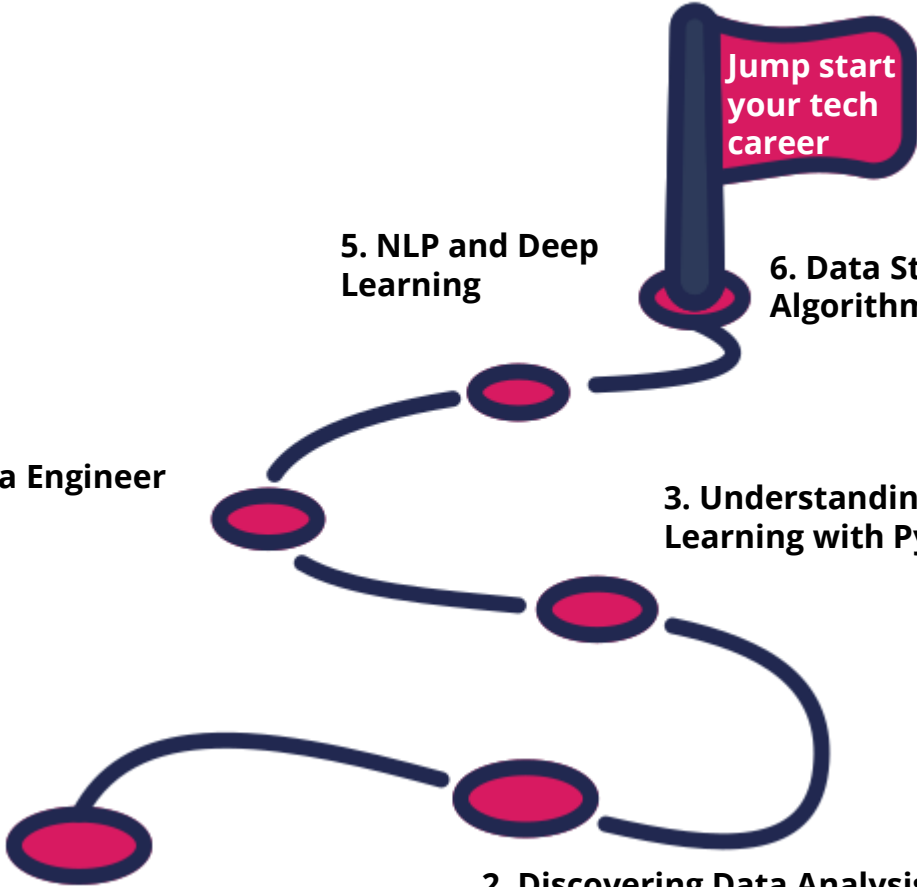**knowledgehut**
upGrad

MS Excel Basics

About Me

- I've been a professional Data Scientist for the last 5 years.

- Currently, I'm working at PayPal in the fraud risk division.

- I've trained more than 700 students in the last 3 years in the field of data science, data analytics, and big data engineering.

Jump start your tech career

5. NLP and Deep Learning

6. Data Structures and Algorithms with Career Support

4. Data Engineer

3. Understanding Machine Learning with Python

1. Mastering MS Excel and Programming Concepts

2. Discovering Data Analysis

📄 Pre-requisites

Hope you have gone through the self-learning content for this session on the PRISM portal.

By the end of this session, you will:

- Learn about elements of an Excel Spreadsheet

- Move data within Excel Spreadsheets

- Understand the various components of the Excel Explore the toolbar – Home Tab, Insert Tab, Data Tab, Page Layout Tab, etc.

- Use of the formula bar and its applications.

Why Learn Excel?

A great tool for performing calculations, data analysis, forecasting and graphics.

Automate repetitive tasks by using macros, functions and formulae.

Create professional reports and presentations with charts, graphs and tables.

Increase your job prospects and compensation.

Pop Quiz

Q. Which software company owns Excel?

a. Google

b. Facebook

c. Microsoft

d. Amazon

Pop Quiz

Q. Which software company owns Excel?

a. Google

b. Facebook

c. Microsoft

d. Amazon

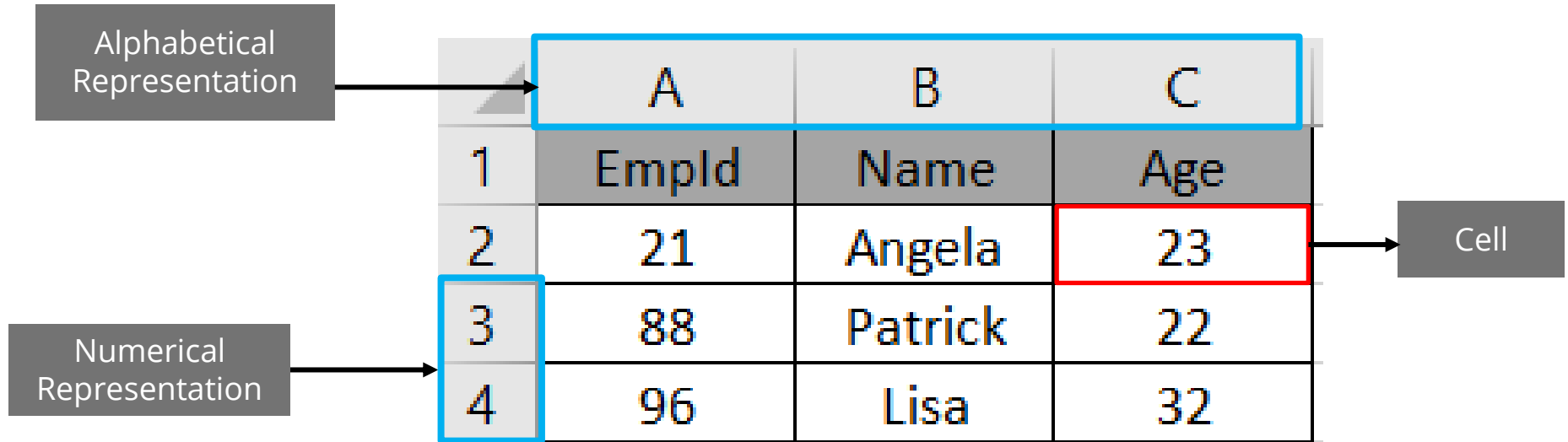# 📄 Introduction to Excel

Introduction to the Excel Interface

Alphabetical Representation

Numerical Representation

Cell

	A	B	C
1	EmpId	Name	Age
2	21	Angela	23
3	88	Patrick	22
4	96	Lisa	32

Pop Quiz

Q. What is a row in an Excel spreadsheet?

a. It's a horizontal set of cells that consists of the information of any specific item or person (Example: Entire detail about the customer)

b. It's a vertical set of cells that consists of a particular feature of the item or person (Example: Age)

c. It's an intersection of both the vertical cells and horizontal cells

d. There is nothing like a row in Excel

Pop Quiz

Q. What is a row in an Excel spreadsheet?

a. **It's a horizontal set of cells that consists of the information of any specific item or person (Example: Entire detail about the customer)**

b. It's a vertical set of cells that consists of a particular feature of the item or person (Example: Age)

c. It's an intersection of both the vertical cells and horizontal cells

d. There is nothing like a row in Excel

📄 Data Types in Excel

Introduction to Data Types

If you are dealing with Customer and Sales data, you can encounter a lot of information like Customer Names, Sales, Orders, Dates, etc. All this information is of different data types.

A particular kind of data item is defined by the input values, the programming language used, or the operations that can be performed on it.

A set of data can be displayed in various data types (formats) such as Numbers, Strings, Dates, etc.
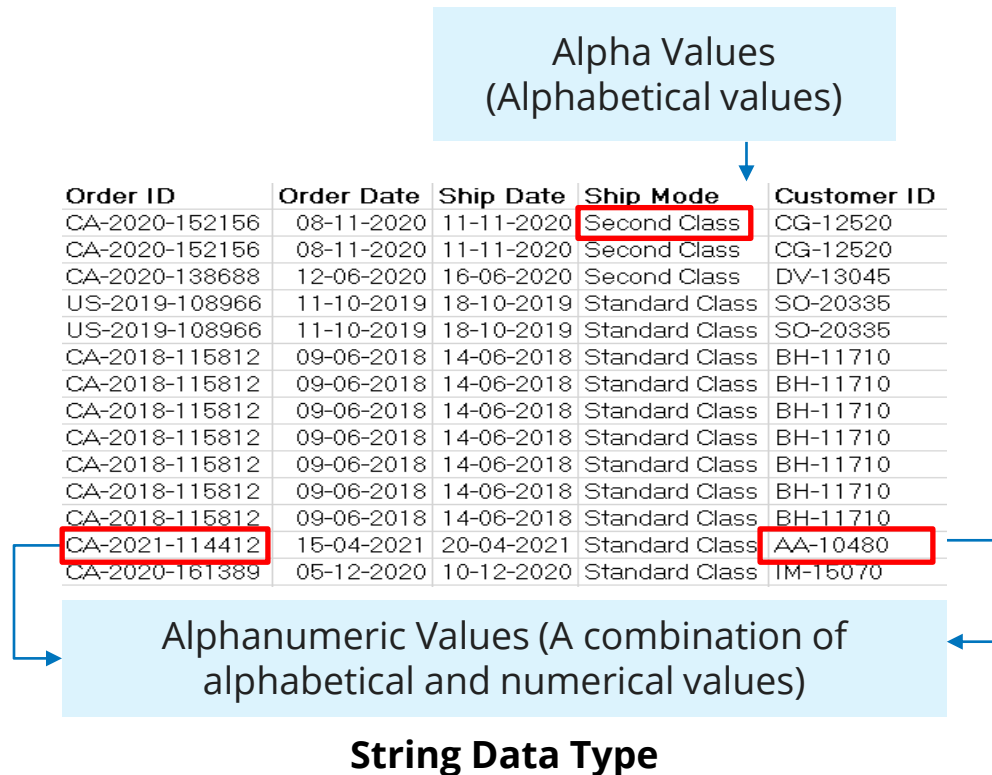
Excel enables you to display data in the following data types:
- *General*
- *Number*
- *String*
- *Date and Time*
- *Currency and Accounting*

Different Data Types

Format	Quantity
Number	10.50
Fraction	10 ½
Scientific	1.00E+01

Number Data Type

Alpha Values
(Alphabetical values)

Order ID	Order Date	Ship Date	Ship Mode	Customer ID
CA-2020-152156	08-11-2020	11-11-2020	Second Class	CG-12520
CA-2020-152156	08-11-2020	11-11-2020	Second Class	CG-12520
CA-2020-138688	12-06-2020	16-06-2020	Second Class	DV-13045
US-2019-108966	11-10-2019	18-10-2019	Standard Class	SO-20335
US-2019-108966	11-10-2019	18-10-2019	Standard Class	SO-20335
CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710
CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710
CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710
CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710
CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710
CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710
CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710
CA-2021-114412	15-04-2021	20-04-2021	Standard Class	AA-10480
CA-2020-161389	05-12-2020	10-12-2020	Standard Class	TM-15070

Alphanumeric Values (A combination of alphabetical and numerical values)

String Data Type

Different Data Types

Order ID	Order Date	Ship Date	Ship Mode	Customer ID
CA-2020-152156	08-11-2020	11-11-2020	Second Class	CG-12520
CA-2020-152156	08-11-2020	11-11-2020	Second Class	CG-12520
CA-2020-138688	12-06-2020	16-06-2020	Second Class	DV-13045
US-2019-108966	11-10-2019	18-10-2019	Standard Class	SO-20335
US-2019-108966	11-10-2019	18-10-2019	Standard Class	SO-20335
CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710
CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710
CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710
CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710
CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710
CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710
CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710
CA-2021-114412	15-04-2021	20-04-2021	Standard Class	AA-10480
CA-2020-161389	05-12-2020	10-12-2020	Standard Class	IM-15070

Date and Time Data Type

Sales Currency	Sales Accounting	
₹ 100.00	₹	100.00
₹ 0.00	₹	–
-₹ 100.00	₹	-100.00

Currency and Accounting Data Type

📄 Demo – Data Types

Poll Time

Q. Which datatype would you use to store age?

a. Number

b. String

c. Date and Time

d. Fraction

Poll Time

Q. Which datatype would you use to store age?

a. **Number**

b. String

c. Date and Time

d. Fraction
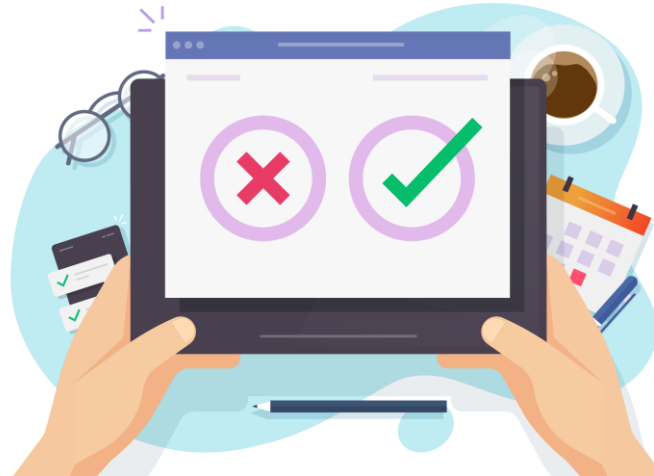
Moving the Cells to Different Positions

Move the Cells by Drag and Drop

One of the ways to move cells in the Excel sheet is by dragging and dropping.

If there is a necessity to change the position of cells in the worksheet, you can simply drag and drop them wherever required.

Move the Cells by Cut and Paste

You can also use CTRL + X and CTRL + V to achieve the same.
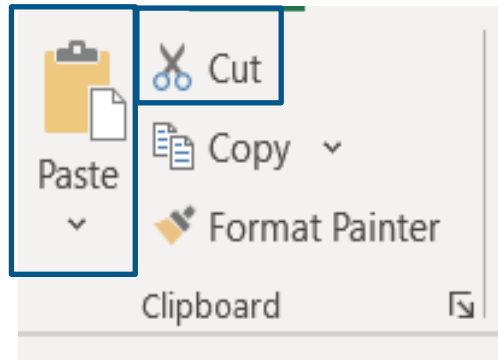
Move the Cell by Copy and Paste

You can also use CTRL + C and CTRL + V to achieve the same.

Poll Time

Q. In how many ways can you move the cells in Excel?

a. 1

b. 2

c. 3
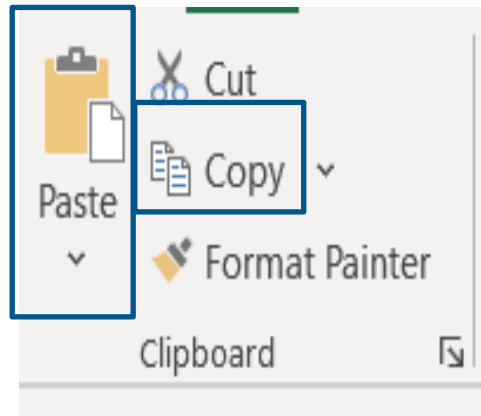
d. You cannot move the cells

Poll Time

Q. In how many ways can you move the cells in Excel?

a. 1

b. 2

c. 3

d. You cannot move the cells
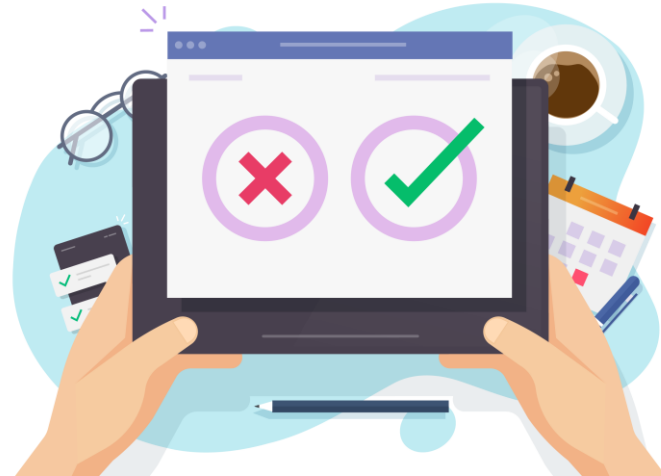
📄 Menu and Toolbar in Excel

Home Tab
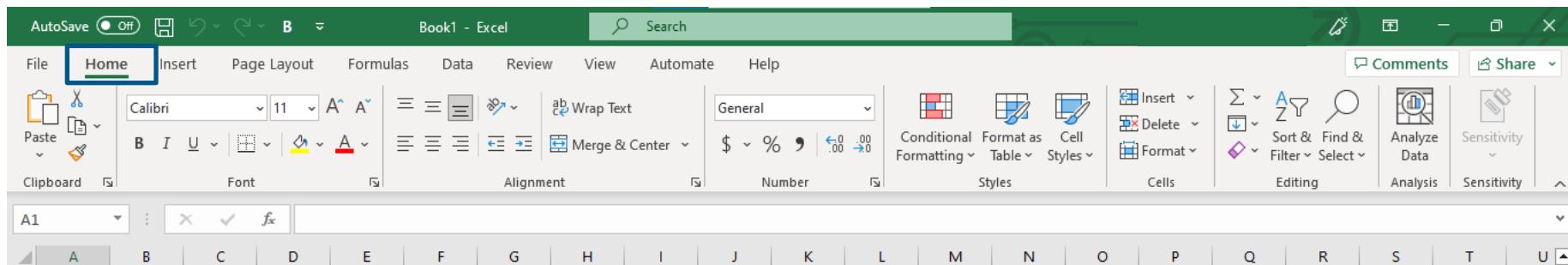
Insert Tab
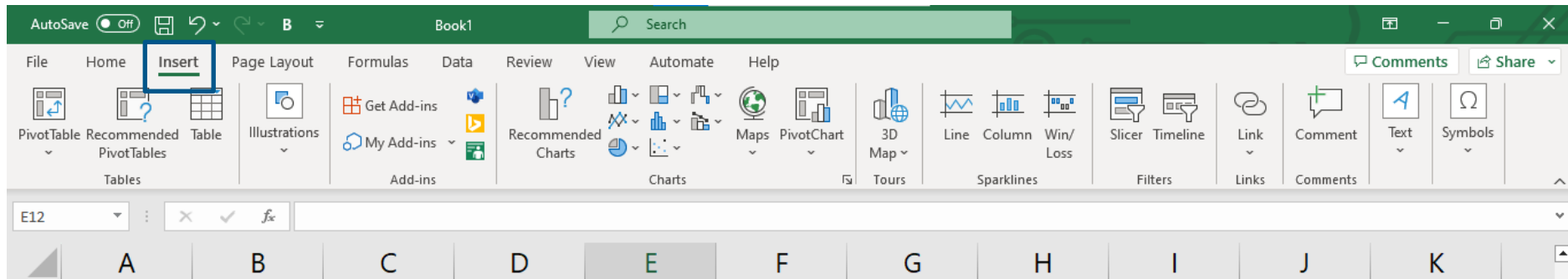
Page Layout Tab
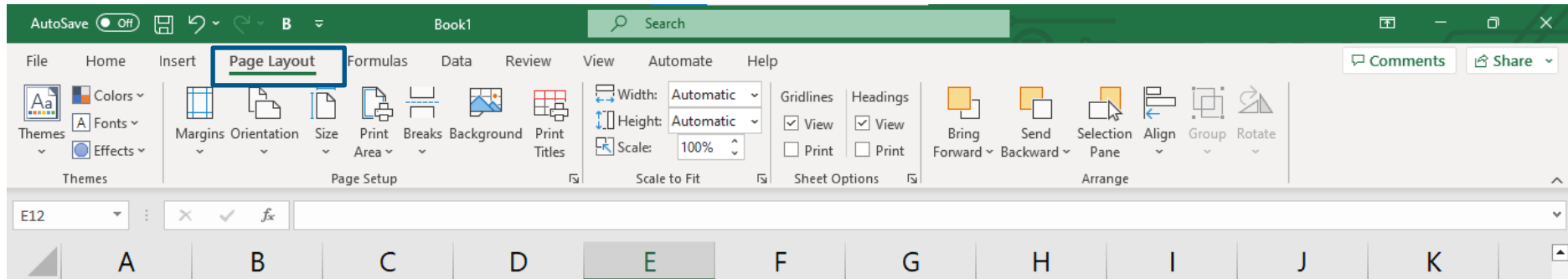
Poll Time

Q. From which tab can you add the charts in Excel?

a. Home tab

b. Insert tab

c. You don't have any functionality of chart building in Excel

Poll Time

Q. From which tab can you add the charts in Excel?

a. Home tab

b. **Insert tab**

c. You don't have any functionality of chart building in Excel

Formula Tab
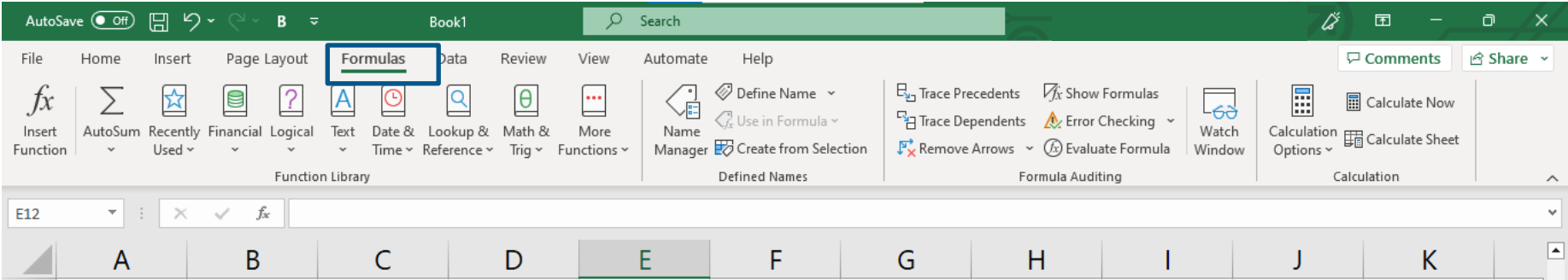
Data Tab
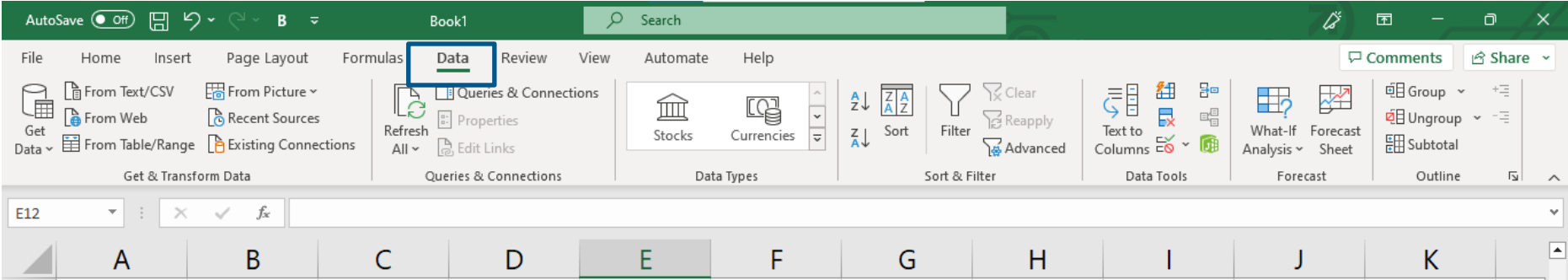
Review Tab

Poll Time

Q. You can find the filter option in the data tab. Is this statement true or false?
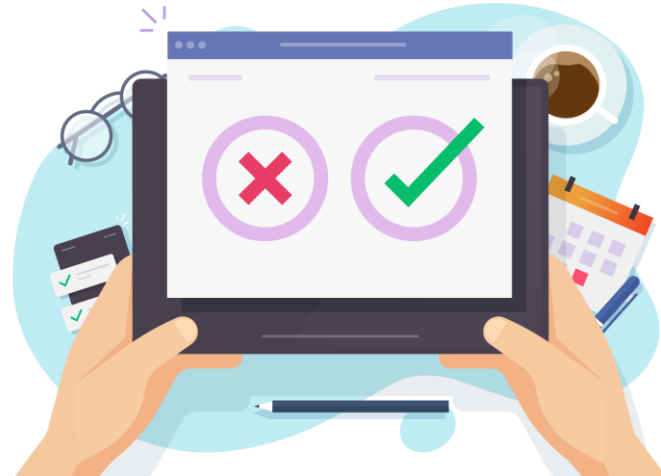
a.   True

b.   False

Poll Time

Q. You can find the filter option in the data tab. Is this statement true or false?
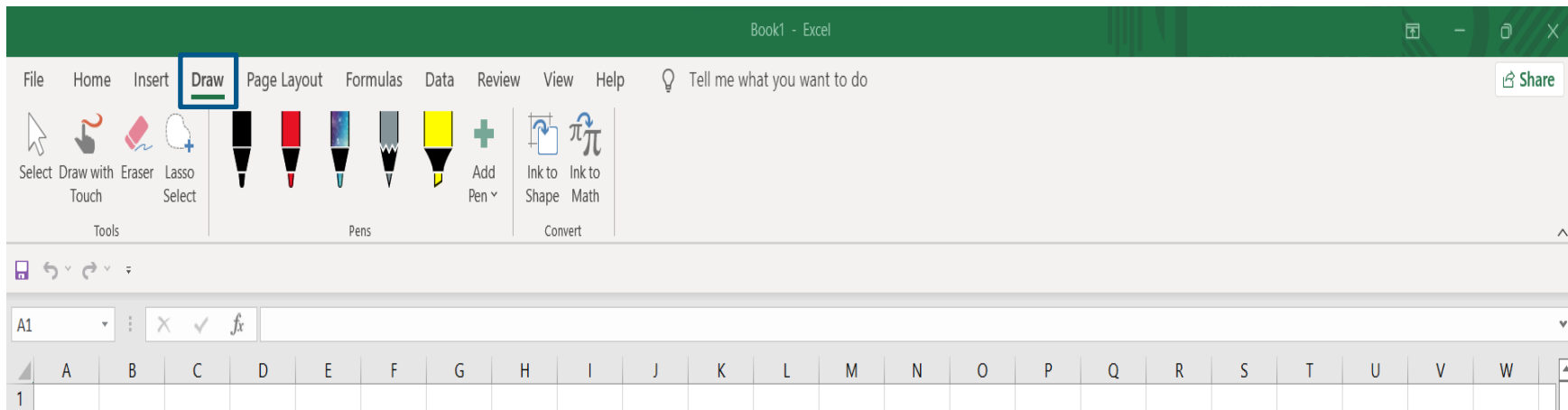
a. **True**

b. False

View Tab
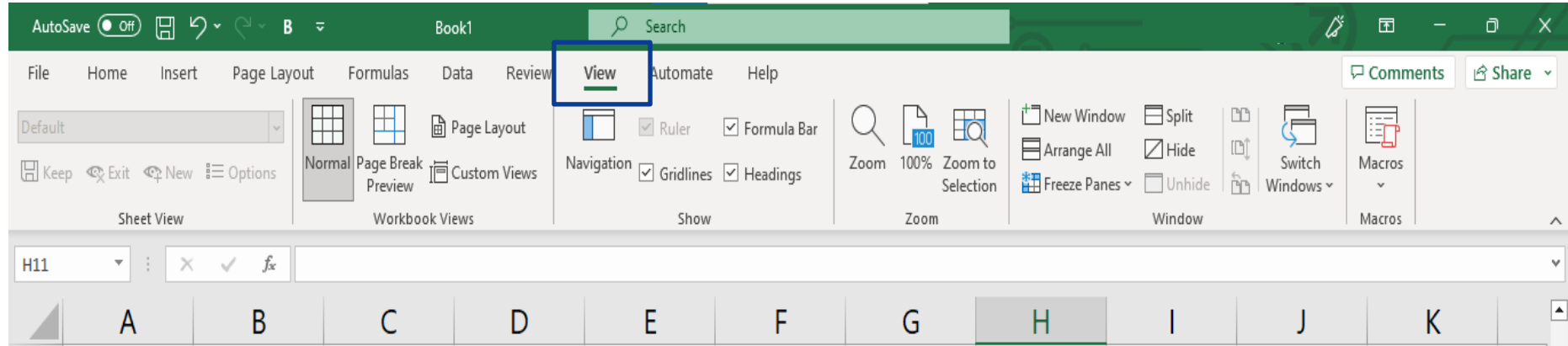
Help Tab
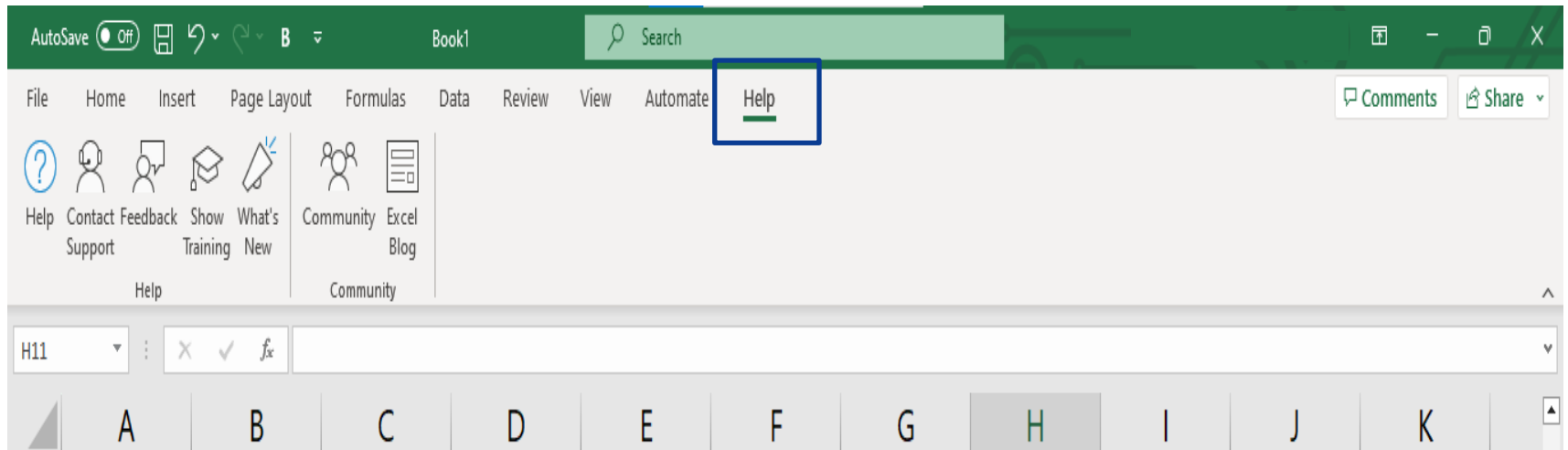
Draw Tab

Poll Time

Q. In which of the following tabs can you find help and support from Excel?

a. View tab

b. Help tab

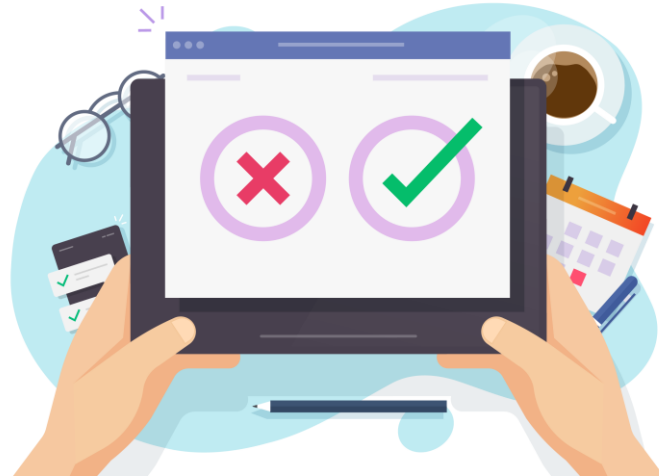# Poll Time

Q. In which of the following tabs can you find help and support from Excel?
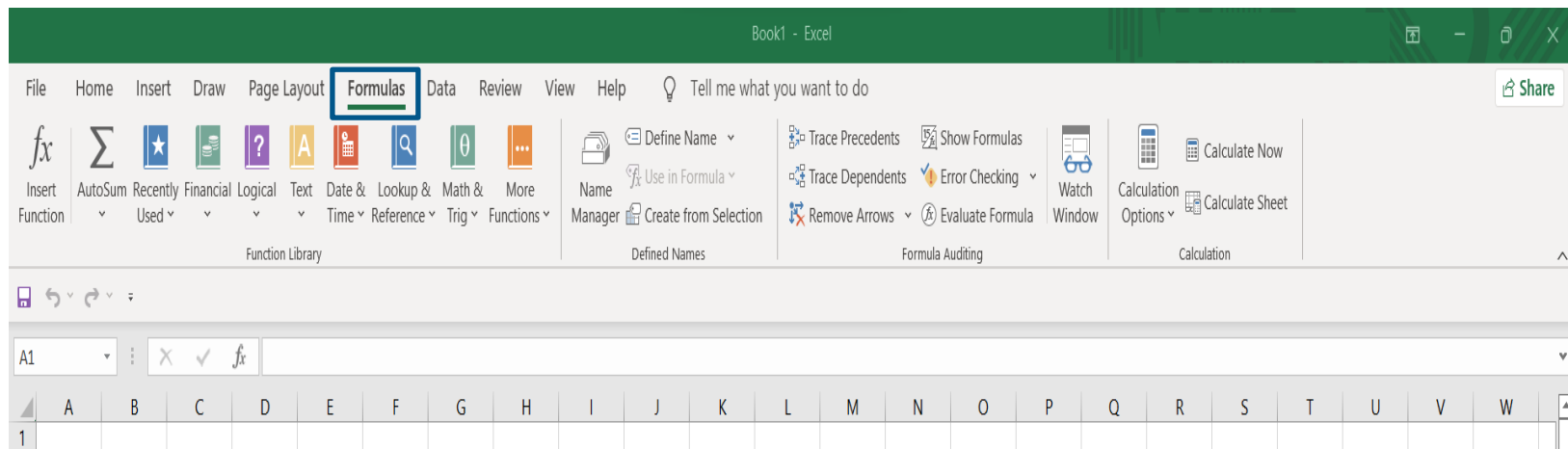
a. View tab

b. **Help tab**

Exercise

In the sales data, format the "Total" column to contain ₹ symbol and round the values to one decimal place. The output should look as shown in the image below.

Total
₹189.1
₹999.5
₹179.6
₹539.7
₹167.4
₹299.4
₹149.3
₹449.1
₹63.7
₹539.4
₹449.1
₹57.7

📄 Use of Function Box

Function Box Usage

Pop Quiz

Q. Which of the below formulas are valid?

a.   =A+B+C

b.   =A2+B9/C12

c.   C8+C7

d.   =1/B12

Pop Quiz

Q. Which of the below formulas are valid?

a.   =A+B+C

b.   =A2+B9/C12

c.   C8+C7

d.   =1/B12

Summary

✓ Excel is a spreadsheet program and is used for analyzing, organizing, and visualizing large structured datasets.

✓ A spreadsheet consists of rows, columns, and cells. Each column has its own unique datatype.

✓ The menu bar in Excel logically groups all the functionalities in Excel across categories such as Home, Insert, Draw, Formula, Data, etc.

✓ Excel supports a variety of functions for each data type. Each function serves a specific purpose that allows us to perform multiple tasks with ease.

Activity

Pre-requisites:

- MS Excel
- Insurance.xlsx

Scenario:

You have been given an Excel file containing insurance premiums for multiple customers.

Perform the following analysis on the given dataset:

- Convert the Expenses column to "Currency" datatype.
- Insert a scatter plot between "Age" and "Expenses" to analyze the relationship between these columns.

Next Session:
Project – Deep Dive into Excel

THANK YOU

Please complete your assessments and review the self-learning content
for this session on the **PRISM** portal.

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Deep Dive into Excel

📄 Pre-requisites

Hope you have gone through the self-learning content for this session on the PRISM portal.

By the end of this session, you will:

- Create dynamic formulae using cell references and cell range.

- Assign custom names to a set of cells using name ranges.

- Customize the layout of your sheet by formatting rows, columns and datatypes.

- Explore variety of functions for text and date columns.

What Have We Learned So Far?

✓ Elements of an Excel Spreadsheet – Rows, Columns and Cells

✓ Functional tabs of the Excel Toolbar – Home, Insert, Data, Page Layout etc.

✓ Working with Formula bar and writing formulae in excel.

Poll Time

Q. Which Toolbar tab contains the option to change the theme of your Excel Worksheet?
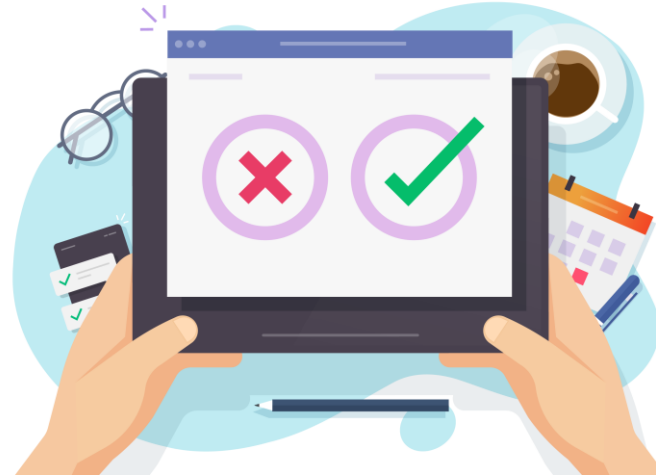
a. Home

b. Insert

c. Page Layout

d. View

Poll Time

Q. Which Toolbar tab contains the option to change the theme of your Excel Worksheet?
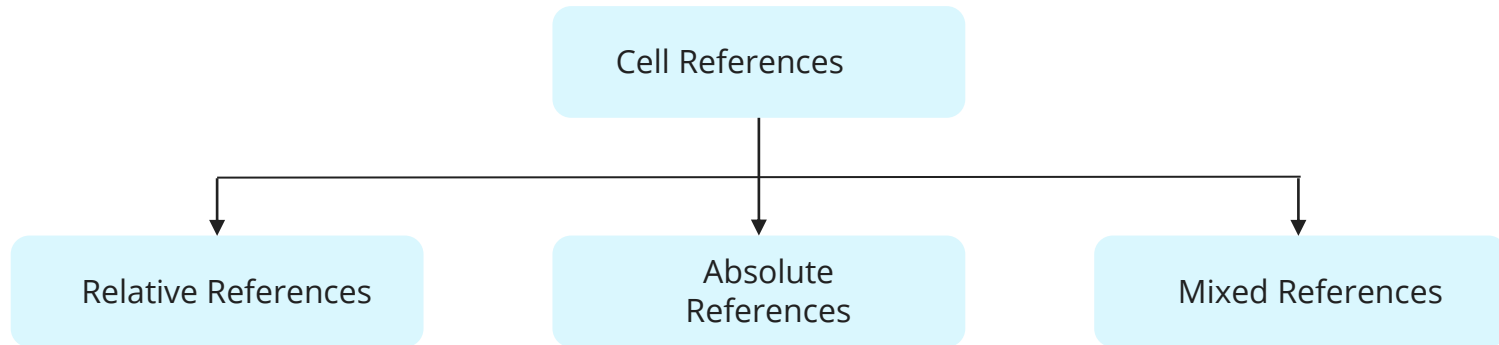
a. Home

b. Insert

c. **Page Layout**

d. View

Use of Cell Reference and Cell Edits

Types of Cell References

Cell reference is a very powerful concept in Excel, which helps to set fixed values for a calculation.

Cell References

Relative References

Absolute References

Mixed References

Poll Time

Q. Which of the following is an absolute Cell Reference?

    a. B2

    b.   B2

    c.   B2

    d. $B2$

Poll Time

Q. Which of the following is an absolute Cell Reference?
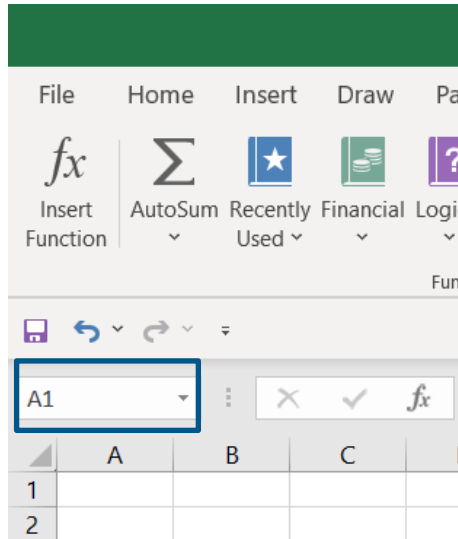
a. **B2**
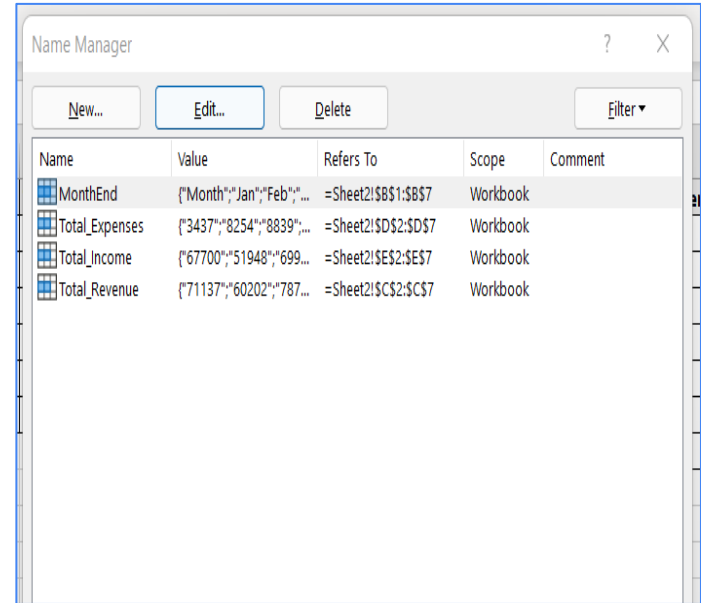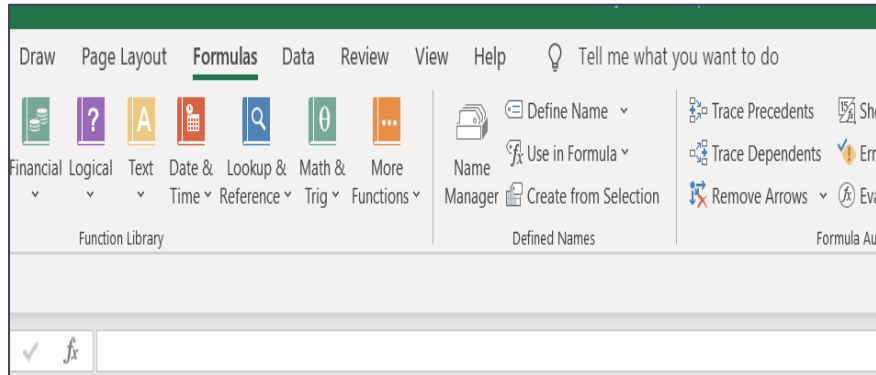
b. B2

c. B2

d. $B2$

📄 Use of Name Box and Range

Name Range and Name Box

The Name Range is a name given to a range of values for easy access to values. By passing any name, users will be able to name the range.
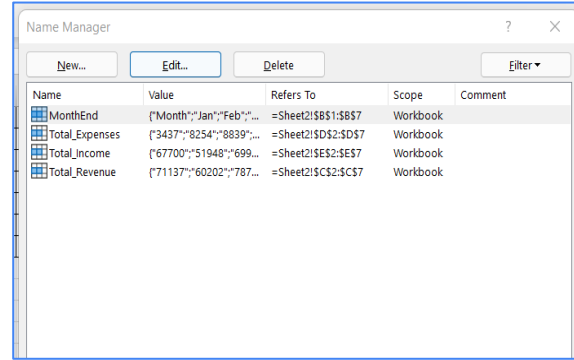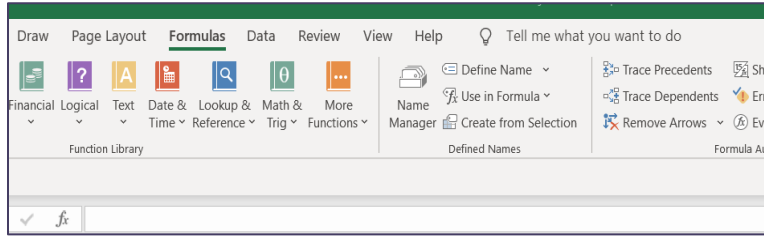
Rename the Name Range Using Formula Tab
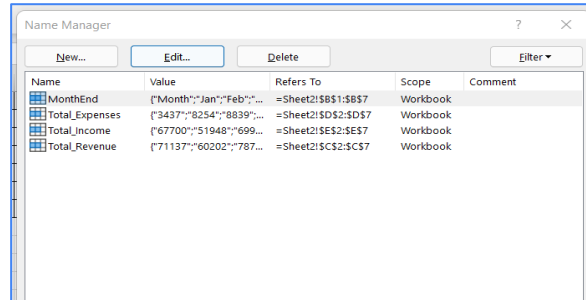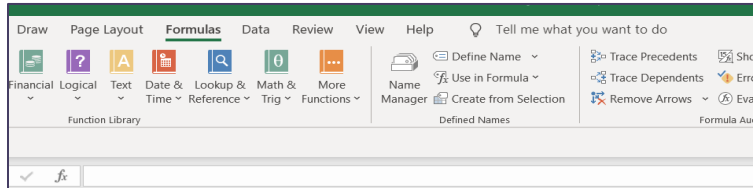
Creating and Deleting the Name Range

Creating the Name Range

Deleting the Name Range

Pop Quiz

Q. Which of the below options can be used as a Name Range?

a. Tax Percent

b. Tax_Percent

c. Tax-Percent

d. (Tax Percent)

Pop Quiz

Q. Which of the below options can be used as a Name Range?

a. Tax Percent

b. Tax_Percent

c. Tax-Percent

d. (Tax Percent)

📄 Demo – Renaming, Creating, and Deleting the Name Range

Exercise

Using the table shown below, create "name ranges" for each Region. Use the Region Name as the title for each range.

Total Sales	Region		
Month	Central	East	West
1	1413.04	189.05	
2	2024.37	19.96	
3	249.5		307.37
4	280.59	778.44	
5	1236.67		63.68
6	1074.1	539.4	
7	686.95	1986.28	
8	1005.9	174.65	825
9	259.03	255.84	151.24
10	269.78	575.36	1139.43
11	533.93	299.85	
12	2105.21	1183.26	

Hands-on - Formatting Rows and Columns and Data Type Formatting

Pop Quiz

Q. How can you get the format cell option?

a. In the Home tab

b. By right-clicking on the cell

c. In the Data tab

d. In the Edit tab

Pop Quiz

Q. How can you get the format cell option?

a.   In the Home tab

b.   **By right-clicking on the cell**
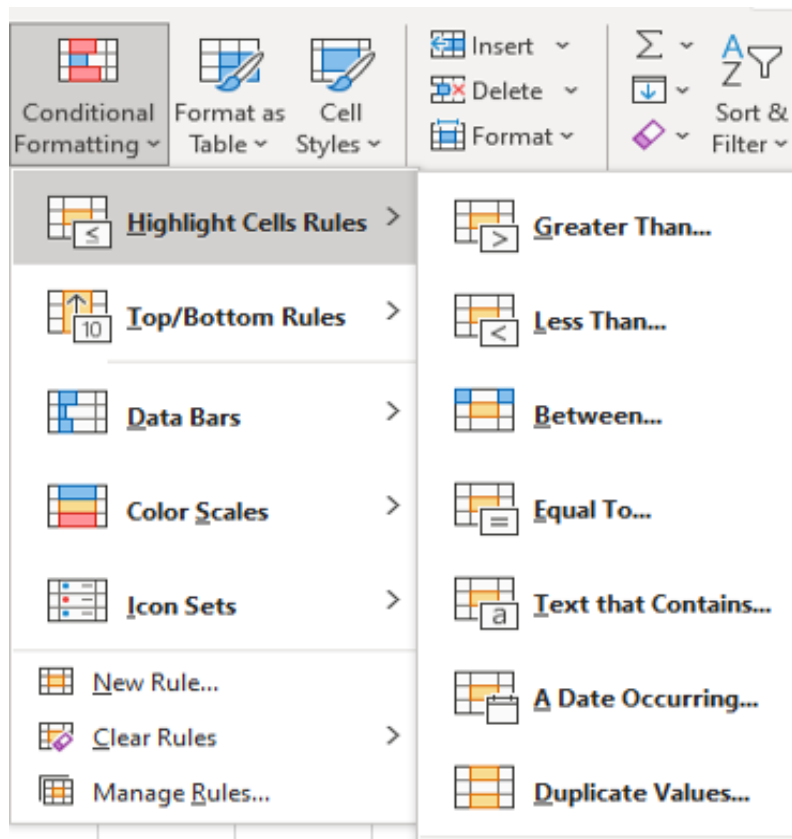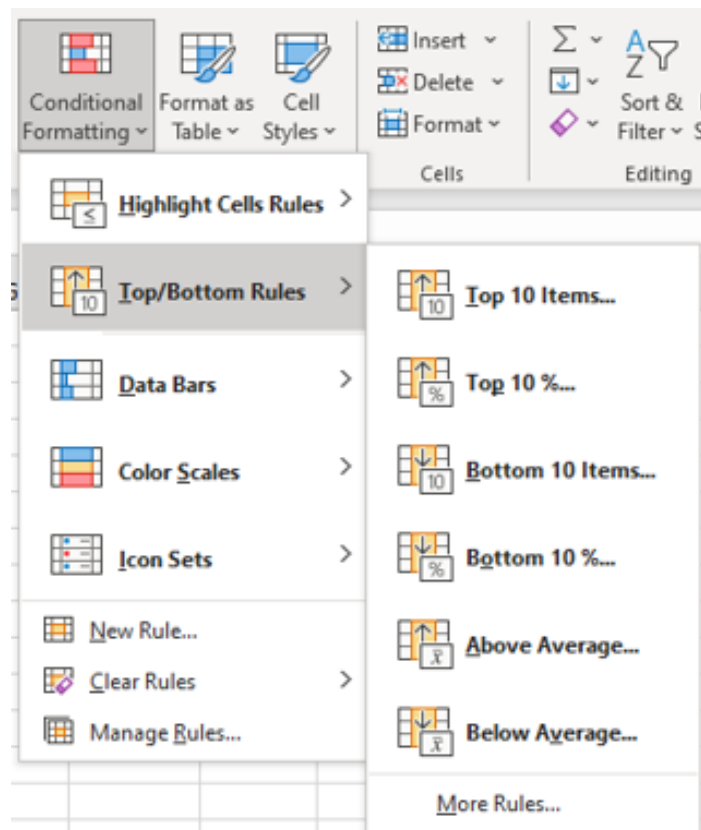
c.   In the Data tab
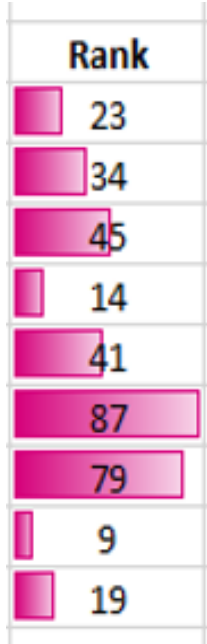
d.   In the Edit tab

Conditional Formatting

Highlight Cell Rules

Top and Bottom Rules

Data Bars, Color Scales, Icon Sets

Data Bars
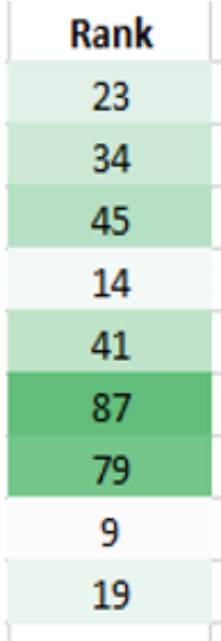
Color Scales
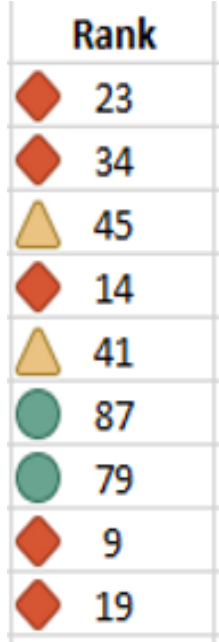
Icon sets

Clear Rules
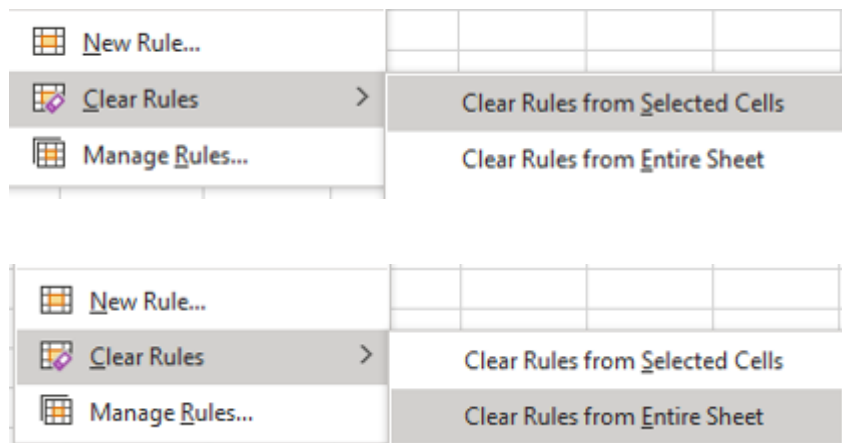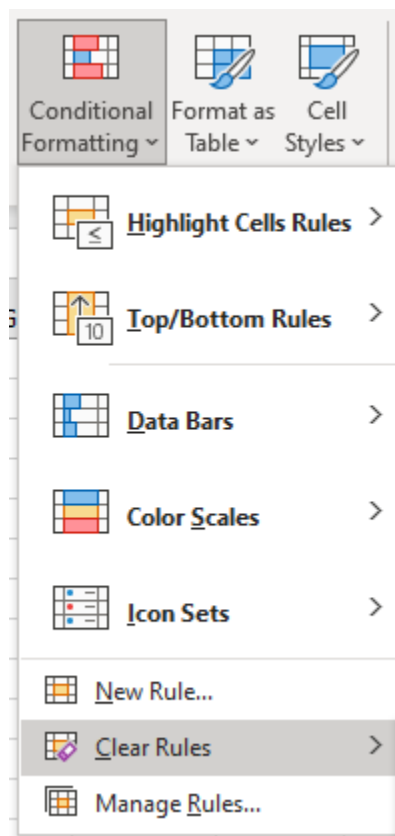
Pop Quiz

Q. Which conditional formatting is applied to the data shown in the image?

a. Color Scale

b. Highlight Cell Rules

c. Icon Sets

d. Data Bar

Data	Sales
78	34
45	42
24	25
15	24
25	34
35	51
45	45
24	41
35	56
45	78
35	265
47	41
36	45
45	25
45	356

Pop Quiz

Q. Which conditional formatting is applied to the data shown in the image?

a.   Color Scale

b.   Highlight Cell Rules

c.   Icon Sets

d.   Data Bar

Data	Sales
78	34
45	42
24	25
15	24
25	34
35	51
45	45
24	41
35	56
45	78
35	265
47	41
36	45
45	25
45	356

📄 Text Functions

Basic Text Functions

TRIM Function	The TRIM function removes the leading and trailing spaces from a cell.
PROPER Function	The PROPER function capitalizes the first letter in each word in the cell.
UPPER Function	The UPPER function converts the text into uppercase.
LOWER Function	The LOWER function converts the text into lowercase.
LEN Function	The LEN function helps you get the number of characters in a cell.

Advanced Text Functions

The **LEFT** function returns the specified number of leftmost characters from a text.

The **RIGHT** function returns the specified number of rightmost characters from a text.

The **MID** function returns the specified number of characters from a text starting at the specified position.

The **CONCATENATE** function combines the text from multiple cells.

The **FIND** function is used to find the position of a character in a particular cell.

The **SEARCH** function is used to find the position of a character in a particular cell.

The **REPLACE** function is used to replace any characters within the text.

The **SUBSTITUTE** function is used to replace specific characters within the text.

Pop Quiz

Q. **String functions always return a string as an output.**
Is this statement true or false?

a. True

b. False

Pop Quiz

Q. **String functions always return a string as an output.**
Is this statement true or false?

a.   True

b.   False

📄 Date Function

Basic Date Functions

`=TODAY()` → The **TODAY** function returns today's date.

`=NOW()` → The **NOW** function returns the current date and time.

`=DAY(K23)` → The **DAY** function returns the day from a date field.

`=MONTH(K23)` → The **MONTH** function returns the month from a date field.

`=YEAR(K23)` → The **YEAR** function returns the year from a date field.

`=DATE(A2,A3,A4)` → The **DATE** function gives date from three inputs, i.e., year, month, and day.

Advanced Date Functions

| 27-01-22 | 10 | =(C4+D4) |

To increase the date, you can simply add the required number of days to a given date.

| 27-01-22 | 10 | =(C4-D4) |

To reduce the date, you can simply subtract the required number of days from a given date.

| 27-01-22 | =EDATE(B8,10) |

| 27-01-22 | =EDATE(B8,-10) |

The **EDATE** function adds or subtracts the number of months from a given date.

📄 Hands-on - Basic Excel Formulas

Pop Quiz

Q. Which of the below functions would you use to extract the street name from the address, House, #12, Gulmohar Street, New Delhi – 110001?

a. Left()

b. Right()

c. Between()

d. Mid()

Pop Quiz

Q. Which of the below functions would you use to extract the street name from the address, House, #12, Gulmohar Street, New Delhi – 110001?

a. Left()

b. Right()

c. Between()

d. Mid()

Activity 1

Pre-requisites:

• MS Excel

• Insurance.xlsx

Scenario:

You have been given an Excel file containing insurance premiums for multiple customers.

Perform the following analysis on the given dataset:

• Calculate the average premium for the customers.

• Highlight customers paying more than the average premium.

Activity 2

Pre-requisites:

- MS Excel
- WorkOrders.xlsx

Scenario:

You have been given an Excel file containing details for several work orders taken up by a company. Please refer to the sheet named "AdminData" for additional data which is relevant for this exercise.

Add a data-validation to 'Service' column such that it contains only the below mentioned values.

Service
Assess
Deliver
Install
Repair
Replace

Activity 3

Pre-requisites:

- MS Excel

- Insurance.xlsx

Scenario:

You have been given an Excel file containing details for several work orders taken up by a company. Please refer to the sheet named "AdminData" for additional data which is relevant for this exercise.

Perform the below analysis on the dataset:

- Insert a column which gives us the hourly cost for the number of technicians used.

- Calculate the Total Cost of service by first calculating the total labor cost and adding the "PartsCost" to it.

Summary

✓ Name Ranges allow us assign custom names to a set of cells. These can be used directly in formulae that reference these set of cells.

✓ Cell references can be made in three ways – Relative, Absolute and Mixed.

✓ Excel gives us a host of formatting options for rows, column and cells in a spreadsheet.

✓ Excel supports a variety of functions for each data type. Each function serves a specific purpose that allows us to perform multiple tasks with ease.

Session Feedback

Next Session:

Project – Data Analysis in Excel

THANK YOU

Please complete your assessments and review the self-learning content
for this session on the **PRISM** portal.

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