

Excel Guide

An introduction to the basic functions of Microsoft Excel.

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Getting Started

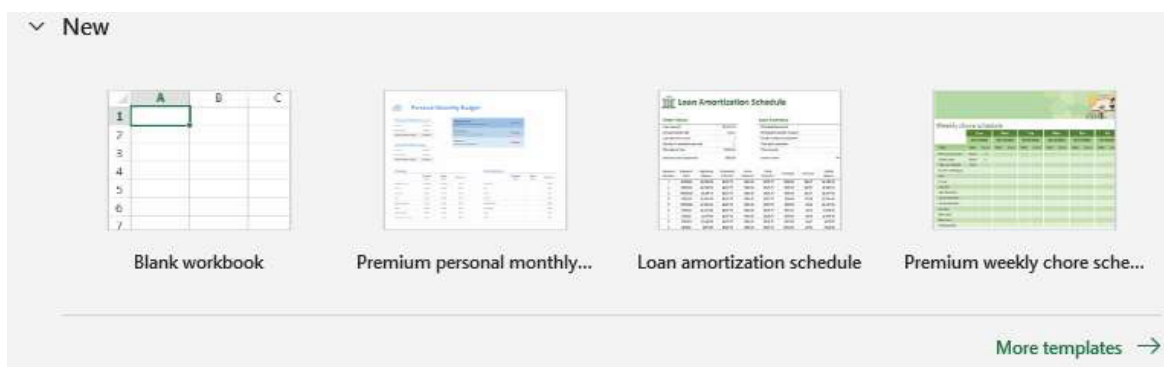
Downloading Microsoft Office

Excel can be downloaded as part of your university Office 365 account. To do this, follow: portal.office.com/account and login using your university email (e.g., c1234567@newcastle.ac.uk) and password, then 'Install Office'.

Opening a workbook

Excel documents are called workbooks. To create a new workbook, open the Excel app, click File, and then click New.

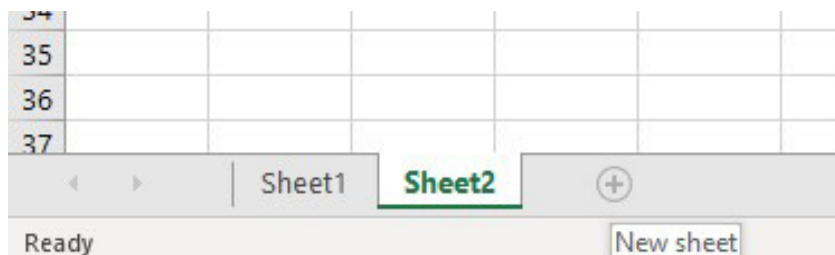
You can use templates available here, or open a blank workbook.



Navigating between spreadsheets

You can create new sheets within a workbook by selecting the '+' button, at the bottom left of the sheet, and navigate between these by selecting different 'tabs'.

You can add as many sheets as you want to a workbook, or you can create new workbooks to keep your data separate.



Data Entry

You can input data manually by clicking an empty cell and typing in your text or number.

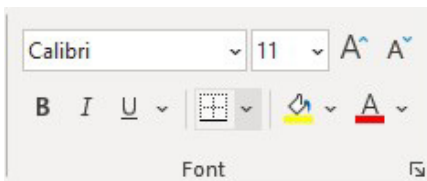
Press Enter or Tab to move to the next cell.

You can also import data from text files (.txt or .csv) files.

Cells are referenced by their row and column location on the sheet, so for instance, A1 is the cell at the intersection of the first column and row.

Formatting

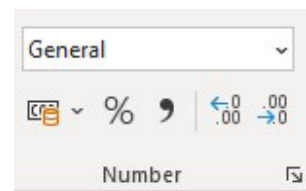
Basic cell formatting



You can add/ remove cell borders, fill cells with colour, or change font formatting by selecting the Home Tab and the Font section at the top of the page.

Number formatting

You can format numbers as currency/ percentages/ date/ time etc. or change the number of decimal places by navigating to the Home Tab and Number section.



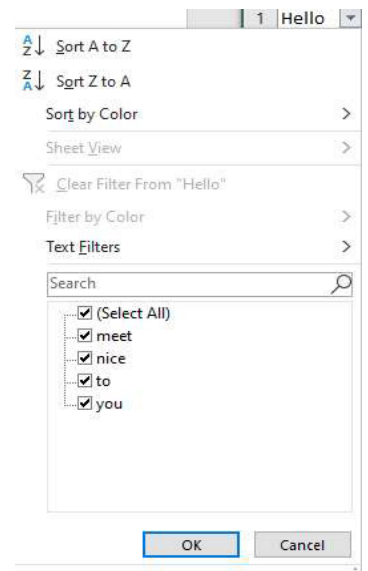
Enabling sorting/ filtering

You can filter data by category, colour or text, you can also 'sort' columns AZ/ highest-lowest etc.

To do this, navigate to the Data tab, then in the Sort & Filter group, click Filter.

Following this, a small arrow will appear in the selected header. Once clicked, the arrow will display a list in which you can make filter choices.

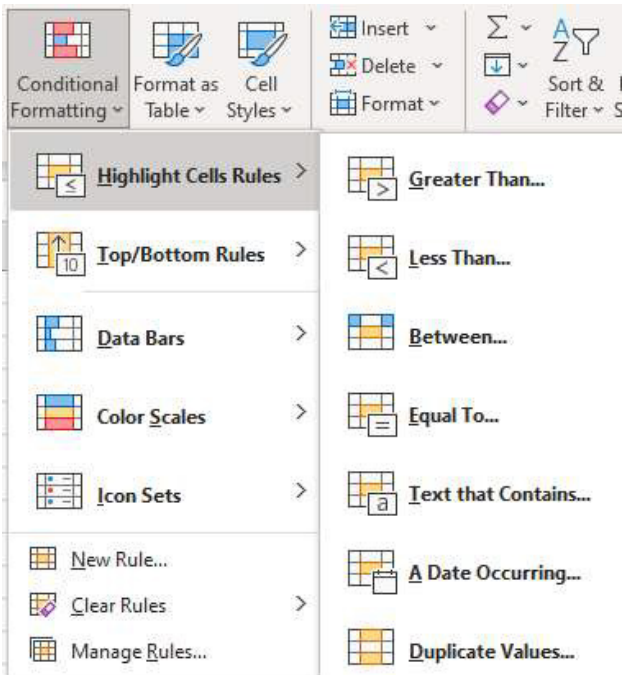
If you only want to see particular values, in the list, clear the (Select All) check box. This removes the check marks from all the check boxes. Then, select only the values you want to see, and click OK to see the results.



Conditional Formatting

Conditional formatting allows you to highlight cells/ data that fit certain criteria.

To get started, select the cells you want to apply conditional formatting to. Then navigate to Home tab, click Conditional Formatting.



Once you select a filter, you will be asked to define the rule(s) that dictate which cells are highlighted, for instance if data is greater/ less than/ between or equal to specified values.

You can also set rules to highlight cells containing specified text, dates, or duplicates. Top/ bottom rules allows you to highlight a specified top or bottom percentage of selected data.

Data bars produce a visual scale symbolising relative cell value.

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N |
|---|-----------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | Initial | JK | RJ | LL | PO | BY | SH | MT | GT | OB | KC | AD | LW | NB |
| 2 | Test score /100 | 80 | 77 | 63 | 55 | 54 | 86 | 74 | 50 | 63 | 78 | 62 | 68 | 58 |

Similarly, you can use the Colour Scales feature to set colours to represent relative cell value.

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N |
|---|-----------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | Initial | JK | RJ | LL | PO | BY | SH | MT | GT | OB | KC | AD | LW | NB |
| 2 | Test score /100 | 80 | 77 | 63 | 55 | 54 | 86 | 74 | 50 | 63 | 78 | 62 | 68 | 58 |

Calculations

Basic formula and functions

In Excel, a formula can perform calculations or operations on values in selected cells. For example, =A1+A2+A3, will calculate the total of cells A1 to A3.

The SUM function totals values from a selection of columns or rows from your selected range.

e.g., =SUM(B2:G2) – Totals the values of row 2.

=SUM(A2:A7, A9, A12:A15) – Adds values from range A2 to A7, skips A8, adds A9, then adds from A12 to A15.

=SUM(A2:A8)/20 – Totals the column selection and divides this by 20.

Calculating Averages, counting cells, trimming

The AVERAGE function should calculate the mean of selected range of cells

e.g., AVERAGE(B2:B11)

The COUNT function counts the number of cells in which numerical data is present.

e.g., COUNT(B:B) counts all cells with numerical data in column B

The COUNTA function similarly counts cells within a specified range, regardless of data type, i.e., empty cells, and cells containing text.

e.g., COUNTA(B12:B75)

The TRIM function removes any extra spaces within identified cells.

e.g., TRIM(A2:A18) – Creates a duplicate column removing any blank spaces from A2 to A18.

IF function

The IF function is often used when you want to categorise your data according to a rule.

e.g., =IF(B6<C6,"TRUE","FALSE")

This means that data at B6 is less than data at C6. If this logic is true, let the cell value read 'TRUE', otherwise, 'FALSE'.

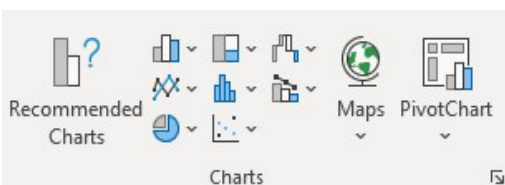
You can also embed formulas and functions within IF formula.

e.g., =IF(SUM(B1:B10) > SUM(C1:C10), SUM(D1:D10), SUM(E1:E10))

This means that the total of B1 to B10 and C1 to C10, then it compares the sum. If the sum of D1 to D10 is greater than the sum of E1 to E10, then it makes the value of a cell equal to the sum of D1 to D10.

Graphics

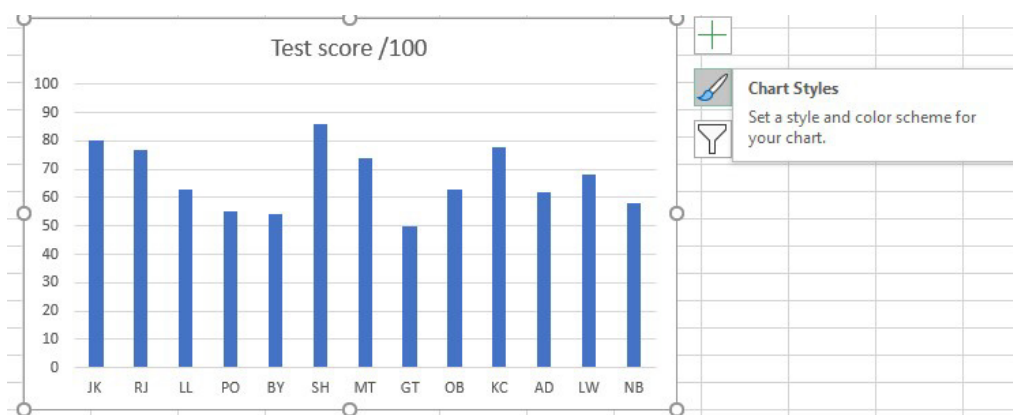
Charts



To insert a chart, select the data and labels you would like to use, then go to 'Insert', and 'charts'.

...ature, which generates a series of potential charts, or manually select the chart type that suits you. This includes bar charts, scatterplots etc.

You can then format the colour, font etc. in excel by clicking on each of the features and editing them manually, or selecting the paintbrush on the right hand side of the chart, and selecting a premade template.



Exporting Tables and Charts

You can save a table you have created in Excel by selecting the cells, and copy-pasting it into a graphics program, saving it as a picture. Alternatively, you can copy the cells directly into a word/ PowerPoint document etc.

You can save a chart by right-clicking it and selecting 'save as picture', or if you would prefer to continue editing this, you can copy and paste the graphic into a Word/ PowerPoint document etc.

Further reading:



Microsoft has a great online guide overviewing the basic functions of Excel, available here: support.microsoft.com/en-us/office/basic-tasks-in-excel-dc775dd1-fa52-430f9c3c-d998d1735fca



There are also some fantastic guides available on YouTube, this playlist is especially user-friendly and extensive:

www.youtube.com/playlist?list=PLpQQipWcxwt-zyMUSRc4VBBs91biCcBo4