University Institute of Engineering

Department of Computer Science & Engineering

Experiment:1

Date of Experiment: 22-07-2025

1. Aim of the practical: To demonstrate the Tableau interface and connect Tableau to various data sources including Excel, CSV, and SQL Server.

2.Objective: To explore the functionality of Tableau by importing data from Excel, CSV, and SQL Server and to understand the structure of Tableau's workspace

3. Tool Used/ Apparatus Required:

- Internet connectivity
- A system with Tableau Desktop or Tableau Public installed
- Sample datasets (SalesData.xlsx, Customers.csv)
- Access credentials to an SQL Server database
- Basic understanding of databases and data formats

4. Theory:

Tableau is a powerful data visualization and business intelligence tool used to analyze and represent data in an interactive and user-friendly manner. It allows users to connect to a wide variety of data sources and create dashboards, charts, and reports with minimal technical knowledge.

In this experiment, we explore the Tableau interface and demonstrate how to connect Tableau to different data sources such as Excel, CSV files, and SQL Server databases.

Tableau Interface: The interface consists of key components such as the data pane, workspace, shelves (Rows, Columns, Filters), and dashboards. These elements enable users to drag and drop fields to generate visualizations.

Connecting to Excel and CSV: Tableau allows direct connections to structured file formats like Excel and CSV. Users can simply upload the file, preview the data, and start building visualizations.

Connecting to SQL Server: Tableau supports live and extract connections to SQL databases. By providing server details, database name, and credentials, users can connect to SQL Server and import data using queries or table selection.

5. Procedure:

Installation of Tableau:

1. Go to the https://www.tableau.com/
2. Then go to the product and click on 'Tableau Desktop'.
3. Click on Start Free Trial, login using Student login id and click on download free trial.

4. Open the downloaded file and click on install.
5. Now the Tableau Desktop is installed

Explore the functionality of Tableau:

1. First open the Tableau Software using your Email Id for the Free Trial Period.
2. Download a Dataset from your preferable site (here: Kaggle).
3. Upload your csv file in Tableau Software.
4. Go to Connect → Click on More → Select your downloaded CSV File.
5. Insert the File.
6. Click on Sheet.
7. Now drag and drop the filters and selectors to visualize the data.
8. Now classify the data as continuous and discrete data sets.
9. Change the visualisation styles from the right-side panel from the variety of visuals available.
10. Now crate a dashboard for the current sheet you worked on.
11. Make changes on the sheet and you will see changes on the Dashboard as well.
12. Take screenshots as wherever necessary.

6. Result:

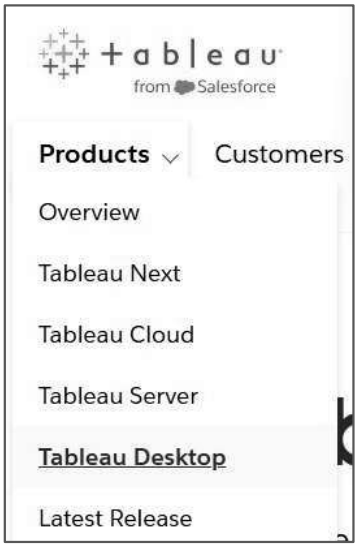

Figure 1.1: Selecting Tableau Desktop

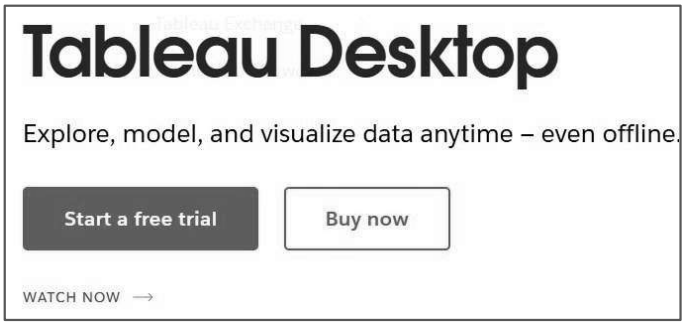

Figure 1.2: Starting Free trial

Figure 1.3: Creating Account

Figure 1.4: Installing Tableau Desktop

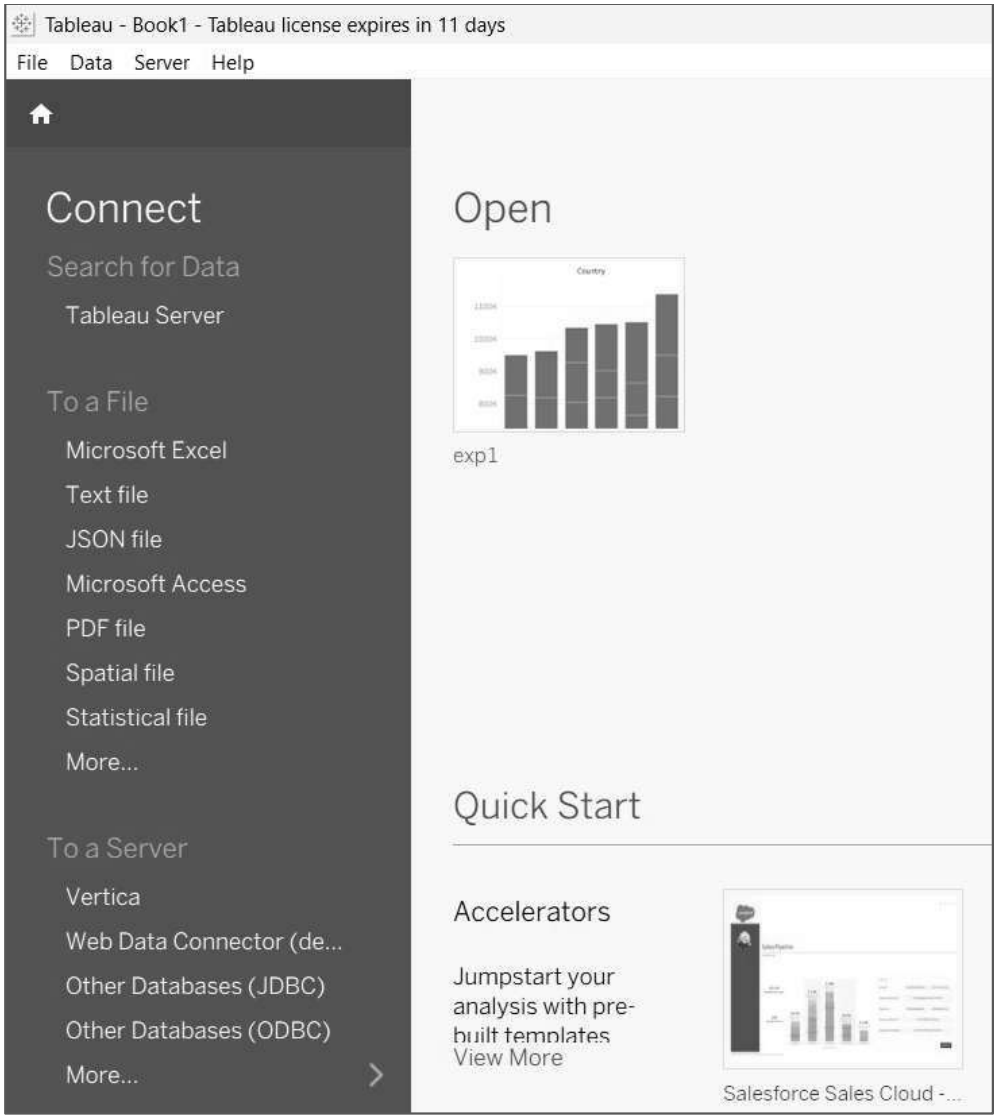

Figure 1.5: Tableau Interface

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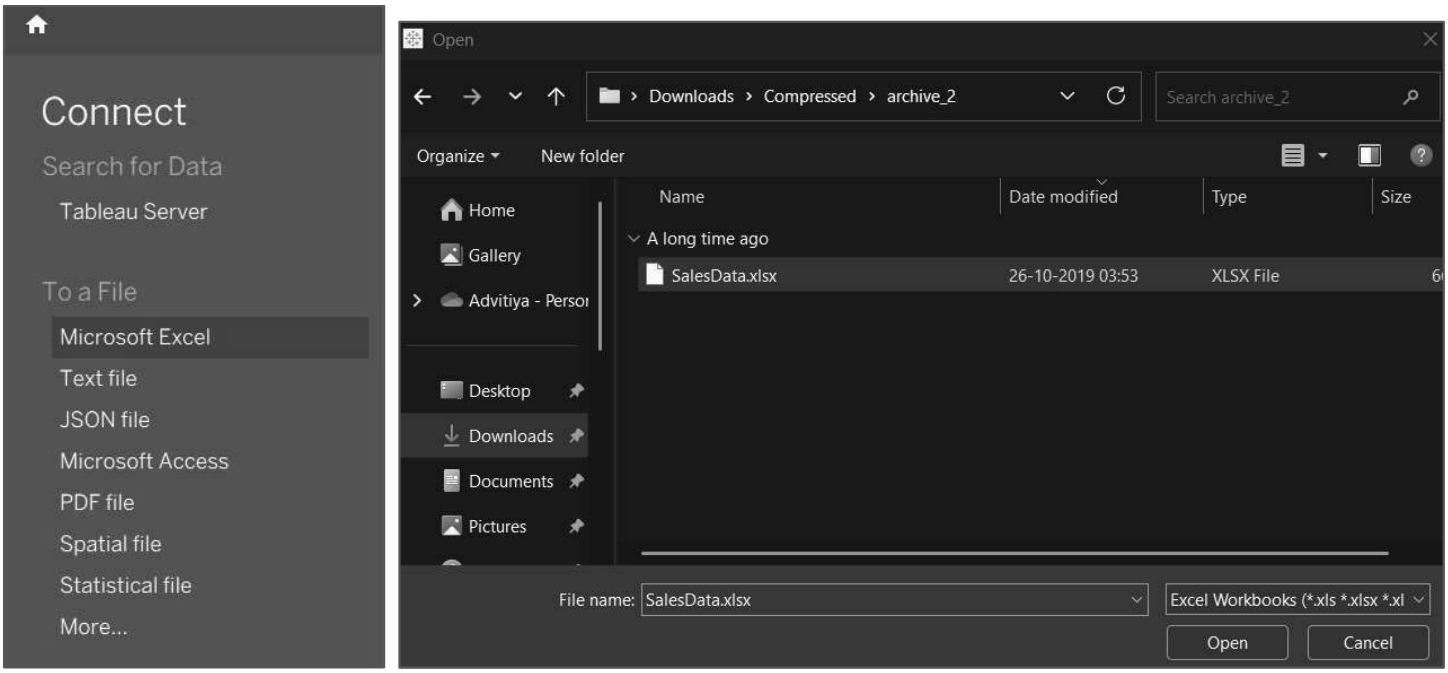

figure 1.6: Importing Excel(xlsx) file

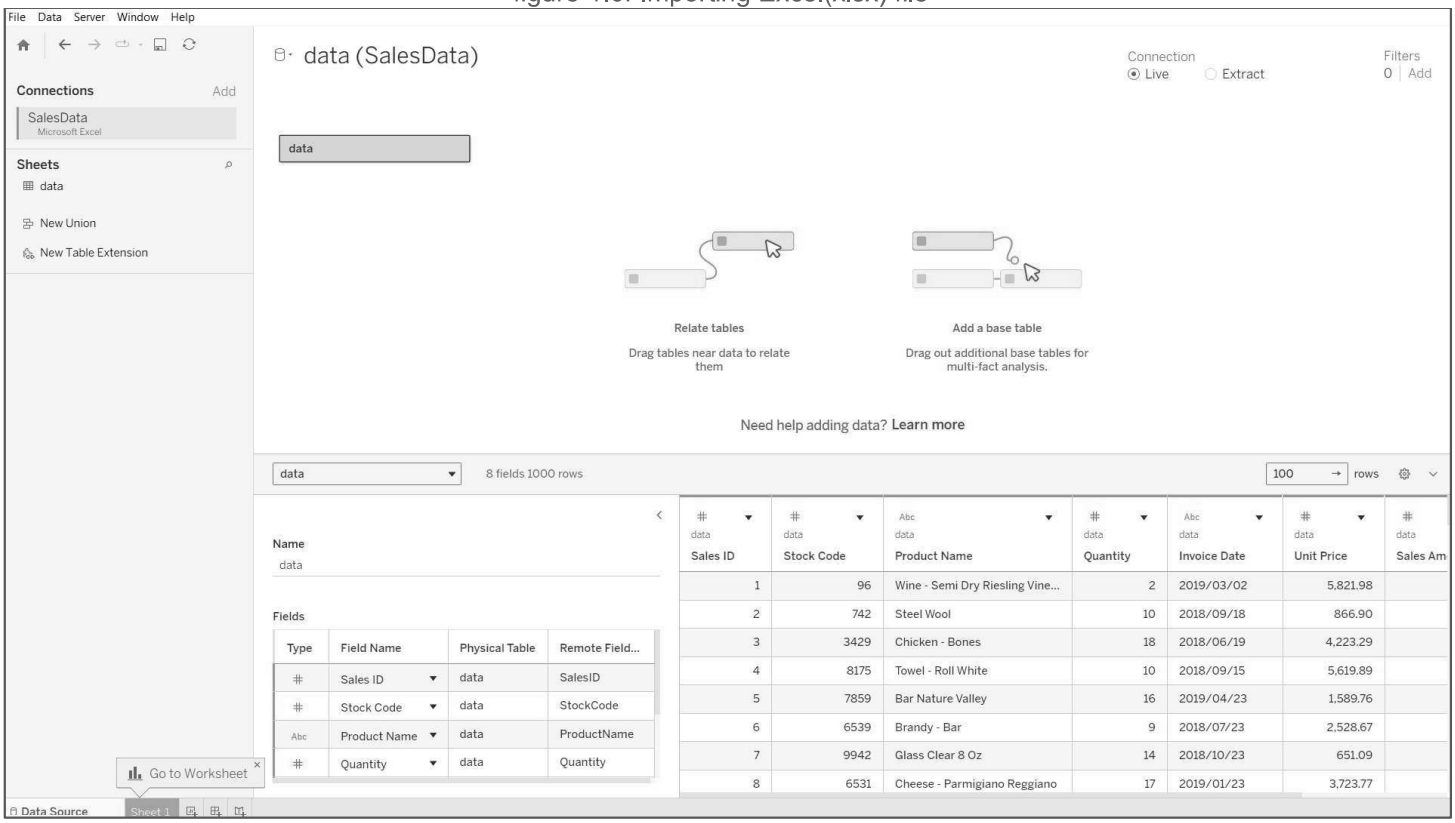

figure 1.7: Excel file uploaded

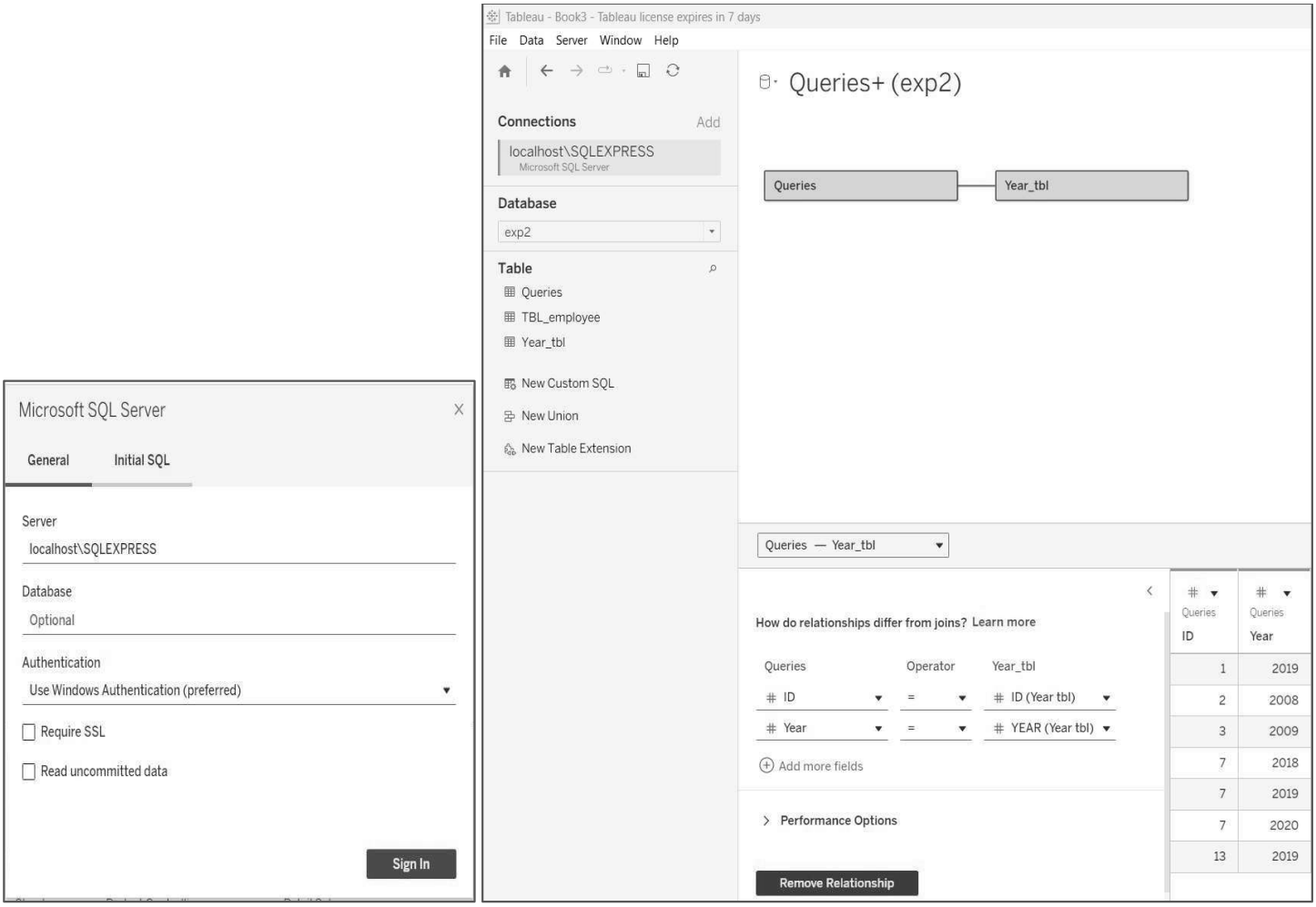

figure 1.12: importing SQL Server table

Conclusion:

In this experiment, we explored Tableau's interface and learned how to connect it to various data sources, focusing on CSV files. After importing a dataset from Kaggle, we used Tableau's drag-and-drop features to create visualizations by selecting fields, applying filters, and customizing displays.

We classified variables as continuous or discrete to choose suitable chart types, including bar charts, line graphs, pie charts, and maps. These visualizations helped reveal patterns and insights in the data.

We also built an interactive dashboard by combining multiple sheets, demonstrating Tableau's dynamic and real-time data visualization capabilities.

Overall, the experiment highlighted how Tableau simplifies data analysis and enables quick, intuitive insight generation through visual analytics.

Learning outcomes (What I have learnt):

1. Gained familiarity with Tableau's workspace, including data pane, shelves, filters, visualization area, and dashboard layout.
2. Learned how to connect Tableau to different types of data sources such as CSV files, Excel spreadsheets, and potentially SQL Server.
3. Understood the difference between continuous and discrete data types and how to represent them using suitable charts and graphs.
4. Developed the ability to design and build interactive dashboards by combining multiple visual elements, enhancing data storytelling.
5. Observed how modifications in individual sheets dynamically update the dashboard, reinforcing the value of real-time data interaction and visualization.

Evaluation Grid:

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.	Student Performance (Conduct of experiment)		12
2.	Viva Voce		10
3.	Submission of Work Sheet (Record)		8
	Signature of Faculty (with Date):	Total Marks Obtained:	30