Cars24 Data Analysis

Overview:

The purpose of this project is to analyze car pricing data to gain insights into trends, patterns, and factors influencing car prices in the market.

Aamir Rabbani

Gaurav Yadav

Parivesh Khatri

Ruchi Mishra

Sejal Prasad

Introduction

Brief introduction & Objectives

The dataset used in this project is sourced from Cars24, a leading platform for buying and selling used cars. It contains detailed information about various car models, including their prices, specifications, km_driven, owner type, and more.

The primary objective of this project is to analyze car pricing data to uncover trends, patterns, and insights that can be valuable for car buyers, sellers, and industry stakeholders.

Significance of the Analysis

Analyzing car pricing data is crucial for several reasons:

1.Informed Decision-Making: It helps prospective car buyers make informed decisions by understanding market trends and pricing dynamics.
2.Competitive Advantage: For car sellers and dealerships, it provides insights into competitive pricing strategies and market positioning.
3.Market Insights: Industry stakeholders can gain valuable market insights to adapt their business strategies, forecast demand, and identify growth opportunities.

Dataset overview

Overview

The dataset used for this analysis is sourced from Cars24, a prominent platform for buying and selling used cars. It comprises a comprehensive collection of data points related to various car listings available on the platform.

The dataset consists of 1103 rows and 13 columns.

It is structured in a tabular format, typically in CSV (Comma-Separated Values) or Excel format, facilitating easy data manipulation and analysis.

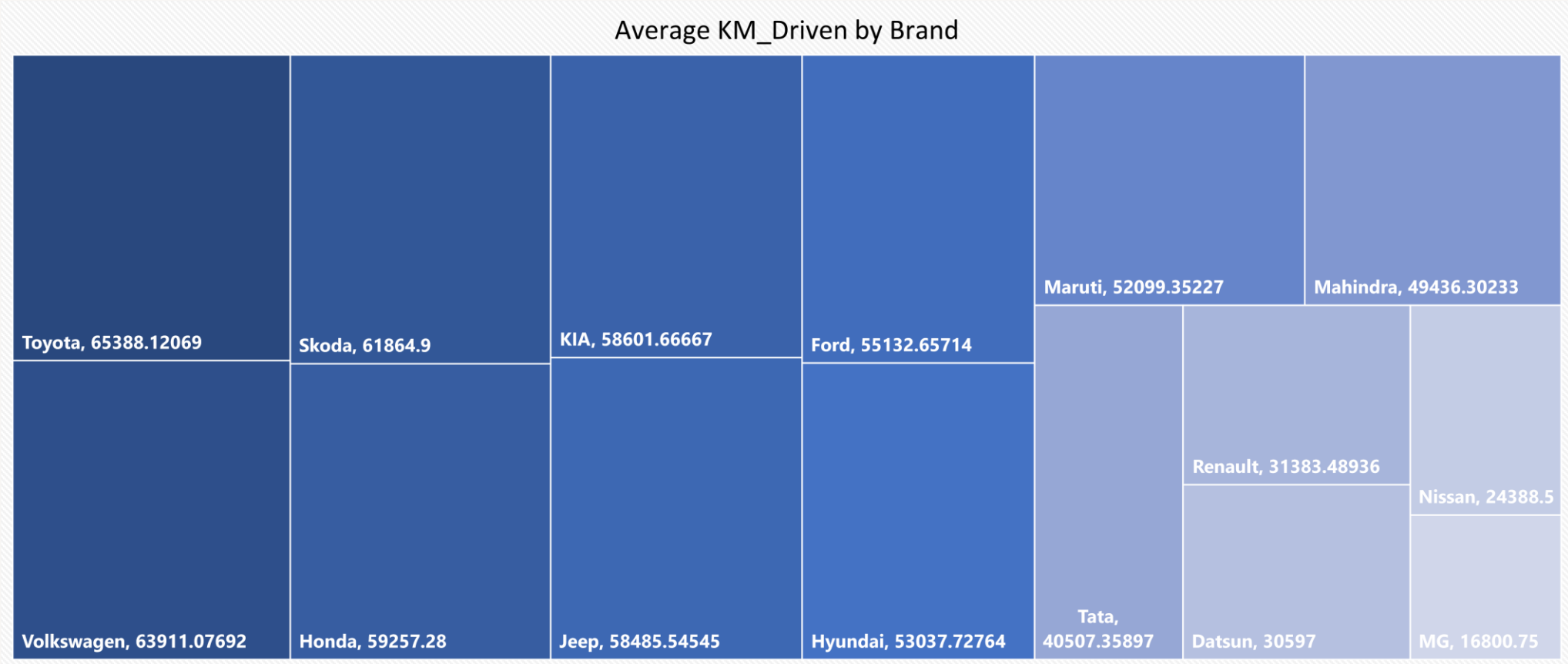
Key columns

- Car Model
- Car Name
- Brand
- Car Transmission
- KM Driven
- Owner Type
- Fuel Type
- Registration ID
- Monthly EMI
- Car Price
- Down Payment Amount
- Location

Methodology

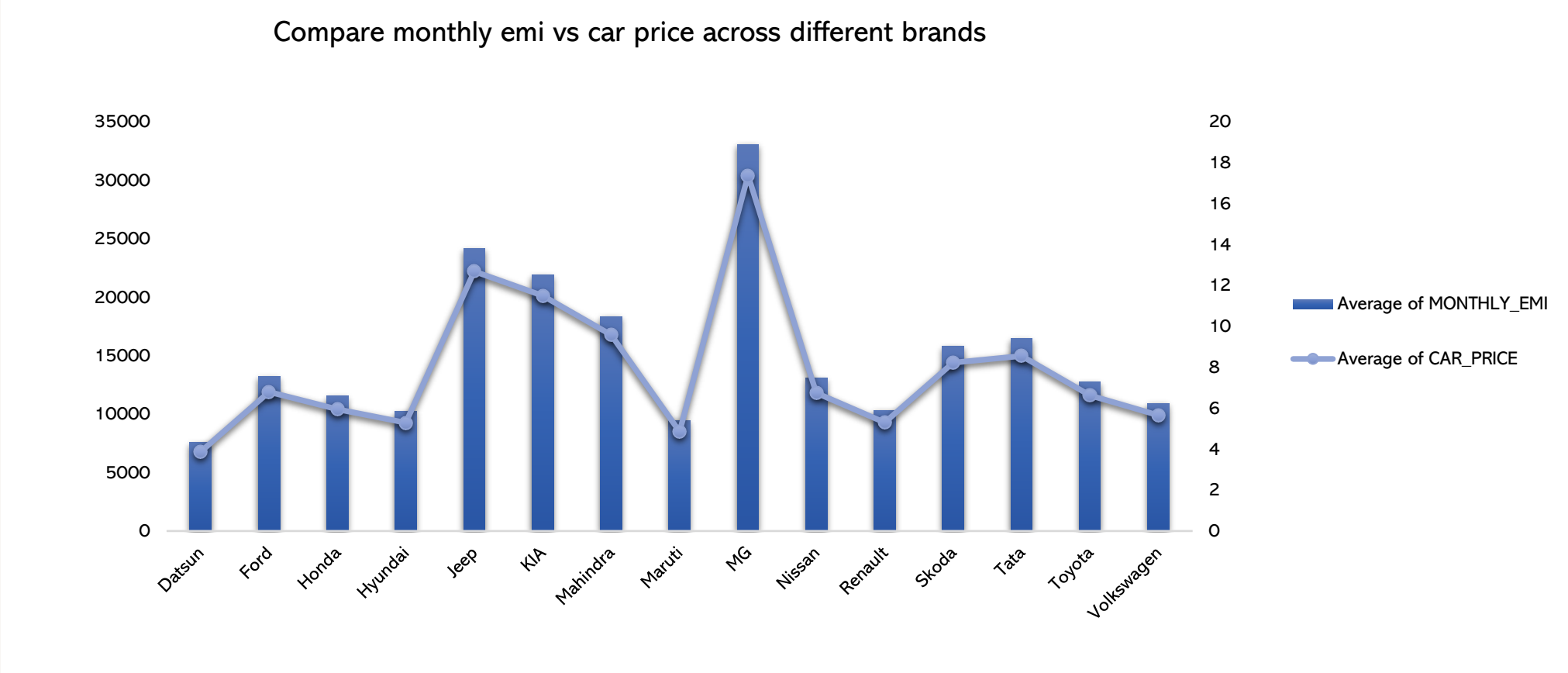
Data Collection (Web scraping with Python)	EDA (With SQL queries)	Visualization (Excel Dashboard)
•The scraping process involves extracting relevant information from the website, such as car listings, prices, brands, models, mileage, and other attributes. •Through automation, the Python script navigates through the website's pages, collects the required data, and stores it in a structured format like CSV or Excel.	•SQL (Structured Query Language) queries are used to extract insights and perform various analyses on the dataset. •SQL queries are crafted to filter, group, aggregate, and manipulate the data to derive meaningful insights. For example, querying average car prices by brand	•Excel is utilized for creating interactive dashboards to visualize key metrics and trends in the car pricing data. •Pivot tables, charts, graphs, and other Excel features are employed to present the analysis findings in a visually appealing and comprehensible manner.

Insight_1



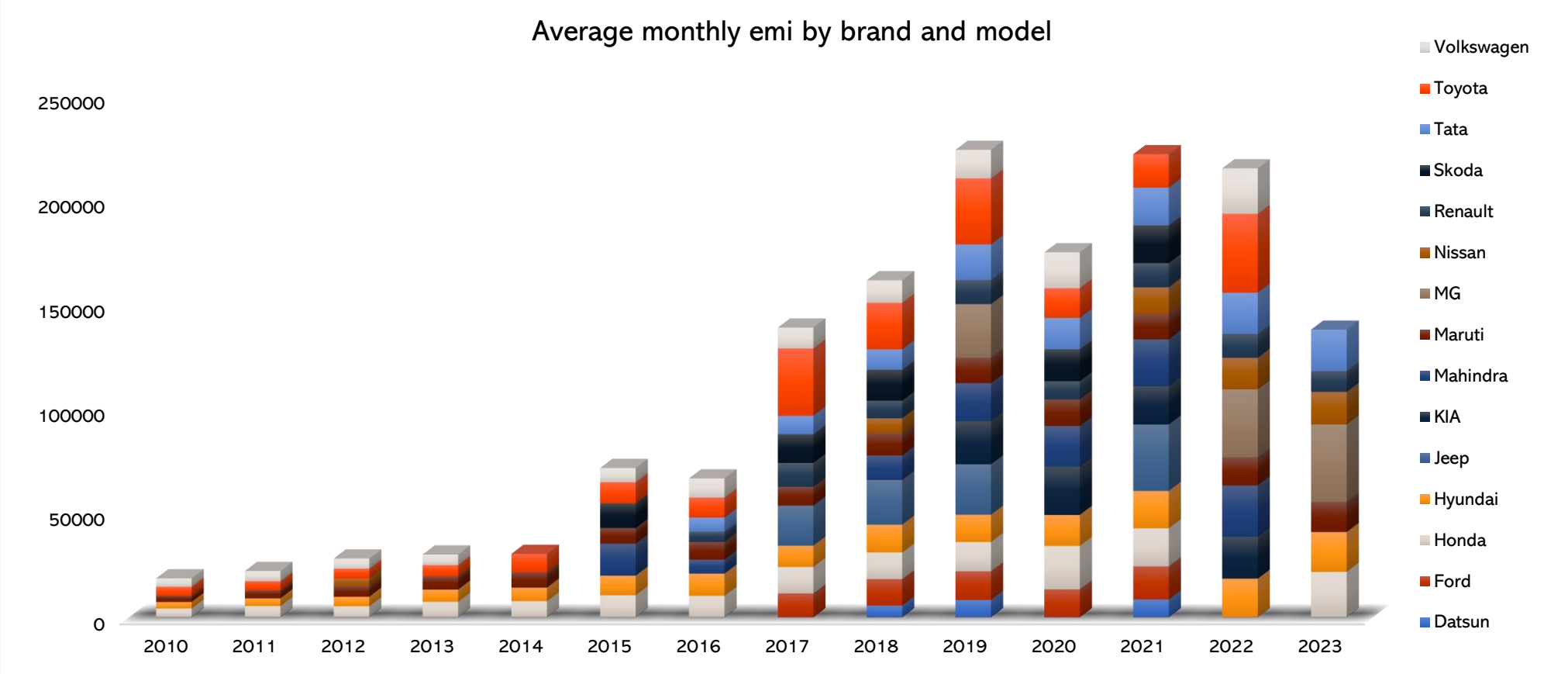
Comparing the average kilometers driven among the top car brands, Toyota emerges as a leader with users covering an annual distance of approximately 65388 km. This signifies the robustness and durability of Toyota vehicles. Whereas MG is at the most bottom position with an average of 16800km, respectively.

Insight_2



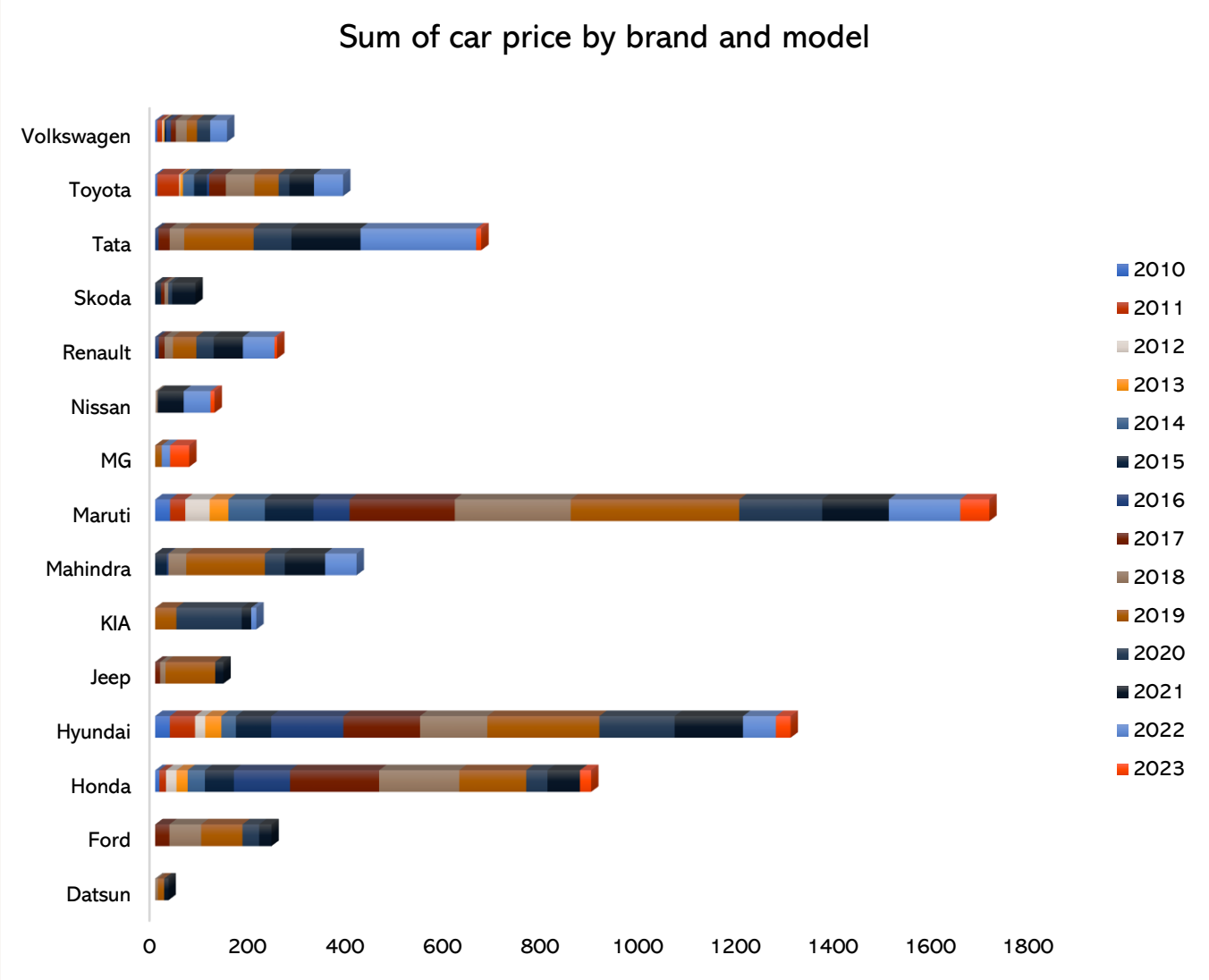
Comparing monthly EMI vs car price across different brands where MG has highest car price as well as monthly EMI and Datsun has the lowest price and EMI that means brands like MG may target affluent consumers seeking luxury and prestige, whereas Datsun may appeal to budget-conscious buyers prioritizing value for money.

Insight_3



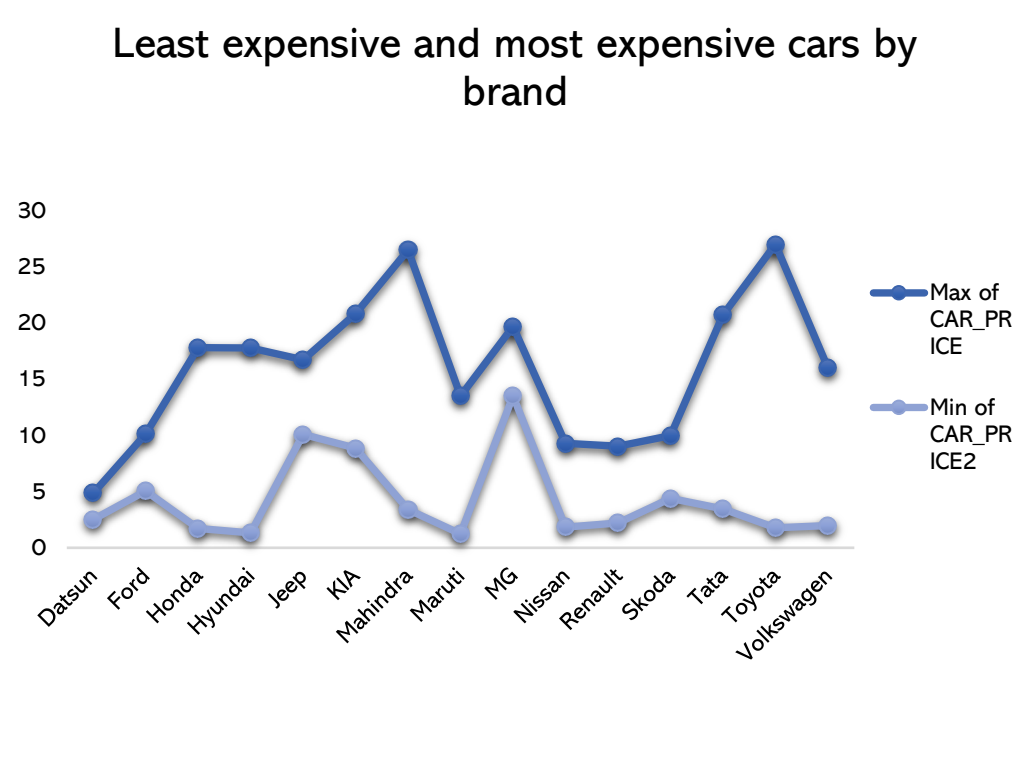
The analysis highlights the variation in monthly EMIs across different brands and model years where Toyota has the highest monthly EMI in model year 2022 and Maruti has the lowest monthly EMI in 2010.

Insight_4



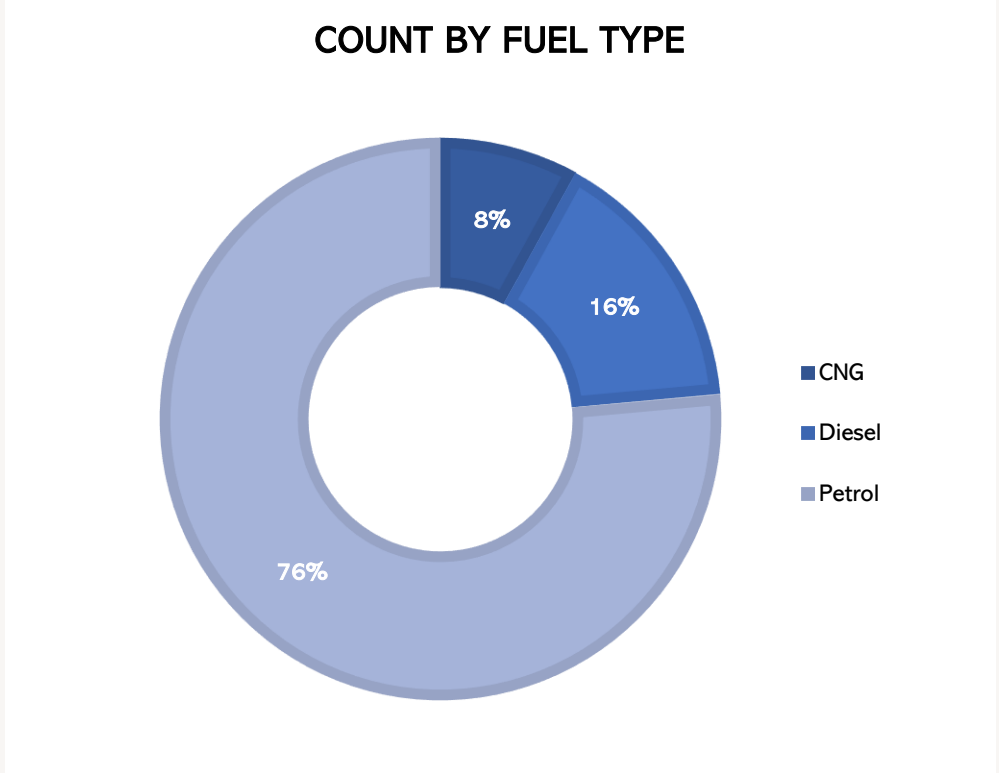
After analyzing sum of car prices by different brands and models it can be seen that Maruti has the highest total car prices in 2019 whereas Nissan has the lowest total car prices in 2012.

Insight_5



After analyzing least and most expensive cars by brand it can be seen that some brands may have higher average prices due to factors such as brand reputation, vehicle features, and market demand like as per the analysis Toyota has the most expensive cars and Maruti has the least expensive cars.

Insight_6



As per the analysis of fuel types Petrol is most preferable type among the people and least preferable fuel type is CNG. It means people are more user friendly with petrol cars.

1. Can you provide information on the least expensive and most expensive cars for each brand available at CARS24, along with their specifications?

CAR_MODEL	BRAND	CAR_NAME	CAR_VARIANT	CAR_TRANSMISSION	KM_DRIVEN	OWNER_TYPE	FUEL_TYPE	REGISTRAION_ID	MONTHLY_EMI	CAR_PRICE	DOWNPAYMENT_AMOUNT	LOCATION
2010	Honda	City	1.5L I-VTEC V MT	Manual	115507	1st	Petrol	DL9C	3343	1.71	Zero down payment	New Delhi
2010	Hyundai	i10	SPORTZ 1.2	Manual	122483	1st	Petrol	HR12	2561	1.31	Zero down payment	Ghaziabad
2010	Maruti	Zen Estilo	LXI	Manual	19332	1st	Petrol	DL4C	2424	1.24	Zero down payment	New Delhi
2011	Toyota	Etios	G SP	Manual	85946	2nd	Petrol	DL3C	3460	1.77	Zero down payment	Noida
2011	Volksw...	Vento	TRENDLINE 1.6	Manual	69805	3rd	Petrol	DL3C	3871	1.98	Zero down payment	New Delhi
2012	Nissan	Micra	XV PETROL	Manual	52349	2nd	Petrol	DL1C	3597	1.84	Zero down payment	Noida
2015	Skoda	Rapid	ELEGANCE 1.6 MPI AT	Automatic	121133	1st	Petrol	HR26	8583	4.39	Zero down payment	New Delhi
2016	Mahindra	Kuv100	K8 5 STR	Ma	46364	2nd	Petrol	HR51	6628	3.39	Zero down payment	Faridabad
2016	Renault	Kwid	RXT 0.8 (O)	Manual	90523	1st	Petrol	HR26	4281	2.19	Zero down payment	New Delhi
2016	Tata	Tiago	XZ PETROL	Manual	39542	2nd	Petrol	UP16	6764	3.46	Zero down payment	Noida

Automatic

After analyzing least and most expensive cars by brand it can be seen that some brands may have higher average prices due to factors such as brand reputation, vehicle features, and market demand like as per the analysis Toyota has the most expensive cars and Maruti has the least expensive cars.

2. CARS 24 Manager wants you to compare the average prices of cars from each brand this year to those from last year.

BRAND	CAR_NAME	CAR_MODEL	avg_price	previous_year_price
Datsun	Go	2019	4.54	0
Datsun	Go Plus	2019	4.1	0
Datsun	Go Plus	2021	4.86	4.1
Datsun	Redi Go	2018	2.86	0
Datsun	Redi Go	2021	3.84	2.86
Ford	Ecosport	2017	5.83	0
Ford	Ecosport	2018	6.59	5.83
Ford	Ecosport	2019	7.18	6.59
Ford	Ecosport	2020	8.88	7.18
Ford	Ecosport	2021	9.5	8.88

After analyzing the data we came to know that average car prices are continuously increasing as compared to previous year car price for each car brand.

Conclusion

Summary

In conclusion, some brands may have higher average prices due to factors such as brand reputation, vehicle features, and market demand like as per the analysis Toyota has the most expensive cars and Maruti has the least expensive cars.

It also concludes that as per the fuel types Petrol is most preferable type among the people and least preferable fuel type is CNG.

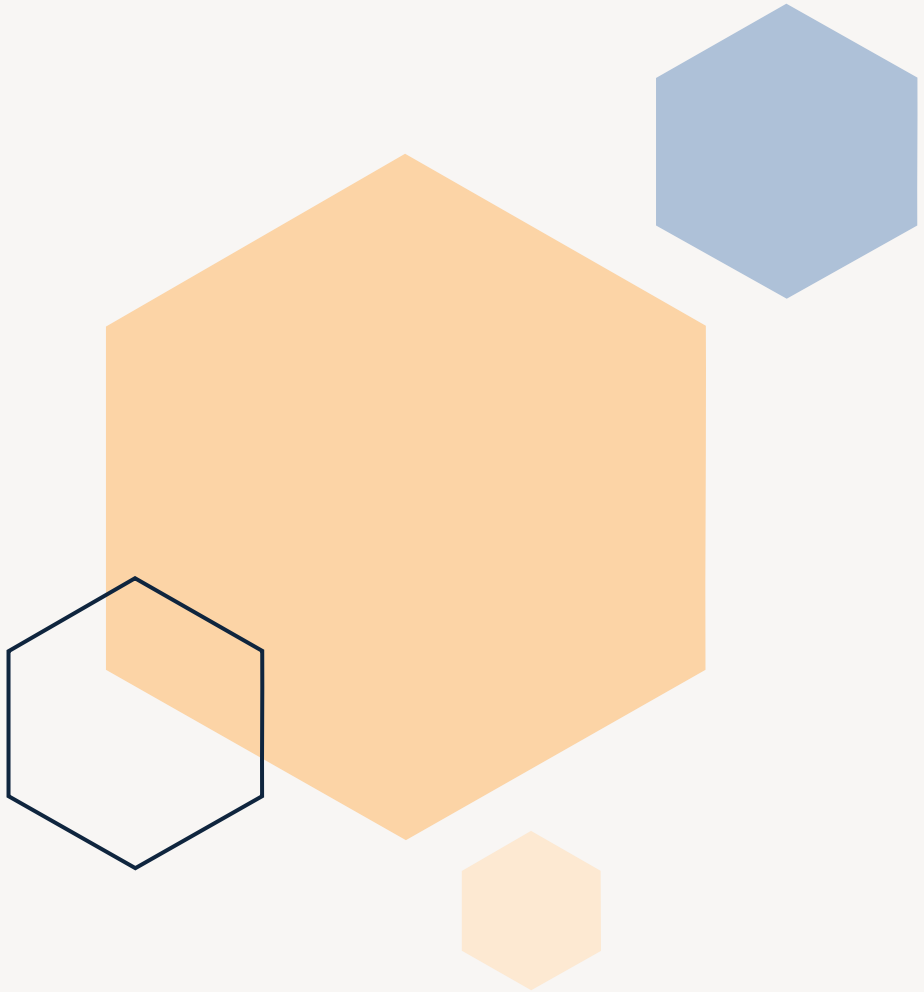
Challenges

Following are the challenges that we have faced during the project analysis

- To understand website structure
- Understanding the HTML structure and identifying the specific elements to extract the data
- Legal and ethical issues
- Creating some meaningful insights

Lessons learned

Understanding data sources, Web scraping techniques, Data cleaning and preprocessing, SQL data analysis, Excel dashboard development, Presentation, Team work



Future work

After analyzing the Cars24 data through different columns like Brand, Car prices, Car emi, Fuel type, location etc; customers requirements can be understandable and based on that better services and offerings can be provided to the various customers as per their needs.

Based on the analysis it can be suggested to expand into new markets, introducing new product lines, optimizing pricing strategies, improving customer service, and more.




Thank you