



ISDM (INDEPENDENT SKILL DEVELOPMENT MISSION)

INTRODUCTION TO SPREADSHEETS

CHAPTER 1: WHAT IS A SPREADSHEET?

A **spreadsheet** is a digital tool used for **storing, organizing, analyzing, and manipulating data** in tabular form. It consists of rows and columns that create cells where data can be entered and processed. Spreadsheets are widely used in **business, education, research, and finance** for data management, calculations, and visualization.

Key Features of Spreadsheets:

- **Organized data entry** in a table format (rows and columns).
- **Mathematical calculations** using formulas and functions.
- **Sorting and filtering** data for better analysis.
- **Graphical representation** using charts and graphs.
- **Automation of repetitive tasks** using macros.

Popular Spreadsheet Applications:

- **Microsoft Excel** (most widely used).
- **Google Sheets** (cloud-based alternative).
- **LibreOffice Calc** (free and open-source software).

CHAPTER 2: UNDERSTANDING THE SPREADSHEET INTERFACE

When you open a spreadsheet application, the main interface consists of:

Chapter 2.1: Basic Components of a Spreadsheet

1. **Workbook** – A file containing multiple sheets.
 2. **Worksheet** – A single spreadsheet page within a workbook.
 3. **Rows and Columns** – The spreadsheet is divided into:
 - o **Rows (Horizontal)** – Numbered (1, 2, 3, etc.)
 - o **Columns (Vertical)** – Labeled (A, B, C, etc.)
 4. **Cells** – The intersection of a row and a column (e.g., A1, B2).
 5. **Formula Bar** – Displays and allows editing of formulas in selected cells.
 6. **Ribbon/Menu Bar** – Contains options for formatting, inserting, and managing data.
 7. **Sheet Tabs** – Located at the bottom, allowing navigation between multiple sheets.
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CHAPTER 3: ENTERING AND FORMATTING DATA IN A SPREADSHEET

Chapter 3.1: Entering Data

1. Click on a **cell** and type text, numbers, or formulas.
2. Press **Enter** to move to the next row or **Tab** to move to the next column.

3. To edit an entry, double-click on the cell or select the cell and use the **Formula Bar**.

Chapter 3.2: Formatting Data

Proper formatting improves readability and presentation of data.

- **Changing Font & Size:** Select a cell or range, then go to **Home** > **Font Options**.
- **Bold, Italic, Underline:** Use **Ctrl + B (Bold)**, **Ctrl + I (Italic)**, **Ctrl + U (Underline)**.
- **Cell Alignment:** Adjust text alignment using **Home > Alignment (Left, Center, Right, Justify)**.
- **Number Formatting:** Change number types (**Currency**, **Percentage**, **Date**) using **Home > Number Format**.
- **Cell Color & Borders:** Highlight important data using **Fill Color** and **Borders**.

CHAPTER 4: USING BASIC FORMULAS AND FUNCTIONS

Formulas and functions perform calculations and automate data processing.

Chapter 4.1: Entering Formulas

1. Start with an **equal sign (=)**.
2. Use **cell references** in calculations (e.g., `=A1+B1`).
3. Press **Enter** to execute the formula.

Example:

- $=A1+B1$ (Adds values in cells A1 and B1).
- $=A1*B1$ (Multiplies values in A1 and B1).
- $=A1-B1$ (Subtracts B1 from A1).

Chapter 4.2: Commonly Used Functions

1. **SUM** – Adds a range of numbers.
 - Syntax: $=SUM(A1:A5)$
2. **AVERAGE** – Calculates the mean value.
 - Syntax: $=AVERAGE(A1:A5)$
3. **MAX/MIN** – Finds the highest and lowest values.
 - Syntax: $=MAX(A1:A5), =MIN(A1:A5)$
4. **COUNT** – Counts the number of cells with values.
 - Syntax: $=COUNT(A1:A5)$
5. **IF** – Performs logical comparisons.
 - Syntax: $=IF(A1>50, "Pass", "Fail")$

CHAPTER 5: SORTING AND FILTERING DATA

Chapter 5.1: Sorting Data

Sorting helps arrange data in a logical order.

1. Select the **data range** (including column headers).
2. Click **Data > Sort**.
3. Choose **Ascending (A-Z) or Descending (Z-A)**.

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4. Click **OK** to apply sorting.

Chapter 5.2: Filtering Data

Filtering allows users to display only the necessary information.

1. Select the **header row** of your data.
 2. Click **Data > Filter**.
 3. Use the **drop-down arrows** in column headers to apply filters.
 4. Select or unselect data values to display relevant information.
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CHAPTER 6: CREATING CHARTS AND GRAPHS

Chapter 6.1: Types of Charts

Charts visually represent data for better analysis.

1. **Bar Chart** – Compares different categories.
2. **Pie Chart** – Shows proportions and percentages.
3. **Line Chart** – Displays trends over time.
4. **Column Chart** – Similar to a bar chart but in vertical format.

Chapter 6.2: Inserting a Chart

1. Select the **data range** for the chart.
 2. Click **Insert > Chart**.
 3. Choose a **chart type** from the options.
 4. Customize the chart title, labels, and design using **Chart Tools**.
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CHAPTER 7: CASE STUDY: USING SPREADSHEETS IN SCHOOL PROJECTS

Chapter 7.1: Scenario

A student needed to analyze and present **monthly expenses** for a school project.

Chapter 7.2: Solution

- Used a **spreadsheet** to enter expense data.
- Applied **SUM** and **AVERAGE** functions to calculate total and average expenses.
- Created a **bar chart** to visually represent expenses.
- Used **sorting and filtering** to analyze different spending categories.

Chapter 7.3: Outcome

- Clear and well-organized data presentation.
- Accurate expense tracking using formulas.
- Professional-looking charts and reports for submission.

CHAPTER 8: EXERCISE

1. Multiple Choice Questions:

- What symbol is used to begin a formula in a spreadsheet?
 - (a) +
 - (b) =

- (c) *
 - (d) -
- Which function is used to find the highest number in a range?
 - (a) SUM
 - (b) AVERAGE
 - (c) MAX
 - (d) COUNT
 - How can you filter data in a spreadsheet?
 - (a) Insert > Chart
 - (b) Data > Filter
 - (c) Home > Sort
 - (d) None of the above

2. Practical Task:

- Create a **new spreadsheet** with a table of **students' exam scores**.
- Use **SUM**, **AVERAGE**, and **MAX** functions to analyze the data.
- Sort the data in **descending order** based on scores.
- Insert a **bar chart** to visualize student performance.
- Save the file as "**Student Report.xlsx**".

WORKING WITH ROWS, COLUMNS, AND CELLS IN EXCEL

CHAPTER 1: INTRODUCTION TO ROWS, COLUMNS, AND CELLS IN EXCEL

Microsoft Excel is a powerful spreadsheet tool used for **data entry, analysis, and management**. Understanding how to work with **rows, columns, and cells** is essential for organizing data efficiently.

Key Terms:

- **Row** – A horizontal group of cells, labeled numerically (1, 2, 3...).
- **Column** – A vertical group of cells, labeled alphabetically (A, B, C...).
- **Cell** – The intersection of a row and a column, identified by a **cell address** (e.g., A1, B3).

Excel provides various functions to **insert, delete, format, and adjust rows, columns, and cells**, making data manipulation easy.

CHAPTER 2: WORKING WITH ROWS IN EXCEL

Chapter 2.1: Selecting Rows

To select a row:

1. Click on the **row number** on the left side of the worksheet.

2. To select multiple rows, click and **drag** over multiple row numbers.
3. Use the shortcut **Shift + Spacebar** to select the current row.

Chapter 2.2: Inserting and Deleting Rows

- **To Insert a Row:**

1. Select the row **above** which you want to insert a new row.
2. Right-click and select **Insert**, or use the shortcut **Ctrl + Shift + "+"**.

- **To Delete a Row:**

1. Select the row to delete.
2. Right-click and select **Delete**, or press **Ctrl + "-"**.

Chapter 2.3: Adjusting Row Height

To change row height:

1. Hover the mouse **between two row numbers** until you see a double arrow ().
2. Click and **drag up or down** to adjust height manually.
3. Double-click to **auto-adjust** the row height based on content.
4. Use **Format > Row Height** to enter a specific value.

CHAPTER 3: WORKING WITH COLUMNS IN EXCEL

Chapter 3.1: Selecting Columns

To select a column:

1. Click on the **column letter** at the top.
2. Drag across multiple column letters to select multiple columns.
3. Use the shortcut **Ctrl + Spacebar** to select the current column.

Chapter 3.2: Inserting and Deleting Columns

- **To Insert a Column:**
 1. Select the column **to the right** of where you want to insert a new column.
 2. Right-click and select **Insert**, or use **Ctrl + Shift + "+"**.
- **To Delete a Column:**
 1. Select the column to remove.
 2. Right-click and select **Delete**, or press **Ctrl + "-"**.

Chapter 3.3: Adjusting Column Width

To change column width:

1. Hover the mouse **between two column letters** until you see a double arrow ().
2. Click and **drag left or right** to adjust width manually.
3. Double-click to **auto-adjust** column width based on content.
4. Use **Format > Column Width** to enter a specific value.

CHAPTER 4: WORKING WITH CELLS IN EXCEL

Chapter 4.1: Selecting Cells

- Click on a **single cell** to select it.
- Click and **drag** to select multiple cells.
- Use **Shift + Arrow Keys** to expand selection.
- Use **Ctrl + A** to select all cells in the worksheet.

Chapter 4.2: Entering and Editing Data in Cells

1. Click on a cell and type text or numbers.
2. Press **Enter** to confirm the entry.
3. To edit a cell, **double-click** or select the cell and press **F2**.

Chapter 4.3: Merging and Splitting Cells

- **To Merge Cells:**
 1. Select multiple cells.
 2. Click **Merge & Center** in the **Home tab**.
- **To Unmerge Cells:**
 1. Select a merged cell.
 2. Click **Merge & Center** again to unmerge.

Chapter 4.4: Formatting Cells

- Click on **Home > Format Cells** to change:
 - **Font, color, and alignment.**
 - **Number formatting** (currency, percentage, date).

- o Cell borders and shading.
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CHAPTER 5: USING AUTOFILL AND SHORTCUTS

Chapter 5.1: Autofill Feature

Excel can automatically fill a series of numbers, dates, or formulas.

1. Enter data in a cell.
2. Click and drag the fill handle (small square at the bottom-right of the selected cell).
3. Release to fill data across selected rows/columns.

Chapter 5.2: Keyboard Shortcuts for Efficiency

Action	Shortcut
Select entire row	Shift + Space
Select entire column	Ctrl + Space
Insert new row	Ctrl + Shift + "+"
Insert new column	Ctrl + Shift + "+"
Delete row/column	Ctrl + "-"
Edit a cell	F2
AutoFit column width	Alt + H + O + I

CHAPTER 6: CASE STUDY: ORGANIZING STUDENT DATA IN EXCEL

Chapter 6.1: Scenario

A teacher needs to **organize student grades** using Excel. The dataset includes **names, subjects, and scores**, requiring structured rows, columns, and cells.

Chapter 6.2: Solution

- Created columns for **Student Name, Subject, and Marks**.
- Used **AutoFit** to adjust column width.
- Applied **bold headings** to improve readability.
- Used **number formatting** for percentage scores.
- Added **borders** to make the table visually clear.

Chapter 6.3: Outcome

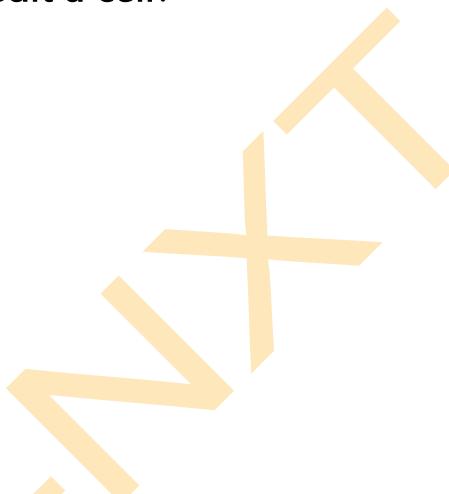
- **Well-structured** student data.
- **Easy-to-read** format for quick evaluation.
- **Error-free calculations** using Excel formulas.

CHAPTER 7: EXERCISE

1. Multiple Choice Questions:

- What is the shortcut to **insert a new row**?
 - (a) Ctrl + A
 - (b) Ctrl + Shift + "+"
 - (c) Shift + Enter
 - (d) Alt + F4
- How do you **auto-adjust column width**?

- (a) Drag the column manually
 - (b) Double-click the column edge
 - (c) Right-click > Resize Column
 - (d) Press F5
- Which key do you press to **edit a cell**?
 - (a) F2
 - (b) F4
 - (c) Ctrl + E
 - (d) Shift + Enter



2. Practical Task:

- Open a **new Excel sheet** and enter the following data:

Student Name	Subject	Marks (%)
Alice	Math	85
Bob	Science	92
Charlie	History	78

- **Adjust column width** using AutoFit.
- **Insert a new row** and add a new student's details.
- **Apply bold formatting** to the headings.
- **Use Merge & Center** to combine the title row.

3. Short Answer Questions:

- What is the **difference** between a row and a column in Excel?
 - How can you **delete multiple rows at once**?
 - What are the **advantages of using Autofill** in Excel?
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BASIC FORMULAS IN SPREADSHEETS (SUM, AVERAGE, MIN, MAX)

CHAPTER 1: INTRODUCTION TO FORMULAS IN SPREADSHEETS

Formulas in spreadsheets are **mathematical expressions** used to perform calculations and automate data processing. Spreadsheets like **Microsoft Excel**, **Google Sheets**, and **LibreOffice Calc** support formulas for addition, averaging, and finding minimum and maximum values efficiently.

Why Use Formulas in Spreadsheets?

- Automates calculations to save time.
- Reduces errors in manual computations.
- Helps analyze large sets of data quickly.
- Enhances decision-making through accurate insights.

In this guide, we will explore four essential spreadsheet formulas:

- SUM** – Adds a range of numbers.
- AVERAGE** – Finds the mean value.
- MIN** – Returns the smallest value.
- MAX** – Returns the largest value.

CHAPTER 2: UNDERSTANDING THE SUM FUNCTION

What is SUM?

The **SUM function** adds all the numeric values within a selected range of cells.

Syntax:

=SUM(range)

Where range represents the group of cells to be added.

Example:

If you want to add values in cells **A1** to **A5**, use:

=SUM(A1:A5)

📌 **Example Data:**

A (Numbers)
10
20
30
40
50

📌 **Result:** =SUM(A1:A5) → 150

Step-by-Step Guide to Using SUM:

1. Click on an empty cell where you want the total.
2. Type =SUM(and select the range (e.g., A1:A5).
3. Press **Enter** to display the result.

✓ **Shortcut:** Use Alt + = in Excel to apply SUM automatically.

CHAPTER 3: UNDERSTANDING THE AVERAGE FUNCTION

What is AVERAGE?

The **AVERAGE** function calculates the **mean (average)** of selected numbers.

Syntax:

=AVERAGE(range)

Example:

For numbers in **A1** to **A5**, use:

=AVERAGE(A1:A5)

📌 **Result:** =AVERAGE(A1:A5) → 30 (since $(10+20+30+40+50)/5 = 30$)

Step-by-Step Guide to Using AVERAGE:

1. Click on an empty cell.
2. Type =AVERAGE(and select the range (e.g., A1:A5).
3. Press **Enter** to calculate the average.

✓ **Tip:** AVERAGE ignores empty cells but includes zeroes in calculations.

CHAPTER 4: UNDERSTANDING THE MIN FUNCTION

What is MIN?

The **MIN** function finds the **smallest value** in a selected range.

Syntax:

=MIN(range)

Example:

If you want the smallest number in A1 to A5, use:

=MIN(A1:A5)

📌 Result: =MIN(A1:A5) → 10

Step-by-Step Guide to Using MIN:

1. Click on a cell where you want the minimum value displayed.
2. Type =MIN(and select the range.
3. Press Enter to get the result.

✓ Tip: The MIN function works best when finding the lowest value in exam scores, budgets, or datasets.

CHAPTER 5: UNDERSTANDING THE MAX FUNCTION

What is MAX?

The **MAX function** finds the **largest value** in a selected range.

Syntax:

=MAX(range)

Example:

To find the highest number in A1 to A5, use:

=MAX(A1:A5)

📌 **Result:** =MAX(A1:A5) → 50

Step-by-Step Guide to Using MAX:

1. Click on a cell where you want the highest value displayed.
2. Type =MAX(and select the range.
3. Press Enter to get the result.

✓ **Tip:** The MAX function is useful for identifying top scores, highest sales, or peak data points.

CHAPTER 6: PRACTICAL EXAMPLES OF USING SUM, AVERAGE, MIN, AND MAX

Example 1: Student Marks Calculation

Student	Math	Science	English
John	85	78	92
Alice	90	88	80
Mark	75	70	85

Tasks:

1. Calculate the **total marks** of each student using SUM().
2. Find the **average marks** per subject using AVERAGE().
3. Identify the **lowest marks** in Science using MIN().
4. Find the **highest marks** in Math using MAX().

📌 **Formulas:**

=SUM(B2:D2) // Total Marks for John

=AVERAGE(B2:B4) // Average Marks in Math

=MIN(C2:C4) // Lowest Marks in Science

=MAX(B2:B4) // Highest Marks in Math

📌 Results:

- John's Total Marks: 255
- Average Marks in Math: 83.3
- Lowest Science Marks: 70
- Highest Math Marks: 90

CHAPTER 7: CASE STUDY – USING BASIC FORMULAS IN BUDGET PLANNING

Scenario:

A family wants to track monthly expenses using a spreadsheet.

Expense Category	Amount (\$)
Rent	1200
Groceries	300
Transport	150
Entertainment	100
Utilities	200

Solution:

Using formulas, they can:

1. Find the **total expenses** → $=\text{SUM}(\text{B2:B6})$.
2. Calculate the **average spending per category** → $=\text{AVERAGE}(\text{B2:B6})$.
3. Identify the **lowest expense** → $=\text{MIN}(\text{B2:B6})$.
4. Identify the **highest expense** → $=\text{MAX}(\text{B2:B6})$.

➡ **Results:**

- **Total Monthly Expenses: \$1950**
 - **Average Expense per Category: \$390**
 - **Lowest Expense: \$100 (Entertainment)**
 - **Highest Expense: \$1200 (Rent)**
- ✓ **Conclusion:** The formulas help in budget tracking and financial planning.

CHAPTER 8: EXERCISE – TEST YOUR SKILLS

1. Multiple Choice Questions:

- What does the **SUM()** function do?
 - (a) Finds the highest value
 - (b) Adds numbers in a range
 - (c) Counts the number of cells
 - (d) Finds the lowest value
- What function calculates the average of selected numbers?
 - (a) MAX

- (b) MIN
 - (c) AVERAGE
 - (d) SUM
- If you use =MIN(A1:A5), what does it return?
 - (a) The highest number
 - (b) The sum of all numbers
 - (c) The smallest number
 - (d) The number of cells

2. Practical Task:

- Enter **five random numbers** in a column (A1:A5).
- Use SUM() to add them up.
- Use AVERAGE() to find the mean value.
- Use MIN() and MAX() to find the lowest and highest values.
- Format the results in **bold** and **highlight** them.

CREATING AND FORMATTING TABLES IN EXCEL

CHAPTER 1: INTRODUCTION TO TABLES IN EXCEL

Tables in Microsoft Excel help organize and analyze data efficiently. By converting data into a structured table, users can sort, filter, and format information effectively. Excel tables offer built-in **sorting, filtering, and styling** options, making data management simple and clear.

Key Benefits of Using Tables in Excel:

- **Organized Data** – Helps structure data in a readable format.
- **Easy Sorting & Filtering** – Allows quick arrangement and searching of data.
- **Automatic Formatting** – Predefined styles improve visual clarity.
- **Formula Application** – Easily apply formulas to an entire table column.
- **Dynamic Data Range** – Automatically expands as new data is added.

CHAPTER 2: CREATING A TABLE IN EXCEL

Chapter 2.1: Manually Creating a Table

To manually create a table in Excel:

1. Open Excel and enter data in a structured format.

2. Select the data range (including column headers).
3. Click on **Insert > Table** (or press **Ctrl + T**).
4. Ensure the "My table has headers" option is checked (if column titles exist).
5. Click **OK**, and Excel will format the data into a table.

Chapter 2.2: Using Predefined Table Styles

1. Select the table.
2. Click on **Table Design > Table Styles**.
3. Choose from predefined **light, medium, or dark** table styles.
4. The selected style will automatically apply to the table.

Chapter 2.3: Converting Data into a Table

If you have an existing dataset and want to convert it into a table:

1. Select the data range.
2. Click **Ctrl + T** or go to **Insert > Table**.
3. Confirm table settings and click **OK**.

CHAPTER 3: FORMATTING TABLES IN EXCEL

Chapter 3.1: Adjusting Table Column Width and Row Height

- Hover over the column border and drag to increase/decrease width.
- Double-click on the column border to auto-fit column width.

- Adjust row height by dragging the **row number boundary**.

Chapter 3.2: Applying Table Styles

1. Click on the table.
2. Go to **Table Design > Table Styles**.
3. Hover over a style to preview and click to apply.
4. Customize colors using **Shading & Borders** in the **Home tab**.

Chapter 3.3: Formatting Text and Numbers in a Table

- **Bold Headers:** Select the header row and press **Ctrl + B**.
- **Text Alignment:** Click **Home > Align Left, Center, or Right**.
- **Number Formatting:** Select number columns and apply **Currency, Percentage, or Date Format**.

Example:

Student Name	Score (%)	Exam Date
Alice	85	01-Jan-2024
Bob	92	05-Jan-2024

CHAPTER 4: SORTING AND FILTERING DATA IN A TABLE

Chapter 4.1: Sorting Data in a Table

Sorting arranges data in ascending or descending order.

1. Click on a table column header.
2. Go to **Home > Sort & Filter**.

3. Choose **Sort A to Z** (ascending) or **Sort Z to A** (descending).

Example:

- Sorting students' names alphabetically.
- Sorting scores from highest to lowest.

Chapter 4.2: Filtering Data in a Table

Filtering displays only specific data based on selected criteria.

1. Click on a table column **drop-down arrow**.
2. Select/deselect checkboxes to show or hide specific values.
3. Click **OK**, and only the selected data will be visible.

Example:

- Filtering scores **above 80%**.
- Displaying only students from **Class A**.

CHAPTER 5: USING FORMULAS IN AN EXCEL TABLE

Chapter 5.1: Applying Formulas to a Table

Tables allow dynamic formulas to update automatically as data changes.

Example: To calculate the **Total Marks** for students:

1. Click on an empty cell in the **Total Marks** column.
2. Enter the formula: `=SUM(B2:B10)` (assuming scores are in column B).
3. Press **Enter**, and Excel will auto-apply the formula.

Chapter 5.2: Using Structured References in Tables

Instead of using cell references (B2:B10), Excel uses table column names.

Example:

- Instead of =SUM(B2:B10), type =SUM([Score]).
- This makes formulas **more readable and dynamic.**

CHAPTER 6: CONVERTING A TABLE BACK TO A NORMAL RANGE

If you no longer need a table format:

1. Click anywhere inside the table.
2. Go to **Table Design > Convert to Range.**
3. Click **Yes** to remove the table format while keeping the data.

CHAPTER 7: CASE STUDY: MANAGING SALES DATA IN EXCEL

Chapter 7.1: Scenario

A company maintains **monthly sales records** in Excel. They need to structure the data into a table for better analysis.

Chapter 7.2: Solution

- Created a **Sales Table** with **Date, Product, Quantity, and Sales Amount.**
- Used **Sorting** to list the highest sales first.
- Applied **Filters** to show only sales **above \$5000.**

- Used a **SUM formula** to calculate the total sales.

Chapter 7.3: Outcome

- Well-structured sales report.
- Easier tracking of high-selling products.
- Quick analysis using formulas.

CHAPTER 8: EXERCISE

1. Multiple Choice Questions

- What is the shortcut to create a table in Excel?
 - (a) Ctrl + A
 - (b) Ctrl + T
 - (c) Ctrl + Shift + T
 - (d) Alt + Insert
- Which tab contains **Table Styles**?
 - (a) Home
 - (b) Insert
 - (c) Table Design
 - (d) View
- How can you remove filters from a table?
 - (a) Right-click and delete
 - (b) Click on the filter icon and select **Clear Filter**

- (c) Use Ctrl + Shift + R
- (d) Select **Table > Remove Filters**

2. Practical Task

- Open Excel and **create a table** with the following columns:

Student Name	Subject	Marks
Alice	Math	85
Bob	Science	90
Charlie	English	78

- Format the table with a predefined style.
- Sort the data based on Marks from highest to lowest.
- Apply a filter to display students with marks above 80.
- Use the SUM formula to calculate total marks.

3. Short Answer Questions

- What is the purpose of an **Excel Table**?
- How do you **remove duplicate values** in a table?
- Explain the difference between **Sorting** and **Filtering** in Excel.

SIMPLE GRAPHS & CHARTS IN EXCEL

CHAPTER 1: INTRODUCTION TO GRAPHS & CHARTS IN EXCEL

Microsoft Excel provides powerful tools for **visualizing data** using graphs and charts. These help in **analyzing trends, making comparisons, and presenting numerical data effectively**. Graphs and charts simplify complex datasets, making them easier to understand.

Why Use Graphs & Charts in Excel?

- Enhances data interpretation through visuals.
- Identifies trends & patterns quickly.
- Makes reports and presentations engaging.
- Reduces errors in data analysis.

Common Types of Charts in Excel:

- **Column Chart** – Compares different categories.
- **Bar Chart** – Displays data in horizontal bars.
- **Line Chart** – Shows trends over time.
- **Pie Chart** – Represents proportions.
- **Scatter Plot** – Analyzes relationships between two variables.

CHAPTER 2: HOW TO CREATE A SIMPLE CHART IN EXCEL

Creating a chart in Excel is simple. Follow these **steps** to insert a chart.

Step 1: Enter Data in Excel

1. Open Microsoft Excel and create a new worksheet.
2. Enter your data in a tabular format.

Example Data: Sales Report

Month	Sales (\$)
Jan	5000
Feb	7000
Mar	6000
Apr	8000
May	9000

Step 2: Select Data for the Chart

1. Click and drag to select the **data range** (e.g., A1:B6).
2. Ensure both **categories** (Months) and **values** (Sales) are selected.

Step 3: Insert a Chart

1. Click on the **Insert** tab in the Ribbon.
2. Choose a chart type from the **Charts group**:
 - Select **Column Chart** for comparisons.
 - Choose **Line Chart** for trends over time.
 - Select **Pie Chart** for percentage breakdowns.

-
3. Click on your chosen chart type, and Excel will insert the chart into your sheet.
-

CHAPTER 3: FORMATTING AND CUSTOMIZING CHARTS

Once your chart is inserted, you can customize it for better readability.

Step 1: Change Chart Title

1. Click on the default chart title.
2. Type a **new title** (e.g., "Monthly Sales Report").

Step 2: Modify Chart Layout & Style

1. Click on the **Chart** to activate the **Chart Tools** in the Ribbon.
2. Go to **Chart Design** > **Quick Layout** to change the chart layout.
3. Use **Chart Styles** to modify colors and design.

Step 3: Label Data on the Chart

1. Click on the **Chart Elements** (plus + icon) next to the chart.
2. Check **Data Labels** to display values on bars or lines.
3. Add **Legend** for category identification.

Step 4: Adjust Axis Labels

1. Click on the **X-Axis** or **Y-Axis** labels.
 2. Use **Chart Tools** > **Format Axis** to modify font, color, or size.
-

CHAPTER 4: TYPES OF CHARTS AND THEIR USES

4.1 Column Chart (Bar Chart)

- 📌 **Use:** Compares values across categories.
- ◆ **Example:** Comparing monthly sales.

How to create:

1. Select data.
2. Click Insert > Column Chart.
3. Customize colors and labels.

4.2 Line Chart

- 📌 **Use:** Shows trends over time.
- ◆ **Example:** Tracking yearly population growth.

How to create:

1. Select data.
2. Click Insert > Line Chart.
3. Adjust the x-axis (time) and y-axis (values).

4.3 Pie Chart

- 📌 **Use:** Represents percentage distributions.
- ◆ **Example:** Budget allocation in a company.

How to create:

1. Select only one column of data (excluding totals).

2. Click Insert > Pie Chart.
 3. Add percent labels for clarity.
-

4.4 Scatter Plot

- ❖ **Use:** Shows relationships between two variables.
- ◆ **Example:** Comparing study hours vs. test scores.

How to create:

1. Select two numerical columns.
 2. Click Insert > Scatter Chart.
 3. Adjust data points and labels.
-

CHAPTER 5: CASE STUDY – ANALYZING SALES DATA WITH CHARTS

Scenario

A retail company wants to visualize **sales performance** over 6 months to identify growth trends.

Solution

- Used a **Line Chart** to track sales increase over time.
- Added **Data Labels** for exact monthly figures.
- Used **Column Chart** to compare sales across regions.

Outcome

- Identified **peak sales months** for marketing strategies.
- Detected **seasonal trends** in sales performance.

- Presented clear reports to company stakeholders.
-

CHAPTER 6: EXERCISE – CREATE YOUR OWN CHARTS IN EXCEL

1. Multiple Choice Questions

1. Which Excel tab is used to insert charts?

- (a) Home
- (b) Insert
- (c) Data
- (d) View

2. What type of chart is best for showing trends over time?

- (a) Pie Chart
- (b) Line Chart
- (c) Column Chart
- (d) Bar Chart

3. How do you change the title of a chart?

- (a) Double-click the title and type
- (b) Delete the chart
- (c) Use the Insert tab
- (d) None of the above

2. Practical Task: Create and Customize a Chart

Task:

- Open Excel and enter the following data:

Year	Sales (\$)
2020	5000
2021	7000
2022	8500
2023	9500
2024	11000

Steps to Follow:

1. Select the data and insert a **Line Chart**.
2. Change the **title** to "Sales Growth Over Years".
3. Add **Data Labels** to display sales figures.
4. Modify the **chart color** for better visibility.
5. Save the file as "**Sales Chart.xlsx**".

FINAL SUMMARY

- Excel Charts help in data visualization** for better insights.
- Use different chart types** (Line, Pie, Bar) for various data presentations.
- Customize charts** using titles, labels, and colors.
- Practice with real-world data** to master Excel charts.

 **ASSIGNMENT:**

 **CREATE A PERSONAL TIMETABLE IN EXCEL AND APPLY BASIC FORMATTING & FORMULAS.**

ISDM-NxT

STEP-BY-STEP GUIDE TO CREATING A PERSONAL TIMETABLE IN EXCEL WITH FORMATTING & FORMULAS

Step 1: Open Microsoft Excel and Set Up the Worksheet

1. Open Microsoft Excel on your computer.
 2. Click on **File > New > Blank Workbook** to start a new sheet.
 3. Rename **Sheet1** to "Timetable" for easy reference.
-

Step 2: Enter Your Timetable Data

2.1 Create Column Headings

1. In **Row 1**, enter the following headings in separate columns:
 - **A1: Time**
 - **B1: Monday**
 - **C1: Tuesday**
 - **D1: Wednesday**
 - **E1: Thursday**
 - **F1: Friday**
 - **G1: Saturday**
 - **H1: Sunday**
2. Press **Ctrl + B** to make the headings bold.

2.2 Fill in Time Slots

1. In **Column A**, enter time slots in **hourly intervals** (e.g., 7:00 AM, 8:00 AM, etc.).
2. Use the **AutoFill feature**:
 - Type 7:00 AM in A2.
 - Click on the **bottom-right corner** of the cell (it turns into a small + sign).
 - Drag down to **fill time slots** for the entire day (e.g., 7:00 AM to 10:00 PM).

2.3 Add Subjects or Activities

1. Under each weekday column (**B2:H2 and below**), enter your **subjects, tasks, or activities** according to the schedule.
2. Example:
 - 8:00 AM - 9:00 AM: Math (Monday)
 - 9:00 AM - 10:00 AM: English (Tuesday)

Step 3: Format the Timetable for Better Readability

3.1 Adjust Column Width & Row Height

1. Select **columns A to H**.
2. Click **Home > Format > AutoFit Column Width**.

-
3. Select all rows and click **AutoFit Row Height**.
-

3.2 Apply Cell Borders

1. Select the entire timetable (A1:H24).
 2. Click **Home > Borders > All Borders** to create clear table lines.
-

3.3 Apply Colors for Readability

1. Select the **header row (A1:H1)** and apply a background color:
 - o Click **Home > Fill Color** and choose a light blue shade.
 2. Highlight **different subjects/activities** with different colors:
 - o Select the subject/activity cells.
 - o Click **Home > Fill Color** and choose a unique color for each subject.
-

Step 4: Use Basic Formulas to Improve the Timetable

4.1 Count Total Study/Work Hours Per Week

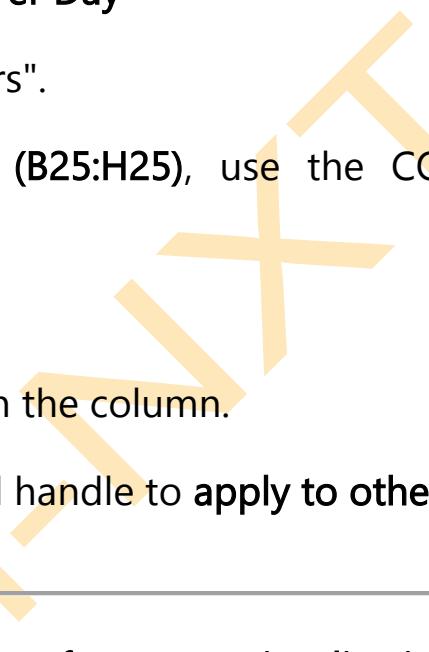
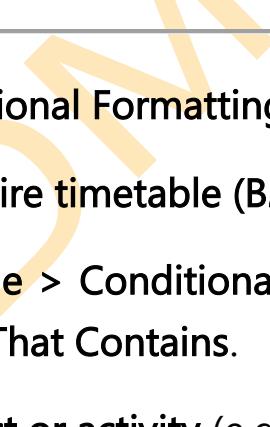
1. Select **I1** and type "Total Hours".
2. In **I2**, use the COUNTIF formula to count occurrences of a subject.

📌 **Example:** If you want to count how many hours you study **Math**, enter:

=COUNTIF(B2:H24, "Math")

3. Press **Enter** to display the total hours for that subject.
 4. Repeat for other subjects.
-

4.2 Auto-Sum Total Study Time Per Day

1. In Row 25, type "Total Hours".
 2. Under each **day column** (B25:H25), use the COUNTIF formula:
=COUNTIF(B2:B24, "<>")
 3. This counts all non-empty cells in the column.
 4. Press **Enter** and drag the fill handle to **apply to other days**.
-

Step 5: Add Conditional Formatting for Better Visualization

1. Select the **entire timetable** (B2:H24).
 2. Click on **Home > Conditional Formatting > Highlight Cell Rules > Text That Contains**.
 3. Enter a **subject or activity** (e.g., "Math") and select a color.
 4. Click **OK** to highlight all cells containing "Math" in the selected color.
 5. Repeat for other subjects.
-

Step 6: Save & Print the Timetable

1. Click **File > Save As.**
2. Name the file "**Personal Timetable.xlsx**".
3. To print:
 - o Click **File > Print (Ctrl + P)**.
 - o Choose **Landscape Orientation** for better readability.
 - o Select **Fit to One Page** if the table is too large.

Final Checklist

-  Timetable data is correctly entered.
 -  Borders and colors improve readability.
 -  Formulas calculate total study hours per subject and day.
 -  Conditional formatting highlights different activities.
 -  File is saved and ready to print.
-