BRIGHT LEARN CAR SALES

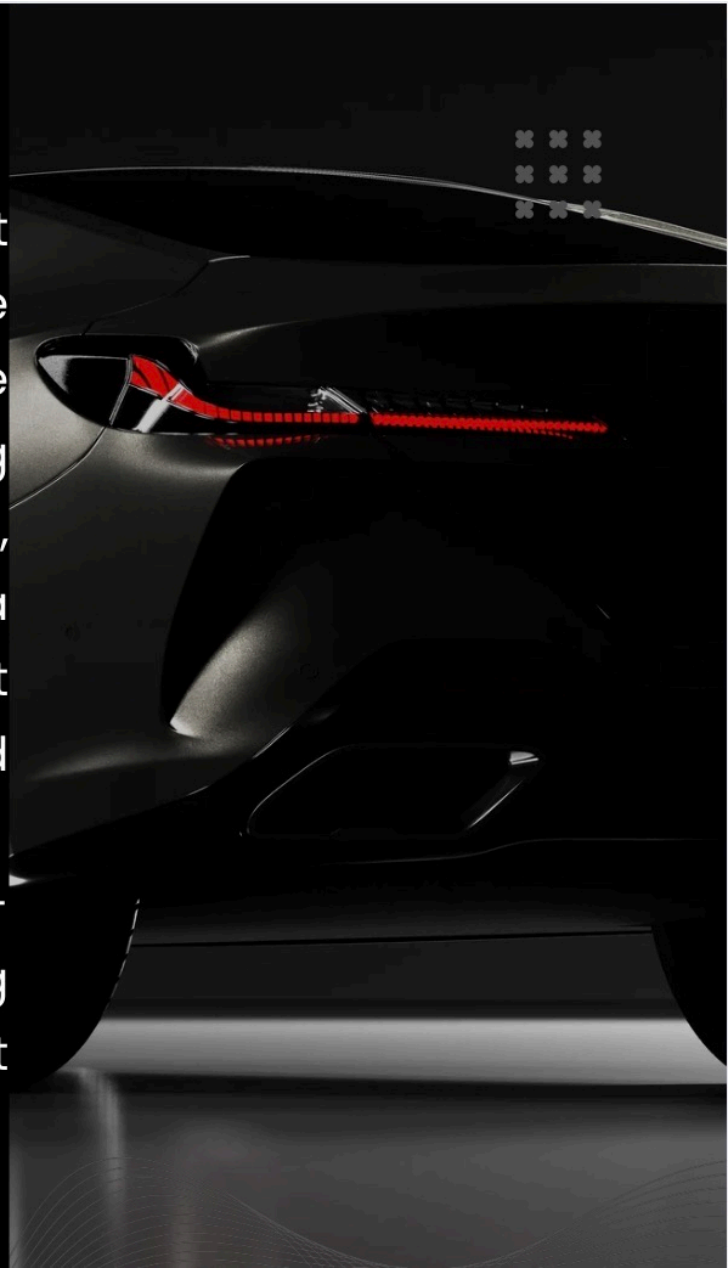
Drive Your Dream with Us

Your Trusted Partner in Finding the Perfect Car

INTRODUCTION

Bright Car Sales is a data-driven analysis project aimed at understanding the sales performance of different vehicle makes and models within the Bright Motors dataset. The dataset contains historical vehicle sales information, including selling price, market value (MMR), year, condition, seller details, odometer readings, and other vehicle attributes. Through data cleaning, transformation, and analytical modelling, the project seeks to uncover key sales trends, revenue drivers, and profitability insights.

This analysis allows the organisation to identify its best-performing car models, understand customer purchasing patterns, and evaluate the financial performance of different vehicle categories.



AIM

To **analyse** Bright Motors' vehicle sales data in order to determine revenue performance, identify top-selling car models, evaluate profit margins, and provide insights that support strategic decision-making and operational improvements.

OBJECTIVES

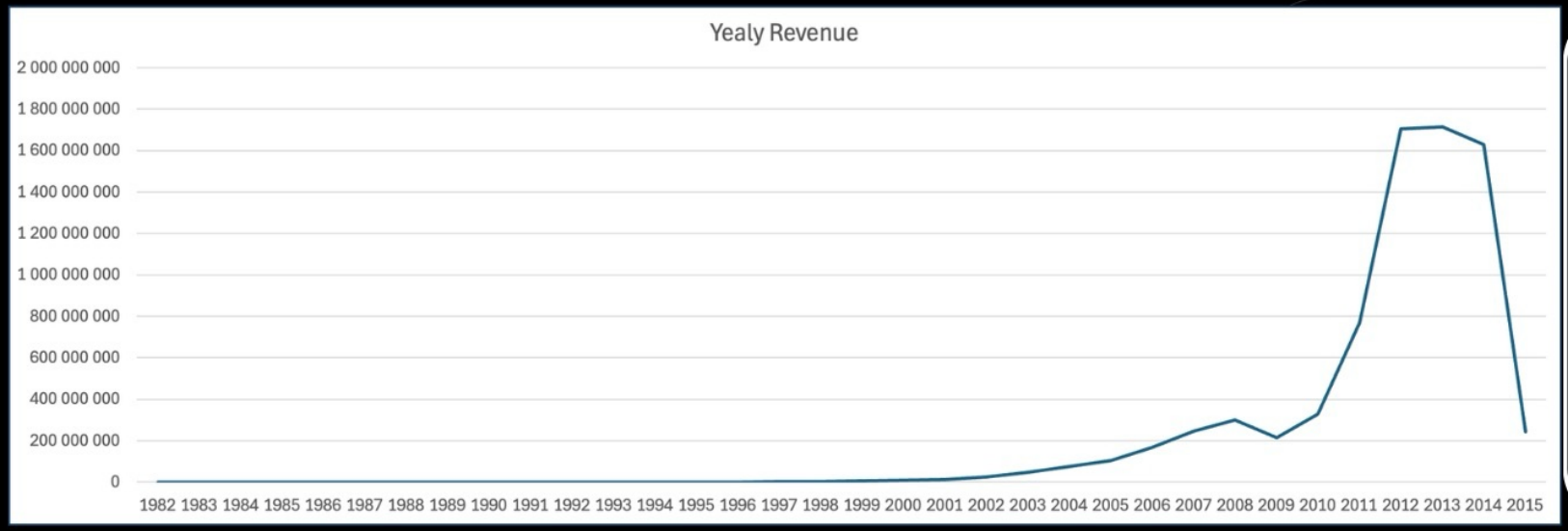
- To **clean, preprocess, and standardise the car sales dataset** by converting text-based prices to numeric format and handling missing or inconsistent records.
- To **calculate key performance metrics**, including total revenue, units sold, and estimated profit margin per make and model.
- To analyse sales distribution across different categories, such as **year, make, model, body type, and transmission**.
- To identify the top-performing car models based on total **revenue, units sold, and profitability**.
- To categorise car models into performance tiers (High, Medium, and Low Margin) using **profit margin** calculations.
- To visualise key trends through **charts** and summaries to support decision-making within Bright Motors.
- To generate **insights and recommendations** that can improve stock management, pricing decisions, and sales strategy.

METHODOLOGY

- Imported the Bright Car Sales dataset and checked data structure and completeness.
- Cleaned the dataset by removing commas/symbols from price fields and converting them to numeric values.
- Standardised text fields (make, model, body type, seller) and formatted dates for time-based analysis.
- Calculated key metrics, including:
  - Total revenue = selling_price * units_sold.
  - Units sold
  - Estimated cost price using MMR
  - Profit margin (Selling_Price - Cost_Price) / Selling_Price * 100
- Performed data transformation using SQL grouping and aggregation (by make, model, year, etc.).
- Categorised each car model into performance tiers (High, Medium, Low, Negative Margin).
- Created visualisations (charts and pivot tables) to display revenue, model performance, and sales distribution.
- Interpreted analytical results to identify high-performing models, low-performing models, and overall sales trends.

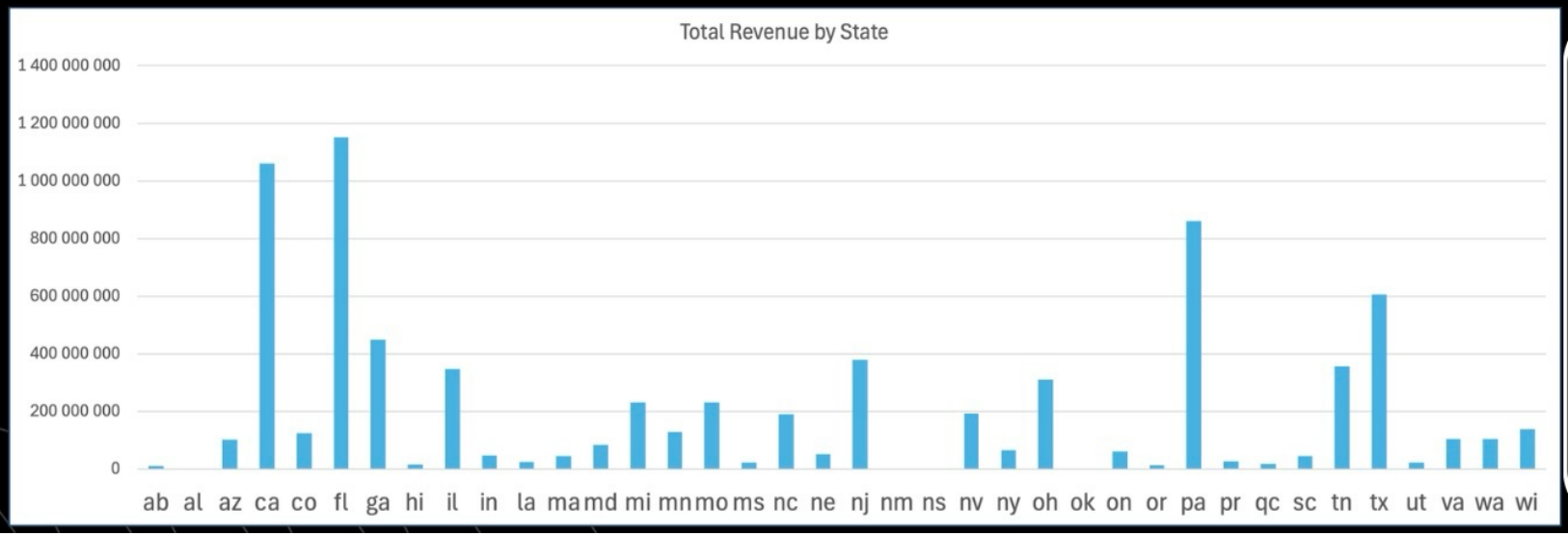

RESULTS
&
ANALYSIS

REVENUE DISTRIBUTION



Insights

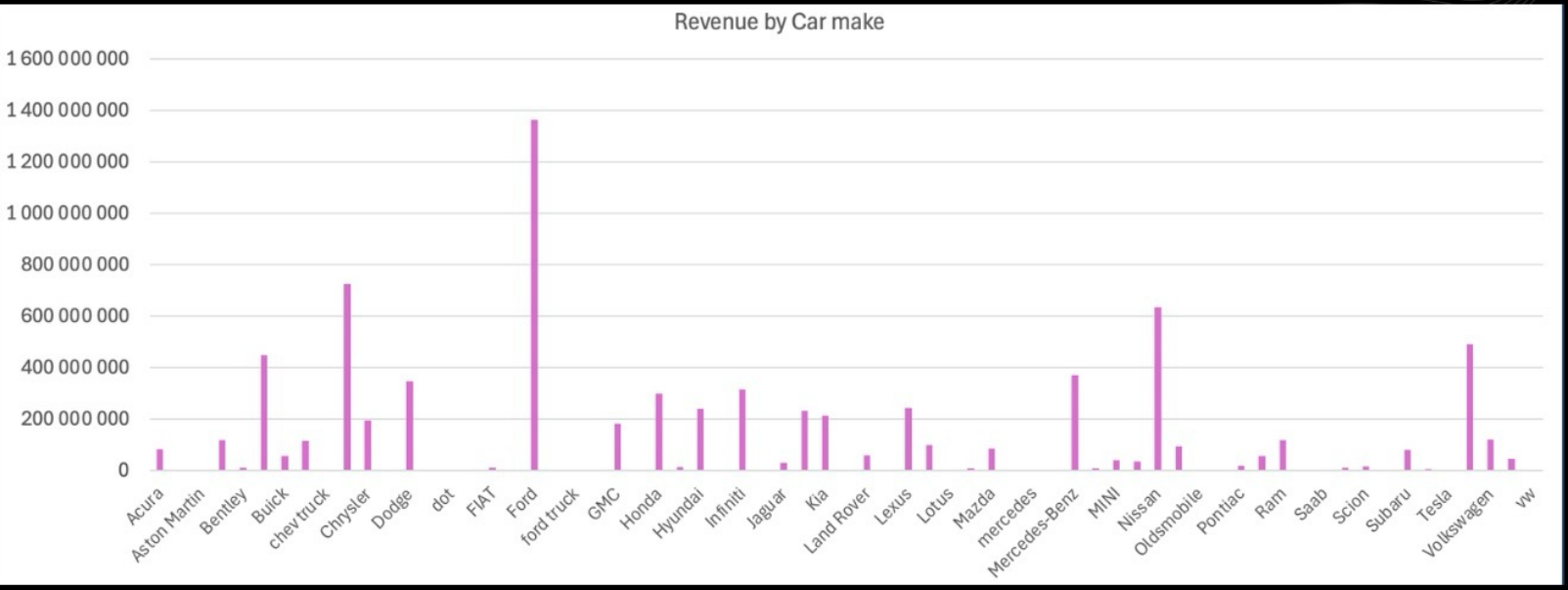
- Revenue remains low and stable for many years, then gradually rises from around 2007.
- A sharp peak occurs between 2011–2014, showing the strongest sales period, followed by a decline afterward.

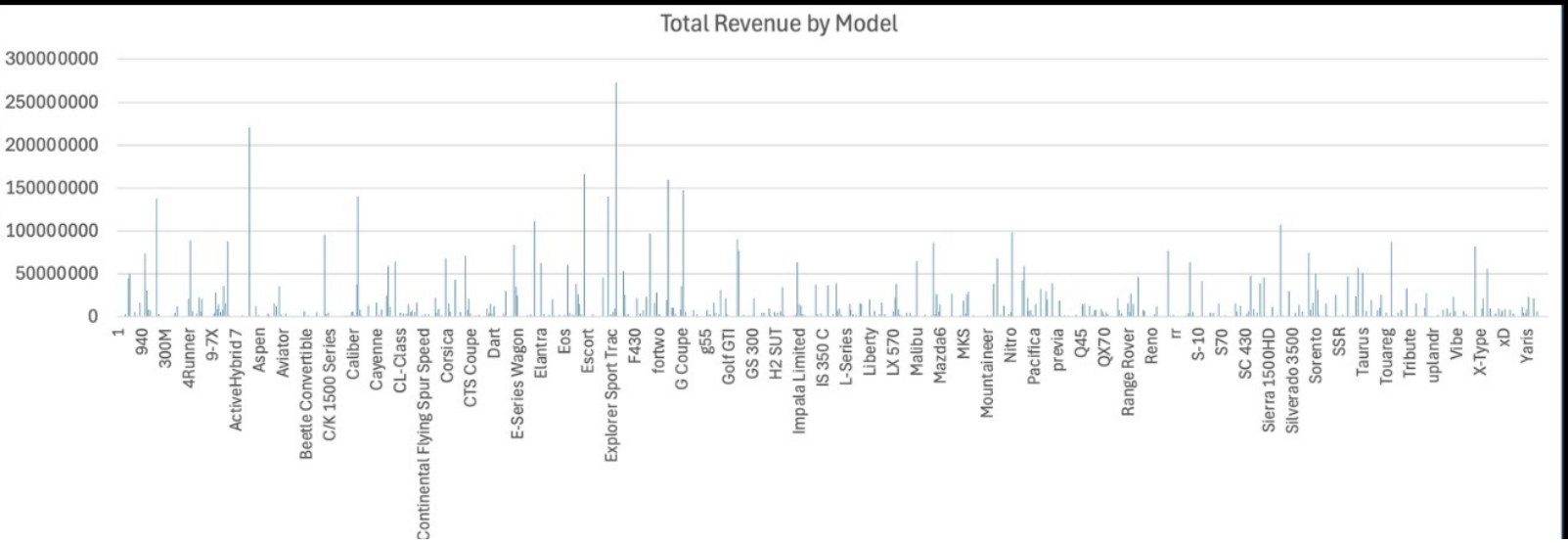


Insights

- Revenue is heavily concentrated in a few states such as Florida(fl) and California(ca).
- Most other states show much lower revenue, indicating uneven sales distribution across regions.

REVENUE DISTRIBUTION





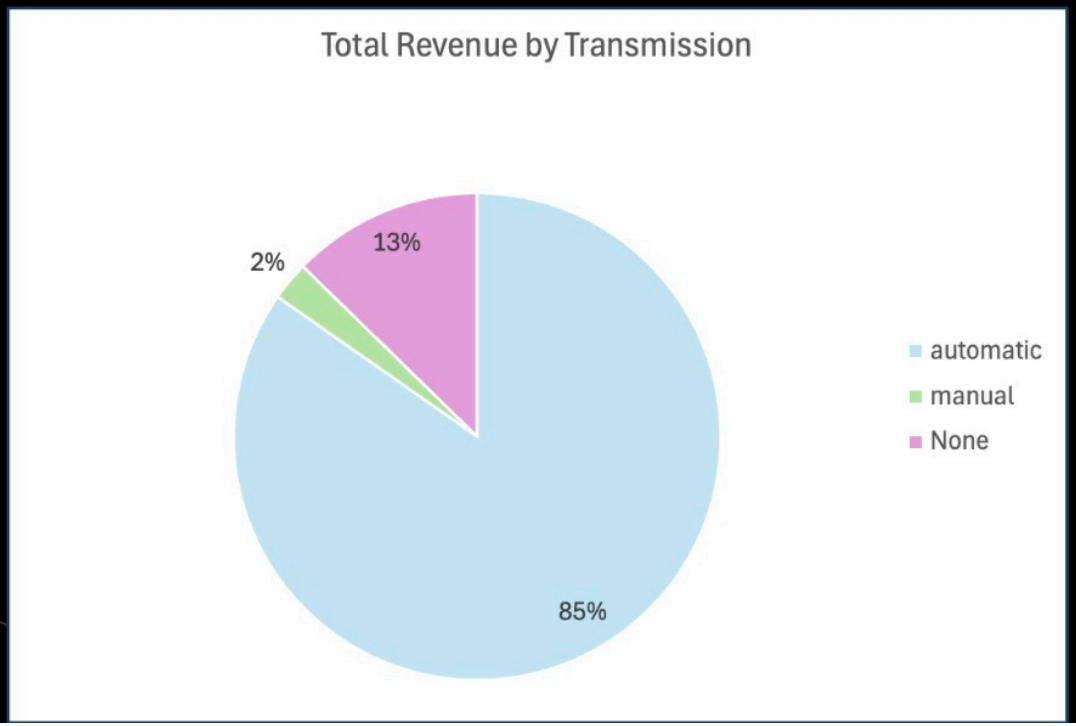
Insights

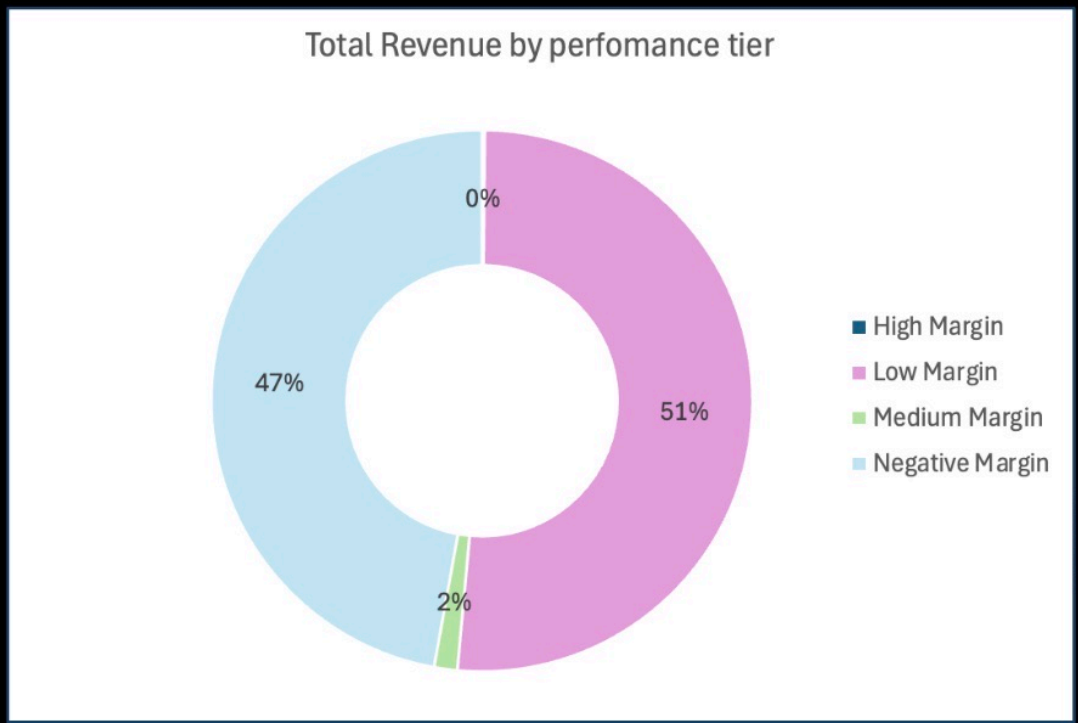
- Revenue is dominated by a few major car makes such as Ford, Chevrolet, Mercedes-Benz, Nissan, BMW, and Toyota.
- Most other makes contribute much smaller revenue amounts.
- Only a handful of car models generate very high revenue, making them the main revenue drivers.
- The majority of models show low revenue, meaning sales performance is concentrated in a small group of high-demand models.

REVENUE DISTRIBUTION

Insights

- Revenue is dominated by automatic cars **(85%)**, while manual transmissions contribute very little **(2%)**, showing a strong market preference.
- 13% of revenue comes from cars with missing transmission data, showing incomplete records.
- Most revenue comes from low margin **(51%)** and negative margin **(47%)** cars, meaning many vehicles are sold at or below cost price.
- Very few cars fall into medium margin categories, and no high-margin cars appear, indicating limited profitability overall.





SELLING PRICE DISTRIBUTION

Insights

- Selling prices stay low for many years, then rise sharply around 2010–2014, showing a strong increase in vehicle value and sales activity during this period.
- Low-margin and negative-margin cars dominate total revenue, indicating most cars were sold at or below their estimated cost (MMR).
- Medium- and high-margin cars contribute almost nothing, showing very limited profitability across the dataset.

KEY RECOMMENDATIONS

- Increase stock of automatic cars, as they generate the highest revenue and show strong customer preference.
- Review pricing and acquisition strategies, since most revenue comes from low-margin and negative-margin vehicles.
- Focus on top-performing makes and models like Ford, Chevrolet, Toyota, BMW, and Nissan to maximise sales.
- Improve data completeness, especially transmission information, to strengthen future analysis and decision-making.
- Prioritise high-revenue states with strong sales performance and tailor marketing or inventory strategies accordingly.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