



THEORY NOTES

SPREADSHEETS & DATA

Basics of MS Excel

Practice. Improve. Succeed.



Subject : MS Excel



Language : English

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What is MS Excel?

Microsoft Excel is a **spreadsheet program** that allows us to store, organise and analyse information. Many people imagine that Excel is a tool only for specialists who process complicated data, but in reality *anyone* can learn to take advantage of Excel's powerful features. Whether we are keeping a household budget, organising a training log or creating an invoice, Excel makes it easy to work with many different kinds of data. Because it is part of the Microsoft Office family, it is used everywhere for accounts, marksheets, budgets, inventories and any work that involves rows and columns of data.

The real beauty of Excel lies in its ability to **simplify** these tasks. Working with a paper spreadsheet is complicated, time-consuming and limited. On paper, if a portion of our row data changes, we must erase and re-enter it, and then we must also erase and recalculate every derived figure — such as the totals or averages that were affected by that change. Excel removes all of this drudgery: it recalculates everything for us automatically the instant a number changes.

Think of it like... a smart sheet of graph paper. On ordinary paper you would add up a column with a calculator; in Excel you write one formula and it adds up instantly — and re-adds by itself the moment you change a number.

What can Excel do?

Excel can be used to make quick and easy **financial analysis**; to **analyse data** of every kind; to create **presentations with charts** (its graph utilities); to **retrieve data from external data sources** and use it inside our worksheets; to **calculate using data from multiple worksheets** at once; to **create web pages** with ease; and even to **run queries on data available on the web**. In short, it gathers the abilities of a calculator, a filing cabinet, a graphing tool and a small database into a single program.

- ✓ **Calculate** — add, subtract, multiply, divide and use hundreds of ready-made functions.
- ✓ **Organise** — sort, filter and group large lists, and search for data that meets a condition.
- ✓ **Visualise** — draw two-dimensional and three-dimensional column charts, pie charts and many other chart types.
- ✓ **Analyse** — summarise data with Pivot Tables and test outcomes with What-If tools.

DEFINITION

Microsoft Excel is a full-featured spreadsheet program that allows us to **organise data, complete calculations, make decisions, transform data into graphs, and develop professional-looking reports**.

The three major parts of Excel

- ✓ **Worksheets** — worksheets let us enter, calculate, manipulate and analyse data such as numbers and text. This is the grid we type into.
- ✓ **Charts** — charts represent data pictorially. Excel can draw two-dimensional and three-dimensional column charts, pie charts and other types of chart.
- ✓ **Databases** — databases manage data. Once we enter data onto a worksheet, Excel can sort the data, search for specific data, and select only the data that meets certain criteria.

Key words to know

- ✓ A **Workbook** is the whole Excel file (extension **.xlsx**).
- ✓ A **Worksheet** (or sheet) is one page inside the workbook; a workbook can hold up to **255** sheets.
- ✓ A **Cell** is one box — the meeting point of a row and a column.
- ✓ One sheet has **10,48,576 rows** and **16,384 columns** (A–XFD).

Note: Excel is very similar to its earlier versions. If we have used Excel before, this interface will feel familiar; but if we are new to Excel, or are used to much older versions, it is worth spending a little time getting comfortable with this screen first. The steps in this book are almost identical in newer versions of Excel.



GradeTyping

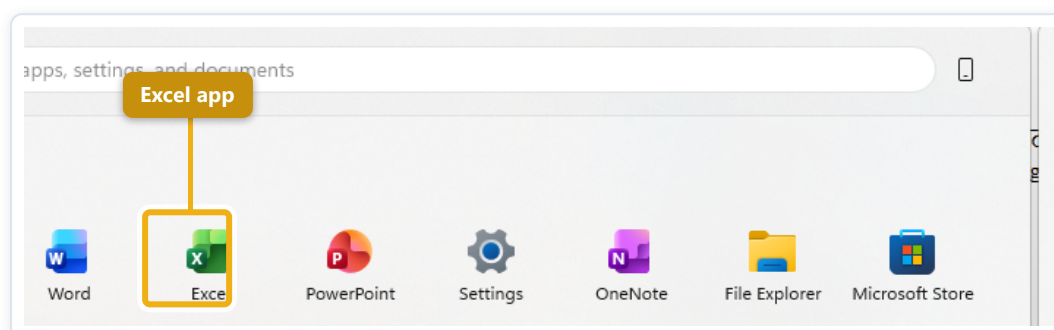
PRACTICE. IMPROVE. SUCCEED.

CCC TBC EXAM

Opening Excel (Start Menu)

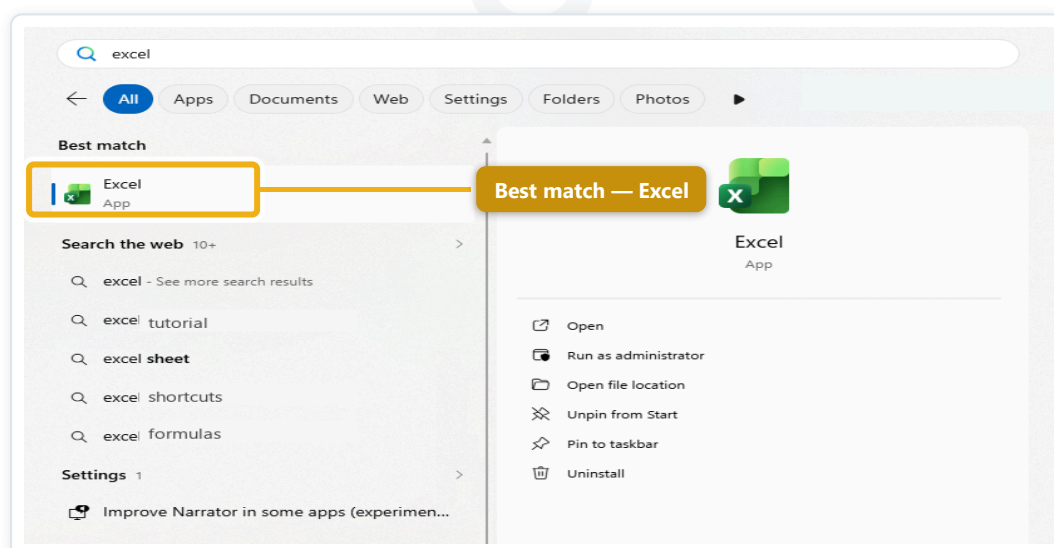
Before we can use Excel we have to open it. The traditional path is **Start** → **All Programs** → **Microsoft Office** → **Microsoft Excel**; if a shortcut already sits on the desktop we can instead simply **double-click the desktop icon**. On modern Windows the fastest way is through the **Start menu search**, shown below.

Step 1 Click the **Start** button at the bottom-left of the screen (the Windows logo). The Start menu opens. You can click **Excel** directly if you see its green icon in the pinned apps.



Step 1 — find the Excel icon in the Start menu.

Step 2 If you don't see it, simply **type "excel"**. Windows searches and shows **Excel** as the *Best match*. Click it (or click **Open**) and Excel starts.



Step 2 — search "excel" and open the Best match.

The Excel Start Screen

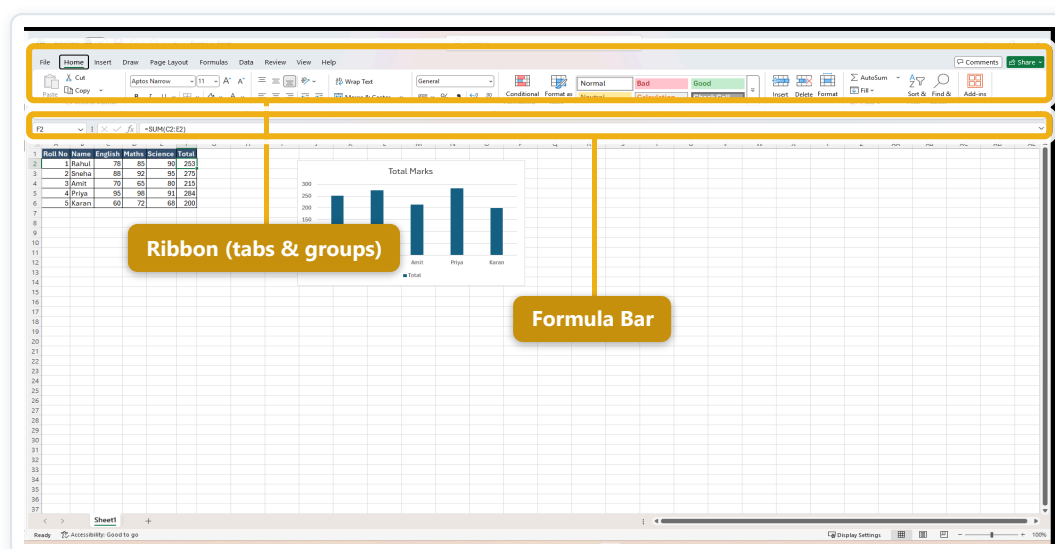
When we open Excel for the first time, the **Excel Start Screen** appears. From here we can do three things: **create a new workbook**, **choose a template**, or **access our recently edited workbooks**. The left side lists *Recently Edited Workbooks* for one-click reopening, while the right side shows a *New Workbook* tile and a row of ready-made *Templates*. To reach the normal Excel grid, locate and select **Blank workbook**.

Note: You can also right-click Excel and choose **Pin to taskbar** so it is always one click away. After Excel starts, the default file we see is named **Book1**.



The Excel Window & Backstage

If we have previously used an earlier version of Excel, this environment will feel very familiar. It continues to use features like the **Ribbon** and the **Quick Access Toolbar**, where we find the commands to perform common tasks, as well as the new full-screen **Backstage view**. When Excel opens we see the worksheet grid with the Ribbon of tools on top. It is worth learning every part below, because every later task uses them.



The main parts of the Excel window.

The Ribbon: Excel uses a tabbed Ribbon system instead of the traditional menus of older programs. The Ribbon contains multiple **tabs** (Home, Insert, Page Layout, Formulas, Data, Review, View), and each tab is divided into several **groups** of related commands. We use these tabs to carry out the most common tasks in Excel.

The Quick Access Toolbar (QAT): located just above the Ribbon, the Quick Access Toolbar lets us reach common commands no matter which tab is currently selected. By default it includes the **Save**, **Undo** and **Repeat (Redo)** commands, and we can add other commands to it depending on our preference.

- ✓ **Title Bar** — shows the workbook name at the very top of the window.
- ✓ **File Menu (File tab)** — the green tab that opens Backstage view.
- ✓ **Name Box** — shows the address of the selected (active) cell, e.g. A1.
- ✓ **Formula Bar** — shows, and lets us edit, the content or formula of the active cell.
- ✓ **Cell** — the single highlighted box we are working in.
- ✓ **Work Area** — the grid of cells where we type our data.
- ✓ **Status Bar** — the bottom strip; it shows the Average, Count and Sum of the selected cells.
- ✓ **View Options / Views option** — buttons (Normal, Page Layout, Page Break Preview) to switch how the sheet is shown.
- ✓ **Help** — the ? icon that opens Excel's help window (covered later).

Backstage view: clicking the green **File** tab opens **Backstage**, which basically allows us to manage the file and its settings. It is the full-screen area for **New, Open, Save, Save As, Print, Export** and Options — everything about the *file itself* rather than its contents. Other file-related operations are also executed from this tab.

Help

The **Help** icon can be used to get Excel-related help any time we need it. Clicking on the ? opens the Excel Help window, where we have a list of common topics to browse. We can also search for a specific topic using the search bar at the top.

Zoom options

The **zoom control** at the bottom-right lets us zoom in for a closer look at our text. It consists of a slider that we can drag left or right to zoom in or out, and we can also click the – and + buttons to decrease or increase the zoom factor. The **maximum zoom supported by Excel is 500%** and the **minimum is 10%**, while **100%** is indicated by the mark in the middle. (Zoom only changes the on-screen size, not the printed size, and the Zoom option is also available on the View tab.)

Workbooks: New, Open, Save & Templates

Excel files are called **workbooks**. Whenever we start a new project in Excel we need to create a new workbook. There are several ways to begin: we can create a brand-new workbook — either a blank one or one based on a pre-designed template — or we can open a workbook that already exists.

Create a new, blank workbook

- Step 1** Select the **File** tab. The Backstage view will appear.
- Step 2** Select **New** and then click **Blank workbook** (or simply press **Ctrl + N**).
- Step 3** A new, blank workbook appears, ready for typing.

Open an existing workbook

- Step 1** Navigate to **Backstage view** and then click **Open** (or press **Ctrl + O**).
- Step 2** Select a location option. **Open Recent Workbooks** displays all of the workbooks we have recently edited, for one-click access; otherwise browse to the file.

Using templates

To save typing, we can start from a ready-made **template** (calendar, budget, invoice and many more) instead of a blank sheet.

- Step 1** In Backstage view, select **New**. Several templates appear below the Blank workbook option.
- Step 2** Select a template to review it.
- Step 3** A preview of the template appears, along with additional information about how the template can be used.
- Step 4** Click **Create** to use the selected template.

Remember: **.xlsx** is the normal Excel workbook format. The very fact that one file is called a *workbook* is because it can contain many sheets.

Saving, Sharing & Exporting Workbooks

Saving and sharing

Whenever we create a new workbook, we need to know how to save it so that we can access and edit it later. As in previous versions of Excel, we can save files **locally** to our computer. But, unlike older versions, Excel also lets us save a workbook **to the cloud using SkyDrive**. We can also export and share workbooks with others directly from inside Excel.

Save and Save As

Excel offers two ways to save a file — **Save** and **Save As**. They work in similar ways but with a few important differences:

- ✓ **Save** (Ctrl + S) — when we create or edit a workbook we use the Save command to store our changes; this is the command we use most of the time. The first time we save a file we need to choose a file name and a location; after that, clicking Save simply stores it again under the same name and location.
- ✓ **Save As** (F12) — we use this command to create a *copy* of a workbook while keeping the original. With Save As we must choose a different name and/or a different location for the copied version.

Auto Recover: Excel automatically saves our workbooks to a temporary folder while we are working on them. If we forget to save our changes, or if Excel suddenly crashes, we can restore the file using **Auto Recover**.

Compatibility Mode

Sometimes we need to work with workbooks that were created in an earlier version of Excel, such as older versions of Excel. When we open these older workbooks they appear in **Compatibility mode**. Compatibility mode disables certain newer features, so we will only be able to use the commands found in the program that originally created the workbook. For example, if we open a workbook created in an older version of Excel, we can use only the tabs and commands that were available in that version.

Exporting workbooks

By default, Excel workbooks are saved in the **.xlsx** file type. However, there may be times when we need another file type, such as a **PDF** or an **Excel 97-2003** workbook. It is easy to export our workbook from Excel into a variety of file types.

Export as a PDF file

Exporting our workbook as an Adobe Acrobat Document — commonly known as a **PDF** — is especially useful when sharing with someone who does not have Excel; a PDF lets recipients *view* but not *edit* the content.

Step 1 Click the **File** tab to access Backstage view.

Step 2 Click **Export** and then select **Create PDF/XPS**.

Step 3 The **Save As** dialog box appears; select the location where we wish to export the workbook, enter a file name, and click **Publish**.

Export in other file types

We may also export the workbook in other types — for example an **Excel 97-2003** workbook to share with people using an older version, or a **.CSV** file if we need a plain-text version.

Step 1 Click the **File** tab to access Backstage view.

Step 2 Click **Export** and then select **Change File Type**.

Step 3 Select a common file type and then click **Save As**.

Step 4 The Save As dialog box appears; select the location, enter a file name, and click **Save**.



Cells, Rows & Columns

Whenever we work with Excel we enter information, or content, into **cells**. Cells are the basic building blocks of a worksheet. Every worksheet is made up of thousands of rectangles, and each of these rectangles is called a cell. A cell is the **intersection of a row and a column**.

- ✓ **Columns** run up–down and are identified by **letters** (A, B, C ...).
- ✓ **Rows** run left–right and are identified by **numbers** (1, 2, 3 ...).
- ✓ Every cell has its own name, called its **cell address** or **cell reference**, based on its column and row. If the selected cell intersects column C and row 5, its cell address is **C5**. This address also appears in the **Name Box**.

Think of it like... a seat in a cinema: the column letter is your row of seats and the row number is the seat number — together they point to exactly one place.

Cell range

We can also select several cells at the same time. A group of cells is known as a **cell range**. Rather than using a single cell address, we refer to a range using the addresses of the **first and last cells**, separated by a colon. For example, a range that includes cells A1, A2, A3, A4 and A5 is written as **A1:A5**.

Selecting

- ✓ **One cell** — click it. The selected single cell is called the **active cell** and is recognised by a black border around it.
- ✓ **A whole column** — click its letter heading.
- ✓ **A whole row** — click its number heading.
- ✓ **A range with the keyboard** — hold **Shift** and press the arrow keys.
- ✓ **Everything** — click the **Select All** box at the top-left corner of the grid (or press **Ctrl + A**).

Entering & clearing data

Click a cell, type, and press **Enter**. Any text we enter is aligned to the bottom-left of the cell, while any number is aligned to the bottom-right. To erase only the contents but keep the formatting, use **Home** → **Editing** → **Clear** → **Clear Contents** (or press **Delete**).

Tip: Press the **Home** key to jump to the first cell of the current row; **Ctrl + Home** jumps to cell A1. The navigation arrow keys (→, ←, ↑, ↓) move the cell pointer one cell forward, backward, up or down.

Modifying Columns, Rows & Cells

By default, every row and column of a new workbook is set to the same height and width. Excel allows us to modify column width and row height in a variety of ways — including, as we shall see, wrapping text and merging cells. When the content of a column or row cannot be fully displayed, we can make all of it visible by changing the size.

Modifying column width by dragging

Step 1 Position the mouse over the column line in the column heading so that the white cross becomes a **double arrow**.

Step 2 Click, hold and drag the mouse to increase or decrease the column width.

Step 3 Release the mouse; the column width is changed. (The same three steps, applied to a **row line**, change the **row height**.)

AutoFit column width

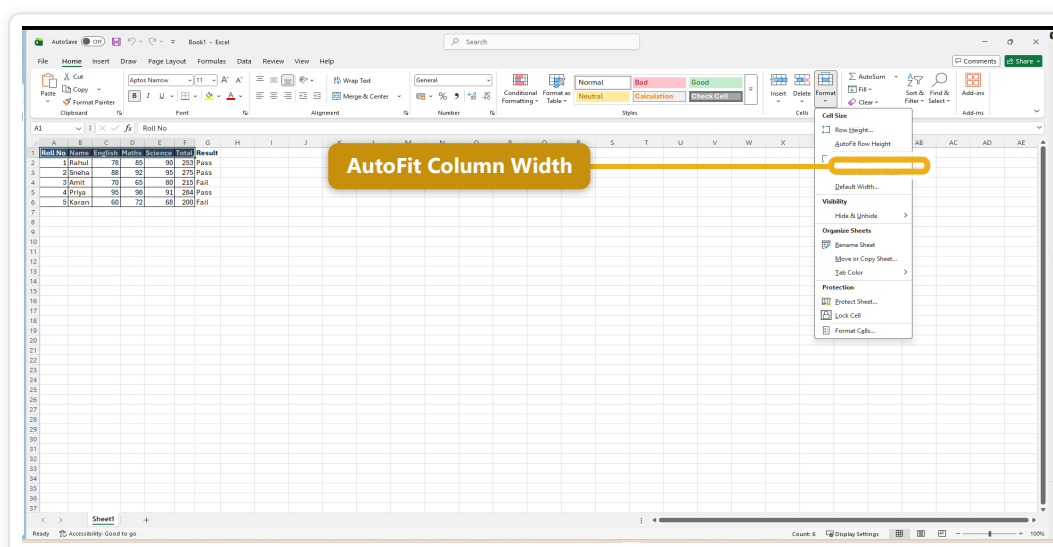
The **AutoFit** feature sets a column's width to fit its content automatically.

Step 1 Position the mouse over the column line so the white cross becomes a double arrow.

Step 2 **Double-click** the mouse; the column width changes automatically to fit the content.

We can also AutoFit several columns at once: select the columns we want, then choose **AutoFit Column Width** from the **Format** drop-down menu on the **Home** tab (Home → Cells → Format). The same Format menu also offers **AutoFit Row Height**.

Step Open **Home** → **Format** and choose **AutoFit Column Width**.



The Format menu — AutoFit and other cell-size options.

Resize ALL rows or columns at once

Rather than resizing rows and columns individually, we can modify the height and width of every row and column at the same time, giving the whole worksheet a uniform size. (1) Locate and click the **Select All** button to select every cell in the worksheet. (2) Position the mouse over a row line so the white cross becomes a double arrow. (3) Click, hold and drag to increase or decrease the row height. (4) Release the mouse when satisfied with the new size — every row (or column) takes the same new size.

Note: If a cell shows #####, the column is simply too narrow for the number — widen it (or AutoFit) and the value appears.

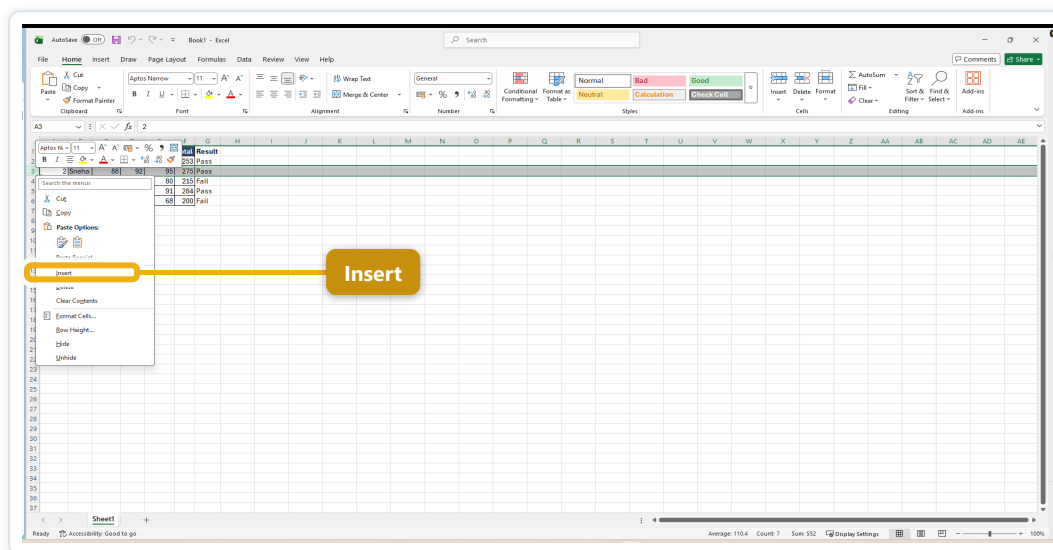


Insert, Delete, Move & Hide

After we have been working with a workbook for a while, we may find that we want to insert new columns or rows, delete certain ones, move them to a different location, or even hide them. Each of these is a simple right-click operation.

Inserting rows

Step 1 Select a row by clicking its number, then **right-click** the mouse button.



Right-click a row number and choose Insert.

Step 2 Select the **Insert** option.

Step 3 The new row appears **above** the selected row.

Inserting columns

First select the column heading *to the right* of where the new column should appear — for example, to insert a column between columns D and E, select column E. (1) Right-click the selected column. (2) Select **Insert**. (3) The new column appears to the **left** of the selected column.

Delete

Right-click the row number or column letter and choose **Delete** (the Delete Sheet command, by contrast, lives on the Home tab in the Cells group).

Move a row or column

Sometimes we want to move a column or row to rearrange the content of the worksheet. (1) Select the desired column or row, then click **Cut** on the Home tab or press **Ctrl + X**. (2) Click the **Insert** command on the Home tab and select **Insert Cut Cells** from the drop-down menu. (3) The column is moved to the selected location and the columns to the right shift right.

Hide & Unhide

At times we may want to compare certain rows or columns without changing the organisation of the worksheet. (1) Select the row or column(s) to hide, right-click, and choose **Hide** from the formatting menu. (2) The columns are hidden, and a thin **green** row or column line indicates the location of the hidden data. (3) To unhide, select the columns to the left and right of the hidden columns — in other words, the columns on *both* sides. (4) Right-click and choose **Unhide**; the hidden columns reappear.



Wrapping Text & Merging Cells

Whenever we have too much cell content to be displayed in a single cell, we may decide to **wrap the text** or **merge the cell** rather than resizing a column. Wrapping the text automatically modifies the cell's row height, allowing the contents to be displayed on multiple lines. Merging lets us combine a cell with adjacent, empty cells to create one large cell.

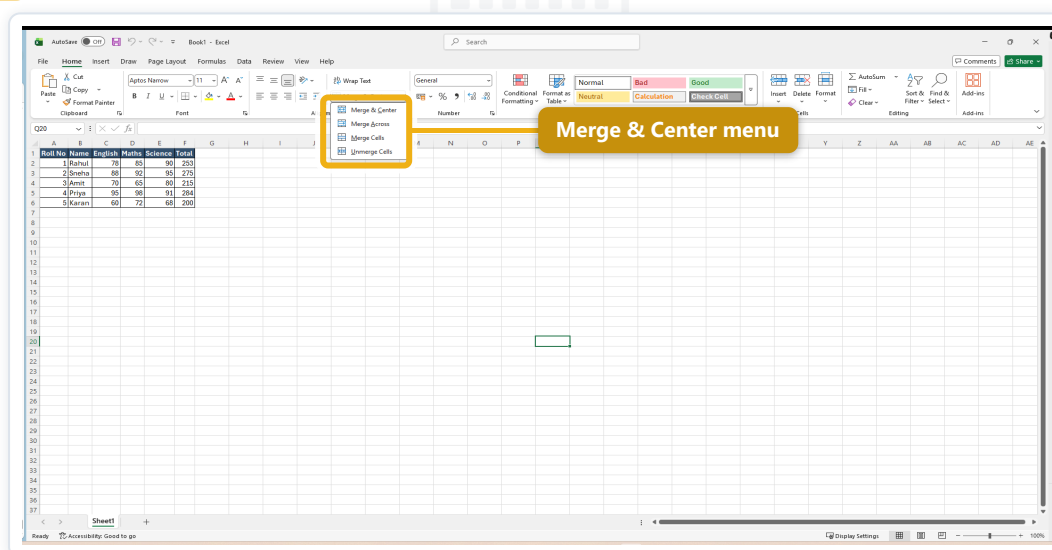
Wrapping text in cells

(a) Select the cells we wish to wrap — for example, the cells in column C. (b) Select the **Wrap Text** command on the **Home** tab. (c) The text in the selected cells is wrapped onto multiple lines and the row grows taller. (d) Click **Wrap Text** again to unwrap the text. (*Compare: the column before text wrapping vs. the column after text wrapping.*)

Merging cells with Merge & Center

Merging joins several cells into one big cell — useful, for example, for a title across the top of a table. (a) Select the cell range we want to merge together, for example **D1:H1**. (b) Select the **Merge & Center** command on the **Home** tab. (c) The selected cells are merged into one and the text is centred. (*Compare: the cells before vs. the cells after the merge.*)

Step Select the cells, then click the arrow next to **Merge & Center** to pick a merge option.



The Merge & Center menu.

- ✓ **Merge & Center** — join the cells into one and centre the text.
- ✓ **Merge Across** — merge each row separately (good for multi-row selections).
- ✓ **Merge Cells** — join into one cell but do *not* centre.
- ✓ **Unmerge Cells** — split a merged cell back into separate cells.

Formatting Cells — Font & Alignment

By default, all cell content uses the same formatting, which can make a workbook full of information difficult to read. Formatting lets us customise the look and feel of the workbook, draw attention to specific sections, and make the content easier to view and understand. All of it lives on the **Home** tab, and the full set of options is in the **Format Cells** dialog (**Ctrl + 1**).

Changing the font, size and style

By default, the font of each new workbook is set to **Calibri** at font size **11**; however, Excel provides a wide variety of other fonts. To customise our cell text, select a cell and click the drop-down arrow next to the **Font** command on the Home tab to open the Font menu. As we move the mouse over the different options, a **live preview** shows how the text will look, and clicking applies the chosen font and size. For emphasis, use the **B** (Bold), **I** (Italic) and **U** (Underline) buttons — or press **Ctrl + B** for bold, **Ctrl + I** for italics, and **Ctrl + U** for underline — after selecting the cell(s) we wish to modify.

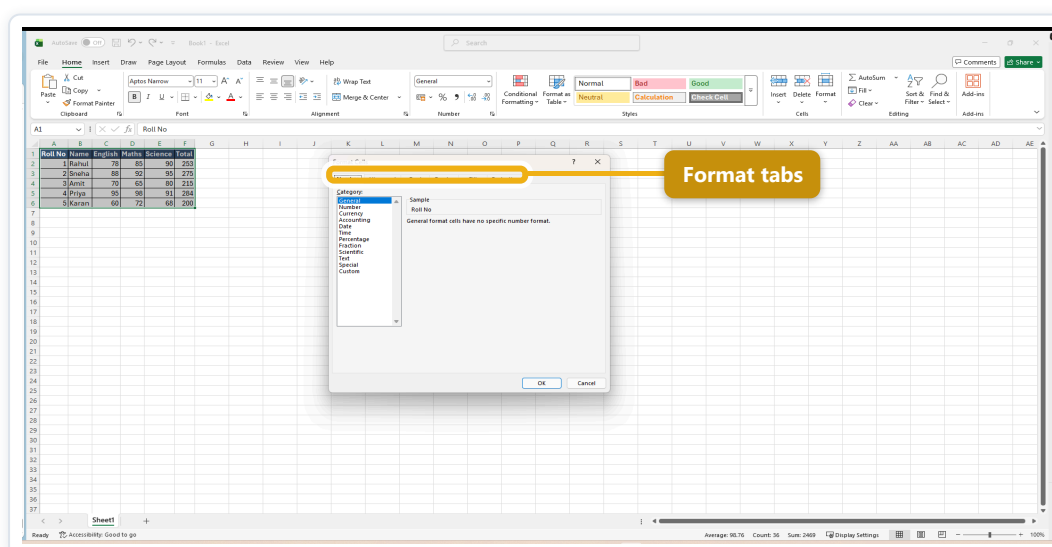
Text alignment

By default, any text entered into the worksheet is aligned to the **bottom-left** of a cell, and any numbers are aligned to the **bottom-right**. Changing the alignment of cell content lets us choose how the content is displayed in a cell, which can make it easier to read. MS Excel has two types of alignment:

- ✓ **Horizontal alignment** — we can align the cell text Left, Center, Right or Justify.
- ✓ **Vertical alignment** — we can align the cell text Top, Middle or Bottom.

We can also rotate text within a cell using the **Text Orientation** option.

Step Select the cells and press **Ctrl + 1** to open **Format Cells**, where Number, Alignment, Font, Border, Fill and Protection all sit on separate tabs.

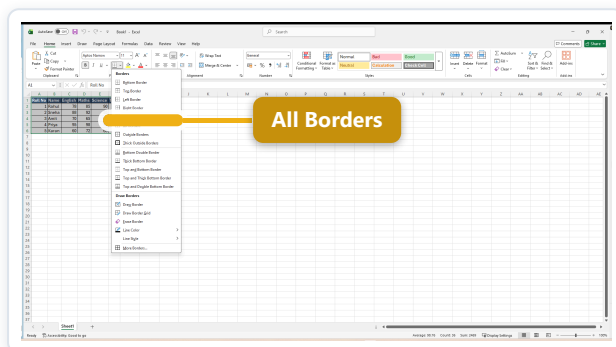


The Format Cells dialog — every formatting option in one place.

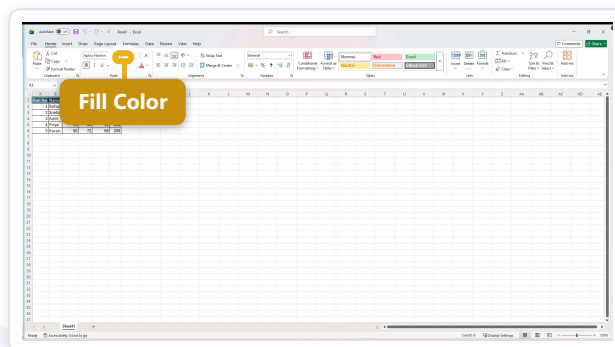
Borders, Fill & Number Formats

Cell borders & fill colours

Cell borders and fill colours allow us to create clear, defined boundaries for the different sections of our worksheet. Both commands are in the Font group on the Home tab. Open the **Borders** menu to pick a border style, change the line style, and change the colour of the borders using the **Draw Borders** tools at the bottom of the Borders drop-down menu; use the **Fill Color** bucket to shade the selected cells.



Borders menu

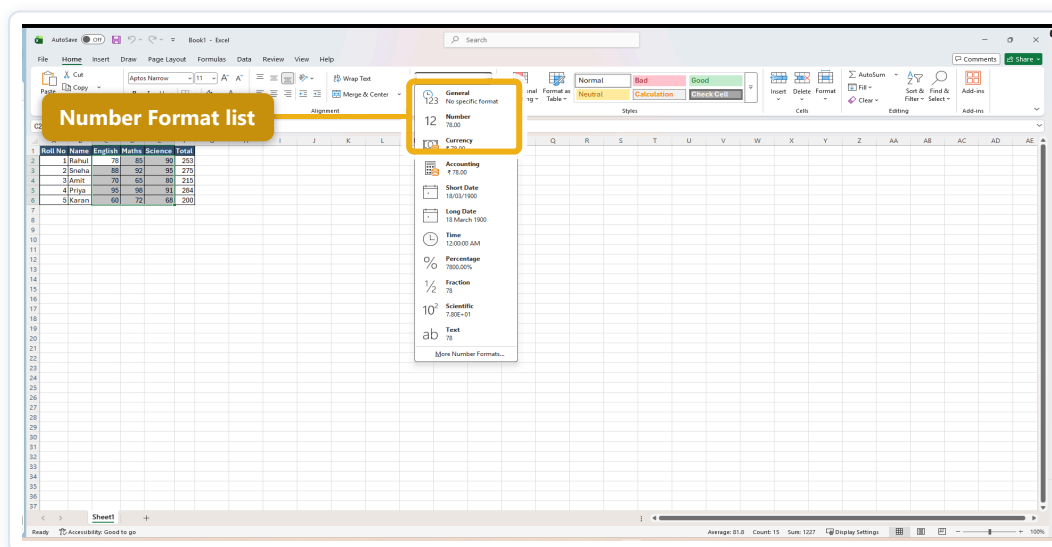


Fill Color picker

Formatting text and numbers

One of the most powerful tools in Excel is the ability to apply specific formatting for text and numbers. Instead of displaying all cell content in exactly the same way, we can use formatting to change the appearance of **dates, times, decimals, percentages (%), currency (\$)** and much more. The **Number** group lets us show the same underlying value in these different ways — open the Number Format list to choose.

Step Select the cells and pick a format from the **Number Format** list (Home tab).



The Number Format list — General, Number, Currency, Accounting, Date and more.

Note: To show currency, the **Accounting** number format is used.



Worksheet Basics

Every workbook contains at least one worksheet by default. When working with a large amount of data, we can create multiple worksheets to help organise the workbook and make it easier to find content. The **sheet tabs** sit just below the work area. We can add a new worksheet, rename a worksheet, make a copy of one, move one, and delete one. To add a new worksheet to the workbook, press the **+** button near Sheet1.

- ✓ **Add** — click the **+** button next to the last sheet tab.
- ✓ **Rename** — double-click the tab and type a new name.
- ✓ **Copy / Move** — right-click the tab and choose **Move or Copy**.
- ✓ **Delete** — right-click the tab and choose **Delete**.
- ✓ **Tab colour** — right-click → **Tab Color** to colour-code sheets.
- ✓ **Protect Sheet** — right-click → **Protect Sheet** to stop others editing or deleting it.

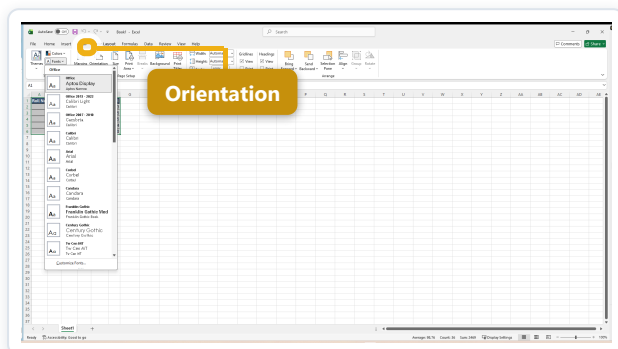
Grouping worksheets

We can work with each worksheet individually, or we can work with multiple worksheets at the same time by combining them into a **group**. Any change made to one worksheet in a group is made to every worksheet in that group. To group sheets: (a) select the first worksheet to include; (b) press and hold the **Ctrl** key; (c) select each additional worksheet we want in the group, continuing until all the desired worksheets are selected; (d) release the Ctrl key — the worksheets are now grouped. While grouped, we can navigate to any worksheet in the group, and any change we make will appear on every worksheet in it. However, if we select a worksheet that is *not* in the group, all of the worksheets become ungrouped.

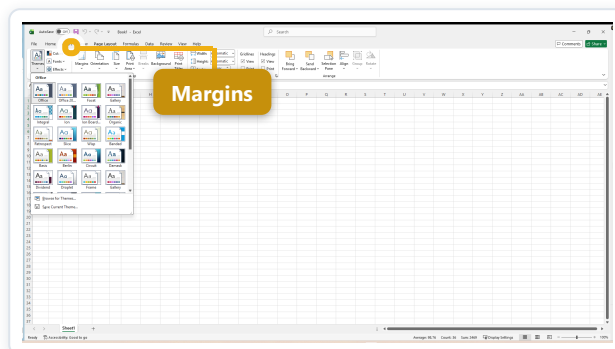
Think of it like... writing on several sheets of carbon paper stacked together — one stroke marks them all.

Page Layout

The commands on the **Page Layout** tab let us control the way our content appears on a printed page, including the page orientation, margin size and more. Other options, such as print titles and page breaks, help make a workbook easier to read.



Orientation

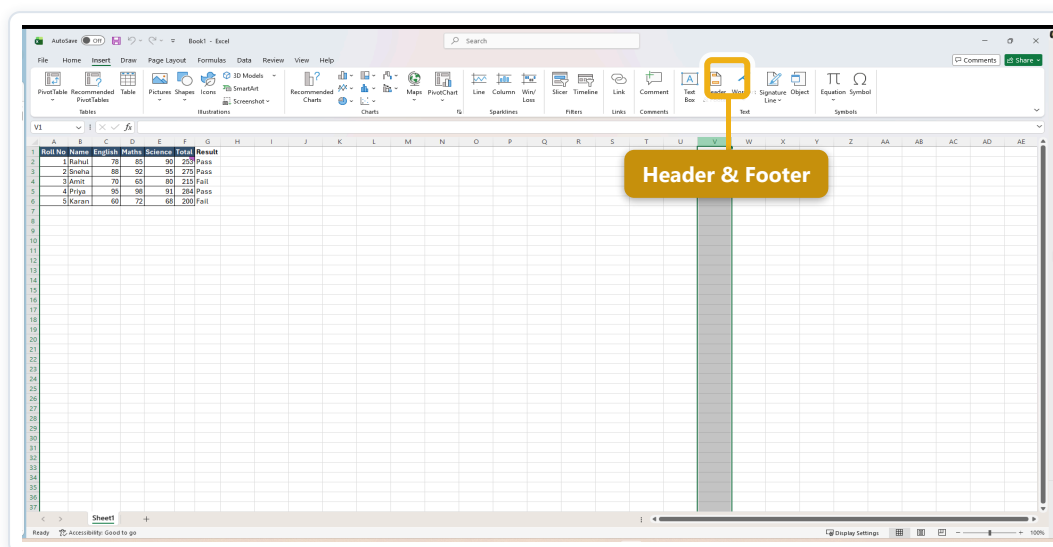


Margins

- ✓ **Page Orientation** — Excel offers two orientation options. **Landscape** orients the page horizontally (wide), while **Portrait** orients it vertically (tall).
- ✓ **Formatting Page Margins** — a margin is the space between the content and the edge of the page. By default every workbook's margins are set to **Normal**, a one-inch space between the content and each edge. Sometimes we adjust the margins so the data fits more comfortably; Excel includes a wide variety of pre-defined margin sizes.
- ✓ **Including Print Titles** — if our worksheet uses title headings, it is important to include those headings on every printed page; a printed workbook would be extremely difficult to read if the headings appeared only on the first page. The Print Titles command lets us select specific rows and columns to appear on each page.
- ✓ **Inserting a Page Break** — to print different parts of the workbook on separate pages, we can insert a page break. There are two types: **vertical** page breaks separate columns, while **horizontal** page breaks separate rows. Page breaks are viewed in **Page Break Preview**.
- ✓ **Inserting Headers & Footers** — we can make the workbook easier to read and more professional by including headers and footers. The **header** is a section that appears in the top margin, while the **footer** appears in the bottom margin (page number, title, date).

Headers & Footers

Insert → **Header & Footer** switches to Page Layout view where you can type into the top and bottom margins.

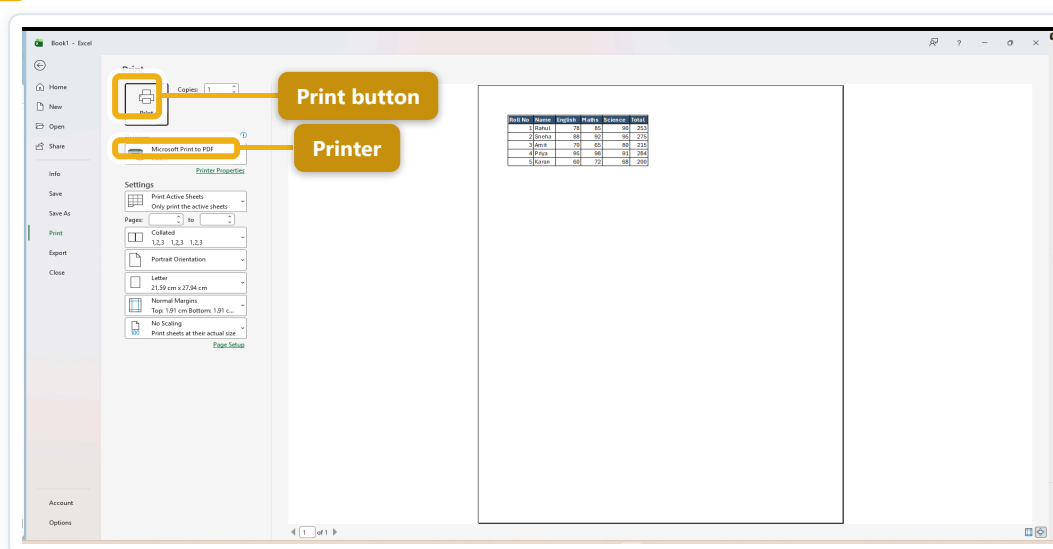


Adding a header in Page Layout view.

Printing a Workbook

Before printing an Excel workbook, it is important to decide exactly what information we want to print. For example, if we have multiple worksheets in the workbook, we must decide whether to print the **entire workbook** or only the **active worksheets**. There may also be times when we want to print only a **selection** of content. A printed copy of a file is also called a **hard copy**. Press **Ctrl + P** (or File → Print) to open the Print screen: on the right we see a **live preview** of exactly what will print, and on the left are all the settings.

Step Choose the printer, how many copies, and what to print, then click **Print**.



The Print screen — settings on the left, preview on the right.

- ✓ **Print Active Sheets** — print the open sheet, the **Entire Workbook**, or just the **Selection** you highlighted.
- ✓ **Copies** — how many to print; **Collated** keeps each copy in page order.
- ✓ Orientation, paper size and margins can also be changed here before printing.

Formulas & the AutoSum

One of the most powerful features in Excel is the ability to calculate numerical information using **formulas**. Just like a calculator, Excel can add, subtract, multiply and divide. A formula is an instruction to perform a calculation, and a standard formula always begins with an **equals sign (=)**.

Mathematical operators

Each formula uses mathematical operators: a plus sign for addition (+), a minus sign for subtraction (-), an asterisk for multiplication (*), a forward slash for division (/), and a caret (^) for exponents. For example **=2+2** or **=5*5**. (Note that we cannot use **spaces** while typing a formula in a cell.)

Use cell references, not just numbers

We can create simple formulas manually (for example **=2+2** or **=5*5**), but most of the time we use cell addresses to build a formula — this is known as making a **cell reference**. Instead of **=78+85**, write **=C2+D2**. Using cell references ensures our formulas are always accurate, because we can change the value of a referenced cell without having to rewrite the formula. By combining a mathematical operator with cell references we can create a variety of simple formulas, and formulas can also include a combination of cell references and numbers.

Point-and-click & the fill handle

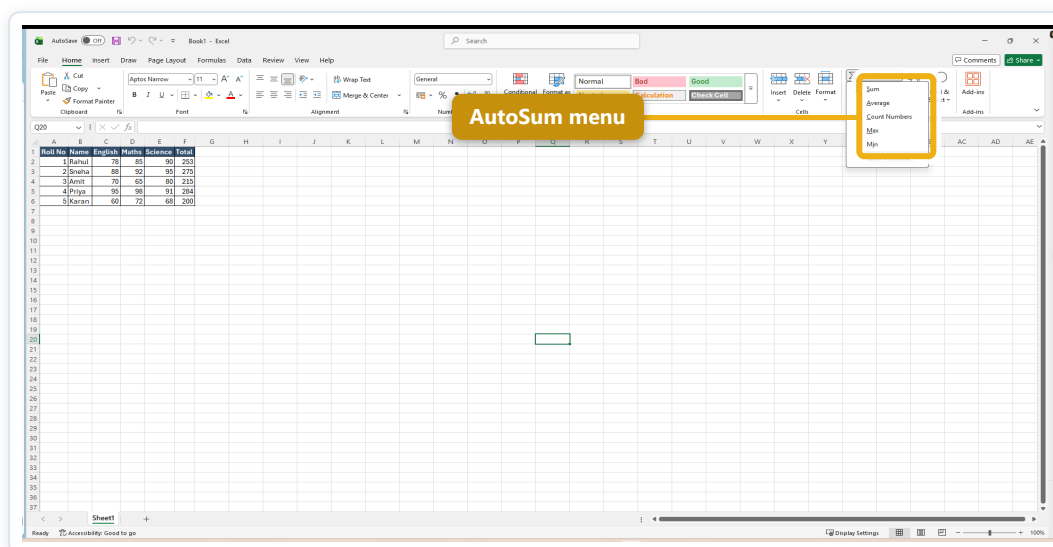
Rather than typing cell addresses manually, we can **point and click** on the cells we wish to include while building a formula; this can save a lot of time and effort. To repeat a formula across adjacent cells, drag the small square at the bottom-right of the cell — the **fill handle** — and Excel copies the formula, adjusting the references automatically, which saves a lot of effort when the same calculation is needed many times.

Creating complex formulas (order of operations)

Excel follows the standard order of operations. For example, it first adds the values inside the parentheses: **(44.85 + 39.90) = \$84.75**; then it multiplies that value by the tax rate: **\$84.75 × 0.075**; and the result shows that the sales tax is **\$6.36**. It is especially important to enter complex formulas with the correct order of operations — otherwise Excel will not calculate the results accurately.

AutoSum

Select the cell below a column of numbers and click **AutoSum** (Home or Formulas tab). Excel writes **=SUM(...)** for you. The dropdown also offers Average, Count, Max and Min.



The AutoSum dropdown — Sum, Average, Count Numbers, Max, Min.



GradeTyping

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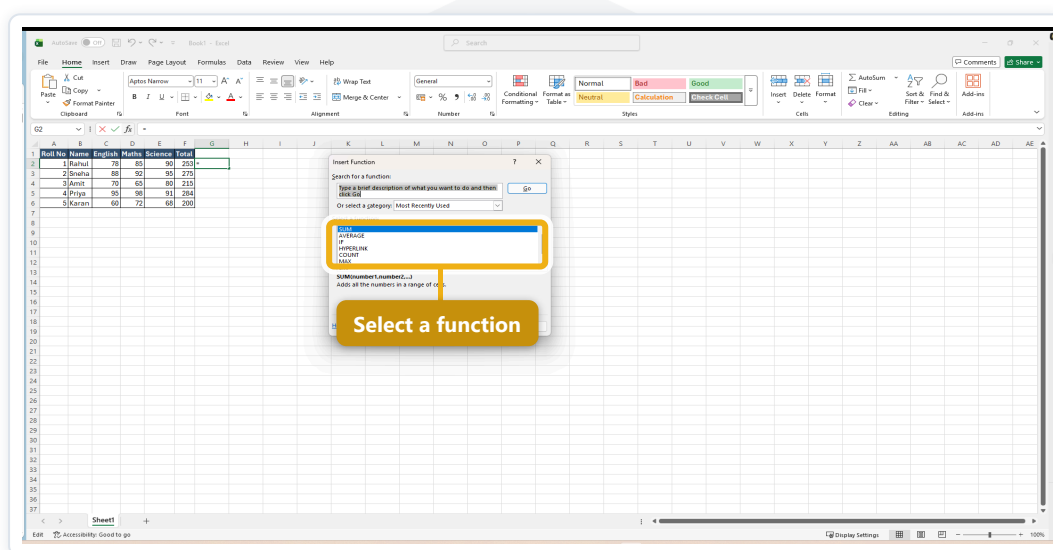
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Functions & the Function Library

A **function** is a ready-made, built-in formula available in Excel. We give it a range of cells — the **argument** — and it returns an answer. Excel has a wide variety of functions; here are some of the most common ones we use:

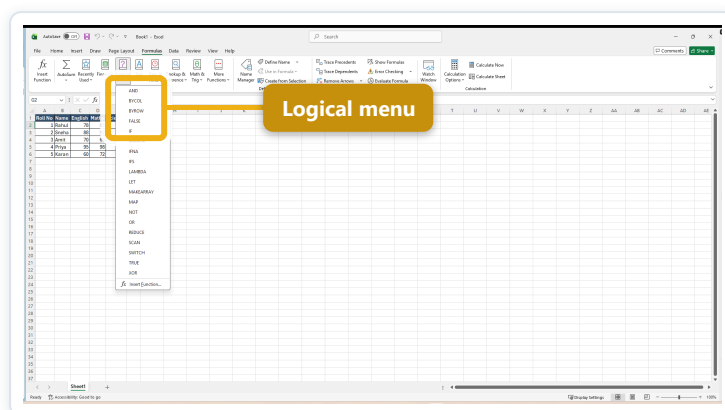
Function	What it does	Example
SUM	adds all the values of the cells in the argument	=SUM(C2:C6)
AVERAGE	calculates the sum of the cells and divides by the number of cells	=AVERAGE(C2:C6)
COUNT	counts the number of cells with numerical data (handy for counting items in a range)	=COUNT(C2:C6)
MAX	determines the highest cell value in the argument	=MAX(C2:C6)
MIN	determines the lowest cell value in the argument	=MIN(C2:C6)

Insert Function Press **Shift + F3** (or click *fx* beside the formula bar) to search for any function and fill in its parts with help.



The Insert Function dialog.

While there are hundreds of different functions in Excel, the ones we use most frequently depend on the kind of data our workbook contains. There is no need to learn every single function, but exploring the different types is helpful as we create new projects. The **Formulas → Function Library** lets us search for functions by category — **Financial, Logical, Text, Date & Time, Lookup** and much more — so we can browse instead of memorising. (Common date/time examples include **=TODAY()** for the current date and **=NOW()** for the current system time; **=UPPER()** converts text to capitals; **=ROUND()** rounds a number to a specific number of digits; and **DB** is an example of a financial function.)



The Logical group of the Function Library.



Cell References & Formula Errors

Relative, Absolute & Mixed references (beyond the basics)

- ✓ **Relative** (C2) — when copied, it shifts (C2 → C3 → C4). This is the default.
- ✓ **Absolute** (\$C\$2) — the \$ locks it so it never changes when copied.
- ✓ **Mixed** (\$C2 or C\$2) — locks only the column or only the row.

Tip: Press **F4** while editing a reference to add the \$ signs quickly.

Order of operations

Excel calculates like maths: brackets first, then powers, then $\times$ and $\div$, then $+$ and $-$. So $=(2+3)*4$ gives 20, not 14. Use brackets to be sure.

Formula error messages

If Excel cannot calculate a formula it shows an error starting with #:

Error	Meaning
#DIV/0!	trying to divide by zero
#N/A	a value is not available
#NAME?	Excel does not recognise the name/text used
#NULL!	an invalid intersection of two ranges
#NUM!	a number is used incorrectly
#REF!	refers to a cell that no longer exists
#VALUE!	wrong type of argument (e.g. text where a number is needed)
#####	not an error — the column is just too narrow

The IF Function (Conditional Formula)

The **IF** function is one of the most useful functions available in Excel. When we design an IF function, we ask Excel to perform a **test**, and then tell Excel what to do if the result of the test is positive (true) or negative (false). Although it may look intimidating at first, it really is quite simple. (IF is a logical function.)

SYNTAX

=IF(logical_test, value_if_true, value_if_false)

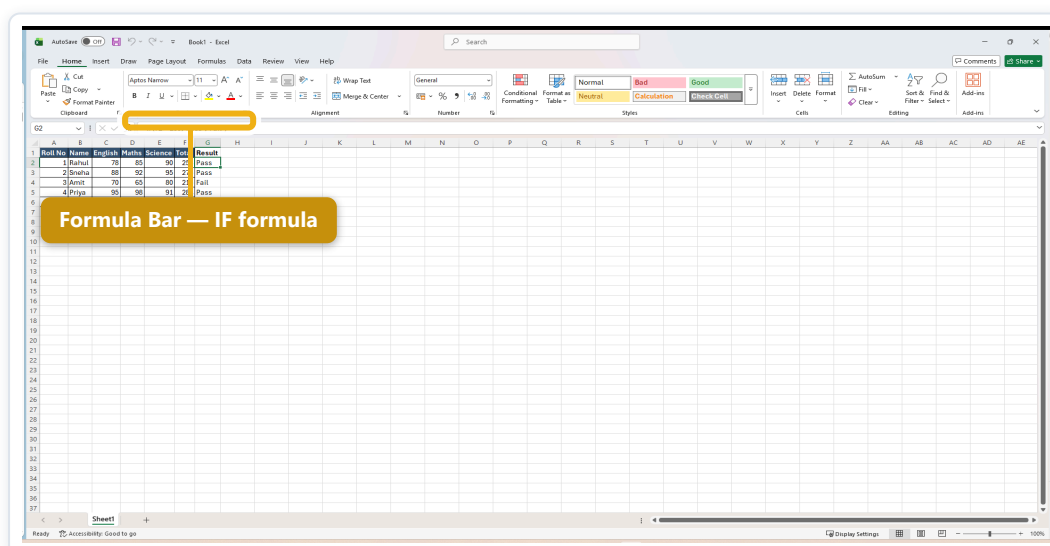
Consider a worked example: assume we enter the formula in cell D16 as **=IF(A16=1, Faculty, Staff)**. The syntax breaks down as follows:

- ✓ **=IF** — every formula in Excel starts with the equals (=) sign, and the IF tells Excel to perform the IF function; the remaining information is inserted within parentheses.
- ✓ **logical_test** — any value or expression that results in True (1) or False (0). It asks Excel to test something; here Excel looks at cell A16 and determines whether its value equals 1.
- ✓ **value_if_true** — the value returned if the logical test is true. For instance, if A16 has a value of 1, Excel inserts the text **"Faculty"** in cell D16.
- ✓ **value_if_false** — the value returned if the logical test is false. For instance, if A16 has any value other than 1, Excel inserts the text **"Staff"** in cell D16.

The **value_if_true** and **value_if_false** parts of the function can each contain either text or formulas.

Example

=IF(F2>=250,"Pass","Fail") — if the total in F2 is 250 or more it writes "Pass", otherwise "Fail".



The IF formula in the formula bar, with results in the Result column.

Think of it like... a teacher with a rule: “*If* marks are 250 or more, write Pass, *else* write Fail.” Excel applies that rule to every row instantly.



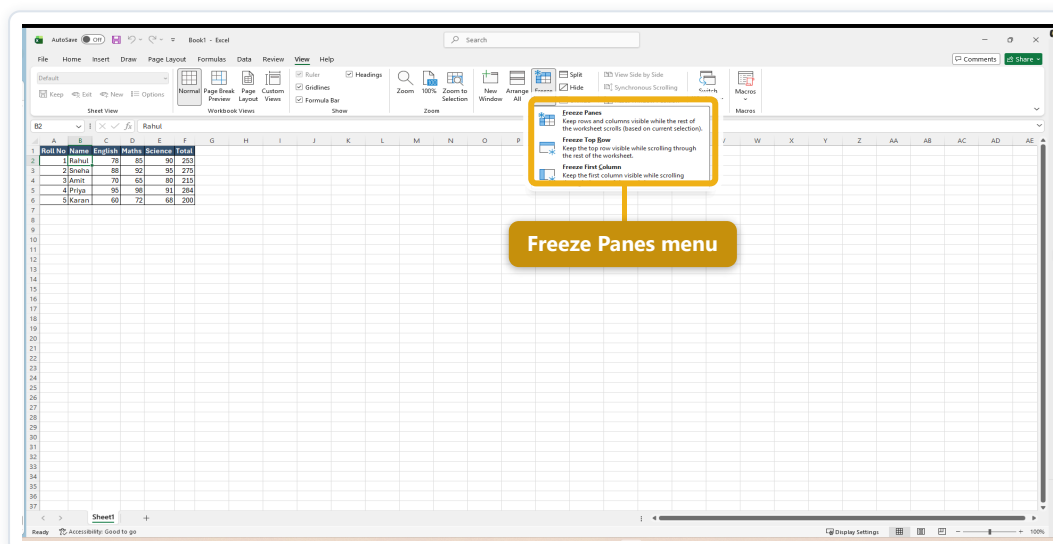
Freeze Panes & Split

Whenever we work with a lot of data, it can be difficult to compare information in the workbook. Excel includes several tools that make it easier to view content from different parts of the workbook at the same time — chiefly the ability to **freeze panes** and **split** the worksheet.

Freezing rows & columns

We often want to see certain rows or columns all the time, especially header cells. By freezing rows or columns in place, we can scroll through our content while continuing to view the frozen cells. To freeze: (i) select the row or column we wish to freeze; (ii) click the **View** tab on the Ribbon; (iii) select the **Freeze Panes** command and then choose **Freeze Panes** from the drop-down menu; (iv) the rows are frozen in place, as indicated by a grey line, and we can scroll down while continuing to view the frozen rows at the top.

Step Select the row/column, then **View** → **Freeze Panes** and pick an option.



Freeze Panes — also Freeze Top Row and Freeze First Column.

To unfreeze the rows or columns that have been frozen, go to the **View** menu and select the **Unfreeze Panes** option from the Freeze Panes command.

Splitting the worksheet

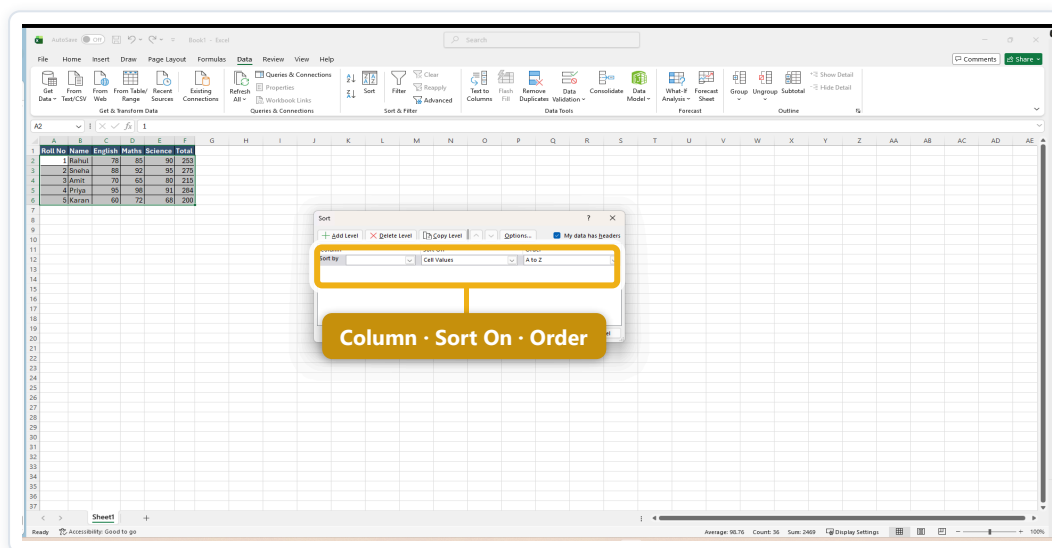
If the workbook contains a lot of content, it can be difficult to compare different sections. Besides opening a new window, Excel lets us split a worksheet into separate panes. The **Split** command divides the worksheet into multiple panes that scroll separately. To split: (i) select the cell where we wish to split the worksheet (in our example, cell D2); (ii) click the **View** tab and then select the **Split** command; (iii) the workbook is split into different panes, and we can scroll through each pane separately using the scroll bars to compare different sections. Click **Split** again to remove it.

Sorting & Filtering

Sorting

As we add more content to a worksheet, organising that information becomes especially important. We can quickly reorganise a worksheet by sorting our data — for example, organising a list of contacts by last name. Content can be sorted alphabetically, numerically and in many other ways. To sort: (a) select a cell range, or the rows or columns we wish to sort by; (b) select the **Data** tab and then click the **A→Z** command to sort A to Z (ascending), or the **Z→A** command to sort Z to A (descending); (c) the worksheet is sorted by the selected column. The two types of sorting in Excel are therefore **Ascending** and **Descending**. For more control, click **Sort** to open the Sort dialog and sort by several columns at once.

Step Data → **Sort** opens the dialog where you choose the column, what to sort on, and the order.



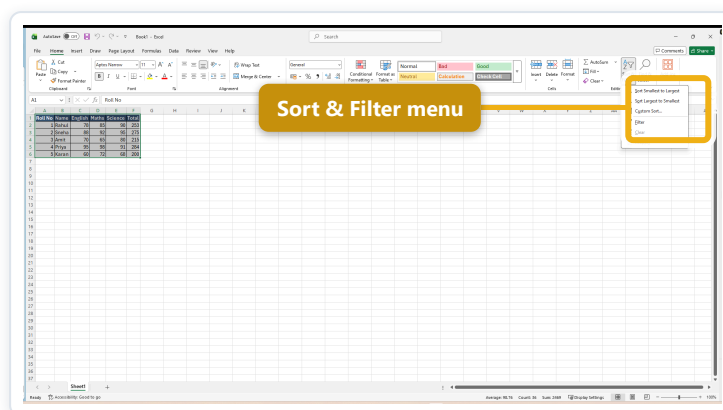
The Sort dialog — sort by Column, Sort On and Order.

Filtering

Filters can be used to narrow down the data in our worksheet, so we view only the information we need. For filtering to work correctly, the worksheet should include a **header row** that identifies the name of each column. To filter: (a) select the **Data** tab and click the **Filter** command; (b) a drop-down arrow appears in the header cell of each column; (c) click the drop-down arrow for the column we wish to filter; (d) the Filter menu appears; (e) uncheck the box next to **Select All** to quickly deselect all data; (f) check the boxes next to the data we wish to keep, then click **OK**; (g) the data is filtered, temporarily hiding any content that does not match the criteria.

Note: Filtering options can also be accessed from the **Sort & Filter** command on the Home tab.

Clearing a filter: after applying a filter we may want to remove, or clear, it so we can filter the content in different ways. To do this, go to the **Data** tab and unselect the Filter option.



Home → Sort & Filter also reaches these commands.



Grouping & Subtotal

Worksheets with a lot of content can sometimes feel overwhelming and even become difficult to read. Fortunately, Excel can organise data into **groups**, allowing us to easily show and hide different sections of the worksheet — like collapsing and opening a folder. We can also summarise the different groups using the **Subtotal** command and create an outline for the worksheet.

- ✓ **Group rows or columns** — select the rows or columns we wish to group (for example columns A, B and C), select the **Data** tab on the Ribbon and click the **Group** command; the selected rows or columns are grouped together and a bracket with a – button appears.
- ✓ **Hide / Show groups** — click the **Hide Detail** button (the –) to hide a group, and the **Show Detail** button (the +) to show the hidden group again.
- ✓ **Ungroup** — select the grouped rows or columns and then click the **Ungroup** command.
- ✓ **Subtotal** — **Data** → **Subtotal** automatically adds a total for each group (for example, a total for each class) and builds an outline.

Think of it like... the little arrows that fold and unfold sections of a document, so you can hide detail you don't need right now.

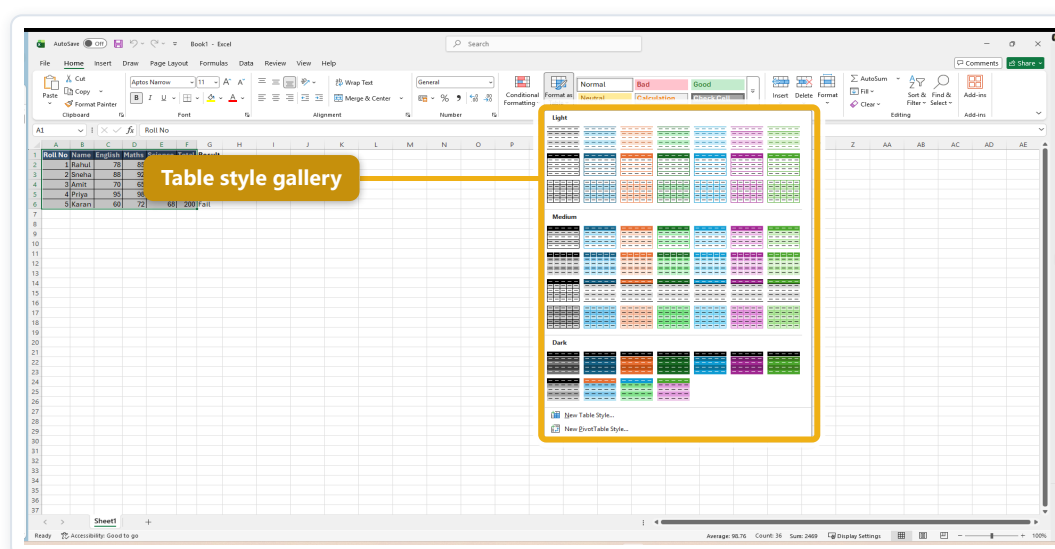


Tables

Once we have entered information into a worksheet, we may want to format the data as a **table**. Just like regular formatting, tables can improve the look and feel of the workbook, but they also help to organise the content and make the data easier to use. Excel includes several tools and pre-defined table styles, allowing us to create tables quickly and easily — complete with banded colours, automatic filter arrows and a Design tab.

Formatting data as a table

(1) Select the cells we want to format as a table. (2) From the **Home** tab, click the **Format as Table** command in the Styles group. (3) Select a table style from the drop-down menu. (4) A dialog box appears, confirming the selected cell range for the table. (5) If the table has headers, check the box next to **My table has headers**, then click **OK**. (6) The cell range is formatted in the selected table style.



The Format as Table style gallery.

Removing a table

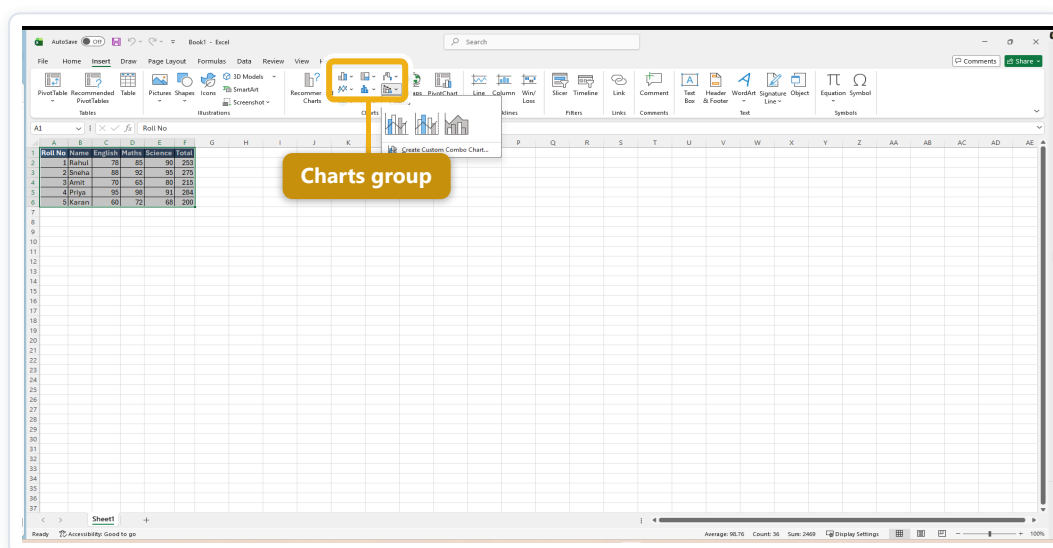
Sometimes we may not want the additional features included with tables, such as the Sort and Filter drop-down arrows. We can remove a table from the workbook while still preserving its formatting elements, like font and cell colour. (a) Select any cell in the table — the **Design** tab appears. (b) Click the **Convert to Range** command in the Tools group. (c) A dialog box appears; click **Yes**. (d) The range is no longer a table, but the cells retain their data and formatting.

Charts

It can often be difficult to interpret Excel workbooks that contain a lot of data. A **chart** turns the workbook data into a picture, which makes it easy to visualise comparisons and trends. Excel has many different types of chart — Column, Bar, Line, Pie, Area and more — so we can choose the one that best fits our data; each chart type has its own advantages, so it helps to understand how different charts are used. We also need to understand how to *read* a chart: charts contain several different elements, or parts, that help us interpret the data.

Inserting a chart

(a) Select the cells we want to chart, *including the column titles and row labels* — these cells will be the source data. (b) From the **Insert** tab, click the desired Chart command. (c) Choose the desired chart type from the drop-down menu. (d) The selected chart is inserted in the worksheet. If we are not sure which type to use, the **Recommended Charts** command suggests several charts based on the source data.



Choosing a column chart from the Insert tab.

Chart layout & style

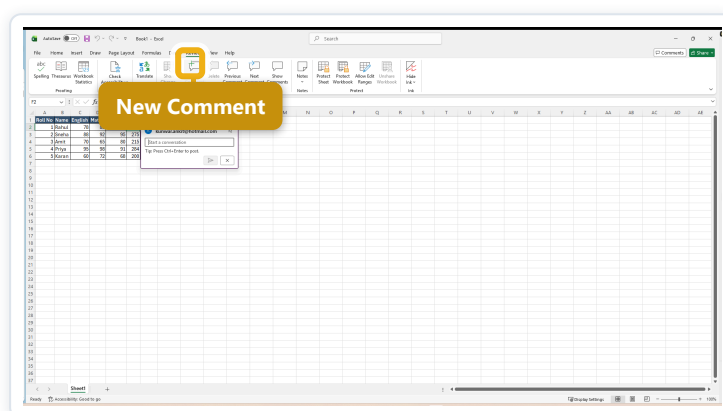
After inserting a chart, there are several things we might want to change about the way the data is displayed; it is easy to edit a chart's layout and style from the **Design** tab. Excel lets us add chart elements — such as chart **titles**, **legends** and **data labels** — to make the chart easier to read. To add one, click the **Add Chart Element** command on the Design tab and choose the desired element from the drop-down menu.

Note: A chart is *linked* to its data — change a number and the chart redraws itself automatically.

Comments & Conditional Formatting

Adding a comment

A comment is a little note attached to a cell. (a) Select the cell where we want the comment to appear — in our example, cell E8. (b) From the **Review** tab, click the **New Comment** command. (c) A comment box appears; type the comment, then click anywhere outside the box to close it. (d) The comment is added to the cell, represented by a **red triangle** in the top-right corner. (e) Select the cell again to view the comment. From the Review tab, the **Show All Comments** command displays every comment in the worksheet at the same time.

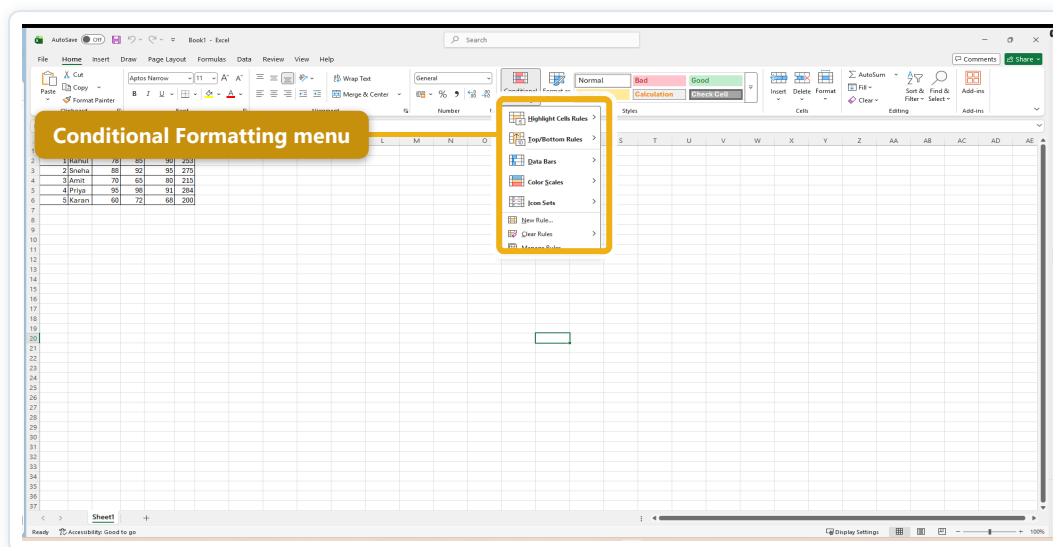


A comment added from the Review tab.

Conditional Formatting

If we have a worksheet with thousands of rows of data, it would be extremely difficult to see patterns and trends just from examining the raw information. Similar to charts, conditional formatting provides another way to visualise data and make worksheets easier to understand. It automatically applies formatting — such as **colours, icons and data bars** — to one or more cells based on the cell value. To do this we create a **conditional formatting rule**. For example, a rule might be: *“If the value is less than \$2,000, colour the cell red.”* By applying this rule we can quickly see which cells contain values under \$2,000. To apply it:

(a) Select the desired cells for the rule. (b) From the **Home** tab, click the **Conditional Formatting** command — a drop-down menu appears. (c) Move the mouse over the desired formatting type (Highlight Cells, Data Bars, Colour Scales, Icon Sets, Top/Bottom Rules) and select the desired rule from the menu that appears. (d) A dialog box appears; enter the desired value(s) into the blank field. (e) Select a formatting style from the drop-down menu, then click **OK**. (f) The conditional formatting is applied to the selected cells.



The Conditional Formatting menu.

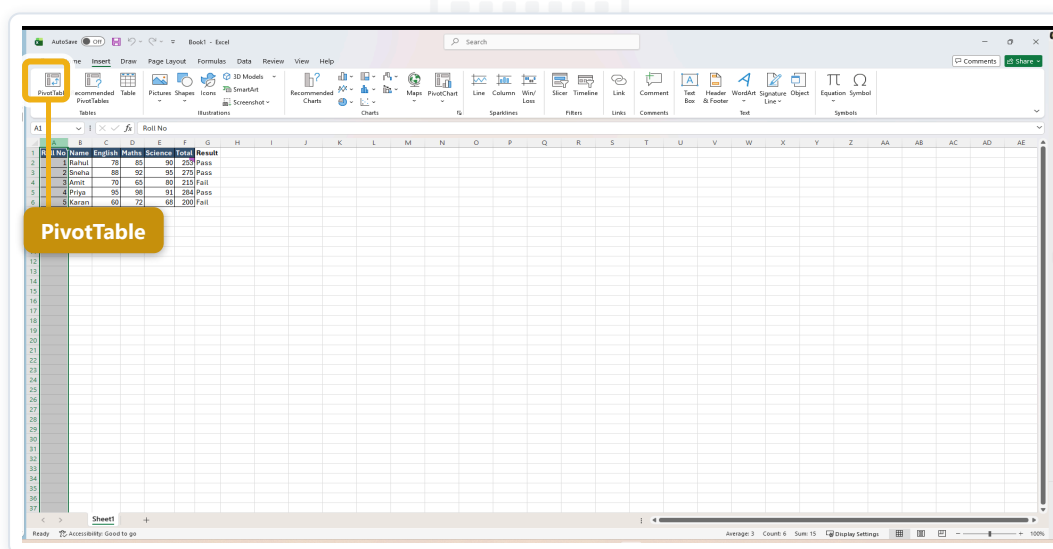
Note: We can apply multiple conditional formatting rules to a cell range or worksheet, letting us visualise different trends and patterns in the data at once. The **Top/Bottom Rules** can be used only for numeric data.



Pivot Tables

When we have a lot of data, it can be difficult to analyse all of the information in a worksheet. **PivotTables** make worksheets more manageable by summarising data and allowing us to manipulate it in different ways. Suppose we wanted to answer the question: *“What is the amount sold by each salesperson?”* for some sales data. Answering this directly could be very time-consuming because each salesperson appears on multiple rows, and we would need to total all of their individual orders. We could use the **Subtotal** command to help, but we would still have a lot of data to work with. Fortunately, a PivotTable can instantly calculate and summarise the data in a way that is both easy to read and to manipulate. Once created, we can use it to answer different questions by rearranging — or **pivoting** — the data; for example, modifying it to answer *“What is the total amount sold in each month?”*.

To create a PivotTable: (a) select the table or cells (including the column headers) containing the data; (b) from the **Insert** tab, click the **PivotTable** command; (c) the Create PivotTable dialog box appears — choose the settings and click **OK**; (d) a blank PivotTable and Field List appear on a new worksheet; (e) decide which fields to add (each field is simply a column header from the source data) and check the box for each field in the PivotTable Field List; (f) the selected fields are added to one of the **four areas** below the Field List — **Filters, Columns, Rows and Values**; (g) the PivotTable calculates and summarises the selected fields. Drag fields between the four areas to pivot and see the data a new way.



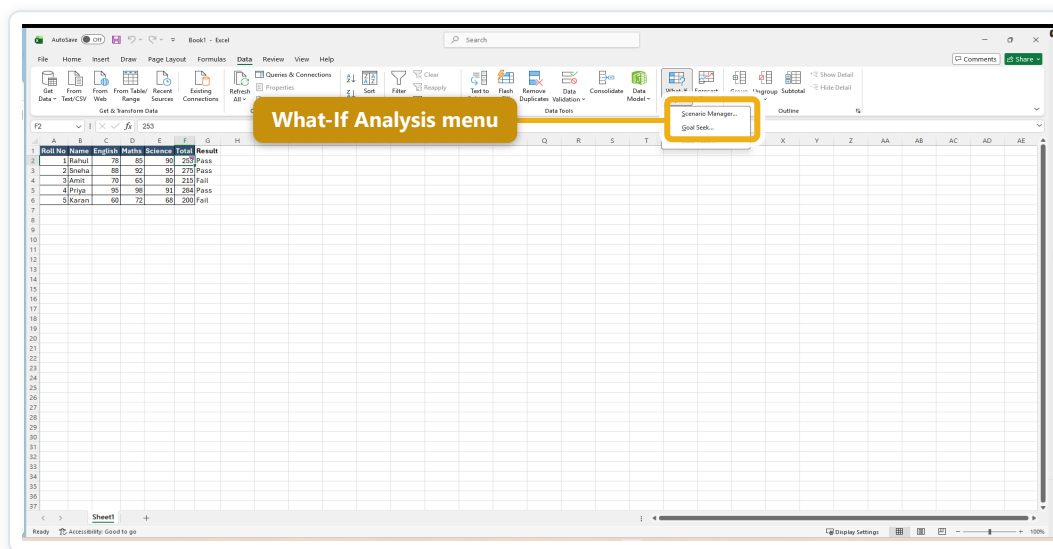
The Create PivotTable dialog.

Think of it like... asking a clerk to total a thick register by name, then by month, then by product — and getting each answer in a second.

What-If Analysis

Excel includes many powerful tools to perform complex mathematical calculations, such as **What-If Analysis** (on the Data tab). This feature helps us experiment and answer “what would happen if...?” questions with our data, even when the data is incomplete. It offers three tools — **Scenario Manager**, **Goal Seek** and **Data Table**.

Open it Data → **What-If Analysis** shows Scenario Manager, Goal Seek and Data Table.



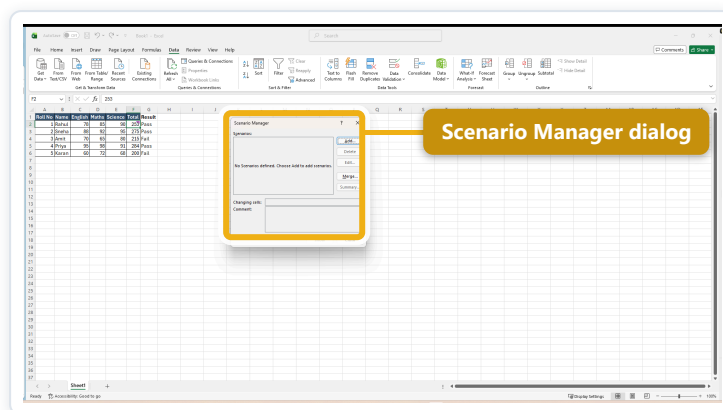
The What-If Analysis menu.

Goal Seek

Whenever we create a formula or function in Excel, we put various parts together to calculate a result. **Goal Seek** works in the opposite way: it lets us start with the desired result, and it calculates the input value that will give us that result. For example — “what must I score on the final assignment to reach 70 overall?”. To use it: (a) select the cell whose value we wish to change (this cell must already contain a formula or function); (b) from the **Data** tab, click **What-If Analysis** → **Goal Seek**; (c) a dialog box appears with three fields:

- ✓ **Set cell** — the cell that will contain the desired result (in our example, cell B7 is already selected).
- ✓ **To value** — the desired result (in our example, 70, because we need at least that to pass the class).
- ✓ **By changing cell** — the cell where Goal Seek will place its answer (in our example, cell B6, the grade we need on the final assignment).

(d) When done, click **OK**. (e) The dialog box tells us if Goal Seek was able to find a solution; click **OK**. (f) The result appears in the specified cell.

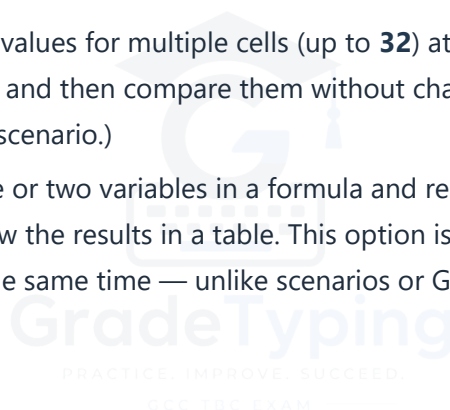


The Goal Seek dialog.

Other types of What-If Analysis

For more advanced projects we may consider the other two types — scenarios and data tables. Rather than starting from the desired result and working backward, like Goal Seek, these options let us test multiple values and see how the results change.

- ✓ **Scenarios** let us substitute values for multiple cells (up to **32**) at the same time. We can create as many scenarios as we want and then compare them without changing the values manually. (Click the **Add** button to make a scenario.)
- ✓ **Data Tables** let us take one or two variables in a formula and replace them with as many different values as we want, then view the results in a table. This option is especially powerful because it shows multiple results at the same time — unlike scenarios or Goal Seek.



Beyond the Basics

These extra tools are not in the original syllabus but are well worth knowing — they make you much faster in real work.

VLOOKUP — looks up a value in a table and returns matching information from another column. `=VLOOKUP(item, table, column_no, FALSE)`. Great for price lists and marksheets.

Data Validation (Data tab) — restrict what a cell will accept, e.g. create a **drop-down list** so users pick from set options instead of typing.

Remove Duplicates (Data tab) — delete repeated rows from a list in one click.

Flash Fill (Ctrl + E) — spots a pattern (e.g. first names from full names) and fills the rest for you.

Find & Replace (Ctrl + F / Ctrl + H) — search the sheet and swap one value for another everywhere at once.

Named Ranges — give a range a friendly name (e.g. *Marks*) and use it in formulas: `=SUM(Marks)`.

Freeze First Column & Sparklines — keep column A visible while scrolling; Sparklines (Insert tab) draw a tiny chart inside a single cell.

More handy functions — **COUNTA** (count non-empty cells), **ROUND**, **TODAY()** / **NOW()** (date & time), **IFERROR** (show a tidy message instead of an error), and **&** / **CONCAT** to join text.

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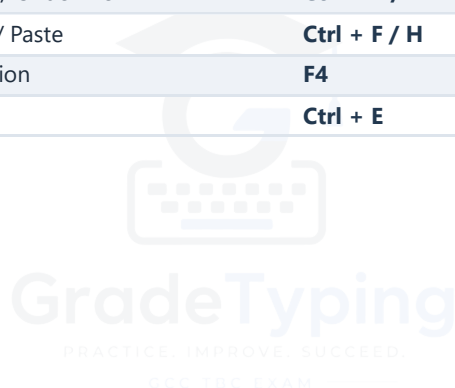
Key Facts & Shortcuts

Numbers worth memorising

Item	Value	Item	Value
Rows in a sheet	10,48,576	Columns in a sheet	16,384 (A–XFD)
Max sheets in a workbook	255	Default font	Calibri, 11
Workbook extension	.xlsx	Formula begins with	= (equals)
Orientations	Portrait, Landscape	Currency format	Accounting

Keyboard shortcuts

Keys	Action	Keys	Action
Ctrl + N	New workbook	Ctrl + O	Open
Ctrl + S	Save	F12	Save As
Ctrl + P	Print	Ctrl + 1	Format Cells
Ctrl + B / I / U	Bold / Italic / Underline	Ctrl + Z / Y	Undo / Redo
Ctrl + C / X / V	Copy / Cut / Paste	Ctrl + F / H	Find / Replace
Shift + F3	Insert Function	F4	\$ absolute reference
Ctrl + Home	Go to A1	Ctrl + E	Flash Fill



Exam Question Bank

Objective questions frequently asked in GCC-TBC and Excel exams. Revise with the answer beside each.

#	Question	Answer
1	To select a whole row, click on the ____.	Row number
2	The ____ function gives the minimum value in a range.	=MIN()
3	If you increase the height of a row, the text shifts to the ____ of the cell.	Bottom
4	Underline is used to make the text ____ in the selected cells.	Underlined
5	The ____ function inserts the current system time into the cell.	=NOW()
6	Cell addresses used in a formula are called ____.	Cell References
7	The ____ command joins two or more cells and centres the data.	Merge & Center
8	The ____ function counts how many cells in a range contain numbers.	=COUNT()
9	A function always starts with the ____ symbol.	= (equals)
10	To make a graph from data, the ____ command is used (Insert tab).	Charts
11	The option to increase the font is available in the ____.	Font group
12	A single worksheet has ____ rows.	10,48,576
13	The bar that shows the content and formula of the active cell is the ____ Bar.	Formula
14	A workbook can have a maximum of 255 ____.	Sheets
15	To apply Currency style, use the ____ option in the Number group.	Accounting Number Format
16	How many orientation types are available in MS Excel?	Two
17	The file extension .xlsx means ____.	Microsoft Excel Workbook
18	You cannot use ____ while typing a formula in a cell.	Spaces
19	The AutoSum option is available in the ____ tab.	Formulas
20	A data Filter is used when a table is ready in the ____.	Worksheet
21	To delete only the data but keep the format, use ____.	Clear Contents
22	Which alignments are available in Excel?	All of the above
23	Pressing the Home key moves the cell pointer to the first cell of the current row.	True
24	A collection of worksheets is called a ____.	Workbook
25	____ means an instruction to perform a calculation.	Formula

Exam Question Bank (cont.)

#	Question	Answer
26	Only a graph is shown in a ___ sheet.	Chart
27	The Sort and Filter commands of the Home tab are also on the ___ tab.	Data
28	___ means a built-in formula available in Excel.	Functions
29	The =TODAY() function gives the current ___.	Date
30	The ___ feature shows the total of selected cell values on the status bar.	Sum
31	The ___ option is used to rotate text in a cell.	Text Orientation
32	The heading of the last column in a worksheet is ___.	XFD
33	Pressing the ___ key moves the cell pointer to the first cell of the current row.	Home
34	MS Excel is a ___ type of application software.	Spreadsheet
35	In MS Excel, a Hard Copy is the ___ of a file.	Printed copy
36	To remove the Freeze effect, choose ___ (View → Window → Freeze Panes).	Unfreeze Panes
37	The ___ option shows rows based on a specific condition.	Filter
38	The ___ command is used to open a new sheet.	New
39	The =MAX() function is used to find the ___ number.	Largest
40	Ascending sorting means ___ sorting.	A to Z
41	Cell references that change automatically when a formula is copied are called ___.	Relative References
42	Portrait and Landscape are types of ___.	Orientation
43	Cell references that stay the same when a formula is copied are called ___.	Absolute References
44	=SUM(F8:F12) sorts the values in the range F8 to F12.	False
45	To select the whole sheet, use the ___ key combination.	Ctrl + A
46	Page breaks are viewed in ___.	Page Break Preview
47	Scroll bars are used to view different areas of the worksheet.	True
48	Format Painter is available in MS Excel.	True
49	A-to-Z serial means ___ sorting of text.	Ascending
50	The selected single cell in a worksheet is called the ___.	Active Cell

Exam Question Bank (cont.)

#	Question	Answer
51	The arrow keys (navigation keys) move the cell pointer one cell at a time.	True
52	In a workbook, the default sheet names are displayed on the ____.	Sheet Tab
53	Pictures can be inserted from the ____ tab.	Insert
54	Ctrl + Page Down can be used to go to the next sheet.	True
55	Cell alignment in Excel is done from ____.	Home → Alignment
56	The options to change font size, colour and face are in the ____.	Font group
57	Gridlines have vertical and horizontal lines.	True
58	Cell references can be made absolute using the ____ symbol.	\$
59	IF is not a logical function.	False
60	The date format in a cell is ____.	MM-DD-YY
61	To start Excel, click the ____ button on the taskbar.	Start
62	The height of a row is measured in which unit?	Point
63	The two types of sorting in Excel are ____.	Ascending & Descending
64	The Top/Bottom Rules of Conditional Formatting can be used only for ____.	Numeric Data
65	Using the Exit option does what in Excel?	Quits Excel
66	The active cell is recognised by a ____ around it.	Black border
67	To select a complete row, click on the ____.	Row Number
68	MS Excel creates a ____ type of file.	Workbook
69	The ____ function rounds a number to a specific number of digits.	=ROUND()
70	The ____ tool inserts readymade shapes like Rectangle, Arrow and Line.	Insert → Shapes
71	It is not possible to insert a column in the work area.	False
72	To select a range, use the arrow keys with the ____ key.	Shift
73	A typed cell value is displayed in the ____.	Formula Bar
74	Where a row and a column intersect (a square) is called a ____.	Cell
75	At the left side of the Zoom Slider we see the ____.	Status Bar

Exam Question Bank (cont.)

#	Question	Answer
76	A formula is an instruction to perform a ____.	Calculation
77	DB is a financial function.	True
78	A new comment can be inserted from the ____ tab.	Review
79	The =UPPER() function converts the given text into ____.	Capital letters
80	When you copy a formula, Excel erases the original copy of the formula.	False
81	Z-to-A serial means ____ sorting of text.	Descending
82	The Help option is available in the ____ menu.	File
83	After starting MS Excel, the default file we see is ____.	Book1
84	____ is present by default in Excel.	Gridlines
85	A workbook can have a maximum of ____ sheets.	255
86	Descending sorting means ____ sorting.	Z to A
87	The shortcut key for closing an Excel workbook is ____.	Ctrl + W
88	____ is used to insert artistic graphics to communicate information visually.	SmartArt
89	The Recent option is available in the ____ menu.	File
90	Delete Sheet command is given in the ____ tab (Cells group).	Home
91	____ is NOT a type of view in Excel.	Print Layout
92	The strip to the right of the Name Box is called the ____ Bar.	Formula
93	Each Excel file is called a workbook because ____.	it can contain many sheets
94	We cannot use ____ alignment in Excel.	Justify
95	A symbol can be inserted using the ____ menu.	Insert
96	The Zoom option is available on the ____ tab.	View
97	The syntax of the IF function is =IF(Condition, value if True, value if False).	True
98	A Pivot Table is used to ____.	Summarise data
99	A ____ is used for different mathematical calculations in Excel.	Formula

Chapter Mind Map

One-glance revision of the whole chapter — follow each branch to recall the key points.



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