SHRI RAMDEOBABA COLLEGE OF ENGINEERING AND MANAGEMENT

KATOL ROAD, NAGPUR - 440 013

Date: _____

Name _____

Year/Sem._____ Branch _____Roll No. _____

Subject _____

Certificate

This is to certify that Mr./Ms._____

_____has completed the term work

in_____ Semester in_____

practical during the academic session_____

His/Her work has been satisfactory.

Signature of

Head of Dept.   Signature of Teacher

DHV EXPERIMENT - 03

Name: Devesh Ashish Vyas.

Roll no: 66 Batch-D4.

Date:- 19/06/23.

1) Problem Statement:

Use Power BI and perform ETL process. Create a dashboard on the curated dataset.

2) Aim:

Use Power BI and perform ETL process. Create a dashboard on the curated dataset. Dataset to use - Use Power Query and apply appropriate cleaning steps, (link to webpage: https://en.wikipedia.org/wiki/2020_Summer_Olympics_medal_table) Table Name on webpage:
"2020 Summer Olympics medal table".

3) Solution:

- Open Power BI Desktop and select "Get Data" from the Home tab.
- Choose "Web" as the data source and enter the URL:
  https://en.wikipedia.org/wiki/2020_Summer_Olympics_medal_table.
- Select the table named "2020 Summer Olympics medal table" and click "Edit" to open Power Query Editor.
- Clean the data by removing unnecessary columns, handling missing values, and changing data types.
- Click "Close & Apply" to load the transformed data into Power BI Desktop.
- Design your dashboard by adding visualizations like tables, charts, and graphs.
- Customize the visualizations, arrange them on the canvas, and add interactivity as needed.
- Save the Power BI file (.pbix) and optionally publish it to the Power BI service for sharing.
- Remember to refresh the data regularly to keep the dashboard up to date.
- These are the steps which we have performed in the current assignment.

4) Attachment of Screenshot of the task:
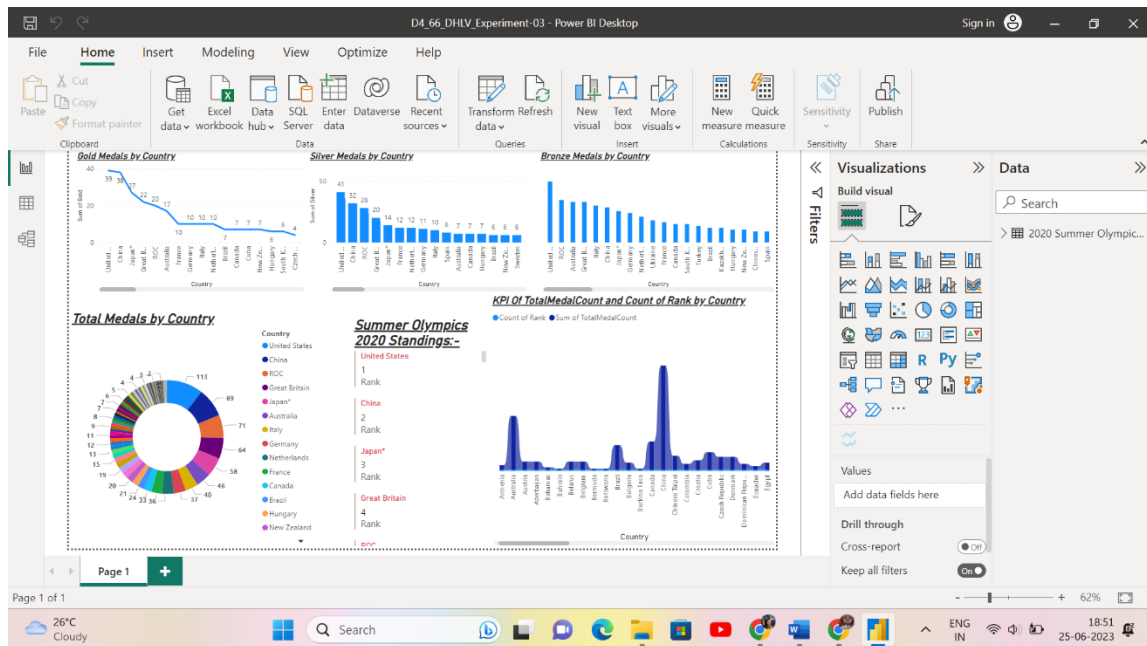
5) Conclusion:

Hence we understood how to perform ETL process in Power BI and to provide a curated dashboard with proper representation of the "2020 Summer Olympics Medal Table".

DHV EXPERIMENT - 04

Name: Devesh Ashish Vyas.

Roll no: 66 Batch-D4.

Date: 19/06/23.

1) Problem Statement:

Use DAX to create some new calculated measures/columns (KPIs) based on your understanding , you can take online examples or refer online sources that have worked on the same dataset.

2) Aim:

Use Power BI to perform data modelling (Dimensional Data Model) with Data Analysis and Expression (DAX), and create a report and Dashboard based on the dataset provided.

3) Solution:

- Connect to your data source and load the necessary tables into Power BI.
- Define relationships between the tables based on their keys.
- Follow a dimensional data modelling approach with a central fact table and related dimension tables.
- Use DAX expressions to perform data analysis, calculations, and aggregations.
- Design your report by adding visuals, formatting them, and creating interactive features.
- Create a dashboard by pinning visuals from the report and arranging them on the canvas.
- Apply filters and cross-filtering for interactivity.
- Save the Power BI file and optionally publish it to the Power BI service.

4) Attachment of Screenshot of the task:
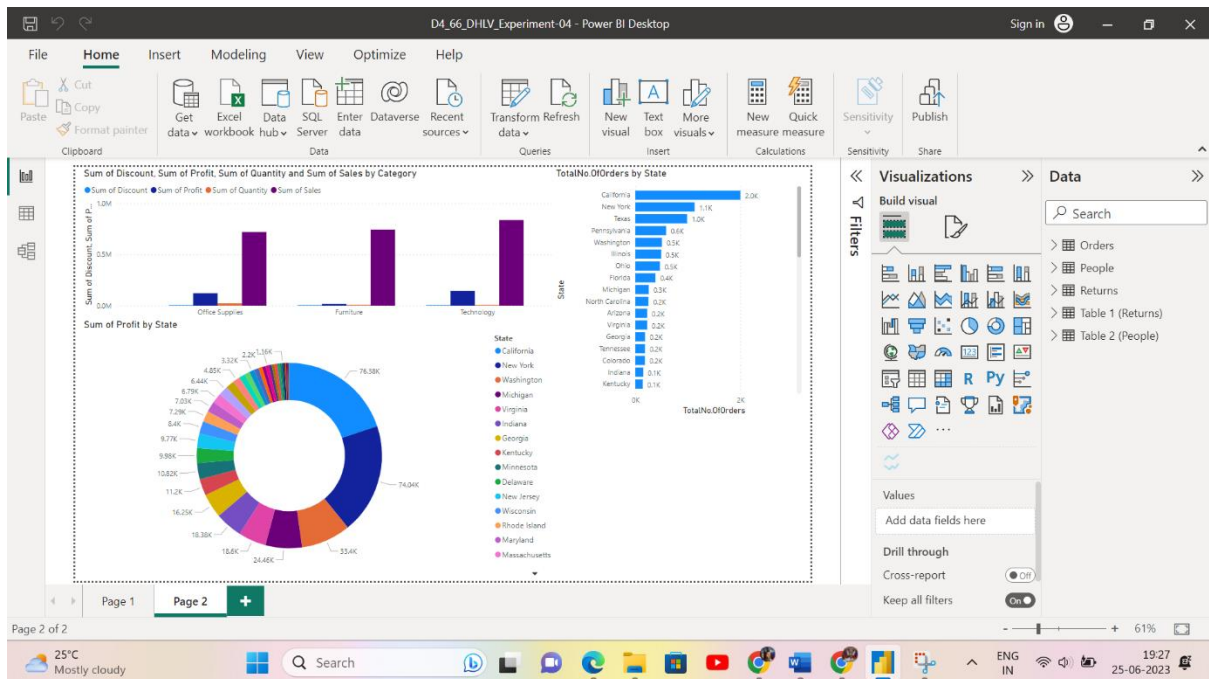
5) Conclusion:

Hence we understood how Use DAX to create some new calculated measures/columns (KPIs) and represent the dashboard in easier format.

DHV EXPERIMENT - 05

Name: Devesh Ashish Vyas.

Roll no: 66 Batch-D4.

Date: 26/06/23.

1) Problem Statement:

Store anyone table among three in Excel and remaining tables in any database

(DBMS)of your choice, and try to gather and merge data from these two data sources (Excel, DBMS).

2) Aim:

Use Sample_Superstore dataset file to simulate

data collection from files and

databases, define relationships between the tables (Orders, People, Returns) and show how

cardinality can be implemented.

3) Solution:

Step1: Using MySql Created schema in the localhost .

Step2: In the created schema , then imported the sample superstore Peoples.csv,

sample superstore Region.csv in the Tables Section in that schema.

Step3: Opened Tableau Desktop, in the connect pane , Selected MySql , then connected with localhost with its port 3306.

Step4: Then usind Add in the connections , added samplesuperstore.csv file for getting Orders table form that file . Dragging the Peoples and Returns table from the connected Schema into the tableau canvas. Also dragging the Orders table from the SampleSuperstore.xlsx file which we added

Step5: Then after dragging the tables and verifying their cardinality , using extract option beside live option and going on sheet1 beside data source , extracted the data into the file (.hyper), which got saved in our tableau repository, file contains the data and the relationship between the tables.

4) Attachment of Screenshot of the task:
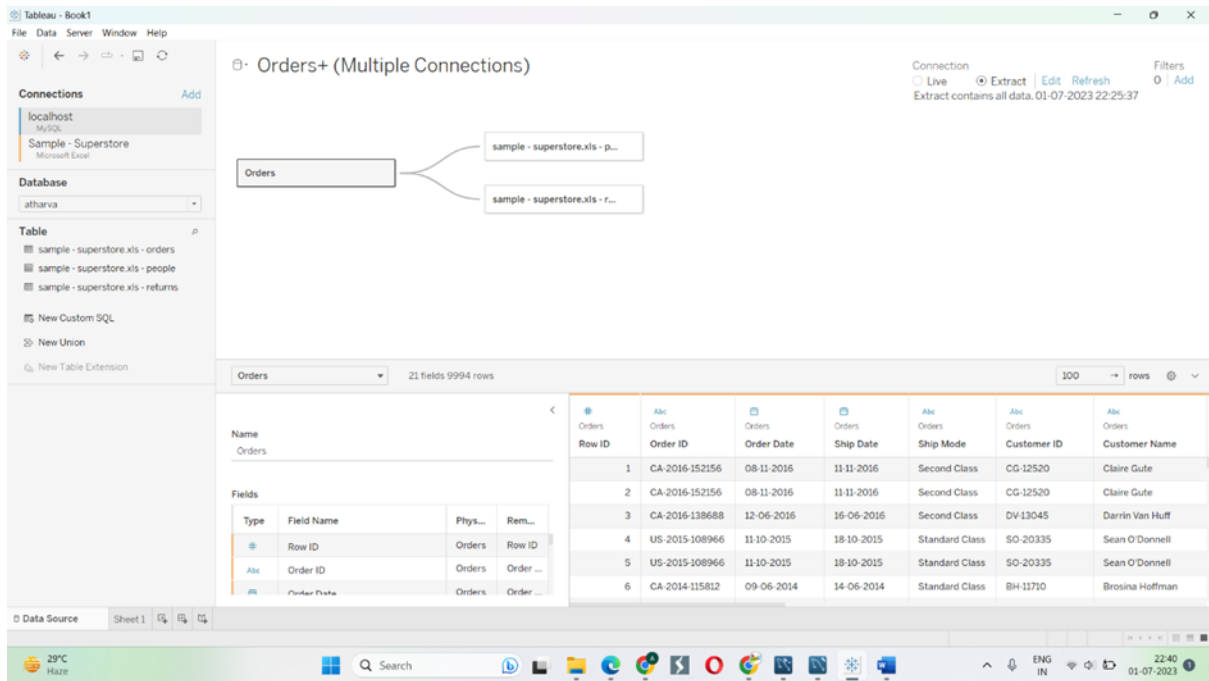
5) Conclusion:

Hence we successfully imported the required tables from MySql Database by creating the schema , and also the Orders table from excel file in the tableau canvas . Also, given the proper cardinality,relationship between the tables and created the final extracted data file (.hyper).

DHV EXPERIMENT - 06

Name: Devesh Ashish Vyas.

Roll no: 66 Batch-D4.

Date: 01/07/23.

1) Problem Statement:

Use Tableau to show how calculated fields are created you can take online examples or refer online sources that have worked on the same dataset.

2) Aim:

Using Tableau and show how calculated fields are

created, show what are Table Calculations in Tableau and how they affect the visuals in

the canvas, create sets and groups and show the differences between them.

3) Solution:

- Calculated fields in Tableau are created using formulas and functions to perform calculations on the data.
- To create a calculated field, right-click on a blank area in the Data pane and select "Create Calculated Field."
- Table calculations in Tableau are computations based on the values in the current view or a specific subset of data.
- Table calculations are applied after data retrieval and can consider dimensions and measures in the visualization.
- Table calculations affect the visual representation on the canvas by creating running totals, percent of total calculations, moving averages, etc.
- Sets in Tableau are custom subsets of data based on specific conditions or criteria.
- Sets can be created manually or using conditions and rules and are useful for comparing subsets of data or highlighting specific elements.
- Groups in Tableau combine related dimension members into higher-level categories.
- Groups are helpful for simplifying visualizations, creating hierarchies, or aggregating data at different levels.
- Sets are dynamic and can change based on conditions or filters, while groups are static and don't change unless explicitly modified.

4) Attachment of Screenshot of the task:
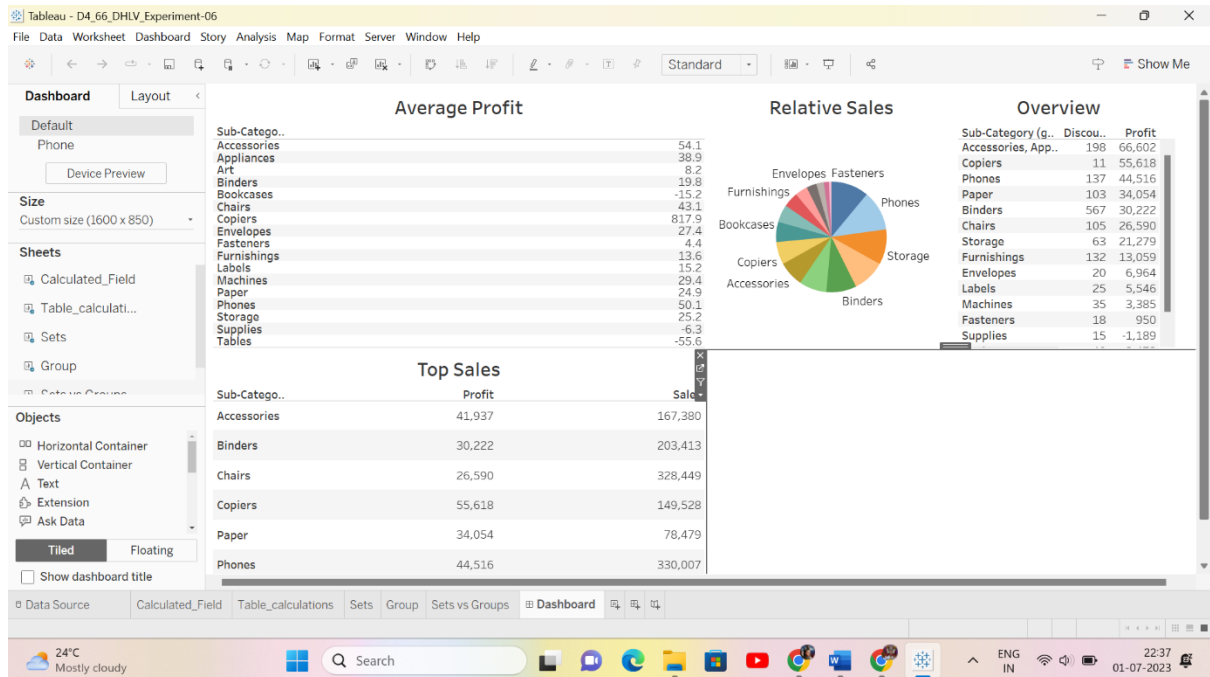
5) Conclusion:

Hence we understood how fields are calculated and we are able to represent the dashboard in easier format.

DHV EXPERIMENT - 07

Name: Devesh Ashish Vyas.

Roll no: 66 Batch-D4.

Date: 06/07/23.

1) Problem Statement:

Use Tableau or Power BI to show how calculated fields are created you can take online examples or refer online sources that have worked on the same dataset.

2) Aim:

You are provided with data for a Hospitality Chain, study the dataset carefully, define relationship, perform necessary tasks to prepare data for visualization, and learn about the KPIs. Create a dashboard showing all the important KPIs.

3) Solution:

- Study and analyze the provided dataset for the Hospitality Chain.
- Identify the connections between variables and datasets within the dataset.
- Clean and format the data, correct errors and ensure consistency.
- Determine the important KPIs aligning with the organization's goals.
- Use the cleaned dataset to calculate the identified KPIs using appropriate formulas.
- Design an interactive dashboard using tools like Tableau, Power BI or Excel to visually represent the KPIs.
- Include all the important KPIs and relevant metrices in the dashboard for easy analysis.
- Continuously update the data and monitor the KPIs to identify trends and make data-driven decisions.

4) Attachment of Screenshot of the task:
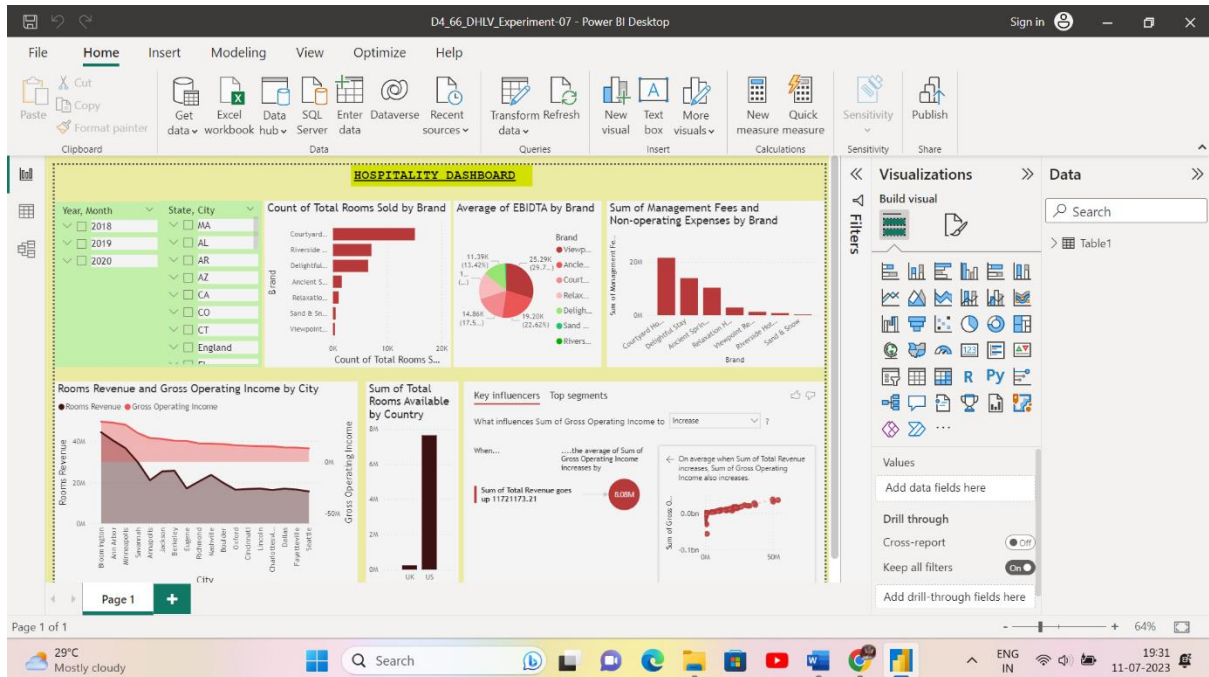
5) Conclusion:

Hence, we understood how fields are calculated and we are able to represent the dashboard in easier format.

DHV EXPERIMENT - 08

Name: Devesh Ashish Vyas.

Roll no: 66 Batch-D4.

Date: 08/07/23.

1) Problem Statement:

Use Tableau to show how calculated fields are created you can take online

examples or refer online sources that have worked on the same dataset.

2) Aim:

Perform US Crime Analysis, use Tableau to construct a dashboard/story for the communication website. Take note of data storytelling.

3) Solution:

- Collect reliable and relevant data on US crime rates.
- Explore the dataset to identify key variables and trends.
- Clean the data to remove duplicate, fix errors and handle missing values.
- Define the objectives of your data story and what insights you want to convey.
- Choose appropriate visualizations in Tableau to showcase the data.
- Create a logical flow and narrative structure for your dashboard or data story.
- Provide context and interpret the data, relating it to broader factors that influence crime rates.
- Use annotations and highlights to draw attention to important findings.
- Make your dashboard interactive by including filters and drill-down options.
- Test and refine your dashboard based on feedback.
- Publish and share your dashboard on a communication website.
- Regularly update your dashboard with the latest data for ongoing monitoring and analysis.

4) Attachment of Screenshot of the task:
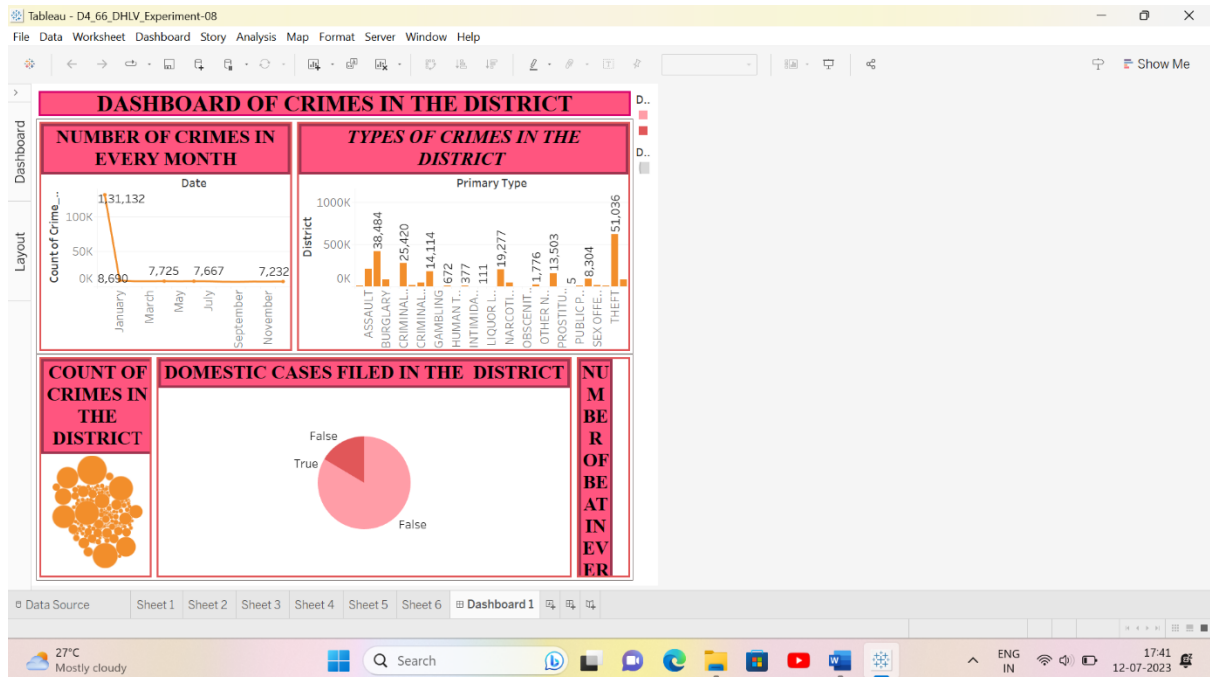
5) Conclusion:

Hence, we understood how fields are calculated and we are able to represent the dashboard in easier format.

DHV EXPERIMENT - 09

Name: Devesh Ashish Vyas.

Roll no: 66 Batch-D4.

Date: 14/07/23.

1) Problem Statement:

Analyse the company's sales data for the fourth quarter across Australia, and state by state and help the company make data-driven decisions for the coming year.

2) Aim:

Analysis of Region(states) based Sales for a company and create a Dashboard highlighting your findings.

3) Solution:

- Collect sales data for the fourth quarter from all branches across Australia, including state-wise sales figures.

- Segregate states based on their revenues to identify top-performing and underperforming states.

- Calculate key performance metrics for each state, such as total sales, average sales per branch, sales growth rate, and customer acquisition rate.

- Analyse factors contributing to high sales in top-performing states, including demographics and customer preferences.

- Identify reasons for underperformance in certain states, such as competition, marketing efforts, and product assortment.

- Formulate tailored sales programs for states with lower revenues, including targeted marketing campaigns and promotional offers.

- Make data-driven investment decisions for the coming year, allocating resources strategically based on performance insights.

- Create a visual dashboard with interactive charts and graphs to present key findings and performance metrics.

- Regularly update the dashboard with real-time or near-real-time data to monitor ongoing performance.

- Provide clear and actionable recommendations aligned with the company's growth and expansion goals.

4) Attachment of Screenshot of the task:
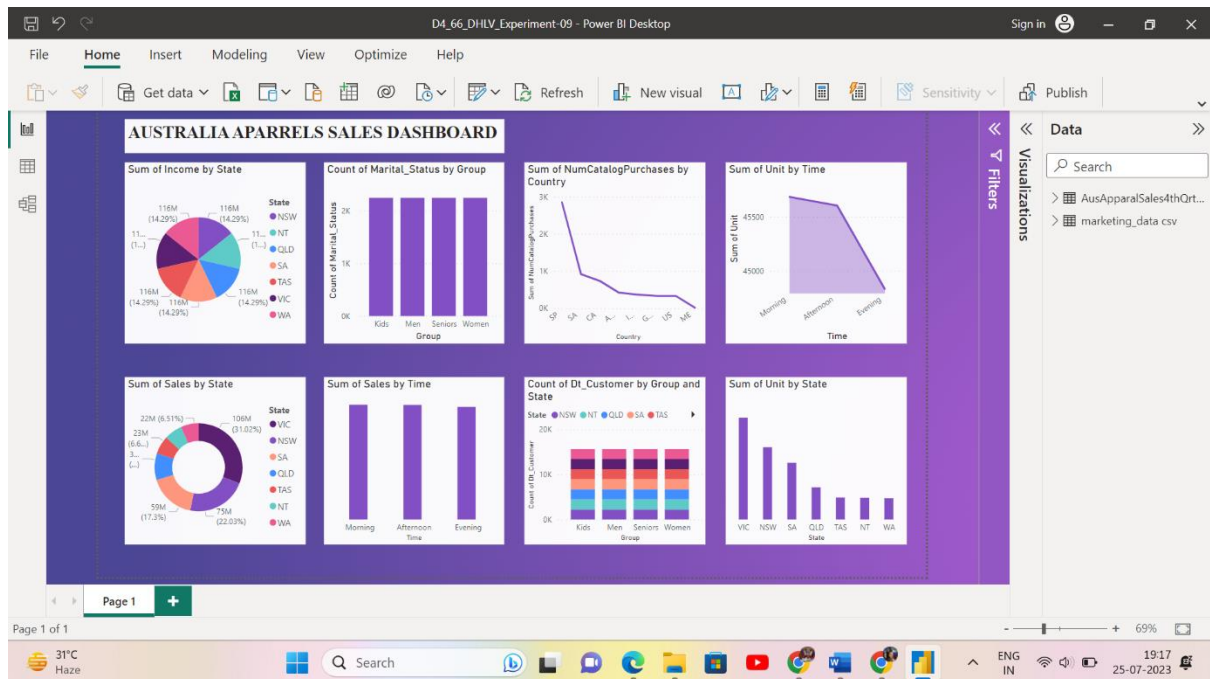
5) Conclusion:

Hence, we understood how fields are calculated and we are able to represent the dashboard in easier format.

DHV EXPERIMENT – 10.

Name: Devesh Ashish Vyas.

Roll no: 66 Batch-D4.

Date: 14/07/23.

1) Problem Statement:

Constructing an interactive Sales Dashboard in Tableau for the Sales department to use for ad-hoc analysis and reporting.

2) Aim:

You are charged as a Tableau developer with constructing an interactive Sales Dashboard in Tableau for the Sales department to use for ad-hoc analysis and reporting.

3) Solution:

- Gather Sales Department's requirements for KPIs and ad-hoc analysis.
- Connect Tableau to relevant data sources for real-time sales data.
- Preprocess and clean the data for visualization.
- Design an intuitive and user-friendly dashboard layout.
- Highlight key KPIs such as total sales, growth rate, and sales by region.
- Incorporate interactive filters for easy data exploration.
- Create various visualizations (bar charts, line graphs, pie charts) for sales trends and performance comparison.
- Use maps to show geographic distribution of sales.
- Implement forecasting models for future sales predictions.
- Enable drill-down functionality for detailed data access.
- Join data from multiple sources if needed.
- Optimize dashboard performance through data aggregation and extracts.
- Conduct user training for Sales department
- Regularly update and maintain the dashboard.
- Empower Sales team to conduct independent ad-hoc analysis and reporting.

4) Attachment of Screenshot of the task:
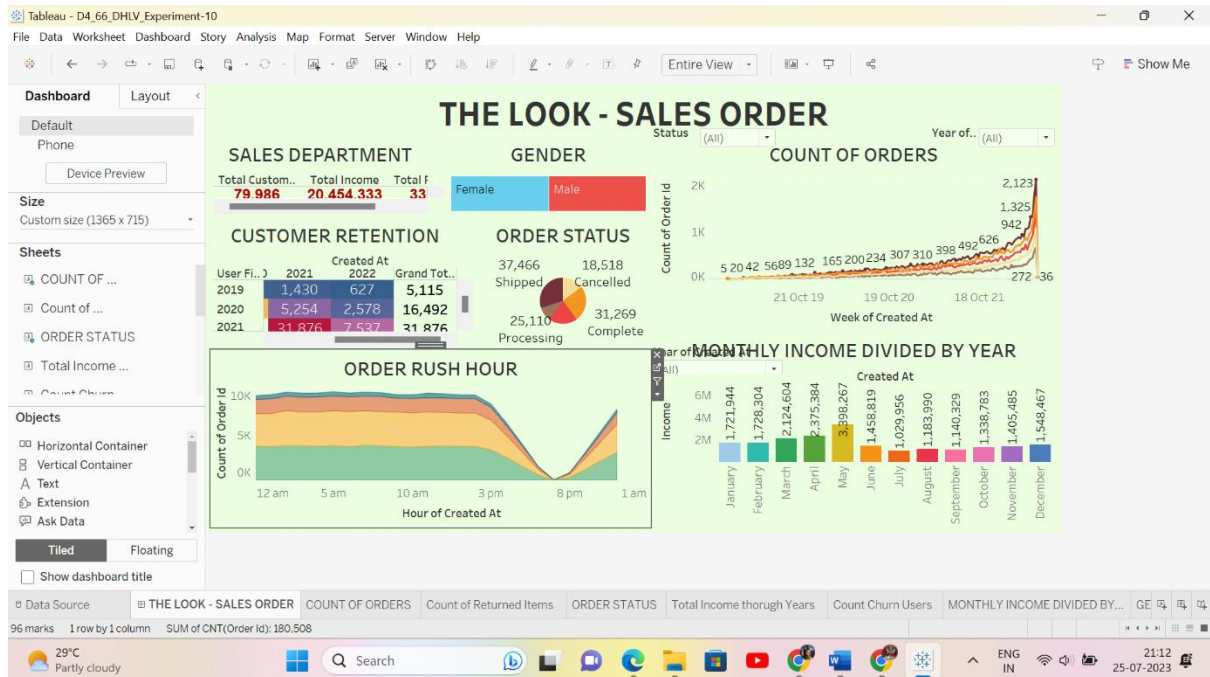
5) Conclusion:

Hence, we understood how fields are calculated and we are able to represent the dashboard in easier format.

DHV EXPERIMENT – 11.

Name: Devesh Ashish Vyas.

Roll no: 66 Batch-D4.

Date: 14/07/23.

1) Problem Statement:

The objective of this project is to predict patients' healthcare costs and to identify factors contributing to this prediction. It will also be useful to learn the inter-dependencies of different factors and comprehend the significance of various tools at various stages of the healthcare cost prediction process.
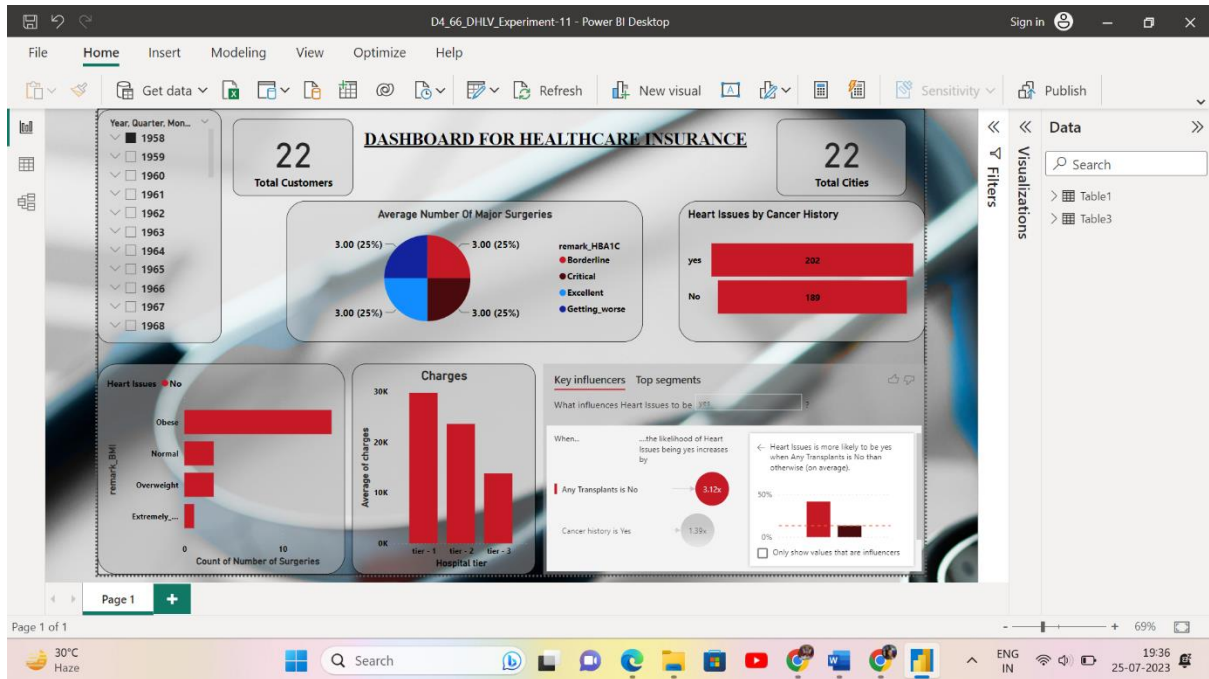
2) Aim:

Perform Comparative Study of a country's Insurance Data from the dataset provided and create a Report/Dashboard for the same.

3) Solution:

- Collect insurance data including patient demographics, medical history, and healthcare costs.
- Preprocess the data by handling missing values, encoding categorical variables, and normalizing numerical features.
- Perform Exploratory Data Analysis (EDA) to gain insights and identify correlations or patterns in the data.
- Select relevant features for healthcare cost prediction using correlation analysis or feature importance ranking.
- Choose appropriate machine learning algorithms for prediction, such as linear regression, decision trees, or random forests.
- Train the selected models on the data and evaluate their performance using metrics like MAE, MSE, or R-squared.
- Analyse feature importance to understand factors contributing to healthcare costs.
- Explore inter-dependencies of different factors through correlation analysis and visualizations.
- Create a comprehensive report or interactive dashboard to present the findings effectively.
- Provide actionable recommendations for healthcare insurance providers based on the analysis to manage costs more efficiently.

4) Attachment of Screenshot of the task:

5) Conclusion:

Hence, we understood how fields are calculated and we are able to represent the dashboard in easier format.