

# Car Analytics

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# Scope & Data

- Help car Dealer and Retailers to recommend car prices based on the features the customer wants
- Create a model that predicts the car prices .
- **Data:** The data has been web scraped from Cars.com
- The data set consists of 8840 rows and 10 columns

cars.com/shopping/results/?stock\_type=cpo&makes%5B%5D=&models%5B%5D=&list\_price\_max=&maximum\_distance=20&zip=

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Basics

Search within 20 miles  ZIP

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Make All makes

Min year Oldest  Max year Newest

Min price Lowest  Max price Highest

Deal rating

☐ [Great Deal](#) (45607)

☐ [Good Deal](#) (47746)

Sponsored **CARFAX** **1 OWNER** & Country Certified Pre-owned

Chrysler Certified  
2022 Chrysler Pacifica Limited  
18,499 mi.  
**\$47,250**  
[Good Deal](#) [CPO Warrantied](#) [Home Delivery](#) [Virtual Appointments](#)  
Hebert's Town & Country Chrysler Dodge Jeep RAM  
4.8 ★★★★★ (1,786 reviews)  
[View on dealer's site](#) [Check availability](#)

Volkswagen Certified  
2022 Volkswagen Atlas 3.6L SE w/Technology  
10,301 mi.  
**\$46,355**  
\$614 est./mo.\* [v](#)  
[Good Deal](#) [CPO Warrantied](#) [Home Delivery](#) [Virtual Appointments](#)  
[Free CARFAX Report](#)  
Don Thornton Volkswagen of Tulsa  
3.8 ★★★★★ (281 reviews)  
[Check availability](#)

Volkswagen Certified  
2022 Volkswagen Atlas 3.6L SE w/Technology  
2,416 mi.  
**\$43,930** \$776 price drop

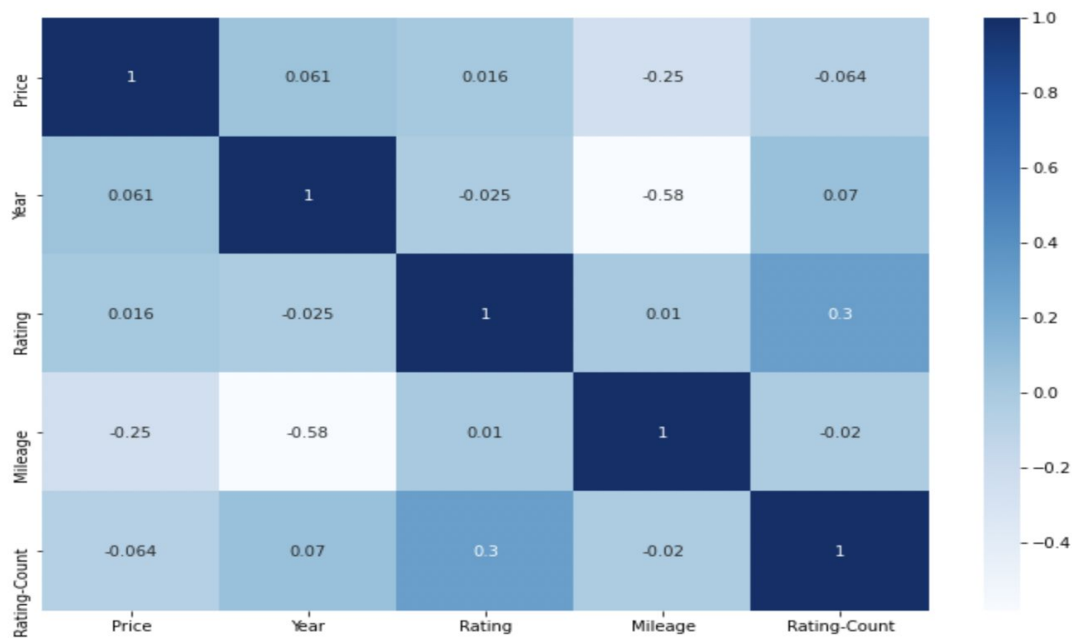
## Attributes a Customer focuses on while purchasing used cars

- Car Brand name
- Price
- Model
- Mileage
- Version
- Dealer Rating



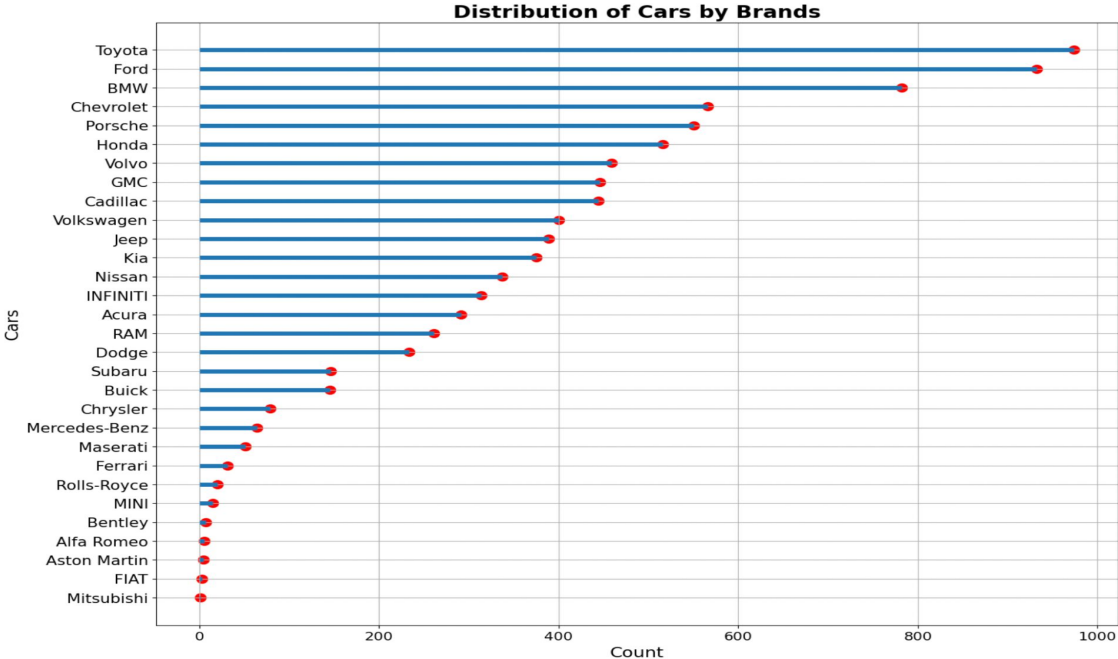


Looking at the correlation between the features

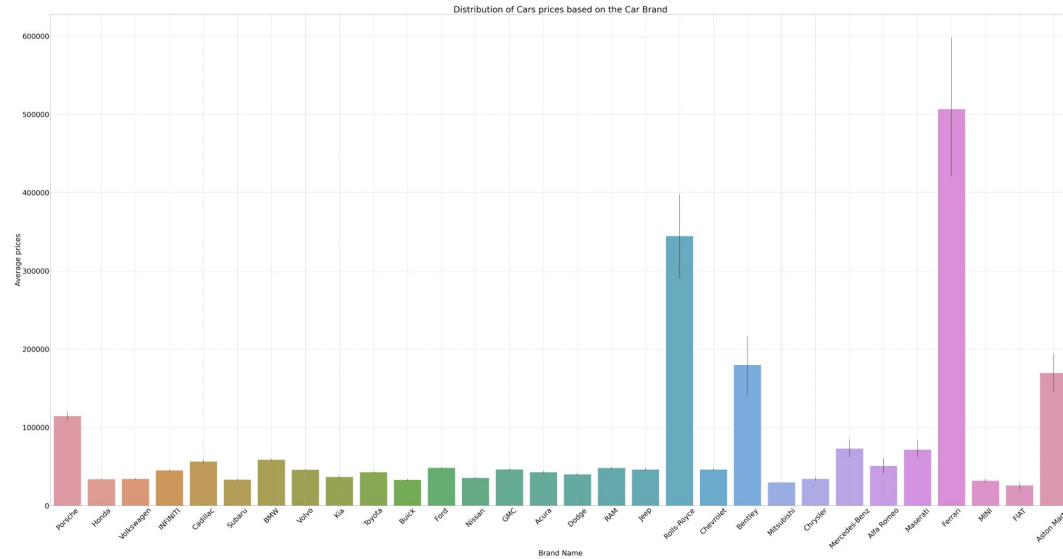




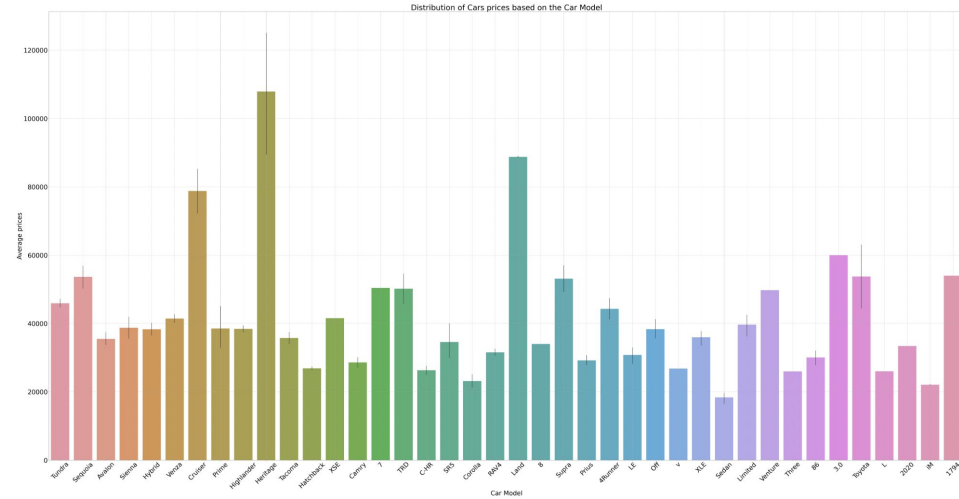
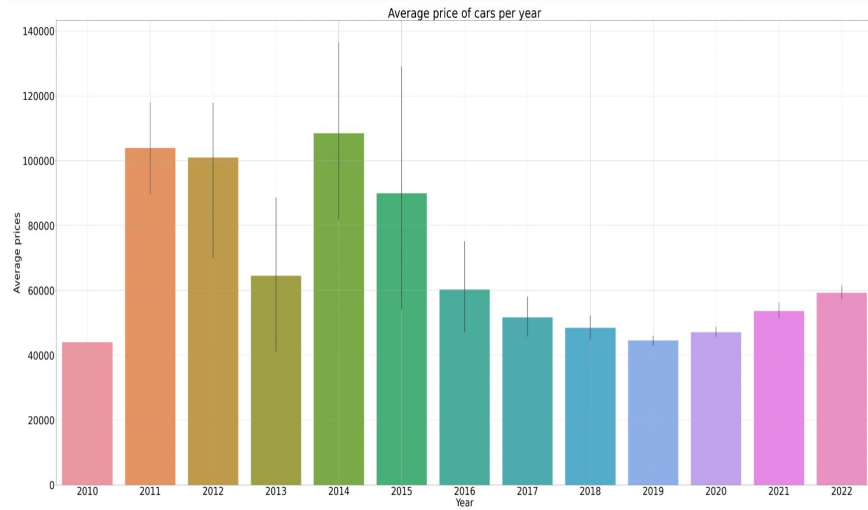
Toyota, Ford BMW, Chevrolet, Porsche are the top 5 car brands in the inventory



Looking at averages prices of cars per brand in the inventory



## Analysing the Year and Model features for toyota

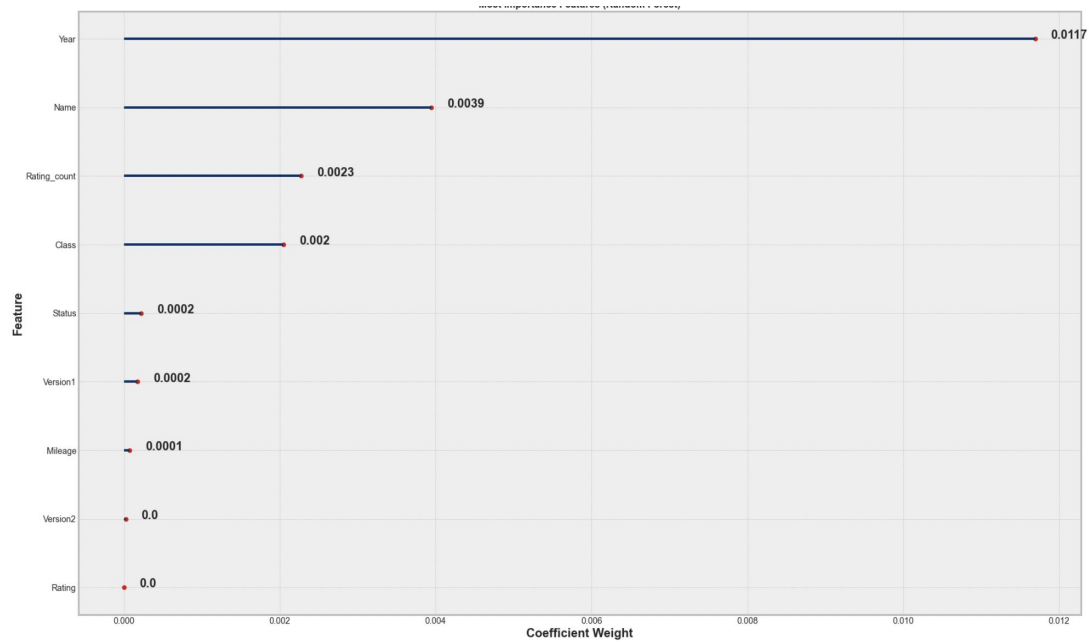




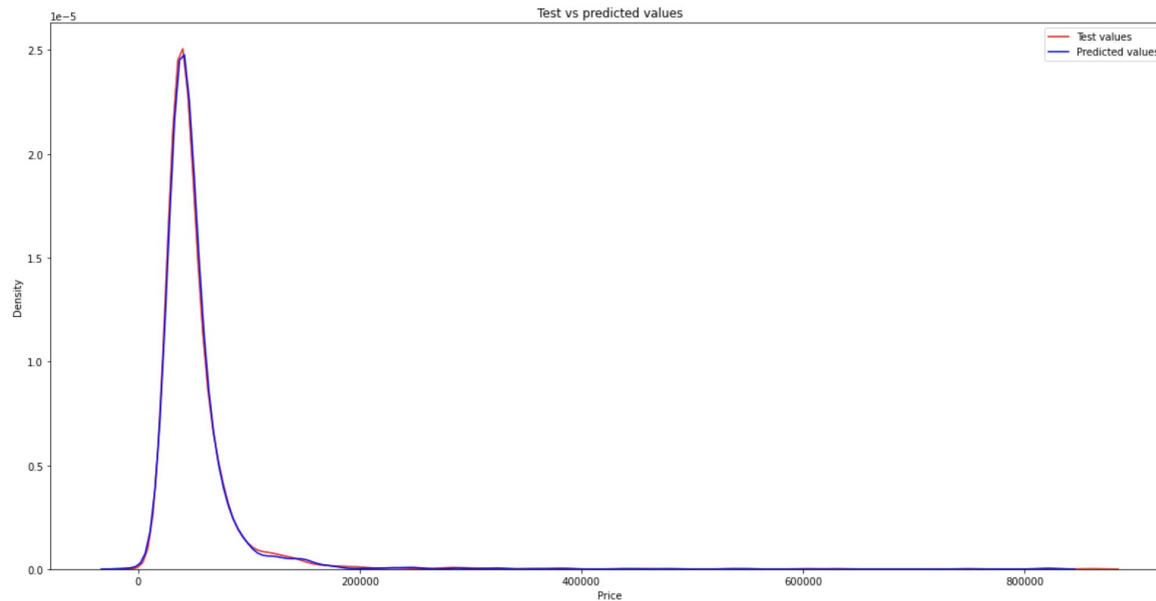
# Modelling



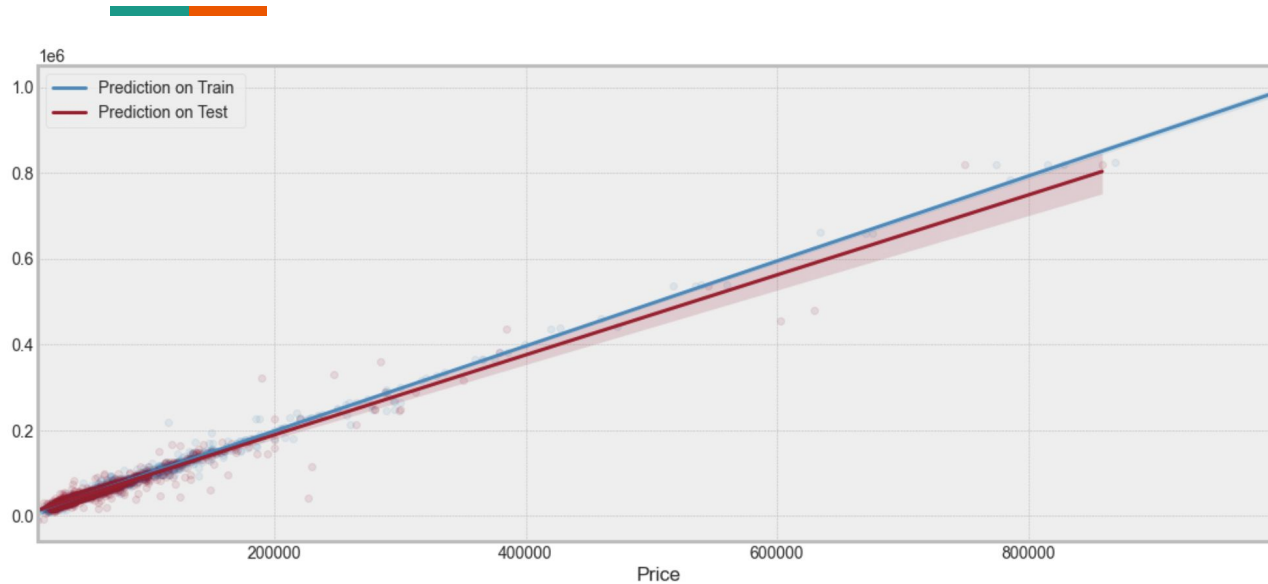
## Features that influence the Price of a car



Looking at the distribution of the model, based on test data and predicted data



## Evaluating the model performance



Lasso Metrics:

	MSE	MAE	RMSE	r2_score
0	101389565.2	4374.18	10069.23	0.94



## Summary

- The Predicting Model has a 94% accuracy.
- Year, Name, Rating\_count, Class are the features that influence the car prices
- This model predicts well and can be used by Car Dealers and retailers, to recommend their customers with cars to buy and with their respective prices

Car_Name	Car_Year	Car_Class	Mileage	original price	predictions	Residuals
Cadillac	2019	Luxury	41934	56989.0	56838.189593	150.810407
Nissan	2019	Platinum	40946	44250.0	41457.470978	2792.529022
Chevrolet	2022	SS	2055	47999.0	49208.517270	1209.517270
Honda	2020	EX-L	4608	35911.0	37836.915143	1925.915143
Nissan	2020	PRO-4X	12579	33308.0	31142.699442	2165.300558
...	...	...	...	...	...	...
BMW	2020	Base	21521	95880.0	99253.326106	3373.326106
Volkswagen	2022	w/Technology	12117	37375.0	44759.830206	7384.830206
Nissan	2022	SV	11015	34997.0	34742.435098	254.564902
Ford	2021	XLT	25199	35300.0	38628.991646	3328.991646
Chevrolet	2022	Custom	13950	36490.0	38737.180060	2247.180060



**Thank you**