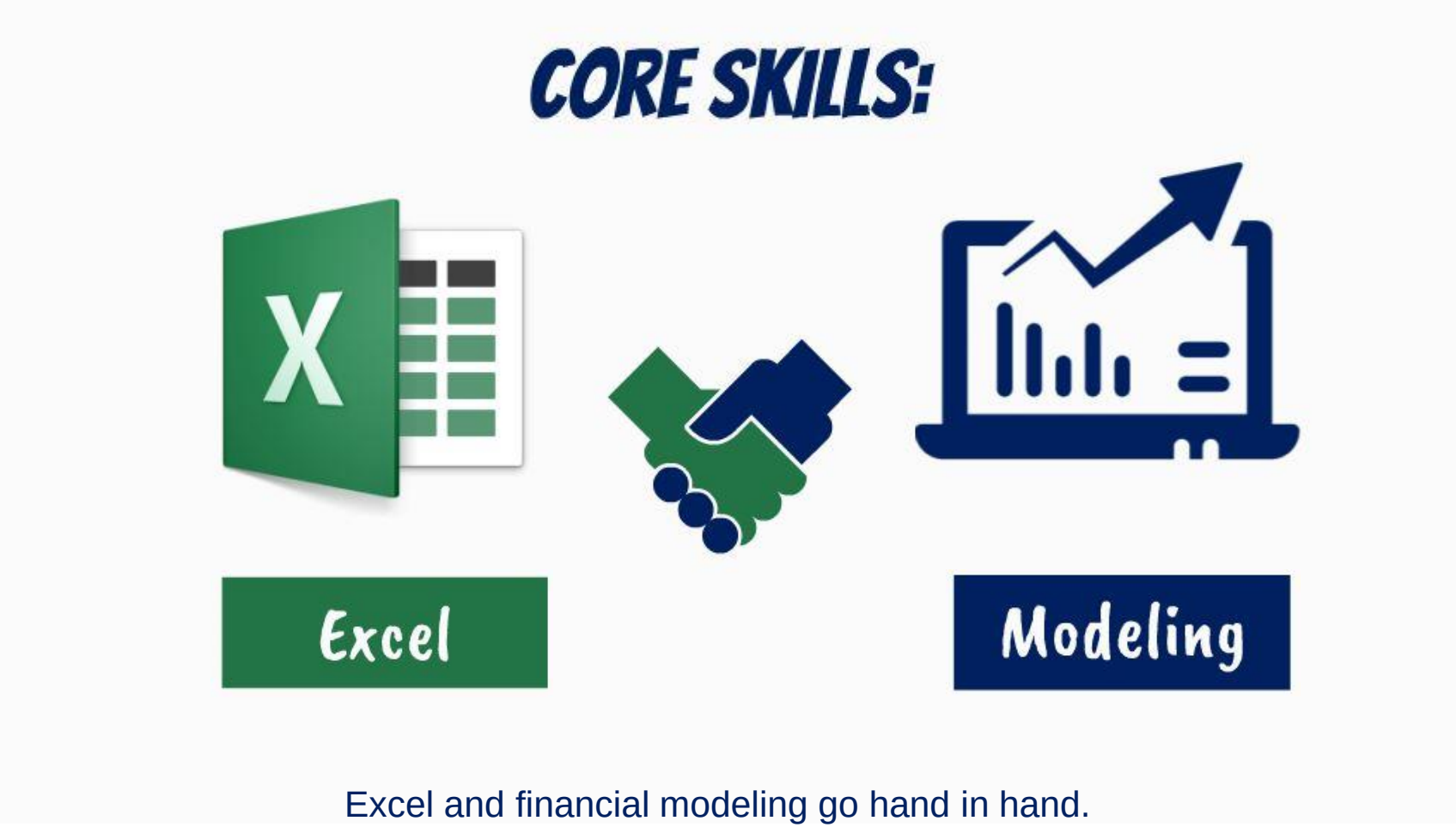
The Power Modeling Bootcamp: Course Notes

Introduction & Formatting



Excel and financial modeling go hand in hand.

A financial model is a virtual representation of a business.

It also translates a set of hypotheses into numerical predictions.

A financial model's main goal is to reduce complexity and uncertainty. It can be very detailed or rather short, but should always aim to be easy to understand and work with.

Why Excel and Why Modeling?

APPLICATIONS:

- BUSINESS VALUATION
- SCENARIO PLANNING
- CAPITAL BUDGETING
- WACC ESTIMATION
- PROJECT FINANCE
- M & A
- ASSET MANAGEMENT

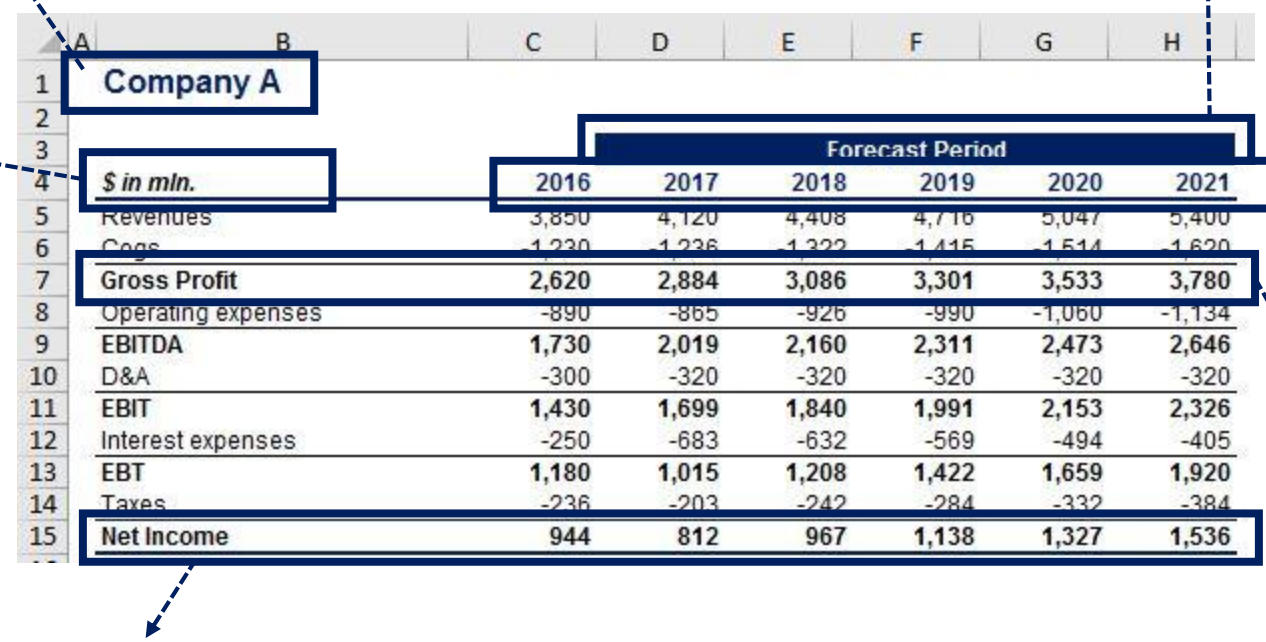
It is a tool that has gained substantial popularity in the modern corporate world.

Professional Formatting

Name of the spreadsheet - Arial 12, Bold; Dark blue

Highlighted text – White font color, Bold, Dark blue fill;
This formatting refers to the forecast period 2017 - 2021

Header - Bold, Italics, Dark blue bottom line;
Displays the currency and the unit of measurement



	A	B	C	D	E	F	G	H
1		**Company A**						
2								
3					Forecast Period			
4		***$ in mln.***	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
5		Revenues	3,850	4,120	4,408	4,716	5,047	5,400
6		Cogs	-1,230	-1,236	-1,322	-1,415	-1,514	-1,620
7		**Gross Profit**	**2,620**	**2,884**	**3,086**	**3,301**	**3,533**	**3,780**
8		Operating expenses	-890	-865	-926	-990	-1,060	-1,134
9		**EBITDA**	**1,730**	**2,019**	**2,160**	**2,311**	**2,473**	**2,646**
10		D&A	-300	-320	-320	-320	-320	-320
11		**EBIT**	**1,430**	**1,699**	**1,840**	**1,991**	**2,153**	**2,326**
12		Interest expenses	-250	-683	-632	-569	-494	-405
13		**EBT**	**1,180**	**1,015**	**1,208**	**1,422**	**1,659**	**1,920**
14		Taxes	-236	-203	-242	-284	-332	-384
15		**Net Income**	**944**	**812**	**967**	**1,138**	**1,327**	**1,536**

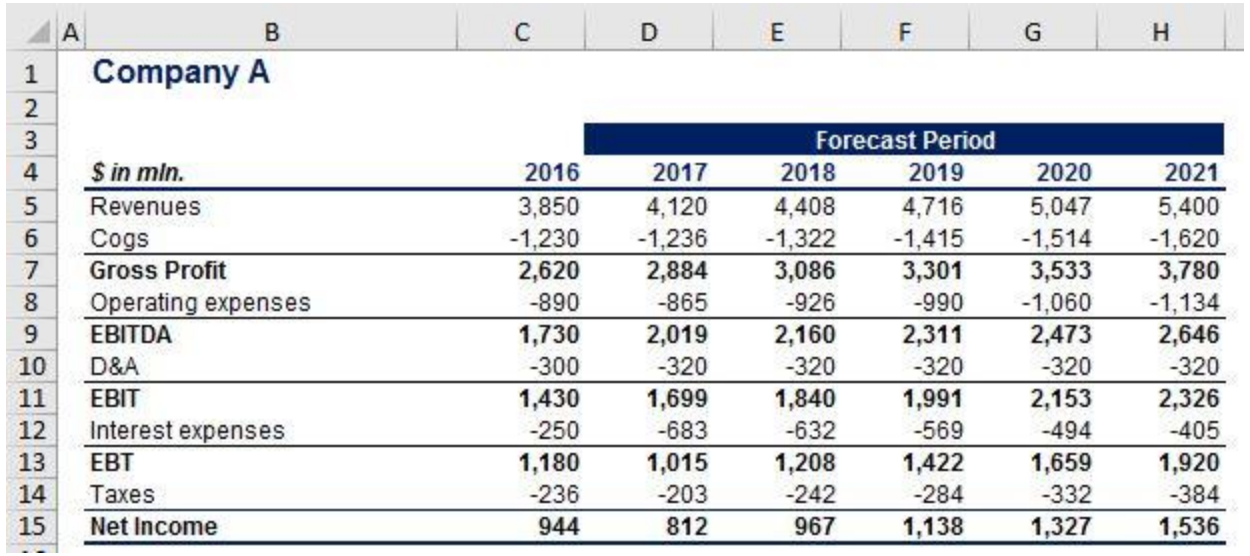
Header - Bold,
Dark blue letters, Dark blue bottom border line;
Represents the forecast period

Subtotal - Bold,
Thin black top border line;
Displays the subtotal values in the table

Total – Bold, Thin top border line, thicker bottom border line; *Shows total values*

Note: *Remember – words are aligned to the left and numbers are aligned to the right*

Professional Formatting



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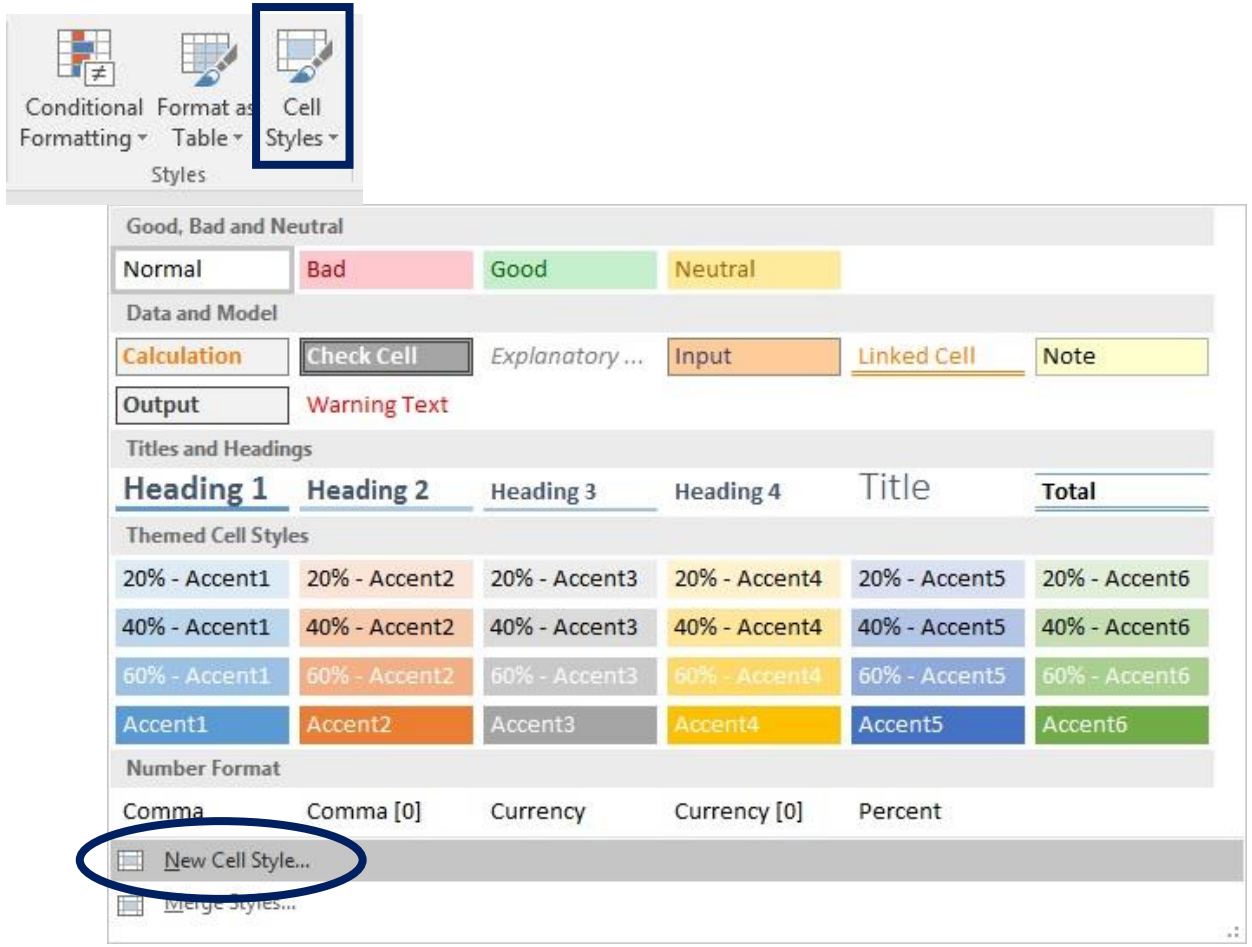
Cell Styles



After you select a cell, in the ***Cell Styles*** section you can create a ***New Cell Style***.

Alt + H + J + N

Cell Styles

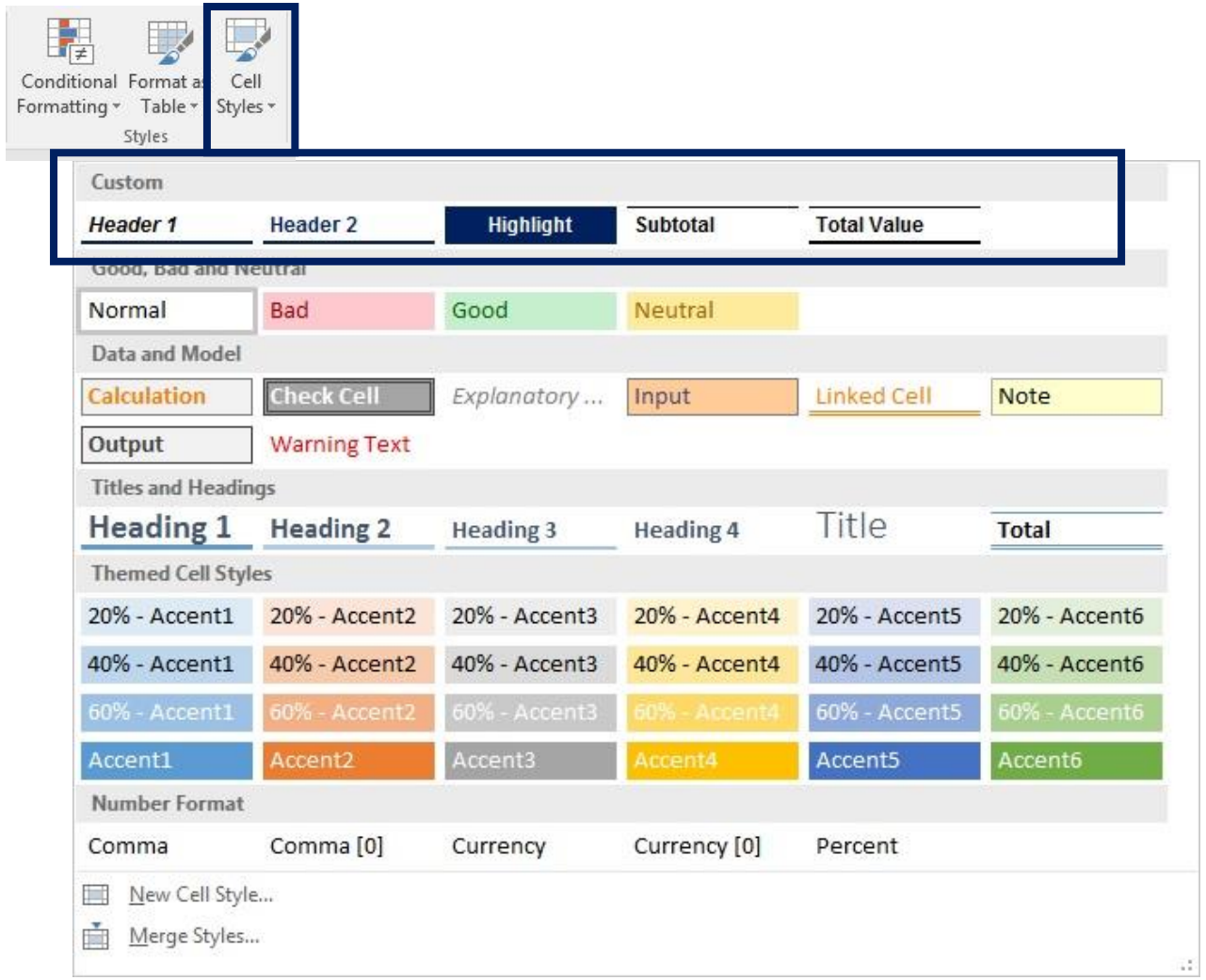
A small dialog box opens up. The characteristics of this formatting are shown here. You can see the default formatting of numbers, cell alignment, font, and so on. You can choose which ones should be applied by ticking or unticking some of these boxes.

By clicking on Format, all aspects of a cell's formatting can be readjusted.

Now, all you have to do is name this style. We recommend you use names that are intuitive.

Once you have decided on a name, click OK.

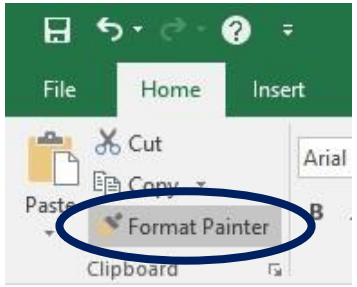
Cell Styles



The next time when you open ***Cell Styles***, you can see a new section called ***Custom***. And within Custom, you will see the new cell style you created.

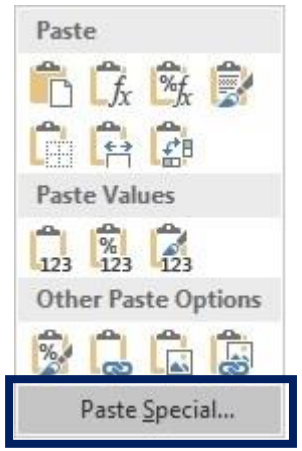
You only need to create new cell styles once. And once you do that, you can use them in all new spreadsheets.

Format Painter



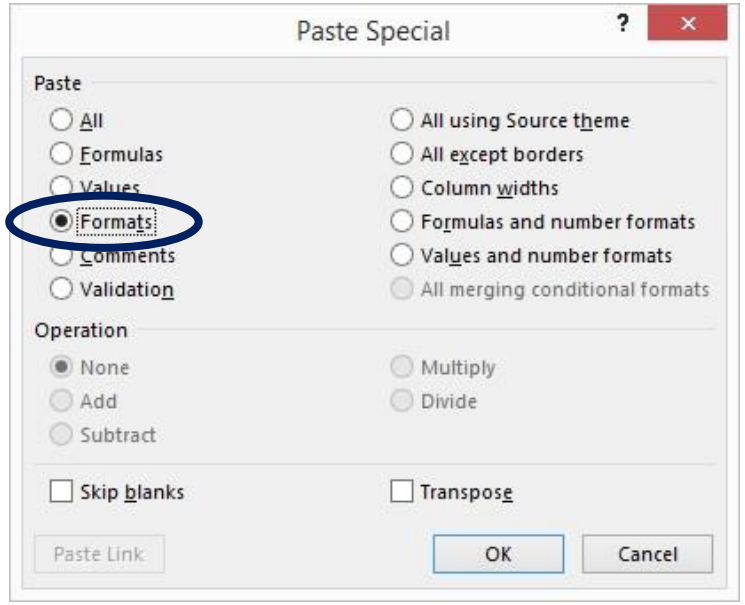
Format Painter copies the formatting of a selected cell or a group of cells, and Excel is ready to apply it to other cells in the spreadsheet.

Paste Special



Alt + E + S

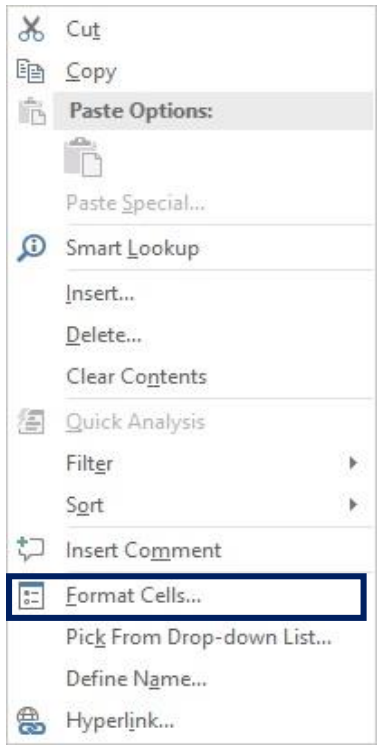
Ctrl + Alt + V

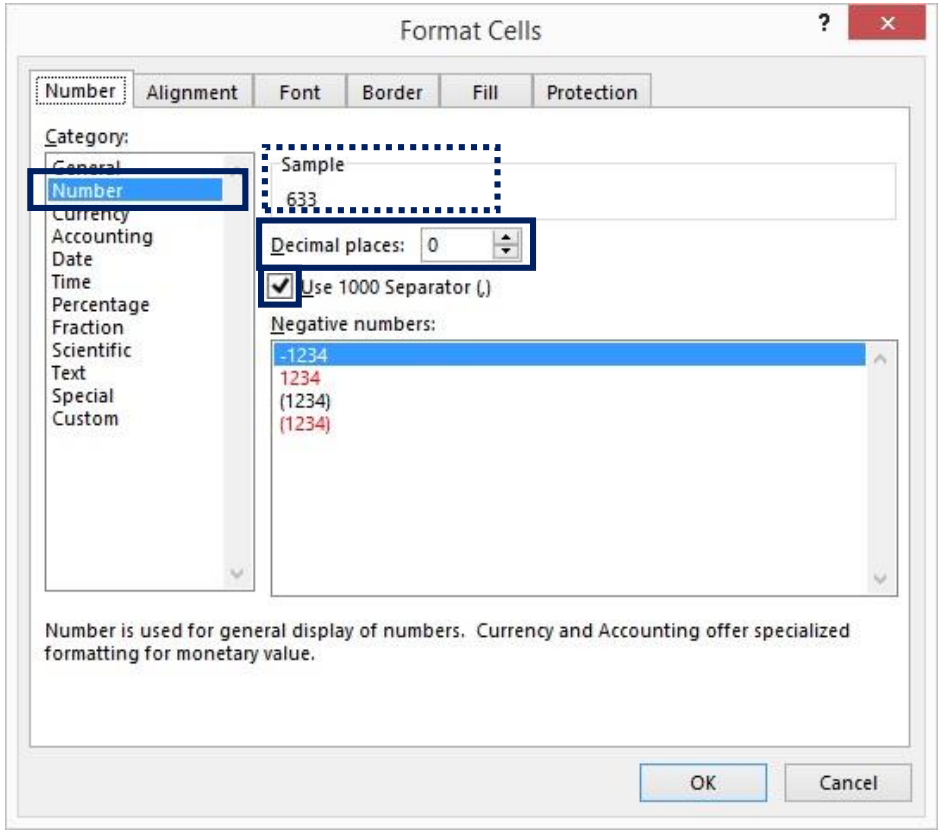


An alternative way to do that is to copy the cells whose format you would like to carry over, select the range that must be formatted, and use ***Paste special.***

You must either expand the ***Paste*** icon or use a keyboard shortcut.

Format Cells



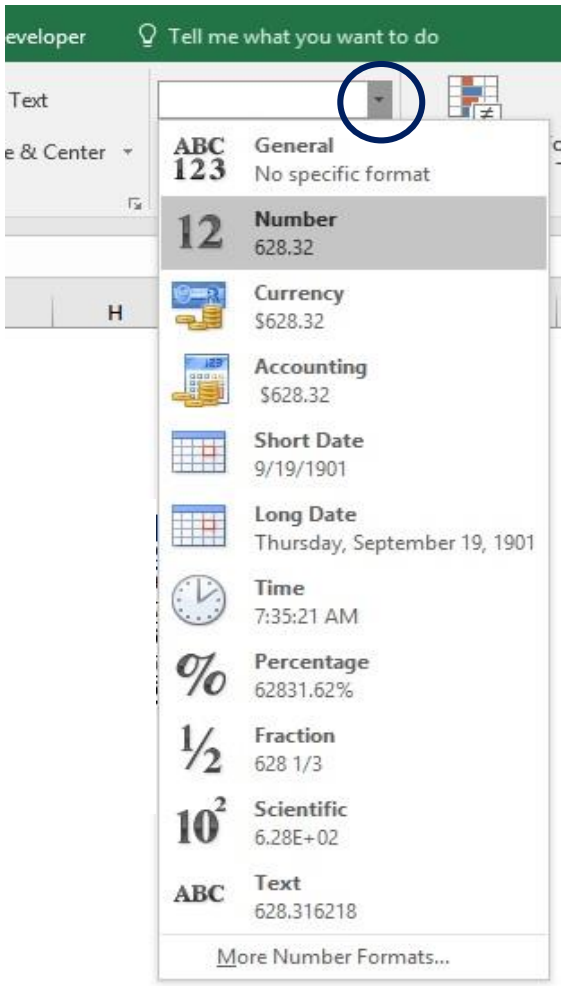


Right click on a cell and press Format cells. Adjust the settings in the dialog box.

When the values you are working with are large, you can remove the figures behind the decimal separator (Decimal places: 0). Since we are talking about money, the thousands separator is indispensable.

Make a snappy check of the sample value. It shows how the numbers will look like after you press OK.

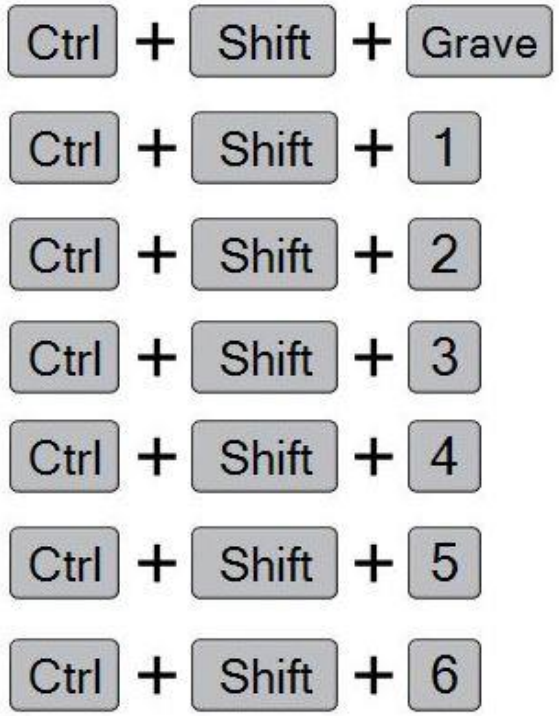
Format Cells



As you probably know, Excel doesn't work only with numbers. Its cells can contain information about text, date, time, currencies, percentages, values, fractions, and other types of data.

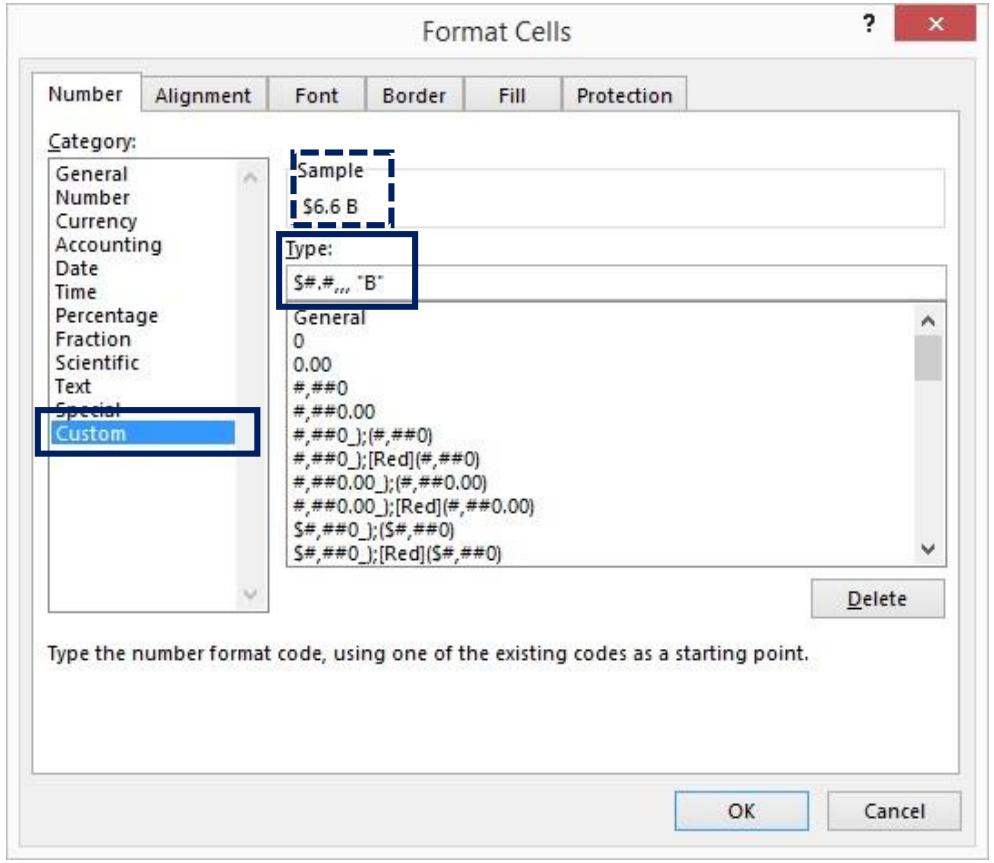
Format Cells

Shortcut Key			Number Format	Pre-formatting	After formatting
Ctrl + Shift +	`	~	General	123	123
Ctrl + Shift +	1	!	Number	123	123.00
Ctrl + Shift +	2	@	Time	22:11	10:11 PM
Ctrl + Shift +	3	#	Date	8/15/2016	15-Aug-16
Ctrl + Shift +	4	$	Currency	123	$123.00
Ctrl + Shift +	5	%	Percent	0.123	12%
Ctrl + Shift +	6	^	Scientific	123	1.23E+02



These shortcuts can save you time when you need to change the cell formats quickly. Each combination starts by holding the Control and Shift keys. And then the third key is a number from 1 to 6. Remember them as Ctrl, Shift plus one of the numbers from 1 to 6.

Custom Numbers



Rules:

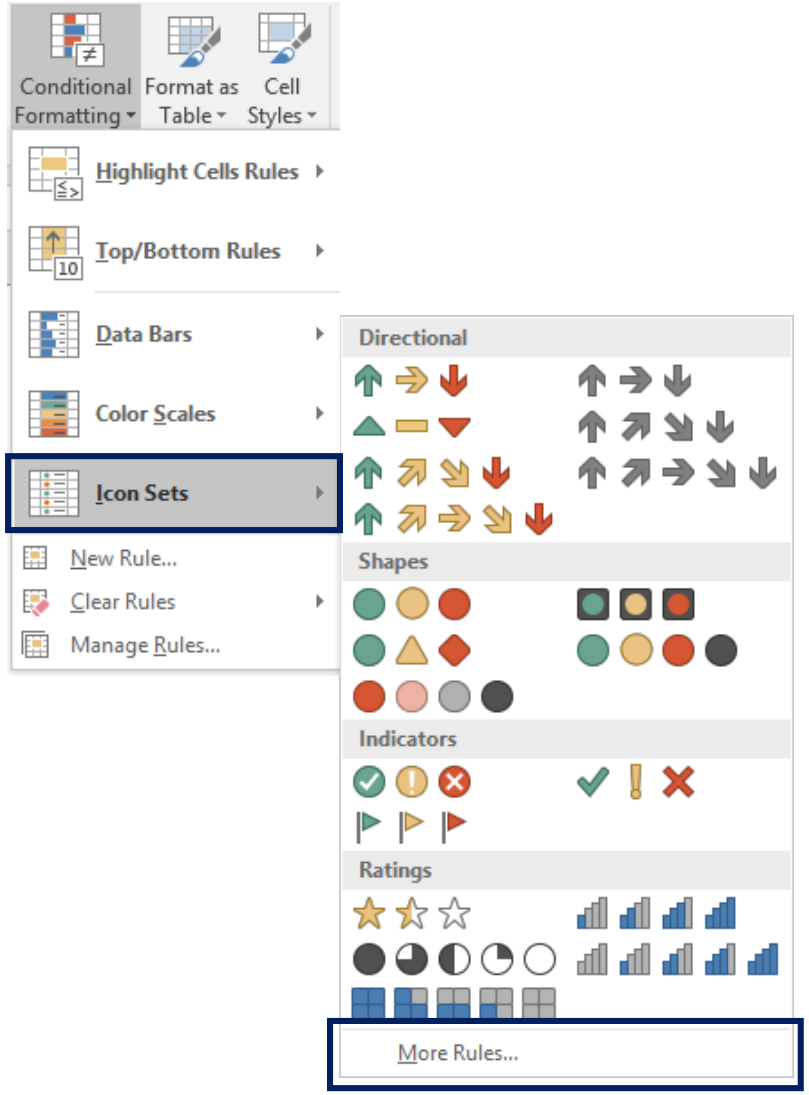
1) **# - a digit**

2) **Symbols in " "**

Exceptions:

~ ! $ % ^ & .

Conditional Formatting

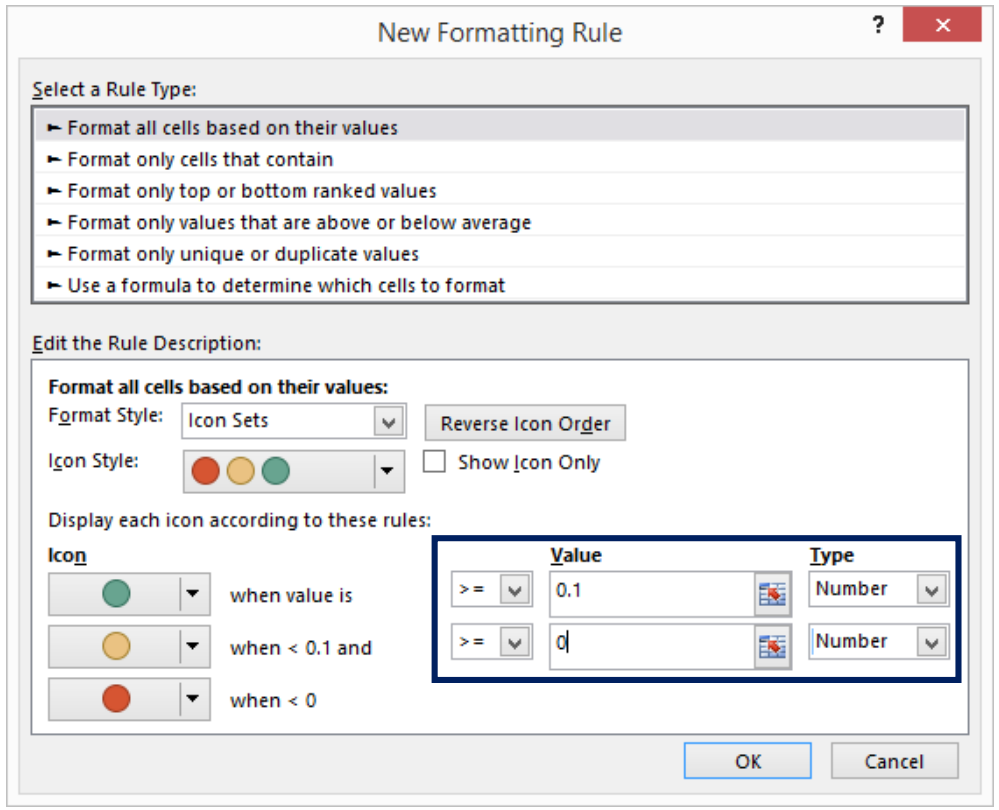


Conditional Formatting highlights cells from a given table according to a rule that reflects the information shown in these cells. Conditional formatting can serve as a quick rule of thumb that helps you visualize and read data.

We can find it in the ***Home*** Tab. Note the different visualization tools it offers– data bars, color scales, icon sets. All of these can be applied to improve data readability.

For example, in Icon Sets, we can create the so-called ***traffic lights formatting***. we advise you to stick to a slightly more professional approach: open the ***More Rules*** dialog box and specify the rules and the threshold values yourself.

Conditional Formatting



If a number is above a certain threshold, it will be colored in green. If it is lower than the threshold, but still higher than a lower bound threshold, it will be colored in yellow. And then if it is lower than both thresholds, it will be colored in red. If you specify no criterion to be used to format the data, Excel will do that for you automatically.

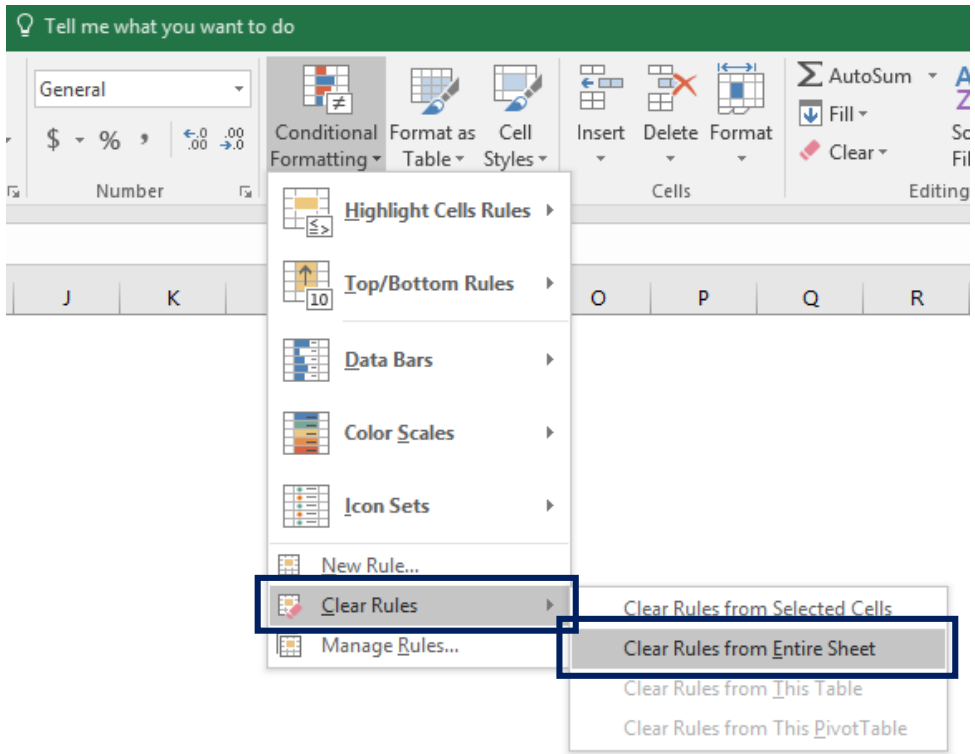
The approach we propose is to use *numbers*, which makes things much easier. Just type in the numbers as decimals and everything will be perfect.

Conditional Formatting

Var% FY14-FY15	Var% FY15-FY16
11.4%	-6.8%
45.2%	-8.4%
-9.2%	67.3%
15.6%	**1.1%**
23.4%	3.9%
13.7%	**0.3%**
9.1%	80.5%
30.8%	-27.7%
-6.4%	-90.5%
-27.7%	6.4%
32.0%	5.1%
0.0%	0.0%
-85.9%	-59.7%
-48.9%	**-8.2%**
-0.1%	-7.6%
-64.8%	**-8.8%**
-39.8%	8.2%
0.0%	0.0%
-85.0%	**-61.9%**
-90.5%	36.6%
-82.1%	-89.1%

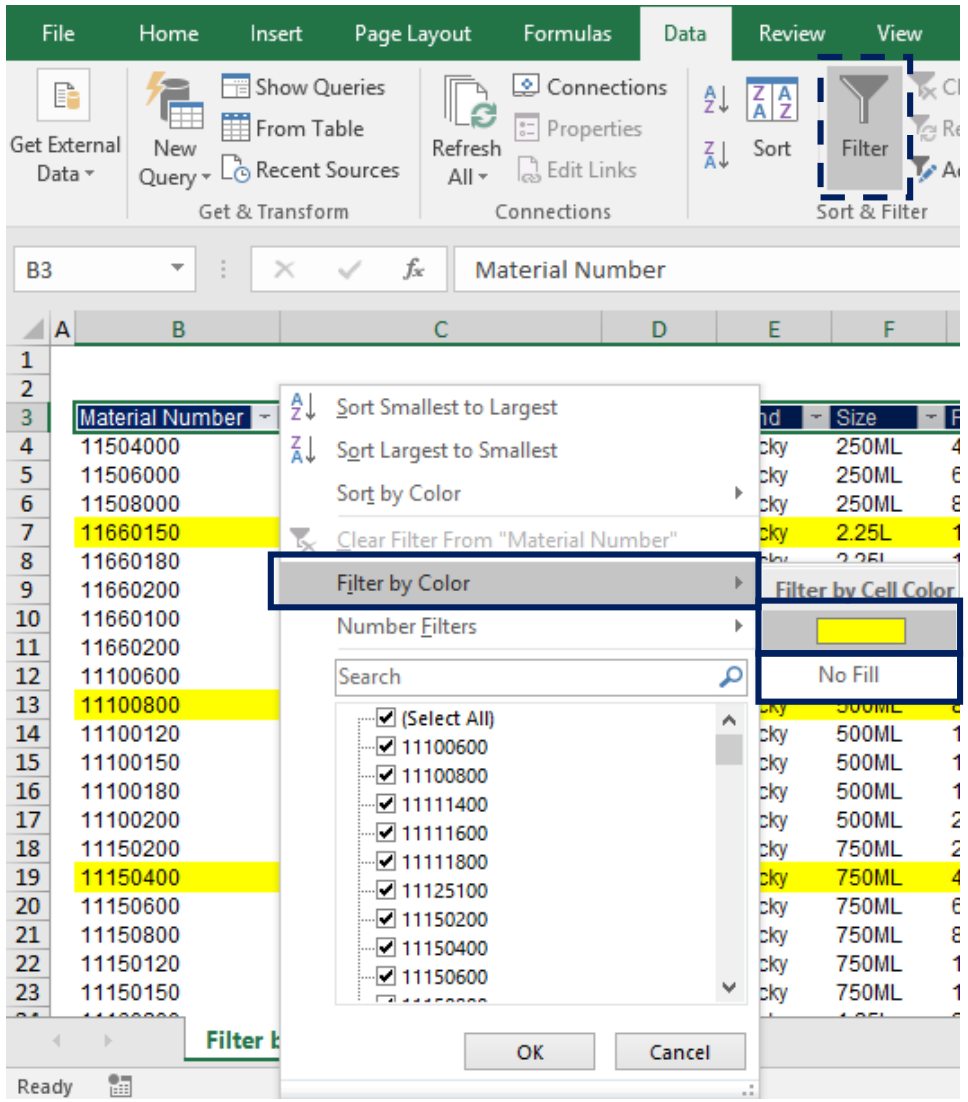
Now the formatting is much more meaningful – you see the positive values in amber and those above ten percent in green. Everything below zero is red. This means you consider a change larger than ten percent good, between zero and 10 percent just ok, and anything below zero as negative.

Conditional Formatting



Finally, if you want to get rid of a rule, it will suffice to expand the already well-known conditional formatting menu and then clear the rule. The quickest way to do that would be to clear the entire sheet.

Filter by Color

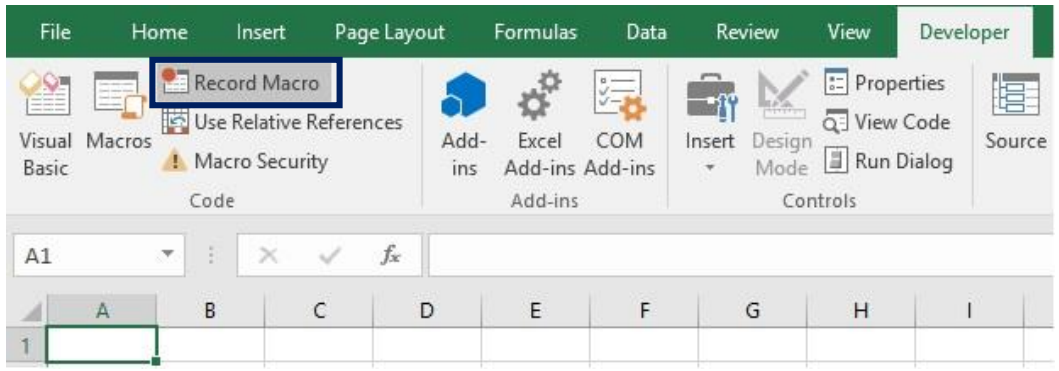


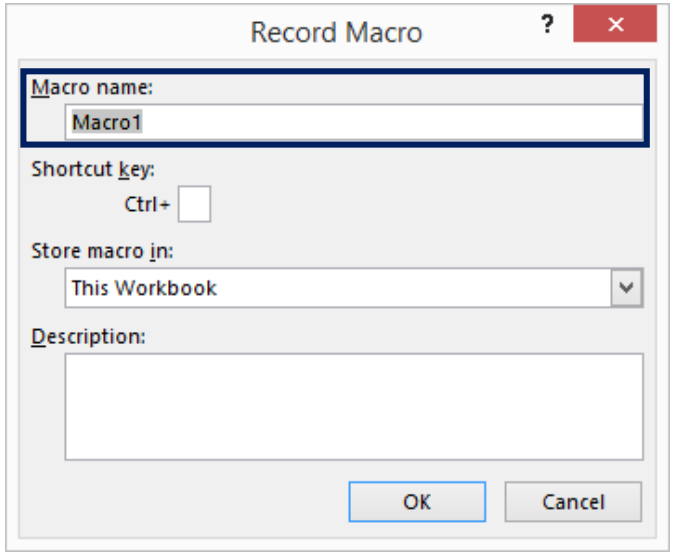
To ***filter by color***, you will have to create a filter.

Then once we've done this, you can select the type of filter that will be applied to the rows of the table. If you only want to filter rows colored in yellow, in the middle of the drop-down list that opens, you can select ***Filter by Color***. Press the yellow rectangle and only the highlighted cells of the table will be displayed.

Alternatively, you could filter by ***No Fill***, which would mean you would see all the cells in the table that have no color applied to them.

Excel Macros





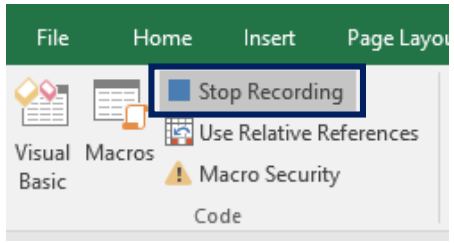
An ***Excel Macro*** is a set of instructions that can be triggered by a shortcut, toolbar or an icon in a spreadsheet.

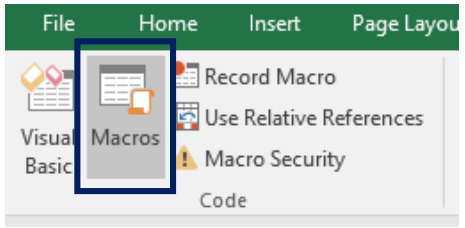
Click ***Record Macro***. Give it a name. Press “OK”.

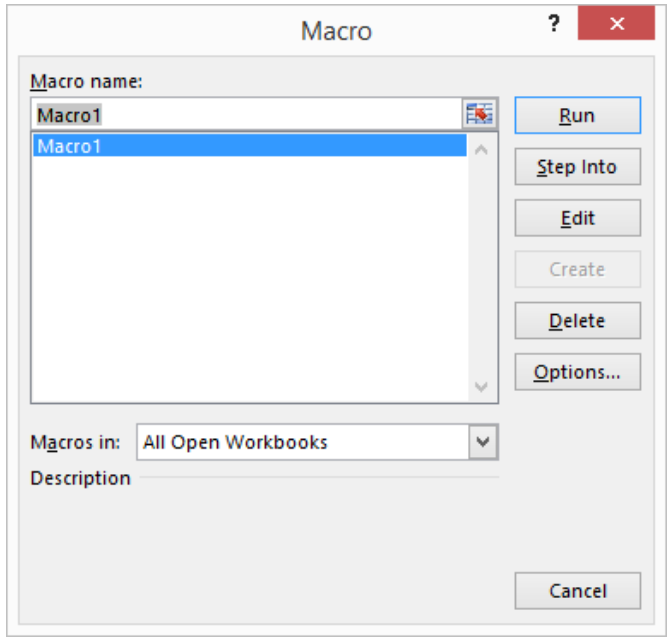
From this moment on, every action you do is recorded.

A piece of advice: use macros which work on a single sheet.

Do not record macros that involve operations on multiple sheets as this carries risks for errors.







It can be any type of action – typing formulas, text, formatting a sheet… anything.
Once you record it, you'll be able to replicate the same sequence of actions on a new sheet.

Once you have done that, you can click on the ***Stop Recording*** button.
Every time you create a new sheet you'll be able to format it easily with the macro you've recorded. Go to the ***Macros*** button and select the macro that you saved. Press the ***Run*** button.

Excel is doing the operations you carried out while recording.

You can use macros for any kind of repetitious operations in order to save time and be more efficient.