Exp No: 7 Date:	Data Visualization Using Power BI

Aim:

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

Procedure:

Step 1: Launch Tableau and Explore Interface

- Open Tableau Desktop.
- Familiarize yourself with the interface:
- Start Page (Connect pane, Open options)
- Data Pane (lists tables and fields)
- Sheets (for building visualizations)
- Dashboard and Story tabs

Step 2: Connect to Data Sources

- In the Connect pane, choose your data source type:
- Excel: Browse and select an Excel file, choose the sheet, and click Sheet1.
- CSV: Browse and select the CSV file, click Sheet1.
- SQL Database: Enter server, database credentials, select tables, and connect.
- Ensure your data appears in the Data Pane.

Step 3: Create Basic Visualizations

- Drag fields from the Data Pane to the Rows and Columns shelves:
- Bar Chart: Place a categorical field on Columns and a numerical field on Rows.
- Line Chart: Place a time/date field on Columns and a numerical field on Rows.
- Pie Chart: Use Marks → Pie, drag a categorical field to Color and numerical field to Angle.
- Use the Show Me panel to explore recommended visualization types.
- Format visualizations with colors, labels, and titles.

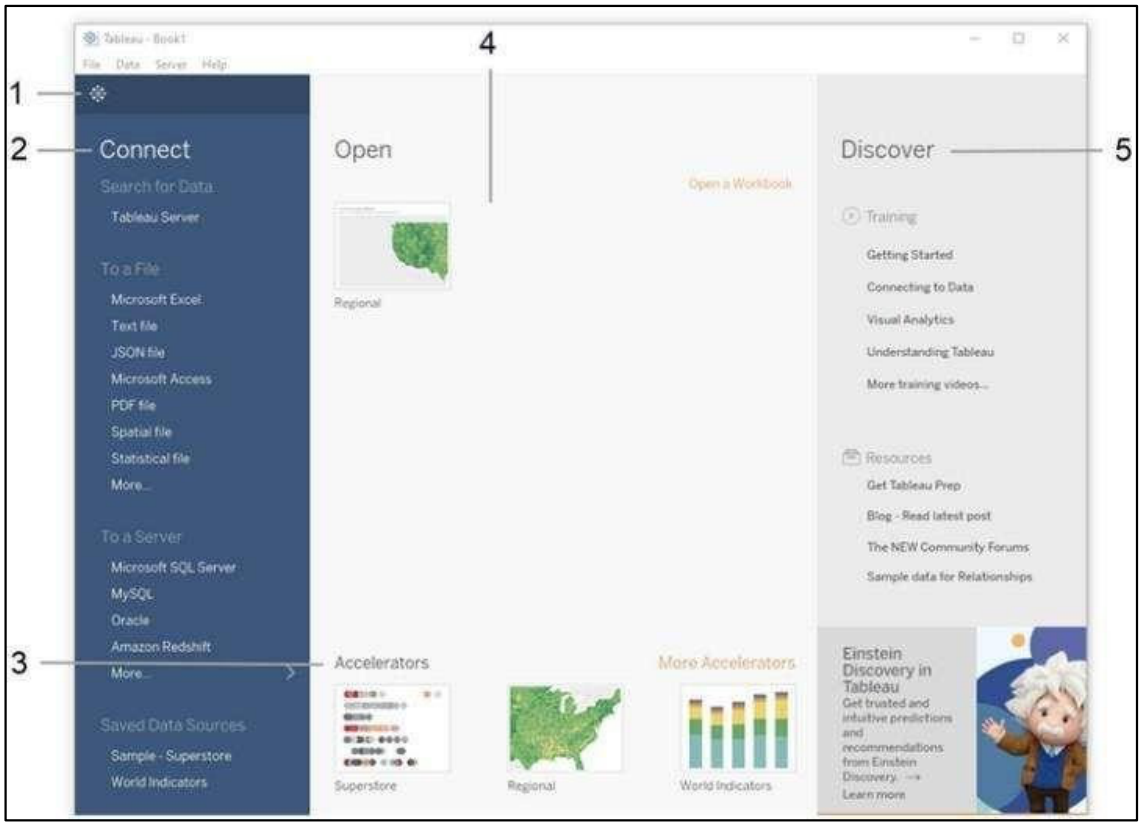
Step 4: Create Calculated Fields

- Click Analysis → Create Calculated Field.
- Enter a formula, e.g., TotalSales = [Quantity] * [UnitPrice].
- Use the calculated field in your visualizations to enhance insights.

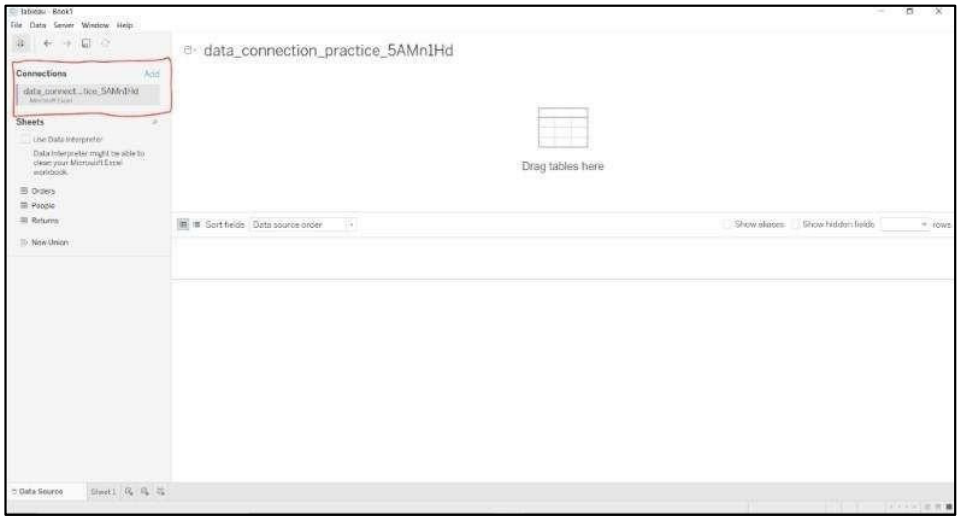
Step 5: Build Dashboards and Stories

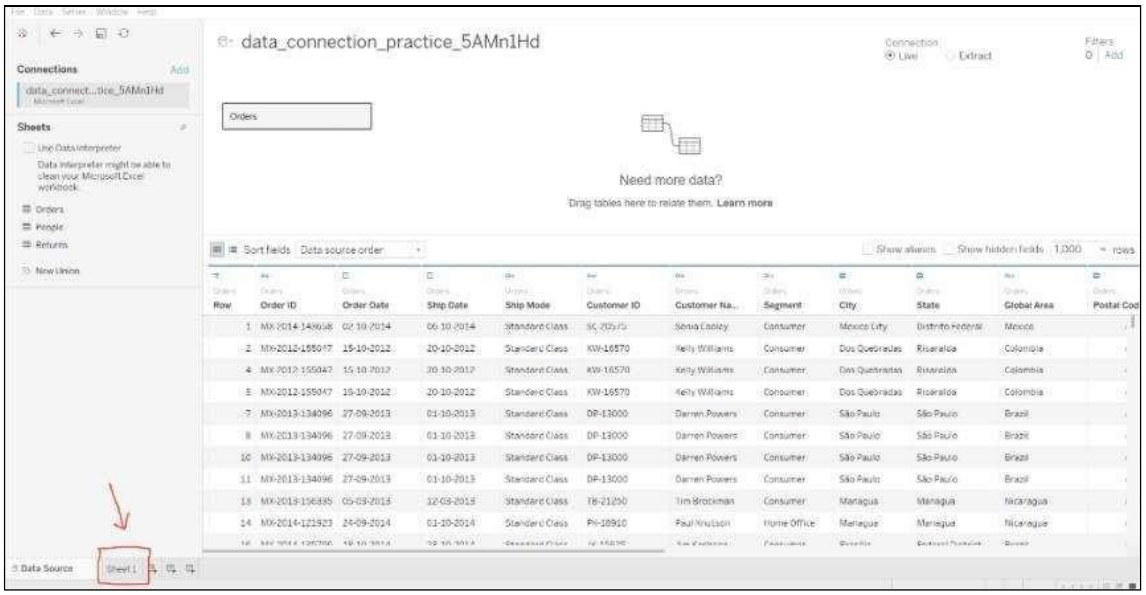
- Click Dashboard → New Dashboard:
- Drag multiple sheets onto the dashboard canvas.
- Add filters, legends, and interactivity.
- Click Story → New Story:
- Combine multiple dashboards and visualizations into a narrative format.
- Add captions and navigation points.
- Customize layout, formatting, and interactivity for clarity.
- Save the workbook: File → Save As.

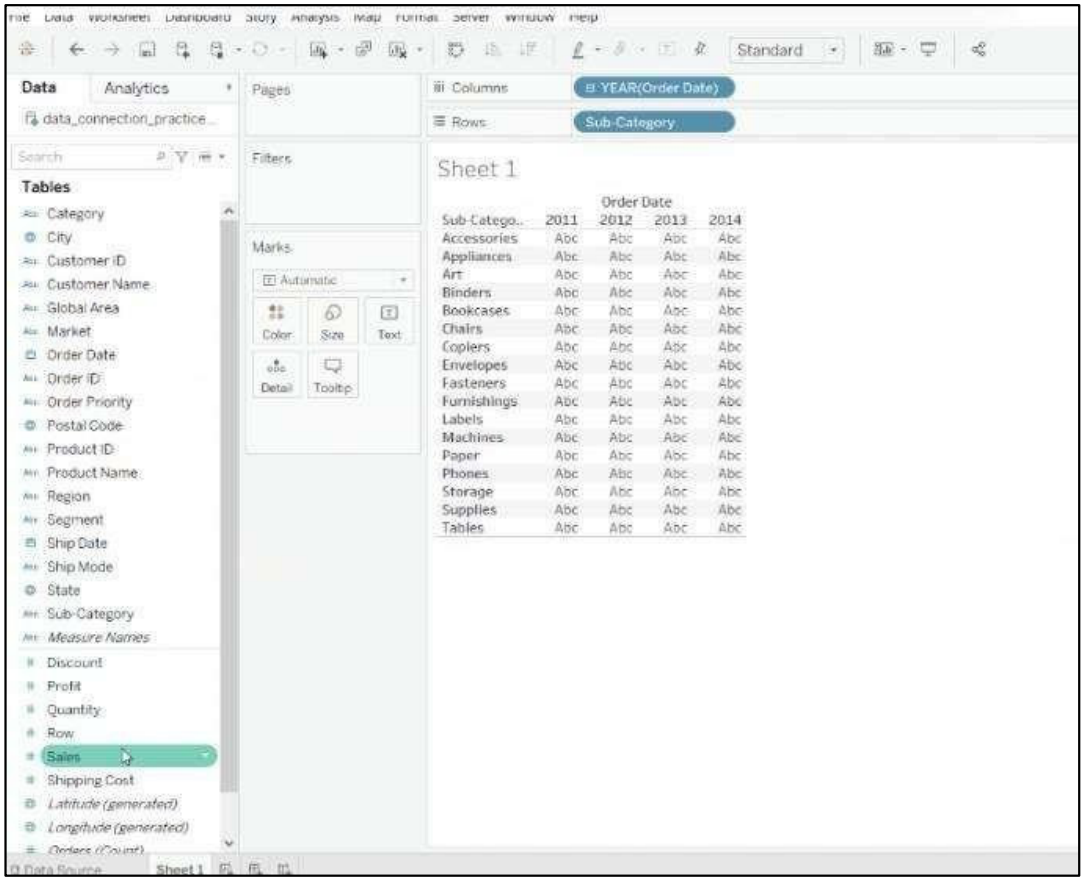
7.1 Introduction to Tableau and its interface

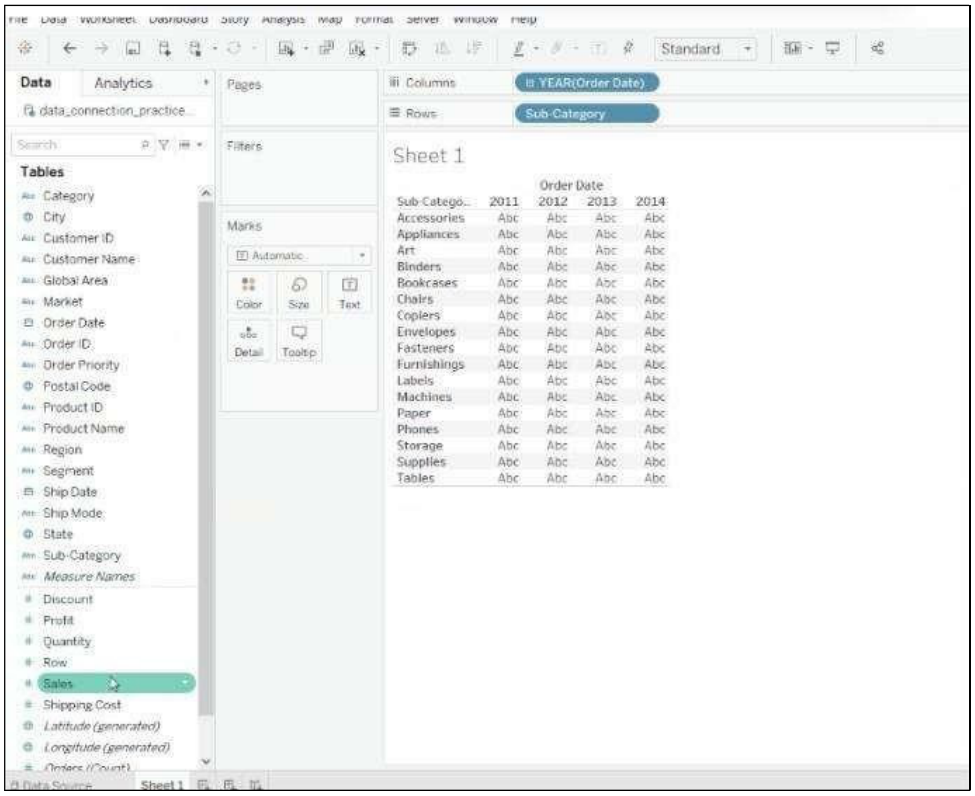


Connecting to various data sources (Excel, CSV, SQL databases)

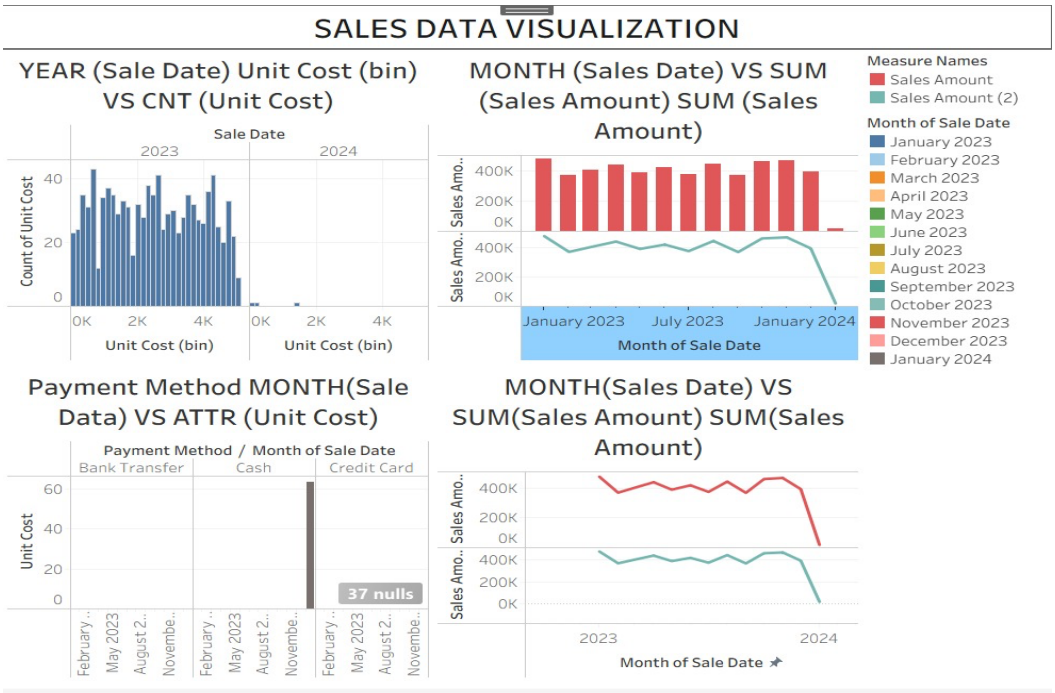



data_connection_practice_5AMn1Hd
Connections
Add
Sheets
Orders
People
Returns
New Union
Orders
Need more data?
Drag tables here to relate them. Learn more
Sort fields
Data source order
Show aliases
Show hidden fields
1,000
rows
Row
Order ID
Order Date
Ship Date
Ship Mode
Customer ID
Customer Na...
Segment
City
State
Global Area
Data Source
Sheet 1


Data
Analytics
data_connection_practice...
Search
Tables
Category
City
Customer ID
Customer Name
Global Area
Market
Order Date
Order ID
Order Priority
Postal Code
Product ID
Product Name
Region
Segment
Ship Date
Ship Mode
State
Sub-Category
Measure Names
Discount
Profit
Quantity
Row
Sales
Shipping Cost
Latitude (generated)
Longitude (generated)
Pages
Filters
Marks
Automatic
Color
Size
Text
Detail
Tooltip
Columns
YEAR(Order Date)
Rows
Sub-Category
Standard
Sheet 1
Order Date
Sub-Catego..
2011
2012
2013
2014
Accessories
Appliances
Art
Binders
Bookcases
Chairs
Copiers
Envelopes
Fasteners
Furnishings
Labels
Machines
Paper
Phones
Storage
Supplies
Tables
Abc
Data Source
Sheet 1


Data
Analytics
data_connection_practice...
Tables
Category
City
Customer ID
Customer Name
Global Area
Market
Order Date
Order ID
Order Priority
Postal Code
Product ID
Product Name
Region
Segment
Ship Date
Ship Mode
State
Sub-Category
Measure Names
Discount
Profit
Quantity
Row
Sales
Shipping Cost
Latitude (generated)
Longitude (generated)
Pages
Filters
Marks
Automatic
Color
Size
Text
Detail
Tooltip
Columns
YEAR(Order Date)
Rows
Sub-Category
Standard
Sheet 1
Order Date
Sub-Catego..
2011
2012
2013
2014
Accessories
Appliances
Art
Binders
Bookcases
Chairs
Copiers
Envelopes
Fasteners
Furnishings
Labels
Machines
Paper
Phones
Storage
Supplies
Tables
Abc
Data Source
Sheet 1

Output:



Result:

This experiment introduced Tableau's interface and workflow, including connecting to data sources, creating visualizations, using calculated fields, and building dashboards and stories. Tableau simplifies data exploration and helps communicate insights effectively.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.