

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.



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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:

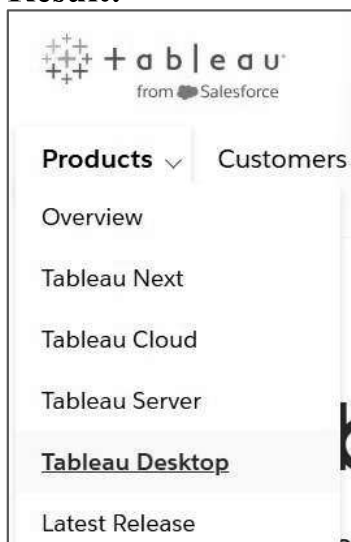


Figure 1.1: Selecting Tableau Desktop

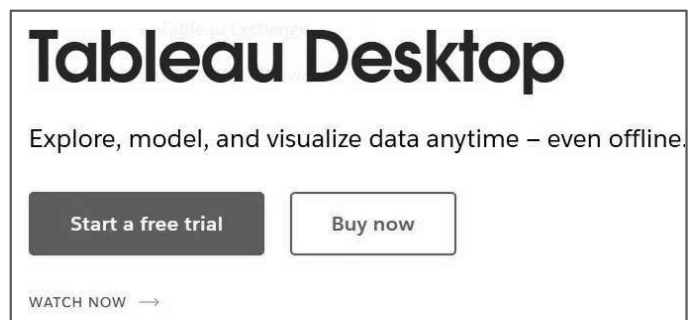


Figure 1.2: Starting Free trial



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Almost there!

Complete the form to start your free trial. Our team will be in touch to help you make the most of your trial.

First Name

Advitiya

Last Name

Sharma

Business E-mail

23bit70015@cuchd.in

Country/Region

India

Phone

+91 92976 00021

☒ I agree to the [Main Services Agreement](#).

We value your privacy. To learn more, visit our [Privacy Statement](#).

Download free trial

Figure 1.3: Creating Account

Tableau 2025.2 (20252.25.0710.1712) Setup

Tableau Desktop

Welcome to Tableau

Before you install the product, you must read and accept the license agreement.
Tableau 2025.2.1 [license terms](#).

☒ I have read and accept the terms of the license agreement.

To help improve our product, Tableau collects information about your feature usage. All usage data is handled according to our [Privacy Policy](#).

Select the check box to opt out. [Learn more](#)

☒ Don't send product usage data.

+ a b l e a u
from Salesforce

Customize

Install

Figure 1.4: Installing Tableau Desktop

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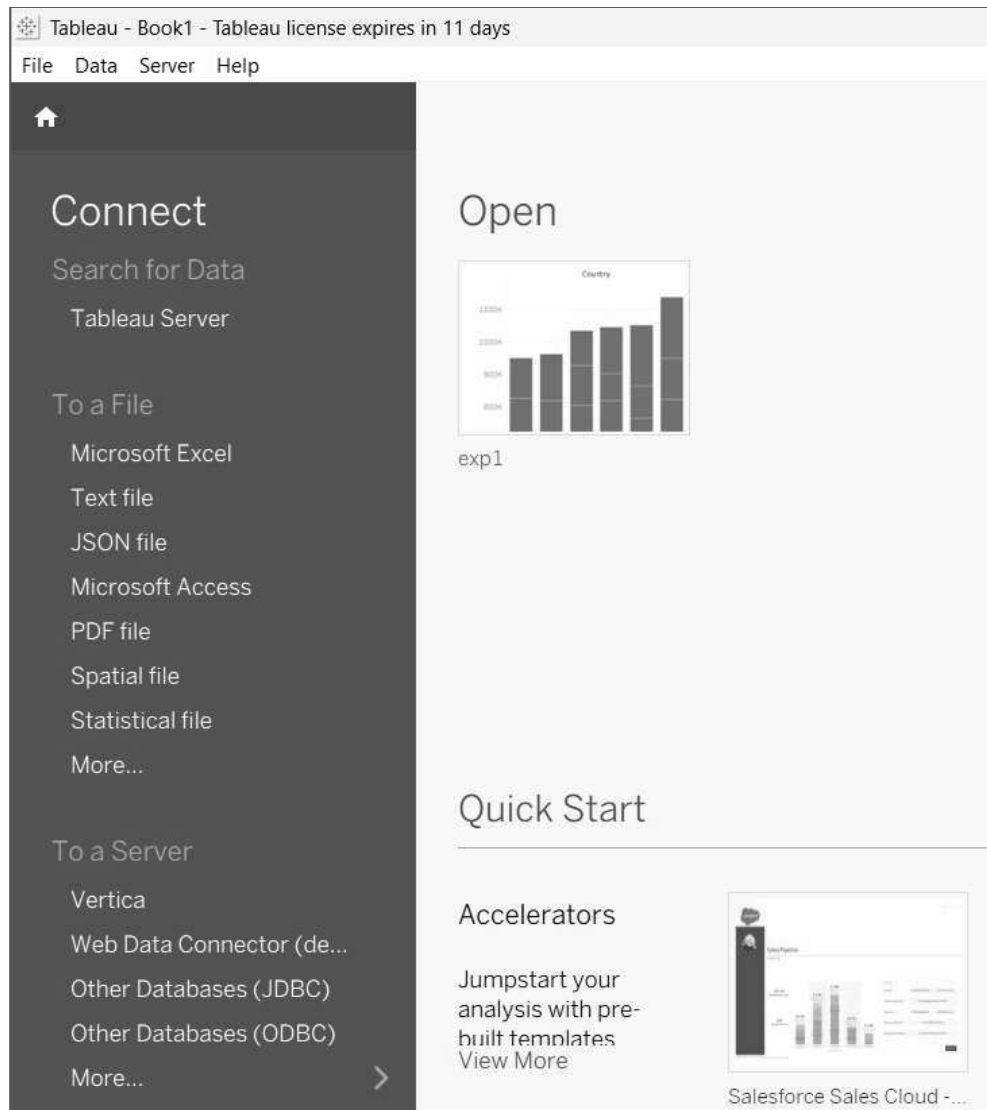


Figure 1.5: Tableau Interface



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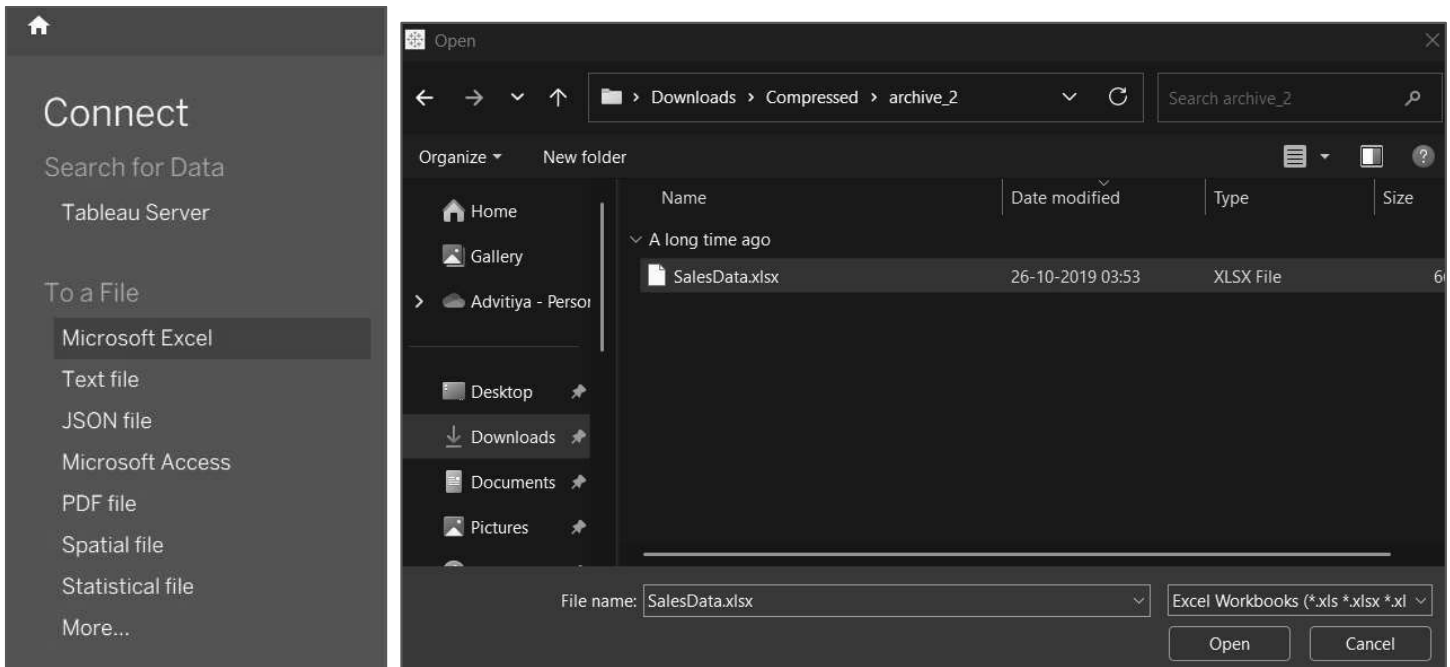


figure 1.6: Importing Excel(xlsx) file

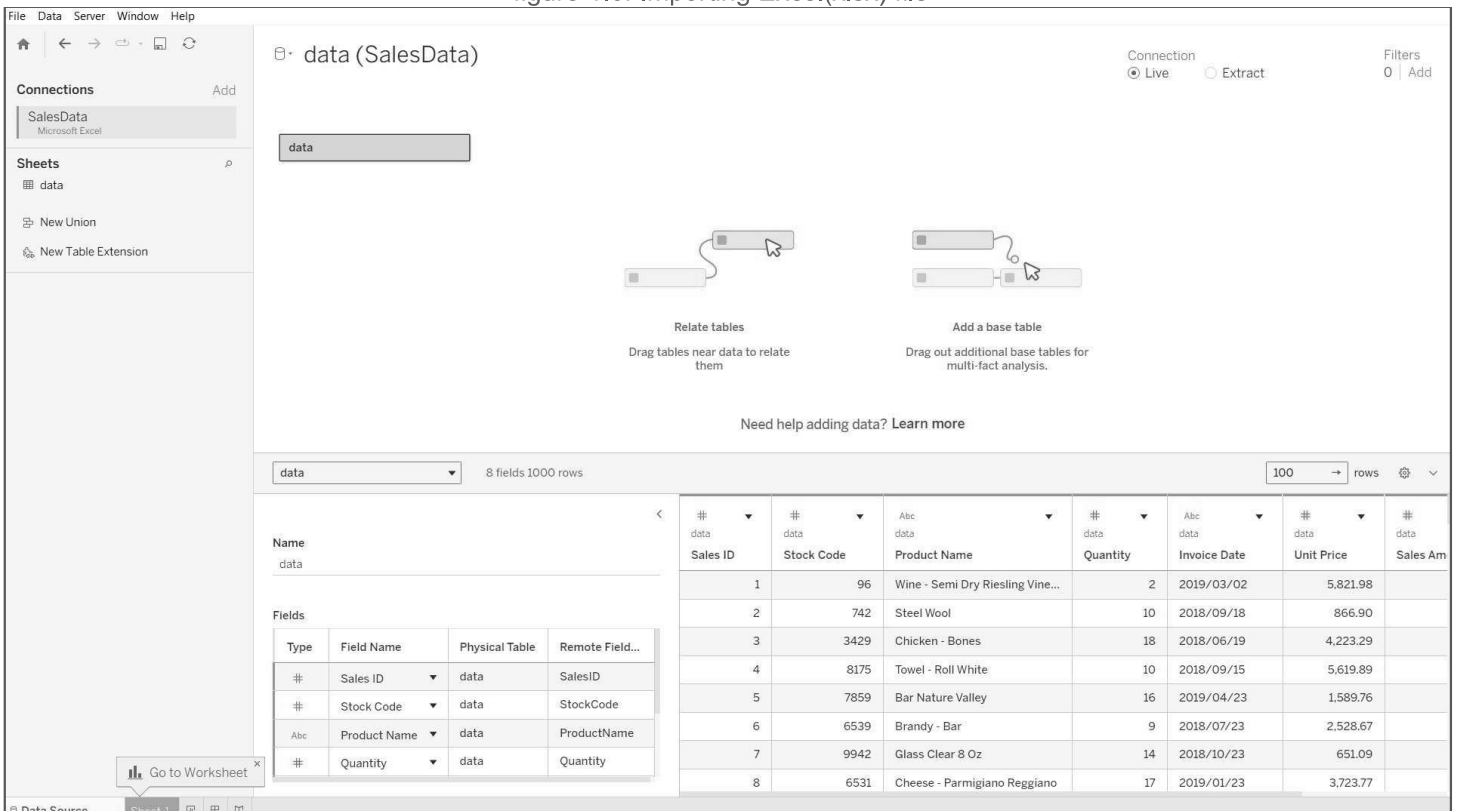


figure 1.7: Excel file uploaded



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Microsoft SQL Server

General

Initial SQL

Server

localhost\SQLEXPRESS

Database

Optional

Authentication

Use Windows Authentication (preferred)

☐ Require SSL

☐ Read uncommitted data

Sign In

Tableau - Book3 - Tableau license expires in 7 days

FileDataServerWindowHelp

Connections

Add

localhost\SQLEXPRESS

Microsoft SQL Server

Database

exp2

Table

Queries

TBL_employee

Year_tbl

New Custom SQL

New Union

New Table Extension

Queries+ (exp2)

Queries

Year_tbl

Queries — Year_tbl

How do relationships differ from joins? Learn more

Queries

Operator

Year_tbl

ID

=

ID (Year tbl)

Year

=

YEAR (Year tbl)

Add more fields

Performance Options

Remove Relationship

ID

1

2

3

7

7

7

13

Queries

Year

2019

2008

2009

2018

2019

2020

2019

figure 1.12: importing SQL Server table



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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 |