**Practical 4: Data Analysis and Visualization using Advanced Excel**

We will use the **Superstore Dirty Dataset (Cleaned version)** for this practical.  
Here’s a step-by-step breakdown:

**🔧 Step-by-Step Procedure**

**🎯 Objective:**

Use **Advanced Excel features** to:

* Analyze sales performance
* Identify top-performing categories/regions
* Visualize trends using pivot charts, slicers, and conditional formatting

**✅ Step 1: Open Dataset in Excel**

1. Open superstore\_dirty\_for\_practical2.csv in **Microsoft Excel**.
2. Save it as an .xlsx file:  
   **File → Save As → Excel Workbook (.xlsx)**

**✅ Step 2: Clean Up (if needed)**

Since the data is already cleaned in Practical 2, verify the following:

* Order Date and Ship Date columns are in **date format**
* Profit and Sales are **numbers**
* No remaining blanks or ### values

**✅ Step 3: Insert a Table**

1. Select the full dataset (Ctrl + A)
2. Go to **Insert → Table**
3. Ensure **“My table has headers”** is checked → Click OK  
   This allows using dynamic ranges for pivot tables and charts.

**✅ Step 4: Create Pivot Tables for Analysis**

**📌 Pivot Table 1: Sales by Region and Category**

1. Insert → Pivot Table → New Sheet
2. Drag Region to **Rows**
3. Drag Category to **Columns**
4. Drag Sales to **Values** (Summarize by SUM)

**📌 Pivot Table 2: Top 10 Customers by Profit**

1. Create another Pivot Table
2. Drag Customer Name to **Rows**
3. Drag Profit to **Values**
4. Sort Profit in **Descending Order**
5. Filter Top 10:
   * Click on Row Labels → Value Filters → Top 10

**📌 Pivot Table 3: Monthly Sales Trend**

1. Drag Order Date to **Rows**
2. Right click → Group → By Month and Year
3. Drag Sales to **Values**

**✅ Step 5: Visualizations (Pivot Charts)**

For each Pivot Table:

1. Click inside Pivot Table
2. Go to **PivotTable Analyze → Pivot Chart**
3. Choose chart type (e.g., Column, Line)
4. Customize chart with:
   * Titles
   * Axis labels
   * Data labels

**✅ Step 6: Add Slicers for Interactivity**

1. Click inside Pivot Table
2. Go to **Insert → Slicer**
3. Select fields like:
   * Region
   * Segment
   * Category
4. Use slicers to filter charts dynamically

**✅ Step 7: Conditional Formatting**

1. Go back to your original table
2. Select the Profit column
3. Go to **Home → Conditional Formatting → Color Scales**
   * Apply Red to Green scale (to see low/high profit)
4. For Sales, apply **Data Bars**

**✅ Step 8: Add Dashboard (Optional)**

1. Create a new sheet
2. Copy your pivot charts and slicers here
3. Arrange them as a clean **dashboard layout**

**📸 Example Visuals to Include**

* Bar Chart: Sales by Region
* Line Chart: Monthly Sales Trend
* Pie Chart: Sales by Category
* Top 10 Customers by Profit
* Slicers for interactivity

**Sort Profit in Descending Order in Pivot Table (Step-by-Step)**

**📌 Example: Top Customers by Profit**

1. **Click anywhere inside your Pivot Table**
   * You should see Customer Name in **Rows**
   * And Profit in **Values**
2. Now **right-click on any value** under the **Customer Name** column in the Pivot Table.
3. Select **"Sort" → "Sort Largest to Smallest"**

✅ This will **sort by Profit in descending order**, placing the **most profitable customers at the top**.

**✅ (Optional) Show Only Top 10 Customers**

To **filter the top 10 customers by Profit**:

1. Click the **dropdown arrow** on Row Labels (next to Customer Name).
2. Choose **"Value Filters" → "Top 10..."**
3. In the dialog:
   * Show: **Top 10**
   * Using: **Profit**
4. Click **OK**