

Excel Notes :

1.1 Apply Custom Data Formats

Custom formats let you change how numbers, dates, or text look **without changing the actual value**.

How to find ?

- Select your cell(s)
- Right-click → **Format Cells**
- Go to the **Number** tab → choose **Custom**

Basic Custom Number Format Codes

Here are common symbols:

Symbol	Meaning	Example
0	Digit placeholder (forces zero)	0000 → 12 → shows 0012
#	Digit placeholder (no zero)	##0 → 12 → shows 12
?	Align decimals	# ?/? → 0.25 → 1/4
%	Percent	0% → 0.25 → 25%
,	Thousand separator	#,##0 → 1200 → 1,200
@	Text placeholder	Hello @ → John → Hello John

Examples

- **Phone Number:** (000) 000-0000 → 1234567890 → (123) 456-7890
- **Leading Zeros:** 0000 → 45 → 0045
- **Add text:** "# units" → 10 → 10 units

- **Conditional Colors:** `[Red]#,##0;[Blue]-#,##0;0`
→ Positive in red, negative in blue.
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2. Apply Data Validation

Data Validation controls what users can enter.

How to find ?

- Select your cell(s)
 - Go to **Data** tab → **Data Tools** → **Data Validation**
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Common Validation Rules

Type	What it does
Whole Number	Restrict to whole numbers only
Decimal	Allow decimals within a range
List	Create a drop-down list
Date	Restrict to certain dates
Time	Restrict to certain times
Text Length	Limit number of characters
Custom	Use formulas for advanced conditions

Example: Create a Drop-Down List

1. Select cell(s).
2. **Data** → **Data Validation** → **Allow: List**
3. In **Source**, type `Yes, No` (or select a range).
4. Click OK → now you have a drop-down.

Example: Allow Numbers Between 1 and 100

1. Select cell(s).
2. **Data** → **Data Validation** → **Allow: Whole Number**
3. **Data** → **between** → **Minimum: 1, Maximum: 100**
4. Click OK.

Add Input Message or Error Alert

- In the **Data Validation** window:
 - **Input Message tab**: Shows a note when the cell is selected.
 - **Error Alert tab**: Shows a custom error if input is invalid.

Note :

Combine custom formats *and* data validation for clean, consistent data.
Use formulas in validation for advanced rules:

- Example: Only allow "Yes" or "No" (case-insensitive):
`=OR(A1="Yes", A1="No")` using **Custom**.

1.2 Advanced Conditional Formatting

Conditional Formatting lets you format cells automatically based on their values or custom formulas.

How to Find ?

Home tab → **Styles group** → **Conditional Formatting**

Built-in Rules

1. **Highlight Cell Rules:** e.g., greater than, less than, text that contains.
2. **Top/Bottom Rules:** top 10 items, above average, etc.
3. **Data Bars, Color Scales, Icon Sets:** visualize trends.

Advanced: Use a Formula

When you need more control, use **'Use a formula to determine which cells to format'**.

Example: Highlight rows if "Status" = "Pending"

1. Select the rows you want to format.
2. Go to **Conditional Formatting** → **New Rule** → **Use a formula**.

\$C2 locks the column C, so it checks Status for each row.

3. Click **Format...**, choose formatting style (fill color, font color, etc.).
4. Click OK.

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- You can manage rules: **Conditional Formatting** → **Manage Rules** → edit, delete, change order.
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2. Advanced Filtering

Advanced Filtering extracts specific rows to the same sheet or another sheet — with complex criteria.

How to Find ?

Data tab → Sort & Filter group → Advanced

1.3 Create and Modify Custom Workbook Elements :

Custom Workbook Elements usually include:

Custom Views
Templates
Themes

Custom Styles
Headers & Footers
Document Properties

1. Create and Use Custom Views

Custom Views let you save display settings (e.g., hidden rows/columns, filters, print settings).

How to:

1. Arrange your worksheet how you want it.
 2. Go to **View** tab → **Workbook Views** group → click **Custom Views**.
 3. Click **Add**, name your view, check options you want (e.g., print settings).
 4. To apply, go back to **Custom Views** → select a view → click **Show**.
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2. Save a Workbook as a Template

A template saves formatting, styles, content, macros, etc., for reuse.

How to:

1. Create your workbook with needed formatting, charts, and formulas.
2. Go to **File** → **Save As**.
3. Choose **Excel Template (*.xltx)** from **Save as type**.

4. Save it in the **Custom Office Templates** folder (recommended for easy access).
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3. Create and Modify Themes

Themes control fonts, colors, and effects.

How to:

1. Go to **Page Layout** tab → **Themes** group.
 2. Click **Themes** drop-down → pick an existing theme or **Customize Colors**, **Customize Fonts**, or **Customize Effects**.
 3. Click **Save Current Theme** to reuse it later.
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4. Create Custom Cell Styles

Cell Styles apply consistent formatting.

How to:

1. Format a cell how you like.
 2. Select the cell → go to **Home** tab → **Styles** group → **Cell Styles**.
 3. Click **New Cell Style**, name it, adjust what you want to include.
 4. Use it by selecting cells → apply your custom style.
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5. Add Custom Headers & Footers

Headers/Footers appear when printing.

How to:

1. Go to **Insert** tab → **Text** group → **Header & Footer**.
2. Use **Header & Footer Tools** to insert page numbers, date, file path, or custom text.
3. Use **Design** tab to customize different first page/odd & even pages.

6. Edit Document Properties

Add author, title, tags, or custom properties.

How to:

1. Go to **File** → **Info**.
2. On the right, edit **Properties** like Author, Title, Tags.
3. For advanced properties, click **Properties** drop-down → **Advanced Properties** → add custom ones under the **Custom** tab.

Note :

- Save your custom workbook elements in a template for consistency across projects.
- Use the **Personal Macro Workbook** to store macros for all workbooks.

1.4. Prepare a Workbook for Internationalization

Preparing a workbook for **internationalization** in Excel means setting it up so people in different countries, languages, and regions can use it easily — without errors in numbers, dates, currencies, or text direction.

1. Use Neutral Date Formats

Dates:

- Use date formats that adjust with the user's locale.
- Avoid hard-coded text dates (like **January 5, 2025**) — instead, use **Date** cell formats (**dd/mm/yyyy** or **mm/dd/yyyy**) and let Excel handle the display.

Numbers & Currency:

- Format numbers using **Number**, **Currency**, or **Accounting** — these adapt to local decimal separators and currency symbols.

- Avoid typing \$ directly; instead, use **Format Cells** → **Currency**.
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2. Use Cell Styles and Themes

- Apply **consistent styles** for headings, body text, and input fields.
 - Themes help maintain consistent fonts that support special characters (e.g., accented letters).
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3. Avoid Hard-Coded Text for Multi-Language

If your workbook is shared in multiple languages:

- Keep all user-facing labels/text in a dedicated sheet.
 - Use **LOOKUP** or **VLOOKUP** to pull the appropriate text based on a language selection.
 - For larger solutions, consider using macros to switch languages.
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4. Use Right-to-Left (RTL) Support (if needed)

For languages like Arabic or Hebrew:

- **File** → **Options** → **Advanced** → **Display** → **Show sheet right-to-left**.
 - Align text properly for RTL reading.
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5. Check Regional Settings

- Make sure your formulas do not rely on specific system settings.
- For example:

- , vs. ; as argument separators.
- Week starting day (Sunday vs. Monday).

Test your workbook with different **Language & Region** settings in **Control Panel (Windows)** or Excel's **Options**.

6. Use Unicode-Compatible Fonts

Use fonts that support special characters, accents, and symbols from multiple languages — like Arial, Calibri, or Unicode fonts.

7. Document Any Local Assumptions

Add a README sheet to explain:

- Required locale settings.
 - Currency assumptions.
 - Special formatting instructions.
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8. Protect Your Workbook (Optional)

Use **Data Validation** to limit entry to proper formats (dates, numbers).
Protect sheets to prevent accidental changes to formulas that depend on local settings.

Three important point to consider while converting your workbook for internationalization

1. Understanding Locale Settings in Excel

- **Locale settings** determine the default formats for **dates, numbers, currency, and language**.

- Each region has unique settings:
 - **US Locale:** mm/dd/yyyy, \$ for currency.
 - **UK Locale:** dd/mm/yyyy, £ for currency.
 - **India Locale:** dd-mm-yyyy, ₹ for currency, lakh/crore system.
 - To change locale:
 - Go to **File** → **Options** → **Language/Regional Format** or use **Control Panel** → **Region** (Windows settings).
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2. Translate Functions & Date Formats

- Some functions **change names** in localized Excel versions:
 - **SUM** becomes **SOMME** in French, **SUMME** in German.
- **Date formats** vary:
 - US: 07/18/2025
 - Germany: 18.07.2025
 - Japan: 2025/07/18

Tip: Use the **TEXT** function to convert date formats for consistency.

3. Right-to-Left Languages (RTL)

- Languages like **Arabic** or **Hebrew** use **RTL layout**.
- Enable RTL:
 - Go to **File** → **Options** → **Advanced** → **Display** → **Right-to-left support**.
 - Sheet direction changes, alignments adapt automatically.

Presenting Data Effectively with Excel Charts

CREATING EXCEL CHARTS

- Select the data range needed for Chart.
- Go to the **INSERT tab** – select the type of chart for the data.



SHORTCUT KEY

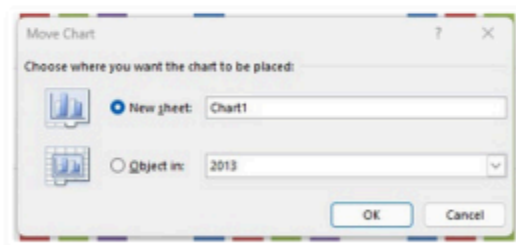
- Select the data range needed for Chart.
- Press function key F11



Using the shortcut key will place the chart on a new Chart Sheet

MOVING CHARTS

- Select the Chart
- Go to the **CHART DESIGN tab – MOVE CHART**
- Select to place the Chart on a **New Sheet** or on an **existing sheet (Object In)**



ADDING CHART ELEMENTS

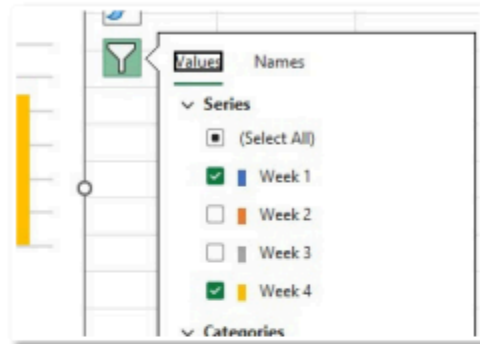
Chart Elements include; Axes Labels/Titles, Legend, Chart Title, Data Labels/Table and more.

- Select the Chart
- Go to the **CHART DESIGN tab – ADD CHART ELEMENT**

FILTERING CHART DATA

Filters will allow you to remove content temporarily from the chart.

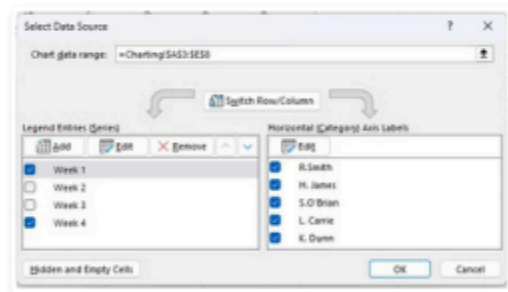
- Select the Chart
- Top Right corner of chart you will find the **FILTER** button.



MODIFY CHART DATA SOURCE

After a chart has been created, you can modify the range used in the chart.

- Select the Chart
- Go to the **CHART DESIGN** tab – **SELECT DATA**
- In this window you can deselect/select Series and Category elements to add or remove from the chart.
 - The entire data range can be modified as well.



CREATING CHART TEMPLATES

Chart templates allow you to quickly apply a prior chart design to a newly created chart.

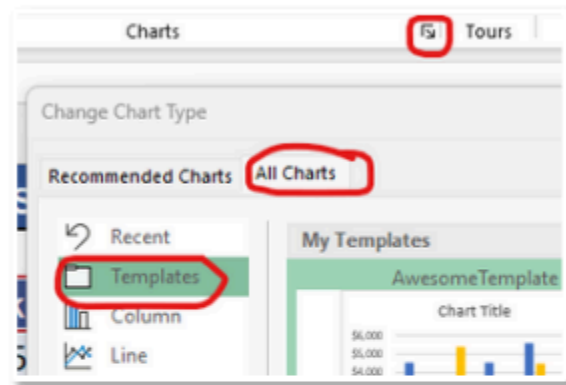
Create Template

- Right Click the existing chart – **SAVE AS TEMPLATE**
- Give the Chart Template a name and click **SAVE**.

By default, the Chart Template will be saved in the Chart Templates folder location on your computer.

Apply Template

- Go to the **INSERT** tab – **CHART OPTIONS** – **ALL CHARTS** – **TEMPLATES**



PRINTING CHARTS

An Excel chart can be printed independently of the sheet or with the rest of the content on the sheet.

Chart Only

- With the chart selected, go to the **FILE** tab – **PRINT**.

Chart and Worksheet

- With the chart **NOT** selected, go to the **FILE** tab -- **PRINT**.

Printing a chart has all the same options as printing a normal Excel worksheet. You can modify the margins, Header/Footer, Scaling and Orientation.

Excel charts error bars :

In Excel charts, **Error Bars** are visual indicators that show the variability or uncertainty in your data. They help you understand how accurate your measurements are by showing how far the data points might be from the "true" value.

Types of Error Bars in Excel

1. **Standard Error (SE)**
2. **Percentage**
3. **Standard Deviation (SD)**

1. Standard Error (SE)

Meaning:

Standard Error tells how much the **average** (mean) value of your data might vary if you repeated the experiment many times. It's useful when you're working with **averages**.

Formula:

Standard Error = Standard Deviation / $\sqrt{\text{Number of Observations}}$

Example:

Suppose you measured the weight of 5 apples:

- Weights (in grams): 100, 102, 98, 101, 99
- Mean = 100
- Standard Deviation = 1.58

A black rectangular box containing the formula for standard deviation in white text. The formula is:
$$s = \sqrt{\frac{1}{n-1} \sum_{i=1}^n (x_i - \bar{x})^2}$$

Standard Deviation (s)=

- Standard Error = $1.58 / \sqrt{5} \approx 0.71$

If you use Standard Error as error bars, each point will have a bar of ± 0.71 , indicating how much the average could vary.

Use it when:

You want to show how **precise** your mean value is.

2. Percentage

Meaning: Percentage error bars show a fixed **percentage** of the value of each data point. It doesn't rely on the actual variation of the data but applies the same % error to each point.

Example:

Sales values for 3 months: ₹10,000, ₹12,000, ₹14,000

If you set error bars at **10%**, then:

- For ₹10,000 → error bar = $\pm ₹1,000$
- For ₹12,000 → $\pm ₹1,200$
- For ₹14,000 → $\pm ₹1,400$

Use it when:

You want to show **proportional uncertainty** (like estimating 10% fluctuation in results).

3. Standard Deviation (SD)

Meaning:

Standard Deviation tells how **spread out** your data is. Error bars using SD show how much individual values differ from the mean.

Example:

Student test scores: 80, 85, 75, 90, 70

- Mean = 80
- Standard Deviation = 7.9

Using SD as error bars shows ± 7.9 around the mean score. It shows **how varied** your Data's performance is.

Use it when:

You want to show the **spread or variability** of your data.
