

<b>Exp No: 6</b> <b>Date:</b>	<b>Data Visualization Using Power BI</b>
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### **Aim:**

To learn the Power BI interface and develop skills in connecting to various data sources (Excel, CSV, SQL databases), creating basic visualizations (bar charts, line charts, pie charts), using calculated columns and measures, and building interactive dashboards.

### **Procedure:**

#### **Step 1: Launch Power BI Desktop**

- Open Power BI Desktop. Familiarize yourself with the interface like Explore Ribbon (Home, Insert, Modeling, View), Fields Pane (contains tables and columns), Visualizations Pane, Report Canvas

#### **Step 2: Connect to Data Sources**

- Home → Get Data.
- Choose the data source type:
- Excel: Browse and select an Excel file, select sheets, and click Load.
- CSV: Browse and select the CSV file, preview, and click Load.
- SQL Database: Enter server name, database, credentials, select tables, and click Load.
- Ensure the data appears in the Fields Pane.

#### **Step 3: Create Basic Visualizations**

- Select a visualization type from the Visualizations Pane:
- Bar Chart: Drag a categorical field to the Axis and a numerical field to Values.
- Line Chart: Drag a time/date field to Axis and numerical field to Values.
- Pie Chart: Drag a categorical field to Legend and a numerical field to Values.

- Format charts using the Format options (colors, labels, titles).

#### Step 4: Create Calculated Columns and Measures

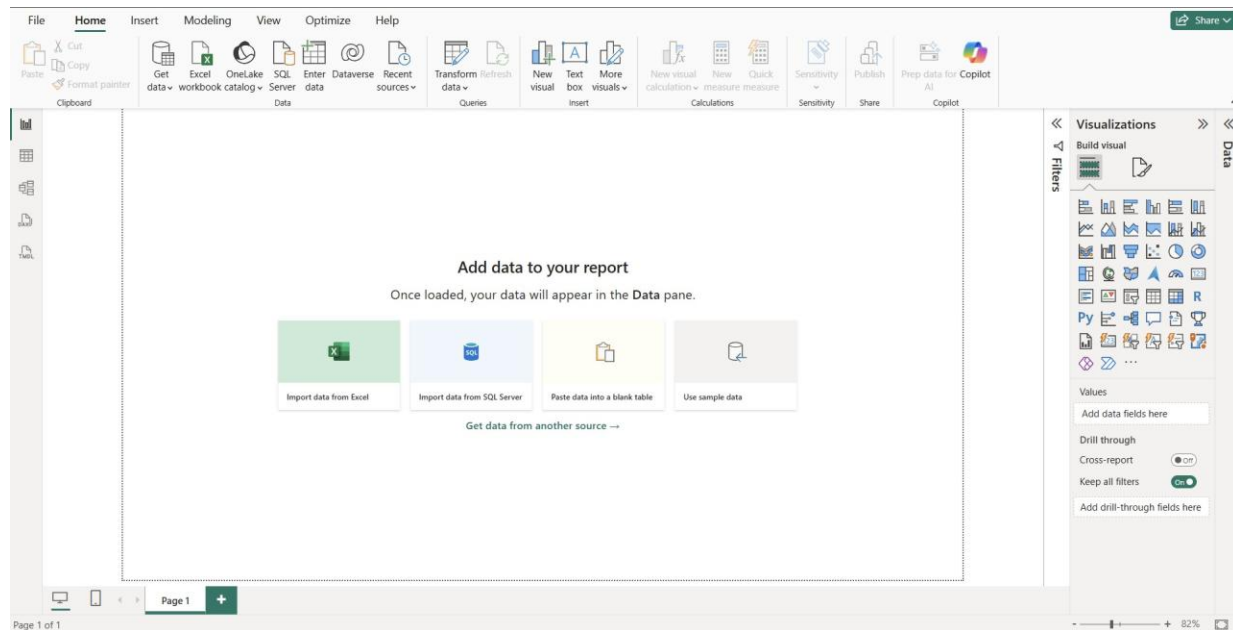
- Calculated Column:
  - Go to Modeling → New Column.
  - Enter DAX formula, e.g.,  $\text{TotalPrice} = \text{Quantity} * \text{UnitPrice}$ .
- Measure:
  - Go to Modeling → New Measure.
  - Enter DAX formula, e.g.,  $\text{TotalSales} = \text{SUM}(\text{Sales}[\text{TotalPrice}])$ .
  - Use these new fields in your visualizations.

#### Step 5: Build Dashboards

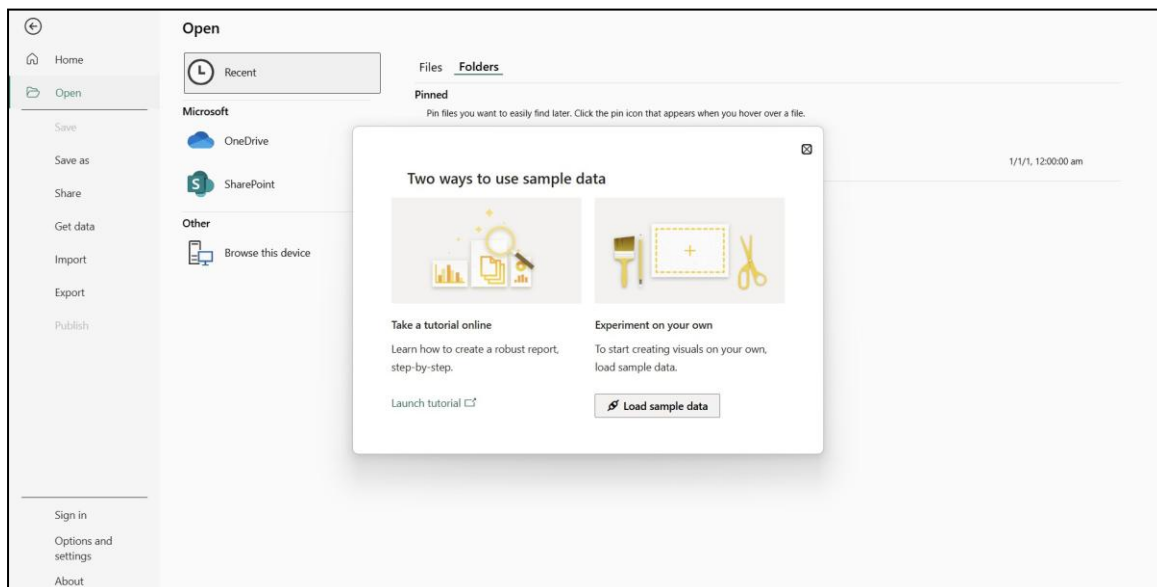
- Arrange multiple visualizations on a single Report Canvas.
- Add slicers to filter data dynamically (e.g., by region or date).
- Customize layout, colors, and titles for readability.
- Save the report: File → Save As.

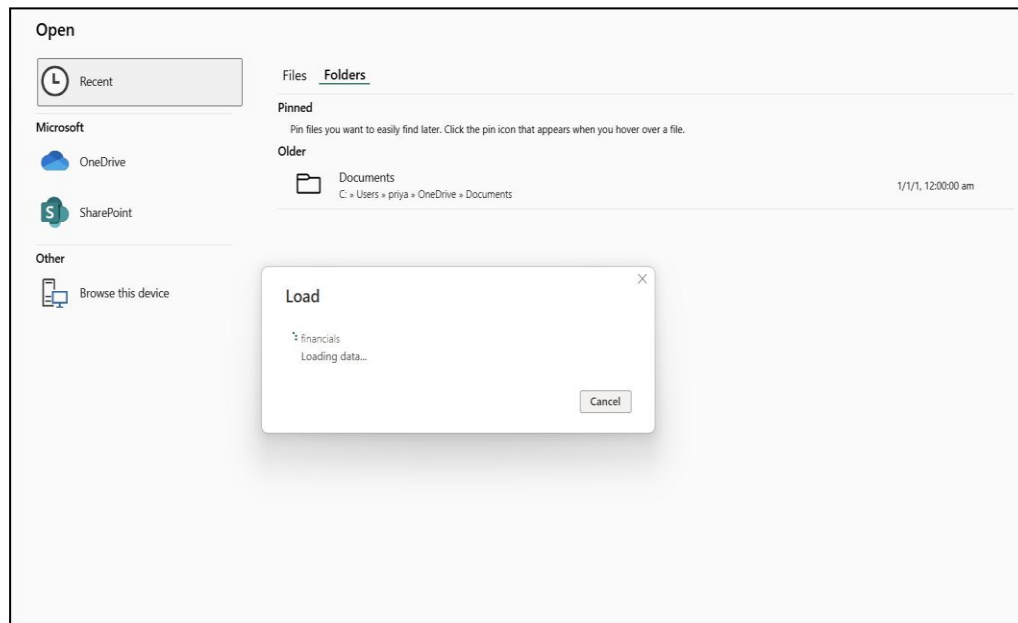
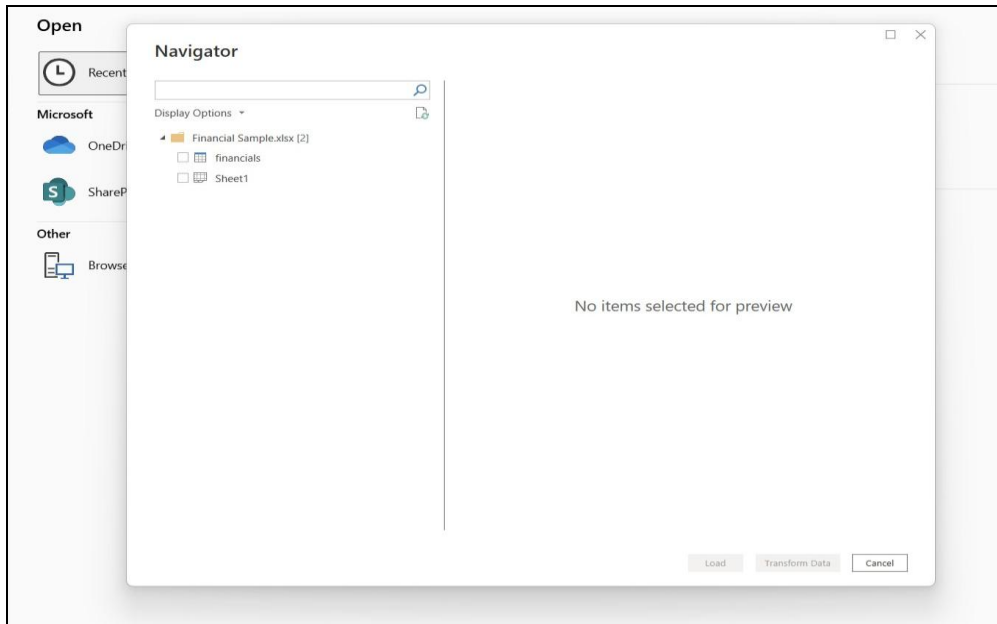
## Execution Steps

### 6.1 Learning the Power BI Interface

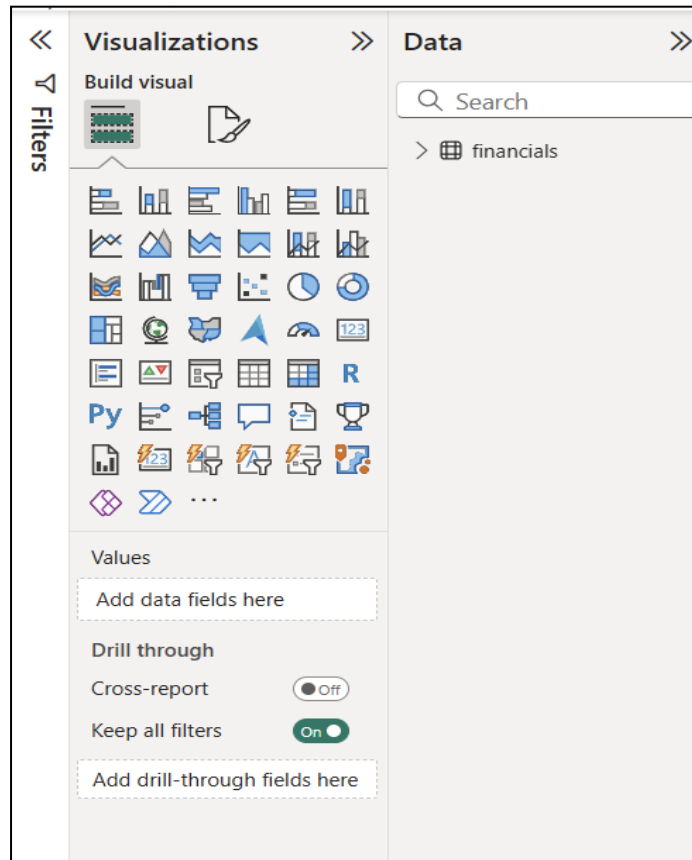


### 6.2 Connecting to various data sources (Excel, CSV, SQL databases)

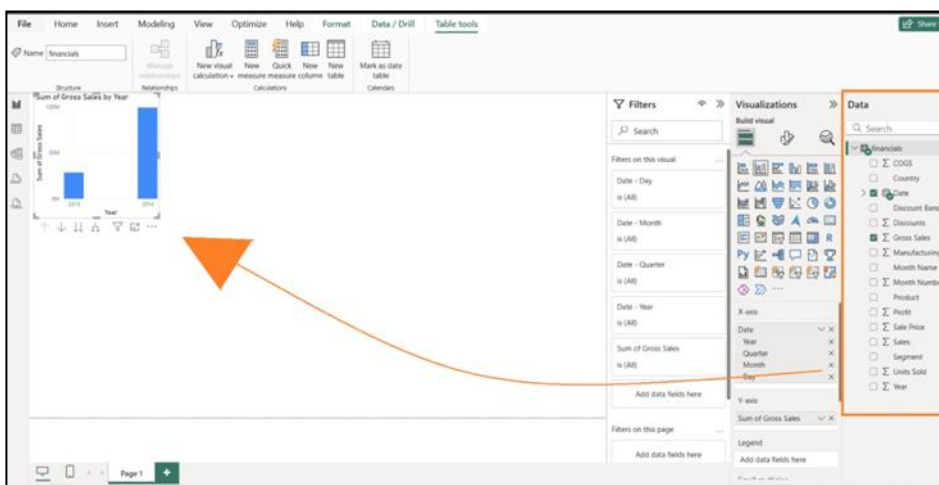




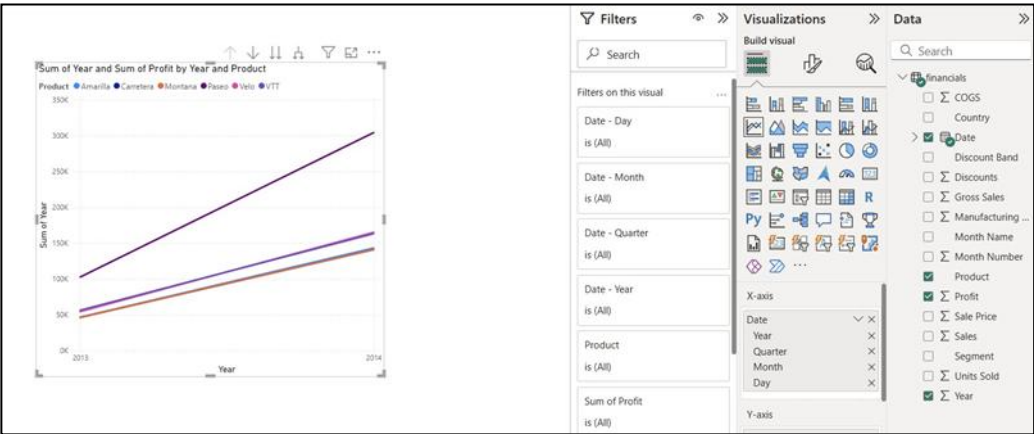
### 6.3 Creating basic visualizations: bar charts, line charts, pie charts



#### Bar charts

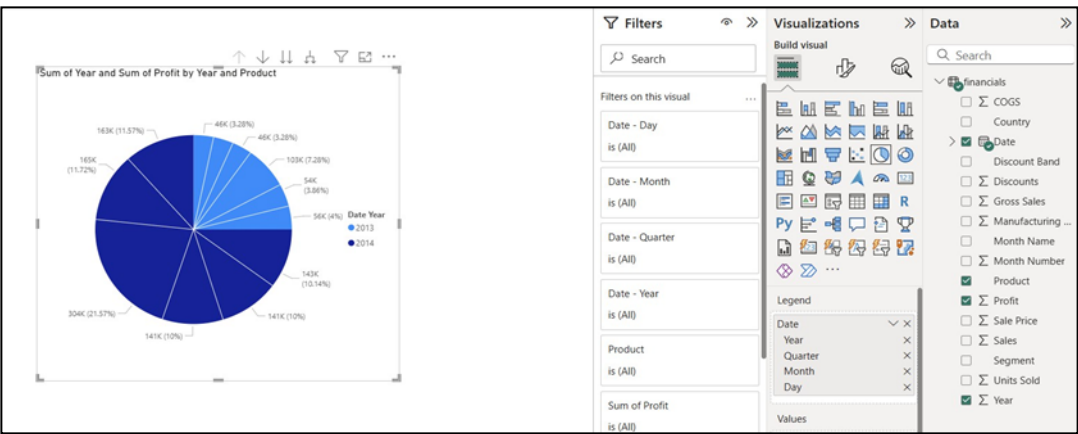


Line chart

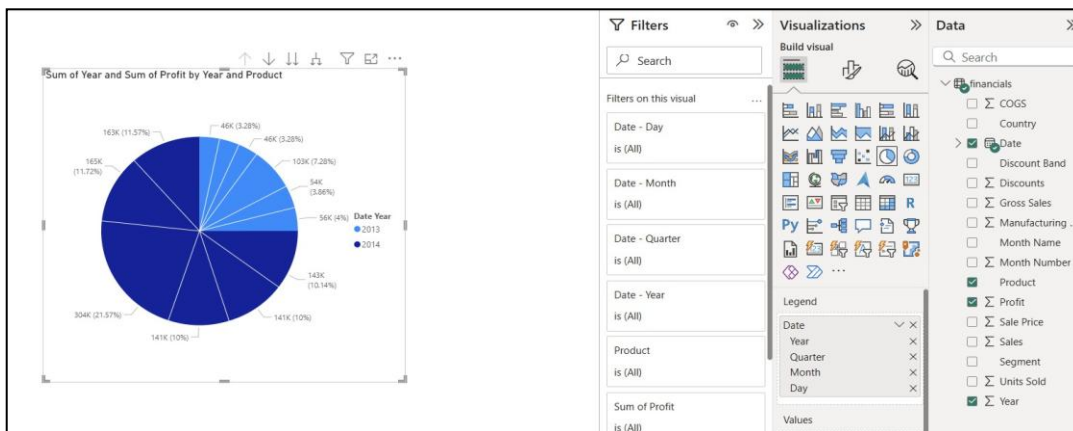
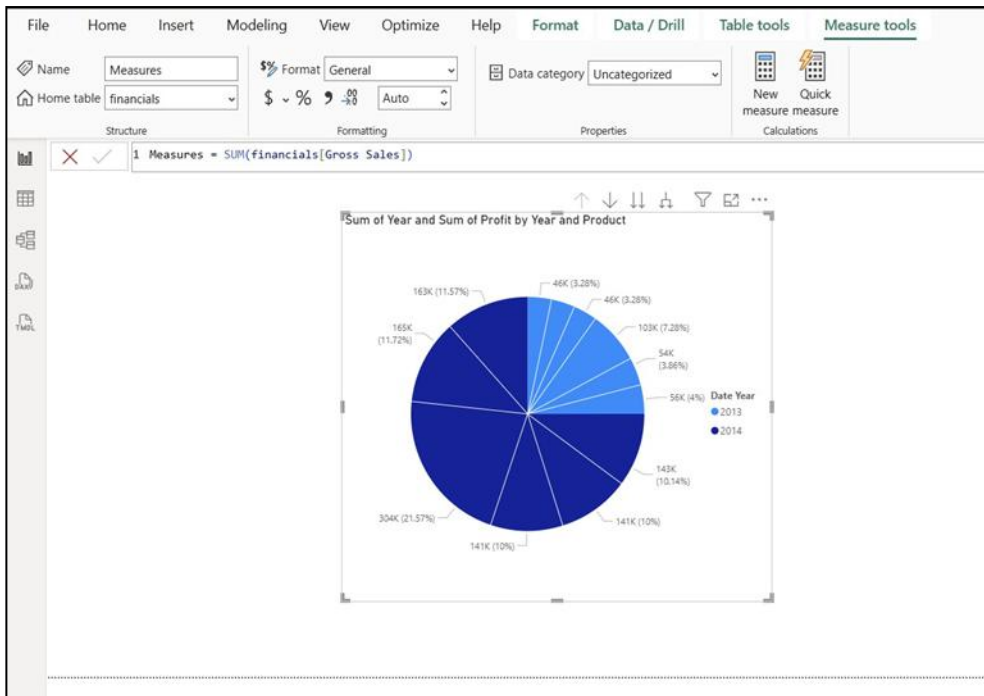


Pie chart

6.4 Creating Calculated Columns and Measures



Go to Modelling, select new measure, upload the formula.



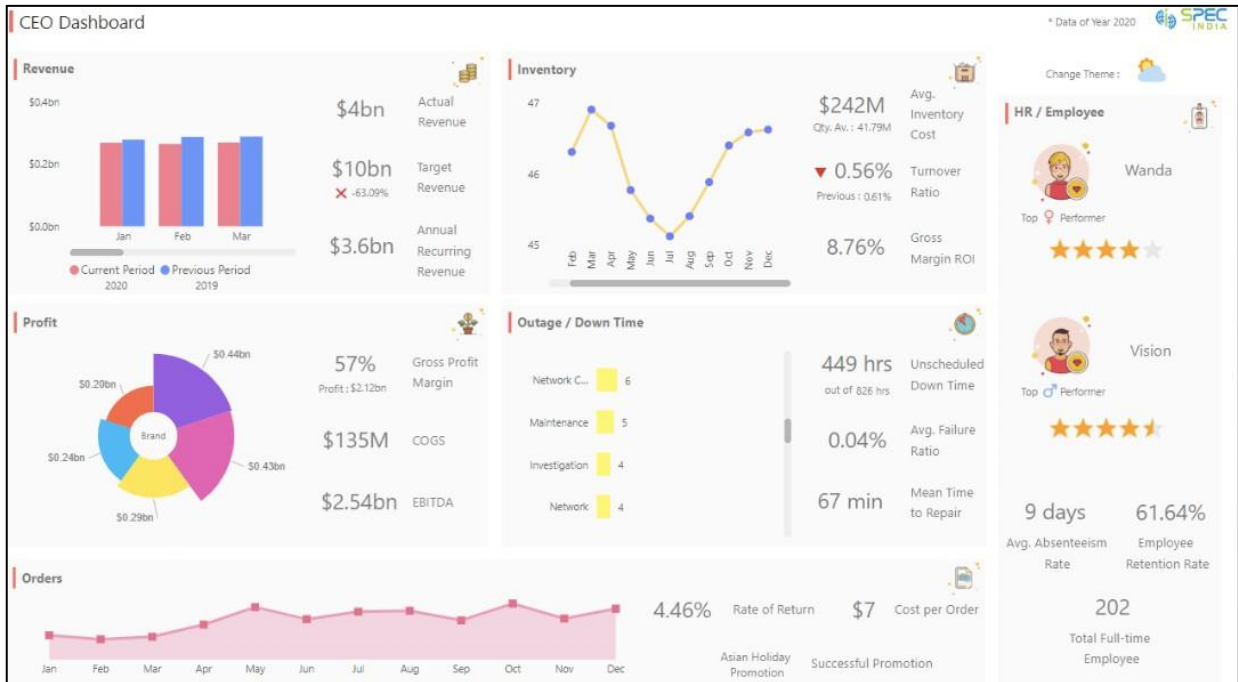
## 6.5 Building Dashboards

Create a report in Power BI Desktop by following the above mentioned steps and save it.

Publish this to Power BI Service: In Power BI Desktop → Home → Publish. Next, sign in → Select My Workspace (or a shared workspace). Create a dashboard in power BI Service.

Arrange, customize and save the final result.

Sample Power BI Dashboard:





**Result:**

This experiment provided hands-on experience with Power BI, including connecting to different data sources, creating basic visualizations, performing calculations with DAX, and building interactive dashboards. The process improves data analysis and visualization skills for business intelligence applications.