Edit menu

Click a command below to learn more about it.

Undo	Reverses the last command you executed.
Cut	Removes the selected values from the worksheet and places them in the clipboard.
Copy	Copies the selected values to the clipboard.
Paste	Pastes the values on the Clipboard into the worksheet.
Fill	Fills the selected worksheet row or column with the value in the active cell.
Clear	Clears the format and/or contents of the active worksheet cells.
Delete	Deletes the active worksheet cells and moves the remaining cells up or over.
Sort	Sorts worksheet values in ascending or descending order.

{button Related Topics,PI(``,`IDH_RT_Edit_Menu_D')}

Undo command
Cut command
Copy command
Paste command

Fill command
Clear command
Delete command
Sort command

Undo command

The Undo command reverses the last command you executed.

Reverses the last command you executed.

Cut command

The Cut command removes the selected values from the worksheet and places them on the Clipboard.

Removes the selected values from the worksheet and places them on the Clipboard.

Copy command

The Copy command copies the selected values to the Clipboard.

Copies the selected values to the Clipboard.

Paste command

The Paste command pastes the values on the Clipboard into the worksheet.

Pastes the values on the Clipboard into the worksheet.

Fill command

The Fill command fills the selected row or column with the value in the active cell. If you select Down, every cell below the active cell is filled with the value in the active cell. If you select Right, every cell to the right of the active cell is filled with the value in the active cell.

{button Related Topics,PI(``,`IDH_RT_Filling_Cells')}

To fill cells below
To fill cells to the right
Down command
Right command

Edit menu

Fill, Right command

The Fill, Right command fills every cell to the right of the active cell with the value in the active cell.

{button Related Topics,PI(`',`IDH_RT_Right_Command')}

To fill cells below

To fill cells to the right

Down command

Edit menu

Displays a submenu.

Fills every cell in the row to the right of the active cell with the cell value.

Fill, Down command

The Fill, Down command fills every cell below the active cell with the value in the active cell.

{button Related Topics,PI(`',`IDH_RT_Down_Command')}

To fill cells below

To fill cells to the right

Right command

Edit menu

Fills every cell in the column below the active cell with the cell value.

To fill cells below the active cell

1 Select the cell with the value and all cells below it you wish to fill.

2 On the Edit menu, click Fill.

3 On the Fill submenu, click Down.

Tip

- You can also press **Ctrl + D** to fill cells below the active cell.

{button Related Topics,PI(`',`IDH_RT_Fill_Down')}

To fill cells to the right

Down command

Right command

Edit menu

To fill cells to the right

1 Select the cell with the value and all cells to the right you wish to fill.

2 On the Edit menu, click Fill.

3 On the Fill submenu, click Right.

Tip

- You can also press **Ctrl + R** to fill cells right of the active cell.

{button Related Topics,PI(`',`IDH_RT_Fill_Right')}

To fill cells below the active cell

Down command

Right command

Edit menu

Clear command

All clears both the format and contents of the selected cells.

Formats clears only the formats (including borders, patterns, alignment, font, and number style) from the selected cells.

Contents clears only the content of the selected cells.

{button Related Topics,PI(``,`IDH_RT_Clearing_cell_formats')}

To clear cell contents
To clear both contents and formats
To clear cell formats
Clear All command

Clear Formats command
Clear Contents command
Edit menu

Clear All command

The Clear All command clears both the format and contents of the selected cells.

{button Related Topics,PI(`',`IDH_RT_All_Command')}

To clear both contents and formats
To clear cell contents
To clear cell formats
Clear All command

Clear Formats command
Clear Contents command
Edit menu
Edit menu

Clears both the format and contents of the selected cells.

Clear Formats command

The Clear Formats command clears only the formats, including borders, patterns, alignment, font and number style, from the selected cells.

{button Related Topics,PI(`',`IDH_RT_Formats_Command')}

To clear cell formats
To clear cell contents
To clear both contents and formats
Clear All command

Clear Formats command
Clear Contents command
Edit menu

Clears only the formats, including borders, patterns, alignment, font and number style, from the selected cells.

Clear Contents command

The Clear Contents command clears only the content of the selected cells.

{button Related Topics,PI(``,`IDH_RT_Contents_Command')}

To clear cell contents
To clear both contents and formats
To clear cell formats
Clear All command

Clear Formats command
Clear Contents command
Edit menu

Command D Clears only the content of the selected cells.

To clear cell formats

1 Select the cells from which to clear the formats.

2 On the Edit menu, click Clear.

3 On the Clear submenu, click Formats.

{button Related Topics,PI(`',`IDH_RT_Clearing_Cell_Formats')}

To clear cell contents

To clear both contents and formats

Clear All command

Clear Formats command

Clear Contents command

Edit menu

To clear cell contents

1 Select the cells from which to clear the contents.

2 On the Edit menu, click Clear.

3 On the Clear submenu, click Contents.

{button Related Topics,PI(`',`IDH_RT_Clearing_Cell_Contents')}

To clear both contents and formats

To clear cell formats

Clear All command

Clear Formats command

Clear Contents command

Edit menu

To clear both contents and formats

1 Select the cells from which to clear the contents and formats.

2 On the Edit menu, click Clear.

3 On the Clear submenu, click All.

Tip

- You can also press **Del** to clear both contents and formats.

{button Related Topics,PI(`',`IDH_RT_Clearing_All')}

To clear cell contents
To clear cell formats
Clear All command

Clear Formats command
Clear Contents command
Edit menu

Delete command

The Delete command deletes the selected cells and moves the remaining cells up or over.

{button Related Topics,PI(``,`IDH_RT_Delete_Command_D')}

Deletes the selected cells and moves the remaining cells up.

Sort command

The Sort command sorts worksheet column or row values in ascending or descending order.

{button Related Topics,PI(``,`IDH_RT_Sort_Command')}

To sort worksheet values in ascending or descending order

Edit menu

Sorts worksheet column or row values in ascending or descending order.

Sort dialog box

Use this dialog box to sort worksheet values in ascending or descending order. This dialog box also allows you to transpose worksheet columns.

Tip

- For Help on a setting, click ? at the top of the dialog box, and then click the setting.You can also right-click the setting, and then click What's This?

{button Related Topics,PI(`',`IDH_RT_Sort_Dialog')}

To sort worksheet values

Sort command

Edit menu

To sort worksheet values

1 Select the cells you want to sort.

2 On the Edit menu, click Sort.

3 In the Sort dialog box, click Sort Top to Bottom to sort column cells. Otherwise, click Sort Left to Right to sort row cells.

4 Click Ascending or Descending to determine the sort order.

5 Click OK.

{button Related Topics,PI(``,`IDH_RT_Sort_Spreadsheet_values')}

Specifies that the sort is applied to columns.

Specifies that the sort is applied to rows.

Lists the available columns or rows that can be sorted.

Specifies that the sort is in ascending order.

Specifies that the sort is in descending order.

Clear All clears both the format and contents of the selected cells.

Clear Formats clears only the formats (including borders, patterns, alignment, fonts, and number styles) from the selected cells.

Clear Contents clears only the content of the selected cells.

Fills the selected worksheet row or column with the value in the active cell.

Deletes the active worksheet cells and moves the remaining cells up or over.

Functions List

FIXED

FLOOR

FV

HLOOKUP

HOUR

IF

INDEX

INDIRECT

INT

IPMT

IRR

ISBLANK

ISERR

ISERROR

ISLOGICAL

ISNA

ISNONTEXT

ISNUMBER

ISREF

ISTEXT

LEFT

LEN

LN

LOG

LOG10

LOOKUP

LOWER

MATCH

MAX

MID

MIN

MINUTE

MIRR

MOD

MONTH

N

NA

NOT

NOW

NPER

NPV

ODD

OFFSET

OR

PI

PMT

PPMT

PRODUCT

PROPER

PV

RAND

RATE

REPLACE

REPT

RIGHT

ROUND

ROW

ROWS

SEARCH

SECOND

SIGN

SIN

SINH

SLN

SQRT

STDEV

STDEVP

SUBSTITUTE

SUM

SUMSQ

SYD

T

TAN

TANH

TEXT

TIME

TIMEVALUE

TODAY

TRIM

TRUE

TRUNC

TYPE

UPPER

VALUE

VAR

VARP

VDB

VLOOKUP

WEEKDAY

YEAR

YEAR

ABS

Description: Returns the absolute value of a number.

Syntax: ABS(number)

Note

- An absolute value does not display a positive or negative sign.

Examples: ABS(-1) returns 1.

ABS(1) returns 1.

{button Related Topics,PI(``,`IDH_RT_ABS')}

SIGN

Function list

ACOS

Description: Returns the arc cosine of a number.

Syntax: ACOS(number)
number is the cosine of the angle. The cosine can range from 1 to -1.

Note

- The resulting angle is returned in radians (from 0 to). To convert the resulting radians to degrees, multiply the radians by 180/PI().

Examples: ACOS(.5) returns 1.05.

ACOS(-.2) returns 1.77.

{button Related Topics,PI(``,`IDH_RT_ACOS')}

COS

PI

Function list

ACOSH

Description:	Returns the inverse hyperbolic cosine of a number.
Syntax:	ACOSH(number) **number** is any number equal to or greater than 1.
Examples:	ACOSH(1.2) returns .62. ACOSH(3) returns 1.76.

{button Related Topics,PI(``,`IDH_RT_ACOSH')}

ASINH
ATANH
COSH
Function list

ADDRESS

Description: Creates a cell address as text.

Syntax: ADDRESS(*row*,*column, ref?type* [,*al*] [, *sheet*]*)*

row is the row number for the cell address.

column is the column number for the cell address.

ref_type is the cell reference type. The following table lists the values for this argument.

Argument	Reference type
1	Absolute
2	Absolute row, relative column
3	Relative row, absolute column
4	Relative

a1 is the reference format. This argument must be TRUE() to represent an A1 reference format; Formula One does not support the R1C1 reference format.

sheet is the name of an external spreadsheet. Omitting this argument assumes that the reference exists in the current spreadsheet.

Examples: ADDRESS(5, 6, 1) **returns “F5”.**

ADDRESS(5, 6, 4, TRUE( ), “SALES.VTS”) **returns “SALES>VTS!F5”.**

{button Related Topics,PI(`',`IDH_RT_ADDRESS')}

AND

Description: Returns True if all arguments are true; returns False if at least one argument is false.

Syntax: AND(logical_list)

logical_list is a list of conditions separated by commas. You can include as many as 30 conditions on the list. The list can contain logical values or a reference to a range containing logical values. Text and empty cells are ignored. If there are no logical values in the list, #VALUE! is returned.

Examples: AND(1+1-2, 5+5-10) returns True because both arguments are true.

AND(TRUE( ), FALSE( ) returns False

{button Related Topics,PI(``,`IDH_RT_AND')}

IF
NOT
OR
Function list

ASIN

Description: Returns the arcsine of a number.

Syntax: ASIN(number)
number is the sine of the resulting angle, ranging from -1 to 1.

Note

- The resulting angle is returned in radians (ranging from -/2 to /2). To convert the resulting radians to degrees, multiply the radians by 180/PI().

Examples: ASIN(-1) returns -1.57.

ASIN(.4) returns .41.

{button Related Topics,PI(``,`IDH_RT_ASIN')}

ASINH
PI
SIN
Function list

ASINH

Description:	Returns the inverse hyperbolic sine of a number.
Syntax:	ASINH(number) **number** is any number.
Examples:	ASINH(5.3) returns 2.37. ASINH(-4) returns -2.09.

{button Related Topics,PI(``,`IDH_RT_ASINH')}

ACOSH
ASIN
ATANH
SINH
Function list

ATAN

Description: Returns the arctangent of a number.

Syntax: ATAN(number)
number is the tangent of the angle.

Note

- The resulting angle is returned in radians, ranging from -/2 to /2. To convert the resulting radians to degrees, multiply the radians by 180/PI().

Examples: ATAN(3.5) returns 1.29.

ATAN(-4) returns -1.33.

{button Related Topics,PI(``,`IDH_RT_ATAN')}

ATAN2
ATANH
PI
TAN
Function list

ATAN2

Description: Returns the arctangent of the specified coordinates.

Syntax: ATAN2(x, y)
x is the x coordinate.
y is the y coordinate.

Note

- The arctangent is the angle from the x axis to a line with end points at the origin (0,0) and a point with the given coordinates (x,y). The angle is returned in radians, ranging from - to , excluding -.

Examples: ATAN2(3, 6) returns 1.11.

ATAN2(-1, .1) returns 3.04.

{button Related Topics,PI(``,`IDH_RT_ATAN2')}

ATAN
ATANH
PI
TAN
Function list

ATANH

Description:	Returns the inverse hyperbolic tangent of a number.
Syntax:	ATANH(number) **number** is a number between -1 and 1, excluding -1 and 1.
Examples:	ATANH(.5) returns .55. ATANH(-.25) returns -.26.

{button Related Topics,PI(``,`IDH_RT_ATANH')}

ACOS
ASINH
TANH
Function list

AVERAGE

Description:	Returns the average of the supplied numbers. The result of AVERAGE is also known as the arithmetic mean.
Syntax:	AVERAGE(number_list) **number_list** is a list of numbers separated by commas. As many as 30 numbers can be included on the list, and the list can contain numbers or a reference to a range that contains numbers. Text, logical expressions, or empty cells in a referenced range are ignored. All numeric values (including 0) are used.
Examples:	AVERAGE(5, 6, 8, 14) returns 8.25. AVERAGE(C15:C17) returns 134; C15:C17 contains 24, 144, and 234.

{button Related Topics,PI(``,`IDH_RT_AVERAGE')}

MIN
MAX
Function list

CEILING

Description: Rounds a number up to the nearest multiple of a specified significance.

Syntax: CEILING(number, significance)
number is a value to round.
significance is the multiple to which to round.

Note

- Regardless of the sign of the number, the value is rounded up, away from zero. If number is an exact multiple of significance, no rounding occurs.
- If number or significance is non-numeric, #VALUE! is returned. When the arguments have opposite signs, #NUM! is returned.

Examples: CEILING(1.23459, .05) returns 1.25.

CEILING(-148.24, -2) returns -150.

{button Related Topics,PI(`',`IDH_RT_CEILING')}

EVEN
FLOOR
INT
ODD
ROUND
TRUNC
Function list

CHAR

Description: Returns a character that corresponds to the supplied ANSI code.

Syntax: CHAR(number)
number is a value between 1 and 255 that specifies an ANSI character.

Note

- The character and associated numeric code are defined by Windows in the ANSI character set.

Examples: CHAR(70) returns F.

CHAR(35) returns #.

{button Related Topics,PI(``,`IDH_RT_CHAR')}

CHOOSE

Description: Returns a value from a list of numbers based on the index number supplied.

Syntax: CHOOSE(index, item_ list)

index is a number that refers to an item in item_list.

- index can be a cell reference. Index can also be a formula that returns any value from 1 to 29.
- If index is less than 1 or greater than the number of items in item_list, #VALUE! is returned.
- If index is a fractional number, it is truncated to an integer.

item_list is a list of numbers, formulas, or text separated by commas. This argument can also be a range reference. You can specify as many as 29 items in the list.

Examples: CHOOSE(2, “Q1”, “Q2”, “Q3”, “Q4”) returns “Q2”.

AVERAGE(CHOOSE(1, A1:A10, B1:B10, C1:C10)) returns the average of the contents of range A1:A10.

{button Related Topics,PI(`',`IDH_RT_CHOOSE')}

CLEAN

Description: Removes all non-printable characters from the supplied text.

Syntax: CLEAN(text)
text is any worksheet information.

Note

- Text that is imported from another environment may require this function.

Examples: CLEAN(“Payments” & CHAR(8) & “Due”) returns Payments Due because the character returned by CHAR(8) is non-printable.

{button Related Topics,PI(``,`IDH_RT_CLEAN')}

CHAR
TRIM
Function list

CODE

Description: Returns a numeric code representing the first character of the supplied string.

Syntax: CODE(text)
text is any string.

Note

- The numeric code and associated string are defined in your computer's character set. The character set used by Windows is the ANSI character set.

Examples: CODE("A") returns 65.

CODE("b") returns 98.

{button Related Topics,PI(`',`IDH_RT_CODE')}

CHAR

Function list

COLUMN

Description:	Returns the column number of the supplied reference.
Syntax:	COLUMN(reference) **reference** is a reference to a cell or range. Omitting the argument returns the number of the column in which COLUMN is placed.
Examples:	COLUMN(B3) returns 2. COLUMN( ) returns 4 if the function is entered in cell D2.

{button Related Topics,PI(``,`IDH_RT_COLUMN')}

COLUMNS
ROW
Function list

COLUMNS

Description:	Returns the number of columns in a range reference.
Syntax:	COLUMNS(range) **range** is a reference to a range of cells.
Examples:	COLUMNS(A1:D5) returns 4.

{button Related Topics,PI(``,`IDH_RT_COLUMNS')}

COS

Description:	Returns the cosine of an angle.
Syntax:	COS(number) **number** is the angle in radians. If the angle is in degrees, convert the angle to radians by multiplying the angle by PI()/180.
Examples:	COS(1,444) returns .126. COS(5) returns .28.

{button Related Topics,PI(``,`IDH_RT_COS')}

COSH

Description:	Returns the hyperbolic cosine of a number.
Syntax:	COSH(number) **number** is any number.
Examples:	COSH(2,10) returns 4.14. COSH(.24) returns 1.03.

{button Related Topics,PI(``,`IDH_RT_COSH')}

ASINH
ATANH
COS
Function list

COUNT

Description: Returns the number of values in the supplied list.

Syntax: COUNT(value_list)
value_list is a list of values. The list can contain as many as 30 values.

Note

- COUNT numerates only numbers or numerical values (for example, logical values, dates, or text representations of dates). If you supply a range, only numbers and numerical values in the range are counted. Empty cells, logical values, text, and error values in the range are ignored.

Examples: COUNT(5, 6, “Q2”) returns 2.

COUNT(“03/06/94”, “06/21/94”, “10/19/94”) returns 3.

{button Related Topics,PI(`',`IDH_RT_COUNT')}

AVERAGE
COUNTA
SUM
Function list

COUNTA

Description: Returns the number of non-black values in the supplied list.

Syntax: COUNTA(expression_list)
expression_list is a list of expressions. As many as 30 expressions can be included in the list.

Note

- COUNTA returns the number of cells that contain data in a range. Null values (“ “) are counted, but references to empty cells are ignored.

Examples: COUNTA(32, 45, “Earnings”, “ “) returns 4.

COUNTA(C38:C40) returns 0 when the specified range contains empty cells.

{button Related Topics,PI(`',`IDH_RT_COUNTA')}

AVERAGE
COUNT
PRODUCT
SUM
Function list

DATE

Description:	Returns the serial number of the supplied date.
Syntax:	DATE(year, month, day) **year** is a number from 1900 to 2078. If year is between 1920 and 2019, you can specify two digits to represent the year; otherwise specify all four digits. **month** is a number representing the month (for example, 12 represents December). If a number greater than 12 is supplied, the number is added to the first month of the specified year. **day** is a number representing the day of the month. If the number you specify for day exceeds the number of days in that month, the number is added to the first day of the specified month.
Examples:	DATE(94, 6, 21) returns 34506. DATE(99, 3, 6) returns 36225.

{button Related Topics,PI(``,`IDH_RT_DATE')}

DATEVALUE
DAY
MONTH
NOW
TIMEVALUE
TODAY
YEAR
Function list

DATEVALUE

Description:	Returns the serial number of a date supplied as a text string.
Syntax:	DATEVALUE(text) **text** is a date, in text format, between January 1, 1900, and December 31, 2078. If you omit the year, the current year is used.
Examples:	DATEVALUE(“3/6/94”) returns 34399. DATEVALUE(“12/25/95”) returns 35058.

{button Related Topics,PI(`',`IDH_RT_DATEVALUE')}

NOW
TIMEVALUE
TODAY
Function list

DAY

Description:	Returns the day of the month that corresponds to the date represented by the supplied number.
Syntax:	DAY(serial_number) **serial_number** is a date represented as a serial number or as text (for example, “06-21-94” or “21-Jun-94).
Examples:	DAY(34399) returns 6. DAY(“06-21-94”) returns 21.

{button Related Topics,PI(`',`IDH_RT_DAY')}

HOUR
MINUTE
MONTH
NOW
SECOND
TODAY
WEEKDAY
YEAR
Function list

DB

Description:	Returns the real depreciation of an asset for a specific period of time using the fixed-declining balance method.
Syntax:	DB(cost, salvage, life, period [, months]) **cost** is the initial cost of the asset. **salvage** is the salvage value of the asset. **life** is the number of periods in the useful life of the asset. **period** is the period for which to calculate the depreciation. The time units used to determine period and life must match. **months** is the number of months in the first year of the item's life. Omitting this argument assumes there are 12 months in the first year.
Examples:	DB(10000, 1000, 7, 3) returns 1451.52.

{button Related Topics,PI(``,`IDH_RT_DB')}

DDB

Description: Returns the depreciation of an asset for a specific period of time using the double-declining balance method or a declining balance factor you supply.

Syntax: DDB(cost, salvage, life, period[,factor])
cost is the initial cost of the asset.
salvage is the salvage value of the asset.
life is the number of periods in the useful life of the asset.
period is the period for which to calculate the depreciation. The time units used to determine period and life must match.
factor is the rate at which the balance declines. Omitting this argument assumes a default factor of 2, the double-declining balance factor.

Note

- The double-declining balance method uses an accelerated rate in which the highest depreciation occurs in the first period, decreasing in successive periods.
- All arguments for this function must be positive numbers.

Examples: DDB(10000, 1000, 7, 3) returns 1457.73.

{button Related Topics,PI(``,`IDH_RT_DDB')}

DOLLAR

Description:	Returns the specified number as text, using currency format and the supplied precision.
Syntax:	DOLLAR(number [,precision]) **number** is a number, a formula that evaluates to a number, or a reference to a cell that contains a number. **precision** is a value representing the number of decimal places to the right of the decimal point. Omitting this argument assumes two decimal places.
Examples:	DOLLAR(1023.789) returns “$1023.79”. DOLLAR(495,301, -2) returns “$500”.

{button Related Topics,PI(`',`IDH_RT_DOLLAR')}

FIXED
TEXT
VALUE
Function list

ERROR.TYPE

Description: Returns a number corresponding to an error.

Syntax: ERROR.TYPE(error_ref)
error_ref is a cell reference.

Note

- The following table lists the error text and associated error numbers returned by this function.

Number	Error text
1	**#NULL!**
2	**#DIV/0!**
3	**#VALUE!**
4	**#REF!**
5	**#NAME?**
6	**#NUM!**
7	**#N/A**
#N/!	**Other**

Examples: ERROR.TYPE(A1) returns 2 if the formula in cell A1 attempts to divide by zero.

{button Related Topics,PI(`',`IDH_RT_ERROR_TYPE')}

ISERR
ISERROR
Function list

EVEN

Description:	Rounds the specified number up to the nearest even integer.
Syntax:	EVEN(number) **number** is any number, a formula that evaluates to a number, or a reference to a cell that contains a number.
Examples:	EVEN(2,5) returns 4. EVEN(2030.45) returns 2032.

{button Related Topics,PI(`',`IDH_RT_EVEN')}

CEILING
FLOOR
INT
ODD
ROUND
TRUNC
Function list

EXACT

Description:	Compares two expressions for identical, case-sensitive matches. True is returned if the expressions are identical; False is returned if they are not.
Syntax:	EXACT(expression1, expression2) **expression1** is any text. **expression2** is any text.
Examples:	EXACT(“Match”, “Match”) returns True. EXACT(“Match”, “match”) returns False.

{button Related Topics,PI(``,`IDH_RT_EXACT')}

LEN
SEARCH
Function list

EXP

Description:	Returns e raised to the specified power. The constant e is 2.71828182845904 (the base of the natural logarithm).
Syntax:	EXP(number) **number** is any number as the exponent.
Examples:	EXP(2.5) returns 12.18. EXP(3) returns 20.09.

{button Related Topics,PI(`',`IDH_RT_EXP')}

LN
LOG
Function list

FACT

Description:	Returns the factorial of a specified number.
Syntax:	FACT(number) **number** is any non-negative integer. If you supply a real number, FACT truncates the number to an integer before calculation.
Examples:	FACT(2,5) returns 2. FACT(6) returns 720.

{button Related Topics,PI(``,`IDH_RT_FACT')}

PRODUCT

Function list

FALSE

Description:	Returns the logical value False. This function always requires the trailing parentheses.
Syntax:	FALSE()

{button Related Topics,PI(`',`IDH_RT_FALSE')}

TRUE

Function list

FIND

Description: Searches for a string of text within another text string and returns the character position at which the search string first occurs.

Syntax: FIND(search_text, text[,start_position])
search_text is the text to find. If you specify an empty string(“”), FIND matches the first character in text.
text is the text to be searched.
start_position is the character position in text at which the search begins. The first character in text is character number 1. When you omit this argument, the default starting position is character number 1.

Note

- FIND is case-sensitive. You cannot use wild-card characters in the search_text.

Examples: FIND(“time”, “There’s no time like the present”) returns 12.

FIND(“4”, “Aisle 4, Part 123-4-11”, 9) returns 19.

{button Related Topics,PI(`',`IDH_RT_FIND')}

EXACT
LEN
MID
SEARCH
Function list

FIXED

Description: Rounds a number to the supplies precision, formats the number in decimal format, and returns the result as text.

Syntax: FIXED(number[, precision][, no_commas]}
number is any number.
precision is the number of digits that appear to the right of the decimal place. When this argument is omitted, a default precision of 2 is used. If you specify negative precision, number is rounded to the left of the decimal point. You can specify a precision as great as 127 digits.
no_commas determines whether thousands separators (commas) are used in the result. Use 1 to exclude commas in the result. If no_commas is 0 or the argument is omitted, thousands separators are included (for example, 1,000.00).

Examples: FIXED(2000.5, 3) returns “2,000.500”.

FIXED(2009.5, -1, 1) returns “2010”.

{button Related Topics,PI(`',`IDH_RT_FIXED')}

DOLLAR
ROUND
TEXT
VALUE
Function list

FLOOR

Description: Rounds a number down to the nearest multiple of a specified significance.

Syntax: FLOOR(number, significance)
number is the value to round.
significance is the multiple to which to round.

Note

- Regardless of the sign of the number, the value is rounded down, toward zero. If number is an exact multiple of significance, no rounding occurs.
- If number of significance is non-numeric, #NAME? is returned. When the arguments have opposite signs, #NUM! is returned.

Examples: FLOOR(1.23459, .05) returns 1.2.

FLOOR(-148.24, -2) returns -148.

{button Related Topics,PI(``,`IDH_RT_FLOOR')}

CEILING
EVEN
INT
ODD
ROUND
TRUNC
Function list

FV

Description: Returns the future value of an annuity based on regular payments and a fixed interest rate.

Syntax: FV(interest, nper, payment[,pv][,type])
interest is the fixed interest rate.
nper is the number of payments in an annuity.
payment is the fixed payment made each period.
pv is the present value, or the lump sum amount, the annuity is currently worth. When you omit this argument, a present value of 0 is assumed.
type indicates when payments are due. Use 0 if payments are due at the end of the period or 1 if payments are due at the beginning of the period. When you omit this argument, 0 is assumed.

Note

- The units used for interest must match those used for nper. For example, if the annuity has an 8% annual interest rate over a period of 5 years, specify 8%/12 for interest and 5*12 for nper.
- Cash paid out, such as a payment, is shown as a negative number. Cash received, such as a dividend check, is shown as a positive number.

Examples: FV(5%, 8, -500) returns 4,774.55.

FV(10%/12, 240, -700, 1) returns 531,550.86.

{button Related Topics,PI(``,`IDH_RT_FV')}

HLOOKUP

Description: Searches the top row of a table for a value and returns the contents of a cell in that table that corresponds to the location of the search value.

Syntax: HLOOKUP(search_item, search_range, row_index)
search_item is a value, text string, or reference to a cell containing a value that is matched against data in the top row of search_range.
search_range is a reference to the range (table) to be searched. The cells in the first row of search_range can contain numbers, text, or logical values. The contents of the first row must be in ascending order (for example, -2, -1, 0, 2...A through Z, False, True). Text searches are not case-sensitive.
row_index is the row in search_range from which the matching value is returned.

- row_index can be a number from 1 to the number of rows in search_range.
- If row_index is less than 1, #VALUE! is returned.
- When row_index is greater than the number of rows in the table, #REF! is returned.

Note

- HLOOKUP compares the information in the top row of search_range to the supplied search_item. When a match is found, information located in the same column and supplied row (row_index) is returned.
- If search_item cannot be found in the top row of search_range, the largest value that is less than search_item is used. When search_item is less than the smallest value in the first row of the search_range, #REF! is returned.

Examples:

	A	B	C	D	E
1		Midwest	Northeast	Pacific	South

2	Q1	48.23	278.21	61.97	164.80
3	Q2	163.83	22.63	161.73	183.96
4	Q3	43.96	233.56	278.16	171.98
5	Q4	245.69	167.09	245.23	163.00

In the preceding worksheet:

HLOOKUP(“Northeast”, B1:E5, 3) returns 22.63.

HLOOKUP(“Pacific”, B1:E5, 7) returns #REF!.

{button Related Topics,PI(`',`IDH_RT_HLOOKUP')}

INDEX
LOOKUP
MATCH
VLOOKUP
Function list

HOUR

Description: Returns the hour component of the specified time in 24-hour format.

Syntax: HOUR(serial_number)
serial_number is the time as a serial number. The decimal portion of the number represents time as a fraction of the day.

Note

- The result is an integer ranging from 0 (12:00 AM) to 23 (11:00 PM).

Examples: HOUR(34259.4) returns 9.

HOUR(34619.976) returns 23.

{button Related Topics,PI(``,`IDH_RT_HOUR')}

DAY
MINUTE
MONTH
NOW
SECOND
WEEKDAY
YEAR
Function list

IF

Description:	Tests the condition and returns the specified value.
Syntax:	IF(condition, true_value, false_value) **condition** is any logical expression. **true_value** is the value to be returned if condition evaluates to True. **false_value** is the value to be returned if condition evaluates to False.
Examples:	IF(A1>10, “Greater”, “Less”) returns Greater if the contents of A1 are greater than 10 and Less if the contents of A1 are less than 10.

{button Related Topics,PI(``,`IDH_RT_IF')}

AND
FALSE
NOT
OR
TRUE
Function list

INDEX

Description: Returns the contents of a cell from a specified range.

Syntax: INDEX(reference [,row] [,column] [,range_number])

reference is a reference to one or more ranges.

- If reference specifies more than one range, separate each reference with a comma and enclose reference in parentheses (for example, (A1:C6, B7:E14, F4)).
- If each range in reference contains only one row or column, you can omit the row or column argument. For example, if reference is A1:A15, you can omit the column argument (for example, INDEX(A1:A15, 3, 1)).

row is row number in reference from which to return data.

column is column number in reference from which to return data.

range_number specifies the range from which data is returned if reference contains more than one range. For example, if reference is (A1:A10, B1:B5, D14:E23), A1:A10 is range_number 1, B1:B5 is range_number 2, and D14:E23 is range_number 3.

Note

- If row, column, and range_number do not point to a cell within reference, #REF! is returned. If row and column are omitted, INDEX returns the range in reference specified by range_number.

Examples:

	A	B	C	D	E
1	Sales Group 1			Sales Group 2	
2	Adams			Cash	$1,819.47
3	Baker			Johnson	$1,733.67
4	Martinez			Nelson	$1,138.23
5	Smith			Randall	$1,634.58
6	White			Schultz	$1,093.82

In the preceding worksheet:

INDEX(A2:B6, 2, 2) returns $1415.35.

INDEX((A2:B6, D2:E6), 4, 2, 2) returns $1634.58.

{button Related Topics,PI(``,`IDH_RT_INDEX')}

INDIRECT

Description:	Returns the contents of the cell referenced by the specified cell.
Syntax:	INDIRECT(ref_text [, a1]) **ref_text** is a reference to a cell that references a third cell. If ref_text is not a valid reference, #REF! is returned. **a1** is the reference format. This argument must be TRUE() to represent an A1 reference format; Formula One does not support the R1C1 reference format.
Examples:	INDIRECT(C1) returns the contents of the cell that C1 references. If C1 contains “D1”, the contents of D1 is returned by INDIRECT.

{button Related Topics,PI(``,`IDH_RT_INDIRECT')}

OFFSET

Function list

INT

Description:	Rounds the supplied number down to the nearest integer.
Syntax:	INT(number) **number** is any real number.
Examples:	INT(10.99) returns 10. INT(-10.99) returns -11.

{button Related Topics,PI(``,`IDH_RT_INT')}

IPMT

Description: Returns the interest payment of an annuity for a given period, based on regular payments and a fixed periodic interest rate.

Syntax: IPMT(interest, per, nper, pv, [fv], [type])

interest is the fixed periodic interest rate.

per is the period for which to return the interest payment. This number must be between 1 and nper.

nper is the number of payments.

pv is the present value, or the lump sum amount the annuity is currently worth.

fv is the future value, or the value after all payments are made. If this argument is omitted, the future value is assumed to be 0.

type indicates when payments are due. Use 0 if payments are due at the end of the period or 1 if payments are due at the beginning of the period. When you omit this argument, 0 is assumed.

Note

- The units used for interest must match those used for nper. For example, if the annuity has an 8% annual interest rate over a period of 5 years, specify 8%/12 for interest and 5*12 for nper.
- Cash paid out, such as a payment, is shown as a negative number. Cash received, such as a dividend check, is shown as a positive number.

Examples: IPMT(*%/12, 1, 48, 18000) returns -117.87.

IPMT(*%/12, 2, 48, 18000, 0, 1) returns -117.09.

{button Related Topics,PI(``,`IDH_RT_IPMT')}

IRR

Description: Returns internal rate of return for a series of periodic cash flows.

Syntax: IRR(cash_flow [, guess])

cash_flow is a reference to a range that contains values for which to calculate the internal rate of return. The values must contain at least one positive and one negative value.

- During calculation, IRR uses the order in which the values appear to determine the order of the cash flow.
- Text, logical values, and empty cells in the range are ignored.

guess is the estimate of the internal rate of return. If no argument is supplied, a rate of return of 10 percent is assumed.

Note

- The internal rate of return is the interest rate received for an investment consisting of payments (specified by negative numbers) and investments (specified by positive numbers).
- IRR is calculated iteratively, cycling through the calculation until the result is accurate to .0000l percent. If the result cannot be found after 20 iterations, #NUM! is returned. When this occurs, supply a different value for guess.

Examples:

	A	B
1	Investment	($60,000.00)
2	1989 income	$9,590.00
3	1990 income	$10,580.00
4	1991 income	$12,790.00
5	1992 income	$15,830.00
6	1993 income	$18,930.00

In the preceding worksheet:

IRR(B1:B6) returns 3.72%

IRR(B1:B3, -20%) returns -49.26%

{button Related Topics,PI(``,`IDH_RT_IRR')}

MIRR
NPV
RATE
Function list

ISBLANK

Description: Determines whether the specified cell is blank.

Syntax: ISBLANK(reference)
reference is a reference to any cell.

Note

- If the referenced cell is blank, True is returned. False is returned if the cell is not blank.

Examples: ISBLANK(A1) returns True if A1 is a blank cell.

{button Related Topics,PI(``,`IDH_RT_ISBLANK')}

ISERR
ISERROR
ISLOGICAL
ISNA
ISNONTEXT
ISNUMBER
ISREF
ISTEXT
Function list

ISERR

Description: Determines whether the specified expression returns an error value.

Syntax: ISERR(expression)
expression is any expression.

Note

- If the expression returns any error except #N/A!, True is returned. Otherwise, False is returned.

Examples: ISERR(A1) returns True if A1 contains a formula that returns an error (for example, #NUM!).

{button Related Topics,PI(``,`IDH_RT_ISERR')}

ISBLANK
ISERROR
ISLOGICAL
ISNA
ISNONTEXT
ISNUMBER
ISREF
ISTEXT
Function list

ISERROR

Description: Determines whether the specified expression returns an error value.

Syntax: ISERROR(expression)
expression is any expression.

Note

- If the expression returns any error value (for example, #N/a!, #VALUE!, #REF!, #DIV/0!, #NUM!, #NAME?, or #NULL!), True is returned. Otherwise, False is returned.

Examples: ISERROR(4/0) returns True.

ISERROR(A1) returns False if A1 contains a formula that does not return an error.

{button Related Topics,PI(``,`IDH_RT_ISERROR')}

ISBLANK
ISERR
ISLOGICAL
ISNA
ISNONTEXT
ISNUMBER
ISREF
ISTEXT
Function list

ISLOGICAL

Description: Determines whether the specified expression returns a logical value.

Syntax: ISLOGICAL(expression)
expression is any expression.

Note

- If the expression returns a logical value, True is returned. Otherwise, False is returned.

Examples: ISLOGICAL(ISBLANK(A1) returns True because ISBLANK returns a logical value.

{button Related Topics,PI(``,`IDH_RT_ISLOGICAL')}

ISBLANK
ISERR
ISERROR
ISNA
ISNONTEXT
ISNUMBER
ISREF
ISTEXT
Function list

ISNA

Description: Determines whether the specified expression returns the value not available error.

Syntax: ISNA(expression)
expression is any expression.

Note

- If the expression returns the #N/A! error, True is returned. Otherwise, False is returned.

Examples: ISNA(A1) returns True if cell A1 contains the NA() function or returns the error value #N/A!.

{button Related Topics,PI(``,`IDH_RT_ISNA')}

ISBLANK
ISERR
ISERROR
ISLOGICAL
ISNONTEXT
ISNUMBER
ISREF
ISTEXT
Function list

ISNONTEXT

Description: Determines whether the specified expression is not text.

Syntax: ISNONTEXT(expression)
expression is any expression.

Note

- If the expression returns any value that is not text, True is returned. Otherwise, False is returned.

Examples: ISNONTEXT(F3) returns True if cell F3 contains a number or is a blank cell.

ISNONTEXT(“text”) returns False.

{button Related Topics,PI(``,`IDH_RT_ISNONTEXT')}

ISBLANK
ISERR
ISERROR
ISLOGICAL
ISNA
ISNUMBER
ISREF
ISTEXT
Function list

ISNUMBER

Description: Determines whether the specified expression is a number.

Syntax: ISNUMBER(expression)
expression is any expression.

Note

- If the expression returns a number, True is returned. Otherwise, False is returned. If expression returns a number represented as text (for example, “12”), False is returned.

Examples: ISNUMBER(123.45) returns True.

ISNUMBER(“123”) returns False.

{button Related Topics,PI(`',`IDH_RT_ISNUMBER')}

ISBLANK
ISERR
ISERROR
ISLOGICAL
ISNA
ISNONTEXT
ISREF
ISTEXT
Function list

ISREF

Description: Determines whether the specified expression is a range reference.

Syntax: ISREF(expression)
expression is any expression.

Note

- If the expression returns a range reference, True is returned. Otherwise, False is returned.

Examples: ISREF(A3) returns True.

{button Related Topics,PI(``,`IDH_RT_ISREF')}

ISBLANK
ISERR
ISERROR
ISLOGICAL
ISNA
ISNONTEXT
ISNUMBER
ISTEXT
Function list

ISTEXT

Description: Determines whether the specified expression is text.

Syntax: ISTEXT(expression)
expression is any expression.

Note

- If the expression returns text, True is returned. Otherwise, False is returned.

Examples: ISTEXT(“2nd Quarter”) returns True.

{button Related Topics,PI(``,`IDH_RT_ISTEXT')}

ISBLANK
ISERR
ISERROR
ISLOGICAL
ISNA
ISNONTEXT
ISNUMBER
ISREF
Function list

LEFT

Description:	Returns the leftmost characters from the specified text string.
Syntax:	LEFT(text [, num_chars}) **text** is any text string. **num_chars** is the number of characters to return. This value must be greater than or equal to zero. If num_chars is greater than the number of characters in text, the entire string is returned. Omitting this argument assumes a value of 1.
Examples:	LEFT(“2nd Quarter”) returns “2”. LEFT(“2nd Quarter”, 3) returns “2nd”.

{button Related Topics,PI(`',`IDH_RT_LEFT')}

MID
RIGHT
Function list

LEN

Description:	Returns the number of characters in the supplied text string.
Syntax:	LEN(text)
Examples:	LEN(“3rd Quarter”) returns 11.
	LEN(“1-3”) returns 3.

{button Related Topics,PI(`',`IDH_RT_LEN')}

EXACT
SEARCH
Function list

LN

Description: Returns the natural logarithm (based on the constant e) of a number.

Syntax: LN(number)
number is any positive real number.

Note

- LN is the inverse of the EXP function.

Examples: LN(12.18) returns 2.50.

LN(20.09) returns 3.00.

{button Related Topics,PI(``,`IDH_RT_LN')}

EXP
LOG
LOG10
Function list

LOG

Description:	Returns the logarithm of a number to the specified base.
Syntax:	LOG(number [,base]) **number** is any positive real number. **base** is the base of the logarithm. Omitting this argument assumes a base of 10.
Examples:	LOG(1) returns 0. LOG(10) returns 1.

{button Related Topics,PI(``,`IDH_RT_LOG')}

EXP
LN
LOG10
Function list

LOG10

Description:	Returns the base-10 logarithm of a number.
Syntax:	LOG10(number) **number** is any positive real number.
Examples:	LOG10(260) returns 2.41. LOG10(100) returns 2.

{button Related Topics,PI(``,`IDH_RT_LOG10')}

LOOKUP

Description: Searches for a value in one range and returns the contents of the corresponding position in a second range.

Syntax: LOOKUP(lookup_value, lookup_range, result_range)

lookup_value is the value for which to search in the first range.

lookup_range is the first range to search and contains only one row or one column.

- The range can contain numbers, text, or logical values.
- To search lookup_range correctly, the expressions in the range must be placed in ascending order (for example, -2, -1, 0, 1, 2...A through Z, False, True). The search is not case-sensitive.

result_range is a range of one row or one column that is the same size as lookup-range.

Note

- If lookup_value does not have an exact match in lookup_range, the largest value that is less than or equal to lookup_value is found and the corresponding position in result_range is returned. When lookup_value is smaller than the data in lookup_range, #N/A is returned.

Examples:

	A	B
1	Region	Headquarters
2	Midwest	Kansas City
3	North	Detroit
4	Northeast	Philadelphia
5	Pacific	Portland
6	South	Atlanta
7	Southwest	Phoenix

In the preceding worksheet:

LOOKUP(“North”, A2:A7, B2:B7) returns Detroit.

LOOKUP(“Alabama”, A2:A7, B2:B7) returns #N/A.

{button Related Topics,PI(`',`IDH_RT_LOOKUP')}

HLOOKUP
INDEX
VLOOKUP
Function list

LOWER

Description:	Changes the characters in the specified string to lowercase characters. Numeric characters in the string are not changed.
Syntax:	LOWER(text) **text** is any string.
Examples:	LOWER(“3rd Quarter”) returns “3rd quarter”. LOWER(“JOHN DOE”) returns “john doe”.

{button Related Topics,PI(`',`IDH_RT_LOWER')}

PROPER

UPPER

Function list

MATCH

Description: A specified value is compared against values in a range. The position of the matching value in the search range is returned.

Syntax: MATCH(lookup_value, lookup_range, comparison)

lookup_value is the value against which to compare. It can be a number, text, or logical value or a reference to a cell that contains one of those values.

lookup_range is the range to search and contains only one row or one column. The range can contain numbers, text, or logical values.

comparison is a number that represents the type of comparison to be made between lookup_value and the values in lookup_range. When you omit this argument, comparison method 1 is assumed.

- When comparison is 1, the largest value that is less than or equal to lookup_value is matched. When using this comparison method, the values in lookup_range must be in ascending order (for example, ...-2, -1, 0, 1, 2..., A through Z, False, True).
- When comparison is 0, the first value that is equal to lookup_value is matched. When using this comparison method, the values in lookup_range can be in any order.
- When comparison is -1, the smallest value that is greater than or equal to lookup_value is matched. When using this comparison method, the values in lookup_range must be in descending order (for example, True, False, Z through A, ...2, 1, 0, -1, -2...).

Note

- When using comparison method 0 and lookup_value is text, lookup_value can contain wild-card characters. The wild-card characters are * (asterisk), which matches any sequence of characters,

and ? (question mark), which matches any single character.

- When no match is found for lookup_value, #N/A is returned.

Examples:

	A	B
1	**Mfr. Code**	**Stock No.**
2	BAJ	0677
3	DOD	0753
4	FMH	0816
5	JMR	0913
6	PLY	7534
7	TJL	7763

In the preceding worksheet:

MATCH(7600, B2:B7,1) returns 5.

MATCH(“D*”, A2:A7,0) returns 2.

{button Related Topics,PI(`',`IDH_RT_MATCH')}

HLOOKUP
INDEX
LOOKUP
VLOOKUP
Function list

MAX

Description: Returns the largest value in the specified list of numbers.

Syntax: MAX(number_list)

number_list is a list of as many as 30 numbers, separated by commas.

- The list can contain numbers, logical values, text representations of numbers, or a reference to a range containing those values.
- Error values or text that cannot be translated into numbers returns errors.
- Error values or text that cannot be translated into numbers returns errors.
- If there are no numbers in the list, 0 is returned.

Examples: MAX(50, 100, 150, 500, 200) returns 500.

MAX(A1:F12) returns the largest value in the range.

{button Related Topics,PI(``,`IDH_RT_MAX')}

AVERAGE
MIN
Function list

MID

Description: Returns the specified number of characters from a text string, beginning with the specified starting position.

Syntax: MID(text, start_position, num_chars)

text is the string from which to return characters.

start_position is the position of the first character to return from text.

- If start_position is 1, the first character in text is returned.
- If start_position is greater than the number of characters in text, an empty strong (“”) is returned.
- If start_position is less than 1, #VALUE! is returned.

num_chars is the number of characters to return. If num_chars is negative, #VALUE! is returned.

Note

- If start_position plus the number of characters in num_chars exceeds the length of text, the characters from start_position to the end of text are returned.

Examples: MID(“Travel Expenses”, 8, 8) returns “Expenses”.

MID(“Part #45-7234”, 7, 2) returns 45.

{button Related Topics,PI(`',`IDH_RT_MID')}

MIN

Description: Returns the smallest value in the specified list of numbers.

Syntax: MIN(number_list

number_list is a list of as many as 30 numbers, separated by commas.

- The list can contain numbers, logical values, text representations of numbers, or a reference to a range containing those values.
- Error values or text that cannot be translated into numbers returns errors.
- If a range reference is included in the list, text, logical expressions, and empty cells in the range are ignored.
- If there are no numbers in the list, 0 is returned.

Examples: MIN(50, 100, 150, 500, 200) returns 50.

MIN(A1:F12) returns the smallest value in the range.

{button Related Topics,PI(``,`IDH_RT_MIN')}

AVERAGE
MAX
Function list

MINUTE

Description: Returns the minute that corresponds to the supplied date.

Syntax: MINUTE(serial_number)
serial_number is the time as a serial number. The decimal portion of the number represents time as a fraction of the day.

Note

- The result is an integer ranging from 0 to 59.

Examples: MINUTE(34506.4) returns 36.

MINUTE(34399.825) returns 48.

{button Related Topics,PI(``,`IDH_RT_MINUTE')}

DAY
HOUR
MONTH
NOW
SECOND
WEEKDAY
YEAR
Function list

MIRR

Description: Returns the modified internal rate of return for a series of periodic cash flows.

Syntax: MIRR(cash_flows,finance_rate,reinvest_rate)

cash_flow is a reference to a range that contains values for which to calculate the modified internal rate of return. The values must contain at least one positive and one negative value.

- During calculation, MIRR uses the order in which the values appear to determine the order of cash flow.
- Values that represent cash received should be positive; negative values represent cash paid.
- Values that represent cash received should be positive; negative values represent cash paid.

finance_rate is the interest rate paid on money used in the cash flow.

reinvest_rate is the interest rate received on money reinvested from the cash flow.

Note

- The modified internal rate of return considers the cost of the investment and the interest received on the reinvestment of cash.

Examples:

	A	B
1	Investment	($60,000.00)
2	1989 income	$9,590.00
3	1990 income	$10,580.00
4	1991 income	$12,790.00
5	1992 income	$15,830.00
6	1993 income	$18,930.00

In the preceding worksheet:
MIRR(B1:B6, 12%, 8%) returns 5.20%.
MIRR(B1:B3, 12%, 8%) returns -40.93%.

IRR
NPV
RATE
Function list

MOD

Description:	Returns the remainder after dividing a number by a specified divisor.
Syntax:	MOD(number, divisor) **number** is any number. **divisor** is any non-zero number. If divisor is 0, #DIV/0! is returned.
Examples:	MOD(-23, 3) returns 1. MOD(-23, -3) returns -2.

{button Related Topics,PI(``,`IDH_RT_MOD')}

INT
ROUND
TRUNC
Function list

MONTH

Description: Returns the month that corresponds to the supplied date.

Syntax: MONTH(serial_number)
serial_number is the date as a serial number or as text (for example, “06-21-94” or “21-Jun-94”).

Note

- MONTH returns a number ranging from 1 (January) to 12 (December).

Examples: MONTH(“06-21-94”) returns 6.

MONTH(34626) returns 10.

{button Related Topics,PI(`',`IDH_RT_MONTH')}

DAY
HOUR
MINUTE
NOW
SECOND
TODAY
WEEKDAY
YEAR
Function list

N

Description: Tests the supplied value and returns the value if it is a number.

Syntax: N(value)
value is a value or a reference to a cell containing a value to test.

Note

- Numbers are returned as numbers, serial numbers formatted as dates are returned as serial numbers, and the logical function TRUE() is returned as 1. All other expressions return 0.

Examples: N(32467) returns 32467.

N(A4) returns 1 if A4 contains the logical function True.

{button Related Topics,PI(``,`IDH_RT_N')}

T
VALUE
Function list

NA

Description: Returns the error value #N/A, which represents “not available.”

Syntax: NA( )

Note

- Use NA to mark cells that lack data without leaving them empty. Empty cells may not be correctly represented in some calculations.
- Although NA does not use arguments, you must supply the empty parentheses to correctly reference the function.

{button Related Topics,PI(``,`IDH_RT_NA')}

ISNA
Function list

NOT

Description: Returns a logical value that is the opposite of its value.

Syntax: NOT(logical)
logical is an expression that returns a logical value (for example, True or False).

Note

- If logical is false, NOT returns True. Conversely, if logical is true, NOT returns False.

Examples: NOT(TRUE( )) returns False.

NOT(MONTH(“12/25/94”) = 12) returns False.

{button Related Topics,PI(`',`IDH_RT_NOT')}

AND
IF
OR
Function list

NOW

Description: Returns the current date and time as a serial number.

Syntax: NOW( )

Note

- In a serial number, numbers to the left of the decimal point represent the date; numbers to the right of the decimal point represent the time. The result of this function changes only when a recalculation of the worksheet occurs.

{button Related Topics,PI(``,`IDH_RT_NOW')}

NPER

Description: Returns the number of periods of an investment based on regular periodic payments and a fixed interest rate.

Syntax: NPER(interest, pmt, pf [,fv] [, type])
interest is the fixed interest rate.
pmt is the fixed payment made each period. Generally, pmt includes the principal and interest, not taxes or other fees.
pf is the present value, the lump-sum amount that a series of future payments is currently worth.
fv is the future value, the balance to attain after the final payment. Omitting this argument assumes a future balance of 0.
type indicates when payments are due. Use 0 if payments are due at the end of the period or 1 if payments are due at the beginning of the period. When you omit this argument, 0 is assumed.

Note
▪

Examples: NPER(12%/12, -350, -300, 16000, 1) returns 36.67.

NPER(1%, -350, -300, 16000) returns 36.98.

{button Related Topics,PI(``,`IDH_RT_NPER')}

NPV

Description: Returns the net present value of an investment based on a series of periodic payments and a discount rate.

Syntax: NPV(discount_rate, value_list)
discount_rate is the rate of discount for one period.
value_list is a list of as many as 29 arguments or a reference to a range that contains values that represent payments and income.

- During calculation, NPV uses the order in which the values appear to determine the order of cash flow.
- Numbers, empty cells, and text representations of numbers are included in the calculation. Errors and text that cannot be translated into numbers are ignored.
- If value_list is a range reference, only numeric data in the range is included in the calculation. Other types of data in the range (for example, empty cells, logical values, text, and error values) are ignored.

Note

- The time span NPV uses for calculation begins one period before the first cash flow date and ends when the last cash flow payment is made. This function is based on future cash flows. When your first cash flow occurs at the beginning of the first period, the first value must be added to the NPV result, not supplied as a value in value_list.

Examples: NPV(8%, -12000, 3000, 3000, 3000, 7000) returns 811.57.

{button Related Topics,PI(`',`IDH_RT_NPV')}

ODD

Description:	Rounds the specified number up to the nearest odd integer.
Syntax:	ODD(number) **number** is any number, a formula that evaluates to a number, or a reference to a cell that contains a number.
Examples:	ODD(3,5) returns 5. ODD(6) returns 7.

{button Related Topics,PI(``,`IDH_RT_ODD')}

CEILING

EVEN

FLOOR

INT

ROUND

TRUNC

Function list

OFFSET

Description: Returns the contents of a range that is offset from a starting point in the spreadsheet.

Syntax: OFFSET(reference, rows, columns [, height] [, width])
reference is a reference to cell from which the offset reference is based. If you specify a range reference, #VALUE! is returned.
rows is the number of rows from reference that represents the upper left cell of the offset range. A positive number represents rows below the starting cell; a negative number represents rows above the starting cell. If rows places the upper left cell of the offset range outside the spreadsheet boundary, #REF! is returned.
columns is the number of columns from reference that represents the upper left cell of the offset range. A positive number represents columns right of the starting cell; a negative number represents columns left of the starting cell. If the columns parameter places the upper left cell of the offset range outside the spreadsheet boundary, #REF! is returned.
height is a positive number representing the number of rows to include in the offset range. Omitting this argument assumes a single row.
width is a positive number representing the number of columns to include in the offset range. Omitting this argument assumes a single column.

Note

- OFFSET does not change the current selection on the spreadsheet. Because it returns a reference, OFFSET can be used in any function that requires or uses a cell or range reference as an argument.

Examples: OFFSET(B1, 3, 2, 1, 1) returns the contents of cell D4.

SUM(OFFSET(A1, 2, 4, 3, 2))
equals the sum of the range
E3:F5.

{button Related Topics,PI(``,`IDH_RT_OFFSET')}

Function list

OR

Description:	Returns True if at least one of a series of logical arguments is true.
Syntax:	OR(logical_list) **logical_list** is a list of conditions separated by commas. You can include as many as 30 conditions in the list. The list can contain logical values or a reference to a range containing logical values. Text and empty cells are ignored. If there are no logical values in the list, the error value #VALUE! is returned.
Examples:	OR(1 + 1 = 1, 5 + 5 = 10) returns True because one of the arguments is true.

{button Related Topics,PI(``,`IDH_RT_OR')}

AND

IF

NOT

Function list

PI

Description: Returns the value of pi (), which is approximately 3.14159265358979 when calculated to 15 significant digits.

Syntax: PI( )

Note

- Although PI does not use arguments, you must supply the empty parentheses to correctly reference the function.

{button Related Topics,PI(``,`IDH_RT_PI')}

COS

SIN

TAN

Function list

PMT

Description: Returns the periodic payment of an annuity, based on regular payments and a fixed periodic interest rate.

Syntax: PMT(interest, nper, pv [,fv] [,type])
interest is the fixed periodic interest rate.
nper is the number of periods in the annuity.
pv is the present value, or the amount the annuity is currently worth.
fv is the future value, or the amount the annuity will be worth. When you omit this argument, a future value of 0 is assumed.
type indicates when payments are due. Use 0 if payments are due at the end of the period or 1 if payments are due at the beginning of the period. When you omit this argument, 0 is assumed.

Note

- PMT returns only the principal and interest payment. It does not include taxes or other fees.
- The units used for interest must match those used for nper. For example, if the annuity has an 8% annual interest rate over a period of 5 years, specify 8%/12 for interest and 5*12 for nper
- Cash paid out, such as a payment, is shown as a negative number. Cash received, such as a dividend check, is shown as a positive number.

Examples: PMT(8%/12, 48, 18000) returns -439.43.

PMT(8%/12, 48, 18000, 0, 1) returns -436.52.

{button Related Topics,PI(``,`IDH_RT_PMT')}

PPMT

Description: Returns the principal paid on an annuity for a given period.

Syntax: PPMT(interest, per, nper, pv, [fv], [type])
interest is the fixed periodic interest rate.
per is the period for which to return the principal.
nper is the number of periods in the annuity.
pv is the present value, or the amount the annuity is currently worth.
fv is the future value, or the amount the annuity will be worth. When you omit this argument, a future value of 0 is assumed.
type indicates when payments are due. Use 0 if payments are due at the end of the period or 1 if payments are due at the beginning of the period. When you omit this argument, 0 is assumed.

Note

- The units used for interest must match those used for nper. For example, if the annuity has an 8% annual interest rate over a period of 5 years, specify 8%/12 for interest and 5*12 for nper.

Examples: PPMT(8%/12, 2, 48, 18000) returns -321.56.

PPMT(8%/12, 2, 48, 18000, 0, 1) returns -319.43.

{button Related Topics,PI(``,`IDH_RT_PPMT')}

PRODUCT

Description: Multiplies a list of numbers and returns the result.

Syntax: PRODUCT(number_list)
number_list is a list of as many as 30 numbers, separated by commas.

- The list can contain numbers, logical values, text representations of numbers, or a reference to a range containing those values.
- Error values or text that cannot be translated into numbers returns errors.
- If a range reference is included in the list, then text, logical expressions, and empty cells in the range are ignored.
- All numeric values, including 0, are used in the calculation.

Examples: PRODUCT(1, 2, 3, 4) returns 24.

{button Related Topics,PI(`',`IDH_RT_PRODUCT')}

FACT

SUM

Function list

PROPER

Description: Returns the specified string in proper-case format.

Syntax: PROPER(text)
text is any string.

Note

- In proper-case format, the first alphabetic character in a word is capitalized. If an alphabetic character follows a number, punctuation mark, or space, it is capitalized. All other alphabetic characters are lowercase. Numbers are not changed by PROPER.

Examples: PROPER(“3rd Quarter”) returns “3Rd Quarter”.

PROPER(“JOHN DOE”) returns “John Doe”.

{button Related Topics,PI(`',`IDH_RT_PROPER')}

LOWER

UPPER

Function list

PV

Description: Returns the present value of an annuity, considering a series of constant payments made over a regular payment period.

Syntax: PV(interest, nper, pmt [,fv] [,type])
interest is the fixed periodic interest rate.
nper is the number of payment periods in the investment.
pmt is the fixed payment made each period.
fv is the future value, or the amount the annuity will be worth. When you omit this argument, a future value of 0 is assumed.
type indicates when payments are due. Use 0 if payments are due at the end of the period or 1 if payments are due at the beginning of the period. When you omit this argument, 0 is assumed.

Note

- The units used for interest must match those used for nper. For example, if the annuity has an 8% annual interest rate over a period of 5 years, specify 8%/12 for interest and 5*12 for nper.
- Cash paid out, such as a payment, is shown as a negative number. Cash received, such as a dividend check, is shown as a positive number.

Examples: PV(*%/12, 48, 439.43) returns-17999.89.

PV(8%/12, 48, -439.43) returns 17000.89.

{button Related Topics,PI(``,`IDH_RT_PV')}

RAND

Description: Returns a number selected randomly from an even distribution greater than or equal to 0 and less than 1.

Syntax: RAND( )

Note

- Since the RAND function generates a number between 0 and 1, you must multiply the RAND function by the highest number.
- Although RAND does not use arguments, you must supply the empty parentheses to correctly reference the function.

Examples: RAND( ) *10 returns a random number greater than or equal to 0 and less than 10.

{button Related Topics,PI(``,`IDH_RT_RAND')}

Function list

RATE

Description: Returns the interest rate per period of an annuity, given a series of constant cash payments made over a regular payment period.

Syntax: RATE(nper, pmt, pv [,fv] [,type] [,guess])
nper is the number of periods in the annuity.
pmt is the fixed payment made each period. Generally, pmt includes only principal and interest, not taxes or other fees.
pv is the present value of the annuity.
fv is the future value, or the amount the annuity will be worth. When you omit this argument, a future value of 0 is assumed.
type indicates when payments are due. Use 0 if payments are due at the end of the period or 1 if payments are due at the beginning of the period. When you omit this argument, 0 is assumed.
guess is your estimate of the interest rate. If no argument is supplied, a value of .1 (10%) is assumed.

Note

- RATE is calculated iteratively, cycling through the calculation until the result is accurate to .00001 percent. If the result cannot be found after 20 iterations, #NUM! is returned. When this occurs, supply a different value for guess.

Examples: RATE(48, -439.43, 18000) returns .0067 (rounded to 4 decimals), which is the monthly interest rate. The annual interest rate (.0067 multiplied by 12) is 8%.

{button Related Topics,PI(``,`IDH_RT_RATE')}

REPLACE

Description:	Replaces part of a text string with another text string.
Syntax:	REPLACE(orig_text, start_position, num_chars, repl_text) **orig_text** is the original text string. **start_position** is the character position at which the replacement begins. If start_position is greater than the number of characters in orig_text, repl_text is appended to the end of orig_text. If start_position is less than 1, #VALUE! is returned. **num_chars** is the number of characters to replace. If this argument is negative, #VALUE! is returned. **repl_text** is the replacement text string.
Examples:	REPLACE("For the year: 1993", 18, 1, "4") returns "For the year: 1994".

{button Related Topics,PI(`',`IDH_RT_REPLACE_Function')}

MID

SEARCH

TRIM

Function list

REPT

Description: Repeats a text string the specified number of times.

Syntax: REPT(text, number)
text is any text string.
number is the number of times you want text to repeat. If number is 0, empty text (” “) is returned.

Note

- The result of REPT cannot exceed 255 characters.

Examples: REPT(“error-”, 3) returns “error-error-error-”.

{button Related Topics,PI(`',`IDH_RT_REPT')}

Function list

RIGHT

Description:	Returns the rightmost characters from the given text string.
Syntax:	RIGHT(text{, num_chars]) **text** is any text string. **num_chars** is the number of characters to return. The value must be greater than or equal to zero. If num_chars is greater than the number of characters in text, the entire string is returned. Omitting this argument assumes a value of 1.
Examples:	RIGHT(“2nd Quarter”) returns “r”. RIGHT(‘2nd Quarter”, 7) returns “Quarter”.

{button Related Topics,PI(``,`IDH_RT_RIGHT')}

ROUND

Description: Rounds the given number to the supplied number of decimal places.

Syntax: ROUND(number, precision)
number is any value.
precision is the number of decimal places to which number is rounded.

- When a negative precision is used, the digits to the right of the decimal point are dropped and the absolute number of significant digits specified by precision is replaced with zeros.
- If precision is 0, number is rounded to the nearest integer.

Examples: ROUND(123.456, 2) returns 123.46.

ROUND(98899.435, -2) returns 9900.

{button Related Topics,PI(``,`IDH_RT_ROUND')}

CEILING

FLOOR

INT

MOD

TRUNC

Function list

ROW Function

Description:	Returns the row number of the supplied reference.
Syntax:	ROW(reference) reference is a cell or range reference. Omitting this argument returns the row number of the cell in which ROW is entered.
Examples:	ROW(B3) returns 3.

{button Related Topics,PI(``,`IDH_RT_ROW_Function')}

COLUMN

ROWS

Function list

ROWS

Description:	Returns the number of rows in a range reference.
Syntax:	ROWS(range) **range** is a reference to a range of cells.
Examples:	ROWS(A1:D5) returns 5. ROWS(C30:F35) returns 6.

{button Related Topics,PI(``,`IDH_RT_ROWS')}

COLUMNS

ROW

Function list

SEARCH

Description: Locates the position of the first character of a specified text string within another text string.

Syntax: SEARCH(search_text, text {, start_position])

search_text is the text to find.

- The search string can contain wild-card characters. The available wild-card characters are * (asterisk), which matches any sequence of characters, and ? (question mark), which matches any single character.
- To search for an asterisk or question mark, include a tilde (~) before the character.

text is the text to be searched.

start_position is the character position at which the search begins. If the number you specify is less than 0 or greater than the number of characters in text, #VALUE! is returned. Omitting this argument assumes a starting position of 1.

Note

- Text is searched from left to right, starting at the position specified. The search is not case-sensitive. If text does not contain the search string, #VALUE! is returned.

Examples: SEARCH(“?5”, “Bin b45”) returns 6.

SEARCH(“b”, “Bin b45”, 4) returns 5.

{button Related Topics,PI(`',`IDH_RT_SEARCH')}

FIND

MID

REPLACE

SUBSTITUTE

Function list

SECOND

Description:	Returns the second that corresponds to the supplied date.
Syntax:	SECOND(serial_number) **serial_number** is the time as a serial number. The decimal portion of the number represents time as a fraction of the day.
Examples:	SECOND(.259) returns 58. SECOND(34657.904) returns 46.

{button Related Topics,PI(``,`IDH_RT_SECOND')}

DAY

HOUR

MINUTE

MONTH

NOW

TODAY

WEEKDAY

YEAR

DATE

Function list

SIGN

Description: Determines the sign of the specified number.

Syntax: SIGN(number)
number is any number.

Note

- SIGN returns 1 if the specified number is positive, -1 if it is negative, and 0 if it is 0.

Examples: SIGN(-123) returns -1.

SIGN(123) returns 1.

{button Related Topics,PI(``,`IDH_RT_SIGN')}

ABS

Function list

SIN

Description:	Returns the sine of the supplied angle.
Syntax:	SIN(number) **number** is the angle in radians. If the angle is in degrees, convert the angle to radians by multiplying the angle by PI()/180.
Examples:	SIN(45) returns .85. SIN(90) returns .89.

{button Related Topics,PI(``,`IDH_RT_SIN')}

ASIN

PI

Function list

SINH

Description:	Returns the hyperbolic sine of the specified number.
Syntax:	SINH(number) **number** is any number.
Examples:	SINH(1) returns 1.18. SINH(3) returns 10.02.

{button Related Topics,PI(``,`IDH_RT_SINH')}

ASINH

PI

Function list

SLN

Description:	Returns the depreciation of an asset for a specific period of time using the straight-line balance method.
Syntax:	SLN(cost, salvage, life) **cost** is the initial cost of the asset. **salvage** is the salvage value of the asset. **life** is the number of periods of the useful life of the asset.
Examples:	SLN(10000, 1000, 7) returns 1285.71.

{button Related Topics,PI(``,`IDH_RT_SLN')}

DDB

SYD

VDB

Function list

SQRT

Description:	Returns the square root of the specified number.
Syntax:	SQRT(number) **number** is any positive number. If you specify a negative number, #NUM! is returned.
Examples:	SQRT(9) returns 3. SQRT(2.5) returns 1.58.

{button Related Topics,PI(``,`IDH_RT_SQRT')}

SUMSQ

Function list

STDEV

Description:	Returns the standard deviation of a population based on a sample of supplied values. The standard deviation of a population represents an average of deviations from the population mean within a list of values.
Syntax:	STDEV(number_list) **number_list** is a list of as many as 30 numbers, separated by commas. The list can contain numbers or a reference to a range that contains numbers.
Examples:	STDEV(4.0, 3.0, 3.5, 2.5, 4.0, 3.5) returns .56.

{button Related Topics,PI(``,`IDH_RT_STDEV')}

STDEVP

VAR

VARP

Function list

STDEVP

Description:	Returns the standard deviation of a population based on an entire population of values. The standard deviation of a population represents an average of deviations from the population mean within a list of values.
Syntax:	STDEVP(number_list) **number_list** is a list of as many as 30 numbers, separated by commas. The list can contain numbers or a reference to a range that contains numbers.
Examples:	STDEVP(4.0, 3.0, 3.0, 3.5, 2.5, 4.0, 3.5) returns .52.

{button Related Topics,PI(`',`IDH_RT_STDEVP')}

STDEV

VAR

VARP

Function list

SUBSTITUTE

Description:	Replaces a specified part of a text string with another text string.
Syntax:	SUBSTITUTE(text, old_text, new_text [, instance]) **text** is a text string that contains the text to replace. You can also specify a reference to a cell that contains text. **old_text** is the text string to be replaced. **new_text** is the replacement text. **instance** specifies the occurrence of old_text to replace. If this argument is omitted, every instance of old_text is replaced.
Examples:	SUBSTITUTE(“First Quarter Results”, “First”, “Second”) returns “Second Quarter Results”. SUBSTITUTE(“Shipment 45, Bin 45”, “45”, “52”, 2) returns “shipment 45, Bin 52”.

{button Related Topics,PI(`',`IDH_RT_SUBSTITUTE')}

REPLACE

TRIM

Function list

SUM

Description: Returns the sum of the supplied numbers.

Syntax: SUM(number_list)

number_list is a list of as many as 30 numbers, separated by commas.

- The list can contain numbers, logical values, text representations of numbers, or a reference to a range containing those values.
- Error values or text that cannot be translated into numbers returns errors.
- If a range reference is included in the list, then text, logical expressions, and empty cells in the range are ignored.

Examples: SUM(1000, 2000, 3000) returns 6000.

SUM(A10:D10) returns 4000 when each cell in the range contains 1000.

{button Related Topics,PI(``,`IDH_RT_SUM')}

AVERAGE

COUNT

COUNTA

PRODUCT

SUMSQ

Function list

SUMSQ

Description:	Squares each of the supplied numbers and returns the sum of the squares.
Syntax:	SUMSQ(number_list) **number_list** is a list of as many as 30 numbers, separated by commas. The list can contain numbers, logical values, text representations of numbers, or a reference to a range containing those values. Error values or text that cannot be translated into numbers returns errors. If a range reference is included in the list, then text, logical expressions, and empty cells in the range are ignored.
Examples:	SUMSQ(9, 10, 11) returns 302.

{button Related Topics,PI(``,`IDH_RT_SUMSQ')}

SUM

Function list

SYD

Description:	Returns the depreciation of an asset for a specified period using the sum-of-years method. This depreciation method uses an accelerated rate, where the greatest depreciation occurs early in the useful life of the asset.
Syntax:	SYD(cost, salvage, life, per) **cost** is the initial cost of the asset. **salvage** is the salvage value of the asset. **life** is the number of periods in the useful life of the asset. **period** is the period for which to calculate the depreciation. The time units used to determine period and life must match.
Examples:	SYD(100000, 1000, 7, 3) returns 1607.14.

{button Related Topics,PI(`',`IDH_RT_SYD')}

T

Description: Tests the supplied value and returns the value if it is text.

Syntax: T(value)
value is the value to test.

Note

- Empty text (“ “) is returned for any value that is not text.

Examples: T(“Report”) returns “Report”.

T(A4) returns empty text (“ “) if A4 contains a number.

{button Related Topics,PI(`',`IDH_RT_T')}

N

VALUE

Function list

TAN

Description:	Returns the tangent of the specified angle.
Syntax:	TAN(number) **number** is the angle in radians. To convert a number expressed as degrees to radians, multiply the degrees by 180/PI().
Examples:	TAN(45) returns 1.62. TAN(90) returns -2.00.

{button Related Topics,PI(``,`IDH_RT_TAN')}

ATAN

ATAN2

PI

TANH

Function list

TANH

Description:	Returns the hyperbolic tangent of a number.
Syntax:	TANH(number) **number** is any number.
Examples:	TANH(-2) returns -.96. TANH(1.2) returns .83.

{button Related Topics,PI(``,`IDH_RT_TANH')}

ATANH

COSH

SINH

TAN

Function list

TEXT

Description:	Returns the given number as text, using the specified formatting.
Syntax:	TEXT(number, format) **number** is any value, a formula that evaluates to a number, or a reference to a cell that contains a value. **format** is a string representing a number format. The string can be any valid format string including “General,” “M/DD/YY,” or “H:MM AM/PM.” The format must be surrounded by a set of double quotation marks. Asterisks cannot be include in format.
Examples:	TEXT(123.62, “0.000”) returns 123.620. TEXT(34626.2, “MM/DD/YY”) returns 10/19/94.

{button Related Topics,PI(`',`IDH_RT_TEXT')}

DOLLAR

FIXED

T

VALUE

Function list

TIME

Description:	Returns a serial number for the supplied time.
Syntax:	TIME(hour, minute, second) **hour** is a number from 0 to 23. **minute** is a number from 0 to 59. **second** is a number from 0 to 59.
Examples:	TIME(12, 26, 24) returns .52. TIME(1, 43, 34) returns .07.

{button Related Topics,PI(``,`IDH_RT_TIME')}

HOUR
MINUTE
MONTH
NOW
SECOND
TIMEVALUE
WEEKDAY
YEAR
Function list

TIMEVALUE

Description:	Returns a serial number for the supplied text representation of time
Syntax:	TIMEVALUE(text) **text** is a time in text format.
Examples:	TIMEVALUE(“1:43:43 am”) returns .07. TIMEVALUE(“14:10:07’) returns .59.

{button Related Topics,PI(``,`IDH_RT_TIMEVALUE')}

HOUR

MINUTE

NOW

SECOND

TIME

Function list

TODAY

Description: Returns the current date as a serial number.

Syntax: TODAY( )

Note

- This function is updated only when the worksheet is recalculated.

{button Related Topics,PI(`',`IDH_RT_TODAY')}

DATE

DAY

NOW

Function list

TRIM

Description: Removes all spaces from text except single spaces between words.

Syntax: TRIM(text)
text is any text string or a reference to a cell that contains a text string.

Note

- Text that is imported from another environment may require this function.

Examples: TRIM(“ Level 3, Gate 45 “) returns “Level 3, Gate 45”.

{button Related Topics,PI(``,`IDH_RT_trim')}

CLEAN

MID

REPLACE

SUBSTITUTE

Function list

TRUE

Description:	Returns the logical value True. This function always requires the trailing parentheses.
Syntax:	TRUE()

{button Related Topics,PI(``,`IDH_RT_true')}

FALSE

Function list

TRUNC

Description: Truncates the given number to an integer.

Syntax: TRUNC(number [, precision])
number is any value.
precision is the number of decimal places allowed in the truncated number. Omitting this argument assumes a precision of 0.

Note

- TRUNC removes the fractional part of a number to the specified precision without rounding the number.

Examples: TRUNC(123.456, 2) returns 123.45.

TRUNC(9899.435, -2) returns 9800.

{button Related Topics,PI(``,`IDH_RT_TRUNC')}

CEILING

FLOOR

INT

MOD

ROUND

Function list

TYPE

Description: Returns the argument type of the given expression.

Syntax: TYPE(expression)
expression is any expression.

Note

- The following table lists the expression types and numbers

Expression type	Number
Number	**1**
Text String	**2**
Logical value	**4**
Error value	**16**

Examples: TYPE(A1) returns 1 if cell A1 contains a number.

TYPE(“Customer”) returns 2.

{button Related Topics,PI(`',`IDH_RT_TYPE')}

ISBLANK

ISERR

ISERROR

ISLOGICAL

ISNA

ISNONTEXT

ISNUMBER

ISREF

ISTEXT

Function list

UPPER

Description: Changes the characters in the specified string to uppercase characters

Syntax: UPPER(text)
text is any string.

Note

- Numeric characters in the string are not changed.

Examples: UPPER(“3rd Quarter”) returns “3RD QUARTER”.

UPPER(“JOHN DOE”) returns “JOHN DOE”.

{button Related Topics,PI(``,`IDH_RT_upper')}

LOWER

PROPER

Function list

VALUE

Description:	Returns the specified text as a number.
Syntax:	VALUE(text) **text** is any text string, a formula that evaluates to a text string, or a cell reference that contains a text string. You can also specify a date or time in a recognizable format (for example, M/DD/YY for dates or H:MM AM/PM for time). If the format is not recognized, #VALUE! is returned.
Examples:	VALUE(9800) returns 9800. VALUE(“123”) returns 123.

{button Related Topics,PI(`',`IDH_RT_VALUE')}

DOLLAR

FIXED

TEXT

Function list

VAR

Description:	Returns the variance of a population based on a sample of values.
Syntax:	VAR(number_list) number_list is a list of as many as 30 numbers, separated by commas. The list can contain numbers or a reference to a range that contains numbers.
Examples:	VAR(4.0, 3.0, 3.5, 2.5, 4.0, 3.5) returns .31.

{button Related Topics,PI(`',`IDH_RT_VAR')}

STDEV

STDEVP

VARP

Function list

VARP

Description:	Returns the variance of a population based on an entire population of values.
Syntax:	VARP(number_list) number_list is a list of as many as 30 numbers, separated by commas. The list can contain numbers or a reference to a range that contains numbers.
Examples:	VARP(4.0, 3.0, 3.0, 3.5, 2.5, 4.0, 3.5) returns .27.

{button Related Topics,PI(``,`IDH_RT_VARP')}

STDEV

STDEVP

VAR

Function list

VDB

Description: Returns the depreciation of an asset for a specified period using a variable method of depreciation.

Syntax: VDB(cost, salvage, life, start_period, end_period [,factor] [,method])
cost is the initial cost of the asset.
salvage is the salvage value of the asset.
life is the number of periods in the useful life of the asset.
start_period is the beginning period for which to calculate the depreciation. The time units used to determine start_period and life must match.
end_period is the ending period for which to calculate the depreciation. The time units used to determine end_period and life must match.
factor is the rate at which the balance declines. Omitting this argument assumes a default of 2, which is the double-declining balance factor.
method is a logical value that determines whether you want to switch to straight-line depreciation when depreciation is greater than the declining balance calculation. Use True to maintain declining balance calculation; use False or omit the argument to switch to straight-line depreciation calculation.

Examples: VDB(10000, 1000, 7, 3, 4) returns 1041.23.

{button Related Topics,PI(``,`IDH_RT_VDB')}

DDB

SLN

SYD

Function list

VLOOKUP

Description: Searches the first column of a table for a value and returns the contents of a cell in that table that corresponds to the location of the search value.

Syntax: VLOOKUP(search_item, search_range, column_index)

search_item is a value, text string, or reference to a cell containing a value that is matched against data in the top row of search_range.

search_range is the reference of the range (table) to be searched. The cells in the first column of search_range can contain numbers, text, or logical values. The contents of the first column must be in ascending order (for example, -2, -1, 0, 2…A through Z, False, True). Text searches are not case-sensitive.

Column_index is the column in the search range from which the matching value is returned.

- column_index can be a number from 1 to the number of rows in the search range.
- If column_index is less than 1, #VALUE! is returned.
- When column_index is greater than the number of rows in the table, #REF! if returned.

Note

- VLOOKUP compares the information in the first column of search_range to the supplied search_item. When a match is found, information located in the same row and supplied column (column_index) is returned.

  If search_item cannot be found in the first column of search_range, the largest value that is less than search_item is used. When search_item is less than the smallest value in the first column of the search_range, #REF! is returned.

Examples:

	A	B	C	D	E
1	Employee	Start Date	Emp. No.	Salary	Exempt
2	Anderson	10/15/84	2348	$37,800	Y
3	Clark	2/6/90	4891	$28,700	N
4	Davis	6/21/80	2480	$46,950	Y
5	Franklin	4/20/88	3793	$30,275	Y
6	Lee	8/30/89	3961	$25,000	N
7	Olson	11/1/81	2578	$45,780	Y
8	Turner	2/15/93	5129	$26,100	N
9	Wilson	9/1/89	3965	$31,650	Y

In the preceding worksheet:

VLOOKUP(“Clark”, A2:E9, 4) returns $28,700.

VLOOKUP(“Lee”, A2:E9, 3) returns 3961.

{button Related Topics,PI(`',`IDH_RT_VLOOKUP')}

HLOOKUP

INDEX

LOOKUP

MATCH

Function list

WEEKDAY

Description:	Returns the day of the week that corresponds to the supplied date.
Syntax:	WEEKDAY(serial_number) serial_number is the date as a serial number or as text (for example, “06-21-94” or “21-Jun-94”). WEEKDAY returns a number ranging from 1 (Sunday) to 7 (Saturday).
Examples:	WEEKDAY(34399.92) returns 1, indicating Sunday. WEEKDAY(“06/21/94”) returns 3, indicating Tuesday.

{button Related Topics,PI(``,`IDH_RT_Weekday')}

DAY

HOUR

MINUTE

MONTH

NOW

SECOND

TEXT

TODAY

YEAR

DATE

Function list

YEAR

Description:	Returns the year that corresponds to the supplied date.
Syntax:	YEAR(serial_number) **Serial_number** is the date as a serial number or as text (for example, “06-21-94” or 21-Jun-94:).
Examples:	YEAR(34328) returns 1993. YEAR(“06/21/94”) returns 1994.

{button Related Topics,PI(`',`IDH_RT_Year')}

DATE

DAY

HOUR

MINUTE

MONTH

NOW

SECOND

TODAY

WEEKDAY

Function list

Statistical Process Control Charts (SPC Charts)
{button Tell me how . . .,PI(`',`IDH_HT_SPC_Charts')}

FlowCharter 7 lets you create many different kinds of charts in support of quality and process reengineering. Quality programs rely on effective communications. For quality programs, charts are the most common means of relaying data so that they can be readily understood. FlowCharter 7 automatically draws the basic charts often referred to in quality and reengineering manuals. With these charts, you can organize and show data so that you can analyze a process. Your analysis can not only describe and detect problems with the current process, but you can predict the progress of a process.

You can create a number of charts, including:

- Process charts
- Cause-and-effect (Ishikawa or fishbone) charts
- Organization charts
- Deployment charts
- Pareto charts
- Histograms
- Run charts (trend charts)
- Control charts
- Scatter charts
- Pie charts

The first four process charts are created using FlowCharter 7. The last six process charts are Statistical Process Control Charts (SPC Charts) and are created using DataAnalyzer. SPC charts are invaluable statistical toosl used for setting up and measuring quality control in manufacturing, process reengineering, process management, and quality assurance.

With SPC charts, you can:

- Identify unstable processes
- Visualize extent of variation in a process
- Improve decision-making
- Identify special cause variation in a process
- Predict progress of a process
- Determine current ability of a process
- Analyze processes over time
- Quickly compare data
- Quickly organize data into recognizable categories
- Help set priorities of a process
- Illustrate impacts of individual affects
- Shows relationship between paired data

Some of the applications for SPC charts are:

- Analysis of stock trends
- Solve customer complaint problems
- Detemine effectiveness of advertising/marketing programs
- Correlate social data such as crime activity and weather conditions

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{button Related Topics,PI(`',`IDH_RT_SQ_Charts')}

Histograms
Run Charts
Pareto Charts
Control Charts

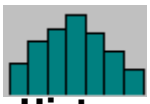
Scatter Charts
Pie Charts
Cause-and-Effect Charts
Process Charts

Organization Charts
Deployment Charts

Choosing an SPC Chart Type

Choosing the SPC chart type depends on the type of process you want to analyze.

Problem	Results of Analysis	Chart to Use
Current process is unstable	Causes of instability and extent of variation is identified	Run chart
Decision-making process needs improvement	Areas where improvement is need are identified	Run chart
There is a problem in the process that is not common to the process.	Special cause variation in a process is identified.	Run chart
You want to predict the progress of a process.	Progress of a process is predicted.	
You want to know what the capability of a current process is.	Current ability of a process is determined.	
You do not know how the process fares over time.	The process over time is graphically depicted.	
You need fast data comparison.	Graphical depiction of data comparison is provided.	
Your data has no obvious patterns or categories.	Data is quicky organized into recognizable categories.	
You have identified problems in a process, but you do not know which causes are having the most affect.	Causes of a process are prioritized.	Pareto chart
You understand the overall process, but you do not know how the parts affect the process.	Impacts of individual affects are identified.	
You want to see the relationship between two separate types of data.	Relationship between paired data is shown.	



Histograms

{button Tell me how . . .,PI(`',`IDH_HT_Histogram')}

Histograms show data clearly and the relationships between them. DataAnalyzer organizes your data into categories to show the relationship between those categories of data. These categories of data are depicted as bars on the histogram. (The terms "histogram" and "bar chart" are used for the same chart.) The heights of the bars indicate the proportion of data points, that is, the higher the bar, the more data points fall into that category.

The use of bars in a histogram is two-fold. As mentioned, the bars show quantities of data within categories. Additionally, DataAnalyzer calculates data interval and frequency. The interval is determined by taking the highest and lowest data points, then dividing the range of all the data into equal parts, or intervals. Histograms show the frequency of each category by the height of the bar. The intervals are equal in size, so the bars are of equal width.

Histograms can show:

- The most and least common category
- The extent of any data dispersion
- The shape of the distribution of data
- Whether the distribution is symmetrically skewed
- Whether there are any isolated categories

Note

- Histograms can have only two columns.

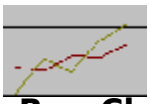
Tips

- Histograms must be derived from stable processes to be effective.
- Histograms are good supporting material for run charts and control charts.

{button Related Topics,PI(`',`IDH_RT_Histograms')}

Statistical Process Control Charts (SPC Charts)

To create a histogram



Run Charts

{button Tell me how . . .,PI(`',`IDH_HT_Run_Charts')}

The run chart, also called a time line chart or trend chart, displays changes over a period of time. A typical use is the number of items produced each day. You can use run charts to:

- Identify unstable processes
- Signal special cause presence in a process
- Identify the extent of variation in a process
- Improve decision-making
- Identify trends

The vertical line, or Y-axis, displays a quantity, such as percentages, frequencies, quantity, or dollar value. The horizontal axis, or X-axis, is divided into time intervals such as days of the week, months, or more unique periods such as first job, second job, and so on. The time sequence of the data is presented along the X-axis, from left to right. The measurements are aligned from low to high, bottom to top, along the Y-axis. DataAnalyzer enters the data points on the run chart and connects them by a straight line in the order they were generated.

Note

- Run charts must have at least two columns and can have no more than 256 columns.

{button Related Topics,PI(`',`IDH_RT_Run_Charts')}

Statistical Process Control Charts (SPC Charts)

To create run charts

Pareto Charts

{button Tell me how . . .,PI(`',`IDH_HT_Pareto')}

A Pareto chart is a form of histograms. A Pareto chart combines a bar chart and a line chart. The bars represent the number of defects or frequency of problems in each category. The line represents the cumulative percent contribution of each of the problems. The chart is sorted according to problem frequency. The bars use the left scale, which is based on the number of failures. The cumulative frequency line uses the right scale, which is from 0 to 100 percent. To construct a Pareto chart, you need data categorized by problem (for example, defective items or number of hours) and the number for each category.

Pareto charts can:

- Identify problem types in a process
- Identify key areas for improvement
- Indicate the order to deal with problems
- Monitor process improvement over time
- Assist in setting priorities of causation
- Illustrate individual causation impacts
- Identify what will yield the most benefit for the least effort
- Provide you with the tool so you can continuously focus on improvement
- Reveal whether attempts at improvement produce results
- Confirm and measure the impact of improvement

Note

- Pareto charts can have only two columns.

Tips

- Keep the time period in which the data are accumulated the same for every category so that your comparisons are valid.
- If you have several categories with small numbers, consider grouping them into a category called Other.
- When applying the chart to your environment, keep in mind that it is easier to reduce the largest category by half than it is to reduce a small category to zero. Focus on improving the larger problem areas. That way, you get the most improvement for your effort.
- Use Pareto charts repeatedly to confirm and measure your improvement.

{button Related Topics,PI(`',`IDH_RT_Pareto_Charts')}

Statistical Process Control Charts (SPC Charts)

To create a Pareto chart

Control Charts

{button Tell me how . . .,PI(`',`IDH_HT_Control')}

There are two basic purposes of a control chart:

- Detecting changes in a process
- Predicting the progress of a process

Control charts are based on four concepts:

- All processes fluctuate with time.
- Individual points are unpredictable.
- A stable process fluctuates randomly, and subgroups of points from a stable process tend to fall within predictable bounds.
- An unstable process does not fluctuate randomly, and these non-random fluctuations are generally out of the range of normal operations.

Visually, a control chart is a chart with limit, or control, lines. On control charts, these control lines show the standards for your evaulation of a process. There are three kinds of control lines:

- Upper control limit (UCL)
- Central line
- Lower control limit (LCL)

Data in control charts is made up of several subgroups consisting of several measurements within each. For most control charts, the measurements within a subgroup are all taken at the same time, or as part of the same batch. The one exception to this rule is the data required for a Moving Range chart since Moving Range charts contain only one value within each subgroup.

By plotting data you enter as points on the control charts, DataAnalyzer draws the control lines so that you can detect any abnormality. With these control lines, you can use a control chart to identify:

- If a process has been operating under control. If all your data points lie within the control lines and the point grouping does not assume a recognizable form, your process in operating under control. This means the process is in a controlled state.
- Special cause variation and the extent of its variation. When some data points are outside the control limits or assume a particular form, you have a special cause variaion.

Comparing control charts prepared at different times lets you use control charts to monitor the performance of a process over time, particularly one that has frequent outputs. With this monitoring, you can predict the progress of a process.

There are two basic types of control charts:

- Variable charts
- Attribute charts

Notes

- Moving Range and C charts can have only two columns.
- X Avg, R charts must have at least three columns and can have no more than 26 columns.
- P, NP, and U charts can only have three columns.

{button Related Topics,PI(`',`IDH_RT_Control_Charts')}

Statistical Process Control Charts (SPC Charts)
Attribute Charts
Variable Charts
Control Limits and Specification Limits

X Avg, R Chart
U Chart
C Chart
P Chart

NP Chart
MR (Moving Range) Chart

To create control charts

Variable Charts

Variable data is information that changes, includes a value, and so on. Examples of variable information are:

- Number of shipments leaving the warehouse per hour
- pH of a chemical mixture
- Environmental conditions

From your data, variable charts depict the extent of a change or impact of variety on a process.

Types of Variable Charts:

- Average (X-Avg) and range (R)
- Moving Range (MR)

{button Related Topics,PI(``,`IDH_RT_Variable_charts')}

Control Charts
Statistical Process Control Charts (SPC Charts)
Attribute Charts
X Avg, R Chart

Control Limits and Specification Limits
MR (Moving Range) Chart

Attribute Charts

Attribute data is information that is either:

- Good or bad
- Yes or no
- Pass or fail

From your data, you can analyze charts that depict the variances in defects.

Types of Attribute Charts

- Percent defective (P)
- Number of defects (NP)
- Defects per constant unit (C)
- Defects per variable unit (U)

{button Related Topics,PI(``,`IDH_RT_Attribute_charts')}

Control Charts
Variable Charts
U Chart
C Chart

P Chart
NP Chart
Control Limits and Specification Limits
Statistical Process Control Charts (SPC Charts)

Control Limits and Specification Limits

Control charts consist of:

- Data
- Upper line representing the upper control limit (UCL) of the data
- Center line (CL) of the data
- Lower line representing the lower control limit (LCL) of the data

It is important to differentiate between control limits and specification limits. Control limits are a function of the process and can be shown with a control chart. Specification limits are created by customer needs and expectations. In other words, process control limits do not depend on the specification limits set by a product or process design.

For example, a customer may require that a part be milled to within a thousandth of an inch. Suppose that under perfect conditions the milling machine can meet that tolerance 10% of the time, meaning you have to scrap 90% of the parts. That is not a control limit: it is a cost of doing business.

If the machine creates the part within a tolerance of less than 10% of the time, however, there is a control problem that can be addressed with control charts.

Note

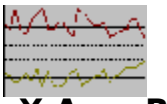
- DataAnalyzer sets the UCL to +3 standard deviations and the LCL to -3 standard deviations, based on a normal distribution.

{button Related Topics,PI(`',`IDH_RT_control_limits')}

Attribute Charts
Control Charts
Statistical Process Control Charts (SPC Charts)
Control Limits and Specification Limits

P Charts
NP Charts
U Charts
C Charts

Variable Charts



X Avg, R Chart

{button Tell me how . . .,PI(`',`IDH_HT_To_X_Avg_R_Chart')}

The X Avg, R control chart is the most common type of control chart. The name is often written x-R, pronounced "X bar R." The X average chart plots the mean (average) values in the process. The R chart plots the range of the values in a particular subgroup. The DataAnalyzer feature supports up to 25 data values in each subgroup.

The result is two charts. Both show the upper control limit (UCL), the central line (CL), and the lower control limit (LCL). The first chart plots the X Avg portion. The X Avg chart plots the actual values. The second chart plots the R portion. The R chart plots the range of sizes.

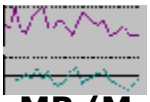
Note

- X Avg, R charts must have at least three columns and can have no more than 26 columns.

{button Related Topics,PI(`',`IDH_RT_Xavg_R_control_chart')}

To create an X Avg, R control chart

Control Charts
Variable Charts
Control Limits and Specification Limits
Statistical Process Control Charts (SPC Charts)



MR (Moving Range) Chart

{button Tell me how . . .,PI(`',`IDH_HT_MR_Chart')}

The Moving Range (or MR) chart is a variation of the X Avg, R Chart. You use it to represent data consisting of a single data value per subgroup. The Moving Range chart is also referred to as an XR chart or individuals chart.

Like the X Avg, R chart, the Moving Range chart consists of two graphs, the X chart and the R chart. The X chart plots the individual data values for each subgroup. The R chart plots the "moving range," which is the absolute difference between successive data values in each subgroup. Since data ranges are calculated from successive data values, this is called a "moving range."

The result is two charts. The first plots the data. The second chart plots the absolute value of the difference between each data value and the previous one.

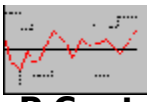
Note

- Moving Range charts can have only two columns.

{button Related Topics,PI(`',`IDH_RT_Moving_Range_Chart')}

To create Moving Range control charts

Control Charts
Variable Charts
Control Limits and Specification Limits
Statistical Process Control Charts (SPC Charts)



P Control Chart

{button Tell me how . . .,PI(`',`IDH_HT_P_Control_Chart')}

Use P control charts:

- When you want to identify the fraction of the data that is defective
- When the subgroups are of different sizes

Because the subgroups have different sizes, DataAnalyzer calculates a sample size for each subgroup to eliminate the possibilty of data from subgroup sizes that are too different. For example, if the gap is 10 and subgroup data range from 20 to 10,000, depiction of the defective data could get lost in the presentation of the data range differences. Using sample sizes may make the UCL and LCL have a "stair-step" appearance.

Note

- P control charts can only have three columns.
- Calcuating sample sizes may make the UCL and LCL have a "stair-step" appearance.

{button Related Topics,PI(`',`IDH_RT_P_Chart')}

To create P control charts

Control Charts
Attribute Charts
NP control charts

U control charts
C control charts
Control Limits and Specification Limits
Statistical Process Control Charts (SPC Charts)

NP Control Chart

{button Tell me how . . .,PI(`',`IDH_HT_NP_Control_Chart')}

Use NP control charts:

- When you want to identify the number of the data that is defective
- When the subgroups are the same size

Because the subgroups are the same size, NP control charts depict the number of defective data. (P control charts depict the fraction of defects.)

Note

- NP control charts can only have three columns.

{button Related Topics,PI(`',`IDH_RT_NP_Chart')}

To create NP control charts

Control Charts
Attribute Charts
P control charts

U control charts
C control charts
Control Limits and Specification Limits
Statistical Process Control Charts (SPC Charts)

U Control Chart

{button Tell me how . . .,PI(`',`IDH_HT_U_Control_Chart')}

Use U control charts:

- When you want to identify the defects per variable unit
- When the subgroups are different sizes

The U chart shows the number of defects when the material being tested is not a constant area or width. An example of data appropriate for a U chart is the number of tufts in a swatch of cloth.

Because the subgroups have different sizes, DataAnalyzer calculates a sample size for each subgroup to eliminate the possibilty of data from subgroup sizes that are too different. For example, if the gap is 10 and the subgroup data ranges from 20 to 10,000, depiction of the defective data could get lost in the presentation of the data range differences. Using sample sizes may make the UCL and LCL have a "stair-step" appearance.

Note

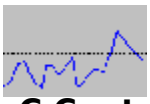
- U charts can only have three columns.

{button Related Topics,PI(`',`IDH_RT_U_Charts')}

To create U control charts

Control Charts
Attribute Charts
P control charts
NP control charts

C control charts
Control Limits and Specification Limits
Statistical Process Control Charts (SPC Charts)



C Control Chart

{button Tell me how . . .,PI(`',`IDH_HT_C_Control_Chart')}

Use C control charts:

- When you want to identify the defects per constant unit
- When the subgroups are different sizes

The C chart shows the number of defects when the material being tested has a constant number of items that could fail. An example of data appropriate for a C chart is the number of faulty chips in a computer motherboard.

Note

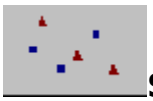
- C charts can have only two columns.

{button Related Topics,PI(`',`IDH_RT_C_Charts')}

To create C control charts

Control Charts
Attribute Charts
P control charts
NP control charts

U control charts
Control Limits and Specification Limits
Statistical Process Control Charts (SPC Charts)



Scatter Charts

{button Tell me how . . .,PI(`',`IDH_HT_scatter')}

Scatter charts provide a method for you to depict and analyze the relationship between two variables: independent variables and dependent variables, such as call duration or amount of chemical. DataAnalyzer plots the independent variable on the vertical (y) axis and the dependent variable on the horizontal (x) axis. The pattern of distribution of data points in a scatter chart describes the strength of the relationship, or the correlation, between the factors being examined. The pattern of distribution can indicate that there is no relationship, a strong correlation, or a negative relationship. With this information, you can identify the possible causes of problems, even when the relationship between the factors is surprising.

Reading Scatter charts

If your chart data points are in a smooth line that allows you to draw a straight curve through or near the points, then you have a correlation between the data. The smoother the curve that can be drawn, the stronger the correlation. A positive or negative correlation between the independent and dependent variables indicates that the variables affect each other .

In a positive correlation between the independent and dependent variables, the chart shows that the variables either both increase or both decrease. This is shown by the spread of data points along straight lines in close proximity that spread from the bottom left of the chart to the top right of the chart.

In a negative correlation between the independent and dependent variables, one variable increases as the other decreases. This is shown by the data points spreading from the top left of the chart toward the bottom right of the chart.

If there is no correlation or a weak correlation between the data sets, the points appear randomly on the chart.

Note

- Scatter charts must have at least three columns and can have no more than 256 columns.

{button Related Topics,PI(`',`IDH_RT_Scatter_Charts')}

Statistical Process Control Charts (SPC Charts)

To create a scatter chart

Pie Charts

{button Tell me how . . .,PI(`',`IDH_HT_pie')}

Use a pie chart to compare parts within a single data set, or series. With a pie chart, you can illustrate the relationship of one part to the whole or one part to components of the whole. A limitation of pie charts is that they cannot compare multiple data series. Each part of the pie is called a segment. For emphasis, you can explode a segment after the chart is created by selecting a segment and dragging it away from the pie.

Note

- Pie charts can have only two columns.

Tips

- Five or six pie segments on a pie chart are ideal; 12 should be the upper limit.
- For best readability, start with the largest segment. The other segments progress clockwise from large to small. If necessary, place a segment representing "all other" or "miscellaneous" after the smallest segment.

{button Related Topics,PI(`',`IDH_RT_Pie_Chart')}

Statistical Process Control Charts (SPC Charts)

To create a pie chart

Cause-and-Effect Charts

{button Tell me how . . .,PI(`',`IDH_HT_cause_effect')}

The cause-and-effect chart is a powerful problem-solving tool used to examine factors that may influence a given situation or effect. It is also called an Ishikawa chart, after the late Kaoru Ishikawa, a noted Japanese educator.

In 1943, Ishikawa first developed the cause-and-effect chart as an analysis tool for showing how various factors are related to producing an effect. The chart also is called a fishbone chart because its unusual appearance resembles a fish skeleton.

Cause-and-effect charts are used primarily for cause analysis. Cause analysis is usually a negative process. Use it when something is wrong and you want to find the reasons. It is particularly well suited for use during brainstorming sessions, which is its most widely used application.

To create a cause-and-effect chart, you first identify an effect or product. This becomes the head of the fish. You draw a backbone or spine and then attach individual bones to it. The bones represent the major causes that bring about the effect.

You add more bones to the major causes to depict sub-causes. You may add several such levels until you have enough detail. You can repeat the same cause in the chart if appropriate. The ultimate goal is to have a complete list of causes and sub-causes.

{button Related Topics,PI(`',`IDH_RT_Cause_and_Effect_Charts')}

Statistical Process Control Charts (SPC Charts)

To create a cause and effect chart from the template

Organization Charts

{button Tell me how . . .,PI(`',`IDH_HT_org_chart')}

Organization charts let you view the hierarchical structure of your organization. FlowCharter 7 makes creating org charts very easy using SnapSheet.

You can connect shapes easily to create a standard organization chart. The lines are smart in that you can move their attached shapes, and the lines remain connected and aligned as the shapes move.

FlowCharter 7 has other smart features, such as data field tables, which let you enter information directly into the org chart and accumulate the data for the entire organization. Information such as the number of executives and their cumulative salaries and other costs can be extracted in reports. The data can be printed for hard copy, saved to a file for transfer to a database application, or copied onto the Clipboard for pasting into another Windows application.

An OLE Automation sample Orgchart.exe, which is found in C:\Program files\Micrografx\Graphics Suite\FlowCharter\Samples, creates an organization chart from a text file that uses tabs to indicate the levels of organization. Two examples, Orgchrt1.txt and Orgchrt2.txt, are in C:\Program files\ Micrografx\Graphics Suite\FlowCharter\Samples.

For your convenience, FlowCharter 7 provides two sample charts (Orgdemo.abc and Orglink.abc in C:\Program files\Micrografx\Graphics Suite\FlowCharter\Samples). Orgdemo.abc shows an example of an Org chart that has a shape (that of Ruth Jacobs, Vice President of Marketing) that is linked to a second org chart (Orglink.abc).

To see how the linking works

1 Open the file Orgdemo.abc.

2 Double-click the V.P., Marketing shape. The file Orglink.abc opens.

You can use these sample files to create your own org charts or create new ones using the many features of FlowCharter 7.

{button Related Topics,PI(`',`IDH_RT_Organization_Charts')}

Statistical Process Control Charts (SPC Charts)

Organization Charts

To create an organization chart

Deployment Charts

{button Tell me how . . .,PI(`',`IDH_HT_deploy')}

Deployment charts are specialized flowcharts in which the shapes that represent activities are:

- Positioned in columns to correspond with one factor
- Positioned in rows to correspond to another factor

Reading the corresponding row factor and column for data describes that data. It is easy to create a deployment chart in FlowCharter 7. The chart’s column and row header shapes can be snap-aligned and resized to create a precise chart format.

{button Related Topics,PI(`',`IDH_RT_Deployment_Charts')}

Statistical Process Control Charts (SPC Charts)

Deployment Charts

To create a deployment chart

Process Charts

{button Tell me how . . .,PI(`',`IDH_HT_process_chart')}

A process chart is a specialized type of flowchart that shows the details of a process so that it can be readily understood. By understanding how a process flows, your quality team can make changes to improve the flow.

FlowCharter 7 makes it easy for you to draw process charts of many styles, using blocks, specialized symbols, or pictures to depict the operations (that is, the steps) involved in the process. Process charts can be used to depict the flow of anything -- from manufacturing activities to paper chases. Virtually every task that is performed and every activity that occurs can be documented in a process chart.

A sample file (Prochart.abc in C:\Program files\Micrografx\FlowCharter\Samples) illustrates one style of process chart showing the steps of a hinge adaptation procedure.

You can edit this sample file to create a four-column process chart, or you can create your own using the drawing tools. For your convenience, FlowCharter 7 comes with two template files (Prochar1.aft and Prochart.aft in C:\Program files\Micrografx\FlowCharter\Samples). Prochar1.aft is a template for a four-column process chart, and Prochart.aft is a template for a five-column process chart.

{button Related Topics,PI(`',`IDH_RT_Process_Charts')}

Statistical Process Control Charts (SPC Charts)

Process Charts

To create a process chart

P and NP Control Charts

Use P control charts:

- When you want to identify the fraction of the data that is defective
- When the subgroups are of different sizes

Use NP control charts:

- When you want to identify the number of the data that is defective
- When the subgroups are the same size

P Control Chart

NP Control Chart

C and U Control Charts

Use C control charts:

- When you want to identify the defects per constant unit
- When the subgroups are different sizes

Use U control charts:

- When you want to identify the defects per variable unit
- When the subgroups are different sizes

C Control Chart

U Control Chart

Insert menu

Click a command below to learn more about it.

Rows	Inserts a row into the worksheet at the current cursor location.
Columns	Inserts a column into the worksheet at the current cursor location.
Titles	Displays or hides chart titles.
Legend	Displays or hides the chart legend.
Gridlines	Displays or hides major and minor chart gridlines.
Control Lines	Displays or hides ±1 and/or ±2 Sigma control lines on the active DataAnalyzer X Avg, R control chart or Moving Range chart.

{button Related Topics,PI(``,`IDH_RT_Insert_Menu_D')}

Closes this dialog box and saves all changes you have made.

Closes this dialog box without saving your changes.

Inserts a row into the worksheet at the cursor location. The row at the cursor location is moved below the inserted row.

Rows command

The Rows command inserts a row into the worksheet at the current cursor location.

{button Related Topics,PI(`',`IDH_RT_Rows_Command')}

To insert a row

1 Ensure that a worksheet is displayed.

2 Click a row number.

3 On the Insert menu, click Rows.

Note

- If you click a cell instead of the row number, a cell will be inserted instead of a whole row. The rest of the cells in the column will move down one. Other cells in the row will not be moved.

{button Related Topics,PI(`',`IDH_RT_Inserting_a_row')}

To delete a row

To insert a column

Insert menu

To delete a row

1 Click the row number of the row you want to delete.

2 On the Edit menu, click Delete.

{button Related Topics,PI(`',`IDH_RT_Deleting_a_row')}

To delete a column

To insert a row

Insert menu

Inserts a column into the worksheet at the current cursor location.

You can only insert columns into Run, X Avg R, and Scatter charts.

Columns command

The Columns command inserts a column into the worksheet at the current cursor location.

Tip

- You can only insert columns into Run, X Avg R, and Scatter charts.

{button Related Topics,PI(``,`IDH_RT_Columns_Command')}

To insert a column

1 Ensure that a chart is displayed.

2 Click the column.

3 On the Insert menu, click Columns.

Notes

- Moving Range, Histogram, Pareto, C, and Pie charts can have only two columns.
- Run charts must have at least two columns and can have no more than 256 columns.
- X Avg, R charts must have at least three columns and can have no more than 26 columns.
- P, NP, and U charts can only have three columns.
- Scatter charts must have at least three columns and can have no more than 256 columns.

{button Related Topics,PI(`',`IDH_RT_Inserting_a_column')}

To delete a column

To insert a row

Insert menu

To delete a column

1 Click the header of the column that you want to delete.

2 On the Edit menu, click Delete.

Notes

- Each chart type requires a certain number of columns. For example, a pie chart requires at least two columns; an X Avg, R chart requires at least three columns. You cannot delete a column if, by doing so, it would leave fewer than the minimum number of columns in the worksheet.
- Run charts must have at least two columns and can have no more than 256 columns.
- X Avg, R charts must have at least three columns and can have no more than 26 columns.
- Scatter charts must have at least three columns and can have no more than 256 columns.

{button Related Topics,PI(``,`IDH_RT_Deleting_a_column')}

To delete a row

To insert a column

Insert menu

Displays or hides the chart title. Also displays or hides the chart axis titles.

Titles command

The Tiles command displays or hides the chart title. Also displays or hides the chart axis titles.

{button Related Topics,PI(`',`IDH_RT_Titles_Command')}

To display or hide chart titles

Insert menu

Titles dialog box

Use this dialog box to display or hide the chart titles and the chart axis titles.

Tip

- For Help on a setting, click
- at the top of the dialog box, and then click the setting.You can also right-click the setting, and then click What's This?

{button Related Topics,PI(`',`IDH_RT_Titles_Dialog')}

To display or hide chart titles

Insert menu

Specifies whether the title for the chart value (Y) axis is displayed.

Specifies whether the title for the chart category (X) axis is displayed.

Specifies whether the title for the chart second value (Y) axis is displayed.

Specifies whether the title for the 3-D chart series (Z) axis is displayed.

Displays or hides the chart legend. The chart legend contains a key to the chart elements.

Legend command

The Legend command in Data Analyzer displays or hides the chart legend. The chart legend contains a key to the chart’s elements.

Tip

- This legend is not the same as the legend for a FlowCharter chart. A FlowCharter chart’s legend displays the totals for the fields in all the shapes in the chart. To work with FlowCharter chart’s legend, FlowCharter must be active. With FlowCharter active, click Legend on the Insert menu to activate FlowCharter legends.

{button Related Topics,PI(`',`IDH_RT_Legend_Command')}

Displays or hides major and minor chart gridlines.

Gridlines command

The Gridlines command displays or hides major and minor gridlines for the category (X), value (Y), second value (Y), and series (Z) axis.

{button Related Topics,PI(`',`IDH_RT_Gridlines_Command')}

To hide or display gridlines

Insert menu

To hide or display gridlines

1 Ensure that a chart is displayed.

2 On the Insert menu, click Gridlines.

3 To display a chart grid line, ensure that the associated Axis Gridline check box is checked. To hide a grid line, clear the associated Axis Gridline check box.

4 Click OK.

{button Related Topics,PI(`',`IDH_RT_Hide_Gridlines')}

To hide or display chart axis gridlines

Insert Gridlines command

Insert menu

Gridlines dialog box

Use this dialog box to display or hide the X, Y, or Z axis gridlines in the active chart.

Tip

- For Help on a setting, click
- at the top of the dialog box, and then click the setting.You can also right-click the setting, and then click What's This?

{button Related Topics,PI(`',`IDH_RT_Gridlines_Dialog')}

To hide or display gridlines

Insert menu

Specifies whether the major category (X-axis) chart gridlines are displayed.

Specifies whether the minor category (X-axis) chart gridlines are displayed.

Specifies whether the major value (Y-axis) chart gridlines are displayed.

Specifies whether the minor value (Y-axis) chart gridlines are displayed.

Specifies whether the major second value (Y-axis) chart gridlines are displayed.

Specifies whether the minor second value (Y-axis) chart gridlines are displayed.

Specifies whether the major series (Z-axis) 3-D chart gridlines are displayed.

Specifies whether the minor series (Z-axis) 3-D chart gridlines are displayed.

Displays or hides Sigma control lines in the active X Avg, R control chart or Moving Range chart.

Control Lines command

The Control Lines command displays or hides control lines in the active X Avg, R control chart or Moving Range chart.

{button Related Topics,PI(`',`IDH_RT_Controllines_Command')}

To display or hide control lines

Insert menu

To display or hide Sigma control lines

1 Ensure that a X Avg, R control chart or Moving Range chart is displayed.

2 On the Insert menu, click Control Lines.

3 To display a control line, ensure that the associated Attach Control Lines check box is checked. To hide a control line, clear the associated check box.

4 Click OK.

{button Related Topics,PI(`',`IDH_RT_Hide_Controllines')}

To set up control line appearance
To set up control line point markers
To set up control line point labels
To format control line text

Selected Control Lines command
Format menu

Insert Control Lines command
Insert menu

Control Lines dialog box

Use this dialog box to display or hide control lines in the active X Avg, R control chart or Moving Range chart.

Tip

- For Help on a setting, click
- at the top of the dialog box, and then click the setting.You can also right-click the setting, and then click What's This?

{button Related Topics,PI(``,`IDH_RT_Control_Lines_Dialog')}

To display or hide control lines

Insert menu

Specifies whether ±1s control lines are displayed in the chart.

Specifies whether ±2s control lines are displayed in the chart.

To create a histogram

1 On the File menu, click Close.

2 On the File menu, click New, and click Blank Page.

3 On the Insert menu, click SPC chart, and click Next.

4 In the Chart Type list box, click Histogram, and click Finish.

5 On the worksheet, enter the label for each category.

6 Enter the value for each category.

7 Click Chart.

Notes

- These steps assume that DataAnalyzer is active, that you have a chart displayed, and that you want to create a new chart.
- Histogram charts can have only two columns.

{button Related Topics,PI(`',`IDH_RT_Creating_a_histogram')}

To make a chart 3-D

1 On the Format menu, click Chart.

2 Click the Appearance tab.

3 Click 3D View.

Note

- You must create a chart before you can make it 3-D.

{button Related Topics,PI(`',`IDH_RT_Making_a_chart_3D')}

To set up 3-D bases and walls

To set up 3-D lighting

To set up 3-D views

To set up 3-D charts

3-D View command

To view chart calculations

- On the View menu, click Calculation.

To create a Pareto chart

1 On the File menu, click Close.

2 On the File menu, click New, and click Blank Page.

3 On the Insert menu, click SPC chart, and click Next.

4 In the Chart Type list box, click Pareto, and click Finish.

5 On the worksheet, enter the label for each category.

6 Enter the value for each category.

7 Click Chart.

Notes

- These steps assume that you are in DataAnalyzer, that you have an active chart, and that you want to create a new chart.
- Pareto charts can have only two columns.

Tip

- If you have several categories with small numbers of defects, consider grouping them in a category called Other.

{button Related Topics,PI(``,`IDH_RT_Creating_a_pareto')}

Creates a new FlowCharter 7 chart. A blank chart window opens in front of the currently open charts.

Opens an existing FlowCharter 7 chart.

Closes the active chart.

Recent file list

Use the recent file list in the File menu to quickly open charts you recently changeed. The names of the last four charts you opened or saved appear in the submenu. The complete path name appears for charts outside the current directory.

A number appears beside each chart name. You can type the number to open the chart or click the chart name in the submenu.

Stores a chart or template in a file on disk. All charts (including linked charts) are saved in separate files. You can also use the shortcut key: Ctrl+S

Lets you rename a chart, so that you have the original chart and a new version. This option is useful for making a copy of a file without using the Windows Copy command.

Saves your workspace in a file. The file contains the names and screen setup of the charts in the FlowCharter 7 window.

Lets you set the size of the page, the size of the page margins (borders), and the orientation of the page (portrait or landscape).

Prints your charts and adds them to presentations and reports. FlowCharter 7 lets you print all the pages, a range of pages, or only selected objects in the chart. You can also use the shortcut key: Ctrl+P

Lets you choose the current printer and printer options.

Closes DataAnalyzer and FlowCharter 7. Use this command when you finish working with the program, or when you want to free memory to work in another program.

Creates an e-mail message with the current chart as an attachment.

Tip

- This feature works with any MAPI E-mail system. MAPI e-mail systems include Microsoft Mail, Microsoft Exchange, and Lotus cc:Mail.

Use the Print Preview command to see what it will look like when you print it.

Displays an index that lets you find specific information to help you use the program.

Displays information about the program and its compatibility with Microsoft Office.

Displays the program’s version number, copyright date, and license information.

Applies the changes to your chart or worksheet. Use the Apply button when you want to view the results of your changes and leave the dialog box open so you can make more changes.

Displays information about the dialog box.

Displays an index that lets you find specific information to help you use the program.

Displays the program version number, copyright date, and license information.

To create a pie chart

1 On the File menu, click Close.

2 On the File menu, click New, and click Blank Page.

3 On the Insert menu, click SPC chart, and click Next.

4 In the Chart Type list box, click Pareto, and click Finish.

5 On the worksheet, enter the label for each category.

6 Enter the value for each category.

7 Click Chart.

Notes

- These steps assume that you are in DataAnalyzer, that you have an active chart, and that you want to create a new chart.
- Pie charts can have only two columns.

{button Related Topics,PI(`',`IDH_RT_Creating_a_pie_chart')}

To create an SPC chart

1 On the File menu, click Close.

2 On the File menu, click New, and click Blank Page.

3 On the Insert menu, click SPC chart, and click Next.

4 In the Chart Type list box, click the type of chart you want to create, and click Finish.

5 On the worksheet, enter the label for each category.

6 Enter the value for each category.

7 Click Chart.

Notes

- These steps assume that you are in DataAnalyzer, that you have an active chart, and that you want to create a new chart.
- Moving Range, Histogram, Pareto, C, and Pie charts can have only two columns.
- Run charts must have at least two columns and can have a maximum of 128 columns.
- X Avg, R charts must have at least three columns and can have no more than 26 columns.
- P, NP, and U charts can only have three columns.
- Scatter charts must have at least three columns and can have no more than 128 columns.

{button Related Topics,PI(``,`IDH_RT_Creating_an_SPC_chart')}

To import data into your SPC chart

Statistical Process Control Charts (SPC Charts)

To create a scatter chart

1 On the File menu, click Close.

2 On the File menu, click New, and click Blank Page.

3 On the Insert menu, click SPC chart, and click Next.

4 In the Chart Type list box, click Scatter chart, and click Finish.

5 On the worksheet, enter the label for each category.

6 Enter the value for each category.

7 Click Chart.

Notes

- These steps assume that you are in DataAnalyzer, that you have an active chart, and that you want to create a new chart.
- Scatter charts must have at least three columns and can have no more than 128 columns.

{button Related Topics,PI(`',`IDH_RT_Creating_a_scatter_diagram')}

To import data into your SPC chart

Scatter Charts

Statistical Process Control Charts (SPC Charts)

To create a control chart

1 On the File menu, click Close.

2 On the File menu, click New, and click Blank Page.

3 On the Insert menu, click SPC chart, and click Next.

4 In the Chart Type list box, click the type of control chart you want, and click Finish. (Use the More button to display information about each chart type.)

5 On the worksheet, enter the label for each category.

6 Enter the value for each category.

7 Click Chart.

Notes

- These steps assume that you are in DataAnalyzer, that you have an active chart, and that you want to create a new chart.
- C charts can have only two columns.
- P, NP, and U charts can only have three columns.

{button Related Topics,PI(``,`IDH_RT_Creating_control_charts')}

Statistical Process Control Charts (SPC Charts)

To create a run chart

1 On the File menu, click Close.

2 On the File menu, click New, and click Blank Page.

3 On the Insert menu, click SPC chart, and click Next.

4 In the Chart Type list box, click Run chart, and click Finish.

5 On the worksheet, enter the label for each category.

6 Enter the value for each category.

7 Click Chart.

Notes

- These steps assume that you are in DataAnalyzer, that you have an active chart, and that you want to create a new chart.
- Run charts must have at least two columns and can have a maximum of 128 columns.

{button Related Topics,PI(`',`IDH_RT_Creating_a_run_chart')}

To import data into your SPC chart

To format the chart

To make the chart 3-D

Run charts

Statistical Process Control Charts (SPC Charts)

To create an XAvg, R control chart

1 On the File menu, click Close.

2 On the File menu, click New, and click Blank Page.

3 On the Insert menu, click SPC chart, and click Next.

4 In the Chart Type list box, click XAvg, R control chart, and click Finish.

5 On the worksheet, enter the label for each category.

6 Enter the value for each category.

7 Click Chart.

Notes

- These steps assume that you are in DataAnalyzer, that you have an active chart, and that you want to create a new chart.
- X Avg, R control charts must have at least three columns and can have no more than 26 columns.

{button Related Topics,PI(`',`IDH_RT_Creating_XAvg_R_control_charts')}

To create Moving Range charts

1 On the File menu, click Close.

2 On the File menu, click New, and click Blank Page.

3 On the Insert menu, click SPC chart, and click Next.

4 In the Chart Type list box, click Moving Range chart, and click Finish.

5 On the worksheet, enter the label for each category.

6 Enter the value for each category.

7 Click Chart.

Notes

- These steps assume that you are in DataAnalyzer, that you have an active chart, and that you want to create a new chart.
- Moving Range charts can have only two columns.

{button Related Topics,PI(`',`IDH_RT_Creating_Moving_Range_charts')}

To create P control charts

1 On the File menu, click Close.

2 On the File menu, click New, and click Blank Page.

3 On the Insert menu, click SPC chart, and click Next.

4 In the Chart Type list box, click P control chart, and click Finish.

5 On the worksheet, enter the label for each category.

6 Enter the value for each category.

7 Click Chart.

Notes

- These steps assume that you are in DataAnalyzer, that you have an active chart, and that you want to create a new chart.
- P control charts can only have three columns.

{button Related Topics,PI(``,`IDH_RT_Creating_P_control_charts')}

To create NP control charts

1 On the File menu, click Close.

2 On the File menu, click New, and click Blank Page.

3 On the Insert menu, click SPC chart, and click Next.

4 In the Chart Type list box, click NP control chart, and click Finish.

5 On the worksheet, enter the label for each category.

6 Enter the value for each category.

7 Click Chart.

Notes

- These steps assume that you are in DataAnalyzer, that you have an active chart, and that you want to create a new chart.
- NP control charts can only have three columns.

{button Related Topics,PI(`',`IDH_RT_Creating_NP_control_charts')}

To create C control charts

1 On the File menu, click Close.

2 On the File menu, click New, and click Blank Page.

3 On the Insert menu, click SPC chart, and click Next.

4 In the Chart Type list box, click C control chart, and click Finish.

5 On the worksheet, enter the label for each category.

6 Enter the value for each category.

7 Click Chart.

Notes

- These steps assume that you are in DataAnalyzer, that you have an active chart, and that you want to create a new chart.
- C control charts can have only two columns.

{button Related Topics,PI(`',`IDH_RT_Creating_C_control_charts')}

To import data into your SPC chart

To format the chart

To make the chart 3-D

C control charts

Statistical Process Control Charts (SPC Charts)

To create U control charts

1 On the File menu, click Close.

2 On the File menu, click New, and click Blank Page.

3 On the Insert menu, click SPC chart, and click Next.

4 In the Chart Type list box, click U control chart, and click Finish.

5 On the worksheet, enter the label for each category.

6 Enter the value for each category.

7 Click Chart.

Notes

- These steps assume that you are in DataAnalyzer, that you have an active chart, and that you want to create a new chart.
- U control charts can only have three columns.

{button Related Topics,PI(`',`IDH_RT_Creating_U_control_charts')}

To import data into your SPC chart

To format the chart

To make the chart 3-D

U control charts

Statistical Process Control Charts (SPC Charts)

To close DataAnalyzer

- On the File menu, click Close.

or

- Click outside the SPC to return to FlowCharter with the SPC chart embedded.

Quality

What is Quality?

In general, quality is a degree of excellence and superiority. To achieve and maintain quality, there must be continual improvement of processes. This continual improvement is achieved through the management of quality processes, or Total Quality Management (TQM). The operating philosophy of quality encompasses the concept of continuous process improvement as a means to achieve the desired level of performance as required by the customers. The management philosophy of quality refers to the practices of process documentation, problem solving and various management and breakthrough planning that result in achieving consistently excellent levels of performance in work processes.

In the business environment, quality occurs when a product or service meets or exceeds the expectations of the customer. The challenge of quality is to supply what your customers want or need, or you think they will purchase, that not only meets or exceeds their expectations, but can be produced or provided at a cost acceptable to the buyer and seller. Quality can be:

- The speed at which a service is delivered
- Consistency
- Innovation
- Low maintenance
- Favorable repair history

{button Related Topics,PI(`',`IDH_RT_Quality_concepts')} {button Next >,JI(`',`IDH_Deming_Quality_Philosophy')}

Deming Quality Philosophy

Quality management presented here is based on the proven philosophy, theory, and methodology of Dr. W. Edwards Deming. The Deming quality philosophy has a clear record of success over since the 1950s.

The practice of Dr. Deming’s theories and philosophy have dramatically improved the quality and performance of companies worldwide. People in business all over the world use his theories and techniques and proof of the success that is possible through the effective use of his system and philosophy. The bulk of the Deming philosophy is contained in his:

- Fourteen Points
- Deadly Diseases
- Obstacles
- Four Theories of Profound Knowledge

{button Related Topics,PI(`',`IDH_RT_Deming_Quality_Philosophy')} {button < Back,JI(`>Large',`IDH_Quality')} {button Next >,JI(`',`IDH_Deming_Philosophy_The_Fourteen_Points')}

Why Quality Management?

There are more than 20 million small businesses in the United States. Small businesses are a major force behind the United States economy, employing more than half of its private sector workforce. Between 1980 and 1986, 64 percent of the 10.5 million jobs created in the United States were produced by small businesses. However, the Small Business Administration (SBA) estimates that 75 percent of all new businesses in the United States fail within the first few years of existence. Some of the reasons that small businesses should pursue the establishment of quality in the workplace are:

- Cost incurred by reworking or replacing the products of unpredictable, unreliable processes
- Lost business caused by the production of poor products or services
- Cost of hiring new employees caused by consistent turnover

The need for transformation by small businesses to a quality culture is essential for success. The approach for transformation must be sound, comprehensive, and well planned.

{button Related Topics,PI(`',`IDH_RT_Quality_Management')} {button < Back,JI(`>Large',`IDH_Deming_Quality_Philosophy')} {button Next >,JumpID()}

Is Quality Management for You?

Answer the following questions to decide if quality management could help your organization:

- Can you envision a new future for your organization?
- Do you want to clarify your organization’s mission?
- Can your mission be separated from the mission of a higher-level organization?
- Do you have control over your budget?
- Do you have control over selecting/assigning and rewarding your people?
- Can you change your organizational structure?
- Do people in your organization know who their important customers are?
- Do you believe you can acquire new customers?
- Can you change your outputs/processes or develop new ones based on customer requirements?
- Can you change your suppliers or what they provide you?
- Are you responsible for a complete process/system?
- Do you already have “mature” TQM process improvement initiatives in place?
- Do you have a leadership team that understands the need for a quality focus?
- Are you willing to devote your personal time to the planning process?

If you answered yes to the majority of these questions, you are probably a candidate for quality management.

{button Related Topics,PI(`',`IDH_RT_Is_Quality_for_You')} {button < Back,JI(`>Large',`IDH_Why_Quality_Management')} {button Next >,JI(`',`IDH_What_Do_I_Need_for_Total_Quality_Management')}

What Do I Need for Total Quality Management?

The major actions you will need to take to establish Total Quality Management in your workplace:

- Spell out a management structure to support mission-essential processes and systems
- Develop strategic planning
- Incorporate comprehensive Total Quality Management (TQM) into the workplace
- Develop an environment that promotes process improvement and encourages innovation
- Rewrite directives, instructions, and policies to support TQM principles and methods
- Develop a number of assessment instruments to measure the success of TQM

Successful strategic planning process will provide your organization with

- A clear focus on the future
- Alignment, first for your leader, but ultimately for everyone in the organization, so that all understand the aims and purpose of the organization
- Leverage for breaking down barriers
- Enhanced communications
- Creation of a climate for innovation

{button Related Topics,PI(`',`IDH_RT_Need_for_Quality_Management')} {button < Back,JI(`>Large',`IDH_Is_Quality_Management_for_You')} {button Next >,JI(`',`IDH_Quality_Management_Structure')}

Quality Management Structure

The initial quality improvement efforts are managed through teams that are organized around critical products and services. These teams are created at each level of responsibility for the product or service, from the executives to the workers. There are three types of teams:

1 Executive Steering Committee - consists of the top leaders of the organization and is responsible for quality and its deployment

2 Quality Management Boards - consists of cross-functional teams that include managers who are jointly responsible for a mission-critical product or service. QMBs are meant to take advantage of both centralized and decentralized efforts. They include members who serve as vertical links within an organization’s chain of command.

3 Process Activity Teams - made up of workers in the system who have been chartered by QMBs to conduct specific improvement tasks, such as data collection and removal of special causes from the system.

{button Related Topics,PI(`',`IDH_RT_Quality_Management_Structure')} {button < Back,JI(`>Large',`IDH_What_Do_I_Need_for_Total_Quality_Management')} {button Next >,JI(`',`IDH_Strategic_Planning')}

Strategic Planning

Transition to a quality culture begins with a plan, specifically a strategic plan. Strategic planning offers a way to tie day-to-day decisions to strategic goals through various supporting plans that involve people at all levels within the organization. The elements of a strategic plan are:

- Vision statement
- Mission statement
- Guiding principles
- Strategic goals
- Strategies for reaching the goals
- Supporting plans

The benefits of a strategic plan are:

- Identifies and pulls together the critical mass. Members of the critical mass come together in a unified effort as they focus on the organization's ultimate purpose, its core values, and its major systems.
- Optimizes organizational performance. Organizational performance improves when all parts of the system functions or departments are working together harmoniously. When members from different departments get together to work on a process that crosses functional lines, there is the likelihood for system optimization.
- Provides leaders with a focus and framework for improvement efforts
- Provides guidance on day-to-day decisions. Strategic planning is expected to influence all levels and activities of an organization, which is why clear communication on strategic goals is so important.
- Provides a means to assess organizational progress toward its desired future. This can help leaders to identify gaps between reality and their vision of the future, and to assess progress as they pursue strategic goals.

{button Related Topics,PI(`',`IDH_RT_Strategic_Planning')} {button < Back,JI(`>Large',`IDH_Quality_Management_Structure')} {button Next >,JI(`',`IDH_Total_Quality_Management')}

Total Quality Management

Total Quality Management (TQM) is the application of quantitative methods and knowledge of people to assess and improve:

- Materials and services supplied to the organization
- All significant processes within the organization
- Meeting the needs of the end user, now and in the future

TQM is pursued through adoption of a philosophy based largely on the teachings of Dr. W. Edwards Deming. This philosophy brings together a set of sound principles and practices to be used in the continual improvement of quality including:

- Understanding the chain reaction of quality improvement
- Planning for organizational transformation
- Recognizing the essential role of leaders in the pursuit of quality
- Avoiding harmful business practices
- Perceiving and managing the interactions of organizational components (system orientation)
- Understanding variations in data to make decisions (theory of variation)
- Developing and testing hypotheses for the purpose of improving performance (theory of knowledge)

{button Related Topics,PI(``,`IDH_RT_Total_Quality_Managment')} {button < Back,JI(`>Large',`IDH_Strategic_Planning')} {button Next >,JI(``,`IDH_Quality_Environment')}

Quality Environment

A successful quality culture balances a reliance on science and philosophy with an understanding of and appreciation for the special knowledge, skills, and attitude that workers contribute. Together this balance works to improve and innovate all work processes. A quality culture is perceived in place when the following elements of teamwork exist in the workplace:

- Cooperation, as opposed to competition
- Employee empowerment
- Team member equality
- Freedom from fear
- Joy in the workplace
- Appreciating team members
- Common objectives
- Knowledge

The cumulative effect of good teamwork is the presence of a group mind in the workplace. This concept is an ideal that envisions a synergy of the best in knowledge, abilities, and attitudes of all team members into one powerful, collective mind. The key factors to achieve the group mind are that:

- All team members must be stakeholders in the mission of the group
- All members must feel free to make suggestions
- All must trust the others, especially when sensitive issues surface
- All members must want the team to reach consensus
- All must subscribe to win-win solutions to problems

{button Related Topics,PI(`',`IDH_RT_Quality_Environment')} {button < Back,JI(`>Large',`IDH_Total_Quality_Management')} {button Next >,JI(`',`IDH_TQM_Directives_Instructions_and_Policies')}

TQM Directives, Instructions, and Policies

TQM directives, instructions, and policies are based on the application of a scientific approach to improving quality. They include the following characteristics:

- Pursuing quality through process analysis and improvement
- Using a Plan-Do-Check-Act cycle to guide improvement efforts, encourage continual improvement, and enhance organizational learning
- Using empirical data to develop knowledge, support decision making, and determine the effectiveness of changes
- Seeking to predict and improve future performance, rather than correct and detect past errors
- Concentrating on increasing the value of the product or service from the customer's perspective
- Using a cyclical approach to improvement

The components of a TQM plan are:

- Vision statement- provides insight into the kind of organization we want to be
- Mission statement - reminds us of what we do and who we do it for
- Guiding principles - reflect the values and form the basis for behavior and decisions
- Strategic goals with strategies for reaching the goals
- Supporting plans

{button Related Topics,PI(``,`IDH_RT_TQM_Directives')} {button < Back,JI(`>Large',`IDH_Quality_Environment')} {button Next >,JI(``,`IDH_Implementing_Help')}

Implementing TQM

Implementation of TQM consists of two major components:

1. This component concentrates on planning and conducting initial quality improvement efforts and establishing the resources needed for the ongoing practice of TQM. One major resource during this phase is education and training.
2. This component involves advancing and sustaining the continual improvement of quality by modifying, as required, the technical systems, cultural systems, and power structure of the organization.

TQM is **systematic** because process improvement requires qualitative and quantitative analyses with the goal of process and system optimization. TQM improves **productivity** because the TQM approach to process improvement reveals:

1. Complexities and redundancies in processes that cannot stand up under a value-added scrutiny
2. Process changes that can have permanent impact because they will preclude future problems, thus, avoiding cost

There is a two-phase approach to implementing TQM:

Phase 1 Establish critical mass - those people with the requisite knowledge and power to lead a cultural change. Managers must acquire the knowledge they need to lead the transformation. Change requires planning, so top managers should first develop a statement of philosophy. Then they need to develop a business plan that incorporates the quality philosophy with the business mission and objectives. The plan should include a **vision statement** (an idealized view of where an organization would like to be in the future), a mission statement, guiding principles, strategic goals, and strategies. The plan should emphasize customer requirements, continuous improvement, a structured approach to process improvement, data-based decision making, and evaluation in terms of meeting customer needs. The next step is to translate the business plan into a transitional organization structure.

Two kinds of teams are formed at the top and bottom of the Quality Management Board (QMB) structure: **Executive Steering Committee or Group (ESC or ESG)** that consists of the top leaders of the organization and is responsible for quality and its deployment, and **Process Action Teams (PATs)** that consist of workers in the system who have been chartered by QMBs to conduct specific improvement tasks, such as data collection and removal of special causes from the system.

Phase 2 Address organizational transformation—long-term issues. It is important to focus now on the extended TQM process, to develop proactive customer feedback systems that anticipate future customer requirements, and to work more closely with suppliers so that they become part of the organization's system. Phase II activities result in innovation and the design of new systems aimed at the strategic business processes of the future (for example, new weapons systems), as well as new organizational systems that remove barriers to employee creativity and involvement.

{button Related Topics,PI(`',`IDH_RT_Implementing_TQM')} {button < Back,JI(`>Large',`TQM_Directives_Instructions_and_Policies')} {button Next >,JI(`',`IDH_TQM_Measurement')}

TQM Measurement

A system of measurements is one of the major elements in determining the progress and success of the transition to a quality culture. Measurements are necessary to:

- Locate your opportunities for improvement
- Prioritize opportunities for improvement
- Help show you where to improve
- Evaluate the progress you have made
- Determine where you want to go
- Assure you that you have or have not gotten there.

Identifying key quality characteristics is the best starting point for determining what you want to measure. They are those elements most vital to the function of a service or product and most important to customers of the service or product. Once it is known which key quality characteristics are to be measured, it is necessary to provide clear operational definitions of them. An **operational definition** is an agreement by a supplier and a customer that a certain procedure carried out by a supplier will be useful to them both. The usefulness of the operational definition is determined by the location, spread, and shape of the outcomes relative to the aim. A good operational definition not only describes the appearance of the key quality characteristics, but also the intent behind it. The operational definition is the means by which a concept is converted to a measurable item.

There are three essential components used in developing operational definitions:

1. The method of measurement, or test, for each key quality characteristic
2. The criteria for judgment or analysis of data
3. The decision as to whether the results indicate the degree that the criteria were or were not met

There are several statistical tools that can be used to measure whether you have achieved, maintained, and improved quality:

- Flowcharts
- Process charts
- Cause-and-effect charts
- Histograms
- Run charts
- Control charts
- Moving Range control charts
- X Avg, R Avg control charts
- P control charts
- NP control charts
- U control charts
- C control charts
- Scatter charts

{button Related Topics,PI(`',`IDH_RT_TQM_Measurement_Charts')} {button < Back,JI(`>Large',`IDH_Implementing_TQM')} {button Next >,JI(`',`IDH_IDH_Use_of_Statistical_Process_Control_Charts_SPC_Charts_for_Quality_Programs')}

Quality
Deming Quality Philosophy
Histograms
Run charts
Control charts
Moving Range control charts
X Avg , R Avg control charts
P control charts
NP control charts
U control charts
C control charts
Scatter charts

Deming Philosophy - The Fourteen Points

1	Create constancy of purpose toward improvement of product and service, with the aim to become competitive and to stay in business and to provide jobs
2	Adopt the new philosophy
3	Cease dependence on inspection to improve quality by building quality into the product in the first place
4	End the practice of awarding business on the basis of a price tag alone
5	Improve constantly and forever the system of product and service, to improve quality and productivity, and thus constantly decrease costs
6	Institute training on the job
7	Institute leadership - the aim of leadership should be to help people and machines and gadgets to do a better job
8	Drive out fear so that everyone may work effectively for the organization
9	Break down barriers between departments
10	Eliminate slogans, exhortations, and targets for the work force asking for zero defects and new levels of productivity
11	Eliminate numerical goals for the work force and numerical goals for management, and eliminate management by objective
12	Remove barriers that rob the hourly worker of the right to pride of workmanship (the responsibility of supervisors must be changed from sheer numbers to quality)
	Remove barriers that rob people in management and in engineering of their right to pride of workmanship
13	Institute a vigorous program of education and self-improvement for everyone
14	Put everybody in the company to work to accomplish the transformation

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{button Related Topics,PI(``,`IDH_RT_Deming_14_points')} {button < Back,JI(`>Large',`IDH_Deming_Quality_Philosophy')} {button Next >,JI(``,`IDH_Deming_s_Deadly_Diseases')}

Deming's Deadly Diseases

- Lack of constancy of purpose to plan product and service that will have a market and keep the company in business and provide jobs
- Emphasis on short-term profits: short-term thinking fed by fear of friendly takeover and by push by bankers and owners for dividends
- Evaluation of performance, merit rating, or annual review
- Mobility of management (job hopping)
- Management by use only of visible figures
- Excessive medical costs
- Excessive costs of liability

{button Related Topics,PI(``,`IDH_RT_Deming_Deadly_diseases')} {button < Back,JI(`>Large',`Deming_Philosophy_The_Fourteen_Points')} {button Next >,JI(``,`IDH_Deming_s_Obstacles')}

Deming's Obstacles

- Hope for instant pudding
- The supposition that solving problems, automation, gadgets, and new machinery will transform industry
- Search for examples; only theory can be transferred between companies
- Our problems are different, Problems are different, but the principles for improvement are universal.
- Obsolescence in schools. Business schools teach how to make a short-term profit, rather than how to produce quality.
- Poor teaching of statistical methods in industry. Don’t use poorly trained people.
- Use of Military Standard 105D and other tables for acceptance. Using such standards to accept or reject products or services guarantees defects. Continual process improvement helps to ensure quality.
- Our quality control department takes care of all our problems of quality. Quality is the responsibility of the process operators and especially of management and the board of directors.
- Our trouble lies entirely with the work force. The workers are handicapped by the system, and the system is the responsibility of management.
- False starts. Use of pieces can provide deceiving results.
- We installed quality control. It cannot be installed; it is a learning process.
- The unmanned computer. A computer collects and summarizes data, but it cannot discern what kind of variation exists in a process.
- The supposition that it is only necessary to meet specifications - specifications do not determine quality
- The fallacy of zero defects. To seek results within specification limits; expecting zero defects is an illusion.
- Inadequate testing of prototypes
- Anyone who comes to try to help us must understand all about our business. Those who come to help you must understand how to improve systems. Together, with those who understand the systems, they can enable continual process improvement of the systems.

{button Related Topics,PI(`',`IDH_RT_Deming_Obstacles')} {button < Back,JI(`>Large',`IDH_Deming_s_Deadly_Diseases')} {button Next >,JI(`',`IDH_Deming_s_Four_Theories_of_Profound_Knowledge')}

Deming's Four Theories of Profound Knowledge

1 **Systems** - Management must understand the organization as a whole system, a complete picture, and they must emphasize the optimization of that system. It is essential that the aim of the system is communicated to and understood by all members of the organization. The best chances of achieving that aim come when all the parts of the system are working collectively toward that aim.

2 **Variation** - Involves understanding variation and knowing how to deal with it. Variation causes economic loss. The normal variation in all processes is called common cause variation. The special cause variation also can adversely affect a process. It is often possible to detect the presence of special cause variation by observing data patterns. Special cause variation can occur when a cause outside the process affects the process. It can occur within the process and is usually specific to a person or group. Special cause and common cause are often confused.

3 **Knowledge** - Requires understanding the prediction involved in management. Everything you do as a manager involves predictions of some type. To predict, you must test a theory over time. Your observations of this theory provide you with information of what works and what does not. These observations lead to your modifying and adopting theories.

3 **Psychology** - Requires understanding the variation in everyone (leaders, employees, suppliers, and customers). You must learn the skills, knowledge, and attitudes of others in order to be able to optimize the system.

{button Related Topics,PI(`',`IDH_RT_Deming_4_Theories')} {button < Back,JI(`>Large',`IDH_Deming_s_Obstacles')} {button Next >,JI(`',`IDH_Why_Quality_Management')}

Use of Statistical Process Control Charts (SPC Charts) for Quality Programs

FlowCharter 7 lets you create many different kinds of charts in support of quality and process reengineering. Quality programs rely on effective communications. For quality programs, charts are the most common means of relaying data so that they can be readily understood. FlowCharter 7 automatically draws the basic charts often referred to in quality and reengineering manuals. With these charts, you can organize and show data so that you can analyze a process. Your analysis can not only describe and detect problems with the current process, but you can predict the progress of a process.

Statistical Process Control Charts (SPC Charts) are created using DataAnalyzer. SPC charts are invaluable statistical tools used for setting up and measuring quality control in manufacturing, process reengineering, process management, and quality assurance.

{button Related Topics,PI(`',`IDH_RT_Use_of_SPC')} {button < Back,JI(`>Large',`IDH_TQM_Measurement')}

Formatting toolbar

	Font list box	Changes the font of the selected text.
	Font Size list box	Changes the font size of the selected text.
	Bold button	Applies or removes bold format to selected text.
	Italic button	Applies or removes italic format to selected text.
	Underline button	Applies or removes underline format to selected text.
	Align Left button	Aligns worksheet text at the left indent.
	Center button	Centers worksheet text between indents.
	Align Right button	Aligns worksheet text at the right indent.
	Text Color button	Changes the color of the selected text.
	Fill Color button	Changes the color of the selected worksheet cell or chart area.
	Line Color button	Changes the color of the selected worksheet or chart line(s).

Applies or removes bold format to selected text.

Applies or removes italic format to selected text.

Applies or removes underline format to selected text.

Aligns worksheet text at the left indent.

Centers worksheet text between indents.

Aligns worksheet text at the right indent.

Text Color button

- The Text Color button changes the color of the selected text.

{button Related Topics,PI(`',`IDH_RT_Text_Color_Button_D')}

To format text color

Formatting toolbar

Changes the color of the selected text.

To color text

1 Select the text you want to color.

2 Click the Text Color button in the Formatting toolbar.

Text Color button

3 Click a color in the color palette.

{button Related Topics,PI(`',`IDH_RT_Format_Text_Color_D')}

To format line and border colors

To format cell and chart colors

Text Color button

Formatting toolbar

Changes the color of the selected worksheet cell or chart area.

Fill Color button

 The Fill Color button changes the color of the selected worksheet cell or chart area.

{button Related Topics,PI(``,`IDH_RT_Fill_Color_Button_D')}

To format worksheet cell and chart colors

Formatting toolbar

To color worksheet cells

1 Click the worksheet cell you want to color.

2 Click the Fill Color button in the Formatting toolbar.

Fill Color button

3 Click a color in the color palette.

{button Related Topics,PI(`',`IDH_RT_to_format_spreadsheet_cell_or_chart_colors')}

To color chart areas

1 Click the chart area you want to color.

2 Click the Fill Color button in the Formatting toolbar.

- Fill Color button

3 Click a color in the color palette.

{button Related Topics,PI(`',`IDH_RT_to_format_spreadsheet_cell_or_chart_colors')}

To format line and border colors

To format text color

Fill Color button

Formatting toolbar

Changes the color of the selected worksheet or chart line(s).

Line Color button

- The Line Color button changes the color of the selected worksheet or chart line(s).

{button Related Topics,PI(`',`IDH_RT_Line_Border')}

To format line and border colors

Formatting toolbar

To color worksheet lines

1 Click the worksheet line you want to color.

2 Click the Line Color button in the Formatting toolbar.

- Line Color button

3 Click a color in the color palette.

{button Related Topics,PI(`',`IDH_RT_Line_Border_Color_D')}

To color chart lines

1 Click the chart line you want to color.

2 Click the Line Color button in the Formatting toolbar.

- Line Color button

3 Click a color in the color palette.

{button Related Topics,PI(`',`IDH_RT_Line_Border_Color_D')}

To format cell and chart colors

To format text color

Line Color button

Formatting toolbar

Standard toolbar

	Cut button	Removes the selected values from the worksheet and places them on the Clipboard.
	Copy button	Copies the selected values to the Clipboard.
	Paste button	Pastes the values on the Clipboard into the worksheet.
	Undo button	Reverses the last command you executed.
	Data Import Wizard button	Imports worksheet data from a file, from the clipboard, or from FlowCharter 7 data fields.
	Format Cells button	Formats the number, alignment, border, pattern, and font of the selected worksheet cell(s).
	2-D to 3-D button	Displays the active SPC chart in 2-D or 3-D.
	Horizontal Grid button	Displays or hides horizontal gridlines in the current SPC chart.
	Vertical Grid button	Displays or hides vertical gridlines in the current SPC chart.
	Legend button	Displays or hides the legend for the active SPC chart.
	Help button	Displays information about the item you click on next.

Cut button

Copy button

Paste button

Undo button

Data Import Wizard button

Format Cells button

2-D to 3-D button

Horizontal Grid button

Vertical Grid button

Legend button

Help button

Displays information about the item you click on next.

Data Import wizard button

- The Data Import wizard button imports worksheet data from a file, from the clipboard, or from FlowCharter 7 data fields.

{button Related Topics,PI(``,`IDH_RT_Imp_Wiz')}

To import worksheet data into DataAnalyzer

Standard toolbar

Imports worksheet data from a file, from the clipboard, or from FlowCharter 7 data fields.

Format Cells button

- The Format Cells button formats the number, alignment, border, pattern, and font of the active worksheet cell(s).

{button Related Topics,PI(``,`IDH_RT_Format_Cells_Button')}

To format cell numbers
To format cell text alignment
To format cell borders
To format cell shading

To format cell text
To use formulas with cells
Format menu
Standard toolbar

Formats the number, alignment, border, pattern, and font of the active worksheet cell(s).

Displays the active SPC chart in 2-D or 3-D.

2-D to 3-D button

- The 2-D to 3-D button displays the active SPC chart in 2-D or 3-D.

{button Related Topics,PI(`',`IDH_RT_2D3D_Button')}

To format the chart appearance
To format the chart backdrop
To format 3-D chart views
To format 3-D chart lighting

To format 3-D chart base and walls
Format 3-D View command
Format Chart command
Format menu

Standard toolbar

Displays or hides horizontal gridlines in the active SPC chart.

Horizontal Grid button

- The Horizontal Grid button displays or hides horizontal gridlines in the active SPC chart.

{button Related Topics,PI(`',`IDH_RT_Horiz_Button')}

To display or hide chart gridlines

Insert menu

Standard toolbar

Displays or hides vertical gridlines in the active SPC chart.

Vertical Grid button

The Vertical Grid button displays or hides vertical gridlines in the active SPC chart.

{button Related Topics,PI(``,`IDH_RT_Vert_Button')}

To display or hide chart gridlines

Standard toolbar

Insert menu

Legend button

The Legend button displays or hides the legend for the active SPC chart.

Tip

- This legend is not the same as the legend for a FlowCharter 7 chart. A FlowCharter 7 chart's legend displays the totals for the fields in all the shapes in the chart. To work with FlowCharter 7 chart's legend, FlowCharter 7 must be active. With FlowCharter 7 active, click Legend on the Insert menu to activate FlowCharter 7 legends.

{button Related Topics,PI(`',`IDH_RT_Legend_Button')}

To format the SPC chart legend
Standard toolbar
Insert menu

Removes the selected values from the worksheet and places them on the Clipboard.

Copies the selected values to the Clipboard.

Pastes the values on the Clipboard into the worksheet.

Reverses the last command you executed.

Displays or hides the legend for the active SPC chart.

Tools menu

Click a command below to learn more about it.

Data Import wizard	Imports worksheet data from a file, from the clipboard, or from FlowCharter data fields.

{button Related Topics,PI(``,`IDH_RT_Tools_Menu_D')}

To import worksheet data
Data Import wizard command

Imports worksheet data from a file, from the clipboard, or from FlowCharter 7 data fields. The file can be an Excel file, a DataAnalyzer V1.0 file, a FlowCharter file with data fields, a tab-delimited text file, or data on the Windows clipboard.

Data Import wizard command

The Data Import wizard command opens the Data Import wizard that lets you mport worksheet data from a file, from the clipboard, or from FlowCharter 7 data fields.

{button Related Topics,PI(``,`IDH_RT_Data_Import_Wizard_Command')}

To import worksheet data

Tools menu

To import data into your chart

1 Click the Spreadsheet tab.

2 Click the Data Import wizard button.

- Data Import wizard button

3 Click Next.

4 Click the source that you want to import the data from. Click Next.

4 Browse or enter the name of the file that contains the data to import. Click Next.

5 Select a range for the data.

6 Drag the data to the current DataAnalyzer worksheet.

7 Click Finish.

Notes

- These steps assume that you are in DataAnalyzer and that you are in an active chart.

{button Related Topics,PI(``,`IDH_RT_Import_Worksheet_Data')}

Data Import wizard command

Tools menu

To drag the selected data, place the mouse pointer at the edge of the selected data. When the cursor turns to an arrow, you can drag the data to the worksheet.

Tip

- Move the wizard window to the side of the worksheet before you drag the data.

SPC chart formulas

Various formulas are used to calculate control line values in all the DataAnalyzer control charts. The formulas are the standard Shewhart formulas.

{button Related Topics,PI(``,`IDH_RT_SPC_Chart_Formulas')}

Moving Range chart formulas

$\overline{X}$ = Average of all individual data values
$\overline{R}$ = Average of all moving range values

X Chart Values

Central Control Line (CL) = $\overline{X}$

Upper Control Line (UCL) = $\overline{X}$ $+2.66\overline{R}$

Lower Control Line (LCL) = $\overline{X}$ $-2.66\overline{R}$

$\pm 2s$ Control Line = $CL \pm 2/3 * (UCL - CL)$

$\pm 1s$ Control Line = $CL \pm 1/3 * (UCL - CL)$

Moving Range Chart Values

Central Control Line (CL) = $\overline{R}$

Upper Control Line (UCL) = $3.267\overline{R}$

Lower Control Line = 0

{button Related Topics,PI(`',`IDH_RT_MR_Chart_Formulas')}

X Avg, R control chart formulas
P chart formulas
NP chart formulas
C chart formulas

SPC chart formulas

X Avg, R control chart formulas

$\overline{X}$ = Average of all data values in a subgroup
R = Range of a subgroup (Maximum value in subgroup - Minimum value in subgroup)
$\overline{\overline{X}}$ = Average of all X Values
$\overline{R}$ = Average of all R Values

X Avg Chart Values

Central Control Line (CL) = $\overline{\overline{X}}$

Upper Control Line (UCL) = $\overline{\overline{X}} + A_2\overline{R}$

Lower Control Line (LCL) = $\overline{\overline{X}} - A_2\overline{R}$

$\pm 2s$ Control Line = $CL \pm 2/3 * (UCL - CL)$

$\pm 1s$ Control Line = $CL \pm 1/3 * (UCL - CL)$

R Chart Values

Central Control Line (CL) = $\overline{R}$

Upper Control Line (UCL) = $D_4\overline{R}$

Lower Control Line = $D_3\overline{R}$

{button Related Topics,PI(``,`IDH_RT_XAvg_Chart_Formulas')}

Moving Range chart formulas

P chart formulas

NP chart formulas

C chart formulas

SPC chart formulas

P chart formulas

n = number inspected in a subgroup
p = number of rejects in a subgroup / number inspected in the subgroup
$\bar{p}$ = total number of rejects / total number inspected

Central Control Line (CL) = $\bar{p}$

Upper Control Line (UCL) = $\bar{p} + \frac{3\sqrt{\bar{p}(1-\bar{p})}}{\sqrt{n}}$ /

Lower Control Line (LCL) = $\bar{p} - \frac{3\sqrt{\bar{p}(1-\bar{p})}}{\sqrt{n}}$ /

{button Related Topics,PI(`',`IDH_RT_P_Chart_Formulas')}

Moving Range chart formulas
X Avg, R control chart formulas
NP chart formulas
C chart formulas

SPC chart formulas

NP chart formulas

n = number inspected in a subgroup
p = number of rejects in a subgroup / number inspected in the subgroup
$\bar{p}$ = total number of rejects / total number inspected

Central Control Line (CL) = $\bar{p}$

n

Upper Control Line (UCL) = $\bar{p}$

n
$+3$
$\sqrt{\bar{p}n(1 - \bar{p})}$

Lower Control Line (LCL) = $\bar{p}$

n
$- 3$
$\sqrt{\bar{p}n(1 - \bar{p})}$

{button Related Topics,PI(`',`IDH_RT_NP_Chart_Formulas')}

Moving Range chart formulas
X Avg, R control chart formulas
P chart formulas
C chart formulas

SPC chart formulas

C chart formulas

$\bar{c}$ = total defects in all subgroups / number of subgroups

Central Control Line (CL) = $\bar{c}$

Upper Control Line (UCL) = $\bar{c}$ $+3\sqrt{\bar{c}}$

Lower Control Line (LCL) = $\bar{c}$ $-3\sqrt{\bar{c}}$

{button Related Topics,PI(``,`IDH_RT_C_Chart_Formulas')}

Moving Range chart formulas
X Avg, R control chart formulas
P chart formulas
NP chart formulas

SPC chart formulas

View menu

Click a command below to learn more about it.

Spreadsheet	Displays the spreadsheet for the active chart.
Chart	Displays the chart for the active spreadsheet.
Calculation	Displays or hides the calculation columns for the active spreadsheet, if available.
Toolbars	Displays or hides the toolbars.

{button Related Topics,PI(``,`IDH_RT_View_Menu_D')}

Displays the spreadsheet for the active chart.

Spreadsheet command

The Spreadsheet command displays the spreadsheet for the active chart.

Displays the chart for the active spreadsheet.

Chart command

The Chart commands displays the chart for the active spreadsheet.

Displays the calculation columns for the active spreadsheet type, if the spreadsheet uses separate columns for chart values.

Calculation command

The Calcualtion command displays the calculation columns for the active spreadsheet type, if the spreadsheet uses separate columns for chart values.

{button Related Topics,PI(`',`IDH_RT_Calculation_Command')}

View menu

To view spreadsheet calculations

- On the View menu, click Calculation.

Displays or hides the toolbars.

Toolbars command

The Toolbars command displays or hides the toolbars.

{button Related Topics,PI(``,`IDH_RT_Toolbars_Command_D')}

Toolbars dialog box

Use this dialog box to hide or display the toolbars.

Tips

- You cannot change toolbar options when using the DataAnalyzer feature.
- For Help on a setting, click
- at the top of the dialog box, and then click the setting.You can also right-click the setting, and then click What's This?

{button Related Topics,PI(`',`IDH_RT_Toolbars_dialog_D')}

To choose color buttons
To choose toolbar button sizes
To show and hide toolbars
To show and hide ToolTips

Toolbars command
View menu

Specifies whether the DataAnalyzer Standard toolbar and/or Formatting toolbar is displayed.

Specifies whether the toolbar buttons are colored.

Tip

- You cannot change toolbar options when using the DataAnalyzer feature.

Specifies whether the DataAnalyzer toolbar buttons are large.

Tip

- You cannot change toolbar options when using the DataAnalyzer feature.

Specifies whether ToolTips are displayed after you hold the cursor over a toolbar item for a moment.

Tip

- You cannot change toolbar options when using the DataAnalyzer feature.

Format menu

Click a command below to learn more about it.

Selected Title	Formats the title of the active chart or chart axis.
Selected Axis	Formats the active chart axis.
Selected Series	Formats the pattern, edges, and color of the active chart fill area, point labels, and point markers.
Selected Legend	Formats the active chart legend.
Selected Control Lines	Formats the control lines of the active chart.
Chart	Formats the appearance, base and walls, and backdrop of the active chart.
3-D View	Formats the view and lighting of a 3-D chart.
Row	Formats the height of the worksheet row(s).
Column	Formats the width of the worksheet column(s).
Cells	Formats the number, alignment, border, pattern, and font of the worksheet cell(s).

{button Related Topics,PI(``,`IDH_RT_Format_Menu_D')}

Selected Title command
Selected Axis command
Selected Series command
Selected Legend command

Selected Control Line command
Chart command
3-D View command
Row command

Column command
Cells command

Lets you format the selected chart title, axis, series, legend, or control line.

Selected Title command

The Selected Title command lets you format the title of the active chart or chart axis.

{button Related Topics,PI(``,`IDH_RT_Sel_Title')}

To format titles

To select title text sizes

To select title text fonts

To select title text styles

To color title text

Format menu

To format titles

1 Click the title.

2 On the Format menu, click Selected Title.

3 Click the Font tab.

4 Click the font you want in the Font list box.

5 Click the font size you want in the Size list box.

6 You may make the text bold, italic, underline, and/or strikethrough by clicking on the appropriate Effects check box.

7 To change the text color, click a color in the Color palette.

8 Click OK.

Tips

- You can also double-click the title to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also color the text by clicking the Text Color button on the Formatting toolbar.

  Text Color button
- You can also bold, italicize, or underline the text by clicking the Bold, Italic, or Underline button on the Formatting toolbar.

  Bold button Italic button  Underline button

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{button Related Topics,PI(`',`IDH_RT_Format_Titles')}

To select title text sizes
To select title text fonts
To select title text styles
To color title text

Selected Title command
Format menu

To select title fonts

1 Select or click the text you want to format.

2 On the Format menu, click Selected Title.

3 Click the Font tab.

4 Click the font you want in the Font list box.

5 Click OK.

Tips

- You can also use the Format Cell button to access the Format Cell dialog box.

Format Cell button

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Selecting_Title_Fonts')}

To fomat titles
To select title text sizes
To select title text styles
To color title text

Selected Title command
Format menu

To select title text size

1 Select or click the text you want to format.

2 On the Format menu, click Selected Title.

3 Click the Font tab.

4 Click the font size you want in the Size list box.

5 Click OK.

Tips

- You can also use the Formatting toolbar buttons to format text.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Selecting_Title_Sizes')}

To fomat title text

To select title text fonts

To select title text styles

To color title text

Selected Title command

Format menu

To select title text styles

1 Select or click the text you want to format.

2 On the Format menu, click Selected Title.

3 Click the Font tab.

4 You may make the text bold, italic, underline, and/or strikethrough by clicking on the appropriate Effects check box.

5 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also bold, italicize, or underline the text by clicking the Bold, Italic, or Underline button on the Formatting toolbar.

Bold button Italic button Underline button

{button Related Topics,PI(``,`IDH_RT_Selecting_Title_Text_Styles')}

To color title text

To fomat title text

To select title text fonts

To select title text sizes

Selected Title command

Format menu

To color title text

1 Select or click the text you want to format.

2 On the Format menu, click Selected Title.

3 Click the Font tab.

4 To change the text color, click a color in the Color palette.

5 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also color the text by clicking the Text Color button on the Formatting toolbar.

  Text Color button

{button Related Topics,PI(``,`IDH_RT_Coloring_Title_Text')}

To fomat title text

To select title text fonts

To select title text sizes

To color title text

Selected Title command

Format menu

Format menu

Format Title dialog box - Title tab

Use this dialog box to format the active title. Type the title in the Text box.

Tip

- Press **CTRL** + **ENTER** to move to the next line.

{button Related Topics,PI(`',`IDH_RT_Format_Title_Dialog')}

Provides a space for you to type a title for the active chart text. (For multi-line titles, press **Ctrl + Enter** to move to the next line.)

Format Title dialog box - Font tab

Use this dialog box to format the active title text.

{button Related Topics,PI(``,`IDH_RT_Format_Title_Font_Dialog')}

To set up titles or cell text

To set up titles

Lists the available text fonts. Type or click the text font you want.

Lists the available font sizes. Type or click the font size you want.

Specifies whether the text is bold.

Specifies whether the text is italicized.

Specifies whether the text is underlined.

Specifies whether the text is strike through text.

Lists the available text colors. Click the text color you want.

Selected Axis command

The Selected Axis command lets you format the active chart axis.

{button Related Topics,PI(``,`IDH_RT_Sel_Axis')}

To set up an axis

1 Cick the axis you want to format.

2 On the Format menu, click Selected Axis.

3 Format the appearance, scale, grid(s), and font, as you want.

4 Click OK.

{button Related Topics,PI(``,`IDH_RT_Format_Axis')}

To set up axis appearance
To select axis scales
To set up major grids
To set up minor grids

To format axis text
Selected Title command
Format menu

To format axis text

1. Click the title.
2. On the Format menu, click Selected Axis.
3. Click the Font tab.
4. Click the font you want in the Font list box.
5. Click the font size you want in the Size list box.
6. You may make the text bold, italic, underline, and/or strikethrough by clicking on the appropriate Effects check box.
7. To change the text color, click a color in the Color palette.
8. Click OK.

Tips

- You can also double-click the title to bring up the dialog box.
- You can also color the text by clicking the Text Color button on the Formatting toolbar.

  Text Color button
- You can also bold, italicize, or underline the text by clicking the Bold, Italic, or Underline button on the Formatting toolbar.

  Bold button Italic button Underline button

{button Related Topics,PI(``,`IDH_RT_Formatting_Axis_Text')}

To select axis fonts
To select axis text sizes
To select axis text styles
To color axis text

Selected Axis command
Format menu

To select axis fonts

1 Select or click the text you want to format.

2 On the Format menu, click Selected Axis.

3 Click the Font tab.

4 Click the font you want in the Font list box.

5 Click OK.

Tips

- You can also use the Formatting toolbar buttons to format text.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Selecting_Axis_Fonts')}

To fomat axis text
To select axis text sizes
To select axis text styles
To color axis text

Selected Axis command
Format menu

To select axis text sizes

1 Select or click the text you want to format.

2 On the Format menu, click Selected Axis.

3 Click the Font tab.

4 Click the font size you want in the Size list box.

5 Click OK.

Tips

- You can also use the Formatting toolbar buttons to format text.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Selecting_Axis_Text_Sizes')}

To fomat axis text
To select axis text fonts
To select axis text styles
To color axis text

Selected Axis command
Format menu

To select axis text styles

1 Select or click the text you want to format.

2 On the Format menu, click Selected Axis.

3 Click the Font tab.

4 You may make the text bold, italic, underline, and/or strikethrough by clicking on the appropriate Effects check box.

5 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also bold, italicize, or underline the text by clicking the Bold, Italic, or Underline button on the Formatting toolbar.

Bold button Italic button Underline button

{button Related Topics,PI(``,`IDH_RT_Selecting_Axis_Text_Styles')}

To fomat axis text
To select axis text sizes
To select axis text fonts
To color axis text

Selected Axis command
Format menu

To color axis text

1 Select or click the text you want to format.

2 On the Format menu, click Selected Axis.

3 Click the Font tab.

4 To change the text color, click a color in the Color palette.

5 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also color the text by clicking the Text Color button on the Formatting toolbar.
  - Text Color button

{button Related Topics,PI(``,`IDH_RT_Coloring_axis_Text')}

To fomat axis text
To select axis text sizes
To select axis text styles
To select axis text fonts

Selected Axis command
Format menu

To set up axis appearance

1 From the active chart, click the chart axis you want to format.

2 On the Format menu, click Selected Axis.

3 To color the axis, click a color in the Color palette.

4 To change the axis line width, type a number for the width in the Width text box: 1 - 16. (1 is thinnest; 16 is thickest.)

5 Click a location for the axis tick marks in the Location list box. You can select: None, Center, Inside, or Outside.

6 To change the width of a tick mark, type a number in the Size text box: 1 - 16. (1 is thinnest; 16 is thickest.)

7 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also color the axis by clicking the Line/Border Color button on the Formatting toolbar.

  Line/Border Color button

{button Related Topics,PI(`',`IDH_RT_Axis_Appear')}

To color the axis
To select axis line widths
To move axis tick marks
To select axis tick mark widths
To format axis text

Selected Axis command
Format menu

To color the axis

1 Cick the axis you want to color.

2 On the Format menu, click Selected Axis.

3 Cick a color in the Color palette.

4 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also color the axis by clicking the Line/Border Color button on the Formatting toolbar.
  - Line/Border Color button

{button Related Topics,PI(``,`IDH_RT_Axis_Color')}

To select axis line widths
To move axis tick marks
To select axis tick mark widths
To format axis text

Selected Axis command
Format menu

To select axis line widths

1 Click the axis you want to format.

2 On the Format menu, click Selected Axis.

3 Type a number in the Width text box: 1 - 16. (1 is thinnest; 16 is thickest.)

4 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Axis_Line_Width')}

To move axis tick marks

1 From the active chart, click the chart axis you want to format.

2 On the Format menu, click Selected Axis.

3 Click the Appearance tab.

4 In the Location list box, click the place you want the tick marks: None, Center, Inside, or Outside.

5 Click OK.

Tip

- You can click the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Axis_Tick_Locations')}

To select axis tick mark widths

1 Click the chart axis you want to format.

2 On the Format menu, click Selected Axis.

3 To change the axis tick mark width, type a number for the width in the Size text box: 1 - 16. (1 is thinnest; 16 is thickest.)

4 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Axis_Tick_Width')}

To set up axis scales

1 Click the chart axis you want to format.

2 On the Format menu, click Selected Axis.

3 Click the Scale tab.

4 Clear the Auto Scale check box.

5 In the Maximum text box, type the maximum value that you want to be displayed on the active axis scale.

6 In the Minimum text box, type the minimum value that you want to be displayed on the active axis scale.

7 In the Major Divisions text box, type the number of major divisions that you want to be displayed on the active axis scale.

8 In the Minor Divisions text box, type the number of minor divisions that you want to be displayed between each major division on the active axis scale.

9 Click OK.

Note

- When the Auto Scale check box is cleared, DataAnalyzer does not automatically calculate the axis.

{button Related Topics,PI(``,`IDH_RT_Axis_Scale')}

To select minimum axis scale values
To select maximum axis scale values
To select number of major axis scale divisions
To select number of minor axis scale divisions

To select axis appearance
To format axis text
Selected Axis command
Format menu

To select maximum axis scale values

1 From the active chart, click the chart axis you want to format.

2 On the Format menu, click Selected Axis.

3 Click the Scale tab.

4 Clear the Auto Scale check box.

5 In the Maximum text box, type the maximum value that you want to be displayed on the active axis scale.

6 Click OK.

Tips

- When the Auto Scale check box is cleared, DataAnalyzer does not automatically calculate the axis.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Axis_Scale_Max')}

To select minimum axis scale values
To select number of major axis scale divisions
To select number of minor axis scale divisions
Selected Axis command

Format menu

To select minimum axis scale values

1 From the active chart, click the chart axis you want to format.

2 On the Format menu, click Selected Axis.

3 Click the Scale tab.

4 Clear the Auto Scale check box.

5 In the Minimum text box, type the minimum value that you want to be displayed on the active axis scale.

6 Click OK.

Note

- When the Auto Scale check box is cleared, DataAnalyzer does not automatically calculate the axis.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Axis_Scale_Min')}

To select number of major axis scale divisions

1 From the active chart, click the chart axis you want to format.

2 On the Format menu, click Selected Axis.

3 Click the Scale tab.

4 Clear the Auto Scale check box.

5 In the Major Divisions text box, type the number of major divisions that you want to be displayed on the active axis scale.

6 Click OK.

Note

- When the Auto Scale check box is cleared, DataAnalyzer does not automatically calculate the axis.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Axis_Scale_Major_Div')}

To select number of minor axis scale divisions

1 From the active chart, click the chart axis you want to format.

2 On the Format menu, click Selected Axis.

3 Click the Scale tab.

4 Clear the Auto Scale check box.

5 In the Minor Divisions text box, type the number of minor divisions that you want to be displayed between each major division on the active axis scale.

6 Click OK.

Note

- When the Auto Scale check box is cleared, DataAnalyzer will not automatically calculate the axis.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Axis_Scale_Minor_Div')}

To set up major grids

1 From the active chart, click the chart axis you want to format.

2 On the Format menu, click Selected Axis.

3 Click the Major Grid tab.

4 Select the Visible check box.

5 In the Pen Color list box, click the color you want from the color palette.

6 In the Pen Style list box, click the pen style you want for the major gridlines: Solid, Dashed, or Dotted.

7 In the Pen Width text box, type (or select) the relative pen width for the major gridlines: 1 - 16. (1 is thinnest; 16 is thickest.)

8 Click OK.

Tips

- To hide the major gridlines, clear the Visible check box or press the **DEL** key.
- You can also color the grid by clicking the Line/Border Color button on the Formatting toolbar.
  - Line/Border Color button

{button Related Topics,PI(`',`IDH_RT_Major_Grid')}

To hide or display axis gridlines

1 From the active chart, click the chart axis that contains the gridlines you want to hide or display.

2 On the Format menu, click Selected Axis.

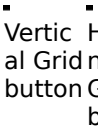
3 Click the Major Grid or Minor Grid tab.

4 If you want to hide the gridlines, clear the Visible check box. To display the gridlines, make sure the Visible check box is selected.

5 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also hide gridlines by clicking the gridlines and pressing the **DEL** key.
- You can also display or hide gridlines by clicking the Vertical Grid or Horizontal Grid button on the Standard toolbar.



{button Related Topics,PI(``,`IDH_RT_Grid_Hide')}

To color axis gridlines

1 From the active chart, click the chart axis you want to format.

2 On the Format menu, click Selected Axis.

3 Click the Major Grid or Minor Grid tab.

4 In the Pen Color list box, click the gridline color you want from the color palette.

5 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also format the gridline color by clicking the Line/Border Color button on the Formatting toolbar.

Line/Border Color button

{button Related Topics,PI(``,`IDH_RT_Grid_Color')}

To select axis gridline styles

1 From the active chart, click the chart axis you want to format.

2 On the Format menu, click Selected Axis.

3 Click the Major Grid or Minor Grid tab.

4 In the Pen Style list box, click the pen style you want for the gridlines: Solid, Dashed, or Dotted.

5 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Grid_Style')}

To select axis scales
To set up minor grids
To hide or display axis gridlines
To color axis gridlines

To select axis gridline widths
To format axis text
Selected Axis command
Format menu

To select axis gridline widths

1 From the active chart, click the chart axis you want to format.

2 On the Format menu, click Selected Axis.

3 Click the Major Grid or Minor Grid tab.

4 In the Pen Width text box, type (or click) the relative pen width for the gridlines: 1 - 16. (1 is thinnest; 16 is thickest.)

5 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Grid_Width')}

To set up minor grids

1 From the active chart, click the chart axis you want to format.

2 On the Format menu, click Selected Axis.

3 Click the Minor Grid tab.

4 Select the Visible check box. (If you want to hide the minor gridlines, clear the Visible check box)

5 In the Pen Color list box, click the minor gridline color you want from the color palette.

6 In the Pen Style list box, click the pen style you want for the minor gridlines: Solid, Dashed, or Dotted.

7 In the Pen Width text box, type (or click) the relative pen width for the minor gridlines: 1 - 16. (1 is thinnest; 16 is thickest.)

8 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also format the gridline color by clicking the Line/Border Color button on the Formatting toolbar.

Line/Border Color button

{button Related Topics,PI(`',`IDH_RT_Minor_Grid')}

Format Axis dialog box - Appearance Tab

Use this dialog box to change the appearance of the active chart axis.

{button Related Topics,PI(``,`IDH_RT_Format_Axis_Appear_Dialog')}

To select axis appearance
To select axis scales
To set up major grids
To set up minor grids

To format axis text
Selected Axis command
Format menu

Lists the available pen colors. Click the pen color you want.

Lists the available pen colors. Click the pen color you want.

Specifies the pen width and provides a space for you to type the pen width: 1 - 16.

Specifies the pen width and provides a space for you to type the pen width: 1 - 16.

Lists the available tick mark locations. Click the tick mark location you want: Center, None, Inside, or Outside.

Specifies the tick mark size and provides a space for you to type the size: 1 - 16.

Format Axis dialog box - Scale Tab

Use this dialog box to change the scale of the active chart axis.

{button Related Topics,PI(`',`IDH_RT_Format_Axis_Scale_Dialog')}

To select axis scales
To select axis appearance
To set up major grids
To set up minor grids

To format axis text
Selected Axis command
Format menu

Specifies whether the axis scale is based on the data being charted. Uncheck this box to manually scale the axis.

Specifies the maximum value that is displayed on the active value (Y) axis scale and provides a space for you to type the value.

Specifies the minimum value that is displayed on the active value (Y) axis scale and provides a space for you to type the value.

Specifies the number of labels displayed for each division on the active category (X) axis scale. A value of 1 labels every division. A value greater than 1 labels the first division and skips the labels for the extra divisions.

Specifies the number of tick marks displayed for each division on the active category (X) axis scale. A value of 1 displays a tick mark at every division. A value greater than 1 displays a tick mark at the first division and skips the tick marks for the extra divisions.

Specifies the number of major division lines that are displayed on the active value (Y) axis scale and provides a space for you to type the number.

Lists the available number of bars displayed in a Histogram chart. (Automatic causes DataAnalyzer to determine the number of bars based on the chart data set.)

Specifies the number of minor division lines that are displayed within the major division lines on the active value (Y) axis scale and provides a space for you to type the number.

Format Axis dialog box - Major Grid Tab

Use this dialog box to format the major grid axis of the active chart.

{button Related Topics,PI(`',`IDH_RT_Format_Axis_Maj_Grid_Dialog')}

To set up major grids
To set up minor grids
To select axis scales
To select axis appearance

To format axis text
Selected Axis command
Format menu

Specifies whether the chart grid is visible.

Lists the available pen styles. Click the pen style you want: Solid, Dashed, or Dotted.

Format Axis dialog box - Minor Grid Tab

Use this dialog box to format the minor grid axis of the active chart.

{button Related Topics,PI(`',`IDH_RT_Format_Axis_Min_Grid_Dialog')}

To set up minor grids
To set up major grids
To select axis scales
To select axis appearance

To format axis text
Selected Axis command
Format menu

Format Axis dialog box - Font Tab

Use this dialog box to format the active chart axis text.

{button Related Topics,PI(`',`IDH_RT_Format_Axis_Font_Dialog')}

To format axis text
To set up minor grids
To set up major grids
To select axis scales

To select axis appearance
Selected Axis command
Format menu

Selected Series command

The Selected Series command lets you format the pattern, edges, and color of the active chart fill area, point labels, and point markers.

{button Related Topics,PI(``,`IDH_RT_Sel_Series')}

To set up series

Format menu

To set up series

1 From the active chart, click the series you want to format.

2 On the Format menu, click Selected Series.

3 Format the appearance, point markers, point labels, and font, as you want.

4 Click OK.

Tips

- You can also double-click the series to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Format_Series')}

To set up series appearance
To set up series point markers
To set up series point labels
To format series text

Selected Series command
Format menu

To set up the series appearance

1 From the active chart, click the chart series you want to format.

2 On the Format menu, click Selected Series.

3 If the selected series is a fill area, you can fill the area with a different color by clicking a color in the Fill Color palette. Go to step 7.

4 If the selected series is a line, you can assign a color to the line by clicking a color on the Color palette.

5 To change the line width, type a number for the width in the Pen Width text box: 1 - 16. (1 is thinnest; 16 is thickest.)

6 To change the line style, click a style in the Style list box: Solid or Dashed.

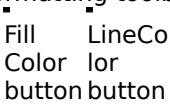
7 To display edges, ensure the Display Edges check box is selected.

8 To assign a color to the series edges, click a color on the Pen Color palette.

9 Click OK.

Tips

- Step 3 or steps 4 through 6 may not be applicable, depending on whether the selected series is a line or fill area.
- The Dotted line style is not available on line series.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also color the fill or line by clicking the Fill Color button or Line/Border color button on the Formatting toolbar.



{button Related Topics,PI(`',`IDH_RT_Series_Appear')}

To color series fills
To color series lines
To select series line widths
To select series line styles

To hide or display series edges
To color series edges
To set up series point markers
To set up series point labels

Selected Series command
Format menu

To select series fill color

1 From the active chart, click the chart series area you want to color.

2 On the Format menu, click Selected Series.

3 To fill the selected area with a different color, click a color in the Fill Color palette.

4 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also format the chart fill color by clicking the Fill Color button on the Formatting toolbar.

  Fill Color button

{button Related Topics,PI(``,`IDH_RT_Series_Fill_Color')}

To color series lines
To select series line widths
To select series line styles
To hide or display series edges

To color series edges
Selected Series command
Format menu

To color series lines

1 From the active chart, click the chart series line you want to color.

2 On the Format menu, click Selected Series.

3 To assign a different color to the series line, click a color in the Color palette.

4 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also format the chart series line color by clicking the Line/Border Color button on the Formatting toolbar.

  - Line/Border Color button

{button Related Topics,PI(``,`IDH_RT_Series_Line_Color')}

To color series fills
To select series line widths
To select series line styles
To hide or display series edges

To color series edges
Selected Series command
Format menu

To select series line widths

1 From the active chart, click the chart series line you want to format.

2 On the Format menu, click Selected Series.

3 To change the series line width, type a number for the width in the Pen Width text box: 1 - 16. (1 is thinnest; 16 is thickest.)

4 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Series_Line_Width')}

To color series fills
To color series lines
To select series line styles
To hide or display series edges

To color series edges
Selected Series command
Format menu

To select series line styles

1 From the active chart, click the chart series line you want to format.

2 On the Format menu, click Selected Series.

3 To change the series line style, click a style in the Style list box: Solid or Dashed.

4 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- The Dotted line style is not available on line series.

{button Related Topics,PI(``,`IDH_RT_Series_Line_Style')}

To color series fills
To color series lines
To select series line widths
To hide or display series edges

To color series edges
Selected Series command
Format menu

To hide or display series edges

1 From the active chart, click the chart series that contains the edges you want to hide or display.

2 On the Format menu, click Selected Series.

3 To hide edges, ensure that the Display Edges check box is cleared. To display edges, ensure that the Display Edges check box is selected.

4 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Series_Edges')}

To color series fills
To color series lines
To select series line widths
To select series line styles

To color series edges
Selected Series command
Format menu

To color series edges

1 From the active chart, click the series that contains the edges you want to color.

2 On the Format menu, click Selected Series.

3 To assign a color to the edges, click a color in the Pen Color palette.

4 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Series_Edges_Color')}

To color series fills
To color series lines
To select series line widths
To select series line styles

To hide or display series edges
Selected Series command
Format menu

To set up series point markers

1 From the active chart, click the chart series you want to format.

2 On the Format menu, click Selected Series.

3 Click the Point Markers tab.

4 To display the point markers, ensure that the Show Markers check box is selected. (To hide markers, clear the Show Markers check box.)

5 To change the marker style, click a style in the Style list box.

6 To change the marker size, type a number for the size in the Size text box: 1 - 16. (1 is thinnest; 16 is thickest.)

7 To change the marker pen width, type a number for the width in the Pen Width text box: 1 - 16. (1 is thinnest; 16 is thickest.)

8 To assign a color to the point markers, click a color in the Color palette.

9 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Series_Markers')}

To hide or display series point markers
To select series point marker styles
To select series point marker sizes
To select series point marker widths

To color series point markers
Selected Series command
Format menu

To hide or display series point markers

1 From the active chart, click the chart series that contains the markers you want to hide or display.

2 On the Format menu, click Selected Series.

3 Click the Point Markers tab.

4 To display the point markers, ensure that the Show Markers check box is selected. (To hide markers, clear the Show Markers check box.)

5 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Series_Markers_Hide')}

To select series point marker styles
To select series point marker sizes
To select series point marker widths
To color series point markers

Selected Series command
Format menu

To select series point marker styles

1 From the active chart, click the chart series that contains the markers you want to format.

2 On the Format menu, click Selected Series.

3 Click the Point Markers tab.

4 To change the marker style, click a style in the Style list box.

5 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Series_Markers_Style')}

To hide or display series point markers
To select series point marker sizes
To select series point marker widths
To color series point markers

Selected Series command
Format menu

To select series point marker sizes

1 From the active chart, click the chart series that contains the markers you want to format.

2 On the Format menu, click Selected Series.

3 Click the Point Markers tab.

4 To change the marker size, type a number for the size in the Size text box: 1 - 16. (1 is thinnest; 16 is thickest.)

5 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Series_Markers_Size')}

To hide or display series point markers
To select series point marker styles
To select series point marker widths
To color series point markers

Selected Series command
Format menu

To select series point marker widths

1 From the active chart, click the chart series that contains the markers you want to format.

2 On the Format menu, click Selected Series.

3 Click the Point Markers tab.

4 To change the marker width, type a number for the width in the Pen Width text box: 1 - 16. (1 is thinnest; 16 is thickest.)

5 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Series_Markers_Width')}

To hide or display series point markers
To select series point marker styles
To select series point marker sizes
To color series point markers

Selected Series command
Format menu

To color series point markers

1 From the active chart, click the chart series that contains the markers you want to color.

2 On the Format menu, click Selected Series.

3 Click the Point Markers tab.

4 To assign a color to the markers, click a color in the Color palette.

5 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Series_Markers_Color')}

To hide or display series point markers
To select series point marker styles
To select series point marker sizes
To select series point marker widths

Selected Series command
Format menu

To set up series point labels

1 From the active chart, click the chart series you want to format.

2 On the Format menu, click Selected Series.

3 Click the Point Labels tab.

4 To display the point labels, ensure that the Show Labels check box is selected. (To hide labels, clear the Show Labels check box.)

5 To change the label location, click a location in the Location list box: Above Point or Below Point.

6 To change the label line style, click a style in the line Style list box: None, Line, or Angled Line.

7 To change the label orientation, click the orientation you want: Horizontal, Vertical, Up, or Down.

8 Click OK.

Tips

- You can also double-click the series to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Series_Labels')}

To move series point labels
To select series point label line styles
To orient series point labels
Selected Series command

Format menu

To hide or display series point labels

1 From the active chart, click the chart series that contains the point labels you want to format.

2 On the Format menu, click Selected Series.

3 Click the Point Labels tab.

4 To display the labels, ensure that the Show Labels check box is selected. (To hide the labels, clear the Show Labels check box.)

5 Click OK.

Tips

- You can also double-click the series to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Series_Labels_Hide')}

To move series point labels
To select series point label line styles
To orient series point labels
Selected Series command

Format menu

To move the series point labels

1 From the active chart, click the chart series that contains the point labels you want to format.

2 On the Format menu, click Selected Series.

3 Click the Point Labels tab.

4 To change the label location, click a location in the Location list box: Above Point or Below Point.

5 Click OK.

Tips

- You can also double-click the series to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Series_Labels_Location')}

To hide or display series point labels
To select series point label line styles
To orient series point labels
Selected Series command

Format menu

To select series point label line style

1 From the active chart, click the chart series that contains the point labels you want to format.

2 On the Format menu, click Selected Series.

3 Click the Point Labels tab.

4 To change the label line style, click a style in the line Style list box: None, Line, or Angled Line.

5 Click OK.

Tips

- You can also double-click the series to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Series_Labels_Style')}

To hide or display series point labels
To move the series point labels
To orient series point labels
Selected Series command

Format menu

To orient series point labels

1 From the active chart, click the chart series that contains the point labels you want to format.

2 On the Format menu, click Selected Series.

3 Click the Point Labels tab.

4 To change the label orientation, click the orientation you want: Horizontal, Vertical, Up, or Down.

5 Click OK.

Tips

- You can also double-click the series to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Series_Labels_Orientation')}

To hide or display series point labels
To move the series point labels
To select series point label line styles
Selected Series command

Format menu

To format series text

1 Select or click the series you want to format.

2 On the Format menu, click Selected Series.

3 Click the Font tab.

4 Click the font you want in the Font list box.

5 Click the font size you want in the Size list box.

6 You may make the text bold, italic, underline, and/or strikethrough by clicking on the appropriate Effects check box.

7 To change the text color, click a color in the Color palette.

8 Click OK.

Tips

- You can also double-click the series to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also color the text by clicking the Text Color button on the Formatting toolbar.

  Text Color button
- You can also bold, italicize, or underline the text by clicking the Bold, Italic, or Underline button on the Formatting toolbar.

  Bold button

  Italic button

  Underline button

{button Related Topics,PI(``,`IDH_RT_Formatting_Series_Text')}

To select series fonts
To select series text sizes
To select series text styles
To color series text

Selected Series command
Format menu

To select series fonts

1 Select or click the text you want to format.

2 On the Format menu, click Selected Series.

3 Click the Font tab.

4 Click the font you want in the Font list box.

5 Click OK.

Tips

- You can also double-click the series to bring up the dialog box.
- You can also use the Formatting toolbar buttons to format text.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Selecting_Series_Fonts')}

To select series text sizes

1 Select or click the text you want to format.

2 On the Format menu, click Selected Series.

3 Click the Font tab.

4 Click the font size you want in the Size list box.

5 Click OK.

Tips

- You can also double-click the series to bring up the dialog box.
- You can also use the Formatting toolbar buttons to format text.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Selecting_Series_Sizes')}

To select series text fonts
To select series text styles
To color series text
Selected Series command

Format menu

To select series text styles

1 Select or click the text you want to format.

2 On the Format menu, click Selected Title.

3 Click the Font tab.

4 You may make the text bold, italic, underline, and/or strikethrough by clicking on the appropriate Effects check box.

5 Click OK.

Tips

- You can also double-click the series to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also bold, italicize, or underline the text by clicking the Bold, Italic, or Underline button on the Formatting toolbar.

Bold button Italic button Underline button

{button Related Topics,PI(``,`IDH_RT_Selecting_Series_Text_Styles')}

To select series text fonts
To select series text sizes
To color series text
Selected Series command

Format menu

To color series text

1 Select or click the text you want to format.

2 On the Format menu, click Selected Title.

3 Click the Font tab.

4 To change the text color, click a color in the Color palette.

5 Click OK.

Tips

- You can also double-click the series to bring up the dialog box.
- You can also use the Formatting toolbar buttons to format text.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also color the text by clicking the Text Color button on the Formatting toolbar.
  - Text Color button

{button Related Topics,PI(``,`IDH_RT_Coloring_Series_Text')}

To fomat series text
To select series text fonts
To select series text sizes
To select series text styles

Selected Series command
Format menu

Format Series dialog box - Appearance Tab

Use this dialog box to format the appearance of the active chart fill area.

{button Related Topics,PI(`',`IDH_RT_Format_Series_Appear_Dialog')}

To set up series appearance
To set up series point markers
To set up series point labels
To set up series text

Selected Series command
Format menu

Lists the available colors for the selected item. Click the color you want.

Specifies whether edges are displayed.

Lists the available colors for the edges. Click the edge color you want.

Format Series dialog box - Point Markers Tab

Use this dialog box to format the point markers on the active chart fill area.

{button Related Topics,PI(`',`IDH_RT_Format_Series_Pt_Mkr_Dialog')}

To set up series point markers
To select series point labels
To set up series text
Selected Series command

Format menu

Specifies whether point markers are displayed.

Lists the available point marker styles. Click the style you want.

Specifies the number of points for the marker diameter and provides a space for you to type the size: 1 - 16.

Specifies the width of the lines that form the marker and provides a space for you to type the width: 1 - 16.

Lists the available colors for the point markers. Click the color you want.

Format Series dialog box - Point Labels Tab

Use this dialog box to format the point labels.

{button Related Topics,PI(``,`IDH_RT_Format_Series_Pt_Labels_Dialog')}

To set up series point labels
To set up series point markers
To set up series text
Selected Series command

Format menu

Specifies whether point labels are displayed.

Lists the available locations for the point labels. Click the location you want: Above Point or Below Point.

Lists the available line styles for the point labels. Click the style you want: None, Line, or Angled Line.

Specifies that the point labels are oriented in the horizontal plane.

Specifies that the point labels are oriented in the vertical plane.

Specifies that the point labels are oriented in the up position; that is, the text is displayed in the vertical plane with the first character of the label closest to the bottom of the chart.

Specifies that the point labels are oriented in the down position; that is, the text is displayed in the vertical plane with the first character of the label closest to the top of the chart.

Format Series dialog box - Font Tab

You can change the style of the point label text in this dialog box.

Tip

- To change the text at the bottom of the bars on a Pareto chart, double-click on the text, and click on the Font tab. (This text is the axis text.)

{button Related Topics,PI(`',`IDH_RT_Format_Series_Font_Dialog')}

To set up series text
To set up series point labels
To set up series point markers
Selected Series command

Format menu

Selected Legend command

The Selected Legend command lets you format the active chart legend.

{button Related Topics,PI(`',`IDH_RT_Sel_Legend')}

To set up legends

1 In the active chart, click the chart legend.

2 On the Format menu, click Selected Legend.

3 Format the appearance, backdrop, and font, as you want.

4 Click OK.

Tips

- You can also double-click the legend to bring up the dialog box.
- You can also use the Formatting toolbar buttons to format text.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Format_Legend')}

To format legend text

1. Click the title.
2. On the Format menu, click Selected Legend.
3. Click the Font tab.
4. Click the font you want in the Font list box.
5. Click the font size you want in the Size list box.
6. You may make the text bold, italic, underline, and/or strikethrough by clicking on the appropriate Effects check box.
7. To change the text color, click a color in the Color palette.
8. Click OK.

Tips

- You can also double-click the legend to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also color the text by clicking the Text Color button on the Formatting toolbar.

  Text Color button
- You can also bold, italicize, or underline the text by clicking the Bold, Italic, or Underline button on the Formatting toolbar.

  Bold button Italic button Underline button

{button Related Topics,PI(``,`IDH_RT_Formatting_Legend_Text')}

To select legend fonts

1 Select or click the text you want to format.

2 On the Format menu, click Selected Legend.

3 Click the Font tab.

4 Click the font you want in the Font list box.

5 Click OK.

Tips

- You can also double-click the legend to bring up the dialog box.
- You can also use the Formatting toolbar buttons to format text.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Selecting_Legend_Fonts')}

To select legend text sizes

1 Select or click the text you want to format.

2 On the Format menu, click Selected Legend.

3 Click the Font tab.

4 Click the font size you want in the Size list box.

5 Click OK.

Tips

- You can also double-click the legend to bring up the dialog box.
- You can also use the Formatting toolbar buttons to format text.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Selecting_Legend_Text Sizes')}

To select legend text fonts
To select legend text styles
To color legend text
Selected Legend command

Format menu

To select legend styles

1 Select or click the text you want to format.

2 On the Format menu, click Selected Legend.

3 Click the Font tab.

4 You may make the text bold, italic, underline, and/or strikethrough by clicking on the appropriate Effects check box.

5 Click OK.

Tips

- You can also double-click the legend to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also bold, italicize, or underline the text by clicking the Bold, Italic, or Underline button on the Formatting toolbar.

Bold button Italic button Underline button

{button Related Topics,PI(``,`IDH_RT_Selecting_Legend_Text_Styles')}

To color legend text

1 Select or click the text you want to format.

2 On the Format menu, click Selected Legend.

3 Click the Font tab.

4 To change the text color, click a color in the Color palette.

5 Click OK.

Tips

- You can also double-click the legend to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also color the text by clicking the Text Color button on the Formatting toolbar.
  - Text Color button

{button Related Topics,PI(``,`IDH_RT_Coloring_Legend_Text')}

To set up legend appearance

1 In the active chart, click the chart legend.

2 On the Format menu, click Selected Legend.

3 To hide the legend, click the Show Legend check box.

4 To change the location of the legend on the chart, click the Location you want: Left or Right.

5 Click OK.

Tips

- This legend is not the same as the legend for a FlowCharter chart. A FlowCharter chart's legend displays the totals for the fields in all the shapes in the chart. To work with FlowCharter chart's legend, FlowCharter must be active. With FlowCharter active, click Legend on the Insert menu to activate FlowCharter legends.
- You can also double-click the legend to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Legend_Appear')}

To hide or display legends

1 In the active chart, click the legend.

2 On the Format menu, click Selected Legend.

3 To display the legend, ensure that the Show Legend check box is selected. (To hide the legend, clear the Show Legend check box.)

4 Click OK.

Tips

- This legend is not the same as the legend for a FlowCharter chart. A FlowCharter chart's legend displays the totals for the fields in all the shapes in the chart. To work with FlowCharter chart's legend, FlowCharter must be active. With FlowCharter active, click Legend on the Insert menu to activate FlowCharter legends.
- You can also double-click the legend to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Legend_Appear_Hide')}

To move legends

1 In the active chart, click the chart legend.

2 On the Format menu, click Selected Legend.

3 To change the location of the legend on the chart, click the Location you want: Left or Right.

4 Click OK.

Tips

- This legend is not the same as the legend for a FlowCharter chart. A FlowCharter chart's legend displays the totals for the fields in all the shapes in the chart. To work with FlowCharter chart's legend, FlowCharter must be active. With FlowCharter active, click Legend on the Insert menu to activate FlowCharter legends.
- You can also double-click the legend to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Legend_Move')}

To set up legend backdrops

1 In the active chart, click the legend.

2 On the Format menu, click Selected Legend.

3 Click the Backdrop tab.

4 Select the legend background fill you want: None, Solid, or Gradient. Select None for a clear background. Select Solid Fill to color the background. Select Gradient for a background that changes color gradually, from one end of the legend to the other.

5 To format the legend border, click a style in the Frame Style list box.

6 To color the legend border, click a color in the Pen Color list box.

7 To change the legend border width, type the width you want in the Pen Width text box: 1 - 16. (1 is thinnest; 16 is thickest.)

8 To shadow the legend border, click the Shadow check box.

9 To offset the shadow from the legend border, type the offset distance in the Shadow Offset text box: 1 - 16. (1 is closest to border; 16 is farthest from border.)

10 To color the shadow, click a color in the Shadow Color list box.

11 Click OK.

Tips

- This legend is not the same as the legend for a FlowCharter chart. A FlowCharter chart's legend displays the totals for the fields in all the shapes in the chart. To work with FlowCharter chart's legend, FlowCharter must be active. With FlowCharter active, click Legend on the Insert menu to activate FlowCharter legends.
- You can also double-click the legend to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Legend_Back')}

To fill legend backgrounds

1 In the active chart, click the legend.

2 On the Format menu, click Selected Legend.

3 Click the Backdrop tab.

4 Select the legend background fill you want: None, Solid, or Gradient. Select None for a clear background. Select Solid Fill to color the background. Select Gradient for a background that changes color gradually, from one end of the legend to the other.

5 Click OK.

Tips

- This legend is not the same as the legend for a FlowCharter chart. A FlowCharter chart's legend displays the totals for the fields in all the shapes in the chart. To work with FlowCharter chart's legend, FlowCharter must be active. With FlowCharter active, click Legend on the Insert menu to activate FlowCharter legends.
- You can also double-click the legend to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also color the legend background fill by clicking the Fill Color button on the Formatting toolbar.

  Fill Color button

{button Related Topics,PI(``,`IDH_RT_Legend_Back_Fill')}

To select legend border styles

1 In the active chart, click the legend.

2 On the Format menu, click Selected Legend.

3 Click the Backdrop tab.

4 To change the legend border style, click a style in the Frame Style list box.

5 Click OK.

Tips

- You can also double-click the legend to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- This legend is not the same as the legend for a FlowCharter chart. A FlowCharter chart's legend displays the totals for the fields in all the shapes in the chart. To work with FlowCharter chart's legend, FlowCharter must be active. With FlowCharter active, click Legend on the Insert menu to activate FlowCharter legends.

{button Related Topics,PI(``,`IDH_RT_Legend_Border_Style')}

To color legend borders

1 In the active chart, click the legend.

2 On the Format menu, click Selected Legend.

3 Click the Backdrop tab.

4 To color the legend border, click a color in the Pen Color list box.

5 Click OK.

Tips

- You can also double-click the legend to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also color the legend border by clicking the Line/Border Color button on the Formatting toolbar.

  Line/Border Color button
- This legend is not the same as the legend for a FlowCharter chart. A FlowCharter chart’s legend displays the totals for the fields in all the shapes in the chart. To work with FlowCharter chart’s legend, FlowCharter must be active. With FlowCharter active, click Legend on the Insert menu to activate FlowCharter legends.

{button Related Topics,PI(``,`IDH_RT_Legend_Border_Color')}

To select legend border widths

1 In the chart, click the legend.

2 On the Format menu, click Selected Legend.

3 Click the Backdrop tab.

4 To change the legend border width, type the width you want in the Pen Width text box: 1 - 16. (1 is thinnest; 16 is thickest.)

5 Click OK.

Tips

- You can also double-click the legend to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- This legend is not the same as the legend for a FlowCharter chart. A FlowCharter chart's legend displays the totals for the fields in all the shapes in the chart. To work with FlowCharter chart's legend, FlowCharter must be active. With FlowCharter active, click Legend on the Insert menu to activate FlowCharter legends.

{button Related Topics,PI(`',`IDH_RT_Legend_Border_Width')}

To shadow legend borders

1 In the chart, click the legend.

2 On the Format menu, click Selected Legend.

3 Click the Backdrop tab.

4 To shadow the legend border, click the Shadow check box.

5 Click OK.

Tips

- You can also double-click the legend to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- This legend is not the same as the legend for a FlowCharter chart. A FlowCharter chart's legend displays the totals for the fields in all the shapes in the chart. To work with FlowCharter chart's legend, FlowCharter must be active. With FlowCharter active, click Legend on the Insert menu to activate FlowCharter legends.

{button Related Topics,PI(``,`IDH_RT_Shadow_Legend_Borders')}

To offset legend border shadows

1 In the chart, click the legend.

2 On the Format menu, click Selected Legend.

3 Click the Backdrop tab.

4 To offset the shadow from the legend border, type the offset distance in the Shadow Offset text box: 1 - 16. (1 is closest to border; 16 is farthest from border.)

5 Click OK.

Tips

- You can also double-click the legend to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- This legend is not the same as the legend for a FlowCharter chart. A FlowCharter chart's legend displays the totals for the fields in all the shapes in the chart. To work with FlowCharter chart's legend, FlowCharter must be active. With FlowCharter active, click Legend on the Insert menu to activate FlowCharter legends.

{button Related Topics,PI(`',`IDH_RT_Offset_Legend_Shadow')}

To color legend border shadows

1 In the chart, click the legend.

2 On the Format menu, click Selected Legend.

3 Click the Backdrop tab.

4 To color the shadow, click a color in the Shadow Color list box.

5 Click OK.

Tips

- You can also double-click the legend to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- This legend is not the same as the legend for a FlowCharter chart. A FlowCharter chart's legend displays the totals for the fields in all the shapes in the chart. To work with FlowCharter chart's legend, FlowCharter must be active. With FlowCharter active, click Legend on the Insert menu to activate FlowCharter legends.

{button Related Topics,PI(``,`IDH_RT_Color_Legend_Shadow')}

Format Legend dialog box - Appearance Tab

Use this dialog box to show or hide the chart legend and to display the legend on the left or right side of the chart.

{button Related Topics,PI(`',`IDH_RT_Selected_Legend_Appear_Dialog')}

Specifies that the legend title is displayed on the left side of the chart.

Specifies that the legend title is displayed on the right side of the chart.

Format Chart dialog box - Backdrop Tab

Use this dialog box to color or shade the chart (or chart legend) and to add a border to the chart (or chart legend).

You must select one of the three options – None, Solid Fill, or Gradient – in the Background Fill area. If you select Solid Fill, the Gradient options do not affect the chart. Likewise, if you select Gradient, then the Solid Fill drop down color list box does not affect the chart. If None is selected, none of these options affect the chart.

If the Shadow check box is clear, the Shadow Offset and Shadow Color options do not affect the chart.

{button Related Topics,PI(`',`IDH_RT_Selected_Legend_Backdrop_Dialog')}

Format Legend dialog box - Font Tab

Use this dialog box to format the chart legend text.

{button Related Topics,PI(`',`IDH_RT_Selected_Legend_Font_Dialog')}

To format legend text
To set up legend appearance
To set up legend backdrops
Selected Legend command

Format menu

Selected Control Lines command

The Selected Control Lines command lets you format the control lines of the active chart.

{button Related Topics,PI(`',`IDH_RT_Sel_Control')}

To set up control lines

Format menu

To set up control lines

1 From the active chart, click the chart control lines that you want to format.

2 On the Format menu, click Selected Control Lines.

3 Format the appearance, point markers, point labels, and font, as you want.

4 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Format_Control')}

To set up control line appearance
To set up control line point markers
To set up control line point labels
To format control line text

Selected Control Lines command
Format menu

To format control lines text

1 Click the title.

2 On the Format menu, click Selected Control Lines.

3 Click the Font tab.

4 Click the font you want in the Font list box.

5 Click the font size you want in the Size list box.

6 You may make the text bold, italic, underline, and/or strikethrough by clicking on the appropriate Effects check box.

7 To change the text color, click a color in the Color palette.

8 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also color the text by clicking the Text Color button on the Formatting toolbar.

  Text Color button
- You can also bold, italicize, or underline the text by clicking the Bold, Italic, or Underline button on the Formatting toolbar.

  Bold button Italic button Underline button

{button Related Topics,PI(``,`IDH_RT_Formatting_Control_Lines_Text')}

To select control lines text fonts
To select control lines text sizes
To select control lines text styles
To color control lines text

Selected Control Lines command
Format menu

To select control lines fonts

1 Select or click the text you want to format.

2 On the Format menu, click Selected Control Lines.

3 Click the Font tab.

4 Click the font you want in the Font list box.

5 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- You can also use the Formatting toolbar buttons to format text.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Selecting_Control_Lines_Fonts')}

To select control lines text sizes
To select control lines text styles
To color control lines text
Selected Control Lines command

Format menu

To select control lines text sizes

1 Select or click the text you want to format.

2 On the Format menu, click Selected Control Lines.

3 Click the Font tab.

4 Click the font size you want in the Size list box.

5 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- You can also use the Formatting toolbar buttons to format text.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Selecting_Control_Lines_Text_Sizes')}

To select control lines text fonts
To select control lines text styles
To color control lines text
Selected Control Lines command

Format menu

To select control lines text styles

1 Select or click the text you want to format.

2 On the Format menu, click Selected Control Lines.

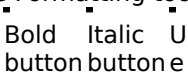
3 Click the Font tab.

4 You may make the text bold, italic, underline, and/or strikethrough by clicking on the appropriate Effects check box.

5 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also bold, italicize, or underline the text by clicking the Bold, Italic, or Underline button on the Formatting toolbar.



Bold button Italic button Underline button

{button Related Topics,PI(``,`IDH_RT_Selecting_Control_Lines_Text_Styles')}

To select control lines text fonts
To select control lines text sizes
To color control lines text
Selected Control Lines command

Format menu

To color control lines text

1 Select or click the text you want to format.

2 On the Format menu, click Selected Control Lines.

3 Click the Font tab.

4 To change the text color, click a color in the Color palette.

5 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also color the text by clicking the Text Color button on the Formatting toolbar.

  Text Color button

{button Related Topics,PI(``,`IDH_RT_Coloring_Control_Lines_Text')}

To select control lines text fonts
To select control lines text sizes
To select control lines text styles
Selected Control Lines command

Format menu

To set up control line appearance

1 From the active chart, click the chart control lines you want to format.

2 On the Format menu, click Selected Control Lines.

3 To assign a color to the control lines, click a color in the Color palette.

4 To change the control line width, type a number for the width in the Pen Width text box: 1 - 16. (1 is thinnest; 16 is thickest.)

5 To change the control line style, click a style in the Style list box: Solid or Dashed.

6 To display edges, ensure that the Display Edges check box is selected.

7 To assign a color to the control line edges, click a color in the Pen Color palette.

8 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- The Dotted line style is not available on line series.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_CL_Appear')}

To color control lines
To select control line widths
To select control line styles
To hide or display control line edges

To color control line edges
Selected Control Lines command
Format menu

To color control lines

1 From the active chart, click the chart control lines you want to format.

2 On the Format menu, click Selected Control Lines.

3 To assign a color to the control lines, click a color in the Color palette.

4 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also format the control line color by clicking the Line/Border Color button on the Formatting toolbar.

Line/Border Color button

{button Related Topics,PI(`',`IDH_RT_CL_Appear_Color')}

To select control line widths
To select control line styles
To hide or display control line edges
To color control line edges

Selected Control Lines command
Format menu

To select control line widths

1 From the active chart, click the chart control lines you want to format.

2 On the Format menu, click Selected Control Lines.

3 To change the control line width, type a number for the width in the Pen Width text box: 1 - 16. (1 is thinnest; 16 is thickest.)

4 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_CL_Appear_Width')}

To color control lines
To select control line styles
To hide or display control line edges
To color control line edges

Selected Control Lines command
Format menu

To select control line styles

1 From the active chart, click the chart control lines you want to format.

2 On the Format menu, click Selected Control Lines.

3 To change the control line style, click a style in the Style list box: Solid or Dashed.

4 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- The Dotted line style is not available on line series.

{button Related Topics,PI(``,`IDH_RT_CL_Appear_Style')}

To color control lines
To select control line widths
To select control line styles
To color control line edges

Selected Control Lines command
Format menu

To hide or display control line edges

1 From the active chart, click the chart control lines you want to format.

2 On the Format menu, click Selected Control Lines.

3 To display edges, ensure that the Display Edges check box is selected. To hide edges, clear the Display Edges check box.

4 To assign a color to the control line edges, click a color in the Pen Color palette.

5 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_CL_Appear_Edges')}

To color control lines
To select control line widths
To select control line styles
To color control line edges

Selected Control Lines command
Format menu

To color control line edges

1 From the active chart, click the chart control lines you want to format.

2 On the Format menu, click Selected Control Lines.

3 To assign a color to the control line edges, click a color in the Pen Color palette.

4 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_CL_Color_Edges')}

To color control lines
To select control line widths
To select control line styles
To hide or display control line edges

Selected Control Lines command
Format menu

To set up control line point markers

1 From the active chart, click the chart control lines you want to format.

2 On the Format menu, click Selected Control Lines.

3 Click the Point Markers tab.

4 To display the point markers, ensure that the Show Markers check box is selected. (To hide markers, clear the Show Markers check box.)

5 To change the marker style, click a style in the Style list box.

6 To change the marker size, type a number for the size in the Size text box: 1 - 16. (1 is thinnest; 16 is thickest.)

7 To change the marker pen width, type a number for the width in the Pen Width text box: 1 - 16. (1 is thinnest; 16 is thickest.)

8 To assign a color to the point markers, click a color in the Color palette.

9 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_CL_Markers')}

To hide or display control line point markers
To select control line point marker styles
To select control line point marker sizes
To select control line point marker widths

To color control line point markers
Selected Control Lines command
Format menu

To hide or display control line point markers

1 From the active chart, click the chart control lines that contain the markers you want to hide or display.

2 On the Format menu, click Selected Control Lines.

3 Click the Point Markers tab.

4 To hide markers, clear the Show Markers check box. To display the markers, ensure that the Show Markers check box is selected.

5 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_CL_Markers_Hide')}

To select control line point marker styles
To select control line point marker sizes
To select control line point marker widths
To color control line point markers

Selected Control Lines command
Format menu

To select control line point marker styles

1 From the active chart, click the chart control lines that contain the markers you want to format.

2 On the Format menu, click Selected Control Lines.

3 Click the Point Markers tab.

4 To change the marker style, click a style in the Style list box.

5 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_CL_Markers_Style')}

To hide or display control line point markers
To select control line point marker sizes
To select control line point marker widths
To color control line point markers

Selected Control Lines command
Format menu

To select control line point marker sizes

1 From the active chart, click the chart control lines that contain the markers you want to format.

2 On the Format menu, click Selected Control Lines.

3 Click the Point Markers tab.

4 To change the marker size, type a number for the size in the Size text box: 1 - 16. (1 is thinnest; 16 is thickest.)

5 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_CL_Markers_Size')}

To hide or display control line point markers
To select control line point marker styles
To select control line point marker widths
To color control line point markers

Selected Control Lines command
Format menu

To select control line point marker widths

1 From the active chart, click the chart control lines that contain the markers you want to format.

2 On the Format menu, click Selected Control Lines.

3 Click the Point Markers tab.

4 To change the marker pen width, type a number for the width in the Pen Width text box: 1 - 16. (1 is thinnest; 16 is thickest.)

5 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_CL_Markers_Width')}

To hide or display control line point markers
To select control line point marker styles
To select control line point marker sizes
To color control line point markers

Selected Control Lines command
Format menu

To color control line point markers

1 From the active chart, click the chart control lines that contain the markers you want to format.

2 On the Format menu, click Selected Control Lines.

3 Click the Point Markers tab.

4 To assign a color to the point markers, click a color in the Color palette.

5 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_CL_Markers_Color')}

To hide or display control line point markers
To select control line point marker styles
To select control line point marker sizes
To select control line point marker widths

Selected Control Lines command
Format menu

To set up control line point labels

1 From the active chart, click the chart control lines you want to format.

2 On the Format menu, click Selected Control Lines.

3 Click the Point Labels tab.

4 To display the point labels, ensure that the Show Labels check box is selected. (To hide labels, clear the Show Labels check box.)

5 To change the label location, click a location in the Location list box: Above Point or Below Point.

6 To change the label line style, select a style in the line Style list box: None, Line, or Angled Line.

7 To change the label orientation, click the orientation you want: Horizontal, Vertical, Up, or Down.

8 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_CL_Labels')}

To hide or display control line point labels
To move control line point labels
To select control line point label styles
To orient control line point labels

Selected Control Lines command
Format menu

To hide or display control line point labels

1 From the active chart, click the chart control lines that contain the labels you want to hide or display.

2 On the Format menu, click Selected Control Lines.

3 Click the Point Labels tab.

4 To display the point labels, ensure that the Show Labels check box is selected. To hide labels, clear the Show Labels check box.

5 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_CL_Labels_Hide')}

To move control line point labels
To select control line point label styles
To orient control line point labels
Selected Control Lines command

Format menu

To move control line point labels

1 From the active chart, click the chart control lines that contain the labels you want to format.

2 On the Format menu, click Selected Control Lines.

3 Click the Point Labels tab.

4 To change the label location, click a location in the Location list box: Above Point or Below Point.

5 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_CL_Labels_Location')}

To hide or display control line point labels
To select control line point label styles
To orient control line point labels
Selected Control Lines command

Format menu

To select control line point label styles

1 From the active chart, click the chart control lines that contain the labels you want to format.

2 On the Format menu, click Selected Control Lines.

3 Click the Point Labels tab.

4 To change the label line style, select a style in the line Style list box: None, Line, or Angled Line.

5 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_CL_Labels_Style')}

To hide or display control line point labels
To move control line point labels
To orient control line point labels
Selected Control Lines command

Format menu

To orient control line point labels

1 From the active chart, click the chart control lines that contain the labels you want to format.

2 On the Format menu, click Selected Control Lines.

3 Click the Point Labels tab.

4 To change the label orientation, click the orientation you want: Horizontal, Vertical, Up, or Down.

5 Click OK.

Tips

- You can also double-click the control lines to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_CL_Labels_Orientation')}

To hide or display control line point labels
To move control line point labels
To select control line point label styles
Selected Control Lines command

Format menu

Format Control Lines dialog box - Appearance Tab

Use this dialog box to format the control lines of the active chart.

{button Related Topics,PI(`',`IDH_RT_Format_Control_Appear_Dialog')}

To color control lines
To select control line widths
To select control line styles
To hide or display control line edges

To color control line edges
Selected Control Lines command
Format menu

Format Control Lines dialog box - Point Markers Tab

Use this dialog box to format the point markers on active chart control lines.

{button Related Topics,PI(`',`IDH_RT_Format_Control_Pt_Mkr_Dialog')}

To hide or display control line point markers
To select control line point marker styles
To select control line point marker sizes
To select control line point marker widths

To color control line point markers
Selected Control Lines command
Format menu

Format Control Lines dialog box - Point Labels Tab

Use this dialog box to format the point labels on the active chart control lines.

{button Related Topics,PI(`',`IDH_RT_Format_Control_Pt_Labels_Dialog')}

To hide or display control line point markers
To select control line point marker styles
To select control line point marker sizes
To select control line point marker widths

To color control line point markers
Selected Control Lines command
Format menu

Format Control Lines dialog box - Font Tab

Use this dialog box to format the active chart control line text.

{button Related Topics,PI(``,`IDH_RT_Format_Control_Font_Dialog')}

To select control lines text fonts
To select control lines text sizes
To color control lines text
Selected Control Lines command

Format menu

Lets you format the appearance and backdrop of the active chart.

Chart command

The Chart command lets you format the appearance, base and walls, and backdrop of the active chart.

{button Related Topics,PI(``,`IDH_RT_Chart_Command_D')}

To set up charts

1 Click the Chart tab.

2 On the Format menu, click Chart.

3 Format the appearance and backdrop, as you want.

4 Click OK.

Tips

- You can also double-click the chart to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Format_Chart')}

To set up chart appearance

1 Click the Chart tab.

2 On the Format menu, click Chart.

3 To view the chart in 2-D, click the 2-D View radio button.

4 To view the chart in 3-D, click the 3-D View radio button.

5 To display the chart title, ensure that the Show Chart Title check box is checked. (To hide the chart title, clear the Show Chart Title check box.)

6 To display the chart legend, ensure that the Show Legend check box is checked. (To hide the legend, clear the Show Legend check box.)

7 Click OK.

Tips

- You can also double-click the chart to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Chart_Appear')}

To change the view from 2-D to 3-D

1 Click the Chart tab.

2 On the Standard toolbar, click the 2-D to 3-D button.

-

  2-D to 3-D button

Tips

- You can also double-click the chart to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- You cannot view scatter charts in 3-D.

{button Related Topics,PI(`',`IDH_RT_changing_from_2d_to_3d')}

To change the view from 3-D to 2-D

1 Click the Chart tab.

2 On the Standard toolbar, click the 2-D to 3-D button.

- 2-D to 3-D button

Tips

- You can also double-click the chart to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_changing_from_3d_to_2d')}

To hide or display chart titles

1 Click the Chart tab.

2 On the Format menu, click Chart.

3 To display the chart title, make sure the Show Chart Title check box is checked. (To hide the chart title, clear the Show Chart Title check box.)

4 Click OK.

Tips

- You can also double-click the chart to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also hide a chart title by clicking the title and pressing the **DEL** key.

{button Related Topics,PI(`',`IDH_RT_Hide_Ch_Titles')}

To hide or display chart legends

1 Click the Chart tab.

2 On the Format menu, click Chart.

3 To display the chart legend, ensure that the Show Legend check box is checked. (To hide the legend, clear the Show Legend check box.)

4 Click OK.

Tips

- You can also double-click the chart to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Hide_Display_Legend')}

To set up chart backdrops

1 Click the Chart tab.

2 On the Format menu, click Chart.

3 Click the Backdrop tab.

4 Select the chart background fill you want: None, Solid, or Gradient. Select None for a clear background. Select Solid Fill to color the background. Select Gradient for a background that changes color gradually, from one end of the chart to the other.

5 To format the chart border, click a style in the Frame Style list box.

6 To color the chart border, click a color in the Pen Color list box.

7 To change the chart border width, type the width you want in the Pen Width text box: 1 - 16. (1 is thinnest; 16 is thickest.)

8 To shadow the chart border, click the Shadow check box.

9 To offset the shadow from the chart border, type the offset distance in the Shadow Offset text box: 1 - 16. (1 is closest to border; 16 is farthest from border.)

10 To color the shadow, click a color in the Shadow Color list box.

11 Click OK.

Tips

- You can also double-click the chart to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Chart_Back')}

To select background fills

1 Click the Chart tab.

2 On the Format menu, click Chart.

3 Click the Backdrop tab.

4 Select the chart background fill you want: None, Solid, or Gradient. Select None for a clear background. Select Solid Fill to color the background. Select Gradient for a background that changes color gradually, from one end of the chart to the other.

5 Click OK.

Tips

- You can also double-click the chart to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also color the fill by clicking the Fill Color button on the Formatting toolbar.
  - Fill Color button

{button Related Topics,PI(``,`IDH_RT_Chart_Back_Fill')}

To select chart border styles

1 Click the Chart tab.

2 On the Format menu, click Chart.

3 Click the Backdrop tab.

4 To format the chart border, click a style in the Frame Style list box.

5 Click OK.

Tips

- You can also double-click the chart to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Chart_Border_Style')}

To color chart borders

1 Click the Chart tab.

2 On the Format menu, click Chart.

3 Click the Backdrop tab.

4 To color the chart border, click a color in the Pen Color list box.

5 Click OK.

Tips

- You can also double-click the chart to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also color the chart border by clicking the Line/Border Color button on the Formatting toolbar.

  - Line/Border Color button

{button Related Topics,PI(``,`IDH_RT_Chart_Border_Color')}

To select chart border widths

1 Click the Chart tab.

2 On the Format menu, click Chart.

3 Click the Backdrop tab.

4 To change the chart border width, type the width you want in the Pen Width text box: 1 - 16. (1 is thinnest; 16 is thickest.)

5 Click OK.

Tips

- You can also double-click the chart to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Chart_Border_Width')}

To shadow chart borders

1 Click the Chart tab.

2 On the Format menu, click Chart.

3 Click the Backdrop tab.

4 Ensure that the Shadow check box is selected.

5 Click OK.

Tips

- You can also double-click the chart to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Chart_Border_Shadow_Format')}

To offset border shadows

1 Click the Chart tab.

2 On the Format menu, click Chart.

3 Click the Backdrop tab.

4 Ensure that the Shadow check box is selected.

5 To offset the shadow from the chart border, type the offset distance in the Shadow Offset text box: 1 - 16. (1 is closest to border; 16 is farthest from border.)

6 Click OK.

Tips

- You can also double-click the chart to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Chart_Border_Offset_Shadow')}

To color border shadows

1 Click the Chart tab.

2 On the Format menu, click Chart.

3 Click the Backdrop tab.

4 To color the shadow, click a color in the Shadow Color list box.

5 Click OK.

Tips

- You can also double-click the chart to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Chart_Color_Border_Shadow')}

To hide or display chart border shadows

1 Click the Chart tab.

2 On the Format menu, click Chart.

3 Click the Backdrop tab.

4 To hide the chart border shadow, clear the Shadow check box. To display the border shadow, ensure that the Shadow check box is selected.

5 Click OK.

Tips

- You can also double-click the chart to bring up the dialog box.
- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Chart_Border_Shadow_Hide')}

Format Chart dialog box - Appearance Tab

Use this dialog box to change the chart from 2D to 3D, or to insert or remove the chart title or chart legend.

Tip

- Only 3D charts have Base Attributes. Both 2D and 3D charts use the Wall Attributes.

{button Related Topics,PI(`',`IDH_RT_Format_Chart_Appear_Dialog')}

Specifies that the chart is displayed in two dimensions.

Specifies that the chart is displayed in three dimensions.

Specifies whether the chart title is displayed.

Specifies whether the chart legend is displayed.

Specifies that no background is displayed for the active chart element.

Specifies that a solid background color is displayed for the active chart element. Click the background color you want.

Lists the available fill colors.

Specifies that the background is blended by two colors.

Lists the way gradient background colors are blended: Horizontal (left to right), Vertical (top to bottom), Rectangle (concentric), or Oval (concentric).

Lists the available beginning gradient pattern colors.

Lists the available ending gradient pattern colors.

Lists the available border styles: None, Single Line, Double Line, Thick Inner, and Thick Outer.

Lists the available border colors.

Specifies the border width and provides a space for you to type the width: 1 - 16.

Specifies whether a shadow is displayed with the border.

Specifies the distance the shadow is offset from the border and provides a space for you to type the offset: 1 - 16.

Lists the available shadow colors.

Lets you format the view, lighting, base, and walls of a 3-D chart.

3-D View command

The 3-D View command lets you format the view and lighting of a 3-D chart.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_3D_View')}

To set up 3-D charts
Chart command
Format menu

To set up 3-D charts

1 Ensure that a 3-D chart is displayed.

2 On the Format menu, click 3-D View.

3 Format the view and lighting, as you want.

4 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Format_3D')}

To set up 3-D views
To set up 3-D lighting
To set up 3-D chart base and walls
To rotate 3-D charts with your mouse

Chart command
3-D View command
Format menu

To set up 3-D chart views

1 Ensure that a 3-D chart is displayed.

2 On the Format menu, click 3-D View.

3 To change the view type, click a type in the View Type list box: Perspective, Orthogonal, or Oblique.

4 To change the relative height from which a 3-D chart is viewed, type the perspective angle you want in the Elevation text box: 0 - 90. (If you enter 90, you look directly down on the top of the chart. If you enter 0, you look directly at the front of the chart.)

5 To change the viewing angle of the 3-D chart, type the perspective angle you want in the Rotation text box: 0 - 360. (An entry of 0 displays a front view of the chart, whereas an entry of 90 rotates the chart to a 90-degree angle from you, providing a side view of the chart.) This step does not apply to pie charts.

6 To change the distance the chart is displayed (as a percentage of the chart depth), type a positive number in the View Distance text box: 50 - 2000. (An entry of 50 displays the chart farthest away, whereas an entry of 2000 displays the chart closest to you.)

7 To change the percentage of the chart's height used to draw the chart's depth, type a positive number in the Depth to Height Ratio text box: 50 - 1000. (An entry of 50 displays the chart with minimal depth and maximum height, whereas an entry of 1000 displays the chart with maximum depth and minimal height.)

8 To change the percentage of the chart's height used to draw the chart's width, type a positive number in the Width to Height Ratio text box: 50 - 1000. (An entry of 50 displays the chart with minimal width and maximum height, whereas an entry of 1000 displays the chart with maximum width and minimal height.)

9 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Format_3D_Views')}

To select 3-D view types
To select 3-D chart viewing heights
To select 3-D chart viewing angles
To select 3-D chart viewing distances

To select 3-D chart widths and depths
To set up 3-D lighting
To set up 3-D chart base and walls
To rotate 3-D charts with your mouse

3-D View command
Chart command
Format menu

To select 3-D view types

1 Ensure that a 3-D chart is displayed.

2 On the Format menu, click 3-D View.

3 To change the view type, click a type in the View Type list box: Perspective, Orthogonal, or Oblique.

4 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Format_3D_View_Type')}

To select 3-D chart viewing heights

To select 3-D chart viewing angles

To select 3-D chart viewing distances

To select 3-D chart widths and depths

To set up 3-D lighting

To set up 3-D chart base and walls

To rotate 3-D charts with your mouse

3-D View command

Chart command

Format menu

To select 3-D chart viewing heights

1 Ensure that a 3-D chart is displayed.

2 On the Format menu, click 3-D View.

3 To change the relative height from which a 3-D chart is viewed, type the perspective angle you want in the Elevation text box: 0 - 90. (If you enter 90, you look directly down on the top of the chart. If you enter 0, you look directly at the front of the chart.)

4 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Format_3D_Viewing_Height')}

To select 3-D view types
To select 3-D chart viewing angles
To select 3-D chart viewing distances
To select 3-D chart widths and depths

To set up 3-D lighting
To set up 3-D chart base and walls
To rotate 3-D charts with your mouse
3-D View command

Chart command
Format menu

To select 3-D chart viewing angles

1 Ensure that a 3-D chart is displayed.

2 On the Format menu, click 3-D View.

3 To change the viewing angle of the 3-D chart, type the perspective angle you want in the Rotation text box: 0 - 360. (An entry of 0 displays a front view of the chart, whereas an entry of 90 rotates the chart to a 90-degree angle from you, providing a side view of the chart.) This procedure does not apply to pie charts.

4 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Format_3D_Viewing_Angle')}

To select 3-D view types
To select 3-D chart viewing heights
To select 3-D chart viewing distances
To select 3-D chart widths and depths

To set up 3-D lighting
To set up 3-D chart base and walls
To rotate 3-D charts with your mouse
3-D View command

Chart command
Format menu

To set 3-D chart viewing distances

1 Ensure that a 3-D chart is displayed.

2 On the Format menu, click 3-D View.

3 To change the distance the chart is displayed (as a percentage of the chart depth), type a positive number in the View Distance text box: 50 - 2000. (An entry of 50 displays the chart farthest away, whereas an entry of 2000 displays the chart closest to you.)

4 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Format_3D_Viewing_Distance')}

To select 3-D view types
To select 3-D chart viewing heights
To select 3-D chart viewing angles
To select 3-D chart widths and depths

To set up 3-D lighting
To set up 3-D chart base and walls
To rotate 3-D charts with your mouse
3-D View command

Chart command
Format menu

To select 3-D chart widths and depths

1 Ensure that a 3-D chart is displayed.

2 On the Format menu, click 3-D View.

3 To change the percentage of the chart’s height used to draw the chart’s depth, type a positive number in the Depth to Height Ratio text box: 50 - 1000. (An entry of 50 displays the chart with minimal depth and maximum height, whereas an entry of 1000 displays the chart with maximum depth and minimal height.)

4 To change the percentage of the chart’s height used to draw the chart’s width, type a positive number in the Width to Height Ratio text box: 50 - 1000. (An entry of 50 displays the chart with minimal width and maximum height, whereas an entry of 1000 displays the chart with maximum width and minimal height.)

5 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Select_3D_Widths_and_Heights')}

To select 3-D view types
To select 3-D chart viewing heights
To select 3-D chart viewing angles
To select 3-D chart viewing distances

To set up 3-D lighting
To set up 3-D chart base and walls
To rotate 3-D charts with your mouse
3-D View command

Chart command
Format menu

To select 3-D chart widths

1 Ensure that a 3-D chart is displayed.

2 On the Format menu, click 3-D View.

3 To change the percentage of the chart’s height used to draw the chart’s width, type a positive number in the Width to Height Ratio text box: 50 - 1000. (An entry of 50 displays the chart with minimal width and maximum height, whereas an entry of 1000 displays the chart with maximum width and minimal height.)

4 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Format_3D_Widths')}

To select 3-D view types
To select 3-D chart viewing heights
To select 3-D chart viewing angles
To select 3-D chart viewing distances

To select 3-D chart depths
To set up 3-D lighting
To set up 3-D chart base and walls
To rotate 3-D charts with your mouse

3-D View command
Chart command
Format menu

To select 3-D chart depths

1 Ensure that a 3-D chart is displayed.

2 On the Format menu, click 3-D View.

3 To change the percentage of the chart’s height used to draw the chart’s depth, type a positive number in the Depth to Height Ratio text box: 50 - 1000. (An entry of 50 displays the chart with minimal depth and maximum height, whereas an entry of 1000 displays the chart with maximum depth and minimal height.)

4 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Format_3D_Height')}

To select 3-D view types
To select 3-D chart viewing heights
To select 3-D chart viewing angles
To select 3-D chart viewing distances

To select 3-D chart widths
To set up 3-D lighting
To set up 3-D chart base and walls
To rotate 3-D charts with your mouse

3-D View command
Chart command
Format menu

To rotate 3-D charts with your mouse

1 Ensure that a 3-D chart is displayed.

2 Press and hold the **CTRL** key.

3 Move the cursor over any 3-D chart fill area. The cursor changes from a single arrow to a larger four-arrow cursor.

4 Drag the cursor to rotate the chart in any 3-D plane.

5 Release the mouse button when the chart view you want is displayed.

{button Related Topics,PI(``,`IDH_RT_Rotate_3D')}

To set up 3-D views

To set up 3-D chart lighting

To set up 3-D chart base and walls

To rotate 3-D charts with your mouse

3-D View command

Chart command

Format menu

To set up 3-D chart lighting

1 Ensure that a 3-D chart is displayed.

2 On the Format menu, click 3-D View.

3 Click the Lighting tab.

4 To change the relative chart shading intensity, type the intensity you want in the Intensity text box: 0 - 100. (An entry of 0 displays the darkest chart shading, whereas an entry of 100 displays the brightest chart illumination.)

5 To display 3-D edges with the chart, ensure that the Display Edges check box is checked. (To hide the edges, clear the Display Edges check box.)

6 To adjust the relative darkness of the 3-D edges, type the darkness you want in the Edge Intensity text box: 0 - 100. (An entry of 0 displays the darkest edges, whereas an entry of 100 displays the brightest edges.)

7 To adjust the light intensity and direction from which the light shines on the chart, drag the associated slider up or down. (When a slider is down, the associated light source is darkest. When a slider is up, the associated light source is at full illumination.)

8 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Format_3D_Lighting')}

To adjust 3-D chart shading intensities
To hide or display 3-D chart edges
To adjust darkness of 3-D chart edges
To adjust 3-D chart lighting directions and intensities

To set up 3-D views
To set up 3-D chart base and walls
To rotate 3-D charts with your mouse
3-D View command

Chart command
Format menu

To adjust 3-D chart shading intensities

1 Ensure that a 3-D chart is displayed.

2 On the Format menu, click 3-D View.

3 Click the Lighting tab.

4 To change the relative chart shading intensity, type the intensity you want in the Intensity text box: 0 - 100. (An entry of 0 displays the darkest chart shading, whereas an entry of 100 displays the brightest chart illumination.)

5 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Adjust_3D_Shading_Intensities')}

To hide or display 3-D chart edges
To adjust darkness of 3-D chart edges
To adjust 3-D chart lighting directions and intensities
To set up 3-D views

To set up 3-D chart base and walls
To rotate 3-D charts with your mouse
3-D View command
Chart command

Format menu

To hide or display 3-D chart edges

1 Ensure that a 3-D chart is displayed.

2 On the Format menu, click 3-D View.

3 Click the Lighting tab.

4 To display 3-D edges with the chart, ensure that the Display Edges check box is checked. (To hide the edges, clear the Display Edges check box.)

5 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Hide_Display_3D_Edges')}

To adjust 3-D chart shading intensities
To adjust darkness of 3-D chart edges
To adjust 3-D chart lighting directions and intensities
To set up 3-D views

To set up 3-D chart base and walls
To rotate 3-D charts with your mouse
3-D View command
Chart command

Format menu

To adjust darkness of 3-D chart edges

1 Ensure that a 3-D chart is displayed.

2 On the Format menu, click 3-D View.

3 Click the Lighting tab.

4 To adjust the relative darkness of the 3-D edges, type the darkness you want in the Edge Intensity text box: 0 - 100. (An entry of 0 displays the darkest edges, whereas an entry of 100 displays the brightest edges.)

5 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Adjust_3D_Darkness')}

To adjust 3-D chart shading intensities
To hide or display 3-D chart edges
To adjust 3-D chart lighting directions and intensities
To set up 3-D views

To set up 3-D chart base and walls
To rotate 3-D charts with your mouse
3-D View command
Chart command

Format menu

To adjust 3-D chart lighting directions and intensities

1 Ensure that a 3-D chart is displayed.

2 On the Format menu, click 3-D View.

3 Click the Lighting tab.

4 To adjust the light intensity and direction from which the light shines on the chart, drag the associated slider up or down. (When a slider is down, the associated light source is darkest. When a slider is up, the associated light source is at full illumination.)

5 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Adjust_3D_Directions_Intensities')}

To adjust 3-D chart shading intensities
To hide or display 3-D chart edges
To adjust darkness of 3-D chart edges
To set up 3-D views

To set up 3-D chart base and walls
To rotate 3-D charts with your mouse
3-D View command
Chart command

Format menu

To set up 3-D chart bases and walls

1 On the Format menu, click Chart.

2 Click the Base and Walls tab.

3 To change the base or wall color, click a color in the associated Color list box.

4 To change the thickness of the 3-D chart base or walls, type the thickness (in points) you want in the associated Thickness text box: 0 - 16. (0 is thinnest; 16 is thickest.)

5 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Format_3D_Base')}

To color 3-D chart bases and walls

To set thickness of 3-D chart bases and walls

To set up 3-D views

To set up 3-D chart lighting

To rotate 3-D charts with your mouse

3-D View command

Chart command

Format menu

To color 3-D chart bases and walls

1 On the Format menu, click Chart.

2 Click the Base and Walls tab.

3 To change the base or wall color, click a color in the associated Color list box.

4 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(``,`IDH_RT_Color_3D_Base')}

To set thickness of 3-D chart bases and walls

To set up 3-D views

To set up 3-D chart lighting

To rotate 3-D charts with your mouse

3-D View command

Chart command

Format menu

To set thickness of 3-D chart bases and walls

1 On the Format menu, click Chart.

2 Click the Base and Walls tab.

3 To change the thickness of the 3-D chart base or walls, type the thickness (in points) you want in the associated Thickness text box: 0 - 16. (0 is thinnest; 16 is thickest.)

4 Click OK.

Tip

- Use the Apply button to make your changes and view the results without closing the dialog box.

{button Related Topics,PI(`',`IDH_RT_Set_3D_Base_Thickness')}

To color 3-D chart bases and walls
To set up 3-D views
To set up 3-D chart lighting
To rotate 3-D charts with your mouse

3-D View command
Chart command
Format menu

Format 3-D View dialog box - View Tab

Use this dialog box to format the active 3-D chart viewing perspective.

{button Related Topics,PI(`',`IDH_RT_Format_3D_View_Dialog')}

To select 3-D view types
To select 3-D chart viewing heights
To select 3-D chart viewing angles
To select 3-D chart viewing distances

To select 3-D chart widths and depths
To set up 3-D lighting
To set up 3-D chart base and walls
To rotate 3-D charts with your mouse

3-D View command
Chart command
Format menu

Lists the available 3-D chart views: Perspective, Orthogonal, and Oblique. Perspective provides the most realistic 3-D appearance (objects farther away from you converge toward a vanishing point on the chart). Orthogonal has no perspective but keeps vertical lines vertical, making some charts easier to read. Oblique is also known as 2.5 dimensional; that is, the chart has depth, but the XY plane does not change when the chart is rotated or elevated.

Specifies the relative height (in degrees) from which a chart is viewed and provides a space for you to type the height you want: 0 - 90. For example, if you set the elevation to 0, you look directly at the front of the chart. If you set the elevation to 90, you look directly down on the top of the chart.

Specifies the viewing angle (in degrees) of the active 3-D chart and provides a space for you to type the perspective angle you want: 0 - 360. For example, an entry of 0 displays a front view of the chart, whereas an entry of 90 rotates the chart to a 90-degree angle from you, providing a side view of the chart. Rotation does not apply to pie charts.

Specifies the relative distance the 3-D chart is displayed from you (as a percentage of the chart depth) and provides a space for you to type the distance you want: 50 - 2000. An entry of 50 displays the chart farthest away (smallest perspective), whereas an entry of 2000 displays the chart closest to you (largest perspective).

Specifies the percentage of the chart’s height used to draw the chart’s depth and provides a space for you to type the percentage you want: 50 - 1000. An entry of 50 displays the chart with minimal depth and maximum height, whereas an entry of 1000 displays the chart with maximum depth and minimal height.

Specifies the percentage of the chart’s height used to draw the chart’s width and provides a space for you to type the percentage you want: 50 - 1000. An entry of 50 displays the chart with minimal width and maximum height, whereas an entry of 1000 displays the chart with maximum width and minimal height.

Format 3-D View dialog box - Lighting Tab

Use this dialog box to format the active 3-D chart lighting.

{button Related Topics,PI(`',`IDH_RT_Format_3D_Lighting_Dialog')}

To adjust 3-D chart shading intensities
To hide or display 3-D chart edges
To adjust darkness of 3-D chart edges
To adjust 3-D chart lighting directions and intensities

To set up 3-D views
To set up 3-D chart base and walls
To rotate 3-D charts with your mouse
3-D View command

Chart command
Format menu

Specifies the relative chart shading intensity and provides a space for you to type the intensity you want: 0 - 100. An entry of 0 displays the darkest chart shading, whereas an entry of 100 displays the brightest chart illumination.

Specifies whether 3-D edges are displayed with the chart.

Specifies the relative darkness of the 3-D edges and provides a space for you to type the darkness you want: 0 - 100. An entry of 0 displays the darkest edges, whereas an entry of 100 displays the brightest edges.

Adjusts the light intensity originating from the left side of the 3-D chart. When the slider is down, light from the left side is darkest. When the slider is up, light from the left side is brightest.

Adjusts the light intensity originating from the top of the 3-D chart. When the slider is down, light from the top is darkest. When the slider is up, light from the top is brightest.

Adjusts the light intensity originating from the bottom of the 3-D chart. When the slider is down, light from the bottom is darkest. When the slider is up, light from the bottom is brightest.

Adjusts the light intensity originating from the right side of the 3-D chart. When the slider is down, light from the right side is darkest. When the slider is up, light from the right side is brightest.

Format Chart dialog box - Base and Walls Tab

Use this dialog box to format the color and thickness of 3-D chart base and walls.

Tips

- For 2D charts, wall attributes affect the color of the chart.
- Base and wall attributes do not apply to pie charts.
- Only the wall attributes affect scatter charts (since this chart can only be viewed in 2D).

{button Related Topics,PI(`',`IDH_RT_Format_3D_Base_Dialog')}

To color 3-D chart bases and walls

To set thickness of 3-D chart bases and walls

To set up 3-D views

To set up 3-D chart lighting

To rotate 3-D charts with your mouse

3-D View command

Chart command

Format menu

Lists the available colors for the 3-D chart base.

Specifies the relative thickness of the 3-D chart base and provides a space for you to type the thickness you want: 0 - 16. An entry of 0 displays the thinnest base, whereas an entry of 16 displays the thickest base.

Lists the available colors for the 3-D chart wall.

Specifies the relative thickness of the 3-D chart wall and provides a space for you to type the thickness you want: 0 - 16. An entry of 0 displays the thinnest wall, whereas an entry of 16 displays the thickest wall.

Row command

The Row command lets you format the height of the active worksheet row(s) and change the default height of all worksheet rows.

{button Related Topics,PI(`',`IDH_RT_Row_Command')}

Lets you format the height of the active worksheet row(s) and change the default height of all worksheet rows.

Row, Height command

the Row, Height command lets you format the height of the active worksheet row(s) and change the default height of all worksheet rows.

{button Related Topics,PI(`',`IDH_RT_Row_Command')}

Automatically sizes the height of the active worksheet row(s) to fully display cell text if the selected cell text font size exceeds the current row height.

Row, AutoFit Selection command

The Row, AutoFit Selection command automatically sizes the height of the active worksheet row(s) to fully display cell text if the selected cell text font size exceeds the current row height.

{button Related Topics,PI(`',`IDH_RT_Row_Command')}

To match cell text size with row height

1 Ensure that a worksheet is displayed. If you want to change the height of one or several rows, highlight the row(s).

2 On the Format menu, click Row.

3 Click AutoFit Selection.

{button Related Topics,PI(`',`IDH_RT_Format_Auto_Row_Height')}

To select row height

1 Ensure that a worksheet is displayed. If you want to change the height of one or several rows, highlight the row(s).

2 On the Format menu, click Row.

3 Click Height.

4 To change the row height, type the row height you want in the Height text box.

5 Click OK.

{button Related Topics,PI(``,`IDH_RT_Format_Row_Height')}

To select default row height

1 Ensure that a worksheet is displayed.

2 On the Format menu, click Row.

3 Click Height.

4 To change the default row height, type the default row height you want in the Default Height text box.

5 Click OK.

{button Related Topics,PI(``,`IDH_RT_Format_Default_Row_Height')}

Row Height dialog box

Use this dialog box to change the height of active rows and/or the default row height for the active worksheet.

{button Related Topics,PI(``,`IDH_RT_Format_Row_Height_Dialog')}

Specifies the height of the active worksheet row(s) and provides a space for you to type a new height.

Specifies whether the default row height is used as the current row height.

Specifies the default row height and provides a space for you to type a new default row height.

Formats cells using default value.

Column command

The Column command lets you format the width of the active worksheet column(s).

{button Related Topics,PI(`',`IDH_RT_Column_Command')}

To match cell text size with column width

To select column width

To select default column width

Format menu

To enter column header

1 Double-click on the column header. (Or, position the cursor over the column and click the right mouse button. Next, click Column Header.)

2 In the Column Header Text box, type the new column header name.

3 Click OK.

{button Related Topics,PI(`',`IDH_RT_Format_Column_Header')}

Specifies the column header and provides a space for you to type a new column header.

To match cell text size with column width

1 Ensure that a worksheet is displayed. If you want to change the width of one or several columns, highlight the column(s).

2 On the Format menu, click Column.

3 Click AutoFit Selection.

{button Related Topics,PI(`',`IDH_RT_Format_Auto_Column_Width')}

To select column widths

1 Ensure that a worksheet is displayed. If you want to change the width of one or several columns, highlight the column(s).

2 On the Format menu, click Column.

3 Click Width.

4 To change the column width, type the column width you want in the Width text box.

5 Click OK.

{button Related Topics,PI(``,`IDH_RT_Format_Column_Width')}

To match cell text size with column width

To select default column width

Column command

Format menu

To select default column widths

1 Ensure that a worksheet is displayed.

2 On the Format menu, click Column.

3 Click Width.

4 To change the default column width, type the default column width you want in the Default Width text box.

5 Click OK.

{button Related Topics,PI(``,`IDH_RT_Format_Default_Column_Width')}

To match cell text size with column width
To select column widths
Column command
Format menu

Column Width dialog box

Use this dialog box to change the width of active columns and/or the default column width for the active worksheet.

{button Related Topics,PI(``,`IDH_RT_Format_Column_Width_Dialog')}

To select column widths
To select default column widths
Column command
Format menu

Specifies the width of the active worksheet column(s) and provides a space for you to type a new width.

Specifies whether the default column width is used as the current column width.

Specifies the default column width and provides a space for you to type a new default column width.

Lets you format the width of the active worksheet column(s) and change the default width of all worksheet columns.

Column, Width command

The Column, Width command lets you format the width of the active worksheet column(s) and change the default width of all worksheet columns.

{button Related Topics,PI(`',`IDH_RT_Column_Command')}

Automatically sizes the width of the active worksheet column(s) to fully display cell text if the selected cell text font size exceeds the current column width.

AutoFit Selection command

The AutoFit Selection command automatically sizes the width of the active worksheet column(s) to fully display cell text if the selected cell text font size exceeds the current column width.

{button Related Topics,PI(`',`IDH_RT_Column_Command')}

Lets you format the number, alignment, border, pattern, and font of the active worksheet cell(s).

Cells command

The Cells command lets you format the number, alignment, border, shading, and font of the active worksheet cell(s).

{button Related Topics,PI(`',`IDH_RT_Cells_Command')}

To set up cells

1. Ensure that a worksheet is displayed.
2. Highlight the cell(s) you want to format.
3. On the Format menu, click Cells.
4. Format the number, text alignment, border, shading, and font of the active worksheet cell(s), as you want.
5. Click OK.

Tip

- You can also click the Format Cells button on the Standard toolbar.

  Format Cells button

{button Related Topics,PI(`',`IDH_RT_Format_Cells')}

To set up cell numbers

1 Ensure that a worksheet is displayed.

2 Highlight the cells you want to format.

3 On the Format menu, click Cells.

4 To change the number category, click a category in the Category list box.

5 To change the number format, click a format in the Format Codes list box.

6 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also click the Format Cells button on the Standard toolbar.

  Format Cells button

{button Related Topics,PI(``,`IDH_RT_Set_Up_Cell_Numbers')}

To select cell number categories

1 Ensure that a worksheet is displayed.

2 Highlight the cells you want to format.

3 On the Format menu, click Cells.

4 To change the number category, click a category in the Category list box.

5 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also click the Format Cells button on the Standard toolbar.

  Format Cells button

{button Related Topics,PI(`',`IDH_RT_Select_Cell_Number_Categories')}

To format cell numbers

1 Ensure that a worksheet is displayed.

2 Highlight the cells you want to format.

3 On the Format menu, click Cells.

4 To change the number format, click a format in the Format Codes list box.

5 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also click the Format Cells button on the Standard toolbar.

  Format Cells button

{button Related Topics,PI(``,`IDH_RT_Format_Cell_Numbers')}

To align cell text

1. Ensure that a worksheet is displayed.
2. Highlight the cells you want to format.
3. On the Format menu, click Cells.
4. Click the Alignment tab.
5. To change the horizontal position of text within the cell(s), click the Horizontal radio button you want.
6. To change the vertical position of text within the cell(s), click the Vertical radio button you want.
7. To automatically wrap text that is too long to fit on one line within a cell, click the Wrap Text check box.
8. Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also click the Format Cells button on the Standard toolbar.
  - Format Cells button

{button Related Topics,PI(``,`IDH_RT_Format_Cell_Alignment')}

To align cell text horizontally

1. Ensure that a worksheet is displayed.
2. Highlight the cells you want to format.
3. On the Format menu, click Cells.
4. Click the Alignment tab.
5. To change the horizontal position of text within the cell(s), click the Horizontal radio button you want.
6. Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also click the Format Cells button on the Standard toolbar.

  Format Cells button

{button Related Topics,PI(``,`IDH_RT_Horizontal_Cell_Alignment')}

To align cell text vertically

1 Ensure that a worksheet is displayed.

2 Highlight the cells you want to format.

3 On the Format menu, click Cells.

4 Click the Alignment tab.

5 To change the vertical position of text within the cell(s), click the Vertical radio button you want.

6 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also click the Format Cells button on the Standard toolbar.

  Format Cells button

{button Related Topics,PI(``,`IDH_RT_Vertical_Cell_Alignment')}

To wrap cell text

1 Ensure that a worksheet is displayed.

2 Highlight the cells you want to format.

3 On the Format menu, click Cells.

4 Click the Alignment tab.

5 To automatically wrap text that is too long to fit on one line within a cell, click the Wrap Text check box.

6 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also click the Format Cells button on the Standard toolbar.

  Format Cells button

{button Related Topics,PI(``,`IDH_RT_Wrap_Text')}

To set up cell borders

1 Ensure that a worksheet is displayed.

2 Highlight the cells you want to format.

3 On the Format menu, click Cells.

4 Click the Border tab.

5 To change the cell border lines, click the Border check box(s) you want.

6 To change the cell border style, click the style you want in the Border list box.

7 To change the cell border color, click a color in the Color list box.

8 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also click the Format Cells button on the Standard toolbar.

  Format Cells button

{button Related Topics,PI(`',`IDH_RT_Format_Cell_Borders')}

To select cell border lines

1 Ensure that a worksheet is displayed.

2 Highlight the cells you want to format.

3 On the Format menu, click Cells.

4 Click the Border tab.

5 To change the cell border lines, click the Border check box(s) you want.

6 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also click the Format Cells button on the Standard toolbar.

  Format Cells button

{button Related Topics,PI(`',`IDH_RT_Cell_Border_Lines')}

To select cell border styles

1 Ensure that a worksheet is displayed.

2 Highlight the cells you want to format.

3 On the Format menu, click Cells.

4 Click the Border tab.

5 To change the cell border style, click the style you want in the Border list box.

6 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also click the Format Cells button on the Standard toolbar.

  Format Cells button

{button Related Topics,PI(`',`IDH_RT_Cell_Border_Styles')}

To color cell borders

1 Ensure that a worksheet is displayed.

2 Highlight the cells you want to format.

3 On the Format menu, click Cells.

4 Click the Border tab.

5 To change the cell border color, click a color in the Color list box.

6 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also click the Format Cells button on the Standard toolbar.

  Format Cells button

{button Related Topics,PI(`',`IDH_RT_Color_Cell_Borders')}

To shade cells

1 Ensure that a worksheet is displayed.

2 Highlight the cells you want to format.

3 On the Format menu, click Cells.

4 Click the Patterns tab.

5 To change the cell shading pattern, click the pattern you want in the Pattern list box.

6 To change the cell shading foreground color, click a color in the Foreground Color list box.

7 To change the cell shading background color, click a color in the Background Color list box.

8 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also click the Format Cells button on the Standard toolbar.

  Format Cells button

{button Related Topics,PI(`',`IDH_RT_Format_Cell_Shading')}

To select cell shading patterns

1 Ensure that a worksheet is displayed.

2 Highlight the cells you want to format.

3 On the Format menu, click Cells.

4 Click the Patterns tab.

5 To change the cell shading pattern, click the pattern you want in the Pattern list box.

6 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also click the Format Cells button on the Standard toolbar.

  Format Cells button

{button Related Topics,PI(``,`IDH_RT_Cell_Shading_Patterns')}

To color cell foreground

1 Ensure that a worksheet is displayed.

2 Highlight the cells you want to format.

3 On the Format menu, click Cells.

4 Click the Patterns tab.

5 To change the cell shading foreground color, click a color in the Foreground Color list box.

6 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also click the Format Cells button on the Standard toolbar.

  Format Cells button

{button Related Topics,PI(`',`IDH_RT_Color_Cell_Shading_Foreground')}

To color cell background

1 Ensure that a worksheet is displayed.

2 Highlight the cells you want to format.

3 On the Format menu, click Cells.

4 Click the Patterns tab.

5 To change the cell shading background color, click a color in the Background Color list box.

6 Click OK.

Tips

- Use the Apply button to make your changes and view the results without closing the dialog box.
- You can also click the Format Cells button on the Standard toolbar.

  Format Cells button

{button Related Topics,PI(`',`IDH_RT_Color_Cell_Shading_Background')}

Format Cells dialog box - Number Tab

Use this dialog box to apply a specific number format to the active worksheet cell(s).

{button Related Topics,PI(`',`IDH_RT_Format_Cells_Number_Dialog')}

Lists the available cell format code categories: All, Fixed, Currency, Percent, Fraction, Scientific, Date, and Time.

Lists the available formatting options for the active category.

Format Cells dialog box - Alignment Tab

Use this dialog box to position text within the borders of the active cell(s).

{button Related Topics,PI(`',`IDH_RT_Format_Cells_Alignment_Dialog')}

Specifies that text is aligned generally within the cell.

Specifies that text is aligned left to right within the cell.

Specifies that text is centered within the cell.

Specifies that text is aligned from right to left within the cell.

Specifies that text fills the cell.

Specifies that text is justified within the cell.

Specifies that text is centered across the active cell(s).

Specifies that text is aligned along the top of the cell.

Specifies that text is centered within the top and bottom cell borders.

Specifies that text is aligned along the bottom of the cell.

Specifies whether all text is displayed within the cell. If text reaches a cell border, the text automatically wraps within the cell (instead of being hidden under an adjacent cell).

Format Cells dialog box - Border Tab

Use this dialog box to add a border to the active worksheet cell(s).

{button Related Topics,PI(`',`IDH_RT_Format_Cells_Border_Dialog')}

Specifies whether a border is displayed around the cell.

Specifies whether a border is displayed along the top of the cell.

Specifies whether a border is displayed along the left side of the cell.

Specifies whether a border is displayed along the right side of the cell.

Specifies whether a border is displayed along the bottom of the cell.

Lists the available border styles: solid, dotted, double lines, and so on.

Lists the available border colors.

Format Cells dialog box - Patterns Tab

Use this dialog box to shade the active worksheet cell(s) with a pattern and/or color.

{button Related Topics,PI(`',`IDH_RT_Format_Cells_Patterns_Dialog')}

Lists the available cell shading patterns.

Lists the available cell foreground colors.

Lists the available cell background colors.

Format Cells dialog box - Font Tab

Use this dialog box to format the active worksheet cell text.

{button Related Topics,PI(``,`IDH_RT_Format_Cells_Font_Dialog')}

Specifies the control line style. Click a style in the Style list box: Solid or Dashed.

Specifies the pen width and provides a space for you to type the pen width: 1 - 16.

Lists the available colors for the edges. Click the color you want.

Lists the available colors. Click the color you want.

Specifies whether edges are displayed.

Getting Started

{button Show Lessons,JI(`',`IDH_Tutorials')}

The DataAnalyzer tutorials contain several "mini" tutorials that you can work through at your own pace. Each tutorial takes less than five minutes to complete.

Before starting the tutorials, you should know how to open menus, choose commands, and select objects using a mouse. You can follow the tutorials from first to last, or you can skip to the ones that interest you the most. None of the tutorials assume that you have worked through any of the other tutorials.

The tutorial files are on the CD-ROM in a directory called TUTORIAL. The files are not automatically installed on your PC. You can either use the tutorial files from the CD-ROM, or copy them all to a directory on your PC.

If you installed FlowCharter 7 from your network, contact your system administrator to find out where the tutorial files are.

Tips

- Use the Browse buttons,  and  --at the top of this window--to advance to the next or previous lesson.
- When you finish each tutorial, *do not save changes* to it. Just click Close on the File menu, then click No in the dialog box.

Lessons

Using the Chart wizard

The Chart wizard helps you choose the SPC chart type that best fits your needs. With these charts, you can organize and show so that you can analyze a process. Your analysis can not only describe and detect problems with the current process, but you can predict the progress of a process. In this manner, SPC charts are invaluable statistical toosl used for setting up and measuring quality control in manufacturing, process reengineering, process management, and quality assurance.

To use the Chart wizard

1 With FlowCharter 7 active, click SPC Chart on the Insert menu.

2 Click Next.

3 Click the SPC chart type you want.

4 Click Finish.

Tip

- Clicking More displays more information on the chart you selected. Click More before you click Finish.

Using the Data Import wizard

DataAnalyzer creates SPC charts using data from the worksheet. You can enter the data yourself or open an existing data file to get the data. Data can be imported from databases, spreadsheet applications, or text files.

This tutorial show you how to use existing data files to create a chart.

To import data into an SPC chart

1 On the Tools menu, click Data Import wizard.

1 Click the Spreadsheet tab in an active chart in DataAnalyzer.

2 On the Tools menu, click Data Import wizard.

or

Click the Data Import wizard button.

Data Import wizard button

3 Click Next.

4 Click Excel 4.0 File, and click Next.

5 Enter the following filename:

6 Click Next.

7 Select a range for the data.

8 Drag the data to the current DataAnalyzer worksheet.

9 Click Finish.

{button < Back,JI(`>Larget',`IDH_Using_the_Data_Import_wizard');cw(`proctut')} {button Next >,JI(`',`IDH_To_enter_a_text_file_into_a_SPC_chart_T')}

To enter a text file into an SPC chart

1 Click the Spreadsheet tab.

2 Click the Data Import wizard button.

- Data Import wizard button

3 Click Next.

4 Click Text file. Click Next.

4 Browse or enter the name of the file that contains the text to import. Click Next.

5 Select a range for the text.

6 Drag the data to the current DataAnalyzer worksheet.

7 Click Finish.

Notes

- These steps assume that you are in DataAnalyzer and that you are in an active chart.

{button < Back,JI(`',`IDH_To_import_data_into_a_SPC_Chart')} {button Next >,JI(`',`IDH_To_enter_a_worksheet_file_into_a_SPC_chart_T')}

To enter a worksheet file into an SPC chart

1 Click the Spreadsheet tab.

2 Click the Data Import wizard button.

- Data Import wizard button

3 Click Next.

4 Click the source that you want to import the data from. Click Next.

4 Browse or enter the name of the file that contains the data to import. Click Next.

5 Select a range for the data.

6 Drag the data to the current DataAnalyzer worksheet.

7 Click Finish.

Notes

- These steps assume that you are in DataAnalyzer and that you are in an active chart.

{button < Back,JI(`',`IDH_To_enter_a_text_file_into_a_SPC_chart_T')} {button Next >,JI(`>Larget',`IDH_Enhancing_a_SPC_Chart');cw(`proctut')}

Enhancing an SPC Chart

DataAnalyzer provides several ways for you to enhance the appearance of your data charts.

This tutorial shows you how to move and resize a chart, add a frame, add a background, make your chart 3D, and use colors for the chart.

To move an SPC chart

1 In an active SPC chart, move the cursor within the chart boundaries, and click the left mouse button.

2 When the chart handles display, hold down the left mouse button, and move the chart in the direction you want.

3 Release the mouse button when the chart is where you wanted it placed.

To resize a chart

1 In an active SPC chart, move the cursor within the chart boundaries, and click the left mouse button.

2 When the chart handles display, move the cursor to one of the handles until a two-ended arrow displays in place of the cursor.

3 Hold down the left mouse button, and move the chart in the direction you want.

3 Release the mouse button when the chart is the size you want.

{button < Back,JI(`',`IDH_To_move_a_SPC_chart_T')} {button Next >,JI(`',`IDH_To_add_a_frame_T')}

To add a frame

1 In an active SPC chart, click Chart on the Format menu.

2 Click the Backdrop tab.

3 Select a frame style in the list box, such as Thick Outer.

4 Select a pen color in the list box, such as black.

5 Select a point size in the Pen Width box, such as 1.

6 Select a frame style in the Frame Style list box, such as Thick Outer.

7 Clear the Shadow check box.

8 Click OK.

{button < Back,JI(`',`IDH_To_resize_a_chart_T')} {button Next >,JI(`',`IDH_To_add_a_background_T')}

To add a background

1 In an active SPC chart, click Chart on the Format menu.

2 Click the Backdrop tab.

3 Select a gradient style in the list box, such as Oval.

4 Select a gradient color to go from, such as aqua.

5 Select a gradient color to go to, such as aqua.

6 Select a frame style in the Frame Style list box, such as aqua with a dotted style.

7 Click OK.

{button < Back,JI(`',`IDH_To_add_a_frame_T')} {button Next >,JI(`',`IDH_To_make_a_chart_3D_T')}

To make a chart 3D

- In an active SPC chart, click the 2D-3D button.

The 2D-3D button toggles the chart between 2D and 3D views.

{bmc

2D-3D button

{button < Back,JI(`',`IDH_To_add_a_background_T')} {button Next >,JI(`',`IDH_To_use_colors_T')}

To use colors

1 In an active SPC chart, click Chart on the Format menu.

2 Click the Base and Walls tab.

3 Select a gradient style in the list box, such as Oval.

4 Select a wall color to go from, such as gray.

5 Click OK.

Tips

- Colors entered as Base color only display in the 3D view for the chart.
- Thickness for colors entered as bases or walls only display in the 3D view for the chart.

{button < Back,JI(`',`IDH_To_make_a_chart_3D_T')} {button Next >,JI(`>larget',`IDH_Enhancing_an_SPC_Chart_Worksheet');cw(`proctut')}

Enhancing an SPC Chart Worksheet

DataAnalyzer offers several ways for you to enhance the appearance of the worksheet for your SPC chart.

This tutorial shows you how to change the worksheet cell numbers, alignment, border, patterns, fonts, and size.

To change SPC worksheet cell number formats

1 In an active SPC worksheet, select the cells that you want to change.

2 Click Cells on the Format menu.

3 Select a category from the list box, such as Currency.

4 Select a Format Code from the list box, such as $##,##0_ so that the currency amount will be rounded to the nearest dollar, and negative amounts will be shown in parantheses.

5 Click Close.

{button < Back,JI(`>larget',`IDH_Enhancing_an_SPC_Chart_Worksheet') ;cw(`proctut')} {button Next >,JI(`',`IDH_To_change_SPC_worksheet_cell_alignment')}

To change SPC worksheet cell alignment

1 In an active SPC worksheet, select the cells that you want to change.

2 Click Cells on the Format menu, and click the Alignment tab.

3 Select a Horizontal location, such as Left.

4 Select a Vertical location, such as bottom.

5 Click the Wrap Text check box for the text to wrap within the cells.

6 Click Close.

{button < Back,JI(`',`IDH_To_change_SPC_worksheet_cell_number_formats_T')} {button Next >,JI(`',`IDH_To_change_SPC_worksheet_cell_borders')}

To change SPC worksheet cell borders

1 In an active SPC worksheet, select the cells that you want to change.

2 Click Cells on the Format menu, and click the Border tab.

3 Click a check box for where you want your cell border, such as Outline for the border.

4 Click a border style, such as thin outline.

5 Click a border color from the palette.

6 Click Close.

{button < Back,JI(`',`IDH_To_change_SPC_worksheet_cell_alignment')} {button Next >,JI(`',`IDH_To_change_SPC_worksheet_cell_patterns')}

To change SPC worksheet cell patterns

1 In an active SPC worksheet, select the cells that you want to change.

2 Click Cells on the Format menu, and click the Patterns tab.

3 Select the Cell Shading Pattern from the list box.

4 Select the Cell Shading Foreground Color from the list box.

5 Select the Cell Shading Background Color from the list box.

6 Click Close.

{button < Back,JI(`',`IDH_To_change_SPC_worksheet_cell_borders')} {button Next >,JI(`',`IDH_To_change_SPC_worksheet_cell_text_font_point_size_and_color')}

To change SPC worksheet cell text font, point size, and color

1. In an active SPC worksheet, select the cells that you want to change.
2. Click Cells on the Format menu, and click the Fonts tab.
3. Click the down arrow at the right of the Font box in the Formatting toolbar. A list of the available fonts opens.
4. Select a font in the list box, such as Dom Casual.
5. Click the down arrow at the right of the Size box. A list of the available point sizes opens.
6. Select a larger point size, such as 12.
7. Click the down arrow next to the Text Color button and click a color.

Text Color button

8. Click Close.

{button < Back,JI(`',`IDH_To_change_SPC_worksheet_cell_patterns')} {button Next >,JI(`',`IDH_To_change_SPC_worksheet_cell_size')}

To change SPC worksheet cell size

1 In an active worksheet, highlight the column(s) you want to change.

2 On the Format menu, click Column.

3 Click Width.

4 To change the column width, type the column width you want in the Width text box.

5 Click OK.

Adding Text to an SPC Chart

DataAnalyzer lets you enter title, legend, and point label text to your SPC chart. This lets you customize the information entered on the chart.

This tutorial shows you how to enter the text for a title, legend, and point label in a chart and change the font, point size, and color of the text. This feature lets you emphasize the text that is most important.

To enter a title in an SPC chart

1 In an active SPC chart, click Titles on the Insert menu.

2 Click the Chart Title check box.

{button < Back,JI(`>larget',`IDH_Adding_Text_to_an_SPC_Chart_T');cw(`proctut')} {button Next >,JI(`',`IDH_To_enter_a_legend_in_an_SPC_chart')}

To enter a legend in an SPC chart

- In an active SPC chart, click Legend on the Insert menu.

{button < Back,JI(`',`IDH_To_enter_a_title_in_an_SPC_chart_T')} {button Next >,JI(`',`IDH_To_enter_point_label_text_in_an_SPC_chart')}

To enter point label text in an SPC chart

1 In an active SPC chart, select a control line that you want to apply point label text to.

2 Click Selected Control Lines on the Format menu, and click the Point Labels tab.

3 Click the Show Labels check box.

4 Select the location for the labels, such as Above Location.

5 Select the line style to mark the point label, such as Line.

6 Select the orientation of the line for the point label.

{button < Back,JI(`',`IDH_To_enter_a_legend_in_an_SPC_chart')} {button Next >,JI(`',`IDH_To_change_the_typeface_point_size_and_color_of_SPC_chart_text')}

To change the font, point size, and color of SPC chart text

1. Select the text you want to change.
2. Click the down arrow at the right of the Font box in the Formatting toolbar. A list of the available fonts opens.
3. Select a font in the list box, such as Dom Casual.
4. Click the down arrow at the right of the Size box. A list of the available point sizes opens.
5. Select a larger point size, such as 12.
6. Click the down arrow next to the Text Color button and click a color.

- Text Color button

This is the last lesson using this chart.

- On the File menu, click Close. Click No in the dialog box.

To run another tutorial

- Click the Help Topics button at the top of this window.

{button < Back,JI(`',`IDH_To_enter_point_label_text_in_an_SPC_chart')} {button Next >,JI(`>larget',`IDH_Creating_an_SPC_Chart');cw(`proctut')}

Creating an SPC Chart

FlowCharter 7 lets you create many different kinds of charts in support of quality and process reengineering. Quality programs rely on effective communications. For quality programs, charts are the most common means of relaying data so that they can be readily understood. FlowCharter 7 automatically draws the basic charts often referred to in quality and reengineering manuals. With these charts, you can organize and show data so that you can analyze a process. Your analysis can not only describe and detect problems with the current process, but you can predict the progress of a process.

You can create a number of charts, including:

- Process charts
- Cause-and-effect (Ishikawa or fishbone) charts
- Organization charts
- Deployment charts
- Pareto charts
- Histograms
- Run charts (trend charts)
- Control charts
- Scatter charts
- Pie charts

This tutorial lets you create a pie chart, one of the most recognizable chart. A pie chart can be used to compare parts within a single data set, or series. With a pie chart, you can illustrate the relationship of one part to the whole or one part to components of the whole. A limitation of pie charts is that they cannot compare multiple data series. Each part of the pie is called a segment. For emphasis, you can explode a segment after the chart is created by selecting a segment and dragging it away from the pie.

To create a pie chart

1 On the File menu, click Close.

2 On the File menu, click New, and click Blank Page.

3 On the Insert menu, click SPC chart, and click Next.

4 In the Chart Type list box, click Pareto, and click Finish.

5 On the worksheet, enter the label for each category.

6 Enter the value for each category.

7 Click Chart.

Notes

- These steps assume that you are in DataAnalyzer, that you have an active chart, and that you want to create a new chart.
- Pie charts can have only two columns.

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