

Efficiency with Excel

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Introduction

Microsoft Excel is a program with great opportunities. The normal user only uses a fraction of its possibilities. The individual use depends on which tasks your daily work involves. These tasks can be executed in many different ways using Excel. One way is not necessary better than the other; there are however certain tasks that can be executed with greater or lesser efficiency.

This essay reflects my personal way of working with Excel. I am still learning new functions and ways of working. Due to the fact that this essay does not necessarily show the most optimal ways, some people who read the essay may have different background and experience, and they might have better solutions. Moreover, that is just the fascinating thing with Excel - a continuous development of knowledge and skills.

This essay is neither a basic education nor an advanced course. It is just my recommendations about how Excel can be used with greater efficiency. Many of my ideas are based on my experience of working with excel tables created by other users.

Basic efficiency

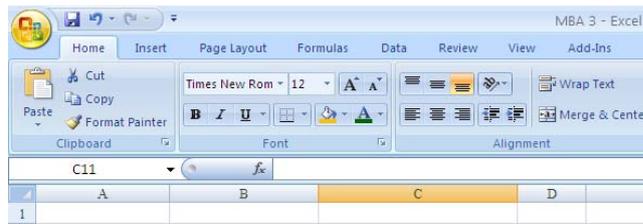
Quick access toolbar

In a new installation of Excel, the quick access toolbar is showed above the ribbon. The toolbar only includes

- Save
- Undo
- Repeat

Verktögsfältet snabbåtkomst (Swedish)

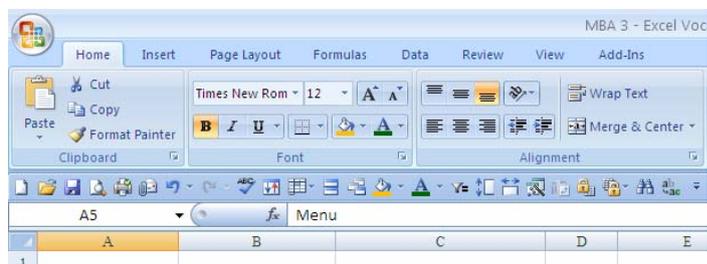
Symbolleiste schnellzugriff (German)



By clicking on the drop-down list to the right of the toolbar a menu for customizing it is shown. Some commands may be chosen directly from the menu, others can be chosen after selecting “More Commands...”.



My recommendation is to include all the commands that are shown directly on the menu. The most efficient way of using the quick access toolbar is to include all the commands that you use frequently. It is also recommendable to show the quick access toolbar below the ribbon, where it is more visual.



Right mouse button

The right mouse button includes shortcuts to commands that Excel finds appropriate for the specific situation. By clicking on the right mouse button a menu drops down with the alternatives.



The keyboard

The keyboard is the fastest and most ergonomic shortcut to many commands. The commands are in most cases applicable to other office-programs.

Ctrl +

N	New Excel Workbook
O	Open
S	Save
P	Print
C	Copy
X	Cut
V	Paste
A	Mark the whole worksheet or table

B	Block letters (<i>F if Swedish or German program</i>)*
I	Italic (<i>K if Swedish or German program</i>)*
U	Underline*
Space	Mark a column
+	Insert a new cell, row or column
-	Delete a cell, row or column
Home	Takes you to the top left cell
End	Takes you to the bottom right cell
↑	To the top of the column
↓	To the bottom of the column
→	To the right side of a row
←	To the left side of a row
Page Up	Previous worksheet
Page Dn	Next worksheet
	Next workbook

** On German keyboards the “Ctrl” key is called “Strg”. In order to obtain block, italic or underlined characters in a German office-program, the touch on the “Strg” key must be combined with a touch on the “umschalt” key.*

Alt +

 Next program

When the [Alt] key is activated small images appear in the menus that indicates which key to touch together with Alt to show or change to a different menu. Which sign that is shown in the menu depends on which language that is used. The signs below show the English version of Excel. To find out the signs for your installation just touch the [Alt] key.

Alt +

F	Shows the Office menu
H	Changes to the Home menu
N	Changes to the Insert menu
P	Changes to the Page-layout menu
M	Changes to the Formulas menu
A	Changes to the Data menu
R	Changes to the Review menu
W	Changes to the View menu
X	Changes to the Add-ins menu

Shift +

Space	Mark a row
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Work and think “Database”

The most efficient way of working with information in a table in Excel is to think in a database mode. When you create a new table with information create it as a database. This means that there should be no gaps in the row or columns. The information must come in a continuous flow. Do not bother with the layout in the beginning of work. Leave this to the end. The important thing is which rows (records) and columns (fields) the table should include. The main item (primary key) should be placed at the left side of the table. When all items are updated think about the layout and formulas. Then use the predefined layout and formulas in Excel.

It is recommendable to start the table some rows down on the worksheet (e.g. row 11). This gives the possibility of inserting information above the table. You can for instance place formulas above the important columns.

Freeze panes

When you work in a table, lock the window under the headline. If some information to the left in the table contains basic information, place the lock to the right of the basic information

Lås fönsterrutor

Fenster fixieren

Filter

It is also recommendable to insert filters on the headline row. This enables you to show selected parts of the table. Increase the row height when you use filters. If you double the height and align the text to the top of the cells, the filters will not hide the text in the cells. Together with subtotal formulas you can obtain information quickly about selected areas if filters are used.

Use existing information

There is a phrase that says “Do not invent the wheel again”. This also applies to Excel. If you want to use new information together with information that already exists, do not spend time registering the existing information again. Instead use formulas to collect the information from the existing Excel sheet to the new sheet. Suitable formulas for this are presented below in the section regarding formulas.

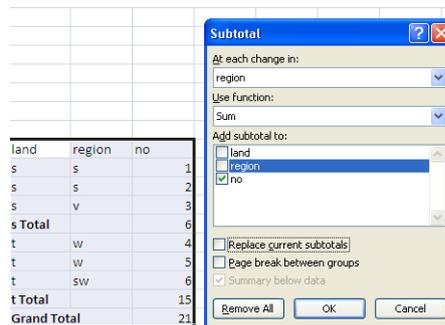
Subtotals

Subtotals can be used either within a table or above/below the table.

Within a table

When subtotals are used within a table the data must be sorted according to the principal columns. For a property company this might be country, region, municipality and property name. It might also be country, company, bank, loan type, loan number etc. Subtotals must be inserted in the order of the importance of the principal columns. Subtotals can be inserted for counts, average, minimum, maximum, sum etc. When the subtotal for the most principal column is inserted continue with the second

(third, fourth etc) important columns. The second subtotal should be inserted without replacing the current subtotals



Do not forget that the data must come in a continuous flow of columns and rows.

Above/below a table

Subtotals above/below the table are used together with filters on the headline row of the table. The data does not require to be sorted in any specific order. When the filter is used in a specific column, the result of the filtration is showed by the formula.

Subtotal(#+;area)

The sign # should be replaced by a number. It then represents a certain calculation of the subtotal. The most common numbers are

Subtotal 1 Counts the average of selected items

Subtotal 3 Counts the number of selected items

Subtotal 4 Selects the maximum value of the selection

Subtotal 5 Selects the minimum value of the selection

Subtotal 9 Sums the selected items

When the headline is combined with filters and frozen panes it is recommendable to insert the subtotal formulas above the table. The advantage of this is that the formulas always will be visible.

Delsumma

Teilergebnis

Auto adjusted column width and row height

To get the exact width for a column double-click on the right borderline for the column on the headline row (A, B, C etc).

This may also be adopted on the row-height, but is more useful for the column width.

If you would like to auto adopt the row-height. Double-click on the borderline under the number on the row number column.

Formulas

Basic formulas

Right =Right(Cell;#)

Show the # number of signs counted from the right side of the indicated cell.

Höger

Rechts

Left =Left (Cell;#)

Show the # number of signs counted from the left side of the indicated cell.

Vänster

Links

Len =Len(Cell)

Counts the number of signs within a cell. Blank spaces are also counted.

Längd

Länge

Trim =Trim(Cell)

Cleans the content of a cell from unnecessary blank spaces.

Rensa

Glätten

Value =Value(Value)

Convert an alpha-numerical value to a number. This might be necessary when values are imported from external databases. The values look like numbers, but since they are alpha-numerical you may not create any formulas with them.

Textnum

Wert

Upper =Upper(Value)

Convert lower-case letters in to upper-case letters.

Useful formula if you would like to create order in a table with different types of cases.

Versaler

Gross

Lower =Lower(Value)

Convert upper-case letters in to lower-case letters.

Same usefulness as of the formula upper.

Gemener

Klein

Round =Round(Value;#)

Rounds a value/formula to a specific number of decimals. When we work with currency the number should be 2. In this way unwanted rounding-errors are avoided in summations.

Avrunda

Runden

Sum	=Sum(Area)	
	Sums the numerical values in a defined area	
	<i>Summa</i>	<i>Summe</i>
Count	=Count(Area)	
	Counts the numerical values in a defined area.	
	<i>Antal</i>	<i>Anzahl</i>
CountA	=CountA(Area)	
	Counts all values in a defined area.	
	<i>AntalV</i>	<i>Anzahl2</i>
Average	=Average(Area)	
	Counts the average value of the numerical values in a defined area.	
	<i>Medel</i>	<i>Mittelwert</i>
Min	=Min(Area)	
	Identifies the lowest value in a defined area.	
	<i>Min</i>	<i>Min</i>
Max	=Max(Area)	
	Identifies the highest value in a defined area.	
	<i>Max</i>	<i>Max</i>
Median	=Median(Area)	

Identifies the middle value in a defined area.

Median

Median

If =If(Condition;True;False)

Checks if a condition is met and returns one value if it is true and another value if it is false.

Om

Wenn

Isna =Isna(Condition)

Checks whether a value is #N/A (not applicable) and returns the value true if the value is missing and false if the value is not missing.

Ärsaknad

Istnv

Vlookup =Vlookup(Value;Search area;Target column;False)

Vertical lookup

Searches for a certain value in a specified area and returns the value in the target column. The target column must be within the specified area. The value false is used to return #N/A if the value is not found within the search area.

Letarad

Sverweis

Hlookup =Hlookup(Value; Search area;Target row;False)

Horizontal lookup

Searches for a certain value in a specified area and returns the value on the target row. The target row must be within the specified area. The item false is used to return #N/A if the value is not found within the search area.

Letakolumn

Wverweis

SumIf =SumIf(Search area; Target value; Target area)

Sums the values in the target area (column) when the search area (column) equals the target value

Summa.om

Summewenn

References

In a formula the reference to a certain cell/area can be relative, absolute or mixed.

Relative A reference is relative if the appointed cell changes when the formula is copied to another cell (A2).

Relativ referens

Relativem bezug

Absolute If the appointed cell does not change, when the formula is copied to another cell, the reference is absolute (\$A\$2).

Absolut referens

Absolutem bezug

Mixed A reference might be mixed relative/absolute both regarding the column and to the row (A\$2, \$A2). In the first case the formula always relates to row 2. In the second case the formula always relates to column A.

Mixad referens

Gemischetem bezug

The combination of relative, absolute and mixed references is essential when formulas are copied in a worksheet. The reason for this is that a relative reference always changes when it is copied to another cell, while an absolute reference does not change. It is therefore necessary to use mixed references in order to get some row constant while the column changes or some columns constant as the rows changes.

To change from relative to absolute reference place the cursor in front of the reference and strike the F4 key once. To change to mixed reference, with the row reference absolute and the column reference relative, strike the F4 key twice. To change to mixed reference, with the row reference relative and the column reference absolute strike the F4 key three times. If the F4 key is struck four times the reference returns to relative.

Primary key

In a database there is always a need for a primary key. The primary key is a unique value in a field (column). If no field represents a unique value, a new field can be created by combining existing fields. For example you can combine the client-number with a property-number to create a unique field for the specific record (row).

	A	B	C	D	E	F	G
	Property	Name	Company	Client	Owner	Primary key	
1							
2	2334	Idet 3	B1084	1084	1084	10842334	
3	2334	Idet 3	B8398	8398	1084	83982334	
4	2334	Idet 3	B8864	8864	1084	88642334	
5	2334	Idet 3	B8866	8866	1084	88662334	
6	2334	Idet 3	B8869	8869	1084	88692334	
7	2334	Idet 3	B8898	8898	1084	88982334	
8	2334	Idet 3	B8899	8899	1084	88992334	
9							

Advanced formulas

Enclosed formulas

A formula might be combined with other formulas. An enclosed formula is then created. One example of this is showed in the example above regarding primary key.

=Value(Trim(D2)&Trim(A2))

This creates a number of the trimmed values for client and property.

Another example is

```
=Value(Left(Cell;4))
```

This creates a value of the first four signs to left in a cell.

A third example is

```
=If(Isna(Vlookup(A2;K2:X100;4;False));"Missing";"Exist")
```

This returns the value "Missing" if a value does not exist in a search-area. If the value exist the value "Exist" is returned.

The formula might be adjusted a little bit to

```
=If(Isna(Vlookup(A2;K2:X100;4;False));0;  
Vlookup(A2;K2:X100;4;False))
```

This returns a zero-value if a value does not exist in a search-area. Otherwise the value of the fourth column in the search-area is returned.

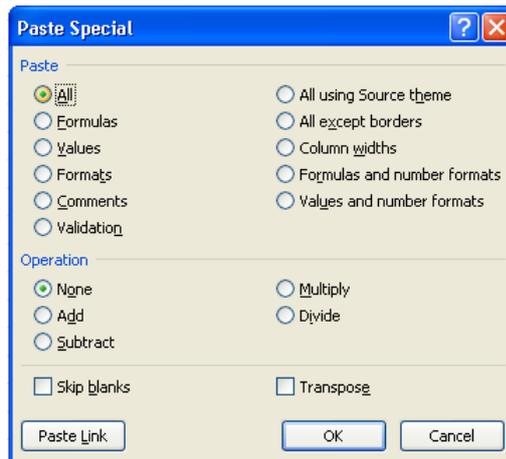
Paste special

When a cell/area is copied and pasted into another area all the existing values, formulas, formats etc are replaced with the new values etc.

There is however a method to paste only certain criteria of the copied cell/area into the new area. This is executed by the command "Paste Special". There are several ways of using the command. The full extent of the possibilities is shown in the dialogue-box below.

Klistra in special

Inhalte einfügen



Values Paste the values of the copied cell/area into the new area. All other criteria of the destination area remain unchanged.

Värde

Werte

Formulas Paste the formulas of the copied cell/area into the new area. All other criteria of the destination area remain unchanged.

Formler

Formeln

Format Paste the format of the copied cell/area into the new area. All other criteria of the destination area remain unchanged.

Format

Formate

Operation With this operation you can add/subtract etc the values of the copied cell/area into the existing values of the new area.

Åtgärd

Vorgang

Transpose This operation paste all the criteria of the copied cell/area into the new area. The values are however re-orientated vertically/horizontally.

Transponera

Transponieren

Macros

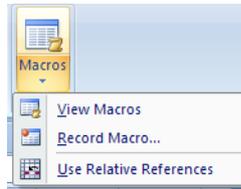
In Microsoft Office you can automate frequently used tasks by creating macros. A macro is series of commands and instructions that you group together as a single command to accomplish a task automatically.

Typical uses for macros are:

- To speed up routine editing and formatting
- To open certain files
- To combine multiple commands, for example to insert a table with a specific size and borders, and with a specific number of rows and columns
- To automate a complex series of tasks

You can use the macro recorder to record a sequence of actions, or you can create a macro from scratch by entering visual basic code in the visual basic editor (VBE). Recorded macros may be edited in the VBE.

When you create macros with the recorder, you do not have to know any of the visual basic code. A macro is recorded by clicking on the button for macros in the view group and selecting record macro.



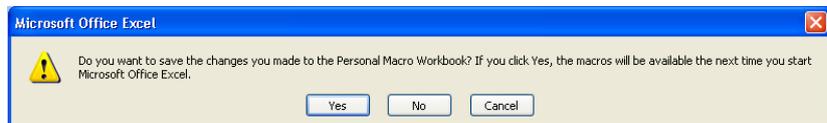
A new dialogue box will appear. Give the Macro a name. Do not use spaces in the name. Store the macro in your personal macro workbook.



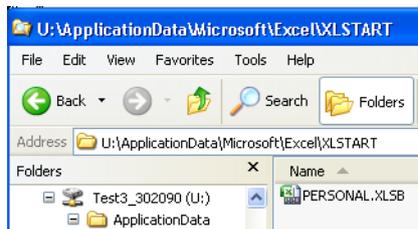
Perform the commands that you want to record. Finish the macro by clicking on the macro button and select stop recording.



When you exit Excel the dialogue box below will appear. If you chose [Yes] the macros will be saved for future use.



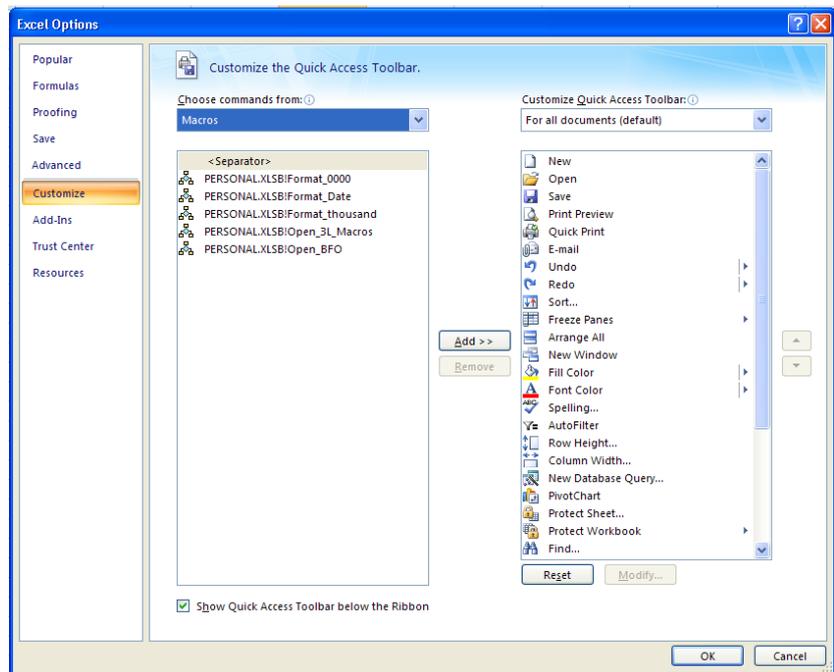
The workbook for personal macros is placed in the “Application Data” folder on the computer. The example below shows the location in Citrix.



Buttons for macros

To make macros more easily reachable, buttons can be created in the quick access toolbar. Then connect the created buttons to the macros.

- Customize the quick access toolbar
- Select more commands...
- Chose commands from the Macro group and then click on add
- Customize the button by selecting the button and click on modify. Select a button for the macro.
- Click on OK when you are finished



Personal workbook

Due to each individual's responsibilities, the use of Excel differs from user to user. Each user often has his/her own work pattern. This pattern can be used to create a personal workbook.

One example might be a worksheet/workbook created with the following format:

- Column width = 12
- Row height = 15
- Font = Times New Roman
- Font size = 12
- Number format = 0 000,00

When the workbook is formatted save it as an Excel template in the folder for Application Data\Microsoft\Excel\Xlstart

There are two types of templates

Xltx Excel template

Xltn Excel macro enabled template

To open the created template use Ctrl + N or click on new.