



# Us Car Sales Analysis

By Rudresh Patidar

# Overview:

The primary objective of this project is to design and develop a comprehensive Car Sales Dashboard utilizing Power BI. The focus will be on creating an interactive platform that extracts valuable insights from visual representations of key performance indicators (KPIs) associated with our car sales. Through this dashboard, our aim is to provide a user-friendly interface that empowers stakeholders to easily interpret and analyse crucial data, fostering informed decision-making based on a deeper understanding of our sales performance trends.

# Requirements:

## KPI:

### 1. Sales Overview:

- Year-to-Date (YTD) Total Sales
- Month-to-Date (MTD) Total Sales
- Year-over-year (YoY) Growth in Total Sales
- Difference Between YTD Sales and Previous Year-to-Date (PYTD) Sales

### 2. Cars Sold Metrics:

- YTD Cars Sold
- MTD Cars Sold
- YoY Growth in Cars Sold
- Difference Between YTD Cars Sold and PYTD Cars Sold

### 3. Average Price Analysis:

- YTD Average Price
- MTD Average Price
- YoY Growth in Average Price
- Difference Between YTD Average Price and PYTD Average Price

# Requirements:

## Charts:

- 1. **YTD Sales Weekly Trend:** Display a line chart illustrating the weekly trend of YTD sales. The X-axis should represent weeks, and the Y-axis should show the total sales amount.
- 2. **YTD Total Sales by Body Style:** Visualize the distribution of YTD total sales across different car body styles using a Pie chart.
- 3. **YTD Total Sales by Colour:** Present the contribution of various car colours to the YTD total sales through a donut chart.
- 4. **YTD Cars Sold by Dealer Region:** Showcase the YTD sales data based on different dealer regions using a bar chart to visualize the sales distribution geographically.
- 5. **Company-Wise Sales trend in Grid Form:** Provide a tabular grid that displays the sales trend for each company. The grid should showcase the company name along with their YTD sales figures.
- 6. **Details Grid Showing All Car Sales Information:** Create a detailed grid that presents all relevant information for each car sale, including car model, body style, colour, sales amount, dealer region, date, etc.



# Goal:

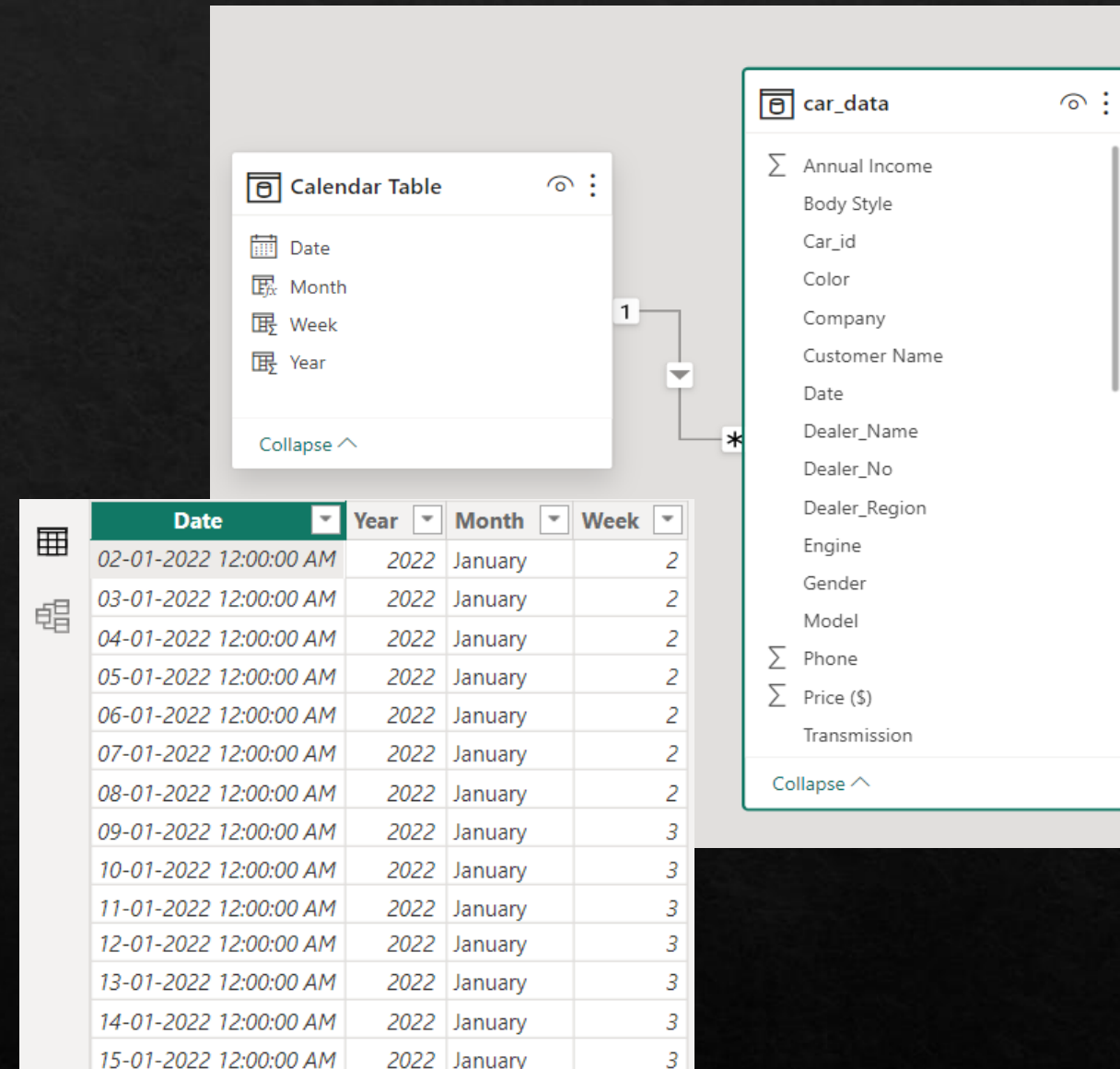
The project goal is to implement an intuitive and dynamic Car Sales Dashboard using Power BI, with a focus on extracting actionable insights from visualized key performance indicators (KPIs). This dashboard aims to provide a centralized platform for stakeholders to comprehensively analyse and interpret critical data related to car sales. By achieving this goal, the project seeks to enhance decision-making processes, enabling the team to make informed and strategic choices based on a real-time understanding of sales performance trends and patterns.

# Data Schema:

In my Schema there is two table first is car\_data and Second is Calendar Table which I have create for further Calculation.

I have created calendar table Because it's provides a centralized place for managing date-related filters and slicers. It enables users to filter or slice their data based on specific time periods, making it convenient to focus on relevant information.

Power BI has built-in DAX (Data Analysis Expressions) functions for time intelligence, such as TOTALYTD, SAMEPERIODLASTYEAR, and others. These functions rely on having a well-defined calendar table in your data model to perform calculations accurately.



SALES | INSIGHTS

- Overview
- Details

- Body Style
- All
- Dealer\_Name
- All
- Transmission
- All
- Engine
- All

YTD Total Sales

\$70.8M23.59%

\$371.2M

MTD Total Sales : \$54.28 M

YTD Avg Price

(\$0.22K)-0.79%

\$28.0K

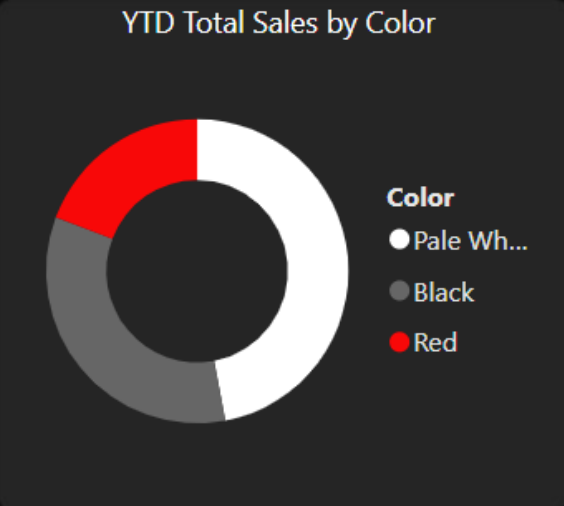
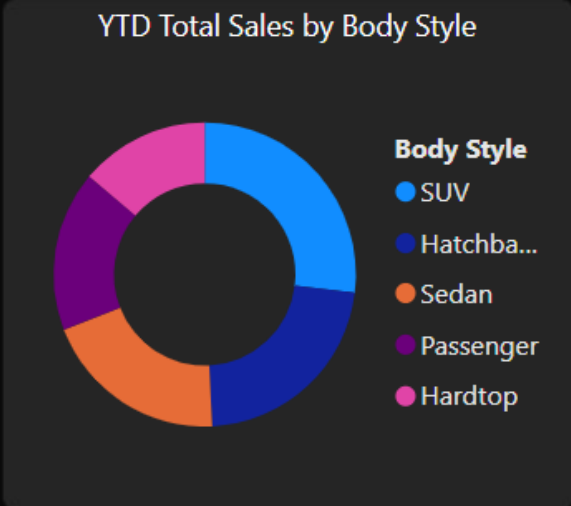
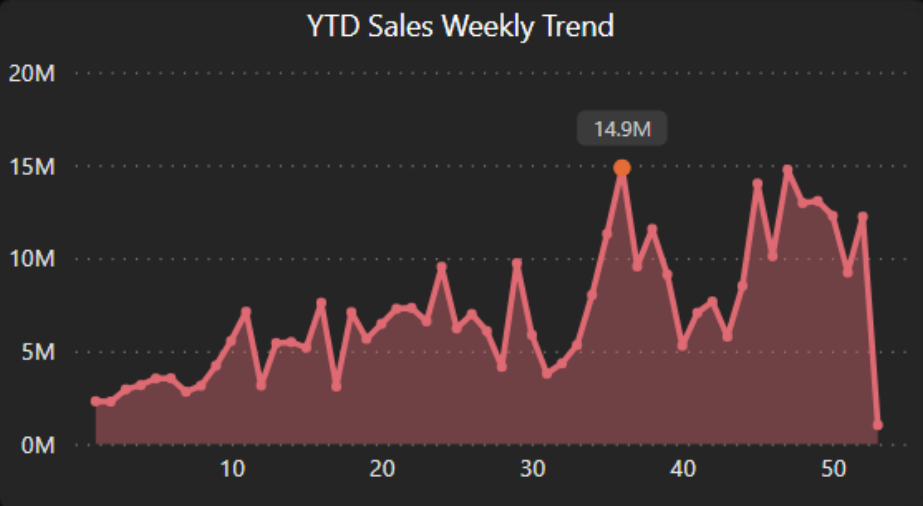
MTD Avg Price : \$28.26 K

YTD Car Sold

2.62K19.73%

13.3K

MTD Cars Sold : \$1.92 K



Company wise Sales Trend					
Company	YTD Avg Price	YTD Cars Sold	YTD Total Sales	%GT YTD Total Sales	
Acura	\$24.9K	376	\$9.3M	2.52%	
Audi	\$22.2K	259	\$5.8M	1.55%	
BMW	\$25.7K	445	\$11.4M	3.08%	
Buick	\$32.2K	243	\$7.8M	2.11%	
Cadillac	\$42.2K	363	\$15.3M	4.13%	
Chevrolet	\$26.0K	1043	\$27.1M	7.30%	
Chrysler	\$25.9K	618	\$16.0M	4.31%	
Dodge	\$26.4K	949	\$25.0M	6.74%	
Ford	\$28.7K	886	\$25.4M	6.85%	
Honda	\$27.6K	392	\$10.8M	2.91%	
Hyundai	\$19.1K	134	\$2.6M	0.69%	

SALES | INSIGHTS

Overview

Details

Body Style

All

Dealer\_Name

All

Transmission

All

Engine

All

YTD Total Sales

\$70.8M

23.59%

\$371.2M

MTD Total Sales : \$54.28 M

YTD Avg Price

(\$0.22K)

-0.79%

\$28.0K

MTD Avg Price : \$28.26 K

YTD Car Sold

2.62K

19.73%

13.3K

MTD Cars Sold : \$1.92 K

Car_id	Date	Customer Name	Dealer_Name	Company	Color	Model	Total Sales
C_CND_000001	02 January 2022	Geraldine	Buddy Storbeck's Diesel Service Inc	Ford	Black	Expedition	26.0K
C_CND_000015	02 January 2022	Zainab	Buddy Storbeck's Diesel Service Inc	Chrysler	Pale White	Sebring Coupe	26.0K
C_CND_000059	04 January 2022	Hershy	Buddy Storbeck's Diesel Service Inc	Mercedes-B	Pale White	C-Class	12.0K
C_CND_000091	05 January 2022	Wadia	Buddy Storbeck's Diesel Service Inc	Nissan	Pale White	Maxima	22.5K
C_CND_000104	06 January 2022	Abel	Buddy Storbeck's Diesel Service Inc	Mercedes-B	Black	SL-Class	38.0K
C_CND_000137	12 January 2022	Jada	Buddy Storbeck's Diesel Service Inc	Lexus	Pale White	ES300	27.3K
C_CND_000194	17 January 2022	Ava	Buddy Storbeck's Diesel Service Inc	Mitsubishi	Black	3000GT	39.0K
C_CND_000238	21 January 2022	Adrian	Buddy Storbeck's Diesel Service Inc	Mitsubishi	Pale White	Galant	36.0K
C_CND_000244	23 January 2022	Leo	Buddy Storbeck's Diesel Service Inc	Cadillac	Pale White	Eldorado	31.0K
C_CND_000275	27 January 2022	Gabrielle	Buddy Storbeck's Diesel Service Inc	Chrysler	Pale White	Sebring Coupe	46.0K
C_CND_000319	03 February 2022	Katelyn	Buddy Storbeck's Diesel Service Inc	Mitsubishi	Pale White	Montero Sport	39.0K
C_CND_000370	06 February 2022	Heaven	Buddy Storbeck's Diesel Service Inc	Plymouth	Pale White	Prowler	71.5K
C_CND_000420	08 February 2022	Devin	Buddy Storbeck's Diesel Service Inc	Acura	Pale White	TL	24.0K
C_CND_000429	09 February 2022	Michael	Buddy Storbeck's Diesel Service Inc	Mercedes-B	Black	S-Class	85.0K
C_CND_000443	09 February 2022	Loreley	Buddy Storbeck's Diesel Service Inc	Mitsubishi	Black	Montero Sport	45.0K
C_CND_000463	14 February 2022	Allison	Buddy Storbeck's Diesel Service Inc	Mitsubishi	Black	Eclipse	27.5K
C_CND_000493	15 February 2022	Lucia	Buddy Storbeck's Diesel Service Inc	Chevrolet	Pale White	Monte Carlo	21.2K
C_CND_000570	21 February 2022	Lillian	Buddy Storbeck's Diesel Service Inc	Cadillac	Pale White	Seville	22.0K

Total

671525.5K

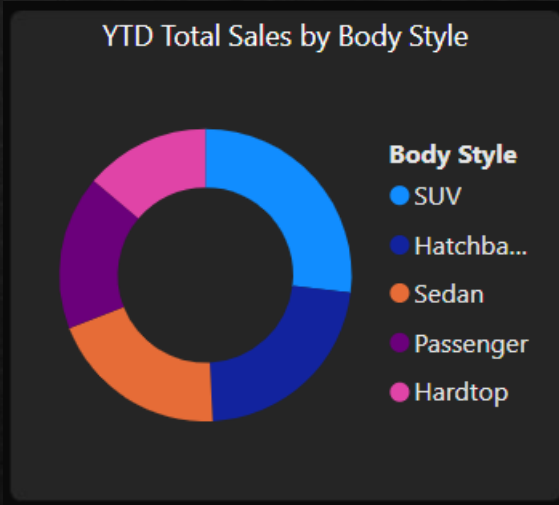


# Key Insights:

YTD Total Sales	\$70.8M	23.59%	YTD Avg Price	(\$0.22K)	-0.79%	YTD Car Sold	2.62K	19.73%
\$371.2M	MTD Total Sales : \$54.28 M		\$28.0K	MTD Avg Price : \$28.26 K		13.3K	MTD Cars Sold : \$1.92 K	

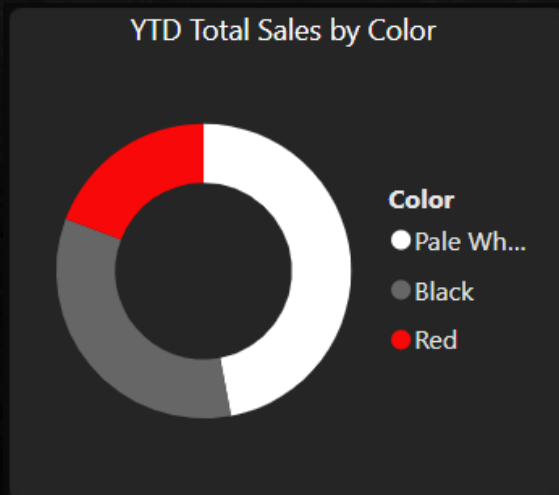
- **Year-to-Date (YTD) Total Sales:** A remarkable \$371.2 million.
- **Year-over-Year (YOY) Growth in Total Sales:** An impressive 23.59% increase.
- **YTD Average Price:** Stands at \$28,000.
- **YOY Growth in Average Price:** Slightly down at -0.75%.
- **YTD Cars Sold:** An incredible 13,300 units.
- **YOY Growth in Cars Sold:** A whopping 24.57% rise.
- **YTD Sales Weekly Trend:** Notable peaks in weeks 39, 46, and 50.
- **YTD Total Sales by Body Style:** SUVs take the lead.
- **YTD Total Sales by Colour:** Pearl White cars stand out with 11.26k sales, followed by black and red cars.
- **YTD Cars Sold by Dealer Region:** The Austin region emerges as the top performer with around 4,135 sales.

## Insights from Pie Chart:



### ➤ In the Year-To-Date Sales breakdown by Body Style:

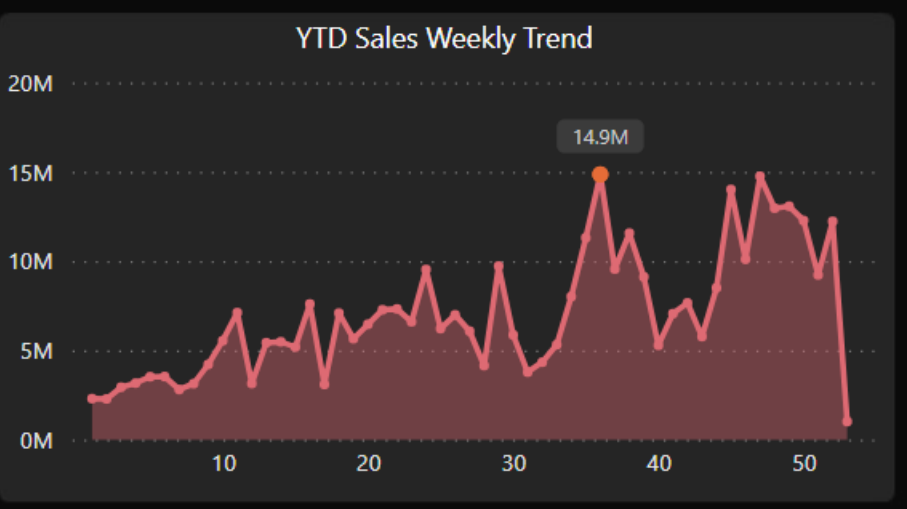
- SUVs dominate the landscape, accounting for the largest share at 26.91%, sales of \$100M
- Hatchbacks follow closely, covering 22.30% of the sales with a revenue of \$8M
- Sedans secure a significant portion at 19.85%, contributing \$74M in sales.
- Passenger vehicles claim a share of 17.09%, generating \$63M in sales.
- Hardtops round out the categories, encompassing 13.85% and \$51M sales.



### ➤ In the Year-To-Date Sales breakdown by Body Color:

- The majority of cars sold are in the Pale White color, contributing significantly with sales reaching \$17M, representing 47.02% of the total sales across all color categories.
- Black-colored cars follow closely, achieving sales of \$125M, constituting 33.74% of the overall sales.
- Red-colored cars contribute \$71M in sales, making up 19.24% of the total sales for the period.

# Insights from Area Chart & Map:



Observing the Area Chart depicting the Year-to-Date Sales Weekly Trend:

- In the 36th week, there is a notable peak, indicating the highest car sales of \$14.9 million.
- The 47th week maintains a strong sales figure, closely following with \$14.7 million in car sales.
- During the 45th week, there is a peak at \$14 million in sales.
- The 52nd week shows a decline in sales, totaling \$12.2 million.
- In the 29th week, the sales figure reaches \$9.7 million.
- The 24th week records \$9.5 million in car sales etc.



The Map Chart highlights Year-To-Date cars sold across different dealer regions:

- Predominantly, the Austin 2296 and Janesville 2113 regions stand out as key areas for car sales.
- In contrast, there is a comparatively lower number of car sales in regions such as Scottsdale 1912, Pasco 1749, Greenville 1740 among others.
- The geographical distribution depicted in the chart offers a clear overview of the varying sales performance across different dealer regions.



## Company wise Sales Trend:

- Chevrolet, Dodge, Ford, Chrysler, BMW, and others are demonstrating strong performance in year-to-date (YTD) sales.
- Chevrolet leads the pack with an impressive 1043 cars sold YTD.
- Dodge closely follows with 949 cars sold YTD.
- Ford maintains a robust sales performance, having sold 886 cars YTD.
- Chrysler is performing well with 618 cars sold YTD.
- BMW exhibits a solid sales trend, securing 445 cars sold YTD.
- These figures showcase the positive sales momentum of these key companies in the current period.

Company wise Sales Trend					
Company	YTD Avg Price	YTD Cars Sold	YTD Total Sales	%GT YTD Total Sales	
Acura	\$24.9K	376	\$9.3M	2.52%	
Audi	\$22.2K	259	\$5.8M	1.55%	
BMW	\$25.7K	445	\$11.4M	3.08%	
Buick	\$32.2K	243	\$7.8M	2.11%	
Cadillac	\$42.2K	363	\$15.3M	4.13%	
Chevrolet	\$26.0K	1043	\$27.1M	7.30%	
Chrysler	\$25.9K	618	\$16.0M	4.31%	
Dodge	\$26.4K	949	\$25.0M	6.74%	
Ford	\$28.7K	886	\$25.4M	6.85%	
Honda	\$27.6K	392	\$10.8M	2.91%	
Hyundai	\$19.1K	134	\$2.6M	0.69%	



## Areas for Business Improvement:

- Utilize insights on top-selling colours and body styles to tailor marketing campaigns and meet customer preferences.
- Leverage the popularity of SUVs by optimizing inventory to meet customer demand and capitalize on trending styles.
- Identify and implement best practices from top-performing dealers to enhance sales strategies and improve overall dealer performance.
- Allocate resources to regions with lower sales figures and explore strategies to increase market share.
- Analyse the slight dip in the Year-over-Year (YoY) growth in average price. Consider pricing strategies or promotions to boost average transaction values.
- Regularly benchmark against competitors, especially the top 5 companies, to identify opportunities for improvement and maintain a competitive edge.

**By focusing on these areas, the business can fine-tune its strategies, improve customer satisfaction, and stay ahead in the dynamic automotive market.**

# Conclusion:

The Car Sales Dashboard project has successfully achieved its goal of providing a dynamic and intuitive platform for extracting actionable insights from key performance indicators (KPIs) related to our car sales. Through comprehensive data analysis and visualization using Power BI, we've uncovered valuable insights that can significantly impact our decision-making processes.

Thank You

