

Microsoft Excel IF Functions



IF Function

You can create "intelligent" formulas which can be used to apply sets of rules to any worksheet calculation. You make a test and then, based on the outcome to this test, you can make your calculation follow different routes. You will need to use the Comparative operators to make the test and then the Excel IF function to process the results of the test. A formula like $A1 > 100$ returns a logical value.

Comparative Operators

=	Equal to
>	Greater than
<	Less than
>=	Greater than or equal to
<=	Less than or equal to
<>	Not equal to

To process the resulting TRUE or FALSE value you need Excel's IF function which has the following arguments:

IF(Logical Test, True value, False value)

You can type the expression directly into a cell or, like any other worksheet function, you can use the Paste Function to walk you through each one of the arguments required for the function. Choose *Insert, Function* or click the fx tool on the formula bar to call up the Excel function library.

For example, if you had the value of 100 entered into cell A1, the following formula would show "Big" in the cell but if the value in the cell was changed to a value less than 100 then it would show "Small". The recalculation is automatic.

=IF(A1>=100, "Big", "Small")

The True/False outcomes can be anything you like; text, numbers, cell references, other calculations or other conditional tests.

Examples:

If you had the value of 100 entered into cell A1, the following formula would show "Big" in the cell but if the value in the cell was changed to a value less than 100 then it would show no entry in the cell.

=IF(A1>=100, "Big", "")

If you had the value of 100 entered into cell A1, the following formula would multiply the value in A1 by 10% but if the value in the cell was changed to a value less than 100 then it would multiply the value by 2%.

=IF(A1>=100, A1*10%, A1*2%)

A common use of these formulas is to force out the display of divide by zero errors which look ugly when the worksheet is printed. When two empty cells are divided Excel always returns the #DIV/0! (Division by Zero) error value which many people consider unsightly, the formula is fine and will operate correctly when some numbers are entered into the cells but meanwhile only the error displays. If cell C1 contained the formula expression $A1/B1$ the cell will display #DIV/0! while A1 and B1 are empty. To force the formula to display zero instead of #DIV/0! use the IF and ISERROR functions:

=IF(ISERROR(A1/B1), 0, A1/B1)

Please note that the first argument in the IF function requires an expression that returns a logical value. The ISERROR function returns a logical value, therefore there is no requirement to explicitly test for the value TRUE. The logical test is ISERROR(A1/B1), it is not necessary for it to be ISERROR(A1/B1)=TRUE, although the formula would still calculate correctly.