1 Adding Intelligence To Your Forms

In this chapter:

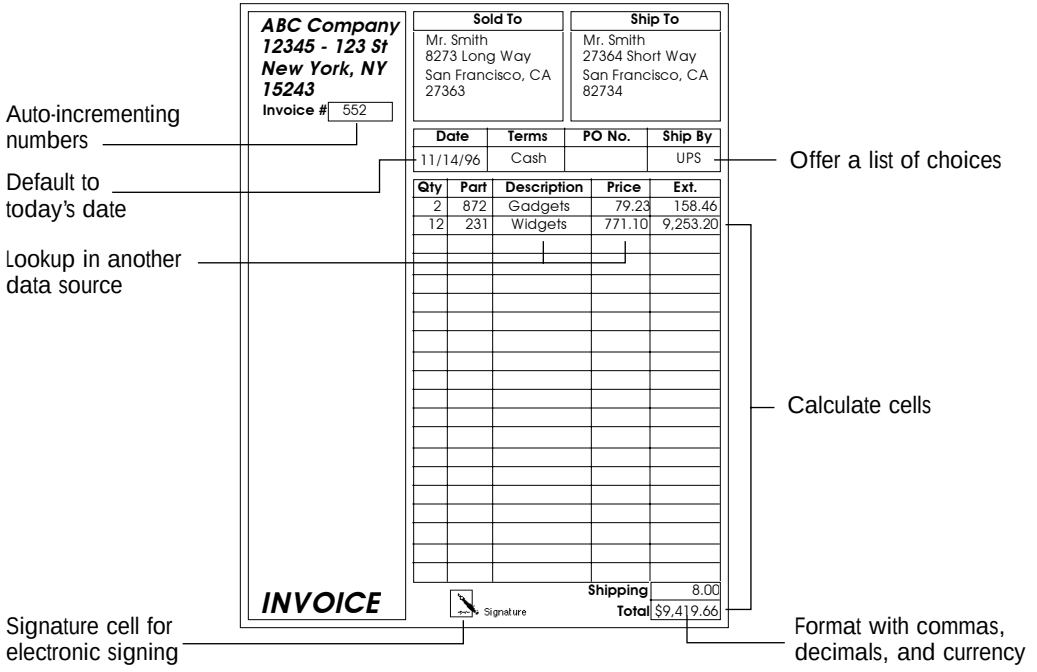
1 Adding Intelligence To Your Forms

This chapter introduces and explains Informed Designer's data-handling capabilities. You'll learn about cells and how they act as place holders for information when you complete a form. You'll also learn how to add 'intelligent' features to your forms. Features such as calculations, validity checks, choices lists, and help messages are designed to help the person filling out the form with Informed Filler.

Overview

When you draw a form, you use the Field and Table tools to create the blanks where information is typed. Each field and table column contains a cell—a holding place for information. When you fill out a form, a cell can hold information such as a name, number, date, time, picture, or signature.

Informed's data intelligence features make it easy for the Informed Filler user to fill out a form. By using these features, you can have Informed Filler automatically format, calculate, and verify data so that the user doesn't have to (the terms *information* and *data* are interchangeable). For example, you could use a formula to calculate the discount amount or the total on an invoice, or you could use the formatting options to automatically add a currency symbol and two decimal places of accuracy to a number.



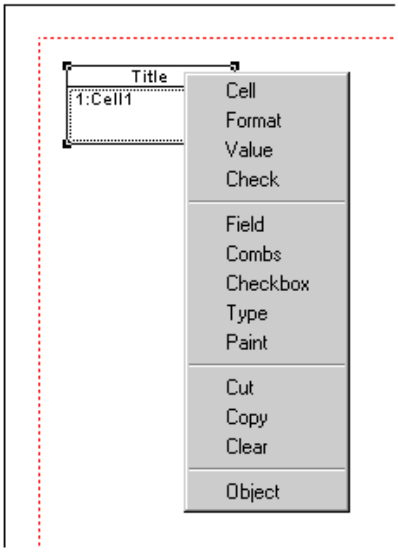
You add intelligent features to your form by using the Cell, Format, Value, Check, Conditional Tabbing, Lookup, and Help Message commands. These commands are found in the Settings menu.

Data Intelligence Commands

Command	Description
Cell	Use the Cell command to set the name and tab position of a cell. You can also configure type options, data entry options, and attach choice lists to make it easier for Informed Filler users to enter the cell's value.
Format	Use the Format command to choose the type of information that a cell will hold. The nine allowable cell types are text, character, number, name, date, time, boolean, picture, and signature. Each cell type offers different formatting options for controlling the exact format.
Value	You can set up formulas so that certain cells are automatically calculated or filled in with default values. Informed Filler can automatically increment a number each time the user fills out a new record. This is useful for numbers such as statement or invoice numbers.
Check	Use the Check command to enter error checking criteria so that Informed Filler can automatically check for errors when the user fills out a form. For example, you might want to restrict the discount amount on a sales slip to no more than ten dollars.
Conditional Tabbing	Not only can you customize the tabbing order of cells on a form, you can also configure dynamic tabbing so that the tab order changes depending on different conditions.
Lookup	With lookups, you can configure a form to read information from other forms and other information systems such as SQL databases. This powerful feature allows you to integrate a set of related forms and link them to other information services in your organization. For example, you could read inventory or customer information into your invoice form.
Help Message	You can provide a custom help message for each cell on your form. Help messages can provide useful information to the person who fills out the form.

The commands described in this chapter are accessible from menus and are selected in the normal way: By using the mouse or by typing keyboard equivalents where they exist.

On both Windows and Mac OS compatible computers, clicking the mouse button provides a shortcut to selecting various commands. With any tool selected, position the pointer over an object and click the right mouse button (Windows) or click the mouse button while pressing the Ctrl key (Mac OS) to display a pop-up menu. The pop-up menu contains the settings commands that are applicable to the type of object. For example, if you position the pointer over a field object and click the right mouse button, you'll see a pop-up menu containing the Cell, Format, Value, Check, Field, Combs, Checkbox, Type, Paint, Cut, Copy, Clear, and Object commands.



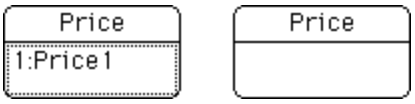
To select a command, drag the pointer to highlight the command, then click or release the mouse button.

The Cell palette also provides shortcuts to many commands. For a detailed description of the Cell Palette, see “Using the Cell Palette.”

Cells

You create a cell each time you draw a field or place a new column in a table. Field and table cells are identical in all respects except one: a field cell holds a single value, whereas a table cell can hold multiple values, one for each row in the table. Remember though, you can’t name or format the individual rows in a table cell differently; all rows in a table cell have the same name, type, and formatting options.

You can display or hide the cells in the drawing window. When a cell is showing, its name and tab position (see next sections) are displayed with the type attributes set for that cell. The figure below illustrates a field with and without its cell showing.



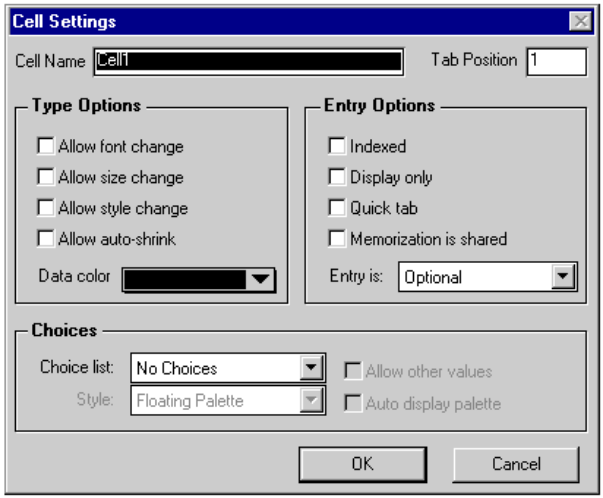
To display the cells in the drawing window, choose **Cell Names** from the Show submenu under Layout. When the cells are displayed, you’ll see a checkmark beside Cell Names indicating that the cells are showing. To hide the cells, choose **Cell Names** again to remove the checkmark.

For information about the appearance of fields and tables, see “The Field Tool” and “The Table Tool,” in Chapter 6 of your *Informed Designer Design and Graphics* manual.

Cell Names

Each cell on your form must be named uniquely. When you create a new cell, Informed Designer automatically names the cell ‘CellX,’ where X is the next available number. It’s easier to recognize a cell if you give it a descriptive name (a cell called ‘Discount’ is more recognizable than one called ‘Cell31’).

You can change a cell’s name using the Cell command. To change a cell’s name, select the cell that you want to rename, then choose **Cell...** from the Settings menu. This dialog box will appear:



Type the cell’s new name in the ‘Cell name’ text box and click ‘OK.’ When you click ‘OK,’ Informed Designer will check that the new name is valid according to these rules:

- A cell name must begin with a letter (a-z, or A-Z).
- Each character in a cell name must be a letter, number, space, or underscore character (_).
- A cell name can be no longer than 255 characters.
- A cell name cannot contain any reserved words.

If Informed Designer detects an error in the cell name, or if another cell already has that name, you’ll be alerted with a message.

Informed Designer’s Cell palette provides an alternate, and often more convenient, method of changing a cell’s name. See “Using the Cell Palette” later in this chapter for more information.

As explained in Chapter 6 of your *Informed Designer Design and Graphics* manual, each field and column cell has a title as part of the structure of fields and tables. When you draw a new field or table, titles are initially set to "Title." When you change a cell's name, Informed Designer will automatically change the field or column title to match the cell title, if you have never explicitly changed the title yourself. If you rename a cell that's used in a formula, Informed Designer will automatically change the cell's name in the formula too.

Type Options

You can set type options for each cell on your form. By setting a cell's type options, you determine factors such as the color of the data in a cell, whether or not the person filling out the form can make changes to the appearance of the data in a cell, and whether or not the type size of the data will shrink to fit the cell if the user enters more information than will fit in the cell area.

Font, Size, and Type Style

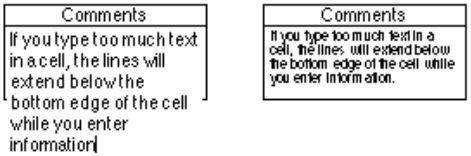
When the Informed Filler user fills out a form, the information they type into each cell is displayed using the cell's type attributes that you've chosen (see "The Cell Section" and "The Column Sections" in Chapter 5 of your *Informed Designer Design and Graphics* manual). These attributes include the font, font size, type style, alignment, and leading.

For each cell, you can control whether or not the person filling out the form can change the font, font size, and type style of the information being entered. For example, you might want to allow style changes so that words or letters can be underlined. To allow such options, click any of the 'Allow font change,' 'Allow size change,' or 'Allow style change' checkboxes on the Cell Settings dialog box. These options apply to all cell types except Signature and Picture.

Auto-Shrink

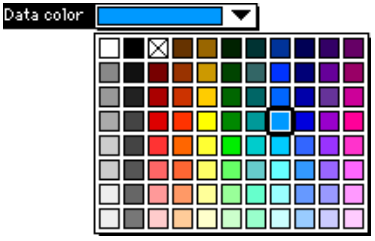
The 'Allow auto-shrink' checkbox controls another type option. When you enter information into a cell, you can enter more information than will actually fit in the cell area. Normally, when you press Tab to move to the next cell, the information that doesn't fit is hidden.

If you check the 'Allow auto-shrink' option, Informed will shrink the type size of the information so that it fits entirely in the cell area when you print your form.



Data Color

You can choose a color with which to display cell values. The data color setting applies to all cell types with the exception of Picture. Pictures always appear in their original color. To select a color, click the ‘Data color’ drop-down list on the Cell Settings dialog box, and hold down the mouse button.



Position the pointer over the desired color on the color palette and release the mouse button.

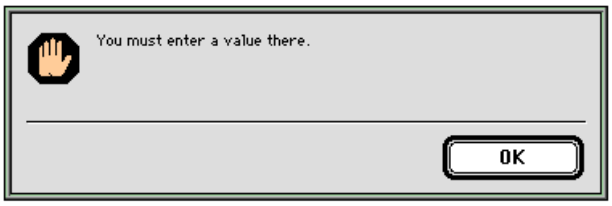
Entry Options

Informed Designer’s data entry options allow you to determine how information is entered when the Informed Filler users fills out a form. You can specify cell attributes such as whether or not entering a cell value is optional, recommended, or required, and whether or not a cell can share its memorized values with similar cells in other forms. You can also set a cell to hold only calculated or default values, instead of values entered by the user.

Entry Status

Check formulas, as explained in “Data Verification,” allow you to specify sophisticated formulas that can test for a variety of errors as the Informed Filler user fills out a form. For simple, more common error conditions, the entry status feature allows you to check for blank values where values are either required or recommended.

If a particular cell value is mandatory, select ‘Required’ from the ‘Entry is’ drop-down list. If a cell value is not mandatory but you’d like to suggest to the user that one be entered, select the ‘Recommended’ option instead. If the Informed Filler user neglects to enter a value in the cell, a message will appear in a dialog box indicating that a value is required or recommended.



The message is displayed when the user tabs to a different cell or when the record is accepted. Once the message appears for the first time (for a particular cell), it will not appear again unless the user later changes the value again or, for required values, when the record is accepted. Informed Filler will not allow the user to accept a record if a required cell value has not been entered.

As a shortcut, you can select the 'Required' entry status by clicking the corresponding button on the Cell palette. For more information, see "Using the Cell Palette" later in this chapter.

Display Only

Informed Designer allows you to decide whether or not a cell's value can be changed by the Informed Filler user. You might want some cells to hold only their calculated or default values, while you might allow other cells to hold values entered by the user.

If you check the 'Display only' feature for a cell, Informed Filler won't let the user change that cell's value when forms are filled out. The cell will be excluded from the tab order and if the user tries to type in the cell, a beep will sound.

You can also change the 'Display only' setting for a cell using the Value command and the Cell Palette. Visually, Informed Designer shows you which cells have the 'Display only' option selected by displaying a cell's frame in red.

Shared Memorization

"Default Values" later in this chapter, explains how you can specify a default value for any cell. This feature is useful if a cell's default value is known in advance and is the same for all users.

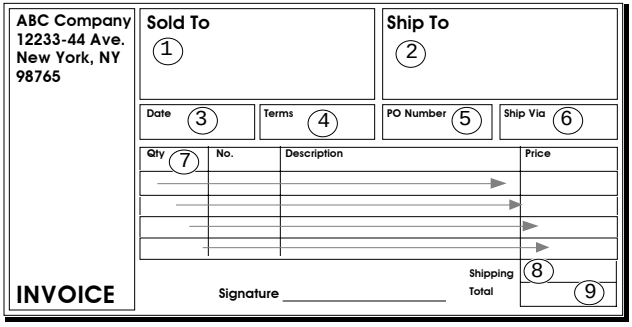
Many forms contain information that is specific to the person filling out the form. For any one person, this information is usually the same for each form they fill out. Informed Filler provides a feature that allows the person filling out a form to specify a cell's default value. Chapter 3, of the *Informed Filler User's Manual* explains how the user can choose the Memorize command to set the default value for a cell.

Often different types of forms will contain some common information. For example, both purchase requisition and travel expense forms contain cells for employee information. For a particular employee, this information is the same on every form, both for purchase requisitions and travel expense forms.

The 'Memorization is shared' option allows you to specify that a cell is to share its memorized value with similar cells on other forms. This means that the Informed Filler user can memorize a cell's value once and have the memorized value automatically take effect for the same cell on other forms. A cell's memorized value is shared only if the 'Memorization is shared' option is selected. The memorized value is shared only with cells on other forms that have the same cell name and the 'Memorization is shared' option selected.

Tab Order

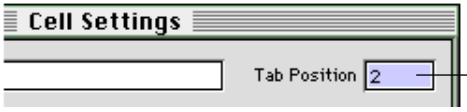
Each time you create a new cell, Informed Designer assigns the next available *tab position* to that cell. On your form, the tab position of all the cells together determines the form's *tab order*; that is, the order that you tab from one cell to the next when you fill out or edit a form. The cell with tab position 1 is entered first, then the cell with tab position 2, and so on.



The circled numbers indicate the order in which tabbing will occur.

You can change a form's tab order with the Cell command, the Change Tab Order command, or by using the Tab tool.

Use the Cell command to reposition a cell in the tab order. To do this, select the cell and choose **Cell...** from the Settings menu. When the Cell dialog box appears, type the new tab position in the 'Tab position' text box.



Change a cell's tab position by typing here.

After you enter the new tab position, click 'OK' to change the selected cell. If you enter an invalid tab position, Informed Designer will alert you with a message.

Changing the tab position of one cell automatically changes the tab position of other cells as well. It's like removing the cell from the tab order list, then re-inserting it back in a new position.

Tabbing in Tables

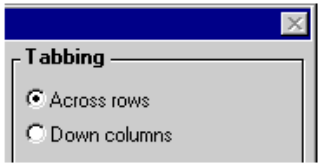
The tab order for tables is handled differently than for fields. Although a table is made up of one or more column cells, all the column cells share a common tab position. For example, if you draw a table with three columns as the first object on your form, all three columns will have tab position 1.

Although the columns in a table all share the same tab position, you can control the direction of the tabbing. The tab order within a table can be either across the rows or down the columns. Being able to tab in different directions makes it easier to fill out certain types of forms. For example, a table on an invoice form usually has columns such as 'Quantity,' 'Part Number,' and 'Price.' The logical order for filling out the form would be to tab *across* the rows and enter the quantity, part number, and price for each item being sold.

Tab across the rows →

Qty	Part No.	Price
10	20-0000	99.00
5	10-0000	195.00

To set a table's tab direction to go across the rows, choose **Table...** from the Settings menu, then click the 'Across rows' radio button on the Table Settings dialog box.



Other types of forms are filled out easier by tabbing *down* each column rather than across the rows. For example, travel expense forms sometimes use columns for each day of the week, with the name of each expense listed beside the rows on the table. Instead of tabbing across the rows and filling out the 'Breakfast' expense for each day, it's more convenient for the user to tab down one entire column and fill out all the expenses for that day, and then go on to the next column.

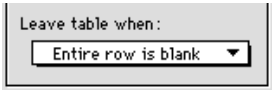
Tab down the columns ↓

	Mon	Tue	Wed
Breakfast	5.95		
Lunch	10.00		
Dinner	15.95		
Hotel	100.00		
Cab	10.00		
Entertainment			

To set a table's tab direction to go down the columns, click the 'Down columns' radio button on the Table Settings dialog box.

If the tab direction for a table is set to go across the rows, the Informed Filler user can override this by pressing the Enter (Windows) or Return (Mac OS) key instead of the Tab key. Pressing Enter/Return moves down the columns rather than across the rows.

Tables on forms usually have multiple rows. However, it's not always the case that every row in a table is used when a form is filled out, so Informed allows the user to leave a table without having to tab through excess empty rows. You use the 'Leave table when' option on the Table Settings dialog box to specify when tabbing will leave a table.



By default, the 'Leave table when' option is set to 'Entire row is blank.' This means that tabbing leaves a table after tabbing through one empty row. To change this option, click the 'Leave table when' drop-down list and select the 'First column is blank' item. This means that tabbing leaves a table after tabbing out of the first column of an empty row. The 'Leave table when' option is only available when the tabbing direction is set to 'Across rows.'

The Tab Tool

Informed Designer's tool palette contains the Tab tool. This tool allows you to change the tab order of the cells on your form by simply clicking and dragging the pointer from one cell to another.

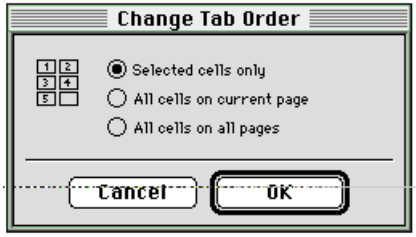
Suppose you have three cells on your form: Name (tab position 1), Fax (tab position 2), and Phone (tab position 3). You might want to change the Phone cell so that it is in tab position 2.

With the Tab tool selected, position the pointer over the Name cell (tab position 1). The pointer changes into a hand. Click the cell and hold the mouse button down while dragging the hand to the Phone cell. A gray line follows the hand to indicate which cell you are moving from. When a highlighted border appears inside the Phone cell, release the mouse button. The Phone cell is now in tab position 2 and the Fax cell has changed to tab position 3.

The Change Tab Order Command

The tab order of a form is commonly based on the top-left through bottom-right positioning of each cell; that is, cells are generally filled out from left to right, starting at the top of a form and working downwards. Informed Designer provides a command that lets you easily reorder the tab position of cells in this manner.

The Change Tab Order command changes the tab position of cells to match their relative position to each other. You can reorder all cells or only selected ones on a single page or on all pages of your form. To use this command, choose **Change Tab Order...** from the Arrange menu or simply double-click the Tab tool. The Change Tab Order dialog box will appear.

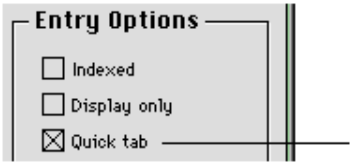


To reorder only the selected cells, choose the ‘Selected cells only’ option. The other two options allow you to reorder all cells on the current page, or all cells on all pages. After choosing an option, click ‘OK’ to perform the command. To cancel the Change Tab Order command, click ‘Cancel’ instead.

Quick-Tabs

When the Informed Filler user fills out a form, pressing the Tab key moves from one cell to the next. Pressing the Shift-Tab key moves them in the opposite direction. Often the user might want to move directly to a particular cell on a form without having to pass through each individual cell to get there. The Quick-Tab feature allows the user to bypass the normal tab order of a form.

By pressing the F2 key (Windows) or Command-Tab keys (Mac OS), the user moves directly to the next Quick-Tab cell. Pressing Shift-F2 (Windows) or Command-Shift-Tab (Mac OS) moves them to the previous Quick-Tab cell instead. To make a Quick-Tab cell, select the cell and choose **Cell...** from the Settings menu.



Click the ‘Quick tab’ checkbox, then click ‘OK’ to dismiss the dialog box.

Use the Quick-Tab feature when your form is divided into sections. By making the first cell in each section a Quick-Tab cell, the user can easily move from one section to the next by pressing F2 (Windows) or Command-Tab (Mac OS) when the form is filled out.

In all tables, the first column is automatically a Quick-Tab cell, regardless of whether or not you select the Quick-Tab option. If the Quick-Tab option is selected for a column cell, F2/Command-Tab will tab from row to row. The first field cell following a table is also automatically a Quick-Tab cell.

The Cell palette provides an alternative, and often more convenient method of setting the Quick-Tab attribute for a cell. For more information, see “Using the Cell Palette” later in this chapter.

Master Page Cells

When you fill out a multi-page form, Informed will automatically change pages for you when you tab between cells on different pages. Like all cells on your form, the cells that appear on the master page also have a tab position. However, since the items on the master page automatically appear on all pages of your form, there's no need to change pages when you tab to a master page cell. Instead you'll remain on the current page.

For more information about the master page, see "The Master Page" section in Chapter 4 of the *Informed Designer Design and Graphics* manual.

Conditional Tabbing

By configuring a cell to have conditional tabbing, you allow the Informed Filler user to tab past sections of the form that are not relevant to the information that they are entering. For example, you could specify a tabbing condition for 'Local' and 'Out of Town' checkboxes on a travel expense form. If the user selects the 'Local' checkbox and then tabs from that cell, they would tab past sections for claiming expenses such as 'Hotel Accommodation' and 'Airline Travel,' and go directly to sections for claiming expenses such as 'Parking' and 'Fuel.'

You specify various tabbing conditions by writing a tab formula. A tab formula applies to a particular cell and determines where tabbing should move when the Informed Filler user tabs from that cell. The result of the formula can be either the name or the tab position of the cell to which tabbing should move.

A tab formula can make use of Informed's powerful formulas and functions capabilities. For a detailed description of these features, please see Chapters 9 and 10 of this manual.

The example formula below tests whether or not the checkbox cell "Married" is checked and, if so, returns "Spouse Name," the name of the cell in which the user enters his or her spouse's name. If Married is unchecked (that is, false), the formula returns "Employer," the name of the first cell following the section for married applicants.

```
If Married then
   "Spouse Name"
Else
   "Employer"
End
```

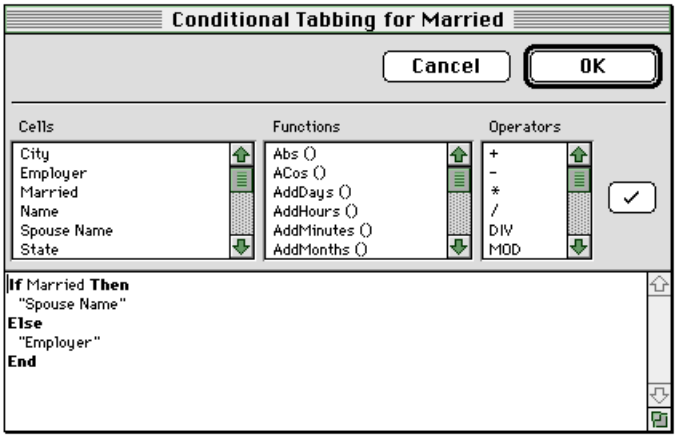
The purpose of the above tab formula is to automatically tab past a section on the form that applies only to married applicants when the 'Married' checkbox cell is not checked. If a tab formula does not return a result, then tabbing will move to the next cell in the tab order. If Spouse Name were the cell following Married (in tab order), then the following formula would work just as well.

```
If Not Married then
   "Employer"
End
```

Note In a conditional tabbing formula, the name of the cell to move to must be in quotes. Otherwise, the value of that cell will be used as the name.

The above examples demonstrate how a tab formula can return a cell's name to identify the name of the cell to move to. A tab condition formula can also return the tab position of the cell instead.

To specify the tab formula for a particular cell, select the cell, then choose **Conditional Tabbing...** from the Settings menu. The Conditional Tabbing dialog box appears.



You enter the formula by typing in the large text box. You can resize the dialog box to show more or less of the tab conditions formula. Informed Designer makes it easy to enter complex, error-free formulas. Instead of typing cell names, functions, and operators, you can double-click any entry in any of the corresponding scrolling lists. The entry is inserted into the formula at the current insertion point. You can move between the lists on the dialog box by pressing Tab. When you tab into a list, a bold frame appears around it to indicate that it's selected.

If you double-click to enter a function that has one or more parameters, Informed Designer will automatically position the insertion point at the first parameter. If you double-click a function while holding down the Alt (Windows) or Option (Mac OS) key, the parameter names are included within parentheses.

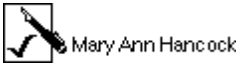
If you click the checkmark button while entering a formula, or if you click 'OK' to dismiss the dialog box, Informed Designer will check to make sure that the formula is valid. The formula is formatted properly, and if any errors are detected, a message appears describing the nature of the error.

Cell Types

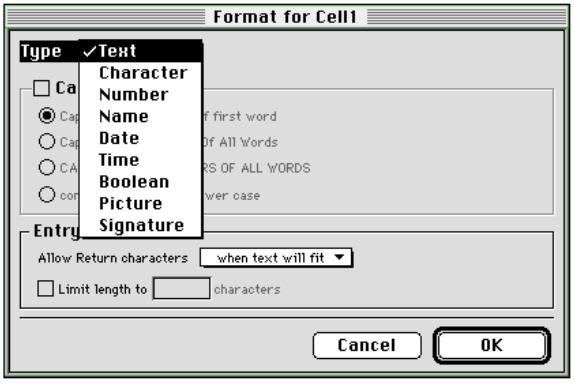
This section describes Informed's cell types and the options associated with each one. Altogether there are nine different cell types. When you create a cell, you should set its type so that it matches the information that the cell is intended to hold. For example, if a cell holds a number, then its type should be number. That way, you can use the cell in arithmetic calculations, and you could have Informed Filler validate numbers that are entered into the cell when the user fills out the form.

The following table lists the nine cell types with examples.

Cell Types

Cell Type	Examples	
Text	Business form #29	12345 - 123 Street, A Big City
Character	(555) 555-1212	02983-1283
Number	101	$12,550.75
Name	Mr. John Smith	Jones, Mr. Tom F.
Date	10/25/89	Wednesday, November 8, 1989
Time	14:20	03:15:04 PM
Boolean	Yes	
Picture		
Signature		

Use the Format command to change the type and formatting options of a cell. To set a cell's type, select the cell, then choose **Format...** from the Settings menu. The Format dialog box appears, allowing you to choose a type from the 'Type' drop-down list.



When you select a different type, the Format dialog box changes to show the available options for that type. After you select the cell type and any options, click ‘OK’ to change the selected cell. To cancel the Format command, click ‘Cancel’ instead.

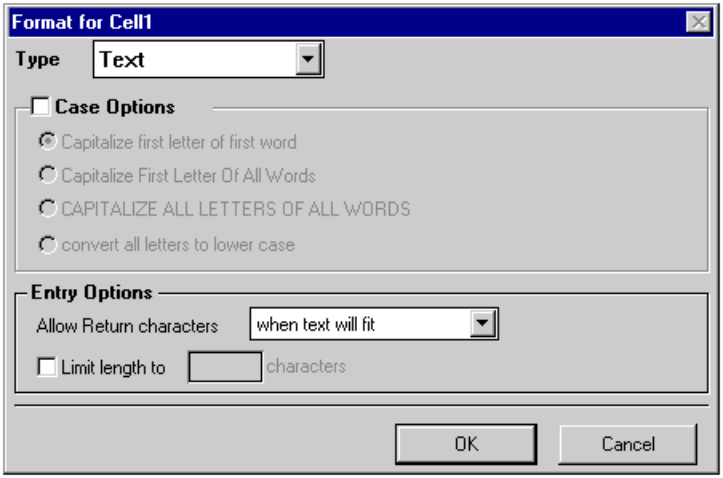
You can change the type and format of two or more cells at the same time. Simply select each cell before choosing the Format command. For more information, see the “Changing Multiple Objects” section, in Chapter 7 of your *Informed Designer Design and Graphics* manual.

Using the Format command, you can change the default cell type and format for field and table cells (the default settings determine the type and formatting options of new cells). To change the default settings, deselect all objects and choose the Format command. Any changes that you make on the Format dialog box will be set for any cells that you draw thereafter. If the Pointer tool is selected, the default settings are changed for both the Field and Table tools. If only one of the Field or Table tools is selected, the defaults are changed for that tool only. For more information, see the “Changing Default Settings” section, in Chapter 7 of your *Informed Designer Design and Graphics* manual.

As a shortcut, you can select the Format command as well as various cell types and formatting options by clicking different buttons on the Cell palette. For more information, see “Using the Cell Palette” later in this chapter.

Text

Use the Text cell type for cells that hold textual information such as an address, a comment, or a memo. The Text cell type allows the Informed Filler user to enter any letter, number, or symbol from the keyboard into a cell.



Note Although numbers can be entered in a text cell, these values are still treated as text. If you intend to store numbers in a cell and use them in arithmetic formulas, use the Number cell type instead.

Case Options

A variety of options control the case of letters in a text cell. Use the case options to convert words or letters to upper or lower case. To use a case option, click the 'Case options' checkbox then choose one of the four possible options by clicking the appropriate radio button.

The first three options convert the first letter only, the first letter of all words, or all letters of all words to upper case. The last option converts all letters of all words to lower case.

Entry Options

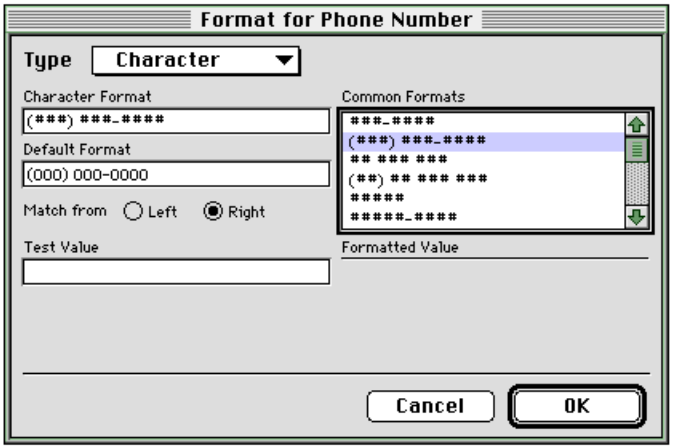
Entry options for the Text cell type allow you to control whether or not the Informed Filler user can press the Enter (Windows) or Return (Mac OS) key to start a new line. You can also limit the length of a text cell to a specific number of characters.

For new cells, the 'Allow Return characters' option is set to 'when text will fit.' With this setting, the Informed Filler user can press the Enter (Windows) or Return (Mac OS) key to start a new line only if there is enough room in the cell for another line. To allow the use of the Enter/Return key for new lines regardless of the size and content of the cell, select the 'always' option instead. To prevent this use of the Enter/Return key, select the 'never' option. When the Informed Filler user presses the Enter/Return key and the use of this key for adding new lines is not permitted (because of the 'Allow Return characters' setting), Informed Filler will act as though the user pressed the Tab key instead and tab to the next cell in tab order.

To limit the length of a text cell to a specific number of characters, select the 'Limit length to' checkbox and enter a number in the text box provided. If the Informed Filler user attempts to enter more characters than specified by this limit, a beep will sound. If a second attempt is made, a message is displayed in a dialog box indicating the length limit.

Character

The Character cell type also stores textual values. However, unlike the Text cell type, character values must match a specific format that you define. Use the Character cell type to store telephone numbers, zip codes, or any values that are always formatted exactly the same way.



Note The character format is used only to format values that the Informed Filler user enters or changes. If Informed Filler displays a character value that was formatted differently than the current character format for the cell, the value will display in its original format. For example, you could make a change to a “Phone number” cell on a form so that its character format is set to include the area code instead of the phone number only. If the new form is used to view data entered using the original form, the “Phone number” cell will still display the phone number without the area code, until the user explicitly changes the value in that cell.

Character Format

A character format is a sequence of characters that rigidly defines the length and format of a valid cell value. Each character can be either a data character or a literal. Each *data character* represents a character position where a value must be supplied. A *literal* is a format character such as a dash or a parenthesis. When entering data into a character cell, the Informed Filler user doesn’t have to type literal characters; Informed Filler inserts them automatically.

In the example telephone number format shown in the previous figure, the character format consists of ten data characters (the digits), and four literals (the space, dash, and parentheses). When the Informed Filler users enter a telephone number, they need only supply the digits. The space, dash, and parentheses are inserted automatically. Informed Filler will also ensure that what is typed correctly matches the format of a telephone number.

Each data character in a character format defines the valid set of characters for that position in a cell value. For example, since the second character in the telephone number character format is a number sign (#), then only the digits ‘0’ through ‘9’ are allowed in that character position. There are four predefined data characters symbols. They’re shown in the table on the following page.

Data Characters

Data Character	Allowable Characters (character set)
A	ABCDEFGHIJKLMNOPQRSTUVWXYZ
a	abcdefghijklmnopqrstuvwxyz
#	0123456789
?	Any character

Custom Characters

If the predefined data characters aren't suitable, then you can define your own data character by enclosing the set of allowable characters within the '<' and '>' delimiters. For example, suppose that only the characters '1' through '9' were allowed as the first digit in a telephone area code. You couldn't use the number sign (#) data character because it allows the digit '0' as well. The character format below uses a custom defined data character.

```
(<123456789>##) ###-####
```

The example above can also be entered as:

```
(<1-9>##) ###-####
```

Since the dash (-) character is enclosed within the '<' and '>' delimiters and falls between two range values, Informed does not interpret it as a literal.

You can mix number and letter values within the '<' and '>' delimiters as well. For example, suppose you need to assign ID numbers for customers and suppliers. Customer IDs consist of five numbers from 1 to 9 (such as 25689), and supplier IDs consist of four numbers and one letter from A to E (such as 12A58). To accomodate this situation, you would create a custom data character like the one below:

```
##<A-E1-9>##
```

You can also group and repeat data characters or literals. If a number between 2 and 99 follows a data character or literal, that character (or literal) is repeated that many times in the format. For example, if '#3' appears in a format, this means that the number sign (#) is repeated three times.

```
(#3) #3-#4
```

To group two or more characters in a character format, enclose the characters within the '{' and '}' delimiters. You can repeat a group of characters the same way you repeat a data character or literal—by following the group with a number between 2 and 99. In the example below, the last four digits of the telephone number character format are represented by a group of two digits repeated twice.

```
(###) ###-{##}2
```

The characters ‘A’ ‘a’ ‘#’ ‘?’ ‘<’ ‘>’ ‘{’ ‘}’ and ‘O’ through ‘9’ are called special characters. They’re special because, as described above, they each have a predefined meaning when used in a character format. If you want to include a special character as a literal in a character format, you must precede it with the *escape character.* Informed Designer’s escape character is the backslash symbol (\).

Suppose that you want to use brackets (‘{…}’) instead of parentheses to surround the area code of a telephone number. You would use the escape character in the character format (because brackets are special characters).

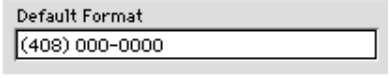
```
\{###\} ###-####
```

Since the escape character precedes each of the bracket symbols, the brackets are interpreted as literals and not as group delimiters.

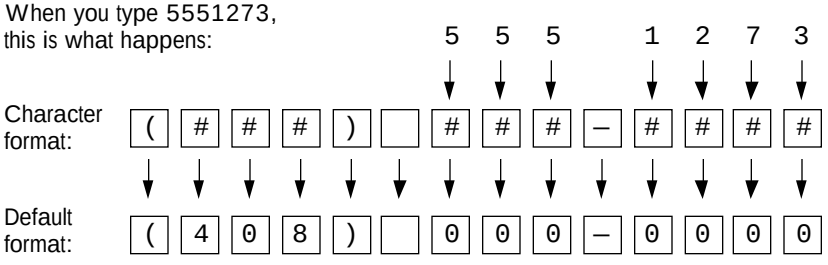
Informed Designer provides a list of common character formats. You can choose a common format by double-clicking an entry in the scrolling list of choices. Or you can create your own format by typing directly in the ‘Character format’ text box.

Default Format

Each character cell can have a default format. The default format doesn’t represent the default value of the cell (see *Calculations and defaults*). Instead, it’s used when someone filling out your form types an incomplete value. If the user enters an incomplete value, Informed Filler will fill in the missing characters with those found in the default format.



In the example telephone number format, the default format is used to supply a default area code. If the Informed Filler user types the value ‘5551273,’ Informed Filler will fill in the area code and display ‘(408) 555-1273.’ The digits typed are matched with the characters in the character format, starting at the right end and working to the left. Since only seven of the ten required data characters are entered, the remaining three are obtained from the default format.



The ‘Match from’ option controls which direction the characters you type are matched with the characters in the character format.

It’s important to choose the proper direction when you supply a default character format. Otherwise, Informed Filler will use the wrong default characters to complete a typed value. For example, the value ‘5551273’ would be displayed as ‘(555) 127-3000’ if you changed the matching direction from right to left.

You enter a default format by typing the value in the ‘Default format’ text box. The value you type must match the character format. If you type an invalid default format, Informed Designer will alert you with a message. To choose the match direction, click the appropriate radio button.

Testing Your Character Format

To confirm that you’ve entered the correct format values and options, Informed Designer allows you to test your format before dismissing the Format dialog box. After you enter the character and default formats, and choose the match direction, you can enter a sample value in the ‘Test value’ text box. The converted value is shown under the Formatted Value heading.

The following table gives a few examples. If the value under the ‘Entry’ column doesn’t match the format, you’ll see the word ‘Error’ (and a message) under the ‘Informed Filler Displays’ column.

Example Formats

Character Format	Default Format	Match	Entry	Informed Displays
(###) ###-####		Left	4154561234	(415) 456-1234
(###) ###-####		Right	4561234	Error - not enough characters
(###) ###-####	(415) 000-0000	Right	1234	(415) 000-1234
#A# #A#		Left	t5t4r4	T5T 4R4
####	0000	Right	12	0012
####	0000	Right	12a	Error - ‘a’ doesn’t match
###?	0000	Right	12a	012a
###?	0000	Left	12a	Error - ‘a’ doesn’t match
{#3-}2#3*		Left	123456789	123-456-789
AA-#3	XL-000	Right	534	XL-534
AA-#3	XL-000	Right	XM534	XM-534
AA-#3	XL-000	Right	X8534	Error - ‘8’ doesn’t match
The \answer is ##.		Right	23	The answer is 23.

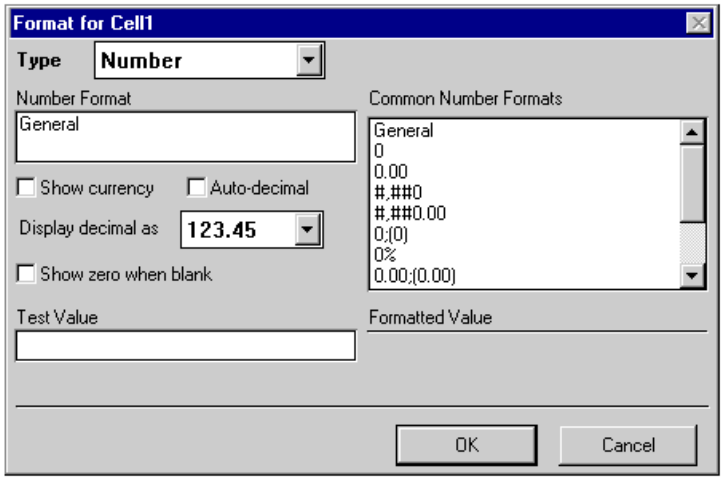
* Is equivalent to ‘###-###-###.’

If you enter an invalid character format, default format, or test value, the formatted value will be blank. When you click ‘OK’ to dismiss the Format dialog box, Informed Designer will check to

make sure that the character format and default format are valid. If an error is detected, you'll be warned with an alert.

Number

Use the Number cell type to store number values. You can display numbers with up to 18 digits of precision. The largest number that you can store accurately is 999,999,999,999,999,999. The smallest is -999,999,999,999,999,999.



Number Format

Like the Character cell type, you describe the format of a number cell using a sequence of symbols. You can choose from a list of common number formats, or you can create your own.

When you create a number format, you type special symbols in a form that represents how you want the number to look. Each symbol has a defined meaning. For example, the symbol zero ('0') is used as a digit placeholder. The number format '000' formats any number value to produce an equivalent number that's at least three digits long.

Common Number Formats

Number Format	Entry	Informed Displays
General	123	123
	123.309	123.309
	-1523.001	-1523.001
000	0	000
	12	012
	1234	1234
###.##	1.2	1.2
	53.215	53.22
###.00	1.2	1.20
	1500.379	1500.38
#,###.00	1500.379	1,500.38
	5	5.00

The ‘General’ number format is a special format that makes use of no formatting options. Numbers entered using this format are displayed as typed with a maximum of nine decimal places of accuracy. Other formats consist of special characters and symbols, each of which has its own meaning, as described below.

Symbol Meaning

Symbol	Meaning
0	A digit placeholder. If a number has fewer digits than zeros in the format, Informed Filler inserts extra zeros. If the number has more digits to the right of the decimal place than zeros in the format, Informed Filler rounds the number’s fractional part to the number of decimal places in the format.
#	A digit placeholder. This symbol follows the same rules as zero above, except that extra zeros aren’t displayed if the number has fewer digits on either side of the decimal than there are number signs (#) in the format.
*	Like the zero symbol, the star (*) is a digit placeholder. However, if a digit is not supplied for the corresponding character position in the number, Informed displays a star (*) instead of a zero.
.	The decimal point. The position of this symbol in the number format determines how many digits are displayed to the left and right of the decimal point.
,	Thousands separator. If this symbol appears on either side of the decimal point, Informed inserts thousands separators on that side in the formatted number.

In addition to these symbols, you can also include literal characters before and after the digit symbols in a number format. A literal character appears unchanged in a formatted number. For example, the number format ‘Acc. No. 0000’ would always format to the characters ‘Acc. No.’ followed by a four digit number.

Informed Designer allows you to enter a different number format for the positive, negative, and zero forms of a number. This feature allows you to use custom negation indicators such as parentheses or the letters 'Dr.' Simply separate the individual formats—in the order positive, negative, then zero—with the semi-colon symbol (;). The table below shows a variety of number formats with examples.

Number Formats

Number Format	Entry	Informed Displays
#,##0.00Cr;#,##0.00Dr;zero	123.45	123.45Cr
	-6251.32	6,251.32Dr
	0	zero
#,##0.00;(#,##0.00);0	-12345	(12,345.00)
	0.00	0
Acc. No. 0000	15	Acc. No. 0015
Balance due is #,##0.00;Credit is #,##0.00;Nil balance	15.75	Balance due is 15.75
	-1500	Credit is 1,500.00
	0	Nil balance

To enter a number format, type directly in the 'Number format' text box, or double-click an entry in the scrolling list of common number formats.

Currency

If you want Informed to automatically add a currency indicator to a formatted number, check the 'Show currency' checkbox. The currency symbol appears immediately to the left or right of the digits in the number depending on the standard used in your country. Informed knows which symbol to use.

Auto-decimal

For floating point numbers (numbers with at least one decimal place of accuracy), you can enter the decimal point yourself, or Informed can insert it for you. This option is often found on electronic calculators. It's commonly used for entering currency values.

Using Auto-decimal

Number Format	Auto-decimal	Entry	Informed Displays
#,##0.00	No	12345	12,345.00
	Yes	12345	123.45
	Yes	10000	100.00
	Yes	1234.5	1,234.50

To use the auto-decimal option, click the 'Auto-decimal' checkbox. The person who fills out your form can always override this feature by entering a decimal point when a number is typed.

Decimal style

You can display the decimal point of a number as the decimal point symbol, or as a vertical bar that extends from the top edge to the bottom edge of the cell. Although the decimal point is the most common choice, the vertical decimal bar is often used on table columns to line up numbers on adjacent rows.

123.00
45.35
32.99
25.95
15.89

123	00
45	35
32	99
25	95
15	89

To choose a decimal style, select your choice from the ‘Display decimal as’ drop-down list.

When you choose the vertical decimal bar option, Informed Designer automatically positions the line according to the current type attributes of the cell, and the number of decimal places in the cell’s number format. If you change any of these settings, Informed Designer will reposition the line as necessary.

Note When you use the vertical bar option, number values are always right aligned, even if you select center or left alignment.

You can select a cell’s vertical decimal bar and change its appearance. Like line objects, a vertical decimal bar has pen shade, line width, and line style attributes. To select a vertical decimal bar, click the line with the Pointer tool. The line will shimmer when it’s selected. To change an attribute, choose a new setting from a Style submenu, or use the Paint command in the Style menu. For more information about paint attributes and how to change them, see the “Paint Settings” section, in your *Informed Designer Design and Graphics* manual.

Displaying Zero Values

When a form is filled out with Informed Filler, values appear only when the user types in the blanks, or when cells are calculated or filled in with default values. This is analogous to filling out a form by hand or with a typewriter.

Sometimes you want to display the number zero in a cell even if a value hasn’t been entered or calculated. Maybe you want to show a zero amount in the extension cell even if the quantity and price values are blank. If you check the ‘Show zero when blank’ checkbox, Informed Filler will display the zero value when the cell is empty.

Testing Your Number Format

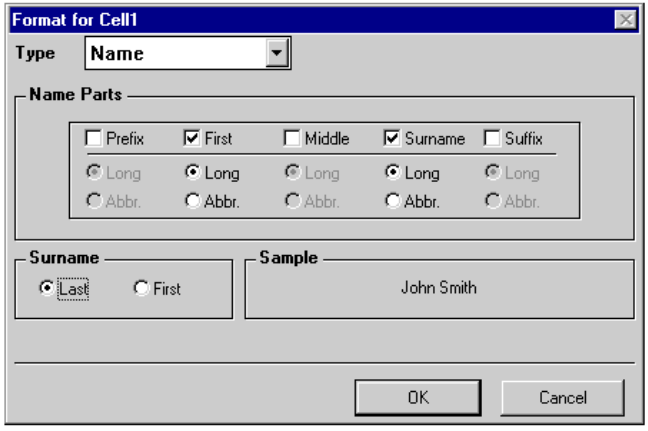
You can test your number format before you dismiss the Format dialog box. After you enter the number format and choose your options, enter a sample number in the 'Test value' text box. The formatted number is shown under the 'Formatted value' heading.

If you enter an invalid number format or test value, Informed Designer will clear the formatted value. If you click 'OK' to dismiss the Format dialog box and an error is detected in the number format, you'll be alerted with a message.

Name

If a cell will contain a person's name, use the Name cell type. The Name cell type displays names using a format that you define.

A name has up to five parts: a prefix (such as Mister or Professor), a first name, a middle name, a last name, and a suffix (such as Junior). Multiple prefixes, middle names, and suffixes are allowed. You can display a part in long or abbreviated form, or you can hide a part altogether. You can also display the surname before all parts, or in its usual position between the middle name and suffix.

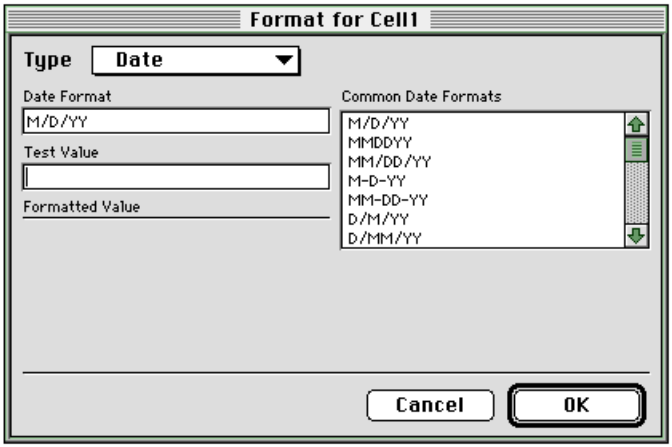


Check the name parts that you want to include in the name format. For those parts, select either the long or abbreviated form by clicking the appropriate radio button. Then choose the surname position by clicking either of the 'First' or 'Last' radio buttons. The sample name changes to reflect the format that you choose.

When the users fill out a name cell, Informed Filler will match the parts that they type with the parts in the name format. If the user types a name in a format that's different from the format of the cell, Informed Filler will automatically change what they type to match the correct format. In order to correctly identify the parts of a name, Informed Filler refers to a list of prefixes and suffixes. This list can be found in Appendix A.

Date

Use the Date cell type to store date values. You can store any date between roughly 30,000 BC and 30,000 AD. Date cells can be used in formulas and in functions that manipulate dates. For example, the AddDays function adds a certain number of days to an old date to calculate a new date. For information about formulas and functions, see Chapters 9 and 10.



You can display date values in any format you like. You describe the format of a date by typing special symbols in a form that represents how you want the date to look. For example, the symbol 'MONTH' represents the month spelled in capital letters (for example 'JANUARY').

Common Date Formats

Date Format	Entry	Informed Displays
M/D/YY	Jan 14 96	1/14/96
	15/08/96	8/15/96
	1*	1/1/96
MM/DD/YYYY	3/9/89	03/09/1989
MON-D-YY	2/17/92	FEB-17-92
	June 3 90	JUN-3-90
Month D, YYYY	3/15/88	March 15, 1988
Mon. D/YY	9/21/91	Sep. 21/91
Dy, Mon D, YYYY	111891	Sun, Nov 18, 1991
MON-D-YYYY AD	2/14/520 bc	FEB-14-520 BC
MONTH, YY	7/78	July, 78
MMDDYY	10/2/90	100290

* Missing parts are filled in using today's date.

A date has four components: the day of week, the day of month, the month, and the year. You create a date format by combining symbols that represent these components in any order and format. The following table describes each symbol.

Symbol Meaning

Symbol	Meaning
D	The day of month without a leading zero (1 - 31).
DD or 0D	The day of month with a leading zero (01 - 31).
M	The month of year without a leading zero (1 - 12).
MM or 0M	The month of year with a leading zero (01 - 12).
Month	The month of year spelled with the first letter capitalized (January - December).
MONTH	The month of year spelled in capital letters (JANUARY - DECEMBER).
month	The month of year spelled in small letters (january - december).
Mon	The abbreviated month of year with the first letter capitalized (Jan - Dec).
MON	The abbreviated month of year in capital letters (JAN - DEC).
mon	The abbreviated month of year in small letters (jan - dec).
YY	The year displayed as a two-digit number.
YYYY	The year displayed as a four-digit number.
Day	The day of week spelled with the first letter capitalized (Sunday - Saturday).
DAY	The day of week spelled in capital letters (SUNDAY - SATURDAY).
day	The day of week spelled in small letters (sunday - saturday).
Dy	The abbreviated day of week with the first letter capitalized (Sun - Sat).
DY	The abbreviated day of week in capital letters (SUN - SAT).
dy	The abbreviated day of week in small letters (sun - sat).
AD or BC	The abbreviated era in capital letters.
ad or bc	The abbreviated era in small letters.

When you combine two date components, you separate them with a separator character. You can use the slash (/), comma (,), space ( ), decimal (.), or dash (-) separator characters.

When the user types a date value, Informed Filler interprets the different date components and displays them using the format of the date cell. If you don't type a component that's part of the date format, Informed Filler inserts the corresponding component of today's date. For example, if today's date is February 15th, 1996, and you type the value '1' using the date format 'M/D/YY,' Informed Filler will display '2/1/96.' The current month and year are inserted to complete the date value.

When you use a date format with a four-digit year (YYYY), Informed Filler will always fill in the current century if you enter a two digit year.

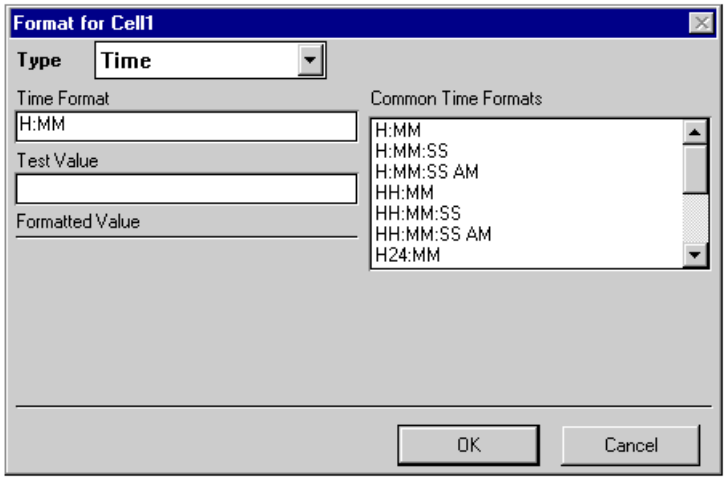
You can choose one of the common date formats by double-clicking an entry in the scrolling list, or you can create your own format by typing in the 'Date format' text box. If you enter an invalid date format, Informed Designer will alert you with a message.

Testing Your Date Format

You can test your date format before you dismiss the Format dialog box. After you type the date format that you want, enter a sample date value in the ‘Test value’ text box. The formatted date is shown under the ‘Formatted value’ heading. If you enter an either an invalid date format or an invalid sample value, Informed Designer will clear the formatted value.

Time

Use the Time cell type to store time values. A time value can range from 0:00:00 to 23:59:59; it represents the time of day. Time cells can be used in formulas and with functions that manipulate time values. For example, the function ADDMINUTE adds a certain number of minutes to an old time to calculate a new time. For information about formulas and functions, see Chapters 9 and 10.



You can display time values in any format you like. You describe the format of a time by typing special symbols in a form that represents how you want the time to look. For example, the symbol ‘HH’ represents the hour of day in 12 hour format. The following table shows some common time formats.

Common Time Formats

Time Format	Entry	Informed Displays
HH:MM	5 34	05:34
	5:34:15	05:34
	5*	05:00
H:MM	5:34	5:34
HH MM SS	17:3:23	05 03 23
H24:MM	3:14	3:14
	3:14 PM	15:14
H:MM:SS PM	9 45	9:45:00 AM
	3:10 AM	3:10:00 AM
	14:50	2:50:00 PM
M:SS	09:40	9:40

* Missing parts are filled in with zero.

A time value has four components: the hour, the minute, the second, and the AM/PM indicator. You create a time format by combining symbols that represent these components in any order and format. The table below describes each symbol.

Symbol Meaning

Symbol	Meaning
H	The hour in 12 hour form without a leading zero (1 - 12).
HH or 0H	The hour in 12 hour form with a leading zero (01 - 12).
H24	The hour in 24 hour form without a leading zero (1 - 23).
HH24 or 0H24	The hour in 24 hour form with a leading zero (01 - 23).
M	The minute without a leading zero (1 - 59).
MM or 0M	The minute with a leading zero (01 - 59).
S	The second without a leading zero (1 - 59).
SS or 0S	The second with a leading zero (01 - 59).
AM or PM	Include the AM/PM indicator in capital letters.
am or pm	Include the AM/PM indicator in small letters.

When you combine two time components, you must separate them with a separator character. You can use the colon (:), decimal (.), or space ( ) separator characters.

When the Informed Filler user types a time value, Informed Filler interprets the different time components and displays them using the format of the time cell. If the user doesn't type a component that's part of the time format, Informed Filler inserts a zero for them. For example, if they type '8' using the time format 'HH:MM,' Informed Filler will display '08:00.'

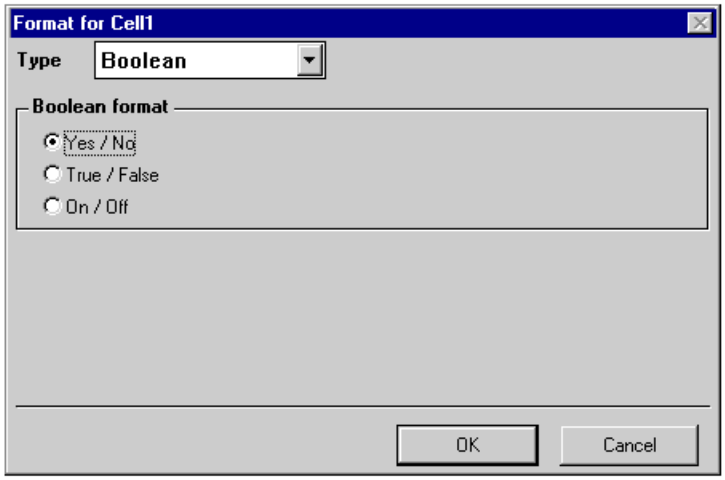
You can choose one of the common time formats by double-clicking an entry in the scrolling list, or you can create your own format by typing in the 'Time format' text box. If you enter an invalid time format, Informed Designer will alert you with a message.

Testing Your Time Format

You can test your time format before you dismiss the Format dialog box. After you type the time format that you want, enter a sample time value in the 'Test value' text box. The formatted time is shown under the Formatted Value heading. If you enter either an invalid time format or an invalid sample value, Informed Designer will clear the formatted value.

Boolean

The Boolean cell type stores values that are True or False. You can display the value of a boolean cell as 'Yes' or 'No,' 'True' or 'False,' or 'On' or 'Off.'



With the Boolean cell type, Informed Filler will ensure that the person filling out the form enters only the values that are appropriate for the selected style. If the user types only part of a value, Informed Filler will convert it to its full form. For example, if they type the letter 'n' while using the Yes/No style, Informed Filler will convert the value and display 'No.'

To choose a boolean format, click one of the radio buttons under the 'Boolean format' heading.

Using Boolean Cells in Checkboxes

The Boolean cell type is appropriate for use with Informed's checkbox feature since, like Boolean cells, a checkbox can represent one of two values. Fields and table columns that are configured as checkboxes will display a check symbol instead of a textual value. For information on how to draw and customize the appearance of checkboxes, please see "Checkboxes" in Chapter 7 of your *Informed Designer Design and Graphics* manual.

Clustering Checkboxes

Checkboxes often appear grouped to offer a variety of choices. For example, you might show different shirt sizes on an order form using a group of checkbox cells set to the 'radio button' style.

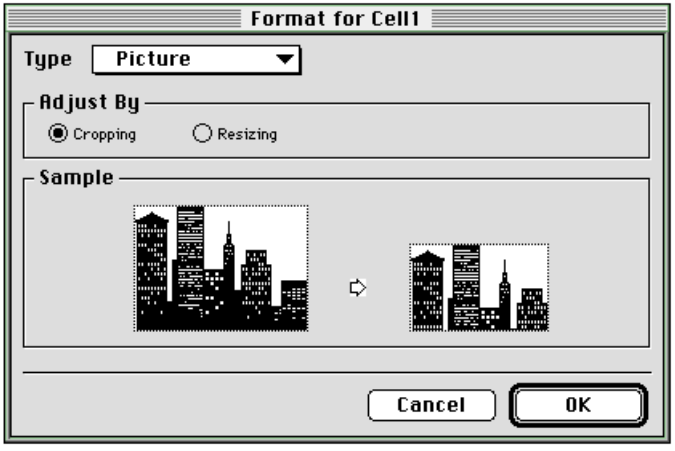
Only one option can be checked. Normally, to change the size from one choice to another, you'd have to uncheck the current setting and then check the new size.

If you use the Cluster command to cluster two or more checkbox cells, Informed Filler will automatically uncheck the currently checked cell when the user selects a different cell in the cluster.

To cluster a set of checkboxes, select the cells you want clustered, then choose **Cluster** from the Arrange menu. You can view which cells participate in a cluster by clicking any cell with the Pointer tool and choosing the **Cluster Information...** command. A dialog box appears listing all cells that are currently clustered with the selected cell.

Picture

The Picture cell type allows you to reserve space on your form for pictures. A picture can be any image created with virtually any drawing program. When filling out a form, instead of typing a value in a picture cell, the user pastes an image using the Paste command from the Edit menu, or imports a picture using the Insert File command from the Cell menu.



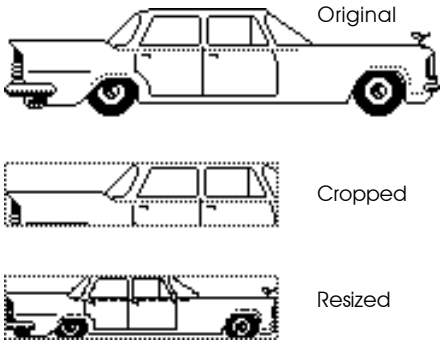
Informed Filler supports the following picture formats in picture cells: Windows Bitmap (.BMP), Windows Metafile (.WMF), Macintosh PICT (.PCT), and Encapsulated PostScript (.EPS).

The Windows Metafile format is not supported on the Mac OS.

By using a picture cell, the person filling out your form can enter a different picture on each new completed form. For example, on your inventory form you could store a picture of each inventory item.

Note Unlike cells of other types, you can't index picture cells. See "Indexing Cells" later in this chapter for more information.

Often the size of the picture that's pasted into a picture cell is larger than the size of the cell itself. Informed Designer allows you to resize or crop the image so that it fits in the cell. When an image is cropped, the area that doesn't fit in the cell is hidden. If you choose the resize option instead, the image is reduced proportionally to a size that fits completely in the cell.



When a form is filled out with Informed Filler, pressing the Tab key moves the user from one cell to the next. When they move to a picture cell, the frame of the cell flashes to indicate that the cell is currently *active*. When the Informed Filler user chooses the Insert File command, the standard Open dialog box appears, prompting to select a file. As a shortcut to choosing the Insert File command, the user can select the picture cell and press Enter (Windows) or Return (Mac OS).

While a picture cell is active, the user can clear it by pressing the Backspace or Delete key, or by choosing the Clear command in the Edit menu.

Signature

The Signature cell type allows you to create a cell that can be used to sign the data on forms electronically with digital signatures. Each signature cell can be configured to sign the entire form, or parts of the form. Although the signature cell is created in Informed Designer, you actually sign the form in Informed Filler. For a detailed discussion of the signature capabilities of Informed, please see Chapter 2, "Using Digital Signatures" and Chapter 7 "Authorizing Form Templates."

Indexes

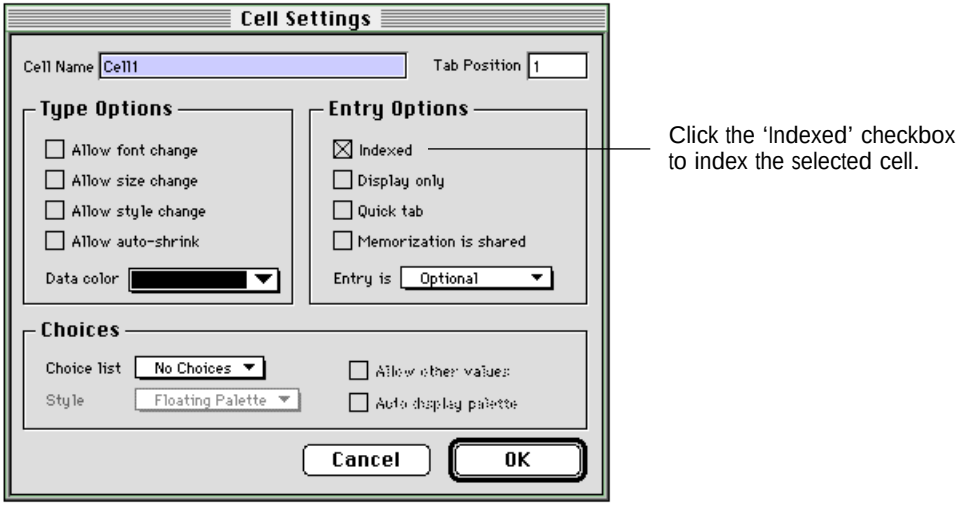
Each time a form is filled out with Informed Filler, the information that the user types is added to the data document's database of records. A data document can contain potentially thousands of records. Informed Filler's Find command lets you search through the database to find and display particular records.

Each cell that you create on a form (by drawing fields and tables) can be indexed with the exception of signature cells and picture cells. An *index* is a pre-sorted list of cell values that Informed Filler maintains automatically as you add, remove, and change records. Although you never actually see an index, you can certainly notice its effect when you use Informed Filler's Find command to find forms.

If a cell is indexed, Informed Filler can search quickly through thousands of records to find a matching value. Depending on the speed of your computer and the number of records in your data document, searching can be as fast as one or two seconds. If a cell is not indexed, Informed Filler has to examine the cell value on each record individually in order to find those that match. Searching can take considerably longer if the cell is not indexed.

Indexing a Cell

You index a cell by clicking the 'Indexed' checkbox on the Cell dialog box. Select the cell (or cells) that you want to index, then choose the **Cell...** from the Settings menu. The Cell dialog box appears.



Click the 'Indexed' checkbox, then click 'OK' to dismiss the Cell dialog box.

With the exception of picture and signature cells, you can index any cell on your form. The following table describes how values of each different cell type are indexed.

Indexing Cells

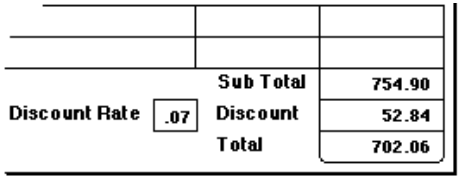
Cell Type	Index Method
text	Each word is indexed separately
character	The entire character value is indexed
name	Each name part is indexed
number	The numeric value is indexed
date or time	The date or time value is indexed
boolean	The boolean value is indexed

It's important that you choose the correct cell type for the indexed cells on your form. A cell's type determines not only the type of information that the cell can store, but also the order that cell values are sorted. For example, suppose that a cell called 'Date' stores the ship date on an invoice form. If the cell's type is Text, cell values would be sorted alphabetically. By using a date cell instead, the cell would be sorted chronologically rather than alphabetically.

When you create a form, care must be taken to properly select which cells are indexed. Since each index adds to the size of your document and affects how quickly Informed Filler can add, remove, and change records, you shouldn't overuse indexes. As a general rule, you should index only those cells that are intended to be used commonly for searching. They usually include cells such as a person's name, or the identification number of a form (the invoice number, for example).

Calculations

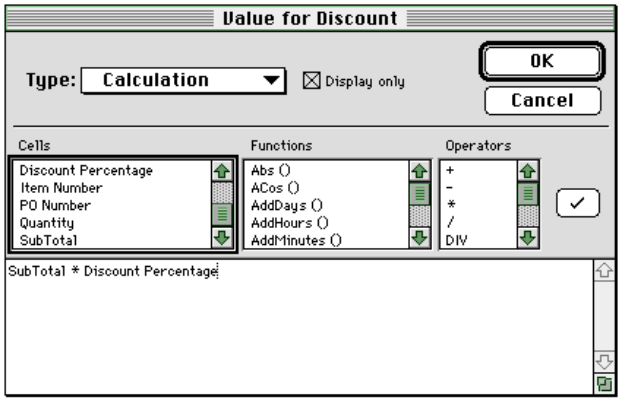
Often a cell gets its value by manipulating other information on a form. For example, the discount amount on a sales slip is calculated as the discount rate times the total purchase amount. You can use a calculation so that the value is filled in automatically for the Informed Filler user.



Calculate the discount amount as:
'Sub Total * Discount Rate'

In addition to mathematical calculations, you can also manipulate other types of information to produce a calculated result. Informed Designer provides a comprehensive set of operators and functions that make it easy to create sophisticated calculations. You can even use if-then-else logic to calculate different results under certain conditions. For detailed information on formulas and functions, see Chapters 9 and 10 respectively.

To create a calculation, first select the cell that you want to calculate, then choose **Value...** from the Settings menu. The Value dialog appears.



You create a calculation by typing a formula in the formula text box. First select the calculation option by choosing 'Calculation' from the 'Type' drop-down list. As a shortcut, Informed Designer will automatically select the 'Calculation' type when you type the first character of a formula.

A formula is like a mathematical equation. You combine operators and functions with cell names and constants to produce a new result. For example, to create a calculation that multiplies the cells 'Sub Total' and 'Discount Percentage,' you would enter this formula:

```
Sub Total * Discount Percentage
```

This formula uses the multiplication operator (*) to return the product of the two values. Other formulas could use additional operators and any of Informed's powerful functions.

Suppose that instead of entering the discount rate, you would like to calculate its value according to the total purchase amount. If the total purchase amount is less than $50, the discount rate should be 0.05 (5%). Otherwise, the rate should be 0.15 (15%). The formula below uses the IF statement to calculate the correct value.

```
If Sub Total < 50 Then
   0.05
Else
   0.15
End
```

The first line of the formula checks the value of the 'Sub Total' cell. If its value is less than 50, the result of the formula is 0.05. If its value is not less than 50 (that is, greater than or equal to 50), the result of the formula is 0.15 instead. For a complete discussion about formulas and functions, see Chapters 9 and 10.

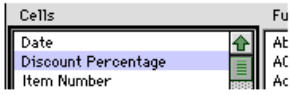
The result of a calculation formula should match the type of the cell that it sets. For example, if a cell's calculation formula adds two numbers, the cell's type should be number. If the resulting type of a calculation is different than the cell's type, Informed will try to automatically convert the result to the cell's type. For more information, see the "Type Compatibility" section in Chapter 9, "Using Formulas."

You can use the 'Display only' feature to prevent someone filling out your form from changing the value of a calculated cell. This feature is also available on the Cell dialog box, and is described in detail in the "Entry Options" section of this chapter.

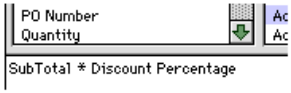
Entering a Calculation Formula

As described earlier in this section, you create a calculation by typing a formula in the formula text box on the Value dialog box. Informed Designer makes it easy to enter complex, error-free formulas. Instead of typing cell names, functions, and operators, you can double-click any entry in any of the corresponding scrolling lists on the Value dialog box. The entry is inserted in the formula at the current insertion point. You can move between the scrolling lists by pressing Tab. When you tab into a list, a bold frame appears around it to show that it's selected.

Place the insertion point at the proper location…



…double click an entry in one of the scrolling lists…



…the entry appears in the formula.

If you double-click to enter a function that has one or more parameters, Informed Designer will automatically position the insertion point at the first parameter. If you double-click a function while holding down the Alt (Windows) or Option (Mac OS) key, the parameter names are included within parentheses.

You can also enter a cell's name by clicking the cell in the drawing window. This is useful if you don't know the name of the cell, but you can see it in the drawing window.

If you click the checkmark button while entering a formula, or if you click 'OK' to dismiss the dialog box, Informed Designer will check to make sure that the formula is valid. The formula is formatted properly, and if any errors are detected, a message appears describing the nature of the error.

Default Values

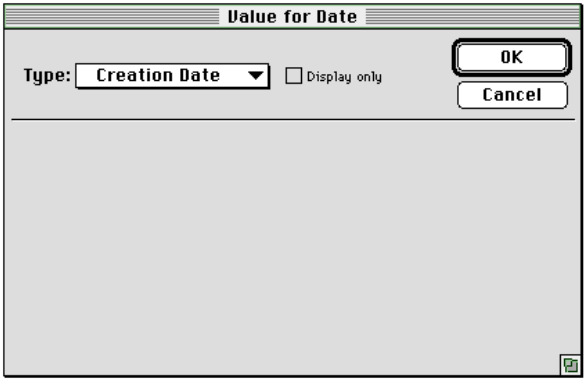
A default value is a value that Informed Filler automatically fills in each time the user fills out a new form. However, unlike calculations, a default value doesn't change unless the user types a different value. Use a default value whenever a cell often has the same value. For example, the default value for the date cell on an invoice could be today's date.

There are three different types of default values. They are:

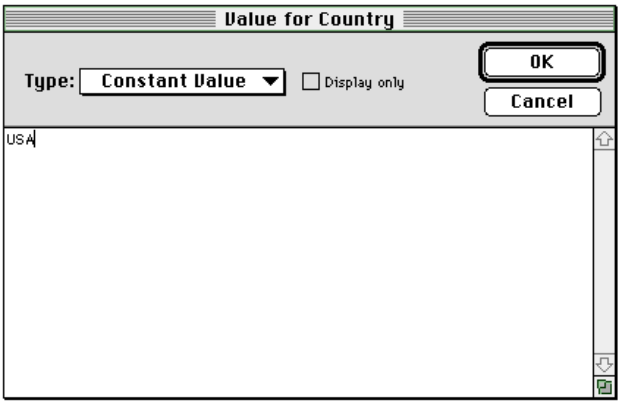
- creation date
- creation time
- constant value

'Creation date' and 'Creation time' default value types are used for automatic entry of the current date or time when the Informed Filler user fills out a new form. The 'Constant value' default type requires that you specify the default value itself.

To create a default value, first select the cell that you want to have the default value, then choose **Value...** from the Settings menu. On the Value dialog box, select 'Creation date,' 'Creation time,' or 'Constant value' from the 'Type' drop-down list.



When you select the "Constant value" type, a text box appears allowing you to enter a default value.



The default value that you enter should be appropriate for the type of cell to which it applies. For example, if the default value applies to a number cell, be sure to enter a number as the default value.

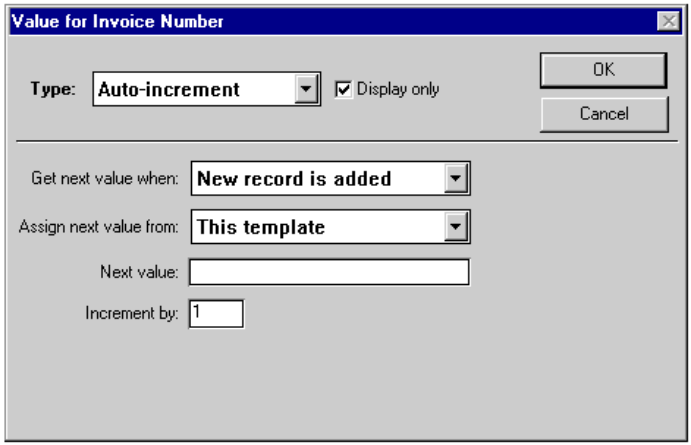
Note The values of cells that are checkboxes automatically default to unchecked when a new form is filled out. To specify the "checked" default value, enter "True," "Yes," or "On."

After selecting the default type and, for constant values, entering the default value, click 'OK' on the Value dialog box. To cancel the Value command, click 'Cancel' instead.

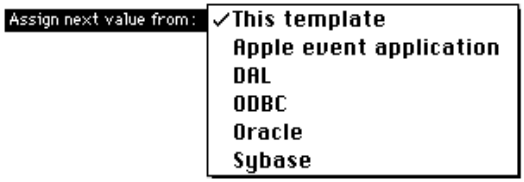
Auto-incrementing Numbers

Forms such as invoices, time sheets, and purchase orders are often numbered uniquely for identification purposes. Each time a new form is filled out, a new number is assigned. Informed Designer provides a number of ways to automatically generate these numbers.

Other sections of this chapter explain how you can specify calculations and default values for any cell using Informed Designer's Value command. By selecting 'Auto-increment' from the 'Type' drop-down list on the Value dialog box, you can configure a cell to be assigned a new number each time the Informed Filler user fills out a new form.



There are several different methods with which Informed Filler can obtain new numbers. The next available number can be stored in the form template itself, or it can be obtained from another application or data source. You choose a method by selecting a choice from the ‘Assign next value from’ drop-down list.



The first two options, ‘This template’ and ‘Apple event application,’ are built into Informed Designer and Informed Filler. The ‘Apple event’ option is available only on the Mac OS. All other options correspond to the data access plug-ins that you have installed in your Informed plug-ins folder.

Informed Filler’s Cell menu contains the Assign Next Value command. The Informed Filler user can select an auto-incrementing cell and choose this command to manually obtain a new number and enter it in the cell. If you choose the ‘New record is added’ option from the ‘Get next value when’ drop-down list on Informed Designer’s Value dialog box, Informed Filler will automatically enter the next available number when the user adds a new record.

Note

If the user of your form is often mobile and not connected to the application or database that supplies new numbers, the ‘Manually only’ setting might be more appropriate. That way, the Informed Filler user can choose to assign numbers manually using the Assign Next Value command, and do so only when a connection is active.

Storing the Number in the Form Template

With the ‘Assign next value from’ drop-down list set to ‘This template,’ Informed Designer stores the next available number in the form template document itself.

Each time Informed Filler assigns a new number to a cell, the next available number is read from the form template document and entered in the cell. The number is then incremented and stored back in the form document.

To set the next available number, enter a value in the ‘Next value’ text box. This value can be a number or an alpha-numeric value. By default, Informed Filler will increment the next value by 1 each time a number is assigned. You can change the increment amount by typing a different value in the ‘Increment’ text box.

If your form will be used by more than one person, you might want to prevent the same number from being assigned to two different forms filled out by two different users. One way to do this is to link the auto-incrementing cell to a database or application that can act as a central distribution point for new numbers. Alternatively, you might consider combining the number with other values on the form (the user’s employee number, for example), to ensure uniqueness among different users.

Linking to Apple Event Applications

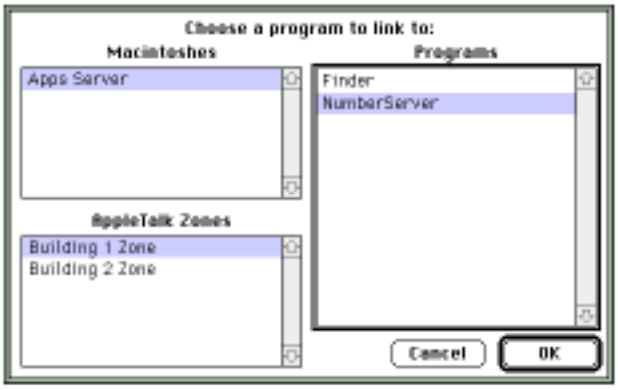
An Apple event aware application is an application that can send and receive messages using the Apple event capability of the Mac OS operating system. Two Apple event aware applications can communicate with each other using this method.

Informed Filler can use Apple events to communicate with another application in order to request and obtain new values for auto-incrementing cells. However, only certain applications, including Informed Number Server and 4th DIMENSION by ACIUS (using the Informed 4D External) can understand the specific Apple events that Informed Filler uses to communicate. Furthermore, this method of linking is available only on Mac OS compatible computers using system software version 7.0 or later. For detailed information about Informed Number Server, please see Chapter 11, “Using Informed Number Server.”

With the ‘Assign next value from’ option set to ‘Apple event application,’ you can choose an application to link the selected cell to.

Note Before you can link an auto-incrementing cell to an Apple event aware application, you must run the application and open the correct database or data file.

To select an application, click the ‘Choose Application’ button. Informed Designer displays the Program Linking dialog box.



Choose the computer that’s running the application, then select the application itself and click ‘OK.’ The name of the application will appear next to the ‘Choose Application’ button.

Since a single application—such as Informed Number Server—can generate several different sequences of numbers (for example, one for invoices, one for purchase orders, and so on), you must specify which particular number to link the auto-incrementing cell to. To do this, click the ‘Choose Table’ button. (In database terminology, a file of information is often referred to as a table.)

Most applications—like Informed Number Server—act like a single DBMS and offer access to one or more databases. When you select a database, the third list shows the available tables. Each table delivers a corresponding sequence of numbers. Select the table (or number) name then click ‘OK.’ The names of the DBMS, the database, and the table appear next to the ‘Choose Table’ button.

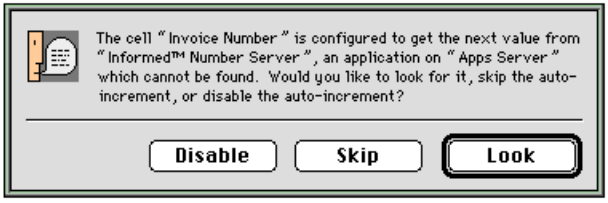
Errors While Testing or Filling Out Forms

Although Informed Designer can check to make sure that you don't make mistakes when you link an auto-incrementing cell to an Apple event aware application, there are several reasons why an auto-increment can fail to work properly. For example, suppose that an auto-increment is linked to a particular application, and that application is not running on the correct computer. Or maybe the application doesn't have the correct database or data file open.

Errors can occur when you test a form with Informed Designer or when forms are filled out with Informed Filler. There are three basic types of errors.

- The application to which an auto-incrementing cell is linked cannot be found.
- The application to which an auto-incrementing cell is linked is available, but an error occurs while requesting the next value.
- System 7 (or later) is not running but is required in order for the auto-increment to work.

It's normal to expect the 'application not found' message in certain situations. Since Informed uses the name of the computer to find the application to which an auto-incrementing cell is linked, this error will occur if you change the computer's name, or if you move the application to a different computer with a different name. You'll see an error message the first time Informed attempts to obtain the next value for the auto-incrementing cell.



The message dialog box contains the 'Look,' 'Skip,' and 'Disable' buttons. You can try to find the required application by clicking the 'Look' button. You'll see the Program Linking dialog box shown earlier. If you successfully find the correct application, Informed will automatically re-link the auto-incrementing cell before continuing. If you click 'Skip' or 'Disable,' the link will be ignored and no attempt will be made to find the missing application. 'Skip' ignores the link that time only which means the error message will appear the next time a new number is requested. Clicking 'Disable' ignores the link until the next time the form template document is opened.

The second type of error can occur when the required application is available but an error from that application is detected. The application may provide information about the error that has occurred. For example, if you've configured an auto-incrementing cell to obtain the next invoice number from Informed Number Server, but Informed Number Server is unable to find the requested number, you'll see this error message:

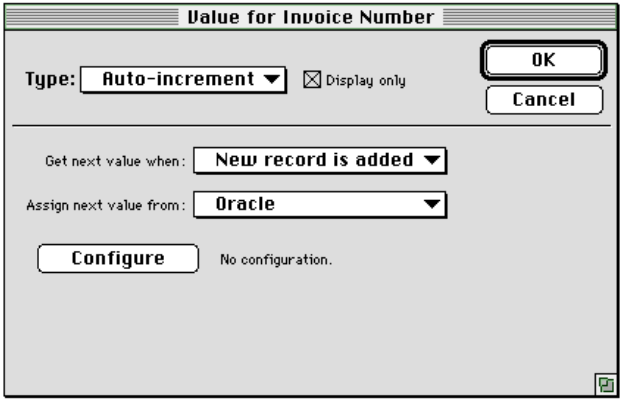
If you click the 'Retry' button, Informed Filler will attempt to request the next value again. This option is useful if the application is running on a different computer since you might be able to fix the problem there and then continue. As explained earlier, the 'Skip' and 'Disable' options allow you to ignore the error. Clicking 'Skip' ignores the error one time only, whereas the 'Disable' option ignores the error until the next time the form document is opened.

The third type of error will occur if you're not running System 7. Auto-incrementing cells that are linked to Apple event aware applications work only if you're using system software version 7 or later, of the Mac OS operating system.

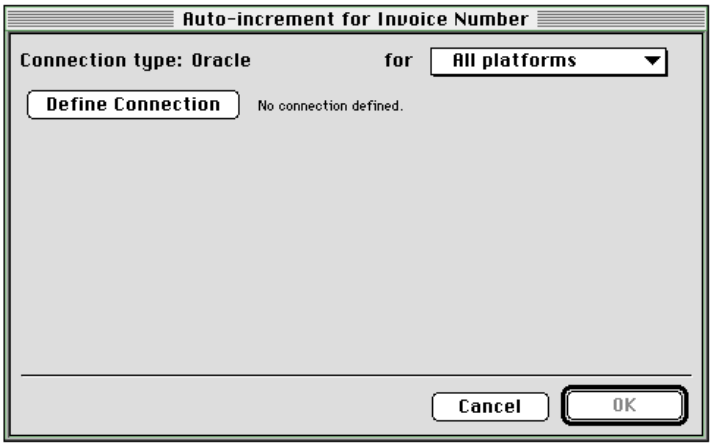
Linking to Other Data Sources

Informed's data access plug-ins are designed to allow access to a wide range of databases and data sources. They include support for many of the standard desktop database formats as well as common SQL databases such as Oracle and Sybase. Informed's plug-in architecture allows Shana to continually develop new plug-ins and update existing plug-ins to support new databases and new standards in data access.

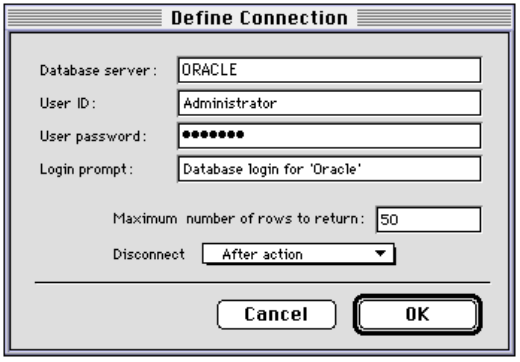
When you choose an item from the 'Assign next value from' drop-down list that corresponds to a data access plug-in, a 'Configure' button appears on the Value dialog box.



Clicking ‘Configure’ displays a configuration dialog box that allows you to specify the connection information and data source-specific instructions for the selected data source. The configuration dialog box for the Oracle data access plug-in is shown below.



With most databases, it is necessary to provide connection information in addition to the specific instructions that are to be carried out by the data source. Connection parameters usually consist of a user ID, a password, and information that identifies the data source or server. This information is specific to the particular data source that you’re linking to and is specified by clicking the ‘Define Connection’ button.

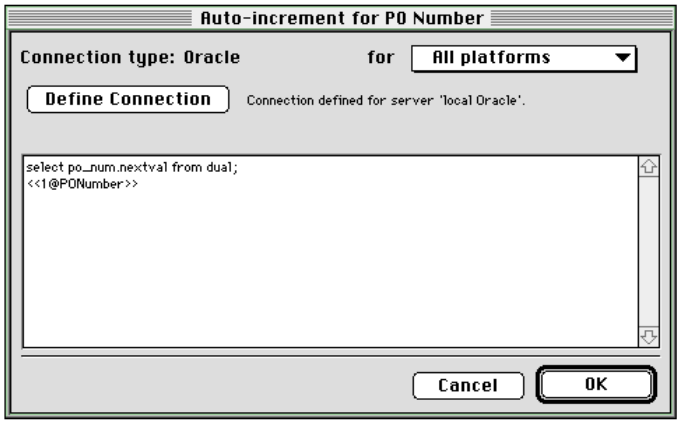


If you enter all necessary connection parameters here, Informed Filler will automatically connect for the user when a new value is requested. You can, however, leave optional parameters blank. Leaving a parameter, such as the user ID or password, blank means that the Informed Filler user will be requested to enter this information when a new value is requested.

The details of connecting to a data source are the same regardless of whether the link is configured for an auto-incrementing cell, a lookup, or for submitting a completed form. The details of the Define Connection dialog box as well as other relevant data source-specific information can be found in the “Data Access Plug-ins” topic of the Informed Designer on-line help system.

Note Before you can configure an auto-incrementing cell to an external data source, the data source (a dBase file, for example) must already exist. Informed Designer will not create the database or data source for you.

Once you've defined the connection to the data source, a large text box appears allowing you to enter the appropriate instructions for obtaining and incrementing the next available number for the auto-incrementing cell.



The text that you enter is specific to the type of data source that you are connecting to. For example, if you're connecting to an Oracle database, you'll enter SQL statements that conform to Oracle's syntax.

Regardless of which type of data source you're connecting to, the statements or instructions that you enter should instruct the data source to return and increment a single value, that being the next available number for the auto-incrementing cell. That value is then placed in the cell by including a return locator following the data source-specific instructions. A return locator is a means of identifying one of potentially many return values, along with the cell on the form into which the value should be placed.

A return locator is specified as the name of a cell enclosed within double less-than and double greater-than characters. The cell name is preceded by a number and the "@" symbol. The number identifies the return value and the cell name identifies the cell into which the value should be placed. If, for example, the data source returns three values, you would use the numbers 1, 2, and 3, respectively, to identify those values. Since the instructions for an auto-increment configuration are intended to return a single value, the number preceding the "@" symbol will most often be 1. For example, the statements below instruct an Oracle server to return and increment the value of an Oracle sequence number named 'po_num.'

```
select po_num.nextval from dual;
<<1@PONumber>>
```

The ‘select’ statement returns a single result. The return locator “<<1@PONumber>>” places the return value in the cell named “PONumber.” Although uncommon, the instructions for an auto-incrementing cell can return multiple values if desired. By using multiple return locators, multiple return values can be placed in multiple different cells on the form.

If you want to include a cell’s value in the instructions, simply enter the cell’s name within double less-than and double greater-than characters.

Configuring for Multiple Platforms

Many of the databases and data sources that Informed can link with are accessible from both the Windows and Mac OS platforms. However, the details of accessing a database or data source from each of the platforms might be different. For example, suppose that you’re linking an auto-incrementing cell to an Oracle database. For Mac OS users, you might be accessing the Oracle database using the Mac OS Oracle client software (SQL*NET), whereas on Windows you might be using ODBC instead. The specific parameters needed to connect to the database, therefore, might be different depending on which platform the Informed Filler user is using.

Since the ‘Apple event’ option is available only on the Mac OS, the linking of an auto-incrementing cell to an Apple event-aware application takes effect only for Informed Filler users with Mac OS compatible computers. For accessing databases or data sources through data access plug-ins, the dialog box for configuring an auto-incrementing cell contains a drop-down list with the items ‘This platform’ and ‘All platforms.’

For each different data access plug-in, Informed Designer knows if the configuration details are the same or different for the two platforms. If they’re the same, the ‘All platforms’ option will be available and the auto-incrementing cell you configure on one platform will function on both.

If the configuration details are different for each platform, ‘This platform’ will be the only choice available in the drop-down list. For accessing these types of databases, you have to configure the auto-incrementing cell on one platform, then move the form template to the other platform and repeat the configuration. Informed Designer stores the configuration for both platforms. Informed Filler uses the configuration that corresponds to the user’s platform.

Although it may be necessary to configure an auto-incrementing cell twice, once on each platform, the resulting form template document is still a platform neutral document. That is, a single version of the template will work with Informed Filler on both platforms. Informed Filler automatically uses the configuration information that’s appropriate for the user’s platform.

Using Lookups

Lookups are an important time saving feature. Information that exists on other forms, or in other databases or information systems can be looked up as forms are filled out. An information system can range anywhere from a small desktop database, to a high capacity, high performance SQL database running on a mainframe. By using lookups, you reduce the amount of data entry required to complete a form. This increases the productivity of Informed Filler users, reduces errors, and helps to ensure that the information entered is current.

There are several different methods with which Informed Filler can access and look up information. Informed Designer's Lookup dialog box contains a drop-down list that lists each of the different methods.

The 'Data Document' connection type allows you to look up information in other data documents containing data for other forms. The 'Apple events' connection type is available only on the Mac OS. All other connection types correspond to the data access plug-ins that you have installed in your plug-ins folder.

How it Works

Lookups are configured for individual cells that contain the information to be looked up. For example, if you want Informed Filler to look up inventory information when the user enters a part number on an invoice form, you'd configure the cell that contains the part number to perform the lookup. This cell is called the lookup cell. While filling out forms with Informed Filler, typing a part number would trigger the lookup and, in turn, fill in the related inventory information in the appropriate cells on the form.

Configuring a lookup is a three step procedure:

- Select the lookup cell and choose the Lookup command
- Choose the connection type
- Specify the configuration details

The Lookup dialog box contains controls for selecting the connection type and configuring the lookup. Select the lookup cell then choose the Lookup command to display the Lookup dialog box.

As a shortcut, you can also click the Lookup button on the Cell palette to display the Lookup dialog box. For more information about the Cell palette, see “Using the Cell Palette” later in this chapter.

The ‘Connection type’ drop-down list contains a list of all available connection types. This list will always include ‘Data document’ and, on the Mac OS, ‘Apple events.’

Other connection types correspond to the data access plug-ins that you have installed in your plug-ins folder. They might include ‘Oracle,’ ‘Sybase,’ ‘ODBC,’ as well as others.

The first connection type is ‘No Lookup.’ To clear a previously configured lookup, select this item then click ‘OK’ on the Lookup dialog box.

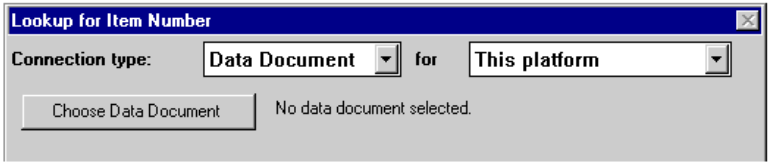
When you select a connection type, the Lookup dialog box changes to display the configuration controls and settings appropriate for that type of connection. For example, the ‘Data document’ connection type has controls for selecting a data document and linking cells, whereas the ‘Script’ option allows you to select a script.

Once you’ve selected the connection type and specified all configuration settings, click ‘OK’ to save the lookup settings. The following sections describe the procedures for configuring the different types of lookups.

Data Document Lookups

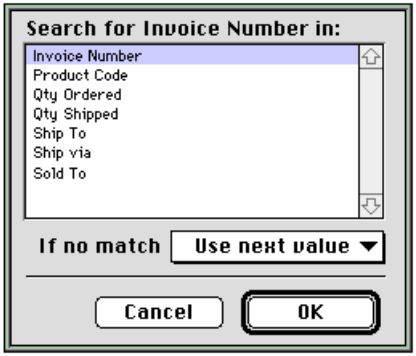
Information can be looked up in data documents containing information for other forms. That way, information that has already been entered on a different form can be looked up to avoid retyping.

With the ‘Data Document’ connection type selected, the Lookup dialog box contains a button titled ‘Choose Data Document.’



Clicking ‘Choose Data Document’ displays the standard Open dialog box allowing you to select a data document. The document that you select is the one in which information is looked up when the lookup is performed. Informed Designer reads the list of cells in the data document you select and displays them in a list labelled ‘Remote data.’ A second list contains the names of the cells on your form template. With a data document selected, the ‘Choose Data Document’ button changes to ‘Clear Lookup.’ You can click this button to clear the linking information.

When the user enters a value in the lookup cell, Informed Filler searches for that value in the match cell in the data document. For example, you might enter an invoice number in the lookup cell on a packing slip to look up common information in a corresponding invoice form and enter it on the packing slip. The invoice number cell in the invoice data document would be selected as the match cell. Choose the match cell by first clicking the ‘Choose Match Cell’ button. A list containing the cells in the remote data document appears.



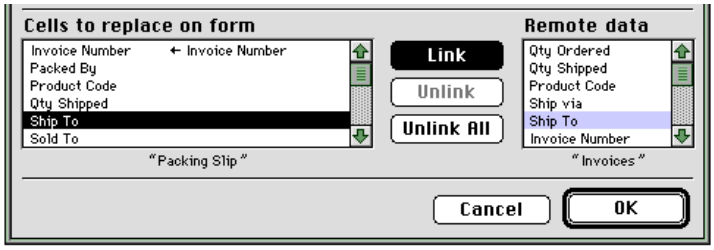
Select the appropriate cell in the list then click ‘OK.’ The name of the match cell will appear next to the ‘Choose Match Cell’ button on the Lookup dialog box.

The match cell in the lookup data document must be a field cell. You cannot perform a lookup into a table cell. When a lookup is performed, Informed Filler searches through all records in the lookup data document comparing the value entered on the form with that of the match cell.

Note The time that it takes Informed Filler to perform a lookup varies depending on how many records are in the lookup data document and whether or not the match cell is indexed. For optimal performance, be sure to index the match cell. See “Indexes” earlier in this chapter for more information.

The ‘If no match’ drop-down list contains two options. The option you choose determines how Informed Filler will function if the search for a lookup value fails. If you choose the ‘Use next value’ option, Informed Filler will use the next higher value in the lookup data document. If you choose the ‘Do not lookup’ option, Informed Filler won’t copy any cell values from the data document and will instead clear the linked cells on the form and display a dialog box indicating that no match was found.

The lower section of the Lookup dialog box contains two lists separated by three buttons. You use these lists to link cells on the form (under ‘Cells to replace on form’) with cells in the data document in which the lookup is performed (under ‘Remote data’). When the lookup is performed, the linked cells are filled with the corresponding values of the cells in the data document. You link two cells by clicking one in each of the two lists, then clicking the ‘Link’ button.



To indicate that two cells are linked, Informed Designer shows the remote cell in the left list with an arrow pointing to the cell on the form. To unlink a cell, select it in the left list, then click ‘Unlink.’ Clicking the ‘Unlink All’ button unlinks all cells.

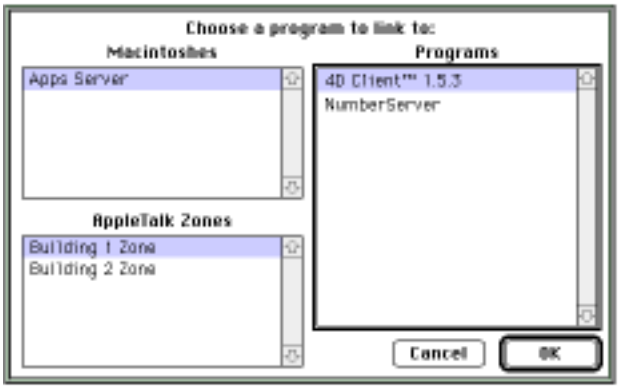
Apple Event Lookups

Apple events is an IAC (inter-application communications) capability that’s available only on computers running version 7.0 or later of the Mac OS. Apple events allows two different applications—either on the same computer or on two different computers connected to the same network—to communicate directly with each other.

The ‘Apple events’ connection type is used to link lookups to other Apple event aware applications. Linking, however, works only with applications that understand the specific type of Apple events that Informed uses to communicate. 4th DIMENSION by ACIUS (using the Informed 4D Externals) is one such application.

Configuring an Apple event connection involves selecting the application and database to connect to, and linking cells on your form with fields in the remote database. With the ‘Apple event’ connection type selected, a button titled ‘Choose Application’ appears on the Lookup dialog box.

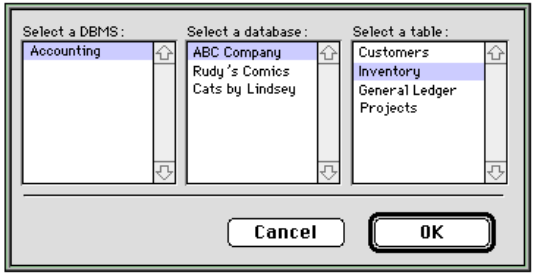
The Apple event application to which you’re linking a lookup must be running when you configure the lookup. Click the ‘Choose Application’ button to select this application. The Program Linking dialog box appears.



The application can be running on any Mac OS compatible computer connected to the network. If the application is running on a computer other than the one that you're running Informed Designer on, that computer must have a name, and it must have program linking turned on. On the Program Linking dialog box, choose the computer that's running the application, then select the application itself and click 'OK.'

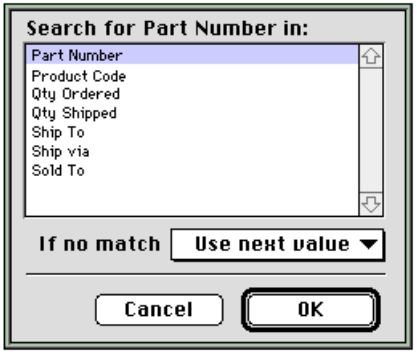
A database or accounting system might contain several different files or tables of information. For example, many accounting systems maintain customer, vendor, inventory, and invoice information in separate files. In database terminology, a file of information is commonly referred to as a table. The individual pieces of information contained in a table—such as a customer's name, address, and terms—are called fields.

Once you've selected an application, click the 'Choose Table' button to choose a particular table to look up into. You'll see a dialog box listing the available options.



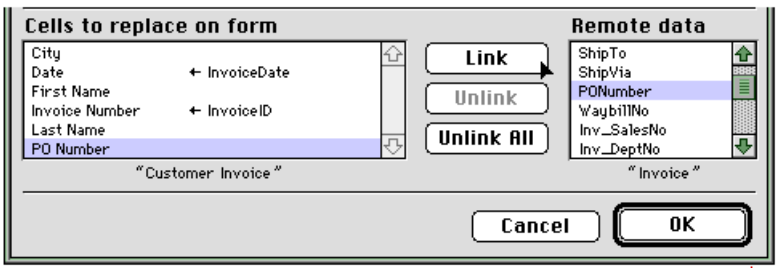
Depending on the application that you've selected, you may or may not see different options in each list. If you select a DBMS (database management system) in the leftmost list, you may see several databases to choose from. Many applications act like a single DBMS and offer access to one or more databases. When you select a database, the third list shows the available tables. Select the appropriate table, then click 'OK.' The name of the table will appear next to the 'Choose Table' button and the 'Remote data' list will contain the fields in that table.

Click the ‘Choose Match Field’ button to select the match field. This is the field that the application will search through to find a matching value when the lookup is performed. For example, suppose that you’re setting up an inventory lookup to fill in the description and price of an item when a part number is typed. The match field would be the part number field in the inventory table of the accounting system or database.



Select the appropriate field in the list. As with data document lookups, the ‘If no match’ drop-down list controls the action Informed Filler takes if the requested lookup value is not found by the lookup application. If you choose the ‘Use next value’ option, Informed Filler will use the next higher value. If you choose the ‘Do not lookup’ option, Informed Filler won’t copy any values and will instead clear the linked cells on the form and display a dialog box indicating that no match was found. After selecting the match field and ‘If no match’ option, click ‘OK.’ The name of the match field will appear next to the ‘Choose Match Field’ button on the Lookup dialog box.

To specify which cells on the form are filled in when the lookup is performed, you link cells in the ‘Cells to replace on form’ list with fields in the ‘Remote data’ list.



Clicking the ‘Link’ button links the selected cell in the left list with a selected field in the right list. Clicking ‘Unlink’ clears the link instead. To unlink all cells, click the ‘Unlink All’ button.

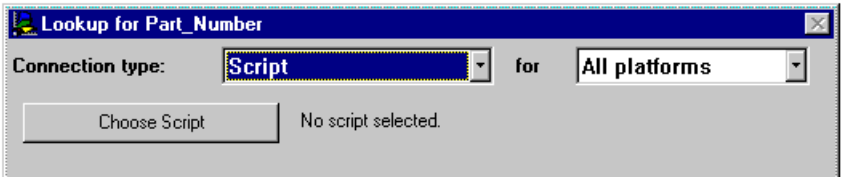
Script Lookups

Informed's scripting capabilities provide a flexible method of integrating different applications. Script lookups can be configured using either JavaScript (on both Windows and Mac OS) or AppleScript (Mac OS only). In order to configure a script lookup you must have the appropriate scripting plug-in installed in your Plug-ins folder.

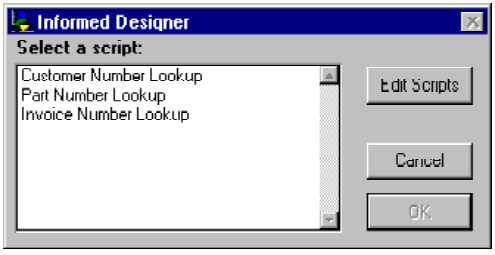
You create a script lookup by writing a script, storing it with the template, and then choosing that script when you configure the lookup. The script instructs an application to find specific information and copy it back onto the form. Like any lookup, a script lookup is triggered whenever the user enters or changes a value in the lookup cell.

See Chapter 12 of this manual for instructions on how to create and store scripts.

With the Script connection type selected, the Lookup dialog box displays a button titled 'Choose Script.'



When you click 'Choose Script' on the Lookup dialog box, the list of scripts that have been added to the form template are presented in another dialog box.



You can select a script, or, as a convenience, you can click 'Edit Scripts' to add a new script. Clicking 'Edit Scripts' is a shortcut to choosing the Scripts command from the Configure submenu. For detailed information on adding, naming, editing, and removing scripts, see Chapter 12, "Scripting."

After selecting a script, click 'OK' on the dialog box. The script name appears to the right of the 'Choose Script' button.

Note Since only Informed Filler understands JavaScript or AppleScript scripts, script lookups cannot be tested using Informed Designer's Test mode. You must use Informed Filler to test a script lookup.

Linking Through Data Access Plug-Ins

Informed's data access plug-ins are designed to provide access to a wide range of databases and data sources. They include support for many of the standard desktop database formats as well as common SQL databases such as Oracle and Sybase. Informed's plug-in architecture allows Shana to continually develop new plug-ins and update existing plug-ins to support new databases and new standards in data access.

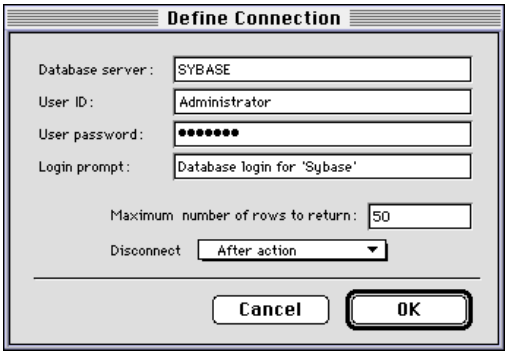
When you choose a connection type that corresponds to a data access plug-in, the Lookup dialog box changes to reflect the specific configuration details for that type. For many connection types there are two methods available for creating the specific instructions required by the data source to perform the lookup: "Easy" and "Custom." Some connection types provide only one method.

The "Easy" method is intended to provide an easy-to-use method of configuration. Although less flexible, it usually requires very little knowledge of the technical details of the data source. For example, no knowledge of Sybase's SQL language is necessary when configuring a Sybase lookup using the Easy configuration method.

The "Custom" method of configuration provides much more flexibility, but often requires more knowledge of the data source. Configuring a custom Sybase lookup, for example, requires that you enter an actual SQL query.

After choosing a connection type, a single button appears near the top of the Lookup dialog box. The title of this button is specific to the type of connection you choose. For many connection types, the button title is 'Define Connection.'

With most data sources, it is necessary to provide connection information in addition to the specific instructions that are to be carried out by the data source. Connection parameters usually consist of a user ID, a password, and information that identifies the data source or server. This information is specific to the data source that you're linking to. The Define Connection dialog box for Sybase is shown on the following page.

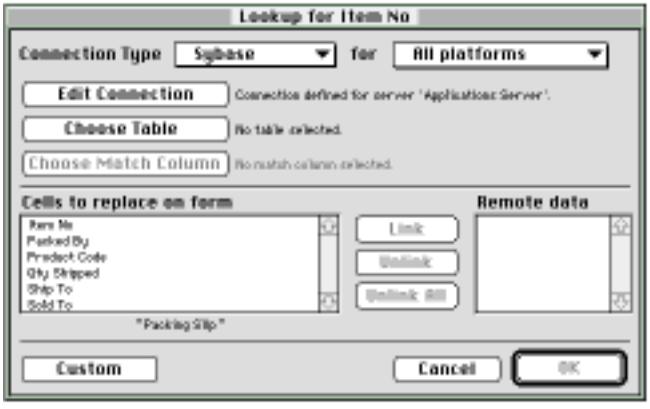


If you enter all necessary connection parameters here, Informed Filler will automatically connect for the user when the lookup is performed. You can, however, leave optional parameters blank. Leaving a parameter, such as the user ID or password, blank means that the Informed Filler user will be requested to enter this information when the lookup is performed.

The details of connecting to a particular type of data source are the same regardless of whether the link is configured for a lookup, an auto-incrementing cell, or for submitting a completed form. The details of the Define Connection dialog box as well as other relevant data source-specific information can be found in the “Data Access Plug-ins” topic of Informed Designer’s on-line help.

Note Before you can link a lookup to an external data source, the data source (a dBase file, for example) must already exist. Informed Designer will not create the database or data source for you.

If additional configuration information is needed (which is the case for most data sources), once you’ve defined the connection, the Lookup dialog box will change to show the controls and settings for either of the Easy or Custom configuration methods. If both the Easy and Custom configuration methods are supported by the selected connection type, you’ll see the Easy configuration screen with a button near the bottom-left of the dialog box titled ‘Custom.’



Clicking the ‘Custom’ button switches the Lookup dialog box to show the Custom configuration screen. The button title changes to ‘Easy.’ Clicking ‘Easy’ switches you back to the Easy configuration screen.

Easy Configuration

If a plug-in supports the Easy configuration method, after you’ve defined the connection, the Lookup dialog box will change to show additional buttons and two scrolling lists. These controls make it very easy to configure the lookup. Once you’ve specified the necessary parameters and links, Informed Designer automatically generates the instructions required by the data source to perform the lookup.

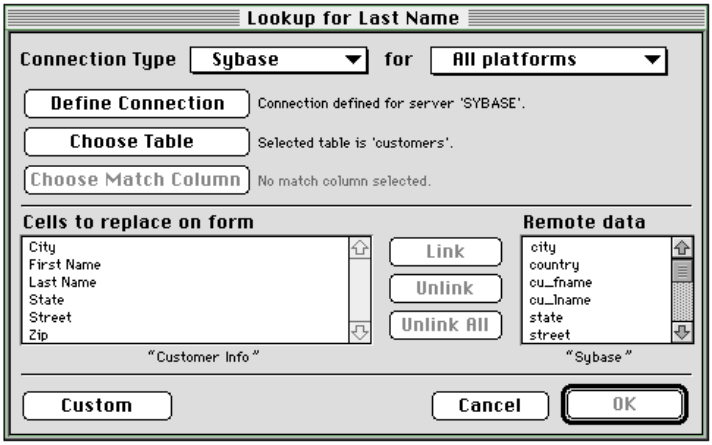
Depending on which connection type you’ve selected, the titles of buttons and the dialog boxes that appear when you click them may vary. The examples shown in this section correspond to the Sybase connection type.

For many types of databases and data sources, information is stored in “tables.” Each table stores information about a particular type of object or entity. For example, an accounting database may have separate tables for customers, vendors, inventory items, and the chart of accounts. Each table contains columns of information. Each column stores one value of information. A customer table, for example, might have separate columns for the customer number, name, address, and balance.

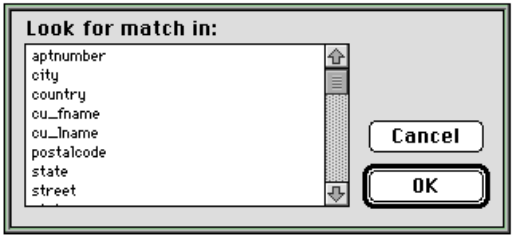
When a lookup is performed, the value that the Informed Filler user types is looked up in a column of a table. If a match is found, the values of other columns are returned and entered in other cells on the form. To select the lookup table, click the ‘Choose Table’ button.

Note In order to choose a table, it is necessary that Informed Designer connect to the data source to obtain the list of available tables. Be sure that the connection has been properly defined and that the database or data source is available before you click ‘Choose Table.’

For Sybase lookups, multiple dialog boxes will appear when you click ‘Choose Table,’ one to select a database and one to select a table. Once you’ve selected a table, the name of the table will appear next to the ‘Choose Table’ button, and the columns in that table will be listed in the ‘Remote data’ scrolling list.



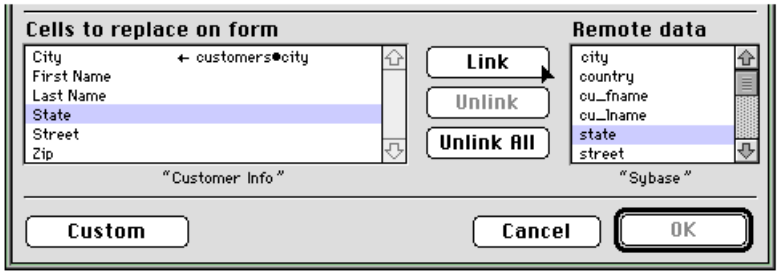
Click ‘Choose Match Column’ to select the match column. This is the column in the table that the database will search through to find a matching value when the lookup is performed.



Select the match column, then click ‘OK.’ The name of the match column appears beside the ‘Choose Match Column’ button on the Lookup dialog box.

Note If the structure of the tables or columns or other elements of the data source changes after you’ve chosen a table, be sure to choose the table again. In doing so, Informed Designer will connect to the data source and obtain the current database structure.

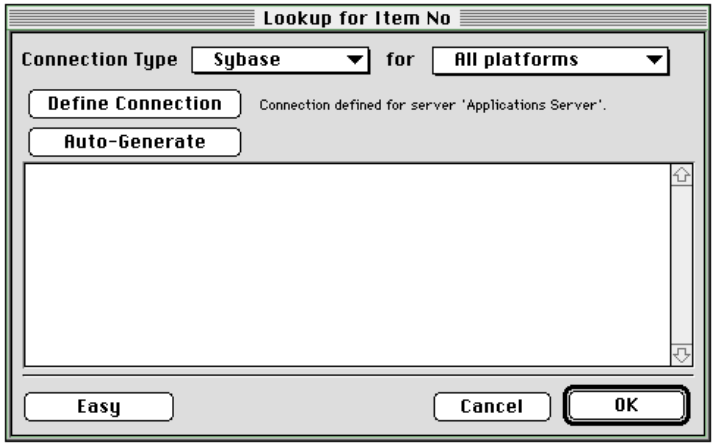
The scrolling lists titled ‘Cells to replace on form’ and ‘Remote data’ are used together to specify which cells on the form are filled in with information returned from the data source. The ‘Remote data’ list contains the names of the columns that are available from the data source. The ‘Cells to replace on form’ list contains all cells on the form template. To specify that a cell value is to be replaced with a return value, simply select the cell in the left list and the return value in the right list, then click the Link button. The name of the return value will appear in the ‘Cells to replace on form’ list with an arrow pointing towards the cell name.



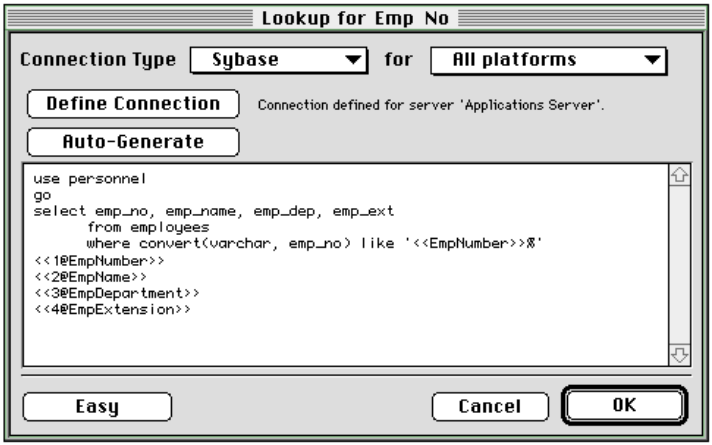
To unlink one cell, select the cell then click ‘Unlink.’ To unlink all cells, click ‘Unlink All.’

Custom Configuration

Some data sources support only the Custom configuration method. The Custom configuration method is much more flexible compared to the Easy method, but it requires more knowledge of the database or data source. For data sources that support both Easy and Custom configuration, you switch between the two methods by clicking the ‘Custom’ / ‘Easy’ button located near the bottom-left of the Lookup dialog box. With the Custom configuration method selected, the Lookup dialog box changes to contain a large text box (in addition to the ‘Define Connection’ button). For many types of data sources, you’ll also see a button titled ‘Auto-Generate.’



The Custom configuration method requires that you enter text that instructs the data source to perform the lookup; Informed Designer does not automatically generate these instructions. The text that you enter is specific to the type of data source that you are connecting to. For example, if you’re connecting to a Sybase database, you’ll enter SQL statements that conform to Sybase’s syntax. The example shown on the following page queries a Sybase database to lookup an employee’s number and return her name, department, and extension.



Regardless of the type of data source you're connecting to, the statements or instructions that you enter should instruct the data source to return one or more values. To include a cell's value in the instructions, simply enclose the cell name within double-less than and double-greater than characters. In the example shown above, the select statement includes the value of the cell "EmpNumber."

The values returned from the data source are entered in other cells on the form by including return locators following the data source-specific instructions. A return locator is a means of identifying a return value, along with the cell on the form into which the value should be entered.

A return locator is specified as the name of a cell enclosed within double less-than and double greater-than characters. The cell name is preceded by a number and the "@" symbol. The number identifies the return value and the cell name identifies the cell into which the value should be placed. If, for example, the data source returns three values, you would use the numbers 1, 2, and 3, respectively, to identify those values.

Data sources that support both Easy and Custom configuration will contain an 'Auto-Generate' button on the Custom Lookup dialog box. Clicking this button will automatically generate the appropriate instructions according to the current Easy configuration settings. This feature is useful if you want to change—or customize—the effect of the Easy configuration in a small way.

After completing the Easy configuration, switch to the Custom method by clicking the 'Custom' button at the bottom-left of the Lookup dialog box. Then click the 'Auto-Generate' button. Informed Designer will examine the current Easy configuration and generate the corresponding instructions. These instructions will appear in the large text box as though you had typed them yourself. If the text box already contains instructions, they will be replaced with those automatically generated.

Configuring for Multiple Platforms

Many of the databases and data sources that Informed can link with are accessible from both the Windows and Mac OS platforms. However, the details of accessing a database or data source from each of the platforms might be different. For example, suppose that you're linking a lookup to an Oracle database. For Mac OS users, you might be accessing the Oracle database using the Mac OS Oracle client software (SQL*NET), whereas on Windows you might be using ODBC instead. The specific parameters needed to connect to the database, therefore, might be different depending on which platform the Informed Filler user is using.

The Lookup dialog box contains a drop-down list with the items 'This platform' and 'All platforms.'

For each different connection type, Informed Designer knows if the configuration details are the same or different for the two platforms. If the connection type is supported on both platforms and the configuration details are the same on both, the 'All platforms' option will be available. The lookup you configure on one platform will function on both.

If the configuration details are different for each platform, or if the connection type is available only on the platform you're using, 'This platform' will be the only choice available in the drop-down list. For accessing these types of databases and data sources, you have to configure the lookup on one platform, then move the form template to the other platform and repeat the configuration. Informed Designer stores the configuration for both platforms. Informed Filler uses the configuration that corresponds to the user's platform.

Although it may be necessary to configure a lookup twice, once on each platform, the resulting form template document is still a platform neutral document. That is, a single version of the template will work with Informed Filler on both platforms. Informed Filler automatically uses the configuration information that is appropriate for the user's platform.

Lookup Errors

Although Informed Designer can check to make sure that you don't make mistakes when you configure a lookup, there are several reasons why a lookup can fail to work properly. For example, suppose that a lookup is linked to a particular data document, and the document is accidentally deleted. Or maybe the application or database required by a lookup is not running.

Errors can occur while you test a lookup with Informed Designer, or as you fill out forms with Informed Filler. For the two connection types that are built into Informed (Data document and Apple event), there are three basic types of errors. They are:

- The lookup data document or application cannot be found.
- The data document or application is available, but an error occurs while configuring or performing the lookup.
- System 7 (or later) is not running and is required for Apple event lookups.

For Apple event lookups, Informed uses the name of the computer to find the lookup application. An error will occur if you change the computer's name, or if you move the application to a different computer with a different name. Similarly, an error will occur if the lookup data document required by a lookup cannot be found. You'll see an error message when Informed Filler attempts to perform the lookup for the first time.

The dialog box that appears contains the buttons 'Look,' 'Skip,' and 'Disable.' You can try to find the required lookup data document or application by clicking the 'Look' button. For data document lookups, you'll see the standard Open dialog box. For Apple event lookups, you'll see the Program Linking dialog box instead. If you successfully find the correct lookup data document or application, Informed will automatically re-link the lookup before continuing. If you click 'Skip' or 'Disable,' the error will be ignored and no attempt will be made to find the missing document or application. 'Skip' ignores the error that time only which means the error message will appear the next time the lookup is attempted. The 'Disable' option ignores the error until the next time the form document is opened.

When you choose the Lookup command to change the configuration of an existing lookup, the lookup data document or application must be available. If it's missing, an error message will appear with options to look for the document or application, clear the lookup and continue, or cancel the Lookup command.

The second type of error can occur when the lookup data document or application is available but an error of some sort is detected. For Apple event lookups, the lookup application may provide information about the particular error that has occurred. For example, if you've configured an Apple event lookup to read inventory information from an accounting system, but the required accounting database is not open, you'll see an error message indicating so.

If you click the 'Retry' button, Informed will attempt to perform the lookup again. This option is useful if the lookup application is running on a different computer (from the one that you're running Informed Designer or Informed Filler on), since you might be able to fix the problem there and then continue. As explained earlier, the 'Skip' and 'Disable' options allow you to ignore the error. Clicking 'Skip' ignores the error one time only, whereas the 'Disable' option ignores the error until the next time the form document is opened.

The third type of error will occur if you're not running System 7 (or later) when Informed Filler attempts to perform an Apple event lookup.

Data Verification

In “Cell Types” earlier in this chapter, you learned about cell types and formatting options. By choosing the correct cell type, you can restrict a cell’s values to those that match the cell type. For example, date cells accept only valid date entries.

Informed Designer allows you to further restrict the allowable values for any cell. Often the value in a cell must be within a certain range or it must conform to specific data entry rules. For example, on a sales slip you might want to restrict the value entered in the discount amount cell to no more than ten percent of the total sale.

By using Informed Designer’s Check command, you can create a *check formula* for any cell on your form. A check formula tests for error or warning conditions. The result of a check formula—which must be True or False—indicates whether or not a cell’s entry is valid. You can even use alert dialogs and help messages to describe error conditions.

Check Formulas

Like calculation formulas, you create a check formula by combining operators and functions with cell names and constants to produce a new result. The resulting type of a check formula must be boolean. That is, a check formula must return True or False. A True result indicates a valid entry, whereas a False result represents an invalid value.

Suppose that the shipping charge cell on an invoice should accept only numbers greater than 2 dollars. Assuming that the shipping charge cell is called ‘Shipping,’ you could use the check formula shown below.

```
Shipping >= 2
```

This formula uses the ‘greater than or equal to’ comparison operator (>=) to test if the value of ‘Shipping’ is at least 2. When a person enters or changes the ‘Shipping’ value, the formula is evaluated using the new value. If the value is greater than or equal to 2, the result of the formula will be True and the value will be accepted. Otherwise, the formula will return False and a beep will sound to indicate that an error has been detected.

You can use Informed’s logical operators to combine more than one test condition. For example, suppose that the shipping charge must also be less than or equal to 10 dollars. Using the ‘AND’ operator, you could combine the two test conditions into one formula.

```
Shipping >= 2 AND Shipping <= 10
```

Only values that are greater than or equal to 2 AND less than or equal to 10 would be accepted.

It's often easier to understand the effect of a check formula if you change the format to use the IF statement. With the IF statement, you can test for different conditions and explicitly return a True or False result. For example, the check formula below is equivalent to the example which allows a shipping charge between 2 and 10 dollars.

```
If Shipping >= 2 AND Shipping <= 10 Then
   Return True
Else
   Return False
End
```

If the condition between the words 'If' and 'Then' is true, then the formula returns the result that follows the word 'Then.' If the condition is false, then the result that follows the word 'Else' is returned instead. The word 'Return' is optional. It can precede the result of a formula.

Often you'd like to test a cell using other cell values on your form. For example, maybe the shipping charge applies only to customers outside of New York state. The following formula uses the IF statement to test the value of the 'State' cell.

```
If State <> 'NY' Then
   Return Shipping >= 2 AND Shipping <= 10
Else
   Return Shipping = 0
End
```

If the value of 'State' is not equal to (<>) the value 'NY,' then the formula proceeds to test if the shipping amount is between 2 and 10. Otherwise, the formula tests for a shipping amount of 0.

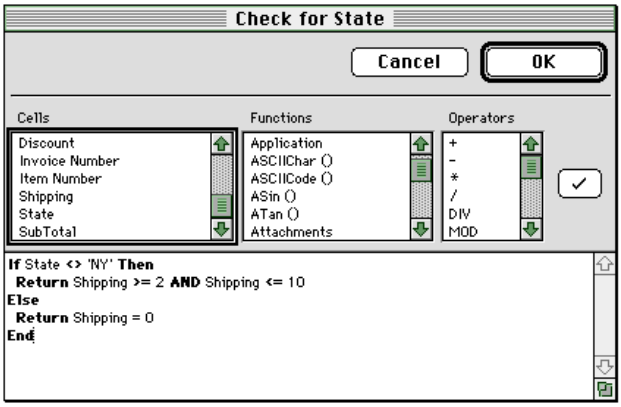
If a check formula doesn't return a result, the formula's result is assumed to be True. For example, if the value of 'State' equals 'NY,' then the check formula below would return the True value.

```
If State <> 'NY' Then
   Shipping >= 2 AND Shipping <= 10
End
```

You can use check formulas to test other types of information too. You can compare date, time, name, and boolean values, and use any of Informed's powerful functions to manipulate and test cell values. For a complete discussion of formulas and functions, see Chapters 9 and 10.

Entering a Check Formula

To create a check formula, first select the cell that you want to check, then choose **Check...** from the Settings menu. The Check dialog box appears.



You enter a check formula by typing in the formula text box. You can resize the dialog box to show more or less of the check formula.

Informed Designer makes it easy to enter complex, error-free formulas. Instead of typing cell names, functions, and operators, you can double-click any entry in any of the corresponding scrolling lists on the Check dialog box. The entry is inserted into the formula at the current insertion point. You can move between the lists on the dialog box by pressing Tab. When you tab into a list, a bold frame appears around it to indicate that it's selected.
If you double-click to enter a function that has one or more parameters, Informed Designer will automatically position the insertion point at the first parameter. If you double-click a function while holding down the Alt (Windows) or Option (Mac OS) key, the parameter names are included within parentheses.

You can also enter a cell's name by clicking the cell in the drawing window. This is useful if you don't know the name of the cell, but you can see it in the drawing window.

If you click the checkmark button while entering a formula, or if you click 'OK' to dismiss the dialog box, Informed Designer will check to make sure that the formula is valid. The formula is formatted properly, and if any errors are detected, a message appears describing the nature of the error.

Alert Dialogs and Help Messages

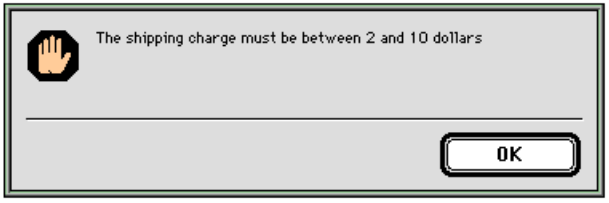
Informed Designer allows you to supply optional messages in any check formula. By using alert dialogs and help messages, you can explain to someone filling out your form why an error occurred, or you can provide helpful reminders of important instructions that must be followed when certain information is entered.

Alert Dialogs

An alert is a dialog box that contains a text message. If you include the words ‘with Alert’ and a message within quotation marks following the result of a check formula, Informed will conduct the alert when the cell is checked (see “Evaluating Check Formulas”). For example, the check formula below uses an alert dialog to report an error when an invalid shipping amount is entered.

```
If Shipping >= 2 AND Shipping <= 10 Then
   Return True
Else
   Return False with Alert 'The shipping charge
   must be between 2 and 10 dollars.'
End
```

When the formula is evaluated, the result will be True if the value of ‘Shipping’ is within the correct range. If the value is out of range, the formula will return False and you’ll see this dialog box:



By using the IF statement, you can use different alerts under different conditions. In the above example, the alert is shown only when the formula detects an incorrect shipping amount. Below is a more complicated example.
Suppose that the discount amount on an invoice can be no higher than 15% for purchases under $5,000, and no higher than 20% for purchases $5,000 and over. Suppose also that purchases with a discount higher than 15% must be accompanied with a supervisor’s signature. Consider the check formula shown below.

```
If TotalSale < 5000 Then
   If Discount Rate > 0.15 Then
      Return False with Alert 'The discount rate
      cannot exceed 15%.'
   End
Else
   If Discount Rate > 0.20 Then
      Return False with Alert 'The discount rate
      cannot exceed 20%.'
   Elseif Discount Rate > 0.15 Then
      Return True with Alert 'This purchase requires a
        supervisor’s signature.'
   End
End
```

The first IF statement tests whether or not the total sale amount (in the cell called ‘TotalSale’) is less than $5,000. For sales under $5,000, an alert is used only if the discount rate is found to be greater than 15%. Since this is an error condition, the formula returns a False result.

If the total sale amount is greater than or equal to $5,000, the formula tests for a discount rate higher than either 20% or 15%. If the discount rate is higher than 20%, an alert reports the error and the formula returns False. If the discount rate is greater than 15% but less than 20%, an alert reminds the person filling out the form that the purchase must be approved by a supervisor. Since this is not an error condition, the formula returns True and not False.

Help Messages

In the section “Cell Help,” you’ll learn how to create a custom help message for any cell on your form. While entering data in a cell on a form, the help message for that cell can be displayed by choosing Informed Filler’s Help command. This command is available in Informed Designer’s Form menu while you test your form.

When a check formula causes an alert to be displayed, Informed Filler will automatically add the alert text to the custom help message for the cell. Therefore, you can always see a cell’s most recent alert message by displaying the help message.

If you replace the word ‘Alert’ with the word ‘Help’ in a check formula (as described above), the alert won’t be displayed when the check formula is evaluated.

```
If Shipping >= 2 AND Shipping <= 10 Then
   Return True
Else
   Return False with Help 'The shipping charge
   must be between 2 and 10 dollars.'
End
```

If an invalid shipping amount is entered, the quoted message will be added to the help message for the cell being checked.

For more information about help messages and the Help command, see “Cell Help.”

Evaluating Check Formulas

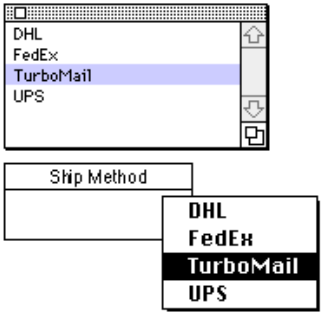
When a form is filled out with Informed Filler, pressing the Tab key moves the user from one cell to the next. Each time they enter a different cell value, Informed Filler checks the value by evaluating the cell’s check formula. If the check formula returns False, a beep will sound and the users will remain at the current cell with the incorrect value selected.

Once an error condition has been detected (as described above), Informed Filler will allow users to proceed to other cells, even if they don’t enter a correct value first. Therefore, the user isn’t forced to correct the mistake before moving to other cells. However, Informed Filler won’t allow accepting, printing, or mailing a form with incorrect values.

Choices

Often a cell will take on a variety of common values. For example, the shipping method on an order form might be Mail, UPS, or Federal Express. Instead of typing the shipping method each time, the Informed Filler user can select an entry from a list of common choices.

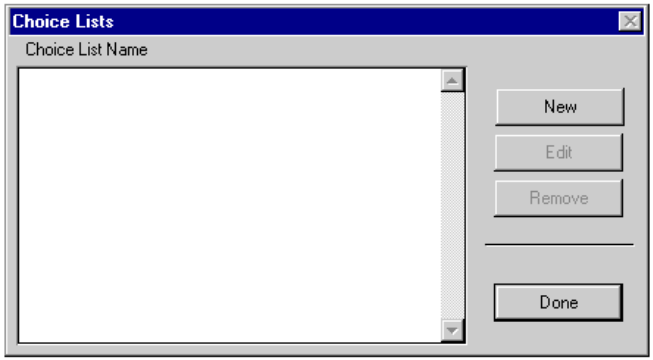
Informed Filler can present a list of choices using either of two methods: a floating palette or a pop-up list. Both allow the Informed Filler user to pick a choice directly from the list, or type the first few characters of the desired choice.



With Informed Designer, creating and using a choice list is a two step process. First, you name the choice list and specify each of the choices. Then you specify which cells the choice list is to be used with. By creating a choice list as a separate step, a single choice list can be used among several different cells. That way, when you need to change the items in a choice list, you can do so once and have the change take effect for multiple cells.

Editing Choice Lists

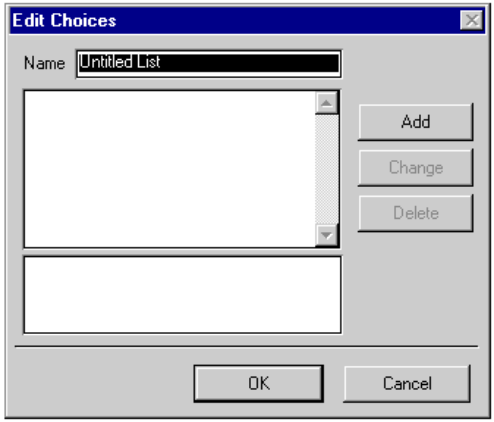
To create or delete a choice list, and to add, remove, or change items in a choice list, select **Choices...** from the Configure submenu under Informed Designer's Form menu. The Choice Lists dialog box appears.



The Choice Lists dialog box contains various controls to add, remove or edit choice lists. It also contains a scrolling list that displays the names of any choice lists that you've already configured for the current form. To add a new choice list, click 'New.' To edit an existing choice list, click it in the scrolling list, then click 'Edit,' or simply double-click it in the scrolling list. When you click 'New' to add a new choice list, or 'Edit' to change an existing choice list, the Edit Choices dialog box appears (see "Editing Choices" below). To remove a choice list, click it in the scrolling list, then click 'Remove.'

Editing Choices

When you create a new choice list or edit an existing list, you do so using the Edit Choices dialog box. With this dialog box you can add new choices, or delete or change existing choices.



The current choices appear in the scrolling list. To add a new choice, type the entry in the text box below the scrolling list and click 'Add.' The new choice is added to the list in sorted order. Although there's no limit to the number of choices a cell can have, we recommend that you enter no more than 50.

To change or remove an existing choice, first select the choice by clicking it in the scrolling list; the selected choice appears in the text box. To remove the selected choice, click ‘Delete.’ To change the selected choice, type the new value then click ‘Change.’

After you’ve entered all of the choices, click ‘OK’ to close the Edit Choices dialog box. To discard any changes, click ‘Cancel’ instead.

Descriptive Text in Choice Lists

You can add descriptive text to a cell’s list of choices that won’t appear in the cell once a choice is made. You do this by separating the descriptive text from the choice by two vertical bars (||). For example, if you want the code 0001 to appear in the shipping cell each time you select Airborne Express, enter the choice “Airborne Express || 0001.” When a user selects the choice, only the text to the right of the vertical bars, in this example “0001”, will appear in the cell. In the choice list itself, the actual choice will appear within parentheses to the right of the descriptive text.

Dynamic Choice Lists

By using formulas, you can create dynamic choice lists that change based on other information on the form. The contents of dynamic choice lists can be created using any of the following methods:

- hard coding the contents in the actual choice list for the cell
- calculating the contents from other cells on the form
- obtaining the contents from an external text file

When using formulas for choice items, you enter the formula in the same place you enter choice values—in the text box on the Edit Choices dialog box. See “Editing Choices” earlier in this chapter for information on the Edit Choices dialog box.

Hard Coding a Choice List

Suppose that the available shipping methods for invoiced goods are different depending on whether the goods are shipped to a destination in the United States or in Canada. You can enter a formula that returns a different list of ship method choices depending on the value of the “Country” cell.

When you enter a formula, you must place it within double less-than and double greater-than characters as shown in the following example.

```
<<If Country="USA" Then Return {"FedEx","UPS","Mail"} ElseIf Country="Canada" Then
Return {"FedEx","Mail"} End>>
```

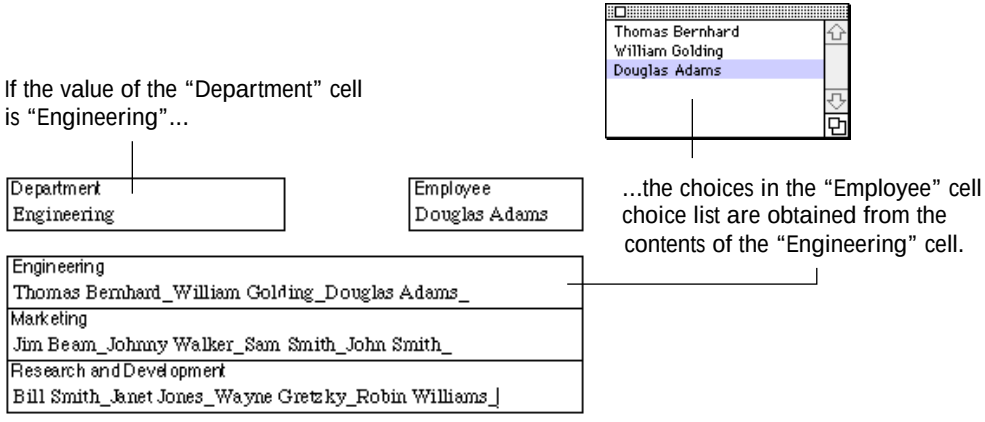
The above formula returns the three ship methods “FedEx,” “UPS, and “Mail” if the value of the “Country” cell is “USA.” If “Country” is “Canada,” the formula returns only “FedEx” and “Mail.”

Calculating the Contents from Other Cells

You can also configure a choice list to obtain its content from other cells on a form.

In the following example there are two cells with choice lists. The first cell—named “Department”—contains a normal, static choice list with three choices; “Engineering,” “Research_Development,” and “Marketing.” Each of these choices corresponds to a similarly named cell on the form that contains the names of each person in the respective departments.

The second cell—named "Employee"—contains a dynamic choice list. Depending on the choice selected in the “Department” cell, a different choice list will appear in “Employee.” For example, if you select “Engineering” as the value for the “Department” cell, the “Employee” choice list looks for the cell named “Engineering” and returns its contents as the list of choices. If you select, “Marketing” in the “Department” cell instead, the “Employee” choice list looks for the cell named “Marketing” and returns its contents as the list of choices.



The example below shows how to configure the choice list calculation for the “Employee” cell in the previous example:

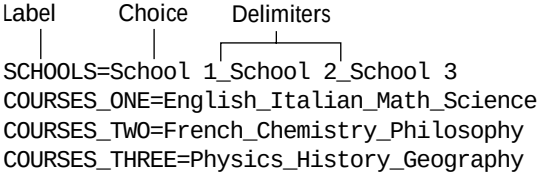
```
<<If Department = "Engineering" Then Tokenize (Engineering,"_")
ElseIf Department = "Research and Development" Then   Tokenize
(Research_Development,"_") ElseIf Department = "Marketing" Then Tokenize
(Marketing,"_") End>>
```

Note This calculation uses the “Tokenize” function which searches for the delimiter in the specified text and breaks the input into individual phrases. For information on the “Tokenize” function, please see Chapter 10 of this manual.

Obtaining the Contents from an External Text File

You can configure a choice list to obtain its contents from an external text file. This method of calculating a choice list requires that you have the Informed “GrabText” plug-in installed in your Plug-ins folder.

In this example, there are two cells with choice lists. The first cell—named “Schools”—contains three choices; “School One,” “School Two,” and “School Three.” Depending on the choice selected in the “Schools” cell a different choice list will appear in the second cell, “Courses.” The choice lists for both cells obtain their contents from an external text file called "CHOICES.txt". The example below shows the contents of the “CHOICES.txt” text file:



To obtain the list of choices for the “Schools” cell, enter this calculation on the Edit Choices dialog:

```
<<Tokenize (External ("GrabText",":CHOICES.txt","SCHOOLS"),"_")>>
```

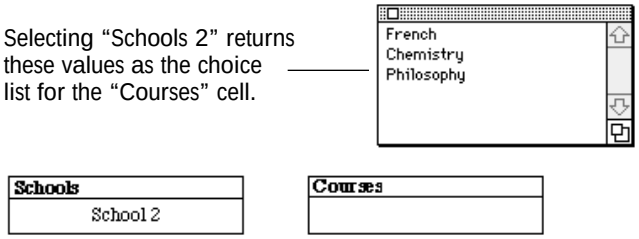
Note This calculation makes use of Informed's “External” function which lets you call an external function (in this case the GrabText plug-in). For information on the “External” function, please see Chapter 10 of this manual.

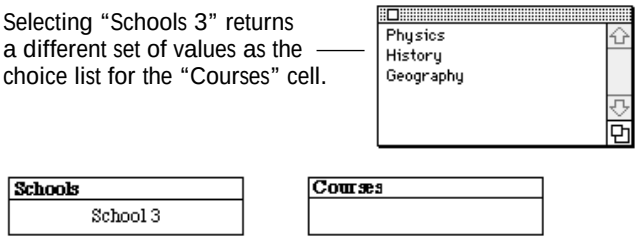
The above calculation tells the GrabText plug-in to look in the text file named “CHOICES.txt.” The default location of the text file is in the Informed Preferences folder. This is referenced by the colon (":") preceding the file name. If the text file is located elsewhere you must specify the full path to its location. GrabText then looks for the label "SCHOOLS". GrabText is case sensitive so the value here must match the entry in the text file exactly. GrabText will return all values following an equals sign ("=") after the specified label until it reaches a carriage return (line break). Using the text file shown earlier, the GrabText plug-in will return the values “School 1,” “School 2,” and “School 3” as the choices for the “Schools” cell.

To obtain the list of choices for the “Courses” cell, enter this calculation on the Edit Choices dialog:

```
<<Tokenize (External ("GrabText",":CHOICES.txt",IFTE(Schools="School 1",
"COURSES_ONE",IFTE(Schools="School 2","COURSES_TWO",IFT(Schools="School 3",
"COURSES_THREE")))),"_")>>
```

This calculation tells the GrabText plug-in to return a specific set of choices depending on the value of the “Schools” cell. For example, if the value of “Schools” is “School 2,” the GrabText plug-in looks for the label “COURSES_TWO” and returns the values “French,” “Chemistry,” and “Philosophy” as the choices for the “Courses” cell.





Configuring Choices for a Cell

Simply defining a choice list does not activate it for a particular cell. To configure a cell to use a choice list, select the cell then choose **Cell...** from the Settings menu. The Cell dialog box appears.

The ‘Choice list’ drop-down list contains the items ‘No choices,’ ‘New List...,’ and the names of any choice lists that you have created. To configure a cell to use a particular choice list, simply select the name of the list from the ‘Choice list’ drop-down list. As a convenience, you can define a new choice list by selecting the ‘New List...’ item. Doing so displays the Edit Choices dialog box with which you can name the choice list and add, remove, or edit choice items. For detailed information on editing a choice list, see “Editing Choices” earlier in this chapter.

When you select a choice list, other options become available. The ‘Style’ drop-down list allows you to pick from two different methods of presenting choices to the Informed Filler user. They include ‘Floating Palette’ and ‘Pop-up List.’

Both styles allow the Informed Filler user to pick a choice either by selecting one directly from the list, or by typing the first few characters of the choice item. To select a choice directly, the user simply clicks the item on the floating palette or selects the item from the drop-down list. Alternatively, as the user types a value in the cell, Informed Filler will automatically enter the choice item that matches most closely. For the floating palette option, this effect of typing occurs regardless of whether or not the palette is visible.

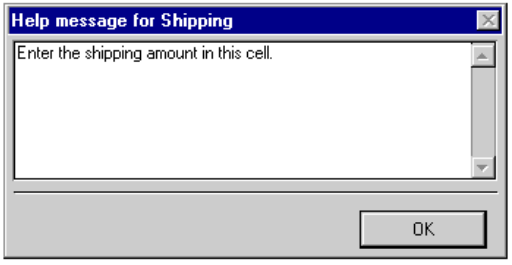
The ‘Auto display palette’ option is available only if the ‘Style’ option is set to ‘Floating palette.’ If you select this option, Informed Filler will automatically display the palette of choices when the user tabs to or selects the cell.

The ‘Allow other values’ option controls whether or not Informed Filler will allow the user to enter values other than those in the choice list. If you leave this option unchecked, Informed Filler will restrict entries to one of those in the choice list. To allow other values, select the ‘Allow other values’ option.

Cell Help

Informed Designer allows you to create a custom help message for any cell on your form template. Use a help message whenever the information in a cell requires explanation or special instructions. Help messages are displayed on dialog boxes or, if you are using a Mac OS compatible computer, they also appear in balloons.

To enter a help message for a cell, select the cell that you want to change, then choose **Help Message...** from the Settings menu. The Help Message dialog box will appear.



A help message can be as long as you like. If you enter more lines than the height of the text box, you can use the scroll bar to scroll the message text up or down.

Note Balloon help on the Mac OS sets limitations on the amount of text that can be displayed. If Balloon help does not display the full amount of text in your help message it will still be available on the Help dialog box.

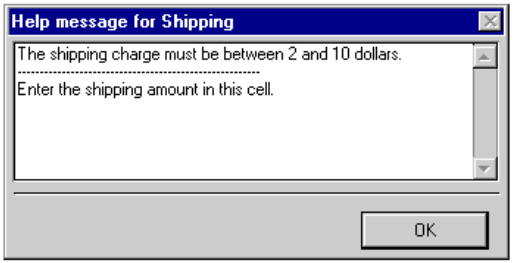
The help messages you create are available to users in Informed Filler, and in Informed Designer's Test mode. When you test a form in Informed Designer you can display the help message by selecting the cell and choosing the Help command in the Form menu.

If you're using a Mac OS compatible computer with System 7 or later, you can also display a help message by choosing the Show Balloons command from the Help menu and pointing at the cell. A balloon will appear showing the cell's help message.

Check Formulas and the Help Dialog

As discussed in "Alert Dialogs and Help Messages," by creating a check formula, you can have Informed Filler automatically display a message or warning when different data entry conditions are met.

When a check formula uses an alert or help message, the message is added to the cell's custom help message. The check formula message is separated from the cell's help message by a dashed line on the Help dialog box.



The check formula message will remain part of the help message until the person filling out the form changes the cell's value. For example, if the Informed Filler user enters a cell value that causes an alert message to display, the message will be added to the Help dialog box for that cell (as described above). If they change the value so that the cell's check formula no longer displays the alert, the alert message will be removed from the Help dialog box.

Form Submission

Automated forms submission allows the Informed Filler user to easily transfer form data from a completed form—or record—into another information system without the need to rekey the data, and without having to follow cumbersome and often complex import and export procedures. Forms can be submitted by simply selecting Informed Filler's Submit command.

There are several methods with which Informed Filler can submit forms. Informed Designer's Configure Submit dialog box contains a drop-down list that lists each of the different methods.

The 'Apple events' connection type is available only on the Mac OS. All other connection types correspond to the data access plug-ins that you have installed in your plug-ins folder.

How it Works

Form submission requires configuration with Informed Designer. You configure forms submission using the Configure Submit command. You specify the type of connection with which to connect to the submission destination as well as various linking parameters. The linking parameters determine how information is transferred from the form to the submission destination.

Configuring a form for submission is a three step procedure:

- Choose the Submit command from the Configure submenu under Form
- Choose the connection type
- Specify the configuration details

The Configure Submit dialog box contains controls for selecting the connection type and configuring submission. If your computer uses the Mac OS, you'll always see the 'Apple events' connection type. You'll also see the other connections types that correspond to the data access plug-ins you have installed in your plug-ins folder.

The first connection type is 'No Submit.' To clear a previously configured submission, select this item then click 'OK' on the Configure Submit dialog box.

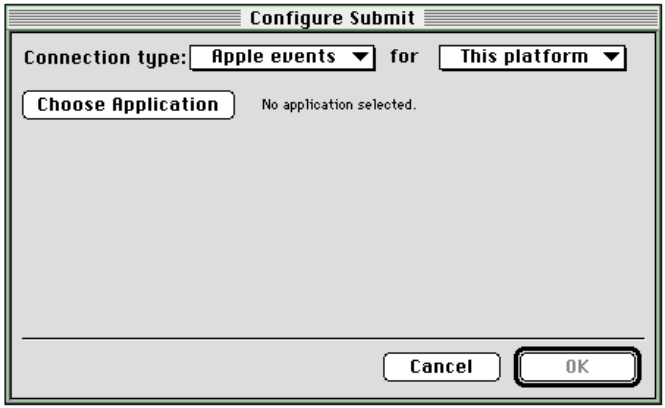
When you select a connection type, the Configure Submit dialog box changes to display the configuration controls and settings appropriate for that type of connection. For example, the Oracle connection type has controls for defining the connection and linking cells, whereas the Script option allows you to select a script.

Once you've selected the connection type and specified all configuration settings, click 'OK' to save the configuration. The following sections describe the procedures for configuring the different types of form submission.

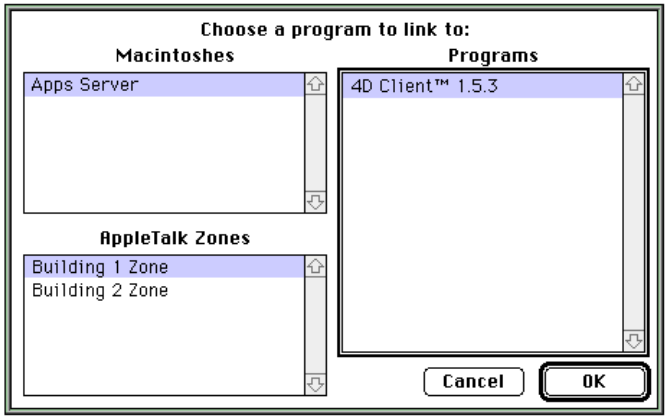
Apple Event Submission

Informed allows you to submit completed forms to Apple event aware applications such as databases and accounting systems. This feature works only with computers using the Mac OS, and only with applications that understand the specific type of Apple events that Informed uses to communicate. 4th DIMENSION by ACIUS (with the Informed 4D external installed) is one such application.

Configuring form submission using the Apple event connection involves selecting the application and database to connect to, and linking cells on your form with fields in the remote database. With the 'Apple event' connection type selected, a button titled 'Choose Application' appears on the Configure Submit dialog box.



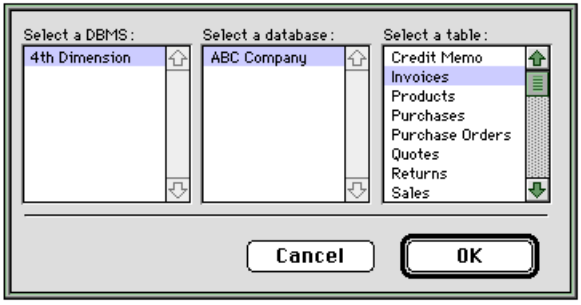
The application to which you link a form must be running when you configure the connection. Click the ‘Choose Application’ button to select this application. The Program Linking dialog box appears.



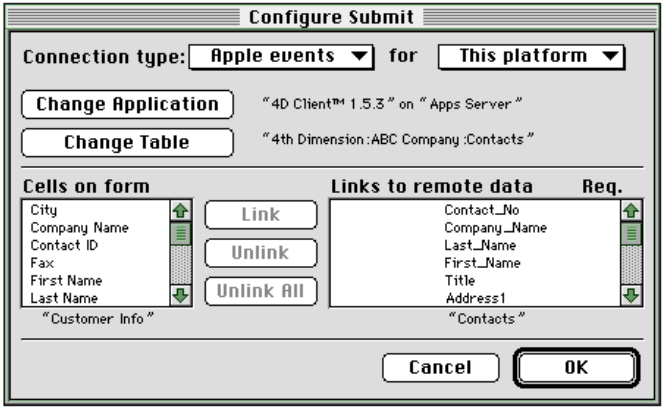
The application can be running on any Mac OS compatible computer connected to the network. If the application is running on a computer other than the one that you’re running Informed Designer on, that computer must have a name and it must have program linking turned on. On the Program Linking dialog box, choose the computer that’s running the application, then select the application itself and click ‘OK.’ When you click ‘OK,’ Informed Designer verifies that the application you selected supports the required Apple events to communicate with Informed. If it doesn’t you’ll see a message indicating so.

Many applications store different types of information in different files or tables. A file of information is commonly referred to as a table. The individual pieces of information contained in a table—such as the invoice number, date, and terms of an invoice—are called fields.

When you link a form to an application, you're required to specify which table the information should be stored in. For example, if you're linking an invoice form to an accounting system, you have to specify that the information will be stored in the invoices table in the accounting database. That way, the application will know how to store the information when a completed form is submitted with Informed Filler. You select a table by clicking the 'Choose Table' button. A dialog box appears listing the options available.

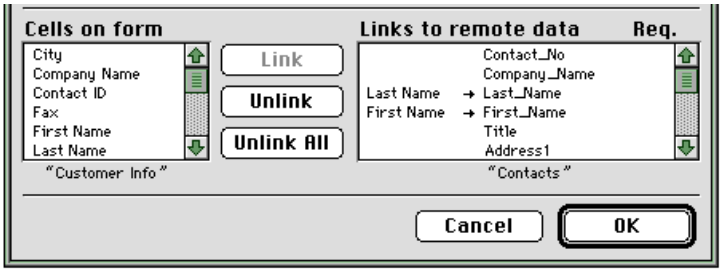


Most applications act like a single DBMS and offer access to one or more databases. When you select a database, the third list shows the available tables. Select the appropriate table, then click 'OK.' The name of the table will appear next to the 'Choose Table' button and the 'Links to remote data' list will show the fields in that table.



You use the two scrolling lists to link the cells on your form with the fields in the table that you selected. When you use Informed Filler to send a completed form to the application, this linking information is used to ensure that the right values are stored in the right places in the table.

To link two items, select a cell in the left list and a field in the right list, then click the 'Link' button. When a field is linked, Informed Designer shows the cell in the 'Links to remote data' list with an arrow pointing towards the field.



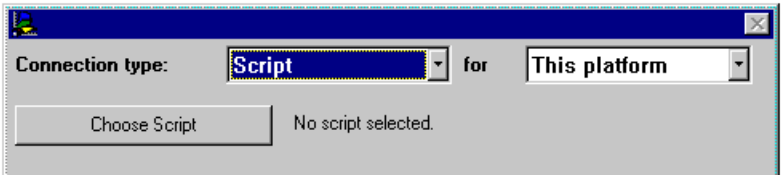
To unlink a field, select it in the right list, then click the ‘Unlink’ button. To unlink all fields, click the ‘Unlink All’ button.

For most tables, certain information is required when you send a completed form with Informed Filler. For example, when you send an invoice to an application, it might be required that you include values for fields such as the customer number, invoice number, date, and terms. On the Configure Submit dialog box, a check mark under ‘Req.’ next to a field in the ‘Links to remote fields’ list indicates that a cell must be linked to that field.

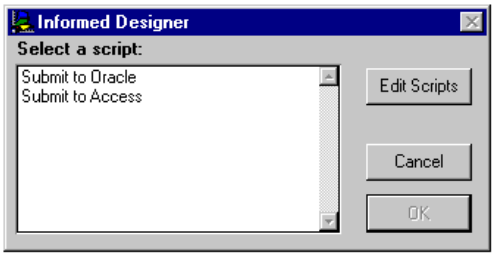
Script Submission

Like script lookups, you configure form submission via a script connection by writing a script. The script instructs an application to copy information from the form and insert it into another application. Script submits can be configured using either JavaScript (on both Windows and Mac OS) or AppleScript (Mac OS only). In order to configure a script submit you must have the appropriate scripting plug-in installed in your Plug-ins folder.

With the ‘Script’ connection type selected, the Configure Submit dialog box contains a button titled ‘Choose Script.’



Rather than entering a script on the Configure Submit dialog box, you do so using the Scripts command in the Configure submenu of Informed Designer’s Form menu. This command allows you to add, name, remove, and edit scripts. When you click ‘Choose Script’ on the Configure Submit dialog box, the list of scripts that have been added to the form are presented in another dialog box.



You can select a script, or, as a convenience, you can click ‘Edit Scripts’ to add a new script. Clicking ‘Edit Scripts’ is a shortcut to choosing the Scripts command from the Configure submenu. For detailed information on adding, naming, editing, and removing scripts, see Chapter 12, “Scripting.”

After selecting a script, click ‘OK’ on the dialog box. The script name appears next to the ‘Choose Script’ button on the Configure Submit dialog box.

Submission Through Data Access Plug-Ins

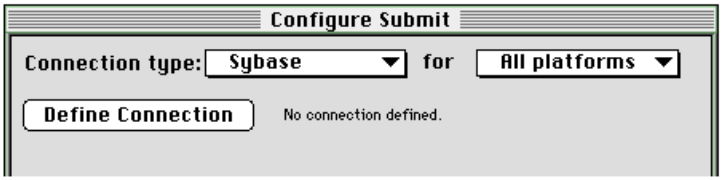
Informed’s data access plug-ins are designed to provide access to a wide range of databases and data sources. They include support for many of the standard desktop database formats as well as common SQL databases such as Oracle and Sybase. Informed’s plug-in architecture allows Shana to continually develop new plug-ins and update existing plug-ins to support new databases and new standards in data access.

When you choose a connection type that corresponds to a data access plug-in, the Configure Submit dialog box changes to reflect the specific configuration details for that type. For many connection types there are two methods available for creating the specific instructions required by the data destination to perform the submission: “Easy” and “Custom.” Some connection types provide only one method.

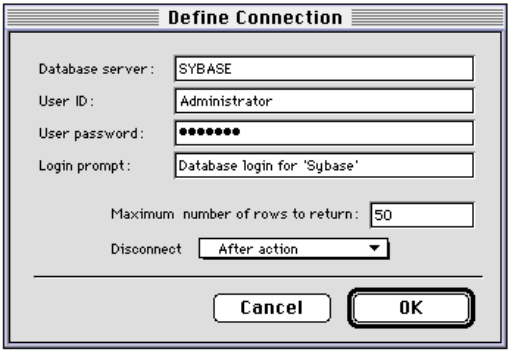
The “Easy” method is intended to provide an easy-to-use method of configuration. Although less flexible, it usually requires very little knowledge of the technical details of the data source. For example, no knowledge of Sybase’s SQL language is necessary when configuring submission to Sybase using the Easy configuration method.

The “Custom” method of configuration provides much more flexibility, but often requires more knowledge of the data source. When configuring custom submission to Sybase, for example, you are required to enter an actual Sybase SQL query.

After choosing a connection type, a single button appears near the top of the Configure Submit dialog box. The title of this button is specific to the type of connection you choose. For many connection types, the button title is ‘Define Connection.’



With most data sources, it is necessary to provide connection information in addition to the specific instructions that are to be carried out by the data source. Connection parameters usually consist of a user ID, a password, and information that identifies the data source or server. This information is specific to the data source that you're linking to. The Define Connection dialog box for Sybase is shown below.

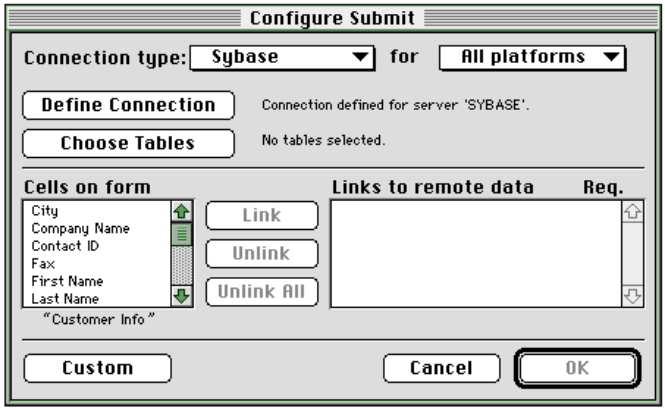


If you enter all necessary connection parameters here, Informed Filler will automatically connect for the user when a form is submitted. You can, however, leave optional parameters blank. Leaving a parameter, such as the user ID or password, blank means that the Informed Filler user will be requested to enter this information when a form is submitted.

The details of connecting to a particular type of data source are the same regardless of whether the link is configured for a lookup, an auto-incrementing cell, or for submitting a completed form. The details of the Define Connection dialog box as well as other relevant data source-specific information can be found in "Data Access Plug-ins" topic of Informed Designer's on-line help.

Note Before you can configure form submission with an external data destination, the data destination (a dBase file, for example) must already exist. Informed Designer will not create the data destination for you.

If additional configuration information is needed (which is the case for most data sources), once you've defined the connection, the Configure Submit dialog box will change to show the controls and settings for either of the Easy or Custom configuration methods. If both the Easy and Custom configuration methods are supported by the selected connection type, you'll see the Easy configuration screen with a button near the bottom-left of the dialog box titled 'Custom.'



Clicking the ‘Custom’ button switches the Configure Submit dialog box to show the Custom configuration screen. The button title changes to ‘Easy.’ Clicking ‘Easy’ switches you back to the Easy configuration screen.

Easy Configuration

If a plug-in supports the Easy configuration method, after you’ve defined the connection, the Configure Submit dialog box will change to show additional buttons and two scrolling lists. These controls make it very easy to configure form submission. Once you’ve specified the necessary parameters and links, Informed Designer automatically generates the instructions required by the data source to perform the lookup.

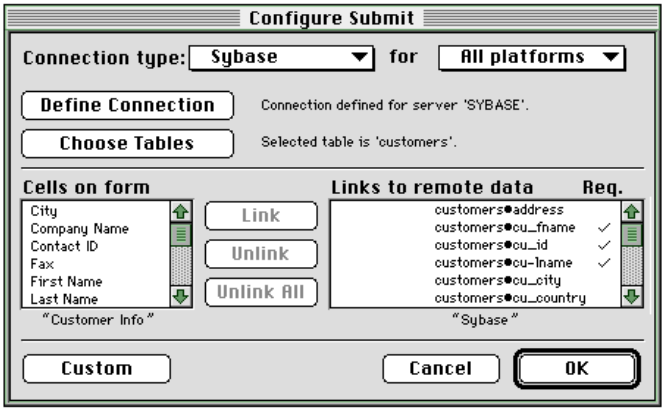
Depending on which connection type you’ve selected, the titles of buttons and the dialog boxes that appear when you click them might vary. The examples shown in this section correspond to the Sybase connection type.

For many types of databases and data sources, information is stored in “tables.” Each table stores information about a particular type of object or entity. For example, an accounting database may have separate tables for customers, vendors, inventory items, invoices, and the chart of accounts. Each table contains columns of information. Each column stores one value of information. An invoice header table, for example, might have separate columns for the invoice number, date, customer number, and shipping address.

When a form is submitted, the information in cells is transferred into different columns in the data source. These columns do not all have to be from the same table. For example, the cells on an invoice form might be submitted into two tables, an invoice header table (containing the invoice number, customer number, date, and terms), and an invoice detail table (containing the invoice number, part number, quantity, and price for each item invoiced). Many databases offer one or more tables into which form data can be submitted. You select which table—or tables— by clicking the ‘Choose Tables’ button.

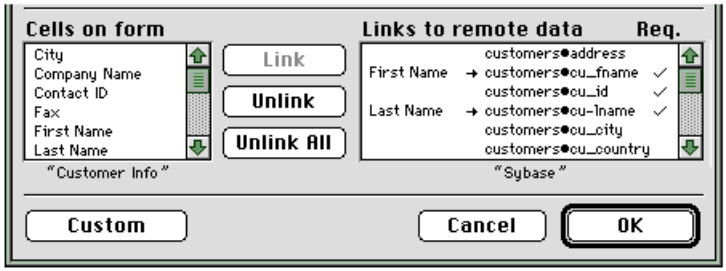
Note In order to choose a table, it is necessary that Informed Designer connect to the data destination to obtain the list of available tables. Be sure that the connection has been properly defined and that the database or data destination is available before you click 'Choose Tables.'

For Sybase, multiple dialog boxes will appear when you click 'Choose Tables,' one to select a database and one to select one or more tables. Once you've selected one or more tables, the corresponding columns will be listed in the 'Links to remote data' scrolling list. Each column name will be prefixed with the name of the table to which it belongs.



Informed Designer automatically knows how to submit forms containing both fields (single value field cells) and tables (multi-value column cells). For many data destinations, including most SQL databases, Informed Filler will insert multiple rows into tables containing columns that are linked to column cells on the form. The number of rows inserted corresponds to the number of rows filled out in the table on the form being submitted. If both column cells and field cells are linked to the same table (which is common when submitting forms to relational databases), then the single value of a linked field cell is repeated for each row that is inserted.

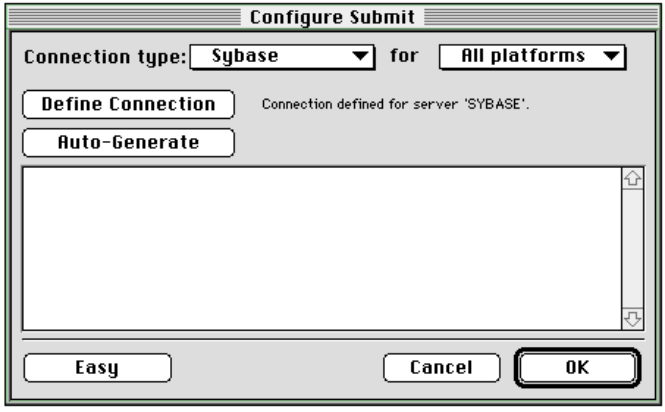
The scrolling lists titled 'Cells on form' and 'Links to remote data' are used together to specify which cells on the form are entered into which columns in the data source. The 'Cells on form' list contains all cells on the form template. The 'Links to remote data' list contains the names of the columns in the data source. To specify that a cell value is to be entered into a column, simply select the cell in the left list and the column in the right list, then click the Link button. The name of the cell will appear in the 'Links to remote data' list with an arrow pointing towards the column name.



To unlink one cell, select the cell then click ‘Unlink.’ To unlink all cells, click ‘Unlink All.’

Custom Configuration

Some data destinations support only the Custom configuration method. The Custom configuration method is much more flexible compared to the Easy method, but it requires more knowledge of the database or data destination. For data destinations that support both Easy and Custom configuration, you switch between the two methods by clicking the ‘Custom’ / ‘Easy’ button located near the bottom-left of the Configure Submit dialog box. With the Custom configuration method selected, the Configure Submit dialog box changes to contain a large text box (in addition to the ‘Define Connection’ button). For many types of data destinations, you’ll also see a button titled ‘Auto-Generate.’



The Custom configuration method requires that you enter text that instructs the data destination to perform the form submission; Informed Designer does not automatically generate these instructions. The text that you enter is specific to the type of data destination that you are connecting to. For example, if you’re connecting to a Sybase database, you’ll enter SQL statements that conform to Sybase’s syntax, whereas if you’re connecting to a web server, you’ll enter an HTTP Post request.

The following example submits an invoice into two tables of a Sybase database.

```
begin transaction
use accounting
go
insert into InvoiceHdr (inv_no, cust_no, inv_date, terms, ship_meth)
    values (convert(varchar, '<<Invoice Number>>'), convert(varchar, '<<Customer
Number>>'),
            convert(datetime, '<<Date>>'), convert(char, '<<Terms>>'),
            convert(varchar, '<<Ship Method>>'))
<<#LOOP>>
insert into InvoiceDtl (inv_no, part_no, quantity, price)
    values (convert(varchar, '<<Invoice Number>>'), convert(varchar,
'<<PartNumber>>'),
            convert(int, '<<Quantity>>'), convert(money, '<<Price>>'))
<<#ENDLOOP>>
commit transaction
```

Regardless of the type of data destination you're connecting to, the statements or instructions that you enter should instruct the data destination to accept one or more values. To include a cell's value in the instructions, simply enclose the cell name within double-less than and double-greater than characters. In the example shown above, the insert statements include the values of the cells "Invoice Number," "Customer Number," "Date," "Terms," "Ship Method," "Part Number," "Quantity," and "Price."

In order to insert the multiple values of a column cell, Informed provides a looping mechanism. Without this mechanism, the reference to a column cell will correspond to only the first row of that cell. For example, the example SQL statement below will insert one row into the table named "InvoiceDtl." The first value of the column cells "PartNumber," "Quantity," and "Price" would be inserted.

```
insert into InvoiceDtl (inv_no, part_no, quantity, price)
    values (convert(varchar, '<<Invoice Number>>'), convert(varchar,
'<<PartNumber>>'), convert(int, '<<Quantity>>'), convert(money, '<<Price>>'))
```

If you surround statements with the keywords "<<#LOOP>>" and "<<#ENDLOOP>>," Informed Filler will automatically repeat those statements once for each non-empty row of any column cells referenced.

```
<<#LOOP>>
insert into InvoiceDtl (inv_no, part_no, quantity, price)
    values (convert(varchar, '<<Invoice Number>>'), convert(varchar,
'<<PartNumber>>'), convert(int, '<<Quantity>>'), convert(money, '<<Price>>'))
<<#ENDLOOP>>
```

If the table containing the column cells "PartNumber," "Quantity," and "Price" contained four rows of information, the insert statement would be repeated four times.

Data destinations that support both Easy and Custom configuration will contain an 'Auto-Generate' button on the Configure Submit dialog box. Clicking this button will automatically generate the

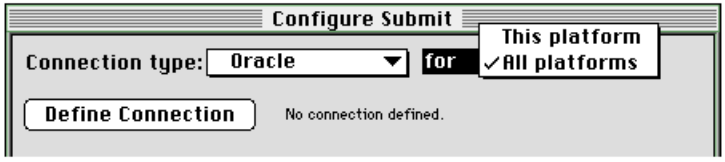
appropriate instructions according to the current Easy configuration settings. This feature is useful if you want to change—or customize—the effect of the Easy configuration in a small way.

After completing the Easy configuration, switch to the Custom method by clicking the 'Custom' button at the bottom-left of the Configure Submit dialog box. Then click the 'Auto-Generate' button. Informed Designer will examine the current Easy configuration and generate the corresponding instructions. These instructions will appear in the large text box as though you had typed them yourself. If the text box already contains instructions, they will be replaced with those automatically generated.

Configuring for Multiple Platforms

Many of the databases and data destinations that Informed can link with are accessible from both the Windows and Mac OS platforms. However, the details of accessing a database or data source from each of the platforms might be different. For example, suppose that you're configuring form submission to an Oracle database. For Mac OS users, you might be accessing the Oracle database using the Macintosh Oracle client software (SQL*NET), whereas on Windows you might be using ODBC instead. The specific parameters needed to connect to the database, therefore, might be different depending on which platform the Informed Filler user is using.

The Configure Submit dialog box contains a drop-down list with the items 'This platform' and 'All platforms.'



For each different connection type, Informed Designer knows if the configuration details are the same or different for the two platforms. If the connection type is supported on both platforms and the configuration details are the same on both, the 'All platforms' option will be available. The linking you configure on one platform will function on both.

If the configuration details are different for each platform, or if the connection type is available only on the platform you're using, 'This platform' will be the only choice available in the drop-down list. For accessing these types of databases and data destinations, you have to configure form submission on one platform, then move the form template to the other platform and repeat the configuration. Informed Designer stores the configuration for both platforms. Informed Filler uses the configuration that corresponds to the user's platform.

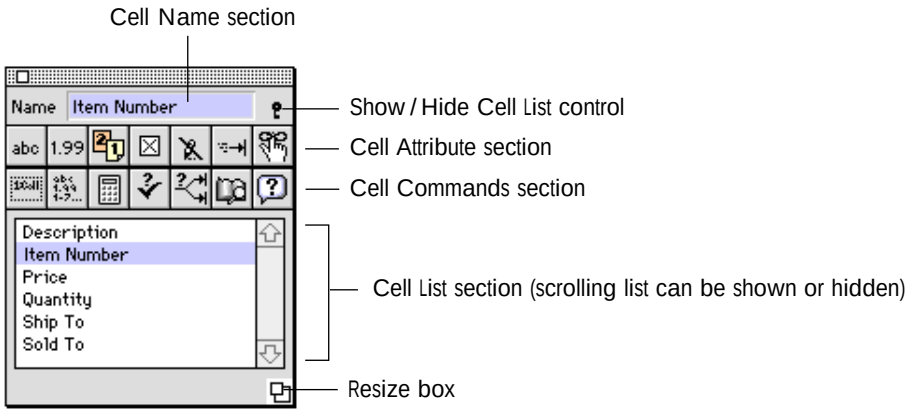
Although it may be necessary to configure form submission twice, once on each platform, the resulting form template document is still a platform neutral document. That is, a single version of the template will work with Informed Filler on both platforms. Informed Filler automatically uses the configuration information that is appropriate for the user's platform.

Using the Cell Palette

The Cell palette is a convenient feature that provides quick access to cell settings. Using the Cell palette, you can quickly and easily perform the following tasks:

- change the name and title of a cell
- easily find a cell by name in the Cell List
- configure a selected set of attributes for a cell by clicking buttons on the palette
- access Informed Designer's cell settings commands with the click of a button

You can show the Cell palette by choosing **Cell Palette** from the Show submenu under Layout. To hide the Cell palette, click its close box or choose **Cell Palette** again. The following figure shows the parts of the Cell palette.



The top section of the Cell palette is called the Cell Name section. The Cell Name section displays the name of the currently selected cell, and can be used to change both the name and title of the cell. With no cells selected, the Cell Name section displays as a gray bar with the words "No cells selected." If a single cell is selected, the Cell Name section changes to display the word "Name" followed by a text box containing the name of the selected cell. With multiple cells selected, the Cell Name section shows as a gray bar with the words "Multiple cells selected."

Below the Cell Name section are two rows of buttons. The top row is called the Cell Attributes section. These buttons allow you to set specific attributes for selected cells. The bottom row is called the Cell Commands section. These buttons provide shortcuts to choosing Informed Designer's cell settings commands. The Cell Attributes and Cell Commands sections are described in detail in "Cell Attributes" and "Cell Commands" later in this chapter.

The Cell palette also contains a control near the right edge of the Cell Name section. Clicking this control shows and hides the Cell List section, a scrolling list appended to the bottom of the Cell palette. See “Using the Cell List.”

Activating the Cell Palette

Until you draw a new cell or select an existing cell, the Cell palette is inactive. That is, the buttons are unavailable, the Cell Name section doesn’t display a cell name, and no cells are selected in the Cell List section.

To make the buttons available, simply draw a new cell or select an existing cell on the form.

To activate the Cell Name section, you can:

- select a cell on the form and press F2 (Windows) or Command-Tab (Mac OS)
- select the ‘Name’ text box
- click a cell in the Cell List section and press Tab

To move off of the Cell palette and back to the form, press Enter (Windows) or Return (Mac OS), or simply click on an empty part of the drawing area, or on an object that does not contain any cells.

Changing Cell Names

You can use the Cell palette to quickly change the name of any cell on your form. To do this, the Cell Name section on the Cell palette must be active.

To rename a single cell, select it, then press F2 (Windows) or Command-Tab (Mac OS). The ‘Name’ text box is highlighted. You can also activate the Cell Name section by selecting the text box. Type the new name in the text box and press Enter (Windows) or Return (Mac OS). Pressing Enter/Return leaves the Cell palette and returns to the form. The new cell name appears in the cell on the form and, if the Cell List section is visible, you’ll also see the new cell name updated and selected in the scrolling list.

Note If you haven’t already specified the title of a cell, changing the cell name also changes the title. However, once you manually change the title of a cell, changing the cell name leaves the title untouched.

You can move through the tab order of your form and rename several cells in succession by pressing F2 (Windows) or Command-Tab (Mac OS) after typing a new cell name. Pressing F2/Command-Tab selects the next cell in the tab order without leaving the Cell palette. For example, if you select the cell with tab position 2 and change its name to ‘Sold To,’ pressing F2/Command-Tab updates the cell name and then automatically selects the cell with tab position 3.

Using the Cell List

The Cell List section lists all cells on the form template, sorted by name. Clicking a cell's name in the list selects the cell (in the Cell List only), and deselects any selected objects on the form. Double-clicking a cell name in the list also selects the cell on the form and briefly displays a red arrow to indicate the cell's position. When visible, the Cell List section can be resized vertically by clicking and dragging the resize box at the bottom-right corner.

When the Cell List section is visible, you can select a cell in the scrolling list by using the mouse, by pressing the Up and Down Arrow keys, or by typing the first few characters of the cell's name. After selecting a cell, you can click any of the buttons on the Cell palette to set attributes or invoke commands.

You can use the Tab key to toggle between the Cell Name and Cell List sections. A highlighted text box indicates that the Cell Name section is active. A highlighted border around the scrolling list shows that the Cell List is the active section.

Cell Attributes

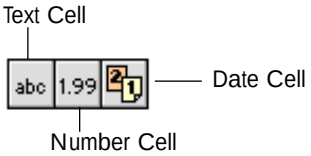
The top row of buttons on the Cell palette is called the Cell Attribute section. These buttons allow you to set specific attributes for selected cells on your form without using commands or dialog boxes. These attributes include certain cell types, the checkbox style, and various data entry options.

To use the Cell Attribute buttons, select one or more cells on your form, then click the appropriate button. The chosen attribute will be applied to all of the selected cells. The Cell Attribute buttons do not toggle on and off when you click them. To change an attribute that was set with the Cell attribute buttons, you must choose the appropriate command from the Settings menu (or click the corresponding Cell Commands button) and change the attribute using a dialog box. For example, if you click the 'Entry is Required' button to set a cell's data entry status, you must choose **Cell...** from the Settings menu (or click the Cell button) and change the entry status on the Cell Settings dialog box.

The following sections describe each button and its function.

Cell Type Attributes

The Text Cell, Number Cell, and Date Cell buttons are used to set a cell's type attribute. A cell's type should match the information that it holds. For example, if a cell holds date information, its type should be date.



Clicking the Text Cell button sets the selected cell's type to Text with no special formatting (that is, no Case or Entry options). You can use this attribute for cells that hold textual information such as a comment or a memo.

Use the Number Cell button to set a cell's type to number with the following format: "#,##0.00." With this format, the number 1500 is displayed as 1,500.00.

Clicking the Date Cell button makes the selected cell a date cell with the following format: "M/DD/YY." Using this format, the date 07/26/96 is formatted as 7/26/96.

The Text, Number, and Date types are only three of the nine cell types that Informed supports. See "Cell Types" earlier in this chapter for detailed information about other cell types and formatting options.

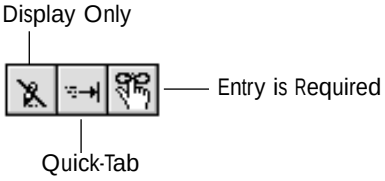
Checkbox Style Attribute

Use the Checkbox button to display a field or column cell as a checkbox with the simple 'X' checkbox style. For more information on checkboxes, see "Checkboxes" in Chapter 7 of your *Informed Designer Design and Graphics* manual.

Data Entry Attributes

The Display Only, Quick-Tab, and Entry is Required buttons are used to set data entry options for selected cells. Data entry options allow you to determine how information is entered when the Informed Filler users fills out a form. By selecting a cell and clicking a button, you automatically set the corresponding data entry attribute for that cell.

The following figure shows the attribute associated with each button.

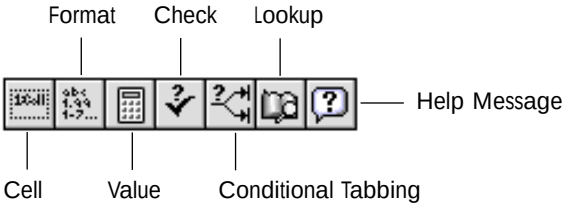


For a detailed description of the Display Only and Entry is Required attributes, see "Entry Options." For information about Quick-Tabs, see "Quick-Tabs."

Cell Commands

The bottom row of buttons on the Cell palette are shortcuts to Informed Designer's cell settings commands. When you select a cell and click one of the buttons, Informed Designer displays the corresponding dialog box, allowing you to change the settings for the selected cell. For example, if you select a cell and then click the Cell button, Informed Designer displays the Cell Settings dialog box.

The following figure shows the cell settings command associated with each button.

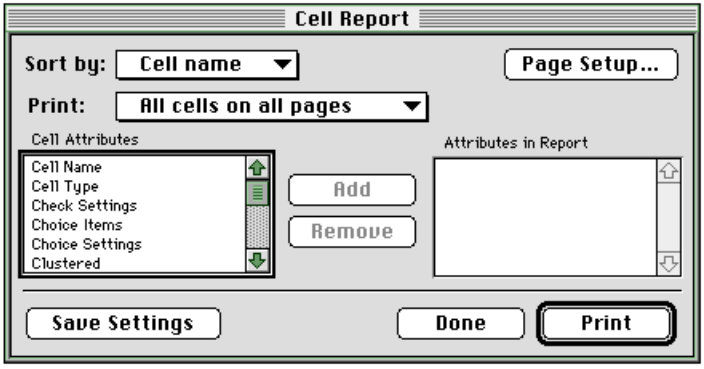


Informed Designer's cell settings commands can be found under the Settings menu. Information on all these commands is available in earlier sections of this chapter.

Cell Report

Previous sections in this chapter explain how forms can be configured to automatically calculate, check, and look up information. Commands exist that allow you to specify cell help messages, display formats, and choice lists.

For large forms, the configuration of cells can be complex. Making even simple changes to a form can require first understanding how the different cells are related and depend on each other. The Cell Report command allows you to print a list of cells and their attributes. The report can be customized for your specific needs. Choosing the Cell Report command from the Form menu displays the Cell Report dialog box.



You customize the cell report by selecting which cell attributes to include as well as options that determine which cells to print and their order. You can print all cells, only those cells on the current page, or only the currently selected cells. Choose your setting from the 'Print' drop-down list. You can sort the report by either cell name or tab position by selecting an option from the 'Sort by' drop-down list.

The scrolling list labeled 'Cell Attributes' contains the different cell attributes that can appear on the cell report. To include an attribute in the report, select its name in the left list, then click 'Add.' The attribute name will appear in the 'Attributes in report' list. The attributes will be printed in columnar format in the order that they appear in this list. To remove an attribute from the report, select its name in the right list, then click 'Remove.'

You set the page setup of the cell report by clicking 'Page Setup' on the Cell Report dialog box. The standard Page Setup dialog box for the currently chosen printer will appear allowing you to change the page size and orientation, or select any printer specific options.

Note Changing the page setup for the cell report does not affect the page setup for the form.

To print the cell report, click 'Print' on the Cell Report dialog box. The standard Print Job dialog box for the currently chosen printer will appear, allowing you to specify the number copies and other printing options.

Clicking 'Print' or 'OK' on the Print Job dialog box will begin printing the report. To cancel printing, click 'Cancel' instead.

To avoid having to re-configure the cell report each time you want to print a report, Informed Designer lets you save the settings on the Cell Report dialog box. Once you've selected the desired report options, click the 'Save Settings' button. The next time you choose the Cell Report command for the current document, Informed Designer will automatically restore the settings that were last saved.

When you've finished printing or configuring the cell report, click 'Done' to dismiss the Cell Report dialog box.

Testing Your Form Template

The previous sections in this chapter describe Informed Designer's data intelligence commands. These commands are used to add intelligent features to your form templates.

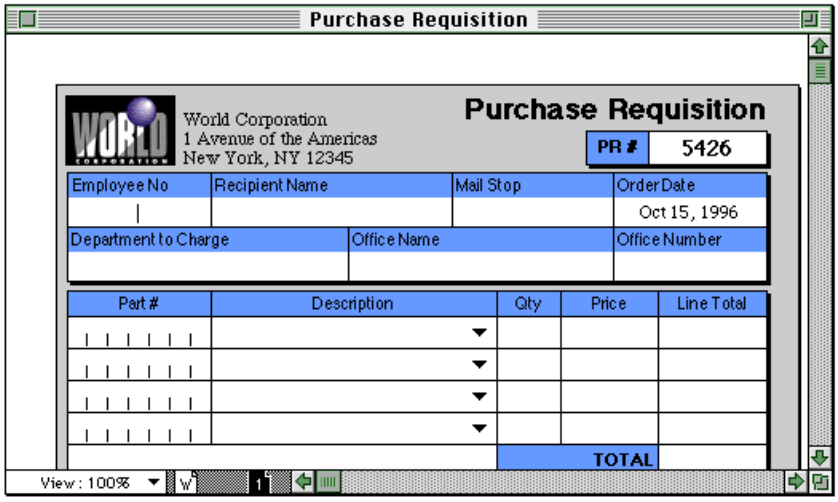
Although you require Informed Filler to store, retrieve, and manipulate completed forms, Informed Designer allows you to *test* the intelligent features of your form during the design process. Informed Designer's Test mode simulates filling out a single form with Informed Filler. You can test calculations, formatting options, and other intelligent features of your form. You can fill in cell values to see the effect of different font and type style settings.

This section describes the commands available to you while testing a form. Informed Designer's data intelligence commands are not explained here. See the previous sections in this chapter for information about these commands and other data-related features.

To test your form, choose the Test command from the Form menu. Informed Designer hides any palettes, and disables any design related commands. To switch back to design mode, choose the Test command again.

Entering Information

Switching to Test mode is like requesting a new record with Informed Filler. Default cell values are filled in for you and the cell with tab position '1' is selected.



If you've previously tested your form, information that you entered in cells will still be available. You can clear this information by choosing **Clear Record** from the Form menu.

You fill out a form by typing or pasting information into each cell. You can move from one cell to the next by pressing the Tab key or by clicking a different cell with the pointer. When you press Tab, Informed Designer will move you to the next cell in tab position order. If you hold down the Shift key while pressing Tab, the previous cell is selected instead. If you press F2 (Windows) or Command-Tab (Mac OS), you'll move directly to the next Quick-Tab cell. If you've configured any conditional tabs, you'll see their effect while testing your form.

When you move from one cell to another, Informed Designer checks the information you entered by evaluating the cell's check formula (if it contains one). If the check formula fails (returns a False result), Informed Designer will sound a beep and select the incorrect value. If the cell has no check formula, any entry is accepted.

Inserting Files

While testing a form template, another way to fill in parts of a form is to use the Insert File command. This command allows you to import a text file into a text cell, or a picture into a picture cell. For the command to be available, the current cell must be a text or picture cell, and its 'Display only' option must be turned off.

To insert a file, select the cell, then choose **Insert File...** from the Form menu. For picture cells only, pressing the Enter (Windows) or Return (Mac OS) key is a shortcut for selecting the Insert File command. The standard Open dialog appears, allowing you to select a file. For text cells, the selected text file will be inserted into the cell at the current insertion point. For picture cells, the selected picture replaces the current picture in the cell.

Entering Checkboxes

When you move to a checkbox cell, the frame flashes, indicating that the cell is selected. To change the value of a checkbox (from checked to unchecked, or vice versa), press any key or click the cell with the pointer.

If you check a checkbox that's clustered with other checkbox cells, Informed Designer will automatically turn off all other checkboxes that are part of the same cluster.

Calculated Cells

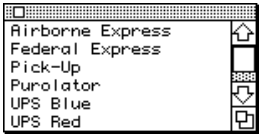
Informed automatically fills in calculated cells. A cell's calculation formula is evaluated whenever the value of any cell that participates in the formula changes.

If a cell's display only option is turned on, Informed Designer won't allow you to change the cell's calculated value. The cell will be excluded from the tab order and when you try to type in the cell, you'll hear a beep. If the display only option is turned off, you can change the cell's calculated value by selecting the cell and typing a different value.

Once you've typed to override the value of a calculated cell, you can easily change the value back to the cell's calculated value. Simply type a different value into one of the cells that participates in the calculation formula of the calculated cell—this triggers the calculation again—then re-type the appropriate value into that cell.

Choices

For cells that have choices, you can enter information by selecting an entry from a choices palette or a drop-down list. For more information, see "Choices" earlier in this chapter. If you've chosen the 'Floating palette' and 'Auto display' options for a cell, Informed will automatically show and hide the Choices palette when you move to and from the cell.



You can also show the Choices palette by choosing **Show Choices** from the Form menu. When the Choices palette is displayed, a checkmark appears next to the Show Choices command. Choose the command again to hide the Choices palette.

Lookups

In design mode, you can link your form with other information systems using the Lookup command. For example, you could have Informed Filler automatically 'look up' the description and price of a part in an inventory database when you type a part number on your invoice.

Only certain types of lookups function while you test a form. For a detailed explanation of Informed's lookup capabilities, see "Lookups" earlier in this chapter.

Signing Forms

You cannot test signing forms and verifying signatures with Informed Designer. However, while in Test mode you can see what a signed signature cell will look like. For more information, see "Testing Signature Cells" in Chapter 2.

Buttons

Buttons can only be tested using Informed Filler.

Auto-incrementing Cells

When you choose the Test command to switch to Test mode, Informed Designer does not automatically enter the next available values for any auto-incrementing cells. To test an auto-incrementing cell while in Test mode, select the cell, then choose **Assign Next Value** from the Form menu.

Changing the View Scale

When you fill out a form with Informed Filler, you can choose a view scale between 50%, 100%, and 200%. Reducing the view scale allows you to see more of the form in the form window. Enlarging the view scale can improve the readability of small type. While you test your form with Informed Designer, you can change the view scale by selecting a scale from the 'View' drop-down list at the bottom-left corner of the window.