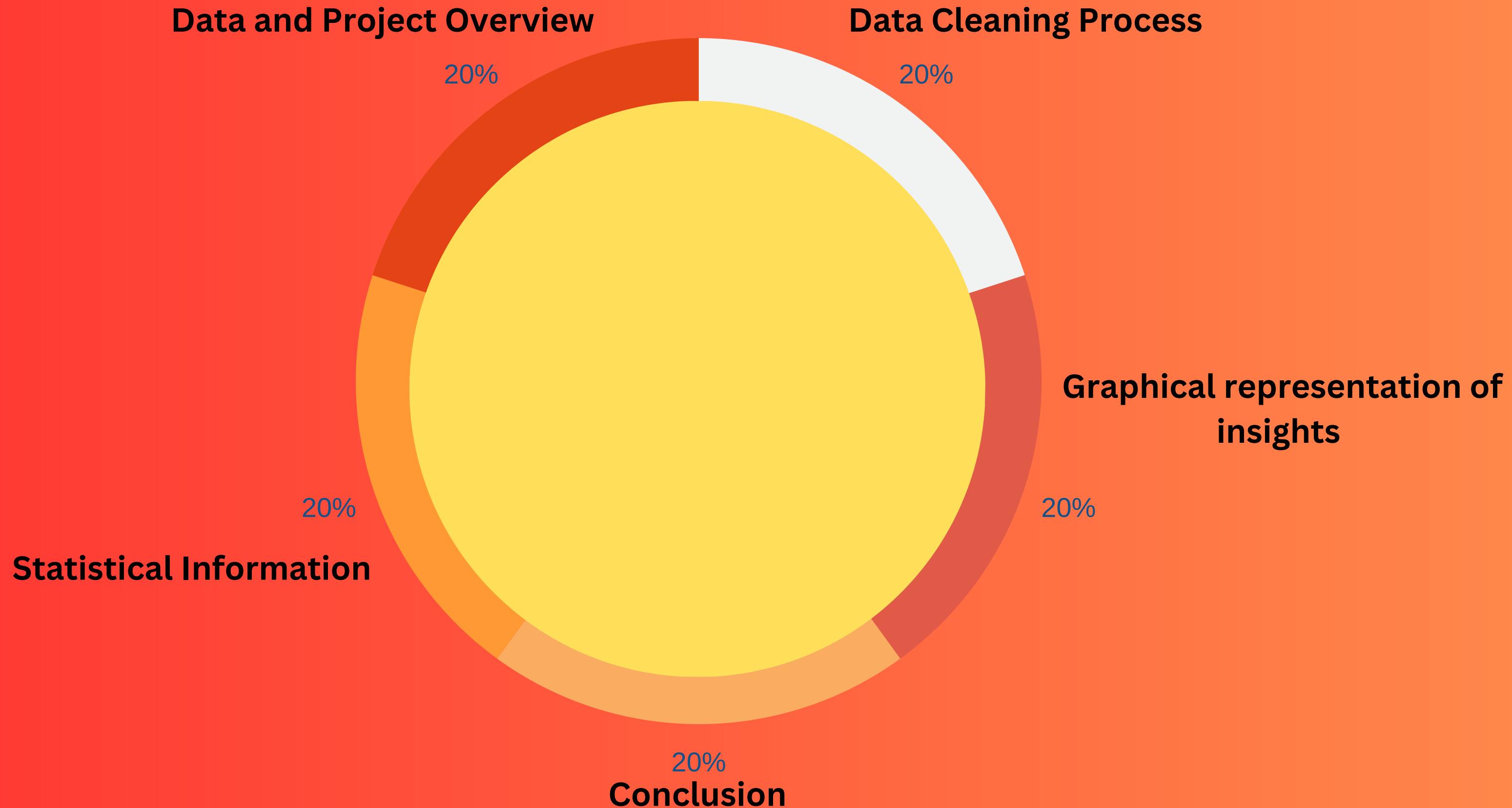


Indian used car data analysis for CarDekho



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Data Description

Source Data set contains from [Cardekho](#) in used car.

Original Data set consists of [19543 rows](#) and 13 columns

Field Information contains of car_name, brand, model, vehicle_age, km_driven, seller_type, fuel_type, transmission, [mileage](#), engine, max_power, seats and selling_Price



Project Objectives

Data Cleaning-

Our project will start revealing gaps and inaccuracies in the data that can interfere with the analysis and then eliminating them

Data Analysis-

Use Pandas, Numpy and other python libraries for investigating our data and searching for interesting info and insights

Statistical Analysis-

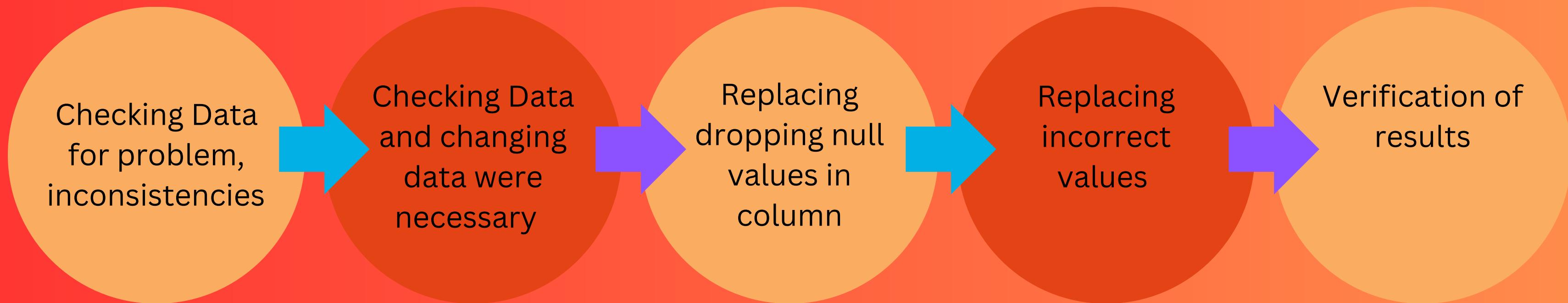
Using Pandas function to obtain statistical information about data and identify relationships between variables

Graphical Representation-

Using the Python Matplotlib library to represent findings using various types of visualizations.

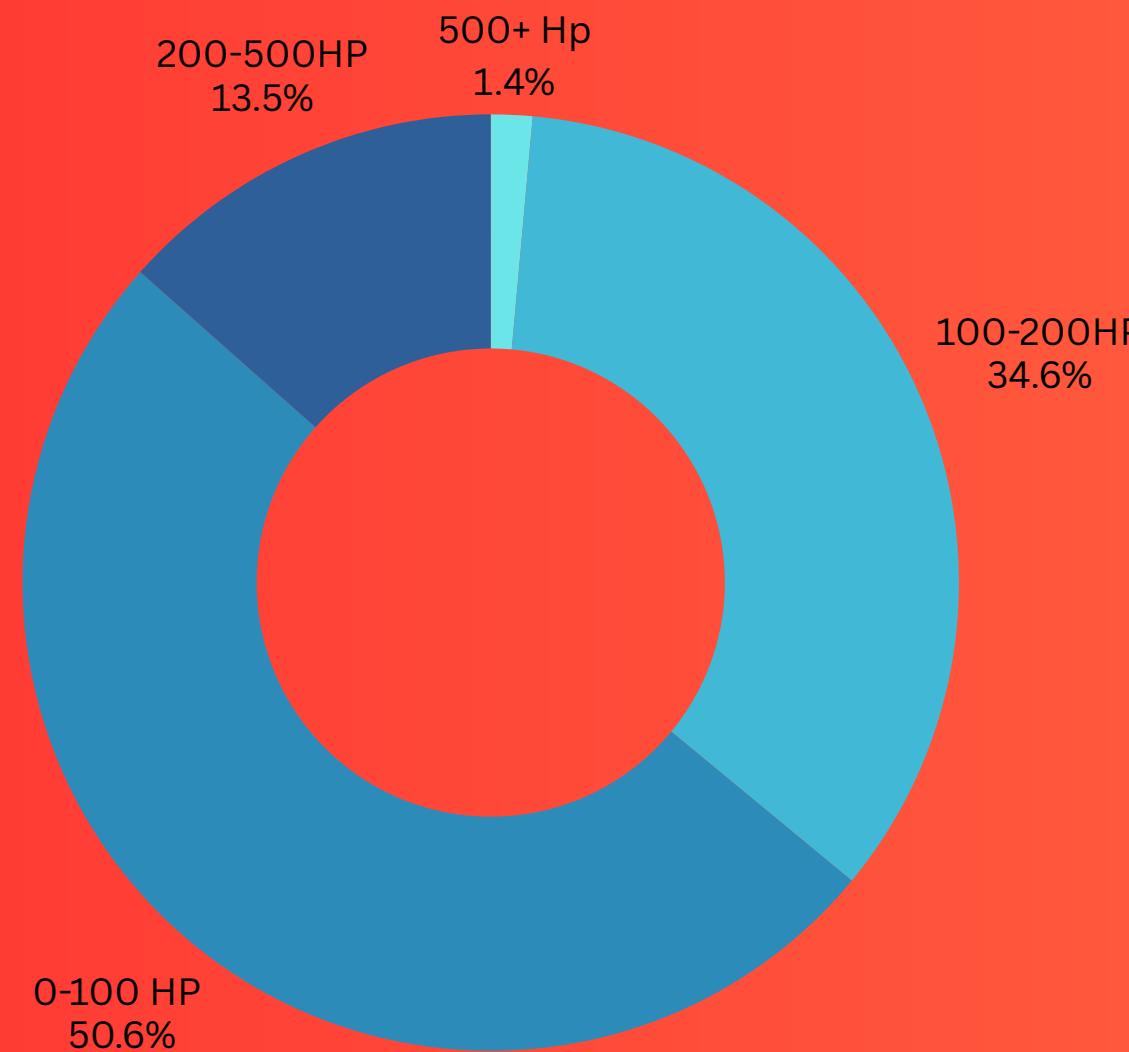
Data Cleaning Process

Different Pandas functions were used to clean and prepare the data for analysis. Process followed the scheme



Horsepower

Horsepower distribution among all cars.



The lowest horsepower is the Maruti Alto, with a maximum power of 46.3 HP.

Bentley Continental, which has a max power of 626.0 HP.

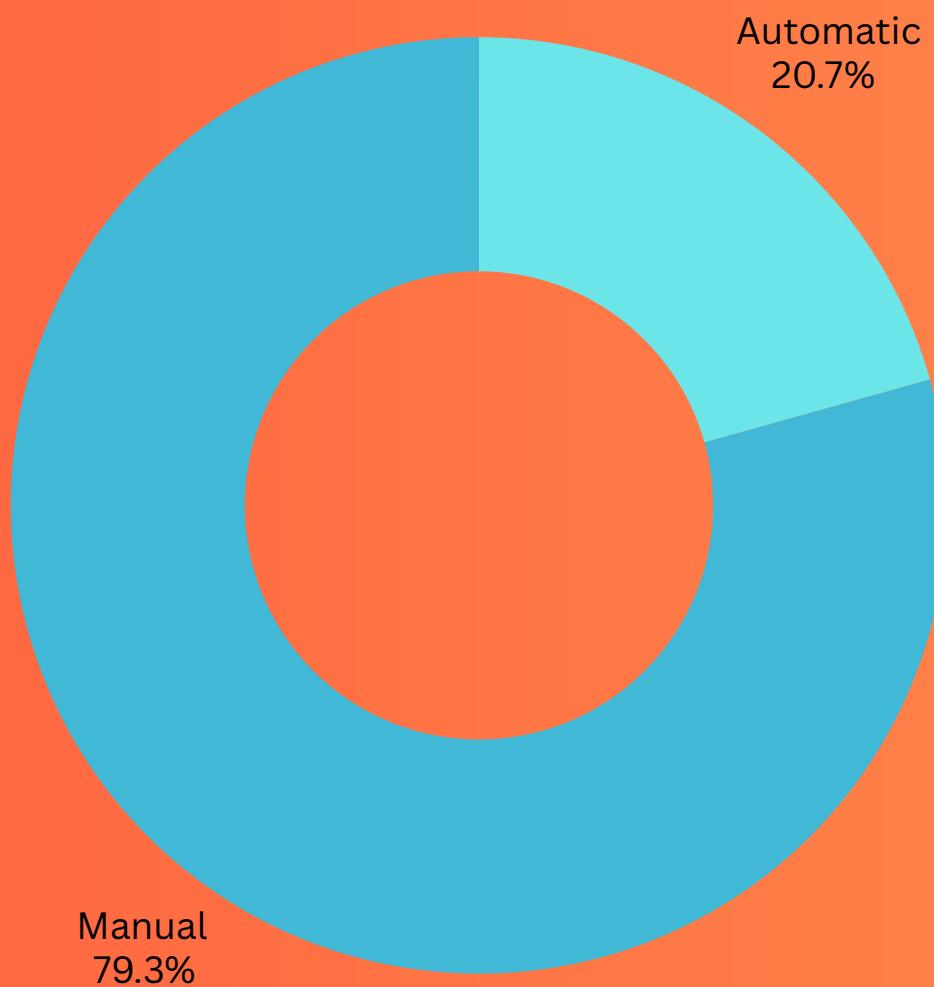
Almost 90% of all cars have less than 200 HP.

Transmission

**Most of the cars have Manual gear type
-12,225 cars.**

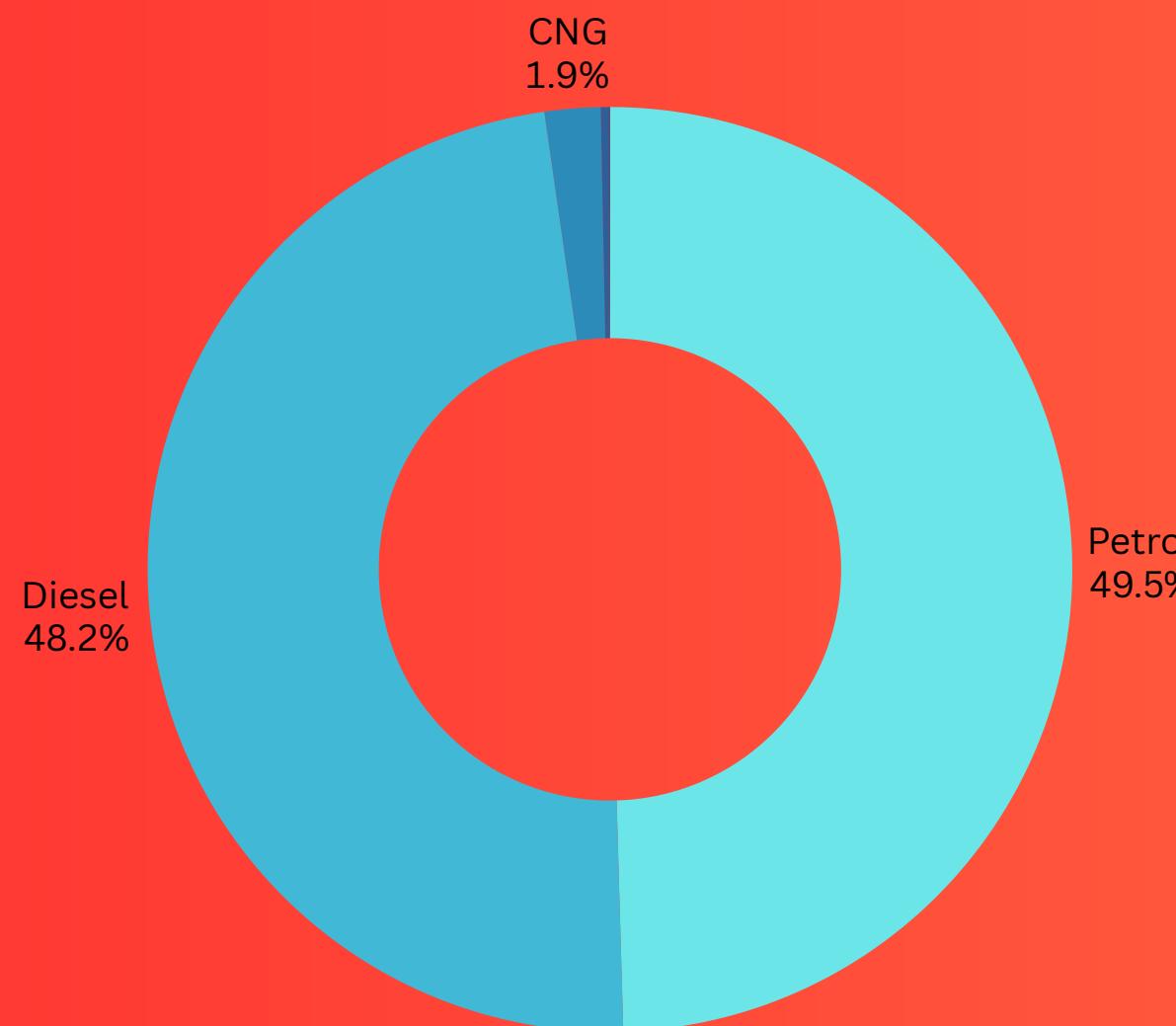
**3,186 cars in Cardekho have Automatic
transition.**

And 0 Semi- Automatic cars.



Fuel types

Fuel types ratio

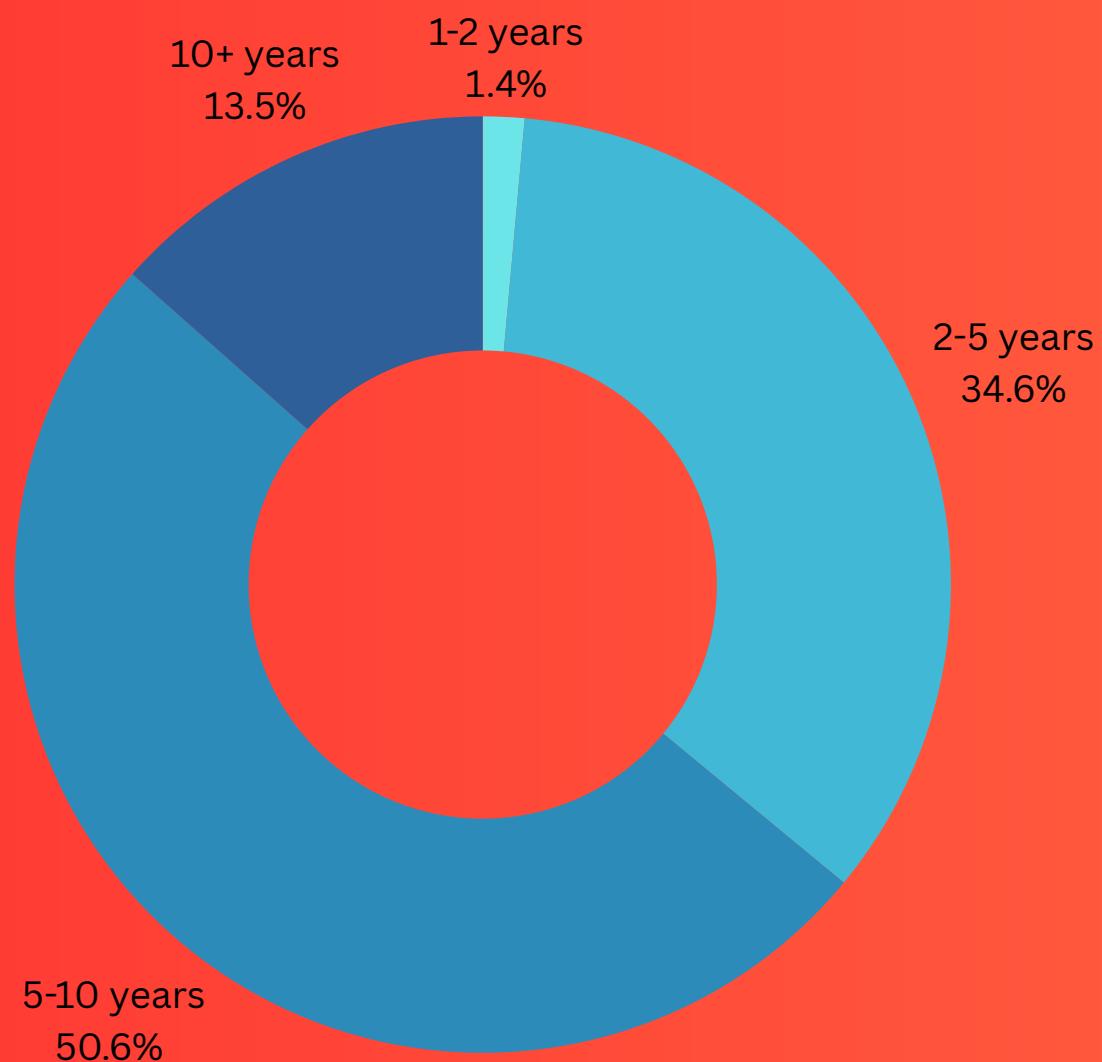


The most of cars- 7,643 are petrol based.

Diesel- 7,419. CNG- 301, LPG- 44, Electric- 4 cars.

Electric vehicles are the least represented 0.03%.

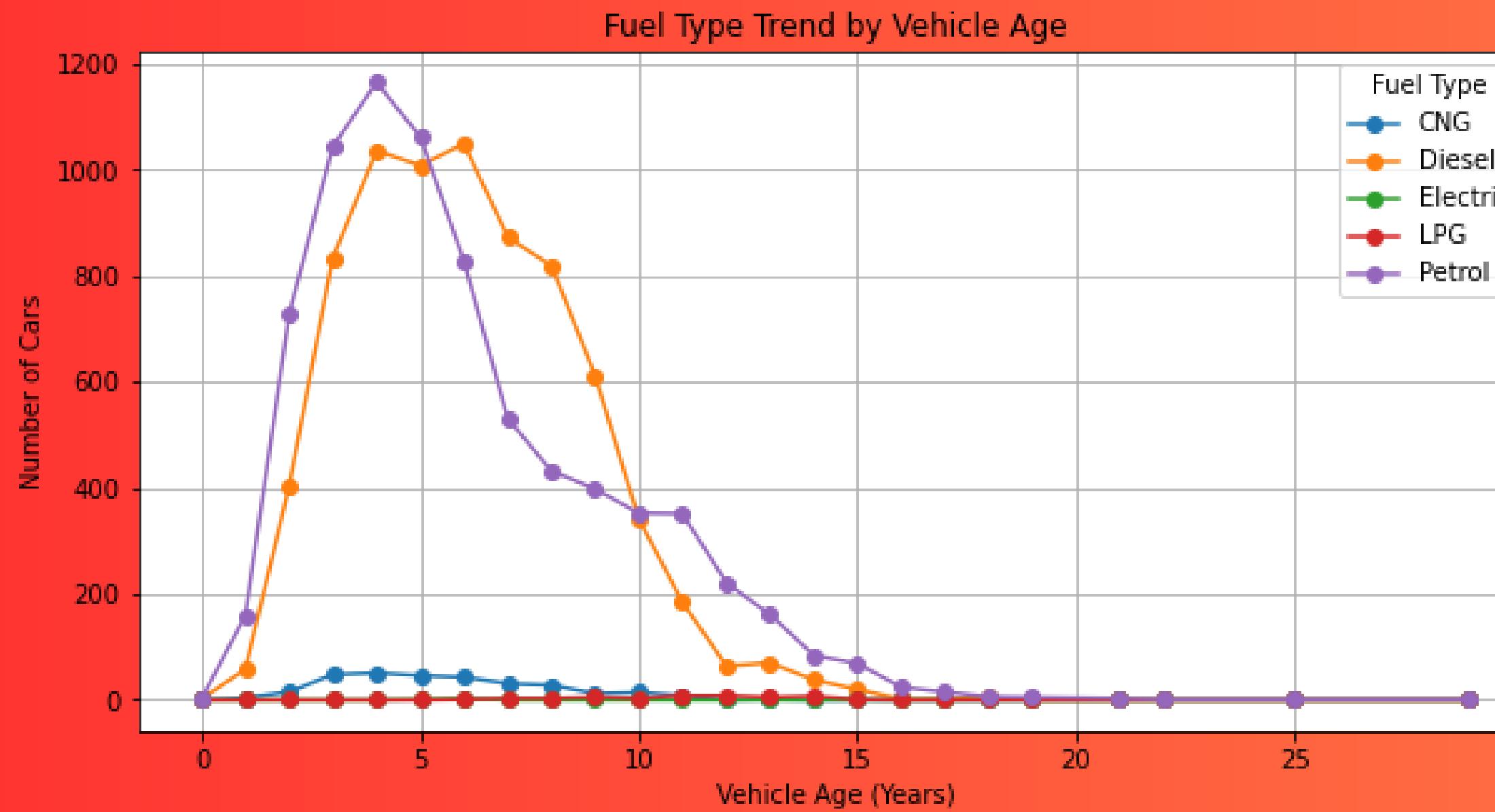
Vehicle age



The most of cars are 5-10 years of age which is 50.6 %

Many people finance cars with 5-year loans. Once the loan is paid off, owners often sell in their vehicles.

Fuel Type Trend by Vehicle Age

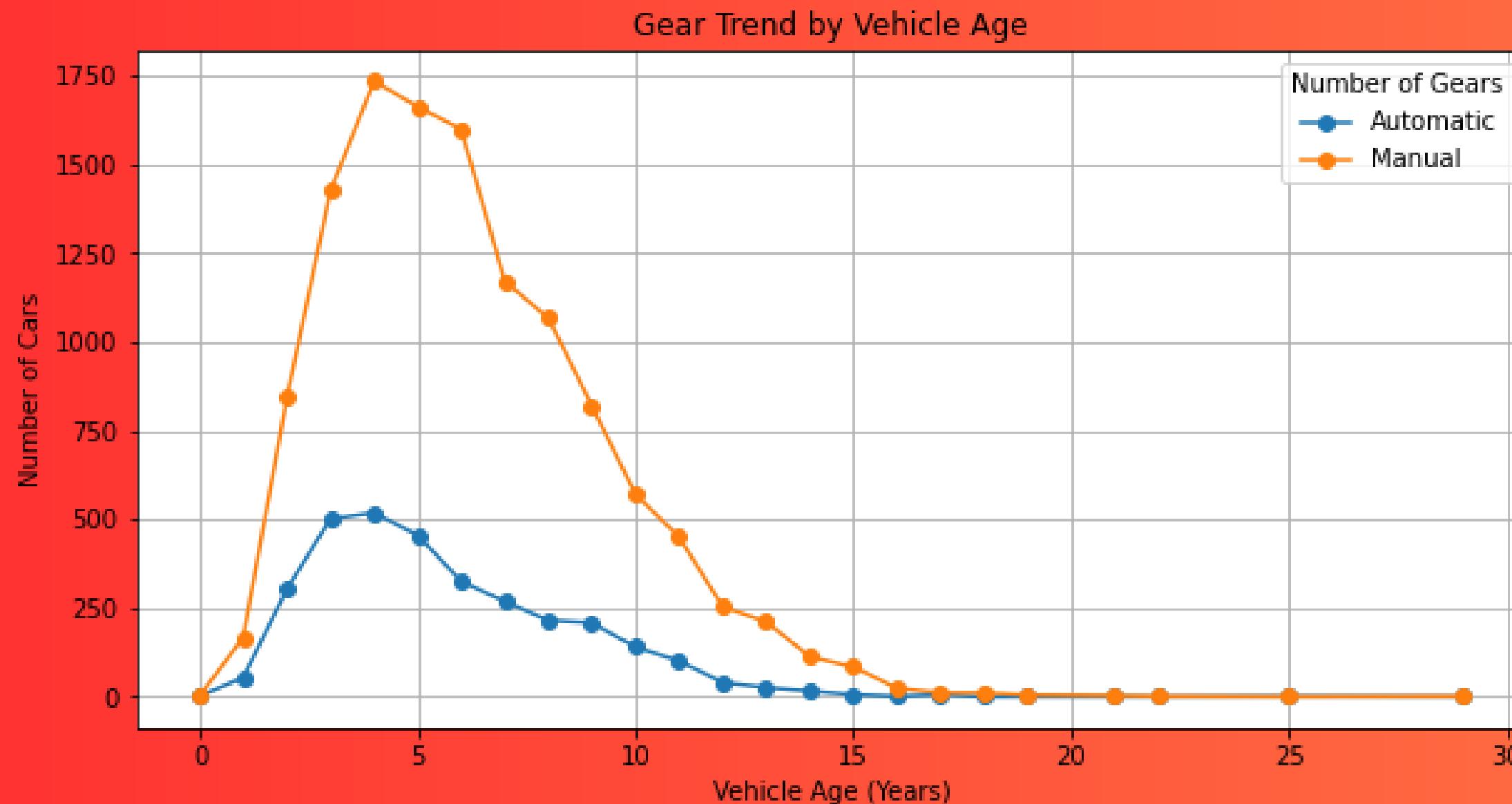


| An anomaly was detected in the 5th year of age.

| LPG and Electric had almost flat line, which states that have no pronounced trend.

| The number of Petrol and Diesel fuel cars were high on the 5th year of age.

Gear Trend by Vehicle Age

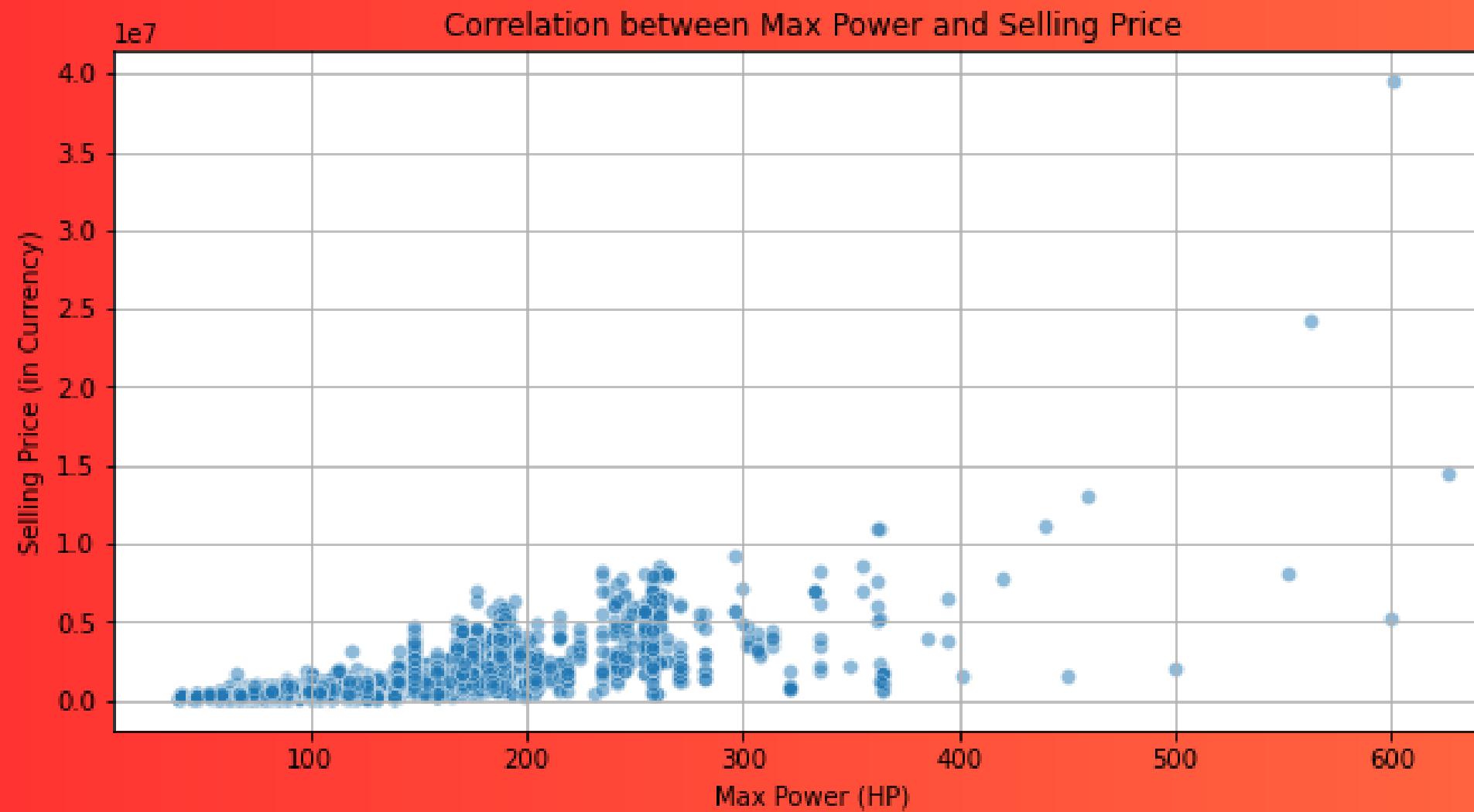


Manual transmission cars dominate in the 1-10 year range, with a sharp peak around 5 years old, followed by a decline.

Automatic transmission cars increase steadily until around 5-6 years, but their peak is much lower than manual cars.

After 10 years, both categories decrease, but manual cars decline faster.

Correlation between Max Power and Selling Price

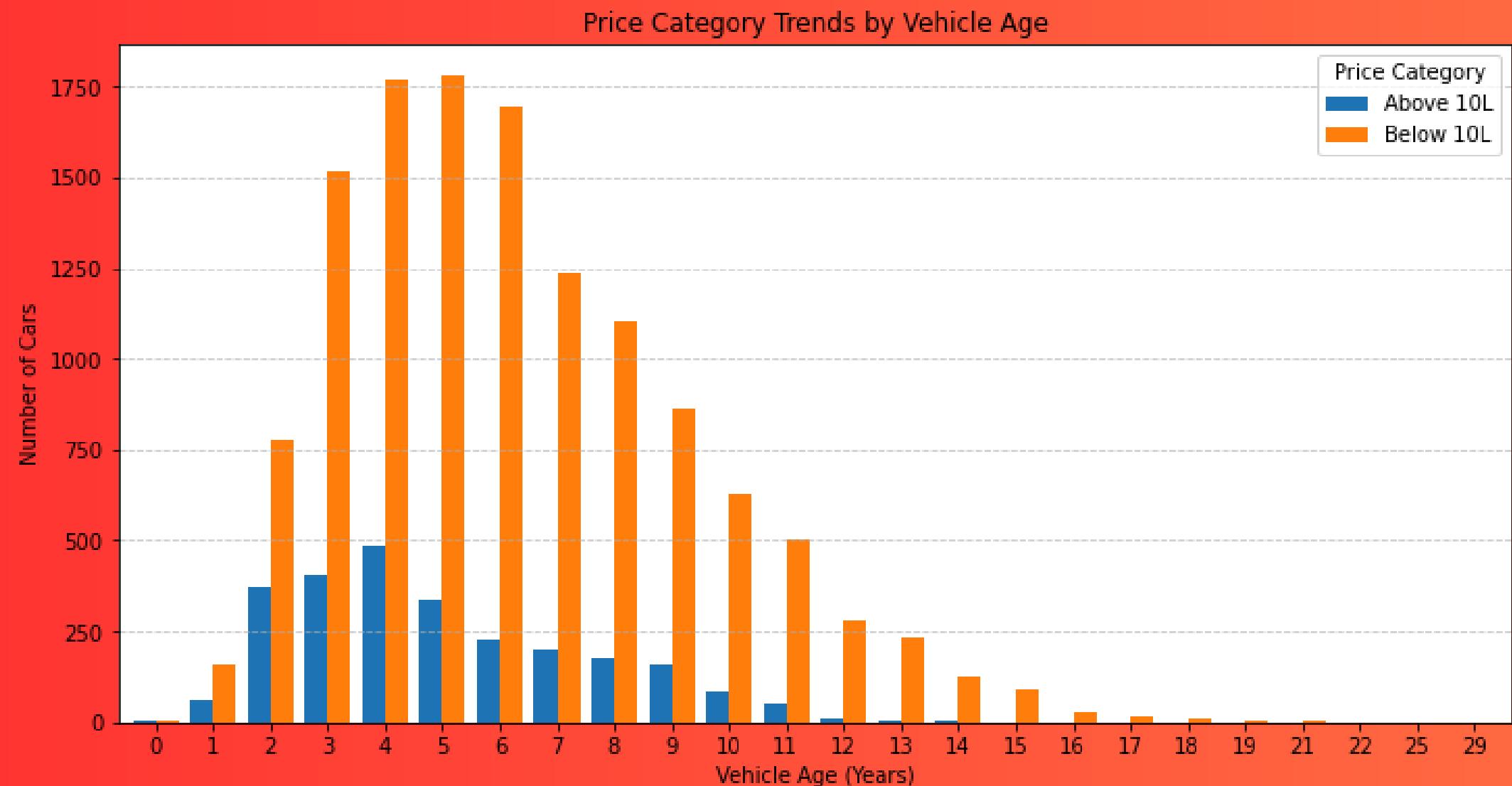


There is a positive correlation between max power (HP) and selling price, meaning more powerful cars tend to be more expensive

The price variation increases significantly after 200 HP, indicating that luxury and high-performance cars have a wider price range.

As max power increases, the selling price generally rises, but after 300+ HP, the prices vary greatly, likely due to premium or exotic car models

Price Category by Vehicle Age



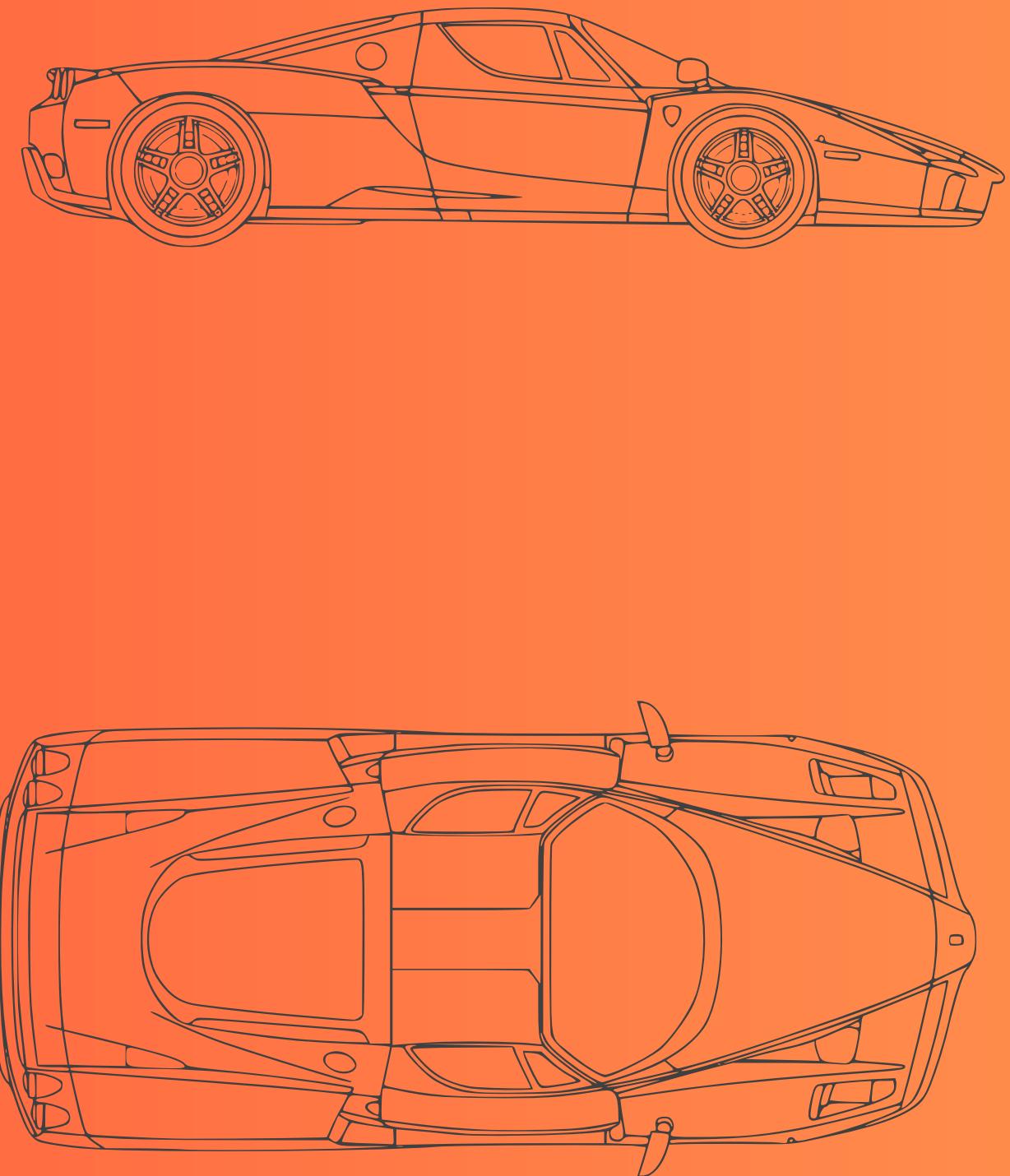
Newer cars (0-3 years old) have a higher number of expensive vehicles (Above 10L), whereas older cars (4+ years) are mostly in the Below 10L category

Aging Effect: As vehicles age, their count and value decline, with very few cars beyond 15 years still in circulation.

The majority of cars in the Below 10L category are between 3 to 10 years old, indicating depreciation over time.

Top 10 Expensive Cars

	Brand	Model	Selling_Price
3799	Ferrari	GTC4Lusso	39500000
10969	Rolls-Royce	Ghost	24200000
1172	Bentley	Continental	14500000
9722	Mercedes-Benz	S-Class	13000000
9364	Porsche	Cayenne	11100000
1888	Mercedes-Benz	S-Class	11000000
10989	Mercedes-Benz	S-Class	11000000
11000	Land Rover	Rover	9200000
3096	BMW	7	8500000
8439	BMW	7	8500000



Top 10 Least Powerful Cars

	Brand	Model	Max_Power	Selling_Price	Mileage	Km
1658	Maruti	Alto	38.4	235000	26.83	53800
3295	Maruti	Alto	38.4	185000	26.83	11000
8549	Maruti	Alto	38.4	150000	26.83	80000
8911	Maruti	Alto	38.4	125000	26.83	72000
11159	Maruti	Alto	38.4	172000	26.83	57000
480	Maruti	Alto	38.4	260000	33.44	42000
3644	Maruti	Alto	38.4	281000	33.44	28000
3784	Maruti	Alto	38.4	345000	33.44	29000
9431	Maruti	Alto	38.4	315000	33.44	28239
10679	Maruti	Alto	38.4	150000	33.44	68000



Top 10 Most Powerful Cars

	Brand	Model	Max_Power	Selling_Price	Mileage	Km
1172	Bentley	Continental	626.0	14500000	9.50	9000
3799	Ferrari	GTC4Lusso	601.0	39500000	4.00	3800
10040	Bentley	Continental	600.0	5200000	6.00	37500
10969	Rolls-Royce	Ghost	563.0	24200000	10.20	5000
12997	Bentley	Continental	552.0	8100000	8.60	30000
9190	Porsche	Cayenne	500.0	2000000	8.50	126000
9722	Mercedes	S-Class	459.0	13000000	7.81	400
9450	BMW	6	450.0	1500000	7.94	65000
9364	Porsche	Cayenne	440.0	11100000	12.50	24000
1209	Porsche	Cayenne	420.0	7800000	12.50	36000



Top 10 Cheapest Cars



	Brand	Model	Selling_Price	Mileage	Km
7607	Maruti	Wagon R	40000	18.90	80000
13676	Maruti	Alto	45000	19.70	110000
3787	Maruti	Alto	50000	18.90	120000
7361	Honda	City	50000	13.00	110000
12298	Maruti	Wagon R	50000	18.90	50000
7930	Maruti	Wagon R	55000	21.79	45000
2596	Maruti	Alto	60000	22.05	22612
2966	Maruti	Alto	60000	19.70	80000
9045	Hyundai	Santro	60000	17.80	50000
11190	Maruti	Baleno	60000	15.40	60500

Top 10 Popular Cars

Brand	Model	Selling_Price
Toyota	Innova	1176112
Hyundai	Verna	653465
Honda	City	625328
Hyundai	i20	525888
Maruti	Swift Dzire	543603
Maruti	Grand	474451
Maruti	swift	471726
Hyundai	Wagon R	307390
Maruti	i10	279175
	Alto	255452



Conclusion

In this project, an analysis of data of Indian used cars from Cardekho website was carried out. Relationships, interesting trends between variables were identified.

An anomaly was discovered. Electric cars are least represented in this year's production, while diesel and petrol cars are the most widely represented. Also there is a downward trend in the number of cars with manual transmission and increase in automatic ones.

This analysis was done using Python in Jupiter notebooks.
