



INNOVATION. AUTOMATION. ANALYTICS

# **PROJECT ON**

# **Bengaluru Used Cars Price Analysis**

by:

Kasarla Shravya

Vellaturi Phanindraamouli

Madhavi

# Problem Statement


- To analyze Bengaluru used car market and understand the factors that influence car prices.

## Objective of the Project

By using historical data of used cars in Bengaluru, this project aims to:

- Identify key factors (such as brand, Year of Manufacture, Fuel type) that most strongly affect the resale value of cars.
- Provide insights into trends in car demand and pricing patterns to assist buyers, sellers, and dealers in making informed decisions.

# Data Collection - Web Scraping

- Website: CarTrade 
- Website URL: <https://www.cartrade.com/>
- We chose data analyze of Used Cars from Bengaluru City
- URL: <https://www.cartrade.com/buy-used-cars/bangalore/c/page-2/#so=-1&sc=-1&city=2>
- Above URL is 2<sup>nd</sup> Page URL, we scraped data from 30 pages
- We used 'BeautifulSoup', 'requests' Libraries for scraping data from website

# Website Interface

Sort ByBest Matches

Show☒ All Cars☐ abSure Cars☐ Certified Cars☐ Luxury Cars

Price

Fuel

KMs

Age

Transmission

Body Type

No. of Owners

Seller Type

Refine ResultsReset

City

Bangalore

POPULAR CITIES

Mumbai

Delhi

Pune

Bangalore

Chennai

Hyderabad

Kolkata

Ahmedabad

Coimbatore

Make

Select Manufacturer

POPULAR BRANDS

+ Hyundai (1114)

+ Maruti Suzuki (1064)


+ Toyota (450)

+ Mahindra (412)

+ Tata (371)

+ Honda (336)


+ Mercedes-Benz (288)




div.grid\_cnt\_new.overflow-hidden.card-detail-block

340 × 192


2019 Volkswagen Vento Highline 1.2 (Petrol)  
₹9,41,000 ₹9.61 Lakh  
Make OfferHOME TEST DRIVE  
48,000 KMs | Petrol | Adegudi, Bangalore  
CONTACT SELLER




2020 Tata Nexon XZA Plus [2020-2023]  
₹9,95,000  
Make OfferJUST ARRIVED  
32,901 KMs | Petrol | Singasandra, Bangalore  
CONTACT SELLER



1st Cars



STANDARD AUTO

 INNOMATICS  
RESEARCH LABS

# Data Cleaning

- Initially, data has 720 rows and 8 columns
- Type conversion: Changed datatypes from object to respective datatypes.
- Null Values : No null values
- Duplicate rows : 123 duplicate rows identified and dropped.

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 597 entries, 0 to 596
Data columns (total 8 columns):
#   Column                      Non-Null Count  Dtype
---  -
0   Brand                       597 non-null    object
1   Model                       597 non-null    object
2   Year_of_Manufacture         597 non-null    int32
3   Fuel_Type                   597 non-null    object
4   KMs_Driven                  597 non-null    int64
5   Location                    597 non-null    object
6   Car_Age_Category            597 non-null    object
7   Price(in_Lakhs)             597 non-null    float64
dtypes: float64(1), int32(1), int64(1), object(5)
```

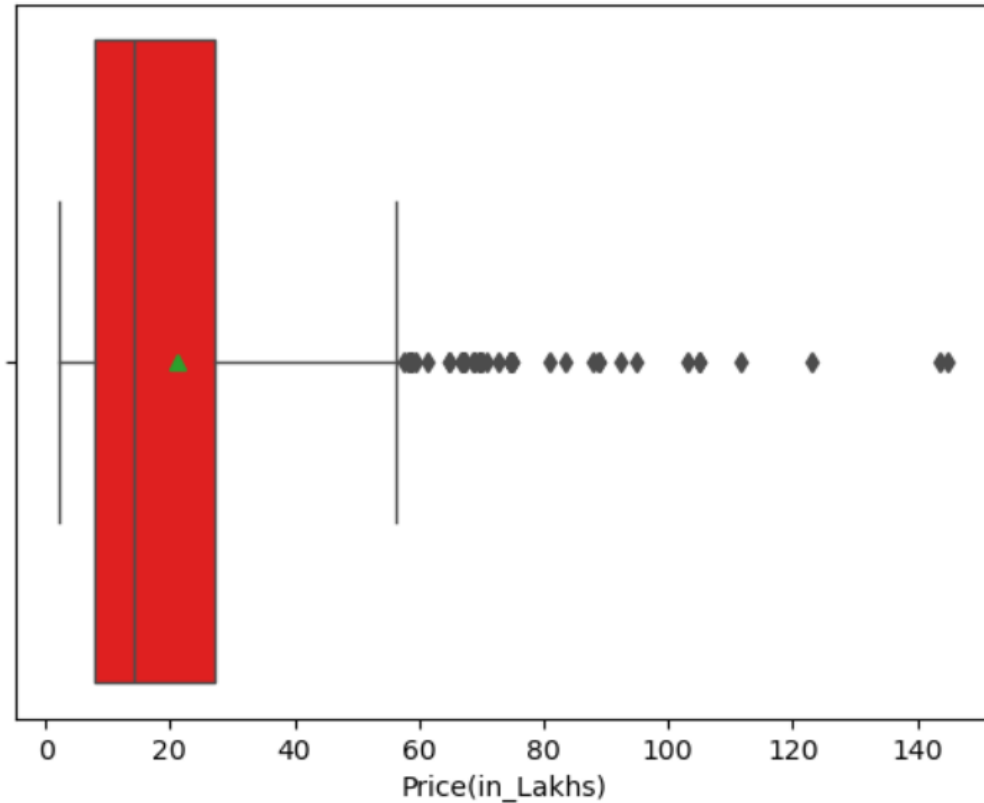
## Data Description

	Brand	Model	Year_of_Manufacture	Fuel_Type	KMs_Driven	Location	Car_Age_Category	Price(in_Lakhs)
0	Mahindra	XUV700 AX 7 Diesel AT AWD Luxury Pack 7 STR	2022	Diesel	29705	Singasandra	New	26.95
1	Mahindra	XUV500 W7 AT	2018	Diesel	49131	Singasandra	Moderate	13.45
2	Tata	Nexon XZ Plus Diesel Dark Edition	2022	Diesel	12336	Singasandra	New	12.95
3	BMW	3 Series 320d Sport Line	2020	Diesel	44244	BTM Layout	Moderate	45.25
4	Maruti Suzuki	Ertiga ZXi AT	2021	Petrol	8412	Singasandra	Moderate	11.85

# Analysis

## Prices

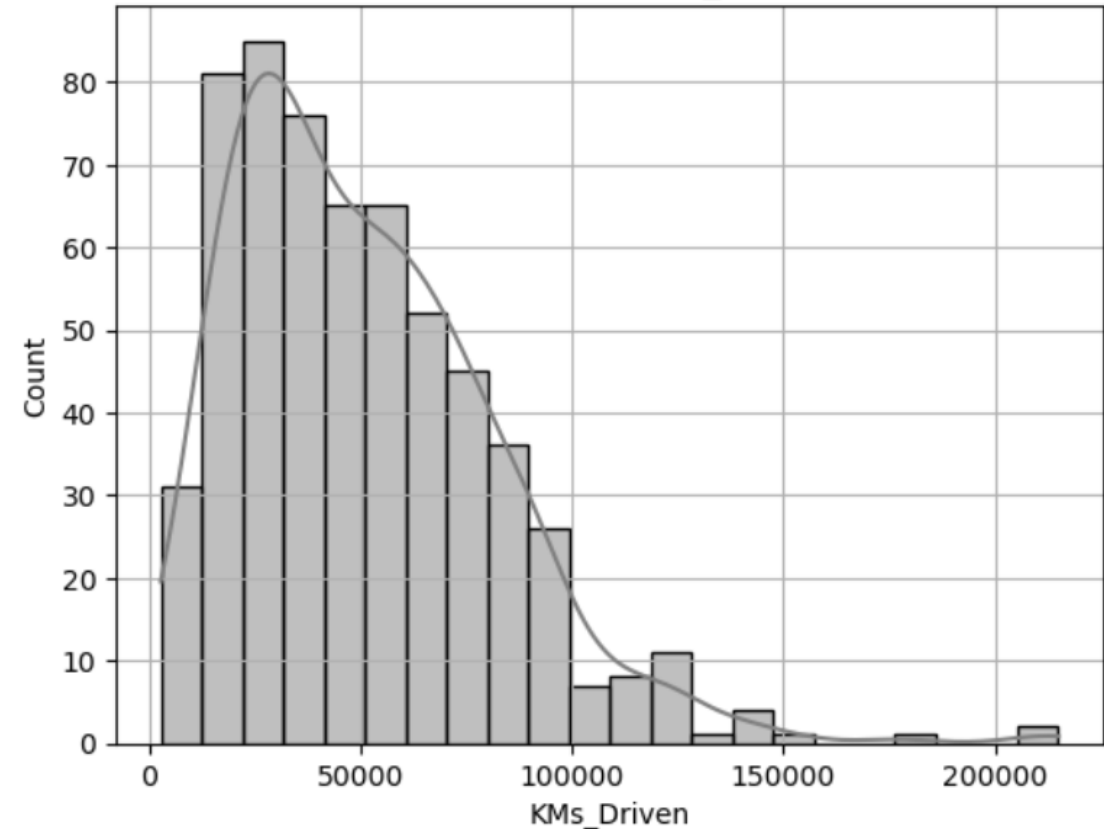
Representation of Outliers of Car Prices



▲ indicates mean value

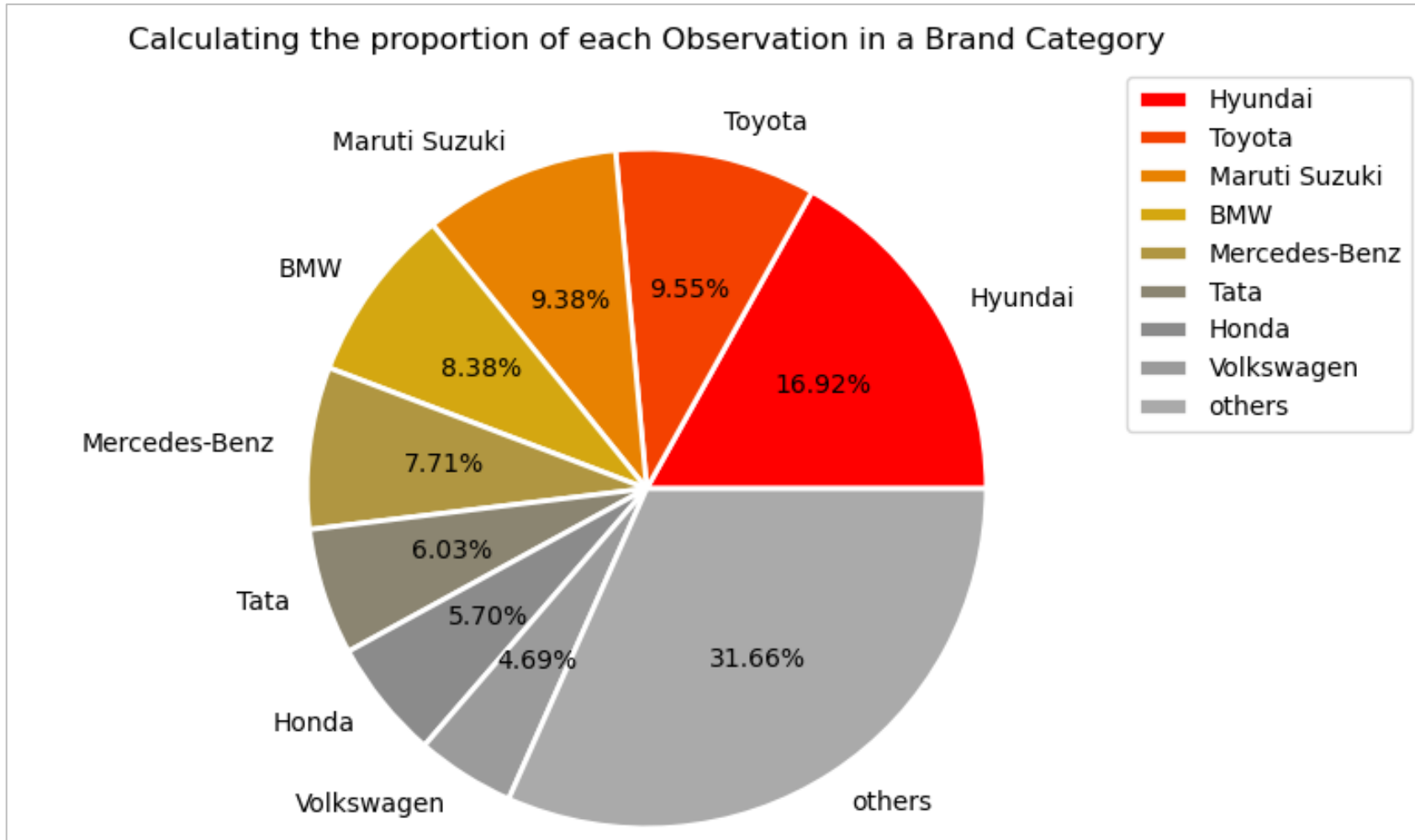
## KMs Driven

Distribution of KMs\_Driven

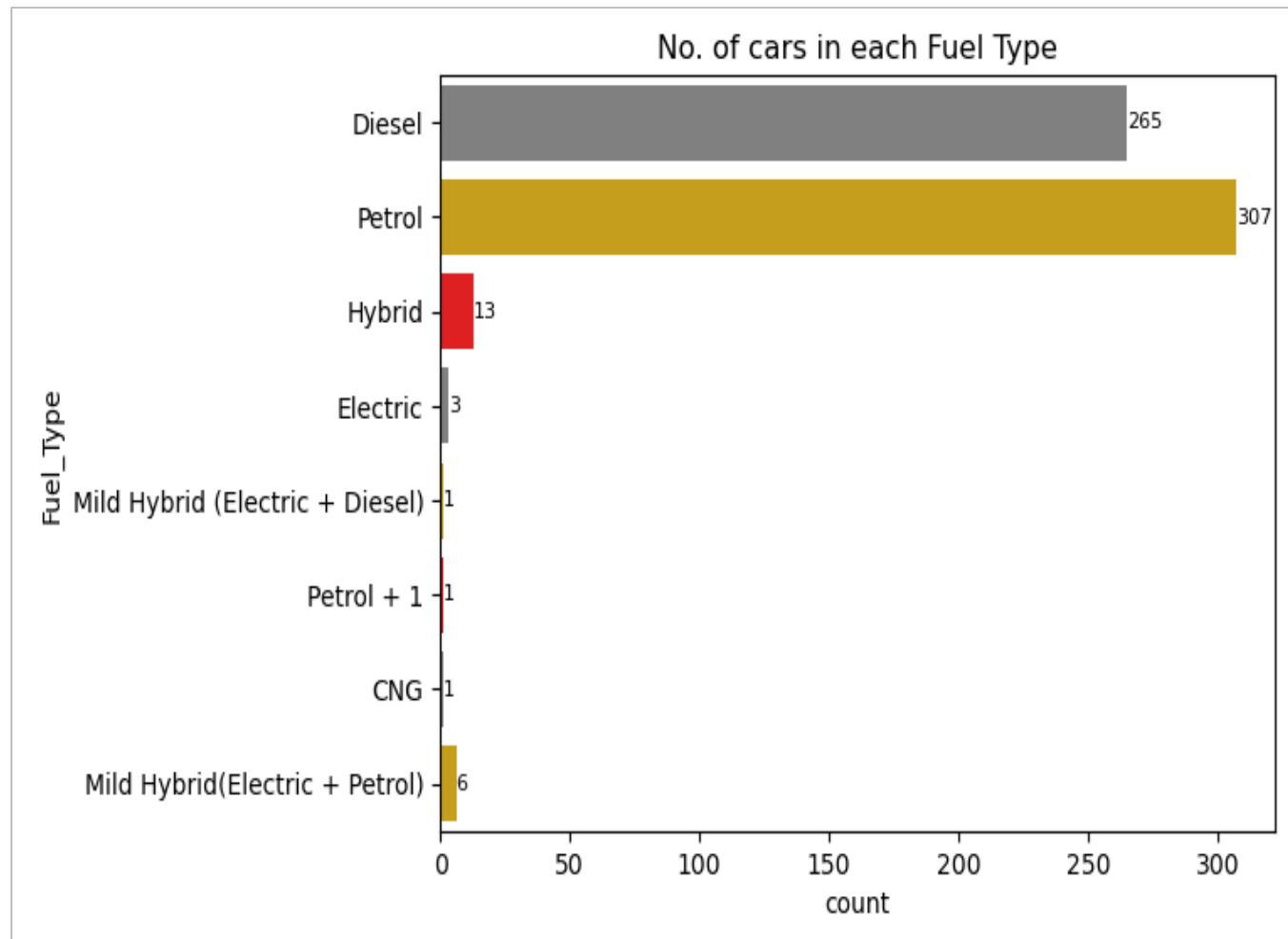


# Brand – Top 8 Brands

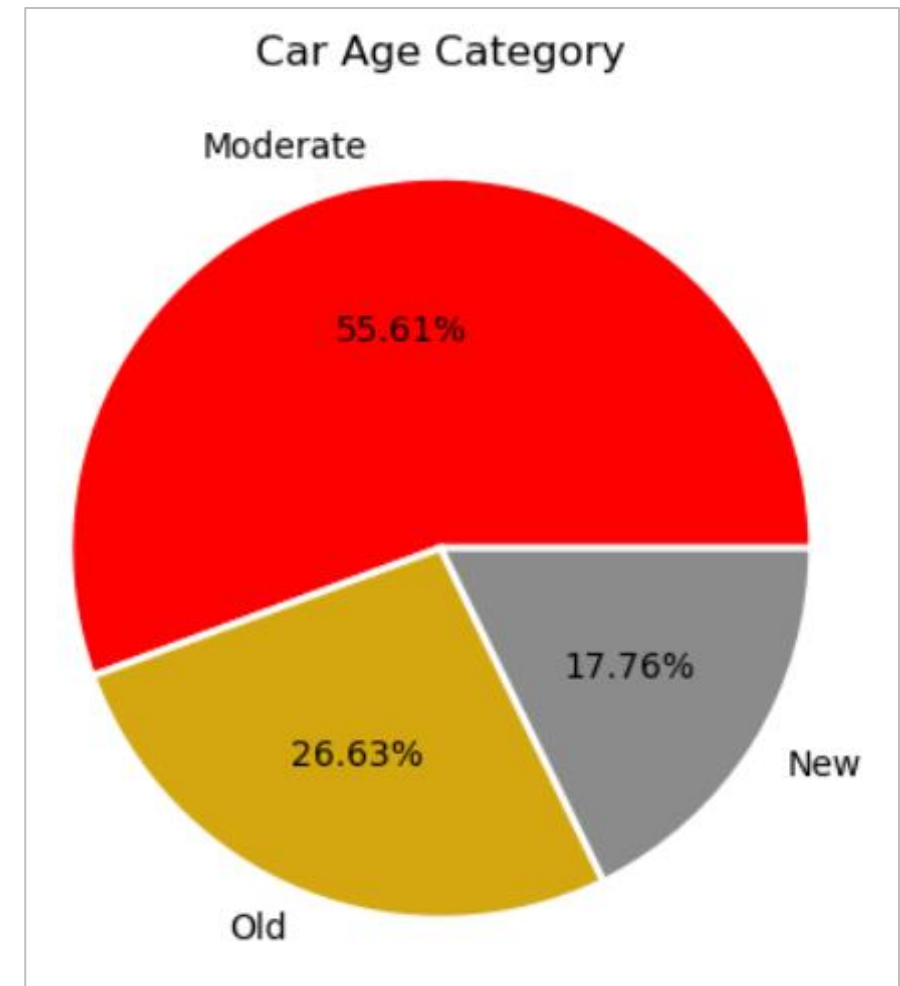
Calculating the proportion of each Observation in a Brand Category



## Fuel Type

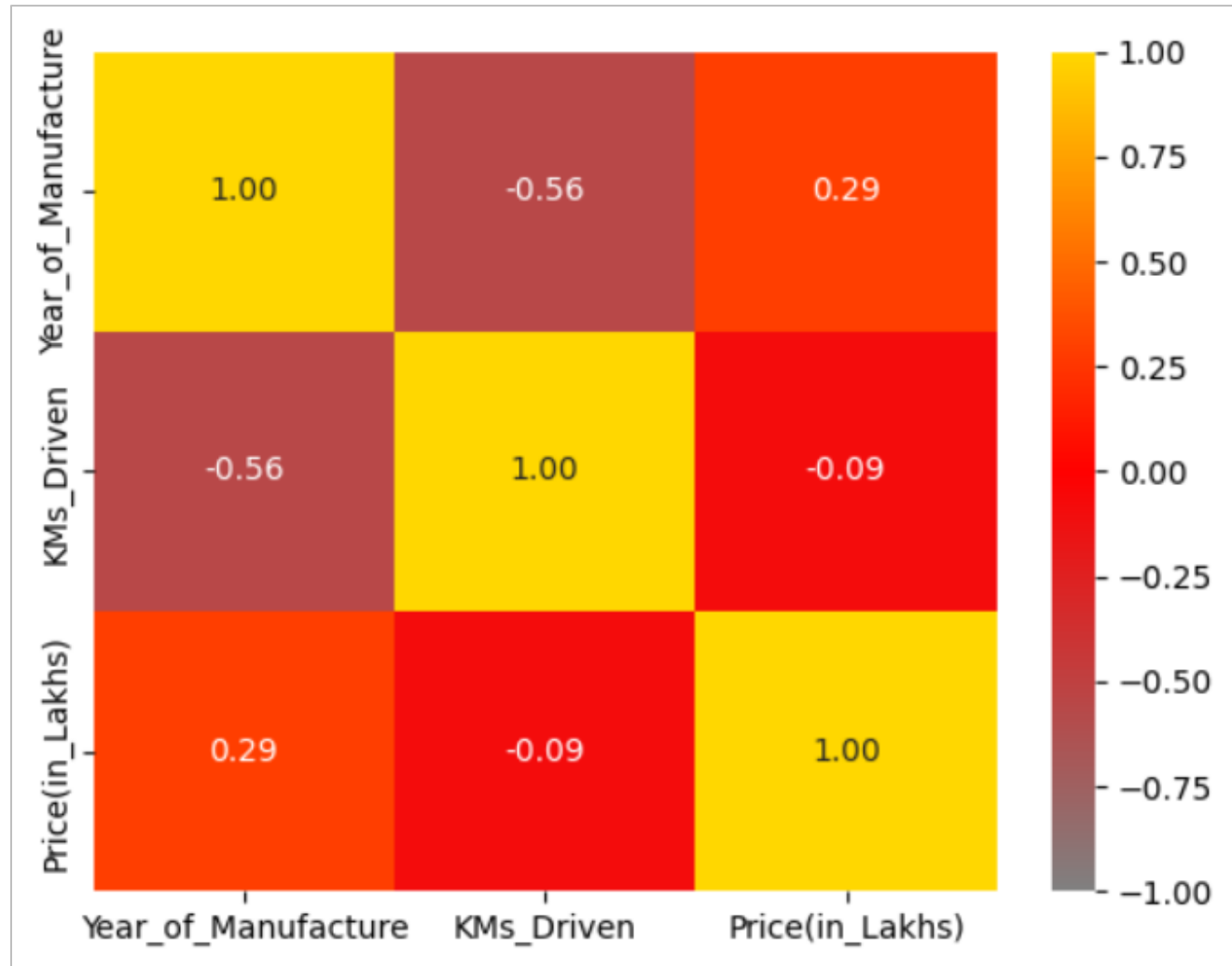


## Car Age Category

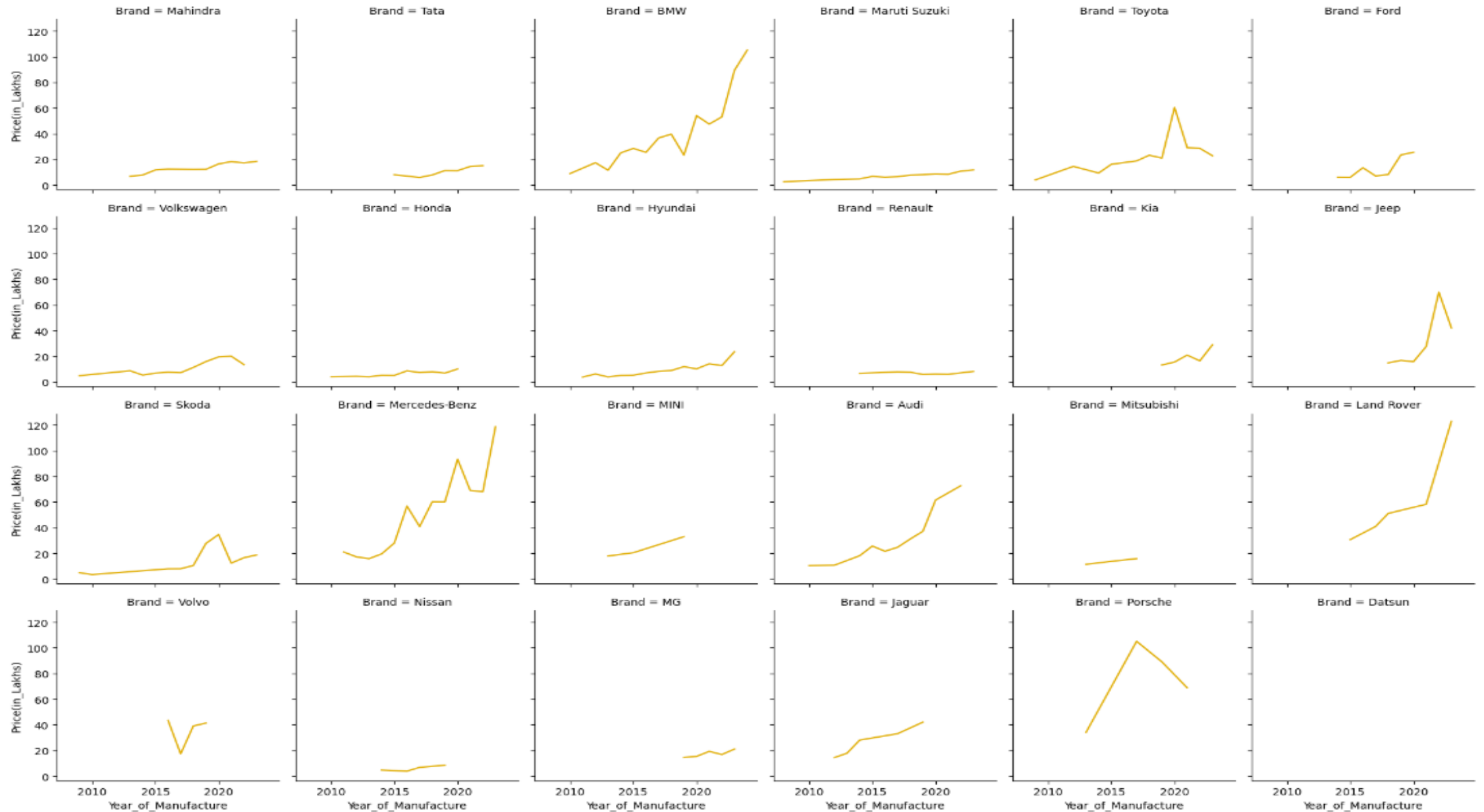




# Heat Map of Numerical Columns – Year of Manufacture, KMs Driven and Price



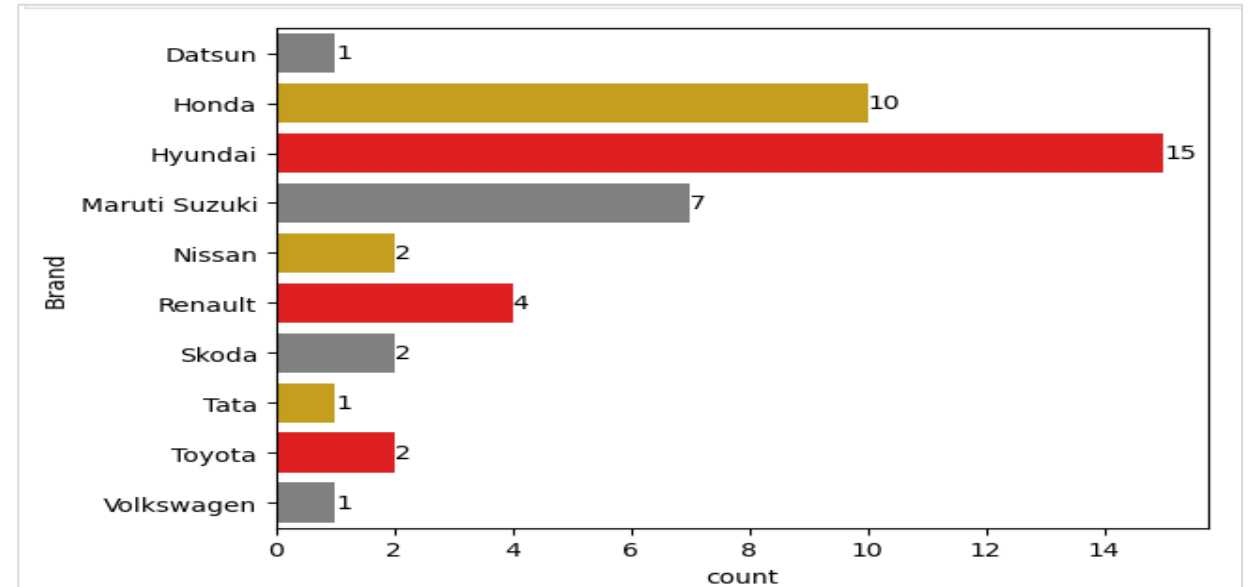
# Brand vs Year vs Price



# Scenario

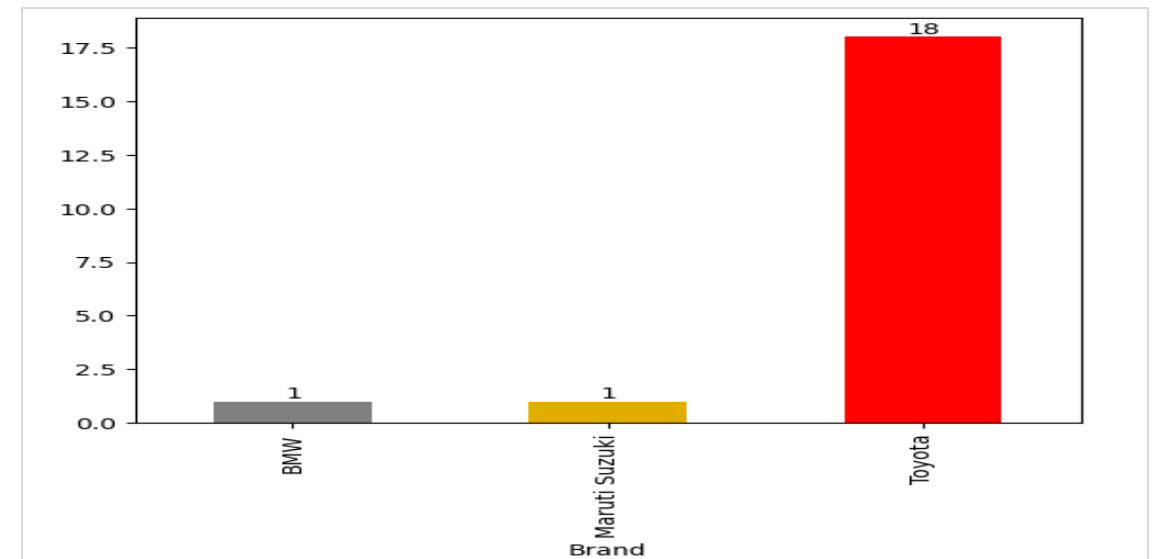
**Q. A person wants to buy a second-hand car with in a budget of 5 lakhs.**

Suggest cars whose prices are under 5 lakhs



**Q. A person wants to know which brands offer Hybrid Cars**

(Hybrid includes Hybrid, Mild Hybrid (Electric + Diesel), Mild Hybrid(Electric + Petrol))



## Q. Based on User preferences Brand, Year, Fuel. Suggest average price of car

Select your car brand of choice(e.g. Ford): Hyundai

Select Year of Manufacture(2008-2024): 2018

Select your fuel of choice: Petrol

-----  
Average Price of Hyundai Petrol cars from 2018 is 7.55 lakhs  
-----

There are 10 cars available

	Brand	Model	Year_of_Manufacture	Fuel_Type	KMs_Driven	Location	Car_Age_Category	Price(in_Lakhs)
578	Hyundai	Santro Sportz	2018	Petrol	44778	Banaswadi	Moderate	4.56347
579	Hyundai	Grand i10 Asta 1.2 Kappa VTVT	2018	Petrol	91312	Banaswadi	Moderate	5.16000
384	Hyundai	Grand i10 Sportz (O) AT 1.2 Kappa VTVT	2018	Petrol	58000	BTM Layout	Moderate	5.65000
79	Hyundai	Grand i10 Asta 1.2 Kappa VTVT	2018	Petrol	47378	Bettahalsoor	Moderate	6.25000
577	Hyundai	Elite i20 Asta 1.2 (O)	2018	Petrol	81961	Banaswadi	Moderate	6.57000
469	Hyundai	Elite i20 Sportz 1.2	2018	Petrol	19000	Hebbal	Moderate	7.23000
540	Hyundai	Elite i20 Asta 1.2	2018	Petrol	109000	Anand Nagar	Moderate	7.50000
203	Hyundai	Verna Fluidic 1.6 VTVT SX	2018	Petrol	69020	Anand Nagar	Moderate	8.95000
518	Hyundai	Creta SX Plus 1.6 Petrol	2018	Petrol	40000	Hebbal	Moderate	10.75000
154	Hyundai	Creta SX 1.6 AT Petrol	2018	Petrol	40377	Singasandra	Moderate	12.85000

# Conclusion

- Hyundai cars are available in affordable range and more in number followed by Maruti Suzuki, in used cars market
- 95% cars are Petrol and Diesel, while others fuel types are very less in used cars market
- Petrol cars are in spread wide range price, where as diesel are cheaper than petrol ones
- On Overall, Year of Manufacture, KMs Driven, Fuel Type , Brand has influenced has Price of used cars.

# Q&A

THANK  
YOU

