

## **My Favourite Functions in Spreadsheets**

There are actually some useful functions for everyday use in a spreadsheet. Nothing fancy like solvers or pivot tables. Simple functions that can make everyday work easier. For everyday tasks. I can only speak for Microsoft Excel - but I'm sure almost every calculation program has these functions in a similar way.

Everything listed via the links is based on spreadsheets not using the R1C1 reference style. In the unlikely event of being interested in this hilarious subject (!), there's a downloadable zip-file with more examples. The Examples file should display all functions in the respective language of the MS Excel version used.

Short explanation of the following functions:

[IF](#)

[COUNTIF](#)

[IF, AND, OR](#)

[VLOOKUP](#)

Download examples file at <http://www.artoo.de/calc/>

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Apart from the fact that IF is a rather good word, it can also help get rid of #DIV/0! in Excel. You can make a lot of spreadsheets look better and a lot of people happy.

Whenever you divide something by zero, which shouldn't happen but is always the case, the cell shows #DIV!0. For example, there are two columns with numbers (e.g. Actual versus Plan, versus the last ten or twenty years...) you want to compare. A third column is added in order to calculate a percentage, e.g. =C4/C3. A small function avoids #DIV!0 showing up in all those percentage cells that happen to divide by zero.

All functions need arguments: **in Excel arguments are seperated by a ";"**

The IF function has 3 arguments: IF(this is the case;then do this;otherwise do this)

**=IF(B3>0;C3/B3;"")**

If the number in **B3** is bigger than zero, then divide **C3** by **B3**, otherwise show an empty cell.

**=IF(B3>0;C3/B3;"increase!")**

If the number in **B3** is bigger than zero, then divide **C3** by **B3**, otherwise write **increase!**

**=IF(B3>0;C3/B3;"--")**

If the number in **B3** is bigger than zero, then divide **C3** by **B3**, otherwise write --

The first and third option seem to be very popular (leave an empty cell or write --). However, whatever is written between those two quotes of the last "otherwise" argument will appear when the first argument is false. The two quotes turn the cell into text > see **IF, AND, OR**. Sure there is the possibility to write a formula into the third otherwise-argument, in that case no quotes are needed, as calculation with numbers doesn't use quotes, whereas defining text in a function requires quotes.

COUNTIF is good for vacation/business trip planning because it counts any number of the same thing.

Say, there is a spreadsheet showing a yearly or monthly calendar where you input letters for every person going on vacation (to avoid everybody disappearing at once). Unfortunately there are only a limited number of holidays one can take, so an extra cell might calculate the number of times you input a **V**, then Mrs./Mr. V knows that her/his vacation planning has come to an end when that number hits the limit.

Another idea could be to count the number of times something reaches more than 100 per cent. With COUNTIF you can count all those cells that show more than 100 per cent - then you might know how many categories of whatever have reached more than planned (you won't know which categories - see [IF,AND,OR](#) for that question).

The COUNTIF function has 2 arguments:

COUNTIF(search in this area;how many of these you can find there)

<b>=COUNTIF(A1:C20;"V")</b>	Look for the letter <b>V</b> in all cells between A1 and C20, then write down the number V's you can find.
<b>=COUNTIF(A20:F200;"&gt; 1")</b>	Look in the area between A20 and F200 and note how many times you find a number > than 1 (which could be 100% in this case)

No matter whether COUNTIF looks for letters, words or numbers - the second argument (what countif is supposed to look for) is always put in quotes.

Combining IF, AND & OR can be rather helpful when there is more than one question to solve.

Say, a cell is to calculate the net price of an item only if the model is in stock and the colour of this item is green, otherwise the cell is to show "--".

Or, if comparing an actual sales number to the budget number, display nothing when one of the two numbers is zero, otherwise calculate the percentage actual versus budget.

Or, if comparing the actual number of music CD's on your shelf is bigger than the ones that should be there, display "hhmm", or if the number of CD's on your shelf is smaller than it should be, display "hhmm", otherwise display "OK", because then everything matches. I know a person who counts CD's, so I guess there must be more of those people around.

**=IF(AND(B5>0;C5="green");D5/B5;"--")**

If the item (B5) is in stock and the item is green (C5), then calculate the net price per piece (D5 is the net price of all items in stock), otherwise display "--"

**=IF(OR(E30=0;F30=0);" ";E30/F30)**

If the actual sales no. in cell E30 is zero or the budget number in F30 is zero, display nothing, otherwise calculate the percentage.

**=IF(OR(K200>L200;L200>K200);"hhmm";"OK")**

If the number of CD's on the shelf doesn't match the number that should be there, display "hhmm", otherwise display "OK".

This function is good for looking up information in big tables without having to scroll all over the place.

Say, there is huge spreadsheet containing data about items and their prices, size, package, whatever. The item is listed in the first column, all other information in the columns to the right. A big table with lots of data. Somewhere else the spreadsheet shows a summary of special items in this database, e.g. only selected items and their available stock. The summary lists a few items, with VLOOKUP the number of pieces in stock is automatically written into the cell.

Another idea could be to lookup share prices in a table and, by adding another couple of calculations to that formula, calculate the profitability - or list only those share prices you want to see from a huge database (for those who don't want to have the internet calculate their funds).

Basically, VLOOKUP has 3 arguments:

VLOOKUP(what to look for;in which area to search;output from which column)

**=VLOOKUP(A10;B1:K250;5)**

Look in cell A10 and see what's written there. Go to the area of B1:K250. Search column B for what is written in A10. Once found, walk across that row to the 5th column in this area (F) and display the content of that cell.

**=VLOOKUP("Mango";B1:K250;3)**

Look for the word "Mango" in column B (because B1:K250 starts there). Once Mango is found in column B, walk across to the 3rd column (D) and display the content of that cell.