VI. Data Visualization Using PowerBi

AIM:

To learn the Power BI Desktop interface and workflow by connecting to Excel/CSV/SQL data sources, creating basic visualizations (bar, line, pie), writing calculated columns and measures (DAX), and assembling an interactive dashboard that answers simple business questions.

PROCEDURE:

1. Open Power BI Desktop & Inspect Interface

1. Launch Power BI Desktop.

2. Note key panes: Fields, Visualizations, Filters, Data/Report/Model view.

3. Switch to Data view briefly to understand where tables and columns appear.

2. Connect to Data Sources

A. Excel

1. Home → Get data → Excel → choose SalesData.xlsx.

2. In Navigator, check the Sales sheet and click Load.

B. CSV

1. Home → Get data → Text/CSV → choose Targets.csv.

2. Preview and click Load.

3. Clean & Transform (Power Query)

1. Home → **Transform data** to open Power Query Editor.

2. For Sales table:

   o Ensure Date column has Date datatype.

   o Create a TotalSales column: Quantity * UnitPrice (Add Column → Custom Column → =[Quantity]*[UnitPrice]).

   o Trim whitespace in text columns; remove duplicates if needed.

3. For Targets.csv:

   o Convert Month to date or text format consistently (e.g., YYYY-MM).

4. Close & Apply.

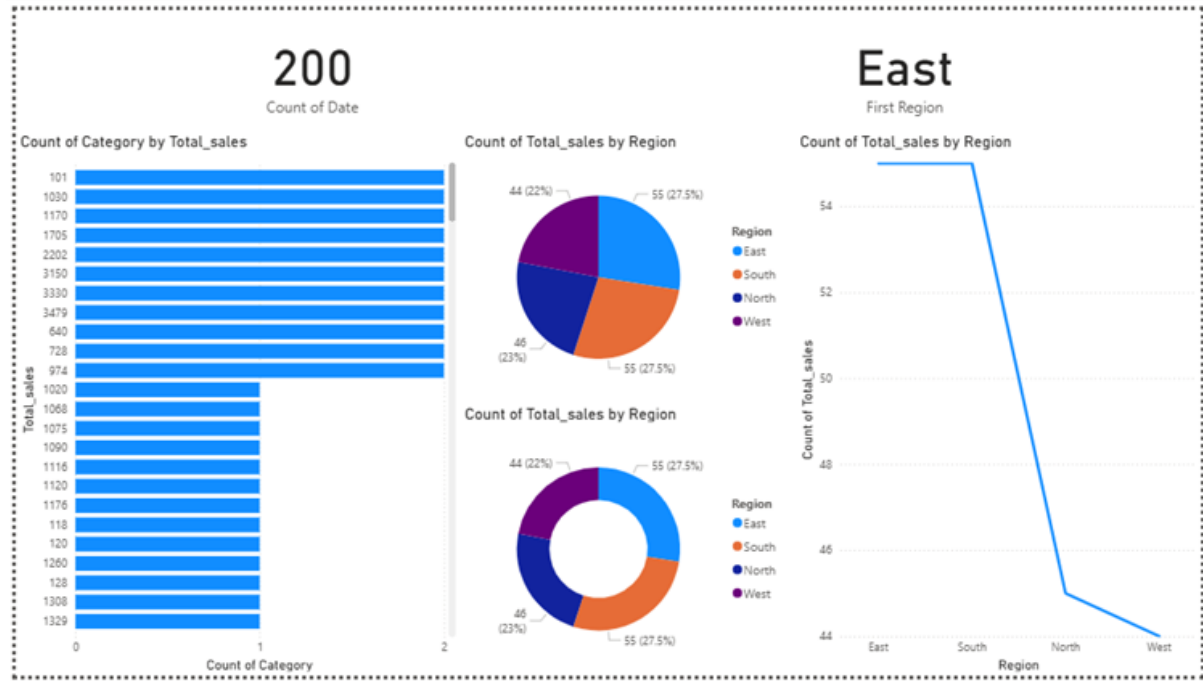**4. Create Basic Visualizations**

Create a new report page and add visualizations:

1. **Bar chart** — Sales by Category

   o   Axis: Category

   o   Value: Total Sales

   o   Add data labels, sort descending.

2. **Line chart** — Monthly Sales Trend

   o   Axis: Sales[YearMonth] (set type to categorical or continuous as needed)

   o   Values: Total Sales

   o   Add a slicer for Region.

3. **Pie chart / Donut** — Sales proportion by Region

   o   Legend: Region

   o   Values: Total Sales

4. **Card visuals** — Key KPIs

   o   Cards showing Total Sales, Total Quantity, Avg Order Value.

5. **Table / Matrix** — Top 10 Products by Sales

   o   Columns: Product, Total Sales, Total Quantity

   o   Use Top N filter on Product to show top 10.

5. Build a Dashboard-like Report Page

1. Arrange visuals into a clean layout:

   o   Top row: KPI cards and a date/region slicer.

   o   Left column: bar chart (Category) & table (Top products).

   o   Right column: line chart (trend) & pie/donut (region share).

   o   Bottom: gauge or variance chart comparing sales vs target.

2. Add titles, tooltips, and consistent formatting (font sizes, number formats).

3. Save the .pbix file.

OUTPUT:

RESULT:

Thus, the given program was written and executed successfully.