

EXCEL
advanced UK



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EXCEL

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INTRODUCTION

Excel is the most widely used spreadsheet program. Few office workers escapes from its use. Excel is also extremely versatile. It bends from the sellers price calculators and storage reporting tool into do it yourself BI tool.

This material focuses on advanced Excel skills. We focus on analyzing data imported from outside the Excel, functions and the reporting with the Pivot and diagrams..

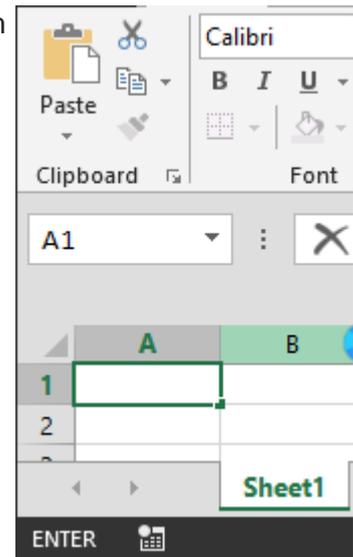
THE BASICS

It is good to master some of the basics features of Excel until proceeding into more advanced level of Excel. Here are the most crucial ones.

Inputing the data

In Excel, each cell acts as a single unit, which means that the data entry for the cell moves to Excel into write (insert) mode. Write mode, some of the functions of the program is not available. Mode automatically turns off when the data is entered. Use enter key to select or you can stop the inputting by pressing the ESC key.

In data input mode, the cursor is blinking inside the cell and the bottom of the Excel window reads text Enter. Part of the ribbon features are "grayed out", ie disabled.



Number formatting

Excel interprets all information received and formats the cells based on that. The design may change radically and the appearance and even the content of the information. When the cell formatting is set, it will not change unless you change the formatting, or delete it

Numbers and text

The first thing to check is whether it is a number or a string. If you enter the numbers according to the locale setting numbers, the information placed on the right side of the cell as the top two cells as shown below. Excel has interpreted your input into numbers so that they can be calculated.

	A
1	1000
2	10 000
3	100 00
4	
5	

In case of a typing error, such as the third cell of the image, the software has interpreted your input string. In this case, "chapters" are not included in the calculation, and the results may be distorted.

Note that with the alignment buttons, you can edit the data alignment into a cell, but we do not recommend it. If you change the layout eg. a permanent basis in the middle, you cannot see the information incorrectly entered and calculations may go wrong.



Thousand separator, currency and percent

When data is inputted accordance with the local settings, Excel can interpret as numbers and format the cells properly. Note, however, that the country settings defined in the computer operating system, and may vary between different machines. The table below shows how Excel interprets the different types of feeds:

Inputted data	Shown	Actual data
10 000	10 000	10000
10000€	10 000 €	10000
50%	50 %	0,5

Dates and time

Dates differs from other inputs significantly. Identified as the date the information is changed in a unique way and can cause confusion. Example, the following entries are interpreted Dates:

Inputted data	Shown	Actual data
1.5	1.touko	42125
2.5.15	2.5.2015	42126
3/5	3.touko	42127
4-5	4.touko	42128

The interpretation of the dates is particularly important to note what actually write Excel cell. You may have already inferred from the table that although the cell displays the date, set it to the serial number. This serial number is the number of days that have passed since 01/01/1900. For example, 5/1/2015 is 42,125 days ahead of the date of 01/01/1900. This system allows Excel to understand the date and therefore must be calculated using them.

The times operate in a very similar relation for dating. In this case, a separator is a colon

Inputted data	Shown	Actual data
12:00	12:00	0,5
13:00	13:00	0,541667
1.5.15 12:00	1.5.2015 12:00	42125,5

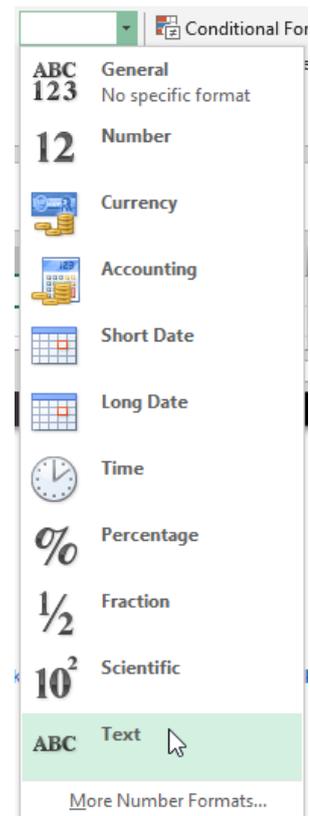
When you enter a time or date with time, Excel writes the cell corresponding to the time of a decimal number. For example, 12:00, or half-days is written as 0.5. This system allows Excel to understand the date and therefore must be calculated using them.

Selecting a formatting and text

Number formatting can be selected also from the ribbon.

1. Activate thr cells
2. Open from the Home tab formatting menu and select desired formatting.
3. You can also select many different formatting with the **More Number Formats** option.

Text design differs from the other formatting, it turns the cell design automatically off. Formatted text cells are not included in the calculation and are formed automatically. Note, however, that the text-formatting is turned on before entering the data.



Typical formatting problems

Sometimes Excel seems interpretative feeds with completely incomprehensible logic. However, this is not true, because the logic is strongly based on mathematical rules. By knowing the most common problem areas, use of the program becomes much easier.

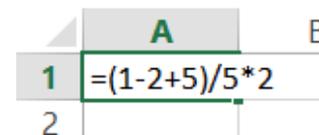
Inputted data	Shown	Explanation	The Fix
00100	100	Excel has interpreted the information as number. Integer leading zeros are insignificant and can be removed	Format the cell as Text and input the data again
+358 400 123	358400123	Excel has interpreted the information as number. A positive sign of the integer will not be displayed	Format the cell as Text and input the data again
1.5	1.touko	In Finnish local setting, a dot is used in dates.	If you meant to input decimal value 1,5, change the formatting of the cell into General and input the data again.

CALCULATIONS

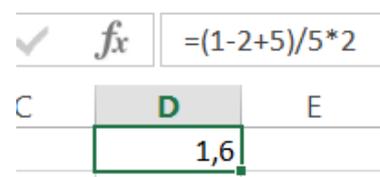
Using the formulas

Excel spreadsheets can be used to efficiently calculate values. The calculation can be done by adding figures or references. Idea is to create tables with the formula does not need to be rewritten every time, but by changing the figures obtained by the result of the calculated quickly again.

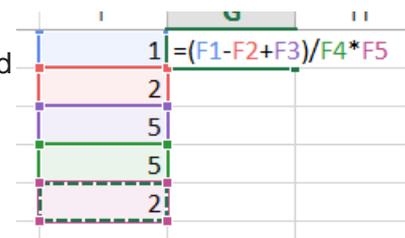
The basic calculation differs from the pocket calculator very little. Calculation is started by entering the = sign. Write a formula in accordance with the rules of mathematics, and then press **Enter**.



Excel writes the result in the cell. You can check and correct the formula from the formula bar.



Now the attached formula seems much more complex. It is not, however, as each figure is now just a data written in the own cell and the formula appears in the names of these cells. Writing the formula also differs slightly, as referenced cells are most often selected with the mouse, instead of typing. Finally, press Enter again, so that Excel displays the answers of the formula in the cell. Now you need to change any of the data cells, in which case the answer to the formula is changed automatically.



Copying the formula

Excel uses in the calculation formulas feature called Relative Reference. This means that even if the cell name is displayed in the formula, it actually refers to a cell location. For example, the image pattern refers to two leftmost cell, even though the formula cells are described by their names **F8** and **G8**.

Data 1	Data 2	Result
1	2	=F8+G8
3	4	
5	6	

This feature allows the copying of formulas, which allows for long lists can be calculated very quickly.

1. Write the formula into top cell and press **Enter**
2. Activate the cell and move your mouse pointer top of the auto copy button.
3. Press your mouse left key down and drag it downwards.

Data 1	Data 2	Result
1	2	
3	4	
5	6	

Data 1	Data 2	Result
1	2	3
3	4	7
5	6	11

Direct reference

Direct cell reference is also known as an absolute reference or basic users "dollar signs" in the formula. A reference can be used to lock in the formula (or functions) references used in such a way that they do not change the format for copying.

The following figure shows the same VAT is added to each item's price. With the relative reference copying the formula results are incorrect.

1. Type the formula.
2. When you select a cell that's reference hat to be locked (**D11** in picture) press **F4** button. Excel adds dollar signs into formula.
3. Copy the formula

	VAT 0%	Price	VAT
Product 1	100,00 €	=B14*(1+\$D\$11)	24 %
Product 2	200,00 €		
Product 3	300,00 €		
Product 4	400,00 €		

IMPORTING THE DATA

Excel is often used for data analysis. Data is collected from multiple sources of Excel database where it is assembled and “cleaned” into form that is required. In this section, we deal with imports as well as knowledge of the necessary information management tools.

Importing .csv files

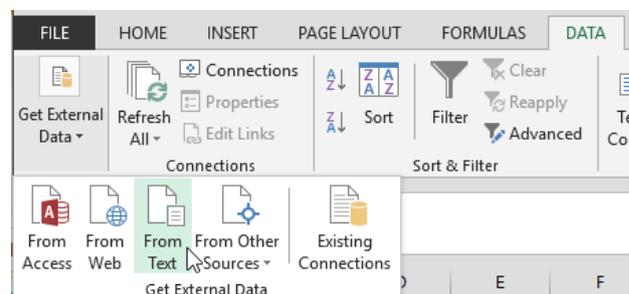
When data is imported from a variety of database applications, most of times, plain copy is enough. However, in certain situations, Excel reads the information wrong. In such situations, you should bring the information by hand, or print it out from the database to a .csv file and read it through Excel.

When you want to import .csv files into Excel:

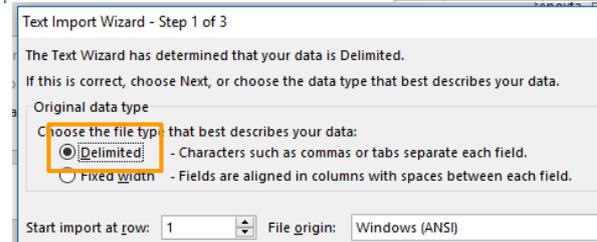
1. Save the data from the data source as .csv file

 Yhteystiedot.csv

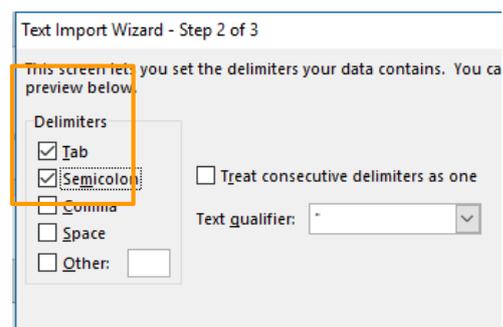
2. Open Text import wizard from Data tab (**From Text**).



3. Select **Delimited** ja click **Next**



4. In .csv file, data is separated with semicolon (;). (Finnish settings).



5. Go through all the columns in the table and define which type of data it is. Text format can be used when you don't want to lose zeroes in front of the value.

