

## how to do data analysis and visualization using Advanced Excel step by step

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### TASK: Analyze Sales Data and Create a Dashboard in Excel

Let's say you have a dataset like this:

Date	Region	Salesperson	Product	Units Sold	Unit Price	Total Sales
01/01/2024	East	John	Laptop	5	500	2500
01/02/2024	West	Sarah	Tablet	3	300	900
...	...	...	...	...	...	...

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### STEP-BY-STEP GUIDE TO DO THE TASK IN EXCEL

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#### Step 1: Import or Enter Data

- Open Excel
  - Paste or import the data from .csv or .xlsx
  - Make sure your headers are clearly labeled in Row 1
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#### Step 2: Create a Table

1. Select the entire dataset
2. Go to **Insert** → **Table**
3. Tick "My table has headers" → Click **OK**

This makes data easier to manage and dynamic for formulas.

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#### Step 3: Add Calculated Columns (Optional)

If not already done:

- Add a formula in the "Total Sales" column:
- `=[@[Units Sold]] * [@[Unit Price]]`

This multiplies units by price for each row.


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#### Step 4: Create a PivotTable

1. Click anywhere in the table
2. Go to **Insert → PivotTable**
3. Choose “New Worksheet” → Click **OK**

#### Now in the PivotTable Field List:

- Drag Region to **Rows**
- Drag Product to **Columns**
- Drag Total Sales to **Values**

 Now you have a region-wise and product-wise sales summary!

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#### Step 5: Add Slicers for Interactivity

1. Click the PivotTable
  2. Go to **PivotTable Analyze → Insert Slicer**
  3. Choose Salesperson and Product → Click OK
  4. Now click slicer buttons to filter data dynamically
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#### Step 6: Insert Charts

1. Select the PivotTable
  2. Go to **Insert → Recommended Charts**
  3. Choose:
    - **Column Chart** for comparison
    - **Pie Chart** for % sales by region
    - **Line Chart** for trend analysis over dates (if Date is used in rows)
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#### Step 7: Build a Dashboard

1. Create a new sheet named Dashboard
2. Copy and paste:

- Pivot charts
  - Slicers
  - KPIs (like total sales using =SUM(Table1[Total Sales]))
3. Arrange neatly with shapes and headings

Use **View → Remove Gridlines** for clean layout

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### Step 8: Apply Conditional Formatting

1. Go to your data sheet or PivotTable
  2. Select the Total Sales column
  3. Go to **Home → Conditional Formatting**
  4. Choose:
    - Color Scales to show high/low sales
    - Data Bars for visual value comparison
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### Step 9: Use What-If Analysis (Optional)

For example, to see how price affects total sales:

1. Go to **Data → What-If Analysis → Data Table**
  2. Set up a table with different unit prices
  3. Link your formulas to this range
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### **Final Tip:**

To update everything dynamically:

- Right-click PivotTable → **Refresh**
- Charts and dashboard update automatically