ANALYSIS REPORT - CAR SALES

Presented By: BHAVINI SHINGALA
Southern Alberta Institute of Technology (SAIT)
Course ID: DATA-043-002
Under Guidance: Junaid Qazi

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PROBLEM STATEMENT

The automotive industry is characterized by its high level of competition and dynamic nature. Car manufacturers and dealerships face the ongoing challenge of understanding market trends and consumer preferences to optimize their sales strategies and maintain a competitive edge.

OBJECTIVE

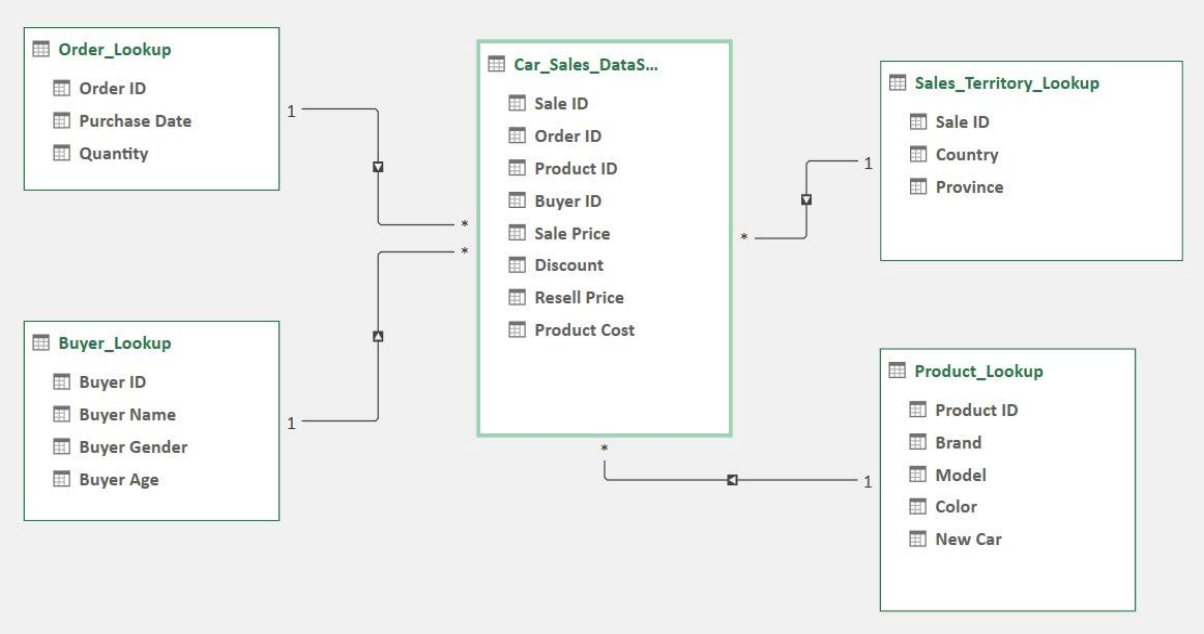
The primary objective of this analytics project is to identify the key factors that influence car sales growth or decline. By understanding overall sales trends over time, the goal is to increase sales by 20% by the end of the year 2024. This project aims to uncover insights that can lead to a targeted increase in car sales, aligning with the strategic growth objectives of the organization.

DATASET

The dataset used for this analysis is the Canadian Car Sales Dataset, which includes sales data across different provinces, car models and their sales volumes, prices, and resell prices. This comprehensive dataset has been sourced from Data World and Statistics Canada, providing a robust foundation for the analysis.

DATA MODEL

Below diagram shows the data model of car sales data.



The data model follows a star schema model, which is a common way to organize data for dimensional analysis in data warehouses. Here's a breakdown of the model:

Fact Table (Centre): The central table in the model likely represents fact tables related to car sales. These tables would typically contain sales-related metrics like sales quantity, sales price, and possibly profit margin.

Dimension Tables (Surrounding): The surrounding tables in the model likely represent dimension tables that provide context and details to the fact tables in the centre. Here are some possible examples of dimension tables based on the image:

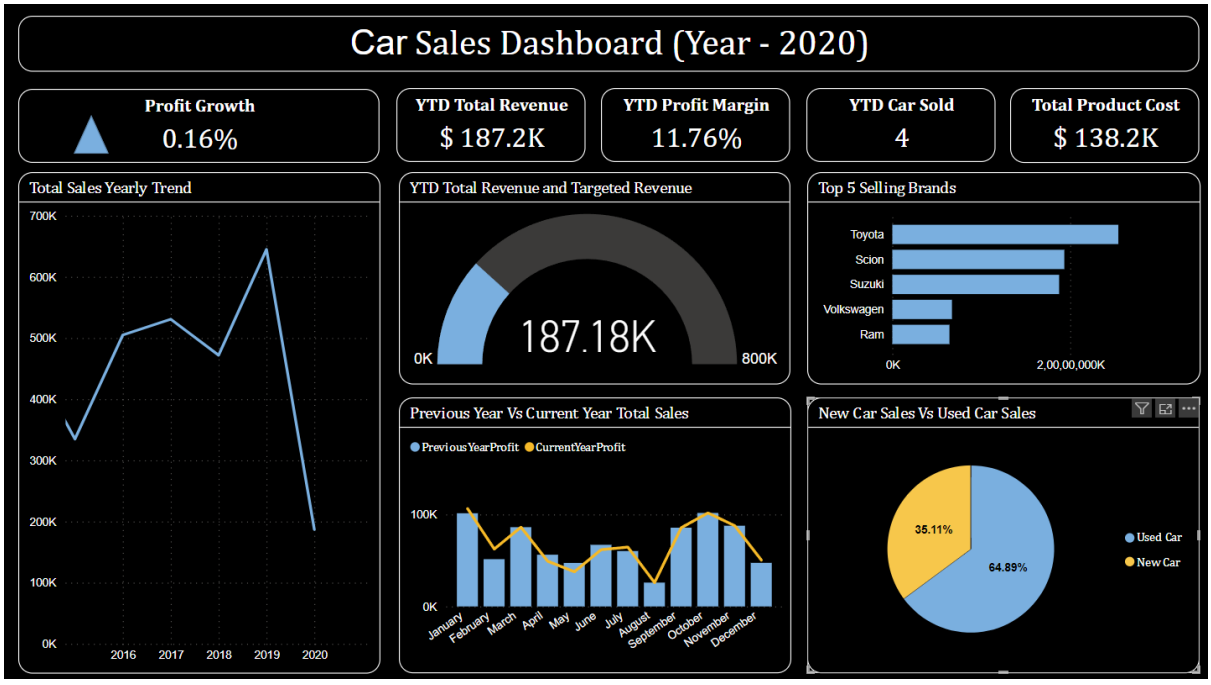
- Order_Lookup Table
- Car_Sales_Data/Product_Lookup Table
- Sales_Territory_Lookup Table

Relationships: The lines connecting the fact tables and dimension tables represent relationships between them. These relationships allow data analysts to slice and dice the data based on different dimensions (e.g., sales by car brand, sales by territory).

Overall, the star schema model in this car sales data warehouse effectively separates facts (sales metrics) from dimensions (descriptive attributes) and establishes relationships between them. This structure facilitates efficient data retrieval and analysis for better understanding car sales performance.

VISUALIZATION ON POWER BI

The below shows the dashboard for Car Sales data:



Visualization plays a crucial role in data analytics by turning complex datasets into understandable and actionable insights. For this project, Power BI was utilized to create dynamic and interactive dashboards that illustrate the sales trends and performance metrics.

The car sales dashboard highlights positive sales performance and profit growth with a green profit indicator (specific percentage not shown). Revenue and profit margin figures provide financial insights. Sales volume and total car cost are displayed. The top-selling brand is revealed, offering a glimpse into customer preference.

Overall, these visualizations help stakeholders quickly grasp the key factors driving sales and identify areas for strategic improvement.

ANALYSIS/INSIGHTS

The analysis revealed that the total revenue for the current year is $187K, which represents 23% of the targeted revenue. The monthly sales trend for the current year has remained consistent with the previous year, indicating stable sales patterns. Additionally, the analysis identified the top-selling models for each brand and the proportion of sales from new versus used cars. These insights are critical for tailoring marketing strategies and inventory management to boost sales performance.

CONCLUSION

To achieve the objective of increasing sales by 20% by the end of 2024, the analysis recommends focusing on marketing the top-selling models, exploring new market segments, and enhancing the customer buying experience. By implementing these strategies, car manufacturers and dealerships can better align their offerings with consumer demands and market trends, ultimately driving sales growth.

REFERENCES

- Data World: https://data.world/
- Statistics Canada: https://www.statcan.gc.ca/en/start
- Dashboard Creation on Power BI: https://www.figma.com/community/file/1238189616000926360/power-bi-car-sales-dashboard