DATA ANALYTICS

Chapter 4: Data Analytics With Excel				
Teaching Hours: 08	Marks Distribution			
	Remember = 02 M	Understanding= 04M	Applying = 06 M	Total = 12 M

Unit - IV Data Visualization

4.1 Creating a Simple Chart, Charting Non Adjacent Cells

4.2 Creating a Chart Using the Chart Wizard Modifying Charts, Moving an Embedded Chart Sizing an Embedded Chart

43 Changing the Chart Type, Changing the Way Data is Displayed. Moving the Legend

4.4 Formatting Charts Adding Chart items Formatting All Text. Formatting and Aligning Numbers. Formatting the Plot Area, Formatting Data Markers

4.5 Pie Charts, Creating a Pie Chart. Moving the Pie Chart to its Own Sheet Adding Data labels, Exploding a Slice of a Pie Chart.

4.1 Introduction

Data visualization is the graphical representation of information and data, employing visual elements like charts, graphs, maps, and dashboards to make complex datasets more accessible and understandable. By translating raw data into visual formats, it enables the identification patterns, trends, and outliers, facilitating quicker and more informed decision making This practice is integral across various fields including business analytics, healthcare, education, and journalism where it aids in communicating insights effectively to diverse audiences. In the context of big data, visualization tools are essential for analyzing vast amounts of information, allowing stakeholders to grasp intricate concepts swiftly and derive meaningful conclusions.

What are Charts and Graphs in Excel ?

Charts and graphs in Excel are powerful tools for data visualization. They help you present and analyze data graphically, making it easier to identify trends, patterns, and comparisons. By converting numerical data into visual formats, you can communicate complex information clearly and effectively.

Uses of Charts and Graphs in Excel

Charts and graphs in Excel affer several advantages

- **Data Visualization:** Transform raw data into visually appealing graphics.
- **Comparison Easily :** compare different datasets.
- **Trend Analysis:** Identify trends and patterns over time
- **Clarity:** Make data insights more accessible and understandable

4.1.1 Creating a Simple Chart

Step-by-Step Guide to Creating Different Types of Graphs in Excel

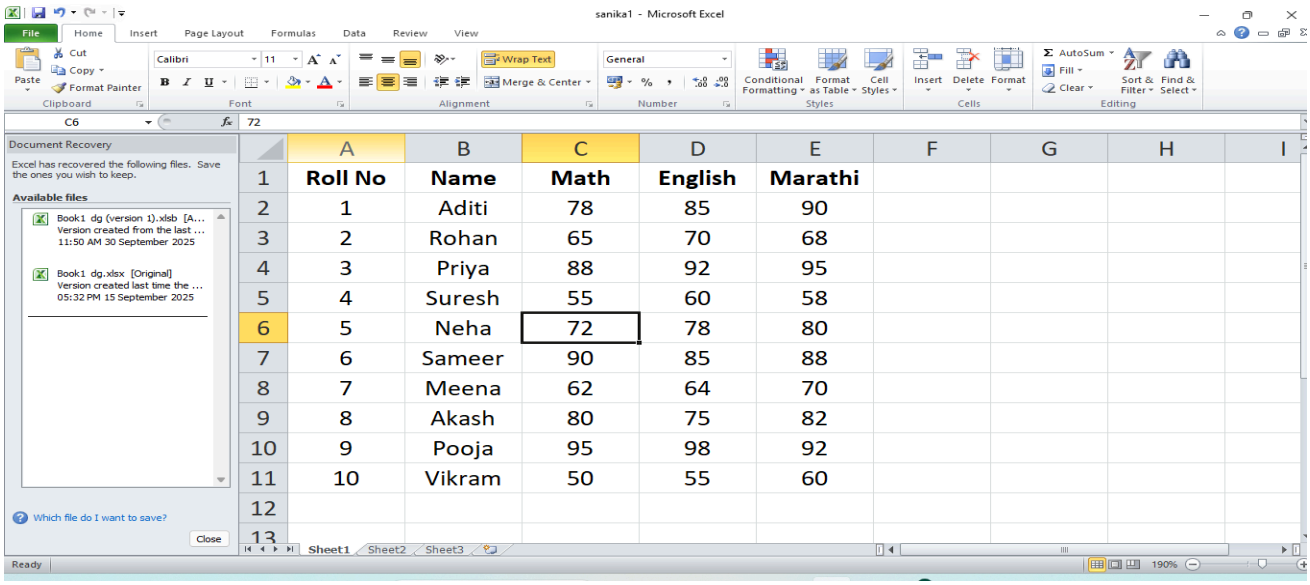
Plotting a Graph in Excel is an easy process. Below is a step-by-step process explaining how te make a chart or graph in Excel

Step 1: Create a Dataset

In your excel sheet enter the dataset for which you want to make a chart or graph. We are using the following random sales data for different courses for January - March period

Step 2: Select the Dataset

Select the entered dataset by drag and drop or by CTRL+ A



	A	B	C	D	E
1	Roll No	Name	Math	English	Marathi
2	1	Aditi	78	85	90
3	2	Rohan	65	70	68
4	3	Priya	88	92	95
5	4	Suresh	55	60	58
6	5	Neha	72	78	80
7	6	Sameer	90	85	88
8	7	Meena	62	64	70
9	8	Akash	80	75	82
10	9	Pooja	95	98	92
11	10	Vikram	50	55	60
12					
13					

Step 3: Go to Insert and Select Recommended Charts

Go to the **Insert Tab** and in the dropdown select the chart of your choice from the **Recommended Charts** You can click on **All charts** option if you cannot find your desired chart.

Go to Insert and Select Recommended Charts

There are various types of charts recommended by Excel. You can preview the chart before applying it. Select the chart or graph that you desire and click on **OK.**

4.1.2 Charting Non-Adjacent Cells in Microsoft Excel

In Microsoft Excel, charts are essential tools for visualizing data. While it's common to create charts from data arranged in adjacent cells, there are situations where the data you want to Include in a chart is located in non-adjacent (non-contiguous) cells or ranges. Excel provides methods to handle such scenarios effectively.

Months	Sales A	Sales B
January	100	150
February	120	130
March	70	140
April	50	150

Now suppose you want to compare Sales A and Sales B only for January and March using column chart.

Step 1: Open the File

Open the file: Non Adjacent_Chart_Example.xlsx

Step 2: Insert a Blank Chart

- Go to the Insert tab on the ribbon.
- In the Charts group, click Insert Column or Bar Chart.
- Choose Clustered Column→ A blank chart will appear

Step 3: Open the Select Data Dialog

- Right-click on the blank chart area.
- Choose Select Data.

Step 4: Add "Sales A" Data

- In the Select Data Source window, click Add.
- In the Edit Series window:
- Series name: Click cell B1 (Sales A).
- Series values:
- Delete what's inside the box.
- Hold down Ctrl and click B2 and B4 (100 and 90).
- Click OK.

Step 5: Add "Sales B" Data

- Click Add again.
- In the Edit Series window:
- Series name: Click cell C1 (Sales B)
- Series values:
- Hold Ctrl and click C2 and C4 (150 and 170).
- Click OK.

Step 6: Add Labels for the X-Axis (Months)

In the main Select Data Source dialog, click Edit under Horizontal (Category) Axis Labels

Select cells A2 and A4 (January and March).

Click OK

Step 7: Finalize the Chart

Click OK to close the dialog

You'll now see a chart showing Sales A and Sales B for January and March only even thoug they were not in a continuous row or column.

4.2 Chart Wizard

The Chart Wizard is a spreadsheet feature that guides users through the process of creating charts and graphs. It provides a step-by-step interface to help user's select data and chart types and customize various aspects of the chart's appearance depending on the selected data. The Chart Wizard is designed to make the charting process more intuitive and accessible.

When users launch the Chart Wizard in Excel, they see a series of recommendations. They typically include selecting a range of data to plot, selecting a chart type (e.g. bar, line, ple, or stock chart), specifying chart parameters such as headings and axis labels, and additional customizations as needed.

4.2.1 Creating a Chart Using the Chart Wizard in Microsoft Excel

How to use Chart Wizard?

In ONLYOFFICE Spreadsheet Editor the Chart Wizard is activated by the Recommended Charts button on the Insert tab

Once you click, you will see recommendations of the ready-made charts and their previews.

Create a new chart using Chart Wizard

Let's create a chart based on our table.

Step 1: Select the cell range that contains the data you wish to use for the chart

Step 2: Go to the Insert tab of the top toolbar and click the Recommended Chart icon. You will see a window with ready graphs based on your data

Step 3: Switch between the recommended chart types to see what the chart will look like. You can also use the tabs on the left to preview other chart types

Step 4: Once you have selected the type of chart or graph you want, click OK to insert the chan into the spreadsheet.

Step 5: Place the chart in the desired position in the sheet and customize additional parameters in the right side toolbar if necessary

Customize the chart size and style. In the parameters, it is also possible to change the displayed data without deleting the chart itself. To do this, use the Select data function.

Consult the ONLY OFFICE Help Center to learn about all the possibilities of working with charts in Spreadsheet Editor.

After you have configured all the settings, your chart is ready

Replace the ready chart with Chart Wizard recommendations

Suppose you already have a chart in your spreadsheet, but you want to improve it to visualize the data more clearly. In this case, Chart Wizard will help you to choose the best option. You can save time by not having to go through all the possible options.

To do this, click on the ready chart and go to the Insert tab Recommended Chart.

In the window that opens, select the chart type that suits you best among the options that appear as icons in the upper row.
Click OK and the chart will be replaced with a new one with the same size and style.

4.2.2 Moving an Embedded Chart

What is an Embedded Chart?

Embedded Chart = A chart inside your worksheet.
It's part of your Excel sheet and appears along with your data, rather than being on a separate Page.

How to Move the Chart?

1. Click on the Chart:

When you click on the chart, it gets selected. You'll see a border around it (like a box). Th border helps you know the chart is ready to be moved.

2. Hover Over the Border:

Move your mouse to the edge of the chart. You should see your cursor change into a four headed arrow (like a plus sign or cross).

The four-headed arrow means you can move the chart.

3. Click and Drag:

Now, click and hold the mouse button on the chart, and drag it anywhere on the sheet.

You can move the chart to a new location (eg, top-left corner, bottom-right corner).

4. Let Go of the Mouse:

Once the chart is where you want it release (let go of) the mouse button The chart will stay in the new place.

Why Move a Chart?

Moving a chart is helpful when you need to make space for more data or want to organize things neatly it's like dragging a picture around in a document:

4.2.3 Sizing an Embedded Chart

Sizing a chart typically means adjusting the dimensions (height and width) of a chart or graph to make it fit a specific space or improve its readability

How to Resize an Embedded Chart in Excel ?

1. Manual Resizing

Steps:

- **Select the Chart:** Click on the chart to activate it
- **Resize Handles:** You'll notice small circles or squares (handles) appear on the corners and edges of the chart
- **Adjust Size:** Click and drag these handles to resize the chart:
- **Corner Handles:** Resize bath width and height proportionally
- **Side Handles:** Resize width or height independently.

Tip: Holding the Shift key while dragging a comer handle maintains the chart's aspect ratio

2. Setting Exact Dimensions via the Ribbon

Steps:

- Select the Chart Click on the chart to select it
- Navigate to the Format Tab: Go to the Format tab on the Ribbon
- Enter Dimension
    - In the Size group. Input your desired Height and Width values
    - Press Enter to apply the changes.

Example:

- Height : 4 Inches
- Width: 6 inches

3. Using the Right Click Menu for Size and Properties

Steps:

- Right Click on the Chart: Right-click anywhere on the chart area
- Format Chart Area: Select Format Chart Area from the context menu.
- Adjust Size
    - In the Format Chart Area pane go to the Size & Properties tab
    - Under Size, adjust the Height and Width as needed
    - Optionally check Lock aspect ratio to maintain proportional resizing

Tips for Effective Chart Resizing

- Maintain Aspect Ratio: To prevent distortion, ensure the Lock aspect ratio option is enabled.
- Align with Cells: If you want the chart to align with specific cells, hold down the Alt key while resizing. This will snap the chart to the gridlines, helping it fit neatly within the desired cel range
- Consistent Sizing Across Sheets: If you need the same chart size across multiple sheet, consider creating a template chart and copying it to other sheets.

4.3 Changing the Chart Type

Charts are used to show data visually. Sometimes, you may want to change how the data is displayed. For example, from a bar chart to a line chart, depending on what you want to show.

Why change the chart type?

- To make the data easier to understand.
- To highlight trends or comparisons
- To suit the type of data you have.
- How to Change the Chart Type (in Excel or Google Sheets)?

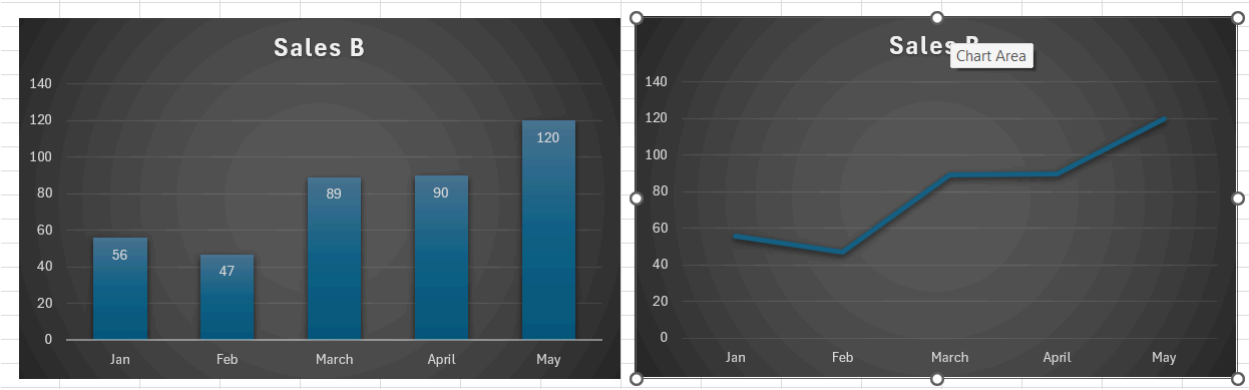
Steps:

- Click on your chart (select it).
- Find and click on "Change Chart Type" (usually in the toolbar or chart editor)
- Choose the chart type you want-like Line, Pie. Column. Area, etc.
- Click OK or Apply and your chart updates!

Example:

Month	Sales
Jan	100
Feb	140
March	120
April	160

Let's say we have this data: First, you create a bar chart to show it. But later, you want to show the trend of sales over time, so you change it to a line chart



Here is a real-time image that shows how the same data can be visualized using two different chart types in Excel-style visuals:

- On the left, you see a Bar Chart
- On the right, the same data is shown as a Line Chart

This is exactly what happens when you change the chart type in Excel using the "Chang Chart Type" option.

4.3.1 Changing the Way Data is Displayed

Data can be shown in many different visual formats like bar charts, line graphs, or pie chart, Choosing the right way to display your data helps people understand it better

Why should we change the way data is displayed?

Sometimes, changing the chart or format helps the data

- Make more sense.
- Show something important, like a trend or comparison
- Match what you want people to focus on.

Think of it like telling a story: you want the right picture to go with your message

Examples of How the display can change the message

Let's say you have this data:

Month	Sales
Jan	100
Feb	140
March	120
April	160

You can show In different ways:

1. Bar Chart

- Each bar shows the sales for one month.
- Easy to compare months side by side.
- Helps answer: "Which month had the highest sales?"

2. Line Chart

- Connect the points to show how sales change over time.
- Helps you see the trend going up or down
- Good for time-based data (weeks, months, years)

3. Pie Chart

- If you want to show how much each month contributes to the total sales, a pie chart can help.
- Not great for time trends-better for showing parts of a whole

How to Change the Chart Type ? (Excel or Google Sheets)

- Click your chart to select it.
- Look for "Change Chart Type
- In Excel it's under the Chart Design tab
- In Google Sheets: it's in the Chart Editor.
- Pick a new chart: Bar, Line, Pie, Column, Area, etc.
- Click OK or Apply.
- Your chart will now display the same data in a new way.

4.3.2 Legend in a Chart

A legend in a chart is a visual guide that helps users understands the meaning of various elements in the chart. It typically shows the colors, patterns, or symbols used to represent different data series or categories.

Example: In a line chart showing monthly sales for 3 products

The legend might look like:

- Product A
- Product B
- Product C

Each colored line on the chart matches the corresponding product name in the la helping users know which line represents which product.

Key Features of a Legend:

- Usually placed at the top, bottom, or side of a chart.
- Can be interactive in some tools (eg. clicking a legend item can toggle a data series on/off)
- Improves readability and interpretability of multi-series charts.

Moving the Legend in a Chart

When you make a chart in Excel or Google Sheets, it often includes a legend a small box explains what the colors or lines in the chart represent. For example:

- Blue Girls
- Red Boys
- Green Total
- This is super helpful when you're showing more than one group or data series in your chart.

Why Move the Legend?

Sometimes, the legend might:

- Be blocking part of the chart
- Look awkward where it is
- Be better placed closer to the title or outside the chart area

By moving the legend, you make your chart:

- Easier to read
- More organized
- Better for presentations or reports

Imagine presenting your chart in class and someone can't see the bars because the legend in the way that's when moving it helps!

Where can you move the legend?

Position	**When to use**
Right (default)	Good for most charts with space on the side
Top	When you want the legend near the title
Bottom	Works well when space is tight at the top
Left	Useful for charts with left-aligned focus
Inside Chart	Only if it doesn't block important data

How to Move the Legend?

In Excel:

1 . Click the chart to select it

2. Click on the legend box.

3. Go to the Chart Design tab

4 . Click "Add Chart Element" > Legend > Choose Position (Top, Bottom, Left, Right)

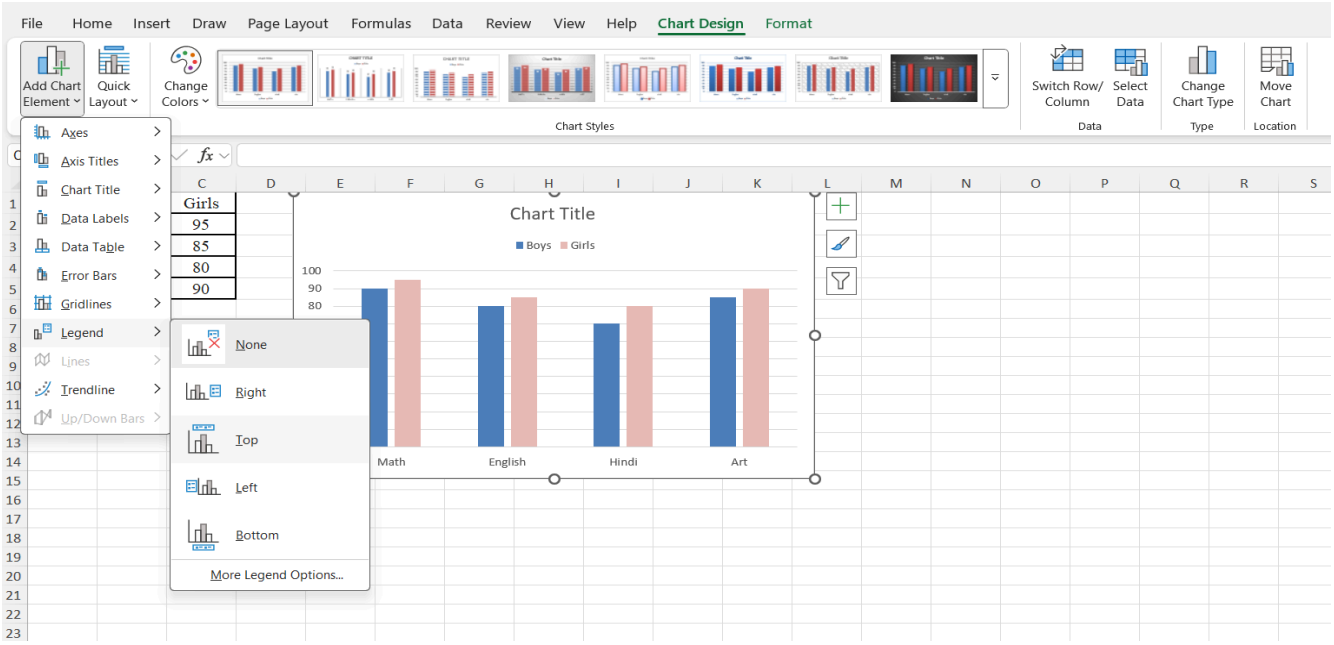
Example:

Let's say you are showing the test scores of boys and girls in 4 subjects

Subject	Boys	Girls
Math	90	95
English	80	85
Hindi	70	80
Art	85	90

You create a bar chart with two colors blue for boys, pink for girls.

If the legend is siting over the bars, your classmates won't see the full chart. You can the legend to the bottom, below the chart, so it's out of the way and still helpful.



4.4 Introduction to Chart Formatting

Charts are powerful tools that transform raw data into visual stories, making compare information easier to understand Proper formatting enhances clarity, emphasizes key insist and makes your data presentations more engaging.

4.4.1 Adding Chart Elements

Essential Chart Components

- **Chart Title**: Describes the overall purpose of the chart
- **Axis Titles:** Label the horizontal (X axis) and vertical (Y-axis) axes
- **Legend:** Identifies different data series in the chart.
- **Data Labels:** Display specific values for data points.

- **Gridlines:** Enhance readability by aligning data points

Adding Elements in Excel

- Create a chart
- Select data for the chart.
- Select Insert > Recommended Charts
- Select a chart Design on the Recommended Charts tab, to preview the chart
- Select a chart
- Select OK
- Add a trendline
- Select a chart
- Select Chart Design > Add Chart Element
- Select Trendline and then select the type of trendline you want, such as Linear, Exponential, Linear Forecast, or Moving Average

Format your chart using the Format task pane

Select the chart element (for example, data series, axes, or titles), right-click it, and click Format <chart element>. The Format pans appears with options that are tailored for the selected chart element.

Clicking the small icons at the top of the pane moves you to other parts of the pane with men options. If you click on a different chart element, you'll see that the task pane automatically updates to the new chart element.

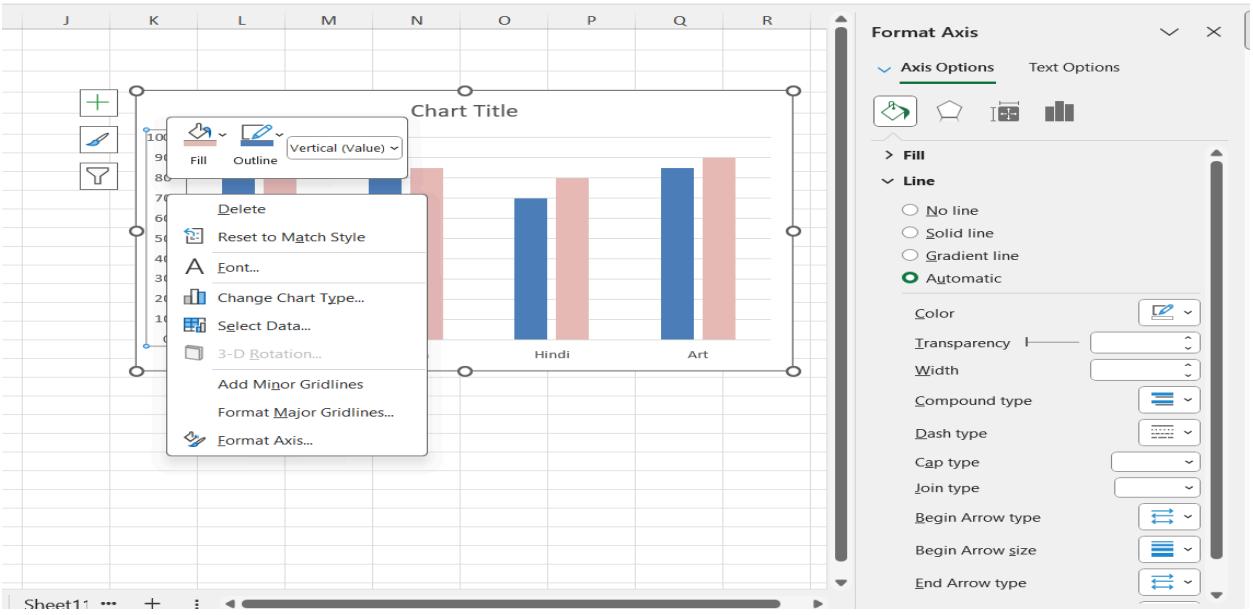
For example, to format an axis:

1. Right-click the chart axis, and click Format Axis.

2. In the Format Axis task pane, make the changes you want

You can move or resize the task pane to make working with it easier. Click the chevron the upper right.

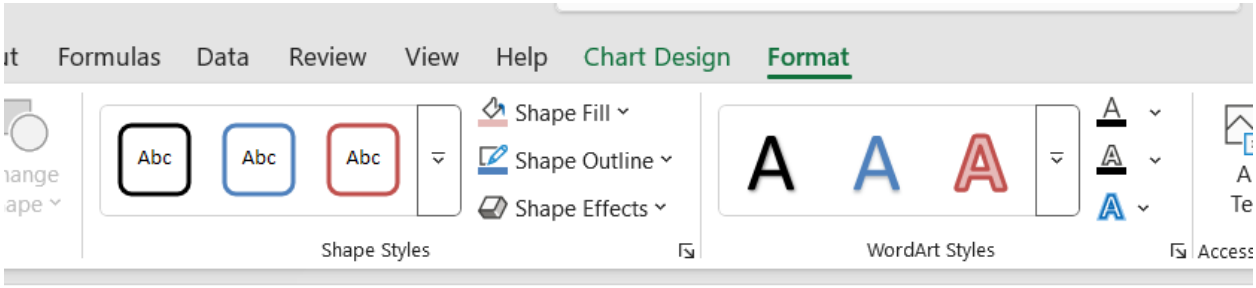
- Select Move and then drag the pane to a new location
- Select Size and drag the edge of the pane to resize it



Format your chart using the Ribbon

1. In your chart, click to select the chart element that you want to format.

2. On the Format tab under Chart Tools, do one of the following



- Click Shape Fill to apply a different fill color, or a gradient, picture, or texture to the chart element
- Click Shape Outline to change the color, weight, or style of the chart element.
- Click Shape Effects to apply special visual effects to the chart element, such as shadows. bevels or 3 D rotation.
- To apply a predefined shape style, on the Format tab, in the Shape Styles group, click the style that you want. To see all available shape styles, click the More button
- To change the format of chart text, select the text, and then choose an option on the mini toolbar that appears. Or, on the Home tab, in the Font group, select the formatting that you want to use.

To use WordArt styles to format test, select the text, and then on the Format tab in the WordArt Styles group, choose a WordArt style to apply To see all available style, click the More button

4.4.2 Formatting Text in Charts

- **Change Font Style and Size:**

1. Click on the text element (eg, chart title)
2. Right click and select Font

3. Choose the desired font, style, and size

Change Text Color:

1. Select the task element

2. Use the Home tab to choose a new text color

Why format text in charts?

Text in charts includes titles, axis labels, legends, data labels, and other annotation Formatting helps:

- Improve **clarity** and **readability**
- Highlight important **values or categories**
- Maintain a **professional look** in reports and presentations

Text elements you can format in charts

Text Element	Example
Chart Title	"Monthly Sales Report"
Axis Titles	X-axis. "Month", Y-axis "Revenue ()
Legend Text	Series names like "Product A", "Product B"
Data Labels	Values displayed on bars, lines, or slices
Category Labels	Axis categories like "Jan", "Feb", etc

How to Format Chart Text in Excel: Step-by-Step?

Step 1: Select the Chart

Click once on the chart to activate it.

Step 2: Select the Test Element

Click directly on the text you want to format

- Chart Title
- Axis Title
- Legend
- Data Label
- Category Label

Once selected, a border appears around the text element

Step 3 : Apply Formatting Options

Use either of the following

Method 1 : Right-click Format [Text Element]

A sidebar appears with text and fill formatting options

Method 2: Use the Home tab

Apply font styles, sizes, colors, and alignment from the ribbon

Common Formatting Options

1. Font Style and Size

- Change font type (Arial, Calibri, etc)

- Adjust font size for visibility
- Use bold, italic or underline to emphasize

Example :Chart Title in bold and 14 pt size

2. **Font Color**

- Use dark colors for not on light backgrounds and vice versa
- Highlight important data in red or green

Example : Use red test for negative sales growth labels

3. **Text Fill and Outline**

In the **Format pane:**

- **Text Fill:** Solid, gradient, pattern, or picture Bill
- **Text Outline:** Border around text (color and thickness)

Example: Add a white outline to black test on a dark chart background.

4. Text Alignment

- Horizontal Alignment : Left, Center, Right
- Vertical Alignment: Top, Middle, Bottom
- Text Direction: Horizontal, Rotated, Stacked

Example: Rotate Y-axis title to **vertical** direction for compact display

5. Wrap Text and Resize

- Resize the chart text box to fit longer titles.
- Use wrap text for multi-line labels.

6. Add or Edit Text

- Click on any chart element (eg, chart title)
- Press F2 or double-click → Enter your custom text

Example: Change "Series 1" to "Rainfall (mm)"

Example: Formatting a Sales Chart

Task : You created a column chart showing monthly sales

Apply the following:

1. Set chart title to bold 16 pt, blue color.

2. Change Y-axis title to "Sales ($)", 12 pt. Italic

3. Rotate X-axis labels by 45 degrees for readability.

4. Format data labels in red font with white background

Steps:

1. Click on chart title Use Home tab Bold, Blue, 16 pt.

2. Click Y-axis title→ Right-click → Format Axis Title→ Italic, 12 pt.

3. Click X-axis→ Format Axis Text direction → Rotate 45°

4. Click on data labels→ Format Data Labels → Font: Red, Fill: White

Final chart: Visually appealing readable, and presentation-ready.

Best Practices

Keep fonts consistent Use same font style across the chart

Use colors sparingly → Emphasize only what's necessary

Avoid clutter → Too much text can confuse the reader

Use appropriate size → Ensure all labels are legible

4.4.3 Formatting and Aligning Numbers

Number Formatting in Excel

Format Axis Numbers:

1. Click on the axis to select it

2. Right-click and choose Format Axis

3. In the Format Axis pane, select Number

4. Choose the desired format (eg. Currency, Percentage).

5. Right-click on the axis labels

6. Select Format Axis

7. Adjust alignment settings under Alignment

Why format and align numbers

Formatting numbers makes data

- Easier to read and interpret.
- More professional in appearance
- Suitable for different types of data (eg, currency, percentage, scientific)
- Aligned properly for better visual comparison in tables or charts

What can you format in numbers ?

- Number type → Currency, Percentage, Fraction
- Decimal places→ 23.5-23.50
- Negative number style → (123) -123, red color
- Alignment → Left, Center, Right
- Thousand separator → 1000000 → 1,000,000

How to Format Numbers in Excel: Step-by-Step?

Step 1 : Select the Cells

Open your Excel worksheet

Select the cell(s) or column(s) with numbers you want to format.

Step 2 : Open Format Cells Dialog Box

There are two main ways:

Method 1: Right click-Format Cells

Method 2: Use the Home tab In the Number group Click the small arrow is (bottom-right corner)

Number Formatting Options

In the Format Cells dialog box→ Select the Number tab

1. **General**

Default format→ displays numbers as you type them.

2. **Number**
   - Customize decimal places.
   - Choose whether to use comma separator
   - Choose format for negative numbers.

Example:

12345.678→ 12,345.68 (2 decimal places)

3. **Currency**

Adds a currency symbol (P. 5. €. etr.)

Custom decimal places and symbol placement

Example:

$12343-$1,234.50

4. Accounting

Similar to currency but aligns currency symbols neatly in column

5. Percentage

Multiplies the value by 100 and adds a% sign.

Example: 0.25-25%

6. Scientific

Displays numbers in exponential notation . **Example:** 12345678→1.23E+07

Aligning Numbers in Excel

Numbers can be aligned for better presentation, especially in tables

Steps to Align Numbers:

- Select the cells with numbers
- Go to the Home tab Look for the Alignment group
- Use the following options
    - Left Align → Align number to the left.
    - Center Align → Align number to the Center.
    - Right Align → Align number to the Right .

- Top / Middle / Bottom Align →Vertical Alignment of tall cells.

Wrap Text and Merge

- **Wrap Text**: Adjusts the text to fit inside the cell without everlossing
- **Merge & Center:** Combines multiple cells and centers the content

Example Activity: Format a Sales Table

Scenario: You have monthly sales data

Month	Sale
Jan	20500
Feb	18500

Task :

- Format sales column as currency ($, 2 decimals)
- Right align the sales valurs
- Center align the month

Steps:

1. Select the Sales column Right-click Format Cells Currency. 2 decimals

2. On Home tab Click Right Align

3. Select the Month column Click Center Align

Result: Neat and professional looking table

4.4.4 Formatting the Plot Area

In Excel:

1 Click on the plot area in select it

2. Right-click and choose Format Plot Area

3. In the Format Plot Area pane, adjust fill color, border style , and effect .

What is the Plot Ares?

- The Plot Area in an Excel chart is the central region where the actual data (bars Lines ,Slices, etc) is displayed. It is bounded by the axes and surrounded by the chart area.

- Think of it as the "canvas" where your data comes to life

Why Format the plot area?

Formatting the plot area improves:

- Visual appeal
- Data clarity
- Focus on key patterns or trends
- Readability in printed or digital reports

How to format the plot area in excel: Step-by-Step ?

Step 1 :Select the Plot Area

1. Click once on the chart
2. Then, click inside the area where the data is plotted (not on the border or title)
3. You should now see a boundary box around the plot areas only.

Step 2: Open Format Options

1. Right-click on the selected plot area.
2. Choose "Format Plot Area..." from the context menu.
3. A sidebar titled Format Plot Area will appear on the right

Formatting options in the plot area

Let's go through the most common formatting changes you can apply:

1.Fill Options

Under the Fill & Line (paint bucket) icon:

No Fill:

- Removes all background color.
- Use when printing on colored paper or to keep charts minimal

Solid Fil

- Applies a single color
- Best for clear, uniform backgrounds

Gradient Fill

- Blends two or more colors.
- Gives a modern or stylized appearance
- Can customize direction, angle color stops

Picture or Texture Fill:

- Uses an image or built in texture
- Good for thematic charts (eg, soil texture for geology data)

Pattern Fill:

Dots, stripes, grids suitable for black-and white prints.

2. Border Options

Still under the **Fill & Line** tab:

Solid Line:

Outlines the plot area with a visible border

Dashed Line:

Makes the border subtie

Change Color and Width:

Set a custom color and adjust line thickness.

Tip: Use a border if your chart has a white background and might blend with the rest the sheet

3. Shadow, Glow & 3D Format

Under the Effects (pentagon icon) tab

Shadow:

Adds depth; helps charts stand out on reports

Glow:

Highlights the chart boundaries

Soft Edges/3D Format :

More stylized, useful for presentations

Note: Avoid excessive 3D effects in technical reports

4.4.5 Formatting Data Markers

In Excel

1. Click on a data series (eg. bars, lines, or points) to select it,
2. Right-click and choose Format Data Series
3. In the Format Data Series pane, adjust marker options such as shape, size, and color.

What are Data Markers?

Data markers are the individual **visual symbols** (bars, columns, points, slices, etc.) that represent data values on a chart.

In a column chart: data markers are the vertical bars.

In a line chart: data markers are the dots (or shapes) on the line

In a pie chart : data markers are the slices

In a scatter plot: data markers are the plotted dots

Why format data markers?

Formatting helps to:

- Highlight Important data points (eg, highest or lowest)
- Differentiate between data series
- Improve chart readability and appeal
- Emphasize trends or categories

How to format data markers in excel: Step-by-Step ?

Step 1:Select the Chart

- Click on the chart where your data is displayed (eg. column chart or line chart

Step 2:Select the Data Marker

- Click on one of the data points (eg, a column/bar or point on a line).
- To select all data markers in the series, click once.

- To format only one marker, click again on that specific marker

Step 3:

- Open Format Data Series
- Right-click on the selected marker or series
- Choose "Format Data Series "from the menu
- A sidebar titled Format Data Series will appear.

Now you are ready to format!

Options for Formatting Data Markers

1. Fill and Border (for bar/column markers)

Under the Fill & Line tab paint bucket icon)

- Solid Fill: Choose a single color for bars/columns
- Gradient Fill Blend two or more colors for a stylish look

- Picture or Texture Fill: Insert an image or texture (eg, logo or theme)
- Border Line: Add colored outlines around bars/dots

2. Marker Options (for line and scatter charts)

Under the Marker Options tab

- Built-in Marker Types: Circle, square, triangle, star, diamond, etc.
- Market Size: Increase of decrease size (eg. 5pt. 10pt)
- Marker Fill Color: Change inside color of the marker

- Marker Border Color : Customize the outline color and thickness

4.4.6 Formatting Charts in Excel

One of the major uses of Excel is to create different types of charts for a given data set. E provides us with a lot of modification options to perform on these charts to make them no insightful

In this article, we are going to see the most common "Formatting performed on charts a suitable example shown below

Example: Consider the performance of a batsman in a T20 match. The data sat contains De runs scored by the batsman in various matches

Match	Run scored
M1	50
M2	60
M3	56
M4	75

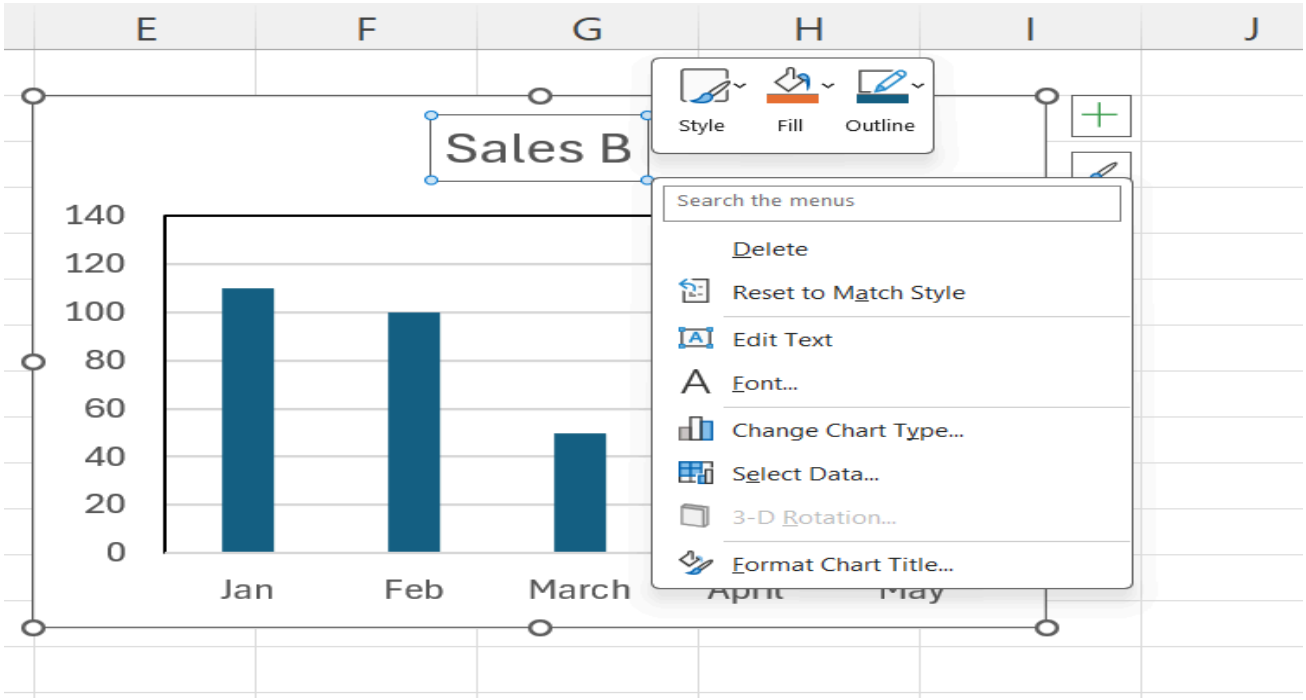
- Now we will insert a bar chart using the above table. To insert a bar chart

  Select dataset → Click on Insert → Chart Sets Pop Down→2-D column

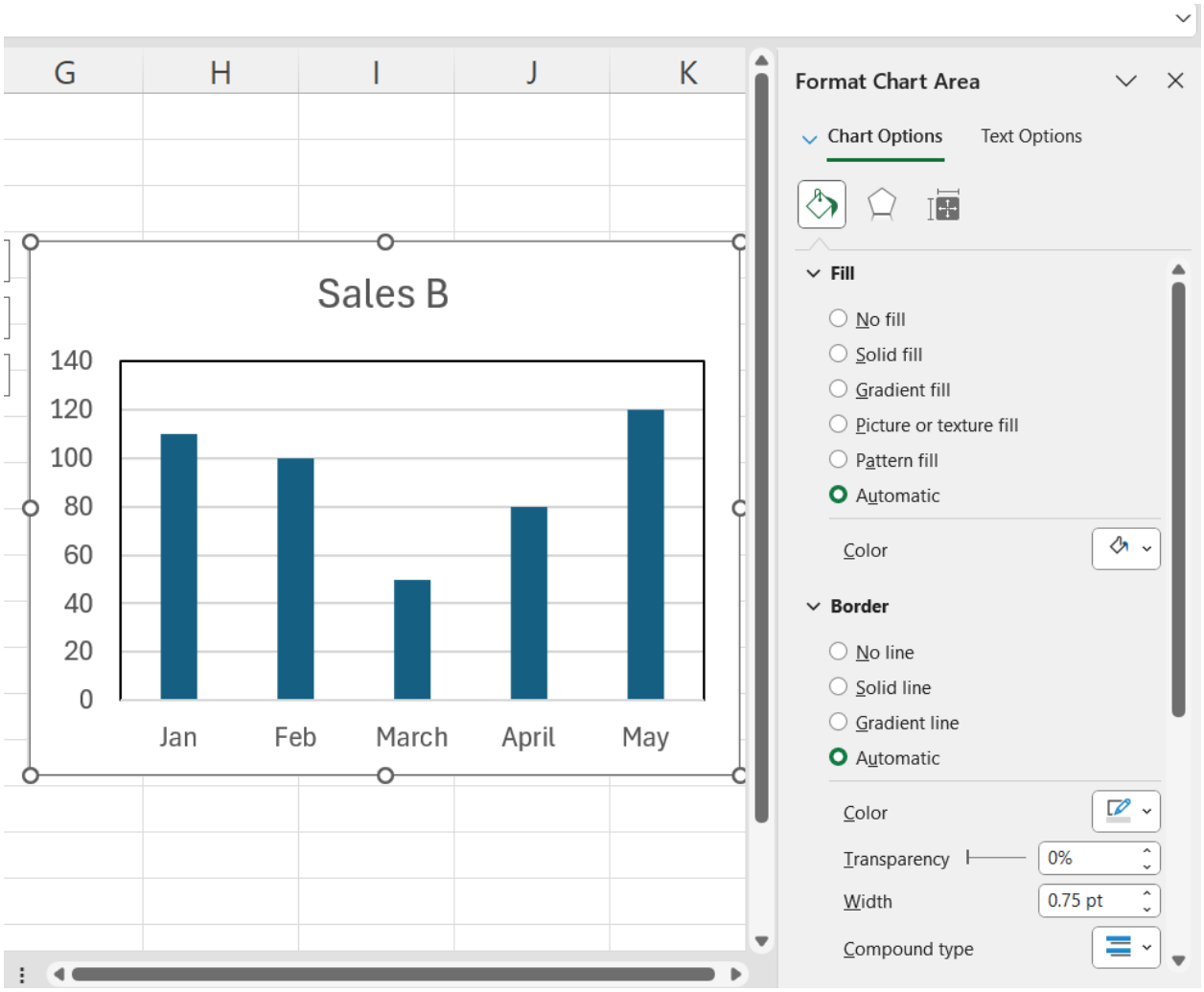
- The key steps to format anything on the chart is
  - Select the part of the chart which needs to be furmatted
  - Right-click on it and select "Format". The format window will open.

1. Formatting the Chart Title

Select the Title → Right Click on it → Format Chart Title .

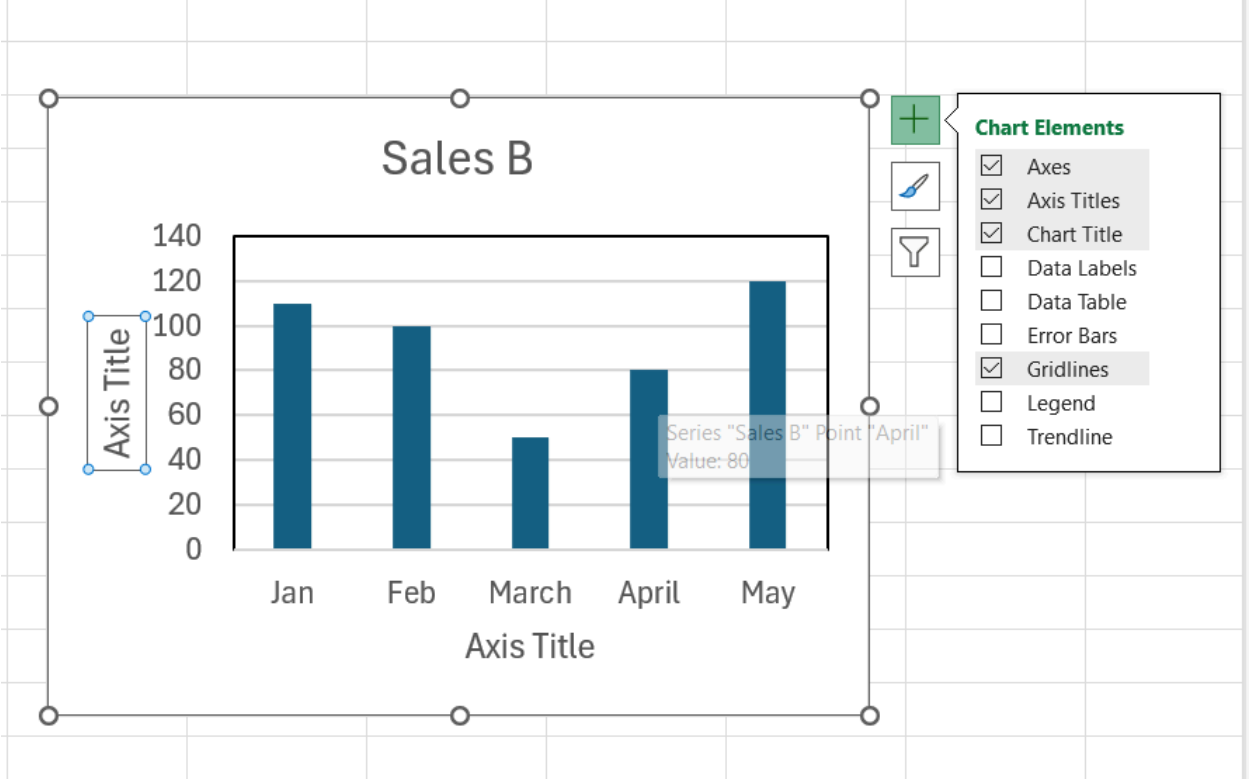


In the Format Chart Title window, you can change **the Font color, add Borders** surrounding the title and various other modifications can be done. You can also rename the title by simply selecting and retyping a new name.



2. Formatting Axis Titles

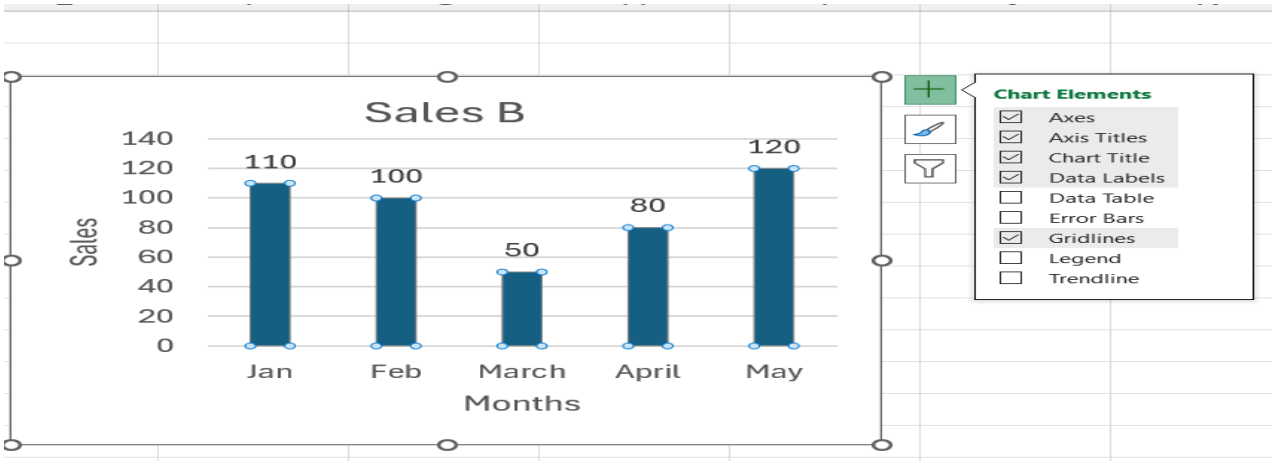
You can add the axis title by using the "+" button in the top right corner of the chart



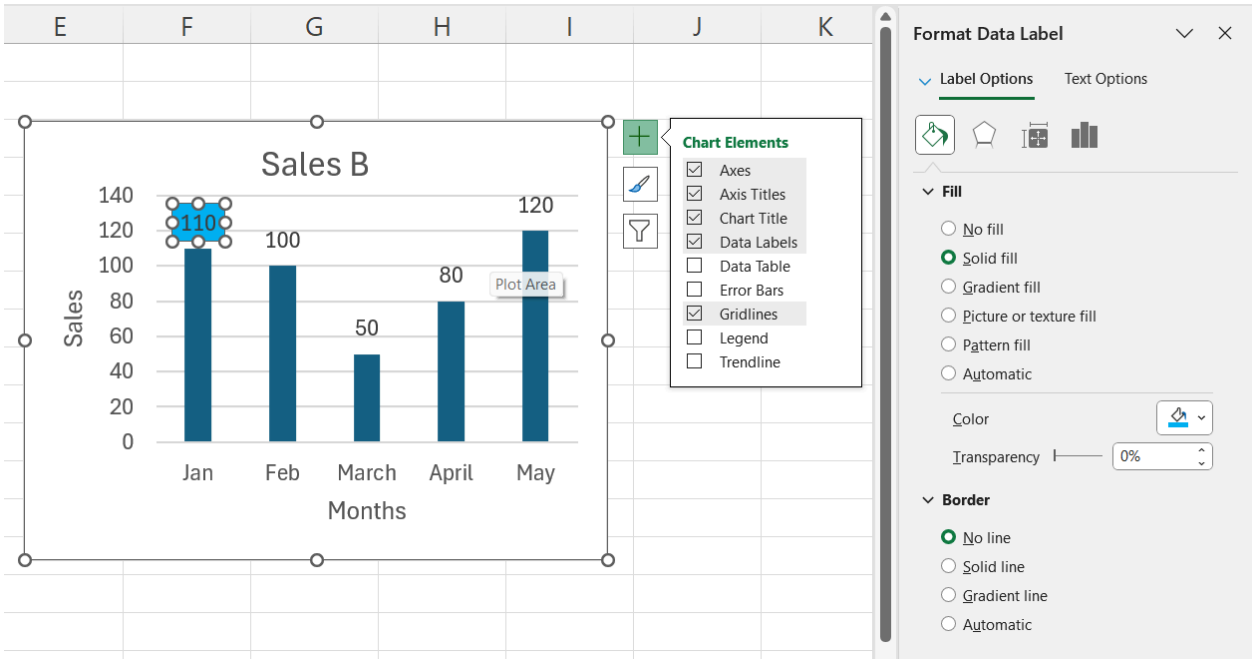
Now, rename the X-axis and Y axis by selecting them You can edit the appearance of the axis title by right clicking on it and selecting "Format Axis Title".

3. Formatting Data labels

You can add Data Labels by using the "+" button on the top right corner of the chart..

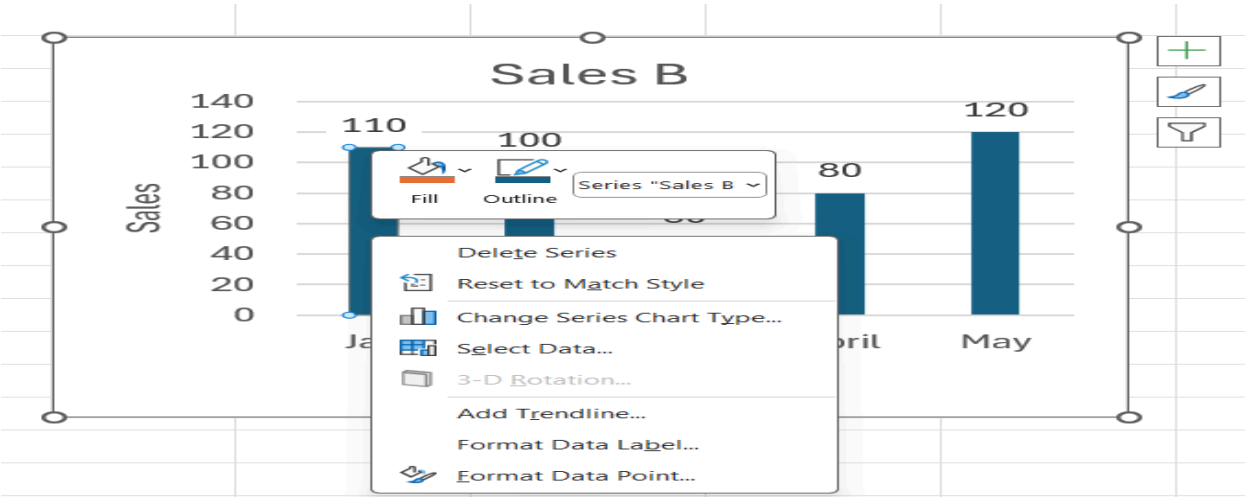


Now open the Format Data Labels Window and can change the Font color, size, alignment, and many other options.



4. Formatting Data Series

You can change the color of the bar charts by selecting them and then open the "Format Data Series" window . By default, on left clicking once on any of the bars all the data sets bar will be selected. If you want to select only one of these bars, left-click twice on the bar which i be formatted.


Sales B
Sales
140
120
100
80
60
40
20
0
110
100
80
120
May
Fill
Outline
Series "Sales B
Delete Series
Reset to Match Style
Change Series Chart Type...
Select Data...
3-D Rotation...
Add Trendline...
Format Data Label...
Format Data Point...