

Module 1: Introduction to Excel for Data Analysis

Objective:

Understand the purpose and layout of Excel. Get comfortable with navigating and using basic features of Excel.

Detailed Topics:

- Navigating Excel interface: ribbon, tabs, formula bar, sheet tabs
- Cell referencing: relative, absolute, and mixed
- Workbook vs worksheet
- Basic formatting: bold, italic, alignment, cell colors
- Adjusting rows/columns, merging cells

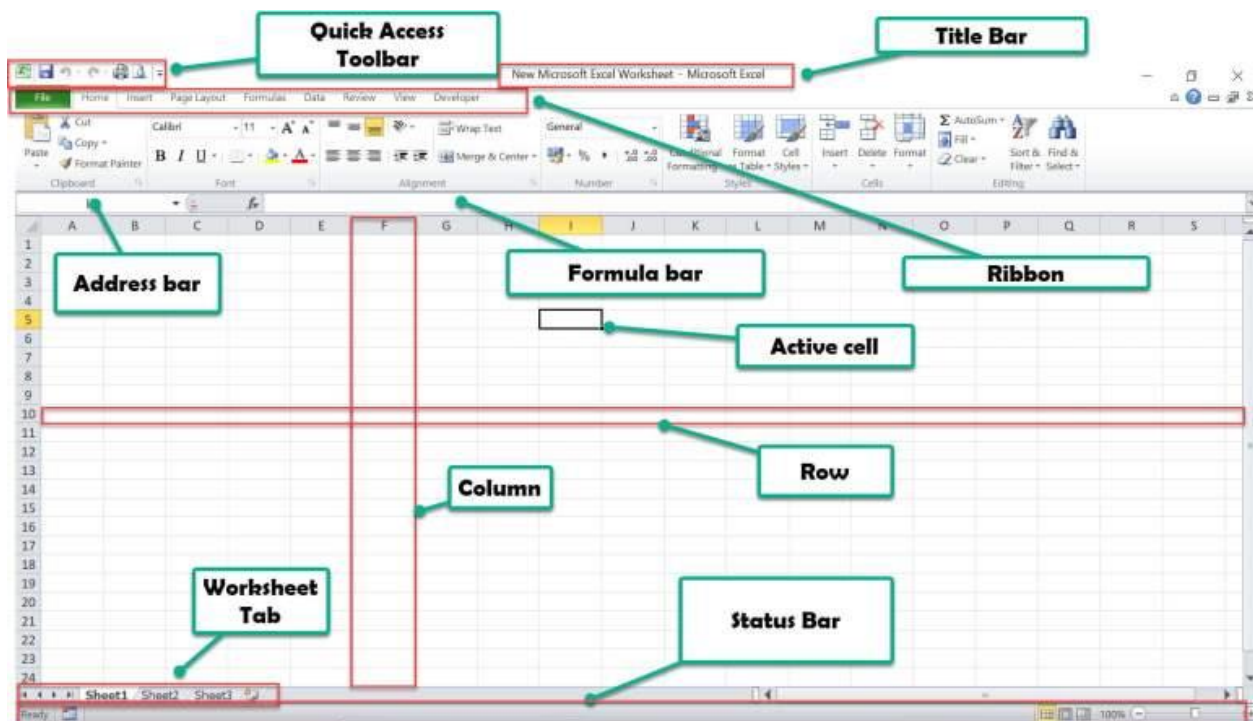
Hands-on Practice:

- Enter personal data like name, age, marks into cells
- Apply different formatting styles
- Save and reopen workbooks

1. Navigating Excel Interface: Ribbon, Tabs, Formula Bar, Sheet Tabs

Objective: Understand the layout of Excel and identify key interface components.

- **Ribbon:** The main toolbar at the top with different commands grouped in tabs (Home, Insert, Page Layout, etc.).
- **Tabs:** Categories in the ribbon; clicking on each reveals a different group of tools.
- **Formula Bar:** Displays the content or formula of the currently selected cell. Also used for editing.
- **Sheet Tabs:** Located at the bottom, they represent individual worksheets within a workbook. Click to switch sheets.



Activity:

- Open Excel and navigate through each tab (Home, Insert, Formulas).
- Type `=SUM(2,3)` in any cell to show how the formula appears in the formula bar.

2. Cell Referencing: Relative, Absolute, and Mixed

Objective: Understand how Excel treats cell references during formula copying.

Key Points:

- **Relative Reference (A1):** Changes when the formula is copied elsewhere.
- **Absolute Reference (\$A\$1):** Stays fixed when copied.
- **Mixed Reference (\$A1 or A\$1):** Only row or column is fixed.

Example:

Relative Reference

	A	B	C
1	1	3	=A1+B1
2	2	5	7
3	3	7	
4	4	9	
5	5	11	
6	6	13	
7	7	15	

If we copy this equation, using relative references, down the rest of the cells in C1, the pattern of the equation will copy not the exact cells. Instead, they will copy the pattern of picking the two cells to the left and adding them together.

	A	B	C
1	1	3	4
2	2	5	7
3	3	7	10
4	4	9	13
5	5	11	=A5+B5
6	6	13	19
7	7	15	22

Relative Reference

	A	B	C
1	Constant	3	
2			
3	1		=A3+\$B\$1
4	2		
5	3		
6	4		
7	5		
8	6		
9	7		

Notice that in our equation, the A3 is a relative reference and the \$B\$1 is an absolute reference for B1.

Now when we copy this equation through the rest of the cells in column C, it will automatically change the reference for the cell from column A but it will keep the absolute reference the same every time.

	A	B	C
1	Constant	3	
2			
3	1		
4	2		
5	3		6
6	4		=A6+\$B\$1
7	5		8
8	6		9
9	7		10

Activity:

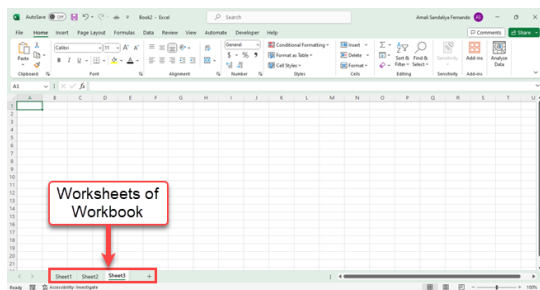
- Enter values in A1:A3 (e.g., 10, 20, 30)
- In B1, type =A1*2, copy down
- Then try absolute and mixed referencing with different fixed cells

3. Workbook vs Worksheet

Objective: Distinguish between workbook and worksheet.

Key Points:

- **Workbook:** The entire Excel file (like a book)
- **Worksheet:** A single sheet within the workbook (like a page in a book)



Activity:

- Ask students to add a new worksheet using the "+" button.
- Rename it to "Practice".

Analogy:

A workbook = a notebook

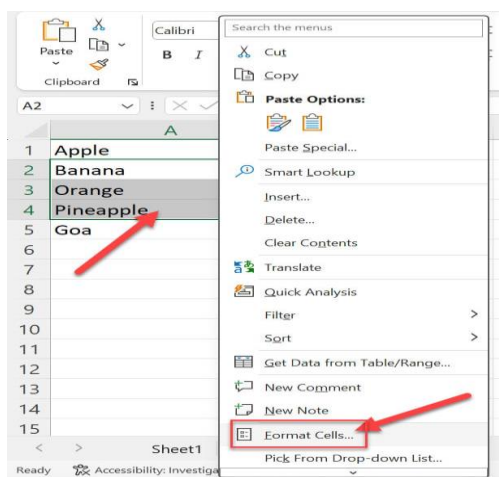
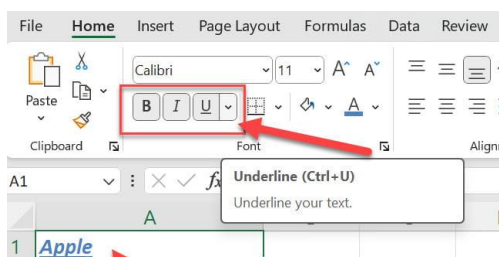
Worksheets = pages in that notebook

4. Basic Formatting: Bold, Italic, Alignment, Cell Colors

Objective: Enhance the appearance and readability of data.

Key Points:

- **Bold (Ctrl+B)** and **Italic (Ctrl+I)**: Emphasize text
- **Alignment**: Align text left, right, center, top, middle, bottom
- **Cell Colors**: Fill cells with color to highlight them (Home > Fill Color)



Activity:

- Enter sample data (Names, Marks)
 - Bold the header, center align, and apply a light blue background
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5. Adjusting Rows/Columns, Merging Cells

Objective: Learn how to manage row and column sizes and merge cells for layout.

Key Points:

- **Adjust Column Width/Row Height:** Drag borders or double-click to auto-fit
- **Merge Cells:** Combine multiple cells into one (Home > Merge & Center)
 - Best used for titles or headers

Caution:

Merging can cause loss of data if not done carefully.

Activity:

- Type a title across A1:D1, select and use Merge & Center
- Resize columns to fit names and data

Summary Table:

Topic	Key Action	Shortcut / Path
Ribbon & Tabs	Navigate commands	Top of Excel window
Formula Bar	View/edit formulas	Under ribbon
Sheet Tabs	Switch/add worksheets	Bottom of window
Cell Referencing	Use \$ to fix rows/columns	Type manually
Workbook vs Worksheet	Whole file vs. single page	File structure
Bold/Italic	Format text	Ctrl+B / Ctrl+I
Alignment	Align content	Home tab > Alignment group
Fill Color	Highlight cells	Home tab > Fill Color
Adjust Row/Column Size	Drag border / AutoFit	Right-click > Row/Column Width
Merge Cells	Combine cells	Home > Merge & Center