cell borders for 12-22
 - moving 12-18
 - removing 12-18
 - resizing 12-19
 - selecting 12-13
- Combine function A-12
- Comma (,)
 - in numeric formats 6-20
 - as search operator 11-4
- Comma-delimited text files
 - importing 2-14, 16-5
- Commands
 - See also specific commands; specific menus*
 - adding, to macros 15-4
 - allowed in macros 15-5
 - moving, in macros 15-4
 - online help for 1-10
 - online help for, preference for 19-2
 - removing, from macros 15-3
- Comparison expressions A-5
- Compatibility, software 16-1, B-1-B-10, C-1-C-16, D-1-D-3
 - summarized 1-2
- Compound documents 16-18
- Compression in dBASE and FoxPro files 19-9
- Concatenate. *See* Combine function
- Conditional
 - calculations in macros, example of 15-21
 - drop-down lists 6-7
 - function A-16
 - macros, example of 15-21
 - searches 11-10
- Connecting
 - to IBM DB2 C-9-C-12
 - to Microsoft SQL Server C-6
 - to Oracle SQL C-4
- Constants in formulas A-2
- Container applications 16-18
- Context-sensitive menus
 - in Browse 10-2
 - in Design 5-3
- Contexts. *See* Environments; *specific environments*
- Control menu 1-9
- Conventions xii
- Conversion functions, summarized A-8
- Converting
 - linked OLE objects to graphic elements 16-25
 - worksheets to crosstabs 12-8
- Coordinates of objects, displaying, in status bar 5-21
- Copying. *See* Duplicating
- Cos (Cosine) function A-13
- Count
 - in repeating panels 7-15, 7-19
 - in summary report panels 8-19
- Creating
 - See also* Adding; Displaying
 - Approach files
 - automatically 2-3, 2-5
 - Approach files, several, for one set of data 2-22
 - Approach OLE objects 16-19-16-21
 - backup files 2-20
 - charts 13-2
 - charts from crosstabs 13-9
 - checkboxes for fields 6-10
 - crosstabs 12-5-12-10
 - databases, basic steps for 1-16
 - databases from spreadsheets 2-11
 - databases from text files 2-14-2-18
 - drop-down lists for fields 6-4
 - embedded OLE objects 16-27
 - fields in a database 3-1-3-20
 - find requests 11-2
 - form letters 9-3
 - forms 7-4
 - formulas 3-8
 - joins 4-13
 - macros 15-1-15-9
 - mailing labels 9-16-9-20
 - named styles 5-27
 - radio buttons for fields 6-12
 - reports 8-3-8-13
 - SQL query files C-13-C-15
 - views in Lotus 1-2-3 17-9
 - worksheets 12-3
- Cropping graphics in PicturePlus fields 6-32
- Crosstabs 1-7, 12-1-12-26
 - adding columns and rows to 12-17
 - adding summary columns and rows to 12-24
 - body cells on 12-12
 - in Browse 12-3
 - column gutters on 12-12
 - columns on. *See* Columns on crosstabs
 - converting, from worksheets 12-8
 - copying, to Clipboard 12-15

- creating 12-5–12-10
 - creating charts from 13-9
 - creating, in Lotus 1-2-3 17-9
 - deleting summary columns and rows
 - from 12-24
 - in Design 12-3
 - displaying fields on 12-17
 - editing formulas on 12-25
 - formatting, for printing 12-23
 - formatting text on 12-23
 - formulas on, editing 12-25
 - main databases for 12-8
 - moving between cells on 12-16
 - moving columns and rows on 12-18
 - moving fields on 12-18
 - pane dividers on 12-12
 - removing fields from 12-19
 - resizing columns and rows on 12-19
 - row gutters on 12-12
 - selecting on 12-13
 - status bar for 12-12
 - summarized data on 12-24–12-26
 - text properties on 12-23
- Current date. *See* Date, current
- Current time. *See* Time, current
- CurrTime (Current time) function A-13
- Customizing
- Approach 19-1–19-22
 - data entry 3-13–3-18
 - icon bars 19-16
 - menus 19-18–19-22
- D**
- Data
- See also* Summarized data
 - aligning, in fields 6-24
 - automatic entry of, setting up
 - for 3-13
 - automatic verification of, setting up
 - for 3-15
 - changing, for charts 13-10
 - color of, in fields 6-24
 - copying, cutting, and pasting, in
 - fields 10-7
 - downloading, for Preview 19-14
 - duplicating, in fields 10-12
 - entering. *See* Entering data
 - exporting 16-12
 - finding, in records. *See* Finding
 - formats for 6-14–6-22
 - importing, from database
 - files 16-2–16-10
 - importing, from text files 16-5
 - mailing, electronically 16-16
 - saving, from SQL queries C-14
 - sharing, on networks. *See* Networks
 - sharing, with other applications. *See*
 - OLE (Object Linking and Embedding) objects
 - showing, in Design 5-9
 - showing, in Design, preference
 - for 19-2
 - text properties of 6-24
- Data entry order 6-32
- Data entry type of fields 6-23
- Database files 1-1, 2-1
- adding fields to 3-1–3-20
 - case-sensitivity of searches in 19-10
 - creating 2-3
 - creating backups of 2-20
 - creating, from spreadsheets 2-11
 - creating, from text files 2-14–2-18
 - dBASE. *See* dBASE files
 - defining passwords for 19-6
 - deleting 2-22
 - deleting fields from 3-20
 - deleting records from 10-23–10-24
 - detail, for views 4-5
 - entering passwords for 2-6, 18-7
 - exporting data from 16-12
 - field order in 3-12
 - file types 2-5
 - FoxPro. *See* FoxPro files
 - IBM DB2. *See* IBM DB2
 - importing 16-2–16-10
 - join options for inserting and
 - deleting records
 - automatically 4-17
 - joining 4-13
 - joining. *See* Joins
 - mailing, electronically 16-16
 - main, for views 4-5, 5-36
 - Microsoft SQL Server. *See*
 - Microsoft SQL Server
 - opening, from another
 - application 2-9
 - Oracle SQL. *See* Oracle SQL
 - Paradox. *See* Paradox files
 - read-only 19-9
 - saving copies of 2-20
 - sharing, on networks. *See* Networks
 - templates for 2-3, 2-20, 3-5
 - unjoining 4-20
- Database programs, compatibility with. *See* Software compatibility
- Databases
- See also* Database files
 - joined. *See* Joins
 - main. *See* Main database
 - template xii
- <<DATE>>. *See* Date, current
- Date, current
- finding 11-9
 - on form letters 9-2
 - in report headers and footers 8-24
 - on views 5-37
- Date fields 3-3
- See also* Entering data
 - adding, to databases 3-3
 - automatic data entry in, setting up
 - for 3-13
 - automatic data verification of,
 - setting up for 3-15
 - displaying formatting characters in,
 - when entering data 6-16
 - editing definitions of 3-11
 - entering data in 10-10
 - formatting 6-15–6-18
 - international formats for 10-11
 - sort sequence for 11-16
- Date function A-13
- Date-related functions summarized A-8

Index-6

- Dates
 - See also* Date, current
 - entering, in date fields 10-10
 - finding 11-8
 - in formulas A-2
 - international, in date fields 10-11
 - international, in formulas A-2
- DateToText function A-13
- Day function A-13
- DayName function A-14
- DayOfWeek function A-14
- DayOfYear function A-14
- .DB filename extension 2-5, B-9
- DB2 (IBM). *See* IBM DB2
- dBASE files
 - See also* Database files
 - case-sensitivity of searches in 11-7
 - character sets for 19-9
 - compatibility with B-1-B-3
 - compression in 19-9
 - database options for 19-9
 - field definitions and B-2
 - filename extensions of B-9
 - indexing and 19-12, B-2
 - locking protocol for 18-4
 - read-only 19-9
 - sharing on networks, options for 18-2
 - size limitations in B-3
- .DBF filename extension 2-5, B-9
- .DBQ filename extension B-9
- .DBT filename extension B-9
- Decimal point (.) in numeric formats 6-19
- Default settings. *See* Preferences
- Defining. *See* Adding; Creating
- Degree function A-14
- Deleting
 - columns from worksheets 12-18
 - columns and rows from
 - cross-tabs 12-18
 - commands from macros 15-3
 - data in fields 10-7
 - fields from databases 3-20
 - fields from form letters 9-13
 - fields from views 5-25
 - files 2-22
 - linked OLE objects 16-25
 - macros 15-10
 - named styles 5-31
 - objects from views 5-25
 - records 10-23-10-24
 - records automatically, join options for 4-17
 - report panels 5-25
 - text in design objects 5-25
 - views 5-40
- Delimited text files
 - creating databases from 2-14
 - exporting 16-13
 - importing 2-14, 16-5
- Descending sort order 11-15
- Deselecting fields and design objects 5-17
- Design environment 1-11, 5-1-5-40
 - See also* Views
 - appearance of joined data in 4-5
 - checking spelling in 10-17-10-22
 - context-sensitive menu in 5-3
 - customizing icon bars for 19-16
 - default icon bars for 5-2
 - displaying data or field names in 5-9
 - displaying data or field names in, preference for 19-2
 - grid. *See* Design grid
 - menu bar in 5-3
 - pop-up menu in 5-6
 - rulers in 5-8
 - saving changes in 5-1
 - showing Add Field dialog box in, preference for 19-2, 19-14
 - status bar in 5-3
 - Tools palette in 5-9
 - zooming in and out 5-11
- Design grid
 - preferences for 19-2
 - showing or hiding 5-7
 - snapping objects to 5-8
- Design objects 5-4
 - See also* Objects; Text; Text objects
 - adding 5-12-5-16
 - aligning 5-34
 - applying named styles to 5-19
 - applying properties to, from another object 5-25
 - attaching macros to 15-13
 - borders of 5-19-5-20
 - color of 5-19-5-20
 - color of text in 5-23
 - coordinates of, displaying in status bar 5-21
 - deleting 5-25
 - deselecting 5-17
 - dimensions of, displaying in status bar 5-21
 - distributing 5-34
 - drop shadows for 5-19
 - duplicating 5-24
 - editing 5-18-5-25, 5-32-5-35
 - equal spacing between 5-34
 - Fill pattern of 5-19
 - grouping 5-32
 - InfoBox and 5-5
 - moving 5-22, 5-24
 - moving, automatically when printing (sliding) 5-22
 - multiple, working with 5-32-5-35
 - named styles for 5-19, 5-26-5-31, 19-2
 - non-printing 5-19
 - OLE objects as 16-19-16-28
 - properties of 5-19-5-24, 5-25
 - resizing and reshaping 5-21
 - selecting 5-17
 - stacking order of 5-34
 - three-dimensional 5-20
 - ungrouping 5-32
- Detail database files, for views 4-5
- Dialing preferences 19-8
- Dialog boxes, online help for 1-10

- Dictionaries
 - editing user 10-20
 - main and user 10-18
 - switching main 10-21
 - Dimensions of objects, displaying in
 - status bar 5-21
 - Dimmed OK button in Join dialog
 - box 4-16
 - Displaying
 - See also* Adding; Creating
 - Add Field dialog box
 - automatically 19-2
 - baseline for fields 6-25
 - calculated fields for repeating panel
 - data 7-15
 - calculated fields on summary report
 - panels 8-19-8-20
 - coordinates of design objects in
 - status bar 5-21
 - data in Design 5-9
 - data in Design, preference for 19-2
 - design grid 5-7
 - dialog box for canceling
 - macros 19-14
 - dimensions of design objects in
 - status bar 5-21
 - drawing 5-9
 - field names in Design, preference
 - for 19-2
 - fields on crosstabs 12-17
 - fields on form letters 9-8
 - fields on forms 6-1-6-14, 7-6
 - fields on mailing labels 6-1-6-14,
 - 9-17
 - fields in repeating panels 7-14
 - fields on reports 6-1-6-14, 8-7
 - fields on views 6-29-6-32
 - find bar, preference for 19-2
 - formatting characters in fields 6-15
 - hidden records 10-23
 - icon bar 1-10
 - icon bar, preference for 19-2
 - InfoBox for design objects 5-5
 - InfoBox for fields 6-15
 - Lotus 1-2-3 data 17-7-17-9
 - Lotus Notes data 17-1
 - non-printing design objects 5-19
 - non-printing fields 6-23
 - non-printing PicturePlus fields 6-31
 - PicturePlus fields 6-29-6-32
 - records 10-4-10-5
 - report panel labels 8-21
 - SQL system table filenames in
 - dialog boxes 19-11
 - status bar 1-10
 - status bar, preference for 19-2
 - title page for reports 8-25
 - view tabs 1-10
 - view tabs, preference for 19-2
 - Welcome dialog box when starting
 - Approach 2-3, 19-2
 - Distinct values, finding 11-12
 - Distributing objects 5-34
 - Divider tabs. *See* View tabs
 - Division operator A-4
 - Dollar sign (\$) in numeric formats 6-19
 - DOS character set. *See* character sets
 - Double quotation marks (") in numeric
 - formats 6-19
 - Downloading data for Preview 19-14
 - Drawing
 - allowing, in PicturePlus fields 6-32
 - geometric objects on views 5-12
 - in PicturePlus fields 10-16
 - Drop shadows
 - for design objects 5-19
 - for fields 6-25
 - for repeating panels 7-12
 - for report panels 8-22
 - Drop-down lists for fields
 - changing values for 6-23
 - creating 6-4
 - displaying a subset of data in 6-7
 - entering data in 10-12
 - Duplicate values, finding 11-12
 - Duplicating
 - data in fields 10-7, 10-12
 - design objects 5-24
 - files 2-19
 - records 10-6
 - report panels 5-24
 - views 5-39
- ## E
- Editing
 - checkbox values 6-23
 - data. *See* Entering data
 - design objects 5-18-5-25,
 - 5-32-5-35
 - drop-down list values 6-23
 - embedded OLE objects 16-28
 - field definitions 3-11, 6-23
 - field labels 6-27
 - field properties 6-22-6-29,
 - 6-31-6-32
 - formulas on crosstabs 12-25
 - formulas in field
 - definitions 3-12, 6-23
 - layout of mailing labels 9-23
 - linked OLE objects 16-23-16-25
 - locking records for 19-14
 - macros 15-9
 - named styles 5-31
 - on networks. *See* Networks
 - radio button values 6-23
 - serial numbers of records 3-4
 - sort order 11-18
 - SQL query files C-13
 - text in design objects 5-18-5-25,
 - 5-32-5-35
 - text in worksheet column
 - headers 12-22
 - Ellipses
 - See also* Design objects
 - drawing on views 5-12
 - reshaping 5-21
 - Ellipsis (...) as search operator 11-4
 - E-mail 16-16
 - limiting amount of data in 16-16
 - sending from Approach 16-16

Index-8

- Embedded OLE objects 16-26–16-28
 - See also* Linked OLE objects; OLE (Object Linking and Embedding) objects
 - editing 16-28
 - inserting in Approach files 16-26–16-28
 - Encapsulated PostScript (EPS)
 - filename extension B-10
 - pictures, adding to views 5-13
 - pictures, pasting into fields 10-14–10-16
 - Enlarging
 - graphics in PicturePlus fields 6-32
 - views in Design 5-11
 - ENTER** key, using as **TAB** key 19-14
 - Entering data 10-7
 - by adding records 10-6
 - by adding records in repeating panels 10-6
 - automatic verification when 3-15
 - automatically 3-13
 - in Boolean fields 10-10
 - in checkboxes 10-13
 - copying, cutting, and pasting when 10-7
 - customization for 3-13–3-18
 - in date fields 10-10
 - displaying formatting characters when 6-15
 - from drop-down lists 10-12
 - by duplicating records 10-6
 - by filling fields with a value 10-16
 - in memo fields 10-8
 - moving between records when 10-4–10-5
 - in numeric fields 10-9
 - in PicturePlus fields 10-14–10-16
 - from radio buttons 10-13
 - specifying data formats for 6-14–6-22
 - in text fields 10-8
 - in time fields 10-11
 - using **ENTER** key as **TAB** key when 19-14
 - Entering passwords 2-6
 - on networks 18-7
 - Environment pop-up menu in status bar 1-9
 - Environments 1-9–1-15
 - See also* specific environments
 - Browse 1-13, 10-1
 - Design 1-11, 5-1
 - Find 1-14, 11-1
 - Preview 1-15, 14-3
 - EPS (Encapsulated PostScript) pictures
 - adding, to views 5-13
 - pasting, into fields 10-14–10-16
 - .EPS filename extension B-10
 - Equal to (=)
 - as comparison operator A-5
 - in numeric formats 6-20
 - as search operator 11-4
 - Exact function A-15
 - Excel
 - filename extension B-10
 - spreadsheets, creating databases from 2-11
 - Excel. *See* Microsoft Excel
 - Exclamation point (!) as search operator 11-4
 - Excluding records from calculations 10-22
 - Exp (Exponentiation) function A-15
 - Exporting data 16-12
 - creating a SQL query file by C-14
 - as delimited text 16-13
 - excluding records when 10-22
 - as fixed length text 16-14
 - limiting data when 16-14
 - from SQL query C-16
 - Exporting pictures in fields 16-15
 - Expressions in formulas A-3–A-6
 - arithmetic A-4
 - comparison A-5
 - logical A-6
 - Extensions, filename B-8–B-10
 - External indexes for dBASE and FoxPro 19-12
- ## F
- Factorial function A-15
 - Field borders, named styles
 - for 5-26–5-31
 - Field boxes 6-1
 - Field Definition command (File menu)
 - See also* Field Definition dialog box
 - Field definition dialog box, flag in 3-10
 - Field definitions, database 3-1–3-20
 - See also* Fields
 - dBASE and B-2
 - editing 3-11, 6-23
 - FoxPro and B-5
 - IBM DB2 and C-12
 - Microsoft Access and B-7
 - Microsoft SQL Server and C-7
 - ODBC and D-2–D-3
 - Oracle and C-4
 - Paradox and B-4
 - Field labels 6-27
 - See also* Labels; Text
 - aligning 6-27
 - applying named styles for 6-23
 - editing 6-27
 - hiding 6-27
 - inside field borders 6-26
 - named styles for 5-26–5-31, 6-23, 19-2
 - properties of 6-27
 - three-dimensional 6-27
 - wording of 6-27
 - Field length
 - changing 3-11
 - in dBASE files B-2
 - in FoxPro files B-6
 - in IBM DB/2 tables C-12
 - in Microsoft Access files B-7
 - in Microsoft SQL Server tables C-8
 - in ODBC data sources D-3
 - in Oracle SQL tables C-5
 - in Paradox files B-4

- Field mapping 16-2
 - when importing Approach files 16-11
 - when importing database files 16-8
 - when opening Approach files 2-7
- Field names
 - in dBASE files B-2
 - editing 3-11
 - on form letters 9-8
 - in formulas A-2
 - in IBM DB2 tables C-12
 - in Microsoft Access files B-7
 - in Microsoft SQL Server tables C-7
 - in ODBC data sources D-2
 - in Oracle SQL tables C-5
 - in Paradox files B-4
 - showing, in Design 5-9
 - showing, in Design, preference for 19-2
- Field references
 - See also* Field names
 - in formulas A-2
- Field types 3-1-3-4
 - See also specific types*
 - Boolean. *See* Boolean fields
 - calculated. *See* Calculated fields; Formulas; Functions
 - changing 3-11
 - date. *See* Date fields
 - memo. *See* Memo fields
 - numeric. *See* Numeric fields
 - PicturePlus. *See* PicturePlus fields
 - text. *See* Text fields
 - time. *See* Time fields
 - variable. *See* Variable fields
- Fields 1-1
 - See also* Field labels; *Specific field types*
 - adding, to databases 3-5
 - adding, to form letters 9-12
 - aligning 5-34
 - aligning data in 6-24
 - applying named styles to 6-23
 - applying properties to, from another object 5-25
 - attaching macros to 15-14
 - automatic data entry in, setting up for 3-13
 - automatic data verification of, setting up for 3-15
 - borders of 6-25
 - calculated. *See* Calculated fields
 - checkboxes for 6-10, 6-23
 - colors of 6-24
 - copying, cutting, and pasting data in 10-7
 - data entry order of, on views 6-32
 - data entry type 6-23
 - data formats for 6-14-6-22
 - database definitions of 3-11
 - in dBASE, limitations of B-3
 - defining. *See* Defining fields
 - deleting data from 10-7
 - deleting, from databases 3-20
 - deleting, from form letters 9-13
 - deleting, from views 5-25
 - deleting, from worksheets 12-18
 - deselecting, in Design 5-17
 - displaying baselines on 6-25
 - displaying, on crosstabs 12-17
 - displaying, on form letters 9-8, 9-12
 - displaying, on forms 6-1-6-14, 7-6
 - displaying, on mailing labels 6-1-6-14, 9-17
 - displaying, in repeating panels 7-14
 - displaying, on views 6-29-6-32
 - displaying, on worksheets 12-17
 - distributing 5-34
 - drop shadows for 6-25
 - drop-down lists for 6-4, 6-23
 - duplicating data in 10-12
 - editing, in databases 3-11
 - entering and editing data in. *See* Entering data
 - equal spacing between 5-34
 - finding matching values in. *See* Finding
 - in FoxPro, limitations of B-6
 - grouping 5-32
 - in IBM DB2, limitations of C-12
 - in reports. *See* Reports
 - InfoBox for 6-15
 - join 4-3
 - labels for. *See* Field labels
 - limiting the values for 6-7
 - mapping. *See* Field mapping
 - in Microsoft Access, limitations of B-8
 - in Microsoft SQL Server, limitations of C-8
 - moving 5-22, 5-24
 - moving, automatically when printing (sliding) 6-28, 9-21
 - moving, on crosstabs 12-19
 - moving data in 10-7
 - moving, on form letters 9-13
 - moving, on mailing labels 9-21
 - moving, in repeating panels 7-15
 - named styles for 5-26-5-31, 6-23, 19-2
 - non-printing 6-23
 - in ODBC data sources, limitations of D-2
 - OLE (Object Linking and Embedding) options for 3-17
 - in Oracle SQL, limitations of C-5
 - in Paradox, limitations of B-5
 - PicturePlus. *See* PicturePlus fields
 - properties of 6-22-6-29, 6-31-6-32
 - radio buttons for 6-12, 6-23
 - read-only 6-23
 - reducing boundaries when printing 6-28
 - removing, from crosstabs 12-19
 - in repeating panels 7-6, 7-14-7-15
 - resizing, on mailing labels 9-21
 - resizing, on views 5-21
 - selecting, in Browse 10-7
 - selecting, in Design 5-17
 - showing field names or data in, in Design 5-9
 - sliding, when printing 6-28

Index-10

- sorting records by 11-14–11-18
- stacking order of 5-34
- text properties of 6-24
- three-dimensional 6-25
- types of. *See* Field types; *specific types*
- ungrouping 5-32
- updating, by importing data.
See Importing
- File formats
See also Applications; *specific programs*
- File menu
Field Definition command.
See Field Definition dialog box
- File sharing. *See* Network
- File types, database 2-5
- Filename extensions B-8–B-10
- Files
See also Approach files; Database files
- Approach 1-1, 2-1
- copying 2-19, 2-22
- creating backup 2-19
- database 1-1, 2-1
- dBASE, limitations of B-3
- deleting 2-22
- FoxPro, limitations of B-6
- importing. *See* Importing
- Microsoft Access, limitations of B-8
- Paradox, limitations of B-5
- sharing, on networks. *See* Networks
- Fill color
 - of fields 6-25
 - of page background 5-38
 - of repeating panels 7-12
 - of report panels 8-22
 - of text and design objects 5-19
- Fill function A-15
- Fill pattern
 - of report panels 8-22
 - of text and design objects 5-19
- Filling fields with values 10-16
- Filtering data in drop-down lists 6-7
- Financial functions summarized A-8
- Find bar, preference for displaying 19-2
- Find environment 1-14, 11-1
 - customizing icon bar for 19-16
 - default icon bar for 11-2
- Find and replace. *See* Filling fields with values
- Find request
 - creating 11-2
 - saving, with macros 11-11, 15-17
- Find requests
See also Finding data in records
- Find Special dialog box 11-13
- Finding 11-1–11-14
 - “And” searches for 11-5
 - blank fields 11-9
 - Boolean values 11-8
 - case-sensitivity of 11-7
 - case-sensitivity of, in Paradox databases 19-10
 - checkbox settings 11-9
 - complex expressions 11-10
 - with conditional searches 11-10
 - creating find requests for 11-2
 - dates 11-8
 - distinct values 11-12
 - duplicate values 11-12
 - homonyms 11-7
 - with “If” statements 11-10
 - macro for, example of 15-17
 - with multiple criteria 11-5
 - non-blank fields 11-9
 - numbers 11-8
 - operators for 11-4
 - “Or” searches for 11-5
 - radio button settings 11-9
 - range of values 11-8
 - records matching multiple criteria 11-5
 - records matching one of several criteria 11-5
 - repeating searches when 11-11
 - text 11-6–11-7
 - times 11-8
 - unique values 11-13
 - values in a range 11-8
 - wildcards for 11-6
 - words that sound like other words 11-7
- First record, moving to 10-5
- Fixed-length text files
 - creating databases from 2-16
 - exporting 16-14
 - importing 2-16, 16-6
- Flag, in Field Definition dialog box 3-10
- Font
 - of data in fields 6-24
 - of field labels 6-27
 - of text in text objects 5-23
- Footers, in reports 8-24
- Form letters 1-5, 9-1–9-13
See also Views
- adding to contents of 9-11–9-13
- addresses on 9-6
- block 9-3
- closing for 9-7
- color settings for 9-10
- creating 9-3
- current date on 9-2
- default icon bar for 9-9
- displaying fields on 9-12
- entering and editing data on.
See Entering data
- field names on 9-6
- formatting text on 9-9
- inside address on 9-6
- main databases for 9-8
- modified block 9-4
- moving fields on 9-13
- personal 9-4
- return address on 9-6
- rulers on 5-8, 9-9
- salutation on 9-6
- SmartMaster styles and layouts for 9-3
- typing on 9-12

Formatting

- charts 13-14
- crosstabs for printing 12-23
- data 6-14–6-22
- reports 8-20–8-28
- text on charts 13-15
- text on crosstabs 12-23
- text in Design 5-23
- text fields 6-22
- text on worksheets 12-23
- worksheets for printing 12-23

Forms 1-4, 7-1–7-21

- See also* Views
- appearance of joined data on 4-5
- calculated fields for 7-15, 7-19
- columnar 7-4
- creating 7-4
- creating, in Lotus 1-2-3 17-9
- detail databases for 7-3
- displaying calculated fields
 - on 7-15, 7-19
- entering and editing data on. *See* Entering data
- examples of 7-16–7-21
- finding records on. *See* Finding
- lookups on 4-8, 7-17
- main databases for 4-6, 7-3, 7-7
- repeating panels on. *See* Repeating panels
- SmartMaster styles and layouts
 - for 7-4
- standard 7-4
- summarized data on 7-15, 7-19

Formulas A-1–A-32

- See also* Calculated fields; Functions
- adding columns and rows to
 - crosstabs for 12-24
- adding columns to worksheets
 - for 12-21
- constants in A-2
- creating, in calculated fields 3-8
- dates in A-2

- editing, on crosstabs 12-25
- editing, in field definitions 3-12
- elements of A-1–A-4
- expressions in A-3–A-6
- field names in A-2
- functions in A-3, A-6–A-32
- operands in A-1–A-3
- operators in A-1
- summarizing records with 3-10
- text in A-2
- times in A-2
- using, without calculated fields 3-15
- where-placed option in 3-10

Found set 11-2

FoxPro files

- See also* Database files
- case-sensitivity of searches in 11-7
- character sets for 19-9
- compatibility with B-5–B-6
- compression in 19-9
- database options for 19-9
- field definitions and B-5
- filename extensions B-9
- indexing and 19-12, B-6
- read-only 19-9
- size limitations in B-6
- viewing, on a network B-5

.FPT filename extension B-9

“Freezing” network data in Preview 18-8

Front, moving design objects to 5-33

Full record locking 19-14

Functions A-3

- See also* Calculated fields; Formulas
- described A-10–A-32
- in formulas A-3, A-6–A-32
- international settings for A-7
- parameters in A-6
- summarized A-8
- using A-6–A-8
- within other functions A-7

FV (Future value) function A-15

G

Geometric objects

- deselecting, in Design 5-17
- drawing on views 5-12
- selecting, in Design 5-17

.GIF filename extension B-10

GIF pictures

- adding, to views 5-13
- pasting, into fields 10-14–10-16

Graphic files

- adding pictures to views 5-13
- filename extensions for B-10
- pasting, into fields 10-14–10-16
- types of, supported 5-13

Graphics grid. *See* Autogrid

Graphs. *See* Charts

Greater than (>)

- as comparison operator A-5
- in numeric formats 6-20
- as search operator 11-4

Greater than or equal to (>=)

- as comparison operator A-5
- as search operator 11-4

Grid, design. *See* Design grid

Grouping objects 5-32

Groups on crosstabs 12-2

H

Headers

- for columns on worksheets.
 - See* Column headers on worksheets
- in reports 8-24

Height of objects, displaying, in status bar 5-21

Help, online

- for charts 13-1
- for commands 1-10
- for commands, preference for 19-2
- for dialog boxes 1-10
- for icons 1-10
- for printing options 14-3

Help system, using xii

Index-12

Hiding

- design grid 5-7
- field labels 6-27
- find bar, preference for 19-2
- icon bar 1-10
- icon bar, preference for 19-2
- page margins in Browse 5-36
- page margins when printing 5-38
- records from view 10-23
- status bar 1-10
- status bar, preference for 19-2
- title page for reports 8-25
- view tabs 1-10
- view tabs, preference for 19-2
- views in Browse 5-36

Homonyms, finding 11-7

Hour function A-16

Hundredth function A-16

I

IBM DB2

- compatibility with C-12
- connecting to, server C-9–C-12
- field definitions and C-12
- files, caching 19-11
- files, case-sensitivity of searches in 11-7
- files, creating 2-5
- files, database options for 19-11
- files, read-only 19-11
- size limitations in C-12

Icon bar pop-up menu, in status bar 1-9

Icon bars 1-8

- in Browse, default for 10-2
- for crosstabs, default for 12-12
- customizing 19-16
- in Design, defaults for 5-2
- displaying 1-10
- in Find, default for 11-2
- for form letters, default for 9-9
- for forms, default for 5-2
- for mailing labels, default for 9-15
- in Preview, default for 14-4
- for reports, default for 5-2

- showing or hiding 1-10
- showing or hiding, preference for 19-2
- text 5-2
- for worksheets, default for 12-11

Icons

- See also specific icons*
- SmartIcons xii

Icons. *See* Icon bar

.IDX filename extension B-9

If

- calculations in macros, example of 15-21
- function A-16
- as search operator 11-4
- searches 11-10

Importing

- appending records when 16-8
- Approach files 16-10
- database files 16-2–16-10
- delimited text files 16-5
- fixed-length text files 16-6
- matching records and 16-9
- text files 2-14–2-18, 16-5
- updating records when 16-9

Incrementing record numbers 3-15

- and renumbering by importing 16-10
- and renumbering with macros 3-4

Indented. *See* Three-dimensional

Index files

- dBASE 19-12, B-2
- external, for dBASE and FoxPro 19-12
- filename extensions for B-9
- FoxPro 19-12, B-6
- Paradox 19-13, B-4
- secondary, for Paradox 19-13

InfoBox

- collapsing 5-6
- for design objects 5-5
- for fields 6-15
- online help for 5-5
- opening 5-5

Initial check in macros 15-21

Inserting records. *See* Adding records

Inserting. *See* Adding

Insertion point in Browse 10-7, 10-8

Installing

- ODBC drivers D-7

International date formats

- in date fields 10-11
- in formulas A-2

International settings for functions A-7

International time formats

- in formulas A-2
- in time fields 10-12

Invalid joins 4-17

IsBlank function A-17

IsLastRecord function A-17

J

Join dialog box, dimmed OK button in 4-16

Join fields 4-3

- linking 4-13
- in repeating panels 7-3

Joined data

- appearance on views 4-4
- examples of forms using 7-16–7-21
- looking up 4-8, 7-17

Joining database files 4-13

Joins 4-1–4-20

- advantages of 4-1–4-3
- alias 4-11
- between database and itself 4-11
- on calculated fields 4-17, 19-14
- creating 4-13
- invalid 4-17
- main and detail databases and 4-5
- options for inserting and deleting records automatically 4-17
- repeating panels for. *See* Repeating panels
- types of relationships in 4-7–4-11
- unjoining 4-20
- valid 4-17

Justifying text 5-23

K

- Key field, specifying for Paradox databases
 - when adding fields to databases 3-19
 - when copying databases 2-21
 - when opening databases 2-10

L

- Labels
 - See also* Field labels; Mailing labels; Text
 - for repeating panels 7-9
 - for report panels 8-21
- Labels. *See* Field labels; Mailing labels
- Landscape orientation for printing 14-2
- Last record, moving to 10-5
- Layout
 - See also* Design environment
 - of charts 13-14
 - of mailing labels 9-23
- Layouts. *See* SmartMaster layouts
- .LCK filename extension B-9
- Leading summary reports 8-4, 8-8
- Left function A-17
- Left-aligning
 - data in fields 6-24
 - field labels 6-27
 - text in design objects 5-23
- Legend frames on charts 13-2
 - layout and position of 13-14
- Legends on charts 13-2
 - format, layout, and position of 13-14
- Length function A-18
- Less than (<)
 - as comparison operator A-5
 - in numeric formats 6-20
 - as search operator 11-4
- Less than or equal to (<=)
 - as comparison operator A-5
 - as search operator 11-4
- Like function A-18
- Line charts 13-3
- Line items. *See* Repeating panels
- Line spacing of text 5-23

Line width

- of design objects 5-19
- of fields 6-25
- of lines drawn in PicturePlus fields 10-16
- of page margins 5-38
- of repeating panels 7-12

Lines

- See also* Design objects
- drawing, in PicturePlus fields 10-16
- drawing, on views 5-12
- number of, in repeating panels 7-11

Linked OLE objects 16-21–16-25

- See also* Embedded OLE objects; OLE (Object Linking and Embedding) objects
- activating 16-25
- breaking links for 16-25
- changing sources for 16-25
- deleting 16-25
- editing 16-23–16-25
- inserting, in Approach files 16-21
- modifying links for 16-24
- updating 16-25

Linking join fields 4-13

- Lists, drop-down, for fields
 - changing values for 6-23
 - creating 6-4

Ln (Natural logarithm) function A-19

- Location. *See* Position
- Locking protocol for dBASE files 18-4
- Locking records for editing 19-14
- Log (Logarithm) function A-19
- Logical expressions A-6
- Logical functions summarized A-9
- Lookups in joined data 4-8
 - example of 7-17
- Looping macros 15-8
 - example of 15-19
- Lotus 1-2-3 spreadsheets
 - creating databases from 2-11
 - creating views in 17-9–17-10
 - displaying data from 17-7–17-10
 - filename extensions for B-10

Lotus Notes

- database options for 19-11
- displaying data from 17-1–17-6
- mailing views and data with 16-16
- replicating a database 17-4
- Lotus Notes F/X 1.1 17-6
- Lotus Symphony filename extensions B-10
- Lower (Lowercase) function A-19
- Lowercase, displaying text fields in 6-22
- Lowercase letters. *See* Case sensitivity

M

- Macro buttons, adding to views 15-11
- Macros 15-1–15-25
 - adding commands to 15-4
 - adding macro buttons
 - for 5-15, 15-11
 - attaching, to fields 15-14
 - attaching, to macro buttons 15-12
 - attaching, to objects 15-13
 - attaching, to views 15-15
 - Browse 15-5
 - Close 15-5
 - commands allowed in 15-5
 - conditional 15-21
 - creating 15-1–15-9
 - Delete 15-5
 - deleting 15-10
 - Dial 15-5
 - displaying dialog box for canceling 19-14
 - Edit 15-6
 - editing 15-9
 - Enter 15-6
 - examples of 15-16–15-25
 - Exit 15-6
 - Export 15-6
 - Find 15-6
 - Find Special 15-6
 - finding records with 11-11, 15-17
 - If calculations in 15-21
 - Import 15-6
 - looping 15-8

Index-14

- looping, example of 15-19
- Mail 15-7
- Menu Switch 15-7
- Message 15-7
- moving commands in 15-4
- Open 15-7
- Preview 15-7
- Print 15-7
- Records 15-7
- removing commands from 15-3
- Replicate 15-7
- Run 15-7
- running 15-15
- Save 15-8
- saving find request
 - with 11-11, 15-17
- Set 15-8
- setting a value with 15-19
- Sort 15-8
- Spell Check 15-8
- switching views with 15-16
- Tab 15-8
- View 15-8
- Zoom 15-8
- Magnetic grid. *See* Design grid
- Magnifying. *See* Enlarging
- Mail, electronic 16-16
- Mail merge. *See* Form letters
- Mailing labels 1-6, 9-13-9-23
 - See also* Views
 - adding design objects to 5-12-5-16, 9-20
 - Avery forms for 9-16
 - changing layout of 9-23
 - creating 9-16-9-20
 - creating, in Lotus 1-2-3 17-9
 - custom layout for 9-18
 - default icon bar for 9-15
 - displaying fields on 9-17
 - layout of, changing 9-23
 - main databases for 9-18
 - margins for 9-23
 - moving fields on 9-21
 - moving fields on, automatically
 - when printing (sliding) 9-21
 - options for 9-23
 - resizing fields on 9-21
 - SmartMaster layouts for 9-16
 - typing text on 9-22
- Main database
 - for forms xi
- Main database files
 - for charts 13-6
 - for crosstabs 12-8
 - for form letters 9-8
 - for forms 7-3, 7-7
 - for mailing labels 9-18
 - for repeating panels 7-3, 7-11
 - for reports 4-6, 8-8, 8-11
 - for views 4-5
 - for views, changing 5-36
 - for worksheets 12-4
- Main dictionary 10-18
 - switching 10-21
- Many-to-many relationships in joins 4-9
- Many-to-one relationships in joins 4-7
- Mapping. *See* Field mapping
- Margins. *See* Page margins
- Mathematical functions summarized A-9
- Maximize button 1-9
- .MB filename extension B-9
- .MDB filename extension B-9
- .MDX filename extension B-9
- Memo fields 3-2
 - See also* Entering data
 - adding, to databases 3-2
 - editing definitions of 3-11
 - entering text in 10-8
 - in ODBC data sources, limitations of D-2
- Memo files 3-2
 - in dBASE, limitations of B-3
 - in FoxPro, limitations of B-6
 - in Microsoft Access, limitations of B-8
 - in Microsoft SQL Server, limitations of C-8
- in Oracle SQL, limitations of C-5
- Menu bar 1-9
 - in Browse 10-2
 - customizing 19-18-19-22
 - in Design 5-3
- Menus
 - changing, for views 5-36
 - context-sensitive, in Browse 10-2
 - context-sensitive, in Design 5-3
 - creating with macros 15-1
 - customizing 19-18-19-22
 - pop-up. *See* Pop-up menus
 - short 5-36
- Menus, pop-up. *See* Pop-up menus
- Merging text and data on form letters 1-5
- Metafile (Windows) filename
 - extension B-10
- Microsoft Access
 - database options for 19-11
 - field definitions and B-7
 - filename extensions B-9
 - files, opening 2-11
 - files, read-only 19-11
- Microsoft Access files
 - compatibility with B-7-B-8
 - opening 2-11
 - size limitations in B-8
- Microsoft Access tables
 - read-only 19-11
- Microsoft Excel filename extension B-10
- Microsoft SQL Server
 - See also* Database files
 - compatibility with C-6-C-8
 - connecting to C-6
 - field definitions and C-7
 - files, caching 19-11
 - files, case-sensitivity of searches in 11-7
 - files, creating 2-5
 - files, database options for 19-11
 - files, read-only 19-11
 - size limitations in C-8
- Middle function A-19
- Minimize button 1-9

Minus sign (-)
 in numeric formats 6-20
 as subtraction operator A-4

Minute function A-19

Mod (Modulus) function A-20

Modem preferences 19-8

Modes. *See* Environments; *specific environments*

Month function A-20

MonthName function A-20

Moving
 See also Aligning; Distributing;
 Editing; Stacking order of objects

 between cells in a worksheet 12-16

 between records 10-4–10-5

 columns on crosstabs 12-18

 columns on reports 8-27

 columns on worksheets 12-18

 commands in macros 15-4

 data in fields 10-7

 design objects 5-22, 5-24

 design objects automatically when
 printing (sliding) 5-22

 design objects to back or front 5-33

 fields automatically when printing
 (sliding) 6-28

 fields on crosstabs 12-18

 fields on form letters 9-13

 fields on mailing labels 9-21

 fields on mailing labels
 automatically when printing
 (sliding) 9-21

 fields in repeating panels 7-15

 insertion point in Browse 10-8

 report panels 5-22, 5-24

 rows on crosstabs 12-18

Multiple databases. *See* Joins

Multiple objects, working
 with 5-32–5-35

Multiplication operator (*) A-4

N

Named styles 5-6, 5-26–5-31
 applying, to design objects 5-19
 applying, to fields and field
 labels 6-23

 applying, to page background 5-36

 applying, to PicturePlus fields 6-31

 applying, to repeating panels 7-11

 assigning default, for objects and
 views 19-2

 defining and saving 5-27

 deleting 5-31

 editing 5-31

Natural logarithm (Ln) function A-19

.NDX filename extension B-9

Networks 18-1–18-9
 changing to single-user status
 on 18-6

 control files for Paradox 18-4

 downloading data from, in
 Preview 18-8

 entering passwords on 18-7

 “freezing” data from, on screen 18-8

 locking protocol for dBASE files
 on 18-4

 record locking on 19-14

 refreshing data from, on screen 18-8

 requirements for xi, xiii

 setting up environment
 for 18-2–18-6

 sharing dBASE files on 18-2

 viewing FoxPro files on B-5

Next record, moving to 10-4

Non-blank fields, finding 11-9

Non-printing
 design objects 5-19

 fields 6-23

 page margins 5-38

 PicturePlus fields 6-31

Not equal to (<>)
 as comparison operator A-5

 as search operator 11-4

NOT operator in logical expressions A-6

Notation conventions xii

Notes F/X 1.1 17-6

Notes on charts 13-2
 format and position of 13-14

Notes server
 quick connecting 17-3

 replicating with 17-4

NPeriods (Number of periods)
 function A-21

.NSF filename extension B-9

Number of pages on reports,
 reducing 8-25

Number sign (#) in numeric formats 6-19

Numbering records 3-15
 and renumbering by
 importing 16-10

 and renumbering with macros 3-4

Numbers, finding 11-8

Numeric fields 3-2
 See also Entering data

 adding, to databases 3-2

 automatic data entry in, setting up
 for 3-13

 automatic data verification of,
 setting up for 3-13

 displaying formatting characters in,
 when entering data 6-21

 editing definitions of 3-11

 entering data in 10-9

 formatting 6-19

 sort sequence for 3-2, 11-16

NumToText (Number to text)
 function A-21

O

Object Linking and Embedding
 (OLE). *See* OLE (Object Linking
 and Embedding) objects

Object linking and embedding. *See* OLE
 objects

Objects
 See also Design objects

 linking. *See* OLE objects

Objects. *See* Design objects; Fields; OLE
 (Object Linking and Embedding)
 objects; Text objects

Index-16

- ODBC data sources
 - adding, for an installed driver D-8
 - case-sensitivity of searches in 11-7
 - database options for 19-11
 - field definitions and D-2–D-3
 - on a server D-5
 - opening, in Approach D-3–D-7
 - quick-connecting to D-6
 - set up on your system D-6
 - size limitations in D-3
- ODBC drivers
 - adding data sources for D-8
 - installing D-7
- OK button, dimmed, in Join dialog box 4-16
- OLE (Object Linking and Embedding)
 - objects 16-18–16-28
 - creating Approach 16-19–16-21
 - editing 16-23, 16-28
 - embedding 16-26–16-28
 - linking 16-21–16-25
 - in PicturePlus fields, options for 3-17
 - updating 16-25
- One-to-many relationships in joins 4-9
 - repeating panels and 7-3
- One-to-one relationships in joins 4-9
- Online Help, using xii
- See also* Help
- Online tutorial. *See* Tutorial
- Opening
 - Approach files 2-5–2-7
 - databases created by another application 2-9
 - SQL query files C-15
- Operands A-1–A-3
 - constants A-2
 - field names A-2
- Operators A-1
 - in arithmetic expressions A-4
 - in comparison expressions A-6
 - search 11-4
- Operators in logical expressions A-6
- Optimistic record locking 19-14
- OR operator in logical expressions A-6
- “Or” searches 11-5
- Oracle SQL
 - See also* Database files
 - compatibility with C-1–C-5
 - connecting to, on local drive C-4
 - connecting to, server C-2
 - field definitions and C-4
 - files, caching 19-11
 - files, case-sensitivity of searches in 11-7
 - files, creating 2-5
 - files, database options for 19-11
 - files, read-only 19-11
 - size limitations in C-5
- Order
 - data entry (tab order) 6-32
 - sort. *See* Sort order
- Orientation of pages when printing 14-2
- .OYZ filename extension B-9
- P**
- <<#>>. *See* Page numbers
- Page background 5-38
- Page breaks after summary report panels 8-18
- Page margins
 - borders of 5-38
 - hiding, in Browse 5-36
 - non-printing 5-19
 - resizing 5-38
- Page numbers on report headers and footers 8-24
- Page orientation for printing 14-2
- Page size for printing 14-2
- Pages, report
 - keeping records together on 8-27
 - reducing number of 8-25
- Paintbrush (Windows) filename extension B-10
- Pane dividers on crosstabs 12-12
- Pane dividers on worksheets 12-11, 12-16
- Paper orientation for printing 14-2
- Paper size, printer 14-2
- Paradox files
 - See also* Database files
 - case-sensitivity of searches in 11-7, 19-10
 - character sets for 19-10
 - compatibility with B-3–B-5
 - database options for 19-10
 - field definitions and B-4
 - filename extensions of B-9
 - indexing and 19-13, B-4
 - key fields for 2-10, 2-21, 3-19
 - network control files for 18-4
 - read-only 19-10
 - sharing on networks, options for 18-4
 - size limitations in B-5
- PARADOX.NET Paradox network control file 18-4
- Parameters in functions A-6
- Parent/Child. *See* One-to-many relationships in joins
- Parentheses () in numeric formats 6-20
- Passwords
 - defining 19-6
 - entering 2-6, 18-7
- Pasting
 - design objects 5-24
 - fields 5-24
 - pictures as design objects 5-13
 - pictures into fields 10-14–10-16
 - text 5-24
- Payment (PMT) function A-22
- .PCX filename extension B-10
- PCX pictures
 - adding, to views 5-13
 - pasting, into fields 10-14–10-16
- PDOXUSRS.NET Paradox network control file 18-4
- Pen. *See* Border
- Pen width. *See* Borders; Line width
- Percent sign (%) in numeric formats 6-19
- Period (.) in numeric formats 6-19
- Pi function A-21

- Pick list. *See* Drop-down list
 - Picture fields
 - in ODBC data sources, limitations of D-3
 - in Oracle SQL, limitations of C-5
 - Picture files
 - in Microsoft SQL Server, limitations of C-8
 - in ODBC data source, limitations of D-3
 - PicturePlus fields 3-3, 6-29-6-32
 - adding, to databases 3-3
 - allowing drawing in 6-32
 - applying named styles to 6-31
 - copying contents of, to files 16-15
 - cropping graphics in 6-32
 - display options for 6-32
 - displaying on views 6-30
 - drawing in 10-16
 - editing definitions of 3-11
 - named styles for 5-26-5-31, 6-31, 19-2
 - non-printing 6-31
 - OLE objects in 16-21-16-28
 - options for OLE objects in 3-17
 - pasting pictures into 10-14-10-16
 - properties of 6-31
 - read-only 6-31
 - resizing pictures in 6-32
 - Pictures
 - See also* PicturePlus fields
 - adding, to views as design objects 5-13
 - displaying, on views as fields 6-30
 - exporting 16-15
 - pasting, into fields 10-14-10-16
 - pasting, on views as design objects 5-13
 - Pictures, adding to views
 - See also* PicturePlus fields
 - Pie charts 13-7
 - Plotted area on charts 13-2
 - position of 13-14
 - Plus sign (+)
 - as addition operator A-4
 - in numeric formats 6-19
 - PMT (Payment) function A-22
 - Pop-up list. *See* Drop-down list
 - Pop-up menu in Design 5-6
 - Pop-up menus 1-9
 - Portrait orientation for printing 14-2
 - Position
 - See also* Aligning; Distributing; Moving; Stacking order of objects
 - of chart components 13-14
 - of objects, displaying in status bar 5-22
 - of summary report panels 8-18, 8-23
 - Position function A-22
 - PostScript (Encapsulated) filename extension B-10
 - Pow (Power) function A-22
 - PowerClick reporting 8-28-8-33
 - PowerKey technology 1-2
 - Preferences 19-1-19-16
 - See also* Customizing
 - for all Lotus Notes tables 19-11
 - for all ODBC data sources 19-11
 - for all SQL tables 19-11
 - for dBASE files 19-9, 19-12
 - for default sort order of records 19-5
 - for Design 19-2
 - for displaying window elements 19-2
 - for FoxPro files 19-9, 19-12
 - general work 19-14
 - modem 19-8
 - for Paradox files 19-10, 19-13
 - password 19-6
 - screen display 19-2
 - Prefix function A-23
 - Present value (PV) function A-23
 - Preview environment 1-15, 14-3
 - customizing icon bar for 19-16
 - default icon bar for 14-4
 - downloading data for 19-14
 - “freezing” network data in 18-8
 - non-printing design objects in, showing 5-19
 - non-printing fields in, showing 6-23
 - non-printing PicturePlus fields in, showing 6-31
 - status bar in 14-4
 - zooming in and out in 14-3
 - Previewing records in views 14-3
 - Previous record, moving to 10-4
 - Printer, specifying 14-2
 - Printing 14-5
 - See also* Non-printing
 - excluding records from 10-22
 - formatting crosstabs and worksheets for 12-23
 - moving design objects automatically when (sliding) 5-22
 - moving fields automatically when (sliding) 6-28
 - options for 14-2
 - records in views 14-5
 - reducing field boundaries when 6-28
 - Proper function A-23
 - Pulse dialing for modems 19-8
 - PV (Present value) function A-23
- ## Q
- .QRY filename extension B-9
 - Query files. *See* SQL query files
 - Query. *See* Find request; Finding
 - Question mark (?) as search operator 11-4, 11-7
 - Quotation marks (") in numeric formats 6-19
- ## R
- Radian function A-24
 - Radio buttons for fields
 - changing values for 6-23
 - creating 6-12
 - finding in 11-9
 - turning on and off 10-13
 - Raised. *See* Three-dimensional
 - Random function A-24

Index-18

- Range
 - of text, selecting, in design objects 5-17
 - of text, selecting, in fields 10-8
 - of values, finding 11-8
- Read-only
 - Approach files 2-6
 - dBASE files 19-9
 - fields 6-23
 - FoxPro files 19-9
 - Paradox files 19-10
 - passwords, defining 19-6
 - PicturePlus fields 6-31
 - SQL tables 19-11
- Read/write passwords, defining 19-6
- Rearranging. *See* Aligning; Distributing; Editing; Moving; Stacking order of objects
- Record numbers, automatic
 - renumbering, by importing 16-10
 - renumbering, with macros 3-4
 - setting up 3-15
- Records
 - adding 10-5-10-6
 - adding, on networks. *See* Networks
 - adding, in repeating panels 10-6
 - in dBASE, limitations of B-3
 - default sort order of 11-14, 19-5
 - deleting 10-23-10-24
 - duplicating 10-6
 - entering and editing data in. *See* Entering data
 - excluding 10-22
 - exporting 16-12
 - finding. *See* Finding
 - in FoxPro, limitations of B-6
 - hiding, from view 10-23
 - in IBM DB2, limitations of C-12
 - importing. *See* Importing
 - join options for inserting and deleting, automatically 4-17
 - keeping, together on reports 8-27
 - last. *See* IsLastRecord function
 - locking, for editing 19-14
 - mailing, electronically 16-16
 - in Microsoft SQL Server, limitations of C-8
 - moving between 10-4-10-5
 - numbering 3-15
 - in ODBC data sources, limitations of D-3
 - in Oracle SQL, limitations of C-5
 - in Paradox, limitations of B-5
 - previewing, in views 14-3
 - printing, in views 14-5
 - renumbering 3-4, 16-10
 - in repeating panels, number of 7-11
 - in repeating panels, summarizing data for 7-15
 - sharing, on networks. *See* Networks
 - showing hidden 10-23
 - sorting 11-14-11-18
 - updating, by importing. *See* Importing
- Rectangles
 - See also* Design objects
 - drawing on views 5-12
 - reshaping 5-21
- Reducing
 - graphics in PicturePlus fields 6-32
 - number of pages on reports 8-25
 - views in Design 5-11
- Referential integrity. *See* Joins
- Refreshing
 - found records in macros 15-17
 - network data on screen 18-8
- Relational database
 - applications 1-3
 - files 4-1-4-4
- Removing
 - fields from worksheets and crosstabs 12-19
 - summary columns and rows from crosstabs 12-25
- Removing. *See* Deleting
- Renumbering records
 - by importing 16-10
 - with macros 3-4
- Repeating panel reports 8-5, 8-11
- Repeating panels 7-3
 - adding, on existing forms 7-7
 - adding, when creating forms 7-6
 - alternating colors in 7-7, 7-12
 - applying named styles to 7-11
 - borders of 7-12
 - displaying fields in 7-14
 - displaying records in 10-6
 - drop shadow for 7-12
 - example of 7-19
 - labels for 7-9
 - main databases for 7-3, 7-11
 - named styles for 5-26-5-31, 7-11
 - non-repeating fields in 7-14
 - number of lines in 7-9, 7-11
 - properties of 7-11
 - rearranging fields in 7-15
 - resizing 7-12
 - selecting 7-10
 - sort order in 7-7, 7-11
 - summarizing data for records in 7-15
 - three-dimensional 7-12
 - unjoining databases used in 4-20
- Repeating searches 11-11
- Replace function A-24
- Replace. *See* Fill field
- Report columns. *See* Columns on reports
- Report panels 8-21-8-24
 - alignment of 8-18
 - borders of 8-22
 - color of 8-22
 - deleting 5-25
 - drop shadows for 8-22
 - location of 8-18
 - moving 5-22, 5-24
 - selecting 8-22
 - showing labels for 8-21
 - summary 8-14-8-20

- Reports 1-4, 8-1-8-33
 - See also* Columnar reports; Repeating panel reports; Standard reports; Summary reports; Views
 - adding subtotals to 8-31
 - adding summary panels to 8-16, 8-29
 - adding title pages to 8-25
 - columnar 8-3, 8-5
 - creating 8-3-8-13
 - creating, in Lotus 1-2-3 17-9
 - default icon bar for 5-2
 - displaying fields on 8-7
 - editing text and design objects on, in Design 5-18-5-25, 5-32-5-35
 - examples of 8-28-8-33
 - finding records on. *See* Finding
 - footers for 8-24
 - formatting 8-20-8-28
 - headers for 8-24
 - keeping records together on 8-27
 - leading summary 8-4, 8-8
 - main databases for 4-6, 8-8, 8-11
 - moving columns on 8-27
 - number of columns on 8-25
 - PowerClick examples of 8-28-8-33
 - previewing. *See* Preview
 - reducing number of pages on 8-25
 - repeating panel 8-5, 8-11
 - report panels in. *See* Report panels
 - resizing columns on 8-28
 - SmartMaster styles and layouts for 8-3
 - standard 8-3, 8-5
 - subtotals on 8-31
 - summarizing data on 8-14-8-20
 - summary 8-4, 8-8
 - title pages for 8-25
 - trailing summary 8-4, 8-8
- Requirements
 - network xiii
 - system xiii
- Reserializing records
 - by importing 16-10
 - with macros 3-4
- Reshaping, design objects 5-21
- Resizing
 - columns on reports 8-28
 - columns on worksheets and crosstabs 12-19
 - design objects 5-21
 - fields on mailing labels 9-21
 - fields on views 5-21
 - page margins of views 5-38
 - pictures in PicturePlus fields 6-32
 - repeating panels 7-13
 - rows on worksheets and crosstabs 12-19
- Right function A-24
- Right-aligning
 - data in fields 6-24
 - field labels 6-27
 - text in design objects 5-23
- Round function A-25
- Rounded rectangles
 - See also* Design objects
 - drawing on views 5-12
 - reshaping 5-21
- Row gutters on worksheets 12-11
- Row markers on worksheets 12-11
- Rows on crosstabs 12-12
 - adding, for fields 12-17
 - adding summary 12-24
 - deleting summary 12-25
 - editing formulas for 12-25
 - moving 12-18
 - removing 12-18
 - resizing 12-19
- Rows on worksheets 12-1
 - resizing 12-19
 - selecting 12-14
- Rulers, design 5-8
 - in form letters 9-9
- Running totals, setting up formulas for 3-8
- S**
- Salutation on form letters 9-2
- SAverage (Summary Average) function A-25
- Saving
 - Approach files 2-18-2-22
 - changes to shared records 18-9
 - creating SQL query file by C-14
 - data from SQL query C-15
 - databases, copies of 2-19
 - design changes 5-1
 - Find requests with
 - macros 11-11, 15-17
 - named styles 5-27
 - queries with macros 11-11, 15-17
 - sort order with macros 11-11
 - templates for databases 2-19
- SCount (Summary count) function A-25
- Screen display
 - increasing work space 1-8
 - work area 1-8
 - work area, preferences for 19-2
- Search criteria. *See* Find request
- Search operators 11-4
- Search strings, case-sensitivity of 11-7
 - in Paradox files 19-10
- Search. *See* Find
- Searching. *See* entries beginning with Find
- Second function A-25
- Secondary indexes for Paradox files 19-13
- “See-through” objects 5-19
- Selecting
 - in Browse 10-7
 - in Design 5-17
 - repeating panels 7-10
 - report panels 8-22
 - on worksheets 12-13
- Semicolon (;) in numeric formats 6-20
- Serial numbers for records
 - editing, by importing 16-10
 - editing, with macros 3-4
 - setting up 3-15

Index-20

- Series on charts 13-2
 - adding 13-14
- Server applications 16-18
- Servers, connecting to
 - IBM DB2 C-9–C-12
 - Microsoft SQL Server C-6
 - Oracle SQL C-2
- Shape of design objects, changing 5-21
- Sharing data
 - on networks. *See* Networks
 - with other applications. *See* OLE (Object Linking and Embedding) objects
- Sharing files. *See* Network
- Short menus 5-36
- Show data entry format option, in InfoBox 6-15
- Showing. *See* Displaying
- Shrinking graphics in PicturePlus fields 6-32
- Sign function A-26
- Sin (Sine) function A-26
- Single user status on networks 18-6
- Size
 - changing. *See* Resizing
 - of design objects, displaying in status bar 5-21
- Slash (/) as arithmetic operator A-4
- Sliding, when printing
 - fields 6-28
 - objects 5-22
- Sliding. *See* Moving
- SLN (Straight-line depreciation) function A-26
- Smart index 11-3
- SmartIcons xii, 1-8
 - See also* Icon bars
 - online help for 1-10
- SmartMaster layouts
 - for charts 13-3
 - for form letters 9-3
 - for forms 7-4
 - for mailing labels 9-16
 - for reports 8-3
- SmartMaster styles
 - for charts 13-4
 - for form letters 9-3
 - for forms 7-4
 - for reports 8-3
- SmartMasters 1-3
 - See also* SmartMaster layouts; SmartMaster styles
- SMax (Summary maximum) function A-26
- .SMI filename extension B-9
- SMin (Summary minimum) function A-27
- Snapping objects to design grid 5-8
- SNPV (Summary net present value) function A-27
- Software compatibility 16-1, B-1–B-10, C-1–C-16, D-1–D-3
 - summarized 1-2
- Sort order
 - ascending 11-15
 - changing 11-18
 - default 11-14
 - default, preference for 19-5
 - descending 11-15
 - in repeating panels 7-7, 7-11
 - restoring original 11-18
 - saving, with macros 11-11
 - specifying 11-16
- Sorting 11-14–11-18
 - excluding records from 10-22
- Soundlike function A-27
- Space-delimited text files
 - creating databases from 2-14
 - importing 2-14, 16-5
- Spacing
 - adding blank columns to worksheets for 12-21
 - of lines of text 5-23
 - of objects 5-34
- Span function A-27
- SpanUntil function A-28
- Spelling checker 10-17–10-22
 - editing user dictionary for 10-20
 - main and user dictionaries for 10-18
 - options for 10-21
 - running 10-18
 - switching main dictionary for 10-21
- Spreadsheets
 - creating databases from 2-12
 - filename extensions for B-10
- SQL queries
 - exporting data from C-16
 - saving data from C-15
- SQL query files C-13–C-16
 - creating C-14
 - editing C-14
 - opening, in Approach C-15
- SQL Server, Microsoft. *See* Microsoft SQL Server
- SQL servers. *See* IBM DB2; Microsoft SQL Server; Oracle SQL
- SQL system table filenames, displaying, in dialog boxes 19-11
- SQL tables C-1–C-16
 - caching 19-11
 - case-sensitivity of searches in 11-7
 - database options for 19-11
 - read-only 19-11
- Sqrt (Square root) function A-28
- Squares
 - See also* Design objects
 - drawing on views 5-12
 - reshaping 5-21
- SSTD (Summary standard deviation) function A-28
- SSum (Summary sum) function A-28
- Stacking order of objects, changing 5-34
- Standard deviation (STD) function A-29
- Standard forms 7-4
- Standard reports 8-3, 8-5
- Starting Approach, showing Welcome dialog box when 2-3, 19-2
- Statistical functions summarized A-9

- Status bar 1-9
 - in Browse 10-2
 - for crosstabs 12-12
 - in Design 5-3
 - in Preview 14-4
 - showing or hiding 1-10
 - showing or hiding, preference for 19-2
 - STD (Standard deviation) function A-29
 - Stored queries 11-11, 15-17
 - Stored sort order 11-11
 - Straight-line depreciation (SLN) function A-26
 - Stretching graphics in PicturePlus fields 6-32
 - Style menu
 - Field Style command. *See* Field Style command
 - Text Style command. *See* Text Style command
 - Styles. *See* Named styles; SmartMaster styles
 - Subtitles on charts 13-2
 - format and position of 13-14
 - Subtotals in summary panels 8-19–8-20
 - Subtraction operator A-4
 - Summarized data
 - on crosstabs 12-24–12-26
 - on forms 7-15
 - on forms, example of 7-19
 - on reports 8-14–8-20
 - on reports, examples of 8-28–8-33
 - when calculated 14-4
 - Summary average (SAverage) function A-25
 - Summary count (SCount) function A-25
 - Summary fields. *See* Calculated fields; Formulas
 - Summary functions summarized A-9
 - Summary maximum (SMax) function A-26
 - Summary minimum (SMin) function A-27
 - Summary net present value (SNPV) function A-27
 - Summary panels 8-14–8-20
 - adding 8-16
 - aligning 8-18
 - displaying calculated fields on 8-19
 - page breaks after 8-18
 - position of 8-18, 8-23
 - Summary reports 8-4, 8-8, 8-14
 - Summary standard deviation (SSTD) function A-28
 - Summary sum (SSum) function A-28
 - Summary variance (SVAR) function A-29
 - SVAR (Summary variance) function A-29
 - Symbols, operators A-1
 - Symphony filename extensions B-10
 - System requirements xiii
- T**
- TAB** key, using **ENTER** key as 19-14
 - Tab order for data entry 6-32
 - Tab-delimited text files
 - creating databases from 2-14
 - importing 2-14, 16-5
 - Table limitations
 - in IBM DB2 C-12
 - in Microsoft SQL Server C-8
 - in ODBC data sources D-3
 - in Oracle SQL C-5
 - Table view. *See* Worksheets
 - Tables. *See* Database files
 - Tabs, divider. *See* View tabs
 - Tagged Image File format (TIFF) filename extension B-10
 - Tan (Tangent) function A-29
 - Targa filename extension B-10
 - Targa pictures
 - adding, to views 5-13
 - pasting, into fields 10-14–10-16
 - Template databases xii
 - Templates for databases 2-3, 3-5
 - saving 2-19
- Text**
- See also* Design objects; Field labels; Labels; Text fields; Text objects
 - adding, to form letters 9-12
 - adding, to mailing labels 9-22
 - aligning, in design objects 5-23
 - color of, in data fields 6-24
 - color of, in design objects 5-23
 - deleting, in Design 5-25
 - deselecting, in Design 5-17
 - editing, in Design 5-18–5-25, 5-32–5-35
 - editing, in worksheet column headers 12-22
 - entering, in text and memo fields 10-8
 - finding 11-6–11-7
 - finding, wildcards for 11-6
 - formatting 6-22, 6-24
 - formatting, on charts 13-15
 - formatting, on crosstabs 12-23
 - formatting, in Design 5-23
 - formatting, on worksheets 12-23
 - in formulas A-2
 - icon bar 5-2
 - selecting, in Design 5-17
- Text fields 3-1**
- See also* Entering data; Text; Text objects
 - adding, to databases 3-5
 - automatic data entry in, setting up for 3-13
 - automatic data verification of, setting up for 3-13
 - capitalization of 6-22
 - displaying correct capitalization of, when entering data 6-22
 - editing definitions of 3-11
 - entering data in 10-8
 - formatting 6-24
 - sort sequence for 3-1, 11-16
- Text files**
- creating databases from 2-14–2-18
 - filename extensions for B-10
 - importing 2-14–2-18, 16-5

Index-22

Text objects

- See also* Design objects; Text
- adding, to views 5-14
- aligning text in 5-23
- applying named styles to 5-19
- applying properties to, from another object 5-25
- deleting 5-25
- deselecting 5-17
- editing 5-18–5-25, 5-32–5-35
- entering text in 5-14
- form letters as 9-12
- line spacing of text in 5-23
- named styles for 5-19, 5-26–5-31, 19-2
- properties of text in 5-23, 5-25
- selecting 5-17

Text size

- of data in fields 6-24
- of field labels 6-27
- of text in design objects 5-23

Text style

- of data in fields 6-24
- of field labels 6-27
- of text in design objects 5-23

Text-related functions summarized A-9

TextToBool (Text to Boolean) function A-30

TextToDate function A-30

TextToTime function A-30

.TGA filename extension B-10

TGA pictures

- adding, to views 5-13
- pasting, into fields 10-14–10-16

Three-dimensional

- charts 13-12
- design objects 5-20
- field labels 6-27
- fields 6-25
- repeating panels 7-12
- report panels 8-22

.TIF filename extension B-10

TIFF

- adding, pictures to views 5-13
- filename extension B-10
- pasting, pictures into fields 10-14–10-16
- tilde (~) as search operator 11-4
- <<TIME>>. *See* Time, current
- Time, current
 - in formulas A-2
 - in report headers and footers 8-24
 - on views 5-38
- Time fields 3-3
 - adding, to databases 3-5
 - automatic data entry in, setting up for 3-13
 - automatic data verification of, setting up for 3-13
 - displaying formatting characters in, when entering data 6-19
 - editing definitions of 3-11
 - entering data in 10-11
 - formatting 6-18
 - international formats for 10-12
 - sort sequence for 3-3, 11-16

Time, finding 11-8

Time function A-30

Time-related functions summarized A-9

Title frames on charts 13-2

- position of 13-14

Title pages for reports 8-25

Titles on charts 13-2

- format and position of 13-2

Today function A-31

Tone dialing for modems 19-8

Tools palette in Design 5-9

Top, moving design objects to 5-33

Totals

- for data in repeating panels 7-15
 - setting up formulas for 3-8
 - in summary report panels 8-19–8-20
- #### Trailing summary reports 8-4, 8-8
- #### Translate function A-31

Transparent

- objects 5-19
- repeating panels 7-12

Triggers, macro 15-10

Trigonometric functions, summarized A-9

Trim function A-31

Trunc (Truncate) function A-31

Tutorial xi

.TXT filename extension B-10

Typing text

- See* Entering data

Typing. *See* Entering data; Entering passwords

U

Ungrouping objects 5-32

Unjoining database files 4-20

Updating

- linked OLE objects 16-25
- records. *See* Editing; Importing

Upper (Uppercase) function A-31

Uppercase, displaying text fields in 6-22

Uppercase letters. *See* Case sensitivity

User dictionary 10-18

- editing 10-20

V

Valid joins 4-17

Value list. *See* Drop-down list

Values

- constants A-2
- entering, in fields 10-16
- finding. *See* Finding
- in formulas A-2–A-32
- limiting, in fields 6-7
- operands A-2

Var (Variance) function A-32

Variable fields 3-4

- adding, to databases 3-5
- automatic data type verification of, setting up for 3-15
- editing definitions of 3-11
- enabled for Notes F/X 1.1 17-6

- in find macros 15-19
 - options for data in 3-18
- Verification of data, automatic 3-13, 3-15
- Vertical bar (|) in numeric formats 6-20
- .VEW filename extension B-9
- View files
 - designing. *See* Design
- View password, changing Design and
 - See also* Set View Password
- View pop-up menu, in status bar 1-9
- View tabs 1-9
 - for crosstabs 12-12
 - showing or hiding 1-10
 - showing or hiding, preference for 19-2
 - for worksheets 12-11
- Viewing. *See* Displaying
- Views 1-3-1-8
 - See also* Charts; Crosstabs; Design environment; Form letters; Forms; Mailing labels; Reports; Worksheets
 - adding design objects to 5-12-5-16
 - adding OLE objects to 16-21-16-28
 - appearance of joined data on 4-4
 - applying named styles to background of 5-36
 - attaching macros to 15-15
 - background color and pattern of 5-38
 - borders of 5-38
 - charts 13-1-13-12
 - checkboxes on 6-10, 6-23
 - creating Approach OLE objects for 16-19-16-21
 - creating, in Lotus 1-2-3 17-9
 - crosstabs 12-1-12-26
 - current date on 5-38
 - current time on 5-38
 - customizing icon bar for 19-16
 - data entry order on 6-32
 - data formats for fields on 6-14-6-22
 - deleting 5-40
 - deleting text and objects on 5-25
 - designing. *See* Design
 - displaying fields on 6-1-6-14, 6-29-6-32
 - displaying PicturePlus fields on 6-29-6-32
 - drop-down lists on 6-4, 6-23
 - duplicating 5-39
 - duplicating objects on 5-24
 - editing fields on, in Design 6-22-6-29, 6-31-6-32
 - editing text and objects on, in Design 5-18-5-25, 5-32-5-35
 - entering and editing data on. *See* Entering data
 - finding records on. *See* Finding
 - form letters 9-1-9-13
 - formatting text on 5-23
 - forms 7-1-7-21
 - hidden records on 10-23
 - hiding, in Browse 5-36
 - hiding, page margins of 5-36
 - importing 16-10
 - limiting the values for fields on 6-7
 - mailing, electronically 16-16
 - mailing labels 9-13-9-23
 - main databases for 4-5, 5-36
 - margins of 5-38
 - menus for 5-36
 - moving design objects on, automatically when printing (sliding) 5-22
 - moving fields on, automatically when printing (sliding) 6-28
 - moving objects on 5-22, 5-24
 - named styles for 5-26-5-31, 5-36, 19-2
 - names of 5-36
 - page background of 5-38
 - previewing 14-3
 - printing 14-5
 - properties of fields on 6-22-6-29
 - radio buttons on 6-12, 6-23
 - reducing field boundaries on, when printing 6-28
 - reports 8-1-8-33
 - resizing fields on 5-21
 - resizing page margins of 5-38
 - selecting on 5-17
 - switching between 1-9
 - switching between, example of macro for 15-16
 - types of 1-3-1-8
 - unjoining databases used for 4-20
 - worksheets 12-1-12-24
- W**
- WeekOfYear function A-32
- Welcome dialog box, displaying when starting Approach 2-3, 19-2
- Where-placed option, for formulas 3-10
- Width
 - See also* Line width
 - of objects, displaying in status bar 5-21
- Wildcards for finding 11-6
- Windows bitmap
 - adding, pictures to views 5-13
 - filename extension B-10
 - pasting, pictures into fields 10-14-10-16
- Windows character set. *See* character sets
- Windows Metafile
 - adding, pictures to views 5-13
 - filename extension B-10
 - pasting, pictures into fields 10-14-10-16
- Windows Paintbrush
 - adding, pictures to views 5-13
 - filename extension B-10
 - pasting, pictures into fields 10-14-10-16
- .WK1 filename extension B-10
- .WKS filename extension B-10
- .WMF filename extension B-10
- WMF pictures
 - adding, to views 5-13
 - pasting, into fields 10-14-10-16
- Words. *See* Text

Index-24

Work area 1-8
 preferences for 19-2
Work space, Approach file window,
 increasing 1-8
Worksheets 1-7, 12-1–12-24
 See also Crosstabs; Views
 adding columns to 12-17, 12-21
 in Browse 12-3
 column gutters on 12-11
 column headers in. *See* Column
 headers on worksheets
 converting to crosstabs 12-8
 copying, to Clipboard 12-15
 creating 12-3
 default icon bar for 12-11, 12-12
 deleting fields from 12-18
 in Design 12-3
 displaying fields on 12-17
 dividing, into panes 12-16
 formatting for printing 12-23
 formatting text on 12-23
 formulas for 12-21
 main databases for 12-4
 moving between cells on 12-16
 moving columns on 12-18
 pane dividers on 12-11, 12-16
 properties of 12-22
 resizing columns and rows on 12-19
 row gutters on 12-11
 row markers on 12-11
 selecting on 12-13
 text properties on 12-23
.WR1 filename extension B-10
.WRK filename extension B-10

X

X-axis on charts 13-2
 properties of 13-14
.XGn index filename extension B-9
.XLS filename extension B-10
.Xnn index filename extension B-9

Y

Y-axis on charts 13-2
 properties of 13-14
Year function A-32
.YGn index filename extension B-9
.Ynn index filename extension B-9

Z

Zero (0) in numeric formats 6-19
Zooming in and out
 in Design 5-11
 in Preview 14-3