Experiment-6

Date: 7

AIM

a) Create a first visualization with tableau software for data file formats

b) Create basic charts (line, barcharts, treemaps) using the show me panel

PROCEDURE

Step-1: Study about basics of data visualization

Step-2: Study about prerequisites of data visualization

Step-3: Study about different visualization charts for data visualization

Step-4: read the required data into tableau using source connection in Tableau

Step-5: Study different visualization charts available in Tableau on the data

Step-6: Study about overview of Tableau

Step-7: To open the application, click the Tableau icon on your desktop (or in your Start menu).

Step-8: In the Connect panel at the left side of the Start page, click the Excel link under the "To a File" heading to the open file selection option.

Step-9: Using the file selection box, select the Excel worksheet that you want to open, and then click the Open button to continue

Step-10: Drag the dimension and measure in row and column input field and it will Automatically suggest a graph best fitted on data.

Step-11: You can change the graph by clicking on the show me button and select whichever graph you want.

SOURCE CODE

Data Visualisation

→ It is the representation of data through use of common graphics such as charts, plots, infographic and even animations.

→ DV transforms complex datasets into easy to understand visual formats like charts and graphs, making it a core component of data exploration, where its purpose is to reveal patterns, trends, outliers, and relationships that are hard to see in raw data.

Data Visualisation in Data Exploration:

→ we can identify pattern and correlations.
→ we can detect outliers.
→ we can understand the data.
→ we can clean the data.
→ hypothesis generation can be done

Tableau

→ It is an easy to use business intelligence software
→ It makes dv, data analytics and reporting as easy as dragging and dropping.
→ Anyone can learn to use tableau without having a prior programming experience.
→ Tableau can combine data from various data sources such as spreadsheets, databases, cloud data and even big data, all into 1 program to perform dynamic analysis.

Why tableau ?

-> No Programming skills required.
-> time saving.
-> combines different types of db spreadsheets, dbs, cloud data & even big data such as Hadoop.
-> query is done behind the scene.
-> different types of db's can be combined easily.
-> Interactive dashboard is easy to build & it makes dv quick & efficient.

Tableau Products:

1. Tableau cloud: Fully hosted, cloud based analytics platform to connect data & analyze it with powerful visual analytics.
2. Tableau server: A self hosted analytics platform.
3. Tableau next: An open analytics platform that combines AI, trusted data modular architecture for direct welfare to turn insights into actions faster.
4. Tableau desktop: A governed, flexible environment to explore, model & visualize data.

Tableau Architecture

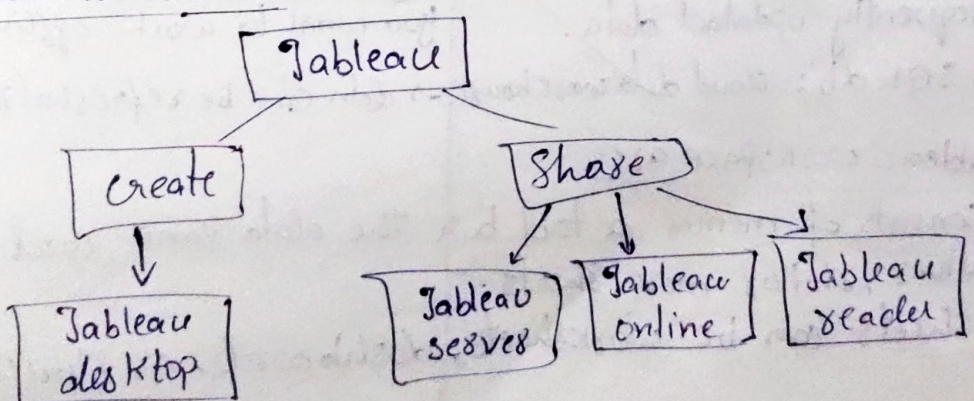


Tableau - System architecture & data flow

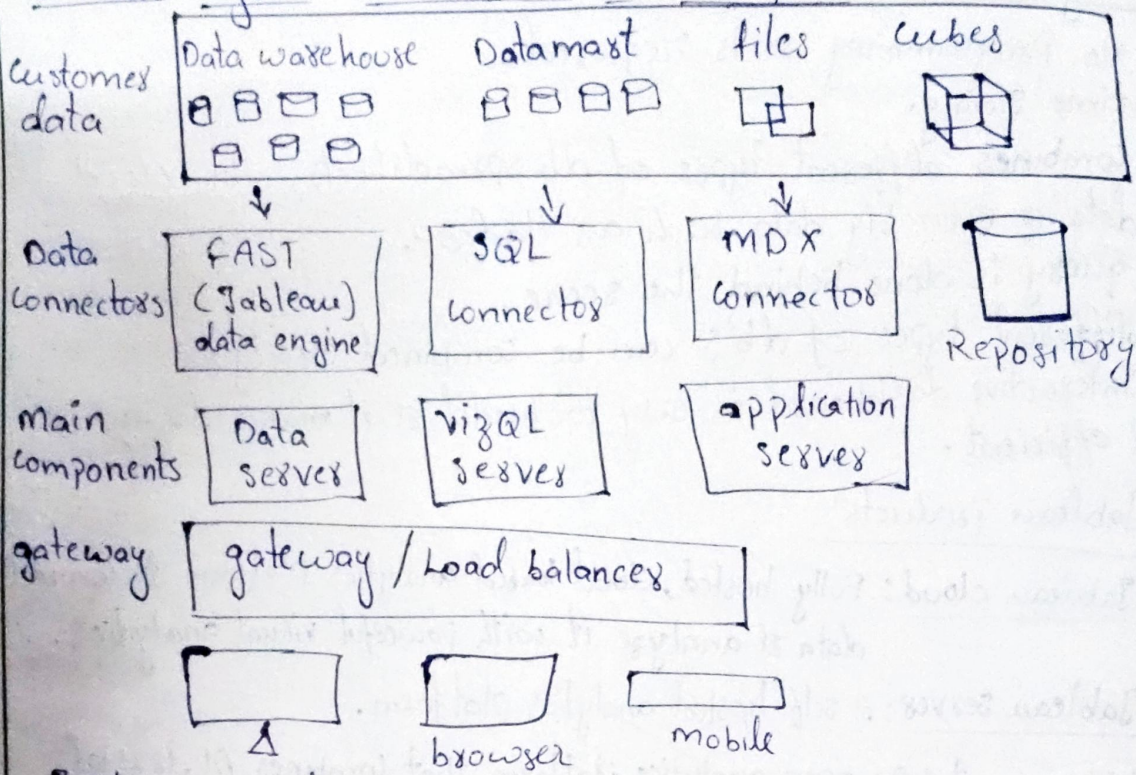


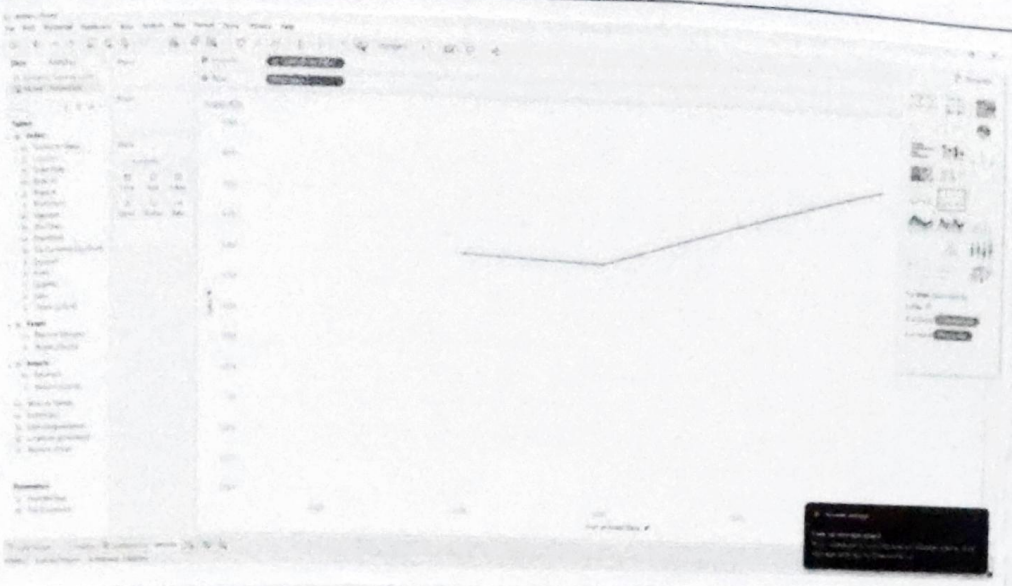
Tableau connections

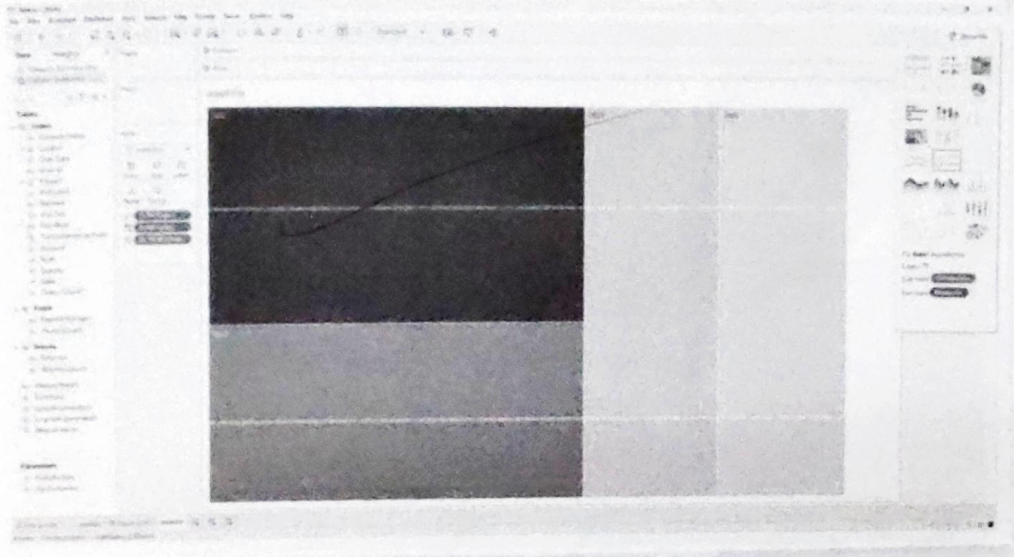
1. Live
-> connects directly to data source.
-> Everytime when we interact with a visualisation, tableau queries the live database.
-> suitable for real time or frequently updated data.
Ex: SQL db's cloud data warehouse

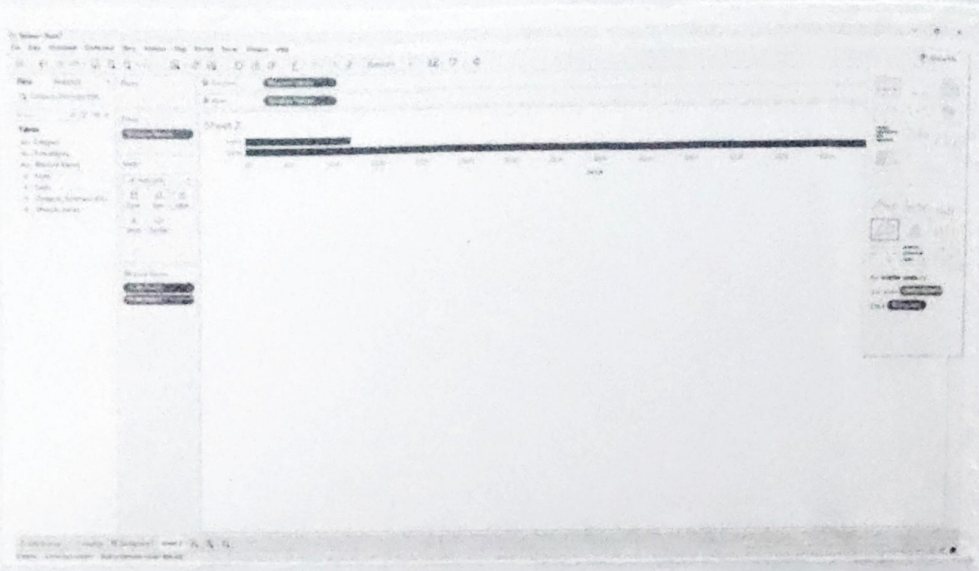
2. Extract
-> extracts a snapshot of data & it in proprietory .hyper form.
-> Fast performance bcoz tableau reads from its own optimized data engine.
-> good for large datasets or when you want to work offline.
-> data can be refreshed periodically

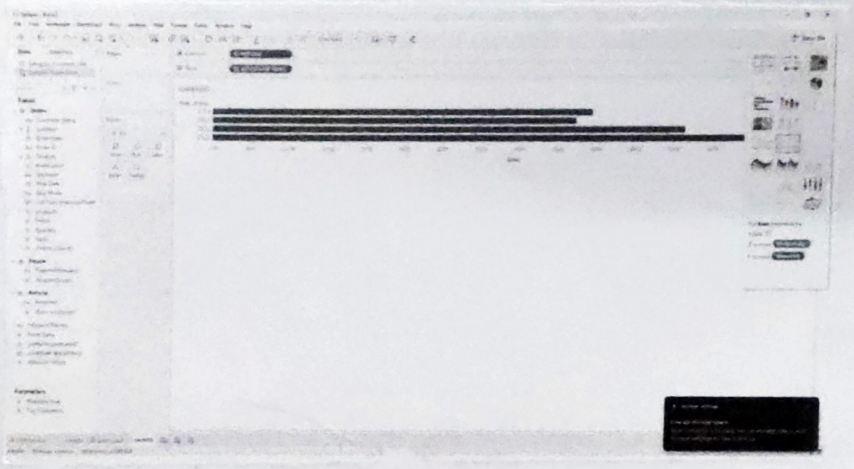
Tableau workspace area

-> consists of menus, a tool bar, the data pane, card and shelves, & 1 or more sheets.
-> sheets can be worksheets, dashboards, or stories.









VIVA QUESTIONS

1. What is data visualization?

Ans. It is the graphical representation of data using charts, graphs & dashboards to understand patterns & insights easily.

2. What are measures and dimensions?

Ans. Measures are numerical fields used for calculations (Sales, Profit) dimentions are categorial fields.

3. Why is data visualization necessary?

Ans. It helps in understanding complex data quickly, identifying trends and making data driven decisions.

4. What is Tableau?

Ans. It is a powerful data visualisation tool used to create interactive & shareable dashboards.

5. What are the different data connection options available in Tableau?

Ans. Excel, CSV, SQL, Oracle, MySQL, Google sheets & cloud platforms like AWS, Snowflake.

6. What are the different types of charts available in Tableau?

Ans. Bar chart, line chart, pie chart, map, scatter plot, Tree map, bubble chart & heat map.

15/9/25