**Module 6: Working with Reports**

**1. Creating Subtotals**

| **Region** | **Salesperson** | **Sales** |
| --- | --- | --- |
| East | Amit | 50000 |
| East | Neha | 30000 |
| West | Priya | 40000 |
| West | Rahul | 60000 |
| North | Swapnil | 25000 |
| North | Ankit | 35000 |

**Tasks:**

1. Sort data by **Region**.
2. Go to *Data → Subtotal*, choose:
   * At each change in: **Region**
   * Use function: **Sum**
   * Add subtotal to: **Sales**

**2. Multiple-Level Subtotals**

| **Region** | **Department** | **Sales** |
| --- | --- | --- |
| East | IT | 20000 |
| East | HR | 15000 |
| East | Sales | 18000 |
| West | IT | 25000 |
| West | HR | 12000 |
| West | Sales | 30000 |

**Tasks:**

1. Sort data first by **Region**, then by **Department**.
2. Add Subtotals for both — first by Region, then by Department.
3. Expand/collapse groups using the outline buttons on the left.

**3. Creating Pivot Tables**

| **Product** | **Category** | **Sales** | **Region** |
| --- | --- | --- | --- |
| Pen | Stationery | 5000 | East |
| Pencil | Stationery | 3000 | West |
| Keyboard | Electronics | 10000 | North |
| Mouse | Electronics | 8000 | East |
| Notebook | Stationery | 7000 | South |

**Tasks:**

1. Insert a **Pivot Table** (Insert → PivotTable).
2. Drag:
   * *Category* → Rows
   * *Region* → Columns
   * *Sales* → Values
3. Analyze total sales per category and region.

**4. Formatting and Customizing Pivot Tables**

1. Apply **Pivot Table Design** styles (e.g., Medium 9).
2. Show **Grand Totals** and **Subtotals**.
3. Format Sales as **Currency**.

**5. Using Advanced Options of Pivot Tables**

1. Right-click on a value → *Value Field Settings → Show Values As → % of Grand Total*.
2. Observe how each cell shows percentage contribution.

**6. Pivot Charts**

1. From the same Pivot Table, insert a **Column Chart**.
2. Try switching to **Pie Chart** and observe changes.
3. Format chart with title: *“Sales by Category and Region”*.

**7. Consolidating Data from Multiple Sheets and Files using Pivot Tables**

**Sheet1 (East Region)**

| **Product** | **Sales** |
| --- | --- |
| Pen | 5000 |
| Pencil | 3000 |

**Sheet2 (West Region)**

| **Product** | **Sales** |
| --- | --- |
| Pen | 7000 |
| Pencil | 4000 |

**Tasks:**

1. Use *Data → Consolidate* or *Pivot Table from Multiple Ranges* to combine data.
2. Create a single report showing total sales per product across all regions.

**8. Using External Data Sources**

**Task:**

1. Use *Data → Get Data → From Text/CSV* or *From Access* to import external data (e.g., sales\_data.csv).
2. Build a Pivot Table on the imported dataset.

**9. Using Data Consolidation Feature**

| **Product** | **East** | **West** | **North** |
| --- | --- | --- | --- |
| Pen | 5000 | 7000 | 6000 |
| Pencil | 3000 | 4000 | 3500 |

**Tasks:**

1. Use *Data → Consolidate → Function: SUM* to combine these into one summary table.
2. Check “Top row” and “Left column” options.

**10. Show Value As (Advanced Pivot Options)**

| **Product** | **Region** | **Sales** |
| --- | --- | --- |
| Pen | East | 5000 |
| Pen | West | 7000 |
| Pen | North | 6000 |
| Pencil | East | 3000 |
| Pencil | West | 4000 |
| Pencil | North | 3500 |

**Tasks:**

1. In Pivot Table, set *Sales → Show Values As → % of Row Total*
2. Then try *% of Column Total*, *Running Total in Region*, *Difference From → (specific field)*.

**11. Viewing Subtotal under Pivot**

1. Right-click inside Pivot Table → *Subtotals → Show all Subtotals at Bottom of Group*.
2. Compare before and after placement.

**12. Creating Slicers (Excel 2010 & above)**

1. Create a Pivot Table using “Product” and “Region.”
2. Go to *Insert → Slicer* and select “Region.”
3. Click buttons on slicer to dynamically filter data.

**Module 7: More Functions**

**1. Date and Time Functions**

| **Task** | **Start Date** | **End Date** |
| --- | --- | --- |
| Project A | 01-Jan-2025 | 10-Jan-2025 |
| Project B | 05-Feb-2025 | 25-Feb-2025 |

**Tasks:**

1. Calculate duration: =DAYS(C2,B2)
2. Extract month: =TEXT(B2,"mmmm")
3. Find today’s date: =TODAY()
4. Calculate working days (excluding weekends): =NETWORKDAYS(B2,C2)

**2. Text Functions**

| **Full Name** | **Output Examples** |
| --- | --- |
| Amit Kumar |  |
| Neha Sharma |  |

**Tasks:**

1. Extract **First Name**: =LEFT(A2,FIND(" ",A2)-1)
2. Extract **Last Name**: =RIGHT(A2,LEN(A2)-FIND(" ",A2))
3. Convert to Uppercase: =UPPER(A2)
4. Join with Department (e.g., “IT”): =CONCATENATE(A2," - IT")

**3. Database Functions**

| **Emp ID** | **Dept** | **Salary** |
| --- | --- | --- |
| 101 | HR | 40000 |
| 102 | IT | 50000 |
| 103 | IT | 45000 |
| 104 | Sales | 35000 |

**Tasks:**

1. Use criteria range:

| **Dept** |
| --- |
| IT |
| Formula: =DSUM(A1:C5,"Salary",E1:E2) |

1. Try =DAVERAGE(...) to find average salary of IT employees.
2. Try =DCOUNT(...) to count IT employees.

**4. Power Functions (CountIf, CountIFS, SumIF, SumIfS)**

| **Region** | **Sales** | **Target** |
| --- | --- | --- |
| East | 50000 | 40000 |
| West | 30000 | 35000 |
| North | 60000 | 50000 |
| South | 25000 | 30000 |

**Tasks:**

1. Count regions that met target: =COUNTIF(B2:B5,">=40000")
2. Total sales above 40000: =SUMIF(B2:B5,">40000")
3. Use multiple criteria: =SUMIFS(B2:B5,C2:C5,">=30000",A2:A5,"North")

**Module 8: Formatting**

**1. Using Auto Formatting Option for Worksheets**

| **Name** | **Department** | **Salary** |
| --- | --- | --- |
| Amit | IT | 50000 |
| Neha | HR | 40000 |
| Priya | Finance | 45000 |

**Tasks:**

1. Select range → *Home → Format as Table* → Choose a style.
2. Explore *Home → Cell Styles → Title, Heading 1, etc.*
3. Apply *AutoFormat* to quickly give your data a professional look.

**2. Using Conditional Formatting for Rows, Columns, and Cells**

| **Employee** | **Department** | **Sales** |
| --- | --- | --- |
| Amit | IT | 80000 |
| Neha | HR | 45000 |
| Rahul | Sales | 60000 |
| Priya | IT | 30000 |
| Swapnil | Finance | 75000 |

**Tasks:**

1. Highlight cells where **Sales > 60000** (use *Greater Than* rule).
2. Use **Color Scales** to visually compare sales.
3. Highlight entire **row** if Department = “IT”:
   * Formula rule: =$B2="IT"
4. Add an **Icon Set** (traffic light style) to the Sales column.

**Module 9: Macros**

**1. Relative & Absolute Macros**

| **Product** | **Price** | **Quantity** | **Total** |
| --- | --- | --- | --- |
| Pen | 10 | 5 |  |
| Pencil | 5 | 10 |  |
| Marker | 25 | 3 |  |

**Tasks:**

1. Turn on the **Developer Tab** → *Record Macro*.
2. Create a **Macro named “TotalCalc”** that multiplies Price × Quantity and places the result in the Total column.
3. Try recording it **with Absolute Reference** (so it always affects same cells).
4. Then record a **Relative Reference Macro** that works correctly no matter which row you start from.  
   → *Developer → Use Relative References.*

**2. Editing Macros**

**Tasks:**

1. Open the **Visual Basic Editor (Alt + F11)**.
2. Modify your previous macro to automatically format totals as currency.  
   Example line in VBA:
3. Selection.NumberFormat = "₹#,##0.00"
4. Add a message box like:
5. MsgBox "Totals Calculated Successfully!"

**Module 10: What-If Analysis**

**1. Goal Seek**

| **Product** | **Cost** | **Selling Price** | **Profit** |
| --- | --- | --- | --- |
| Pen | 50 |  | 1000 |

**Tasks:**

1. Formula: Profit = Selling Price × 100 – Cost × 100 (assuming 100 items).
2. Use **Goal Seek** to find what Selling Price gives a Profit of ₹1000.  
   → *Data → What-If Analysis → Goal Seek*

**2. Data Tables**

| **Rate** | **Years** | **EMI** |
| --- | --- | --- |
| 8% | 5 |  |
| 9% | 5 |  |
| 10% | 5 |  |
| 11% | 5 |  |
| 12% | 5 |  |

**Tasks:**

1. Assume a **Loan Amount = ₹1,00,000**.
2. Formula for EMI in C2:  
   =PMT(A2/12,B2\*12,-100000)
3. Convert this into a **One-Variable Data Table** showing EMI for different interest rates.  
   → *Data → What-If Analysis → Data Table*

**3. Scenario Manager**

| **Month** | **Sales** | **Expenses** | **Profit** |
| --- | --- | --- | --- |
| Jan | 100000 | 60000 | =B2-C2 |
| Feb | 120000 | 75000 | =B3-C3 |

**Tasks:**

1. Create **Scenarios** like:
   * *Best Case:* Increase Sales by 10%, Decrease Expenses by 5%
   * *Worst Case:* Decrease Sales by 10%, Increase Expenses by 5%
2. Use **Scenario Manager** to compare total profits under both cases.  
   → *Data → What-If Analysis → Scenario Manager*

**Module 11: Charts**

**1. Using Charts**

| **Month** | **Sales** |
| --- | --- |
| Jan | 40000 |
| Feb | 45000 |
| Mar | 48000 |
| Apr | 52000 |

**Tasks:**

1. Select data and insert a **Column Chart**.
2. Add **Chart Title** and **Data Labels**.

**2. Formatting Charts**

1. Change chart color scheme to your corporate theme.
2. Format the Y-axis to display currency (₹).
3. Add a gradient fill to the bars.

**3. Using 3D Graphs**

| **Product** | **Q1** | **Q2** | **Q3** | **Q4** |
| --- | --- | --- | --- | --- |
| Pen | 5000 | 7000 | 8000 | 9000 |
| Pencil | 4000 | 6000 | 7000 | 7500 |
| Marker | 3000 | 5000 | 6000 | 7000 |

**Tasks:**

1. Select data and insert a **3D Column Chart**.
2. Rotate 3D angle using *Format → 3D Rotation*.

**4. Using Bar and Line Chart Together (Combo Chart)**

| **Month** | **Sales** | **Profit** |
| --- | --- | --- |
| Jan | 40000 | 8000 |
| Feb | 50000 | 9000 |
| Mar | 60000 | 12000 |
| Apr | 70000 | 15000 |

**Tasks:**

1. Insert a **Combo Chart**:
   * Sales → Column
   * Profit → Line
2. Add **Data Labels** and format line color to red.

**5. Using Secondary Axis in Graphs**

| **Product** | **Sales** | **Target** |
| --- | --- | --- |
| A | 40000 | 60000 |
| B | 70000 | 80000 |
| C | 50000 | 55000 |
| D | 90000 | 95000 |

**Tasks:**

1. Create a **Column Chart** for both Sales and Target.
2. Add **Target** as a **Secondary Axis** to compare actual vs target clearly.

**6. Sharing Charts with PowerPoint / Word Dynamically**

**Tasks:**

1. Copy the chart → *Paste Special → Paste Link* into PowerPoint or Word.
2. Change any data in Excel and watch the linked chart update automatically.

**Module 12: New Features of Excel**

**1. Sparklines (Inline Charts)**

| **Month** | **Sales** | **Sparkline** |
| --- | --- | --- |
| Jan | 4000 |  |
| Feb | 6000 |  |
| Mar | 8000 |  |
| Apr | 7000 |  |

**Tasks:**

1. Insert → *Sparklines → Line*.
2. Select range B2:B5 as data, place Sparkline in C2.
3. Add markers and highlight highest/lowest points.

**2. Inline Charts (Cell Charts using Conditional Formatting)**

| **Product** | **Sales** |
| --- | --- |
| Pen | 10000 |
| Pencil | 5000 |
| Marker | 15000 |
| Eraser | 8000 |

**Tasks:**

1. Apply **Data Bars** using Conditional Formatting.
2. Observe visual representation directly inside cells.

**3. Data Bars & Color Scales (Data Charts)**

| **Employee** | **Score** |
| --- | --- |
| Amit | 75 |
| Neha | 88 |
| Rahul | 65 |
| Priya | 92 |

**Tasks:**

1. Apply **Color Scale** (green–yellow–red) to quickly visualize performance.
2. Experiment with **Icon Sets** (stars, arrows, traffic lights).

**4. Overview of All New Features (Excel 2016 and above)**

**Tasks:**

1. Explore new functions such as:
   * TEXTJOIN(), IFS(), MAXIFS(), MINIFS()
2. Try new **Chart Types**:
   * Treemap, Waterfall, Funnel, Map, Histogram.
3. Try new **Data Types**:
   * *Data → Stocks* and *Data → Geography.*
4. Explore **Dynamic Arrays**:
   * =UNIQUE(), =FILTER(), =SORT()