CHINA CAR PRICE PREDICTION AND MODEL

BY

SAURI EMPIRE

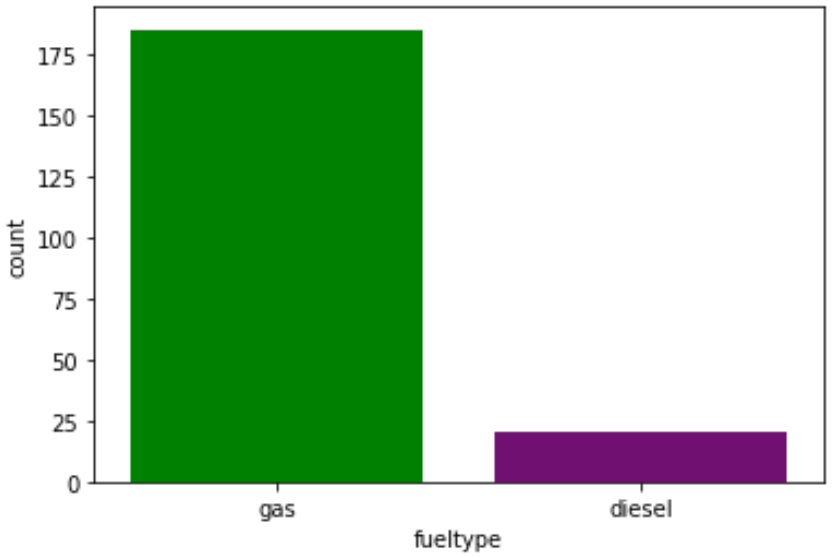
PROBLEM STATEMENT

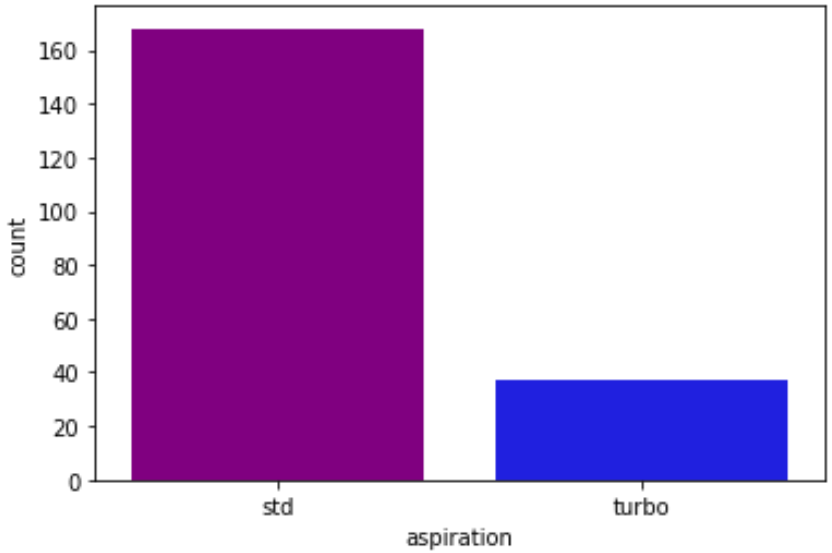
- A Chinese automobile company Geely Auto aspires to enter the Nigerian market by setting up its manufacturing unit and producing cars locally to compete with their Nigerian, US and European counterparts. Specifically, they want to understand the factors affecting the pricing of cars in the Nigerian market, since those may be very different from the Chinese market. The company wants to know:
- Which variables are significant in predicting the price of a car
- How well do those variables describe the price of a car

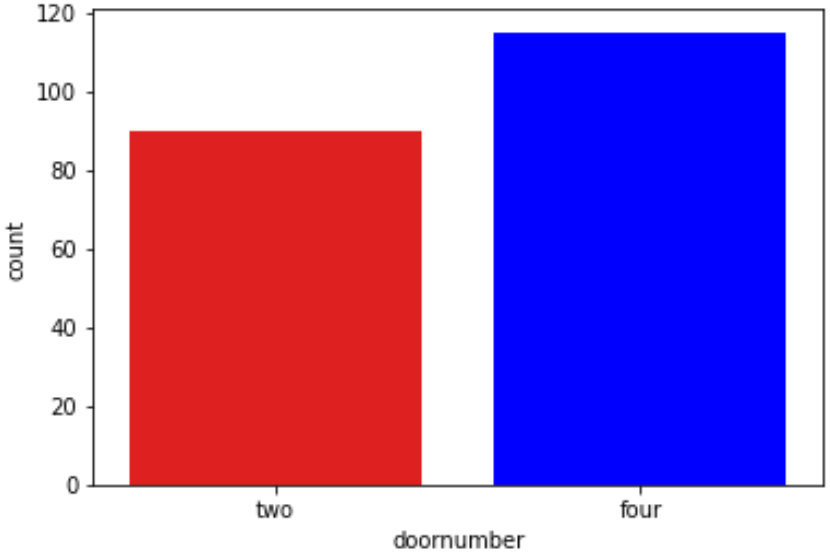
OBJECTIVES

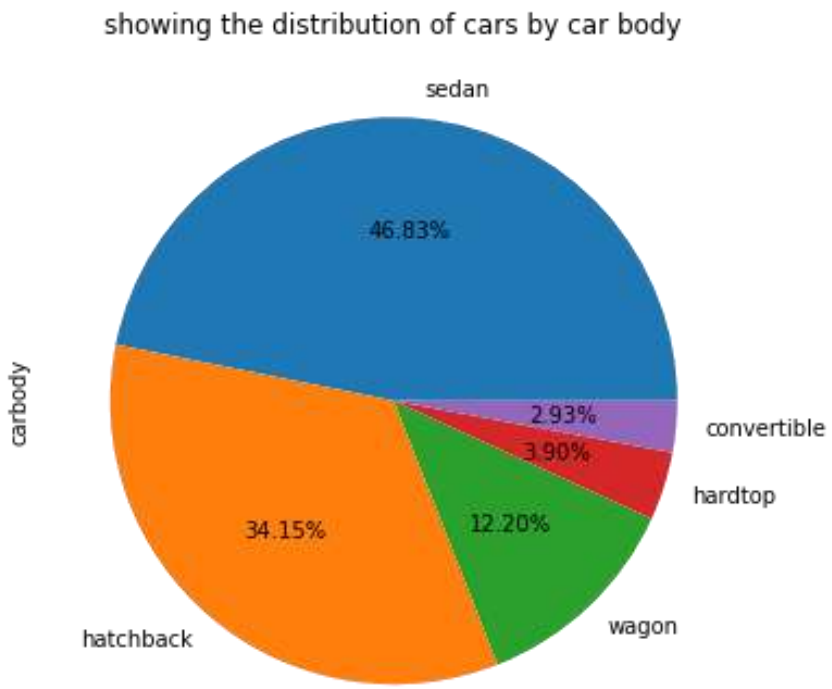
- To model the price of cars with the available independent variables. The management will use it to understand how exactly the prices vary with the independent variables. They can accordingly manipulate the design of the cars, the business strategy etc. to meet certain price levels. Further, the model will be a good way for management to understand the pricing dynamics of a new market.

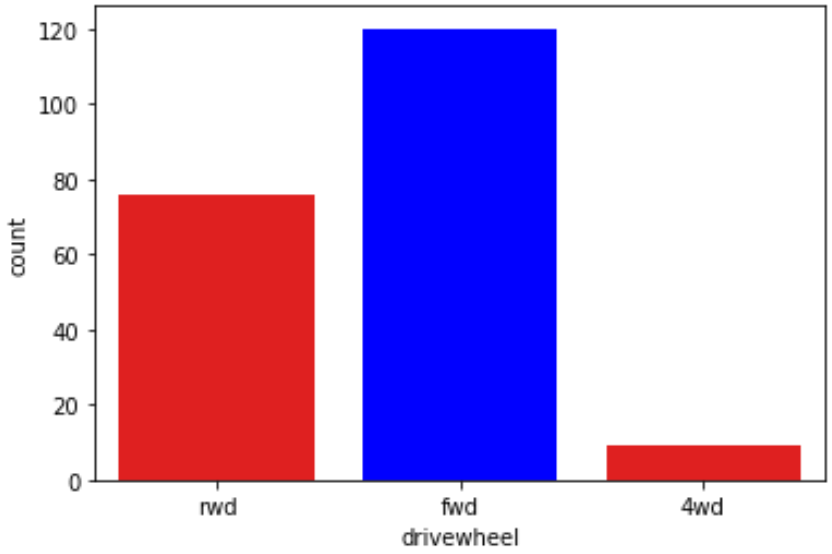
CARS (REVIEW AND SIGHT)

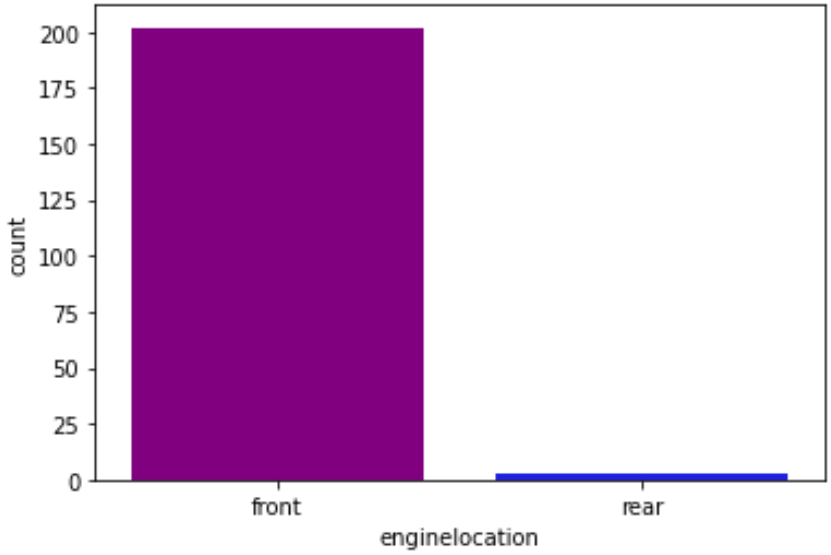


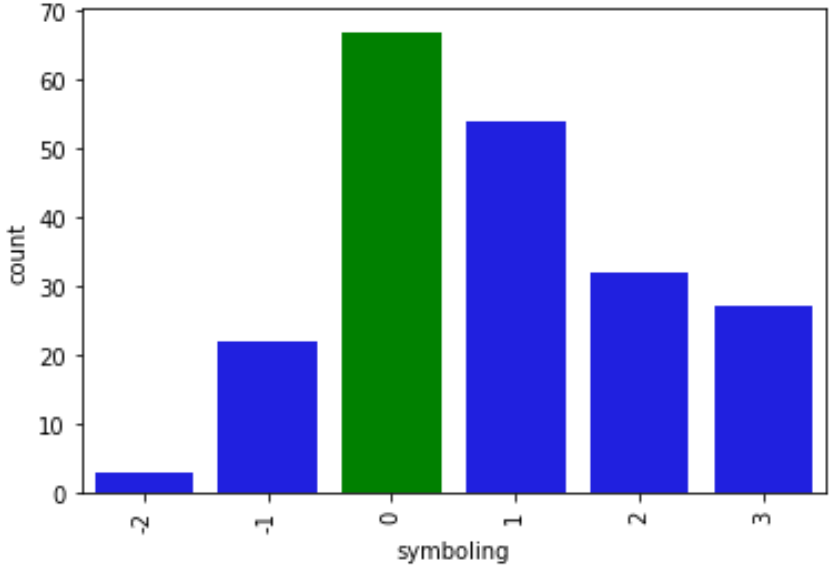


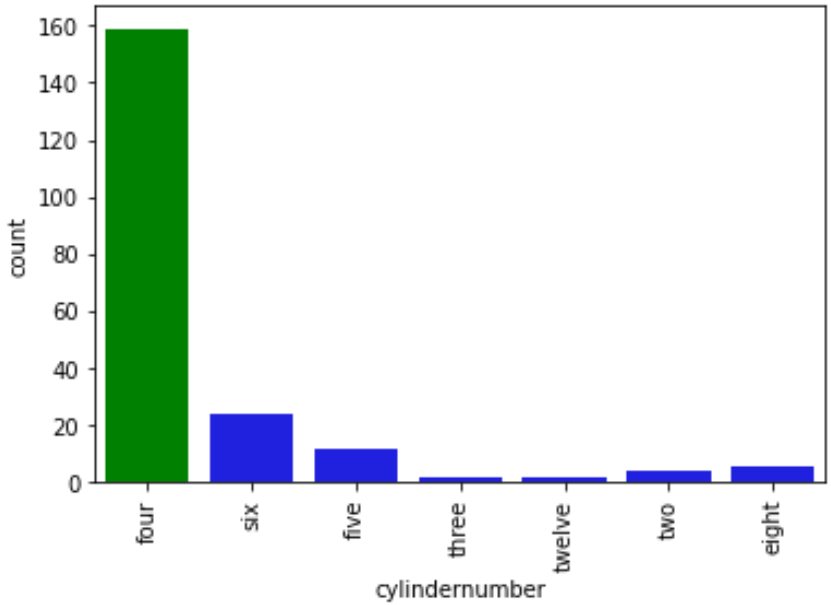

120
100
80
60
40
20
0
count
two
four
doornumber

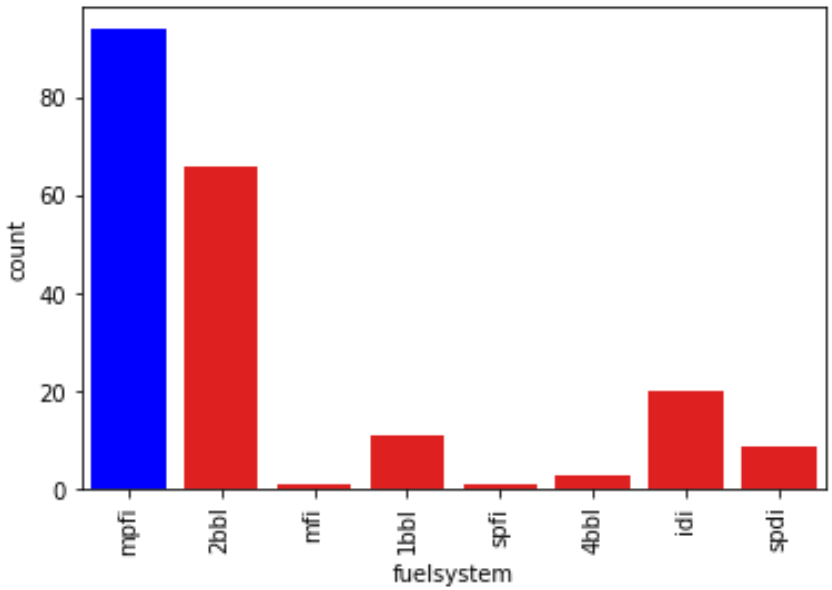

showing the distribution of cars by car body
sedan
46.83%
carbody
2.93%
convertible
3.90%
hardtop
34.15%
12.20%
hatchback
wagon

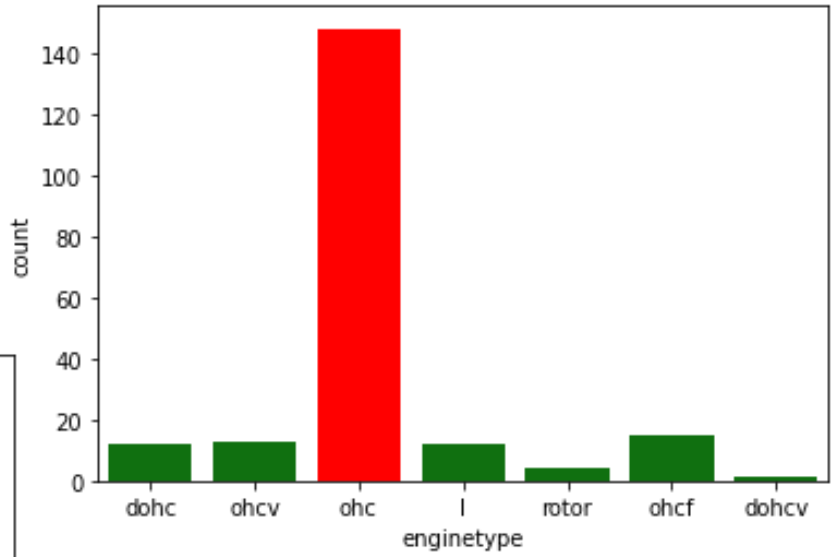

120
100
80
60
40
20
0
count
rwd
fwd
4wd
drivewheel


200
175
150
125
100
75
50
25
0
count
front
rear
enginelocation

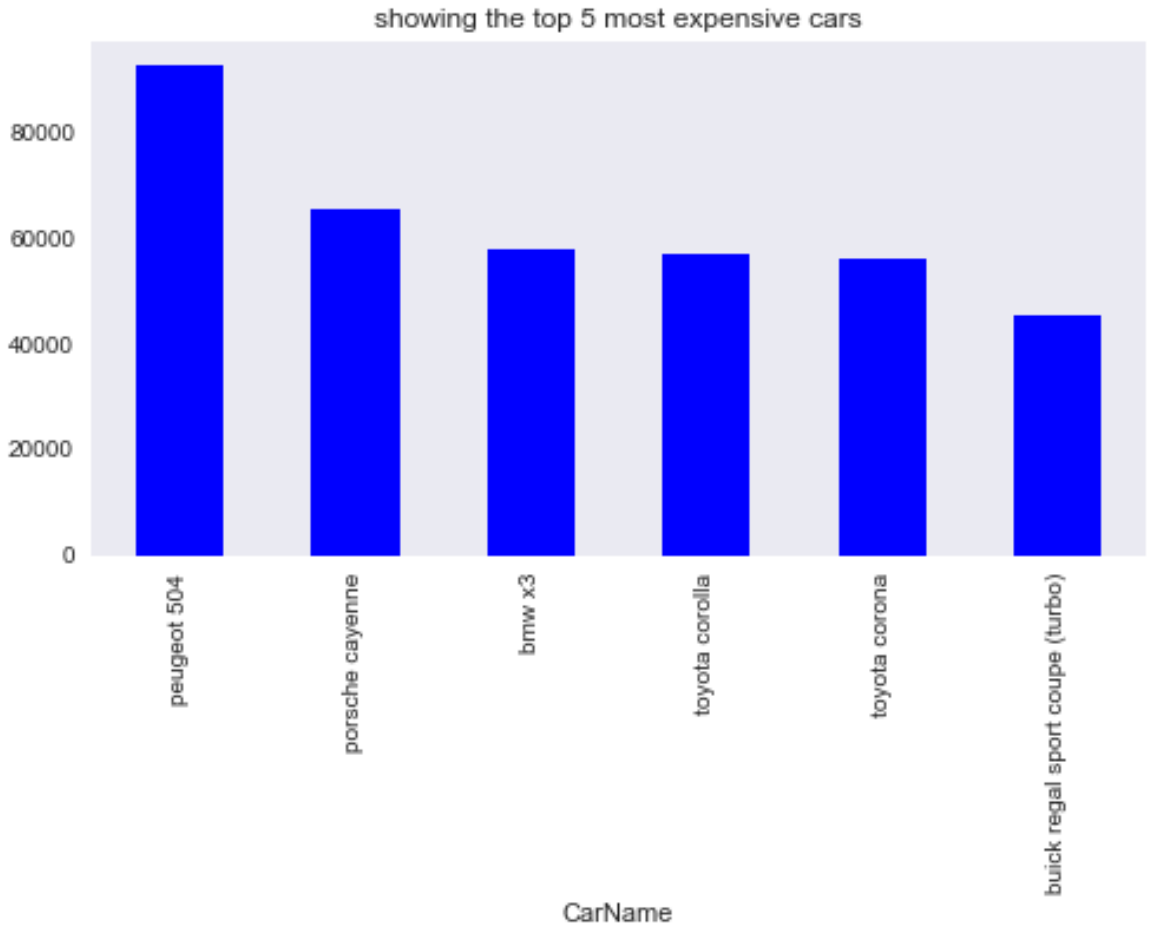

70
60
50
40
30
20
10
0
count
-2
-1
0
1
2
3
symboling


160
140
120
100
80
60
40
20
0
count
four
six
five
three
twelve
two
eight
cylindernumber

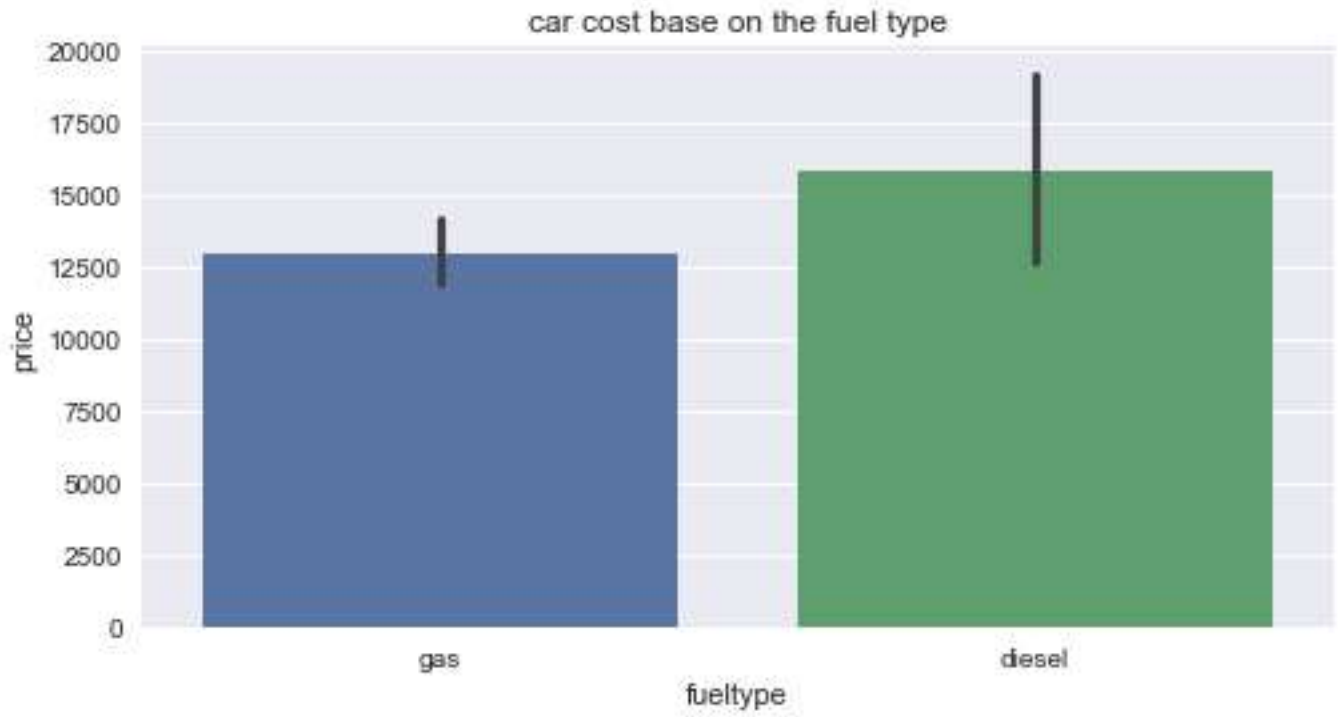

count
0
20
40
60
80
mpfi
2bbl
mfi
1bbl
spfi
4bbl
idi
spdi
fuelsystem


count
0
20
40
60
80
100
120
140
dohc
ohcv
ohc
l
rotor
ohcf
dohcv
enginetype

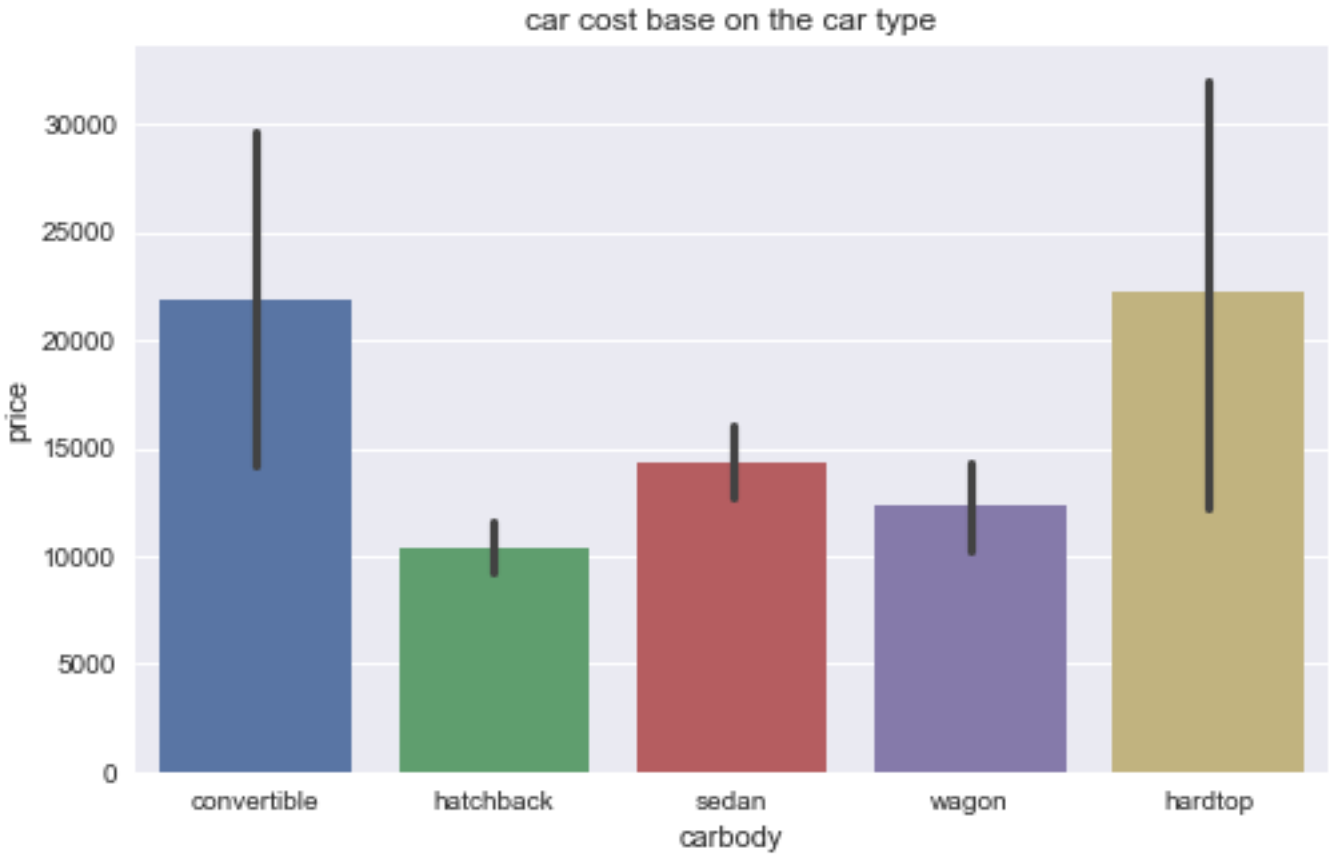
What are the top 5 cars that are the most expensive?



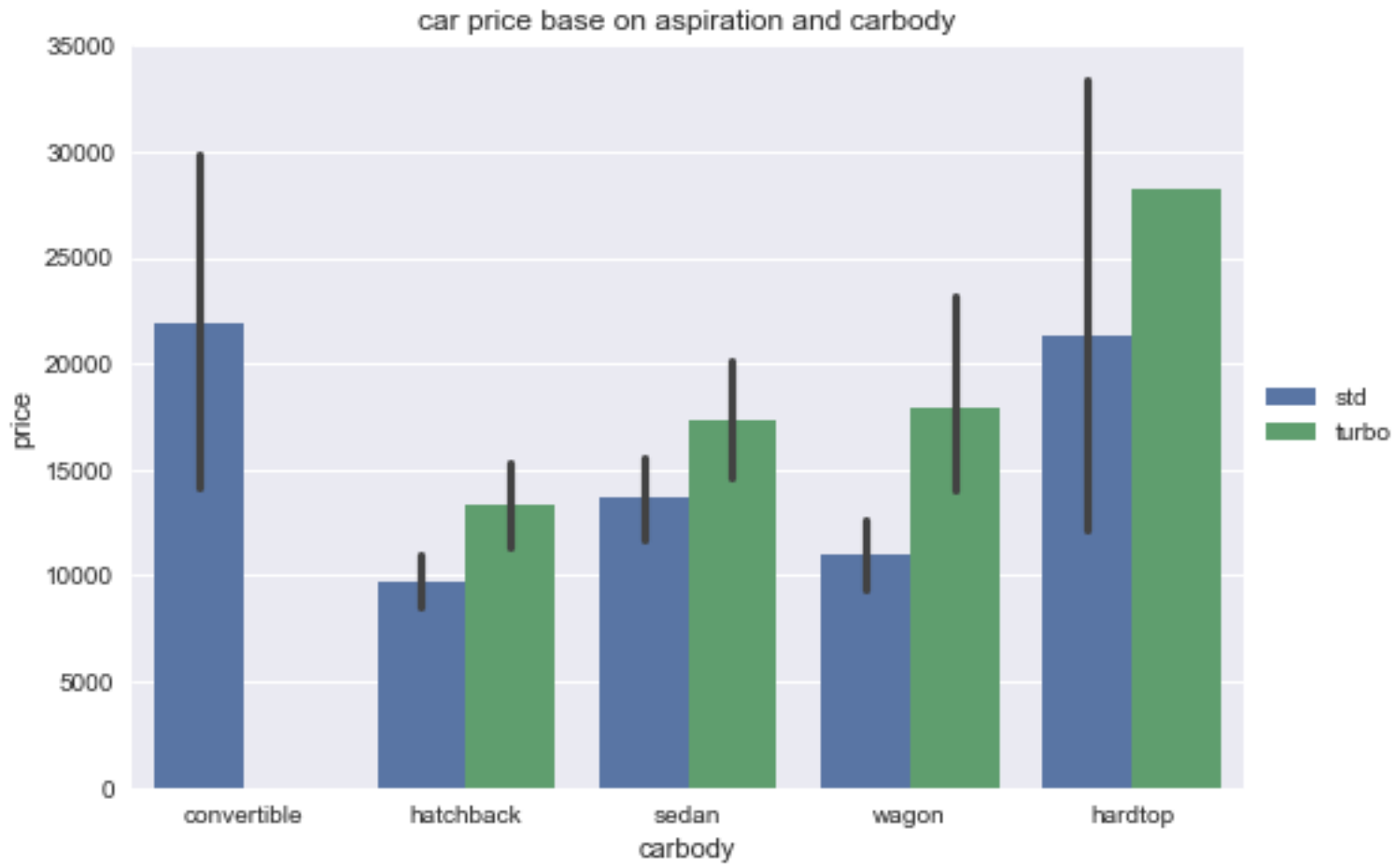
Which of the car is the most expensive base on the fuel type it use?



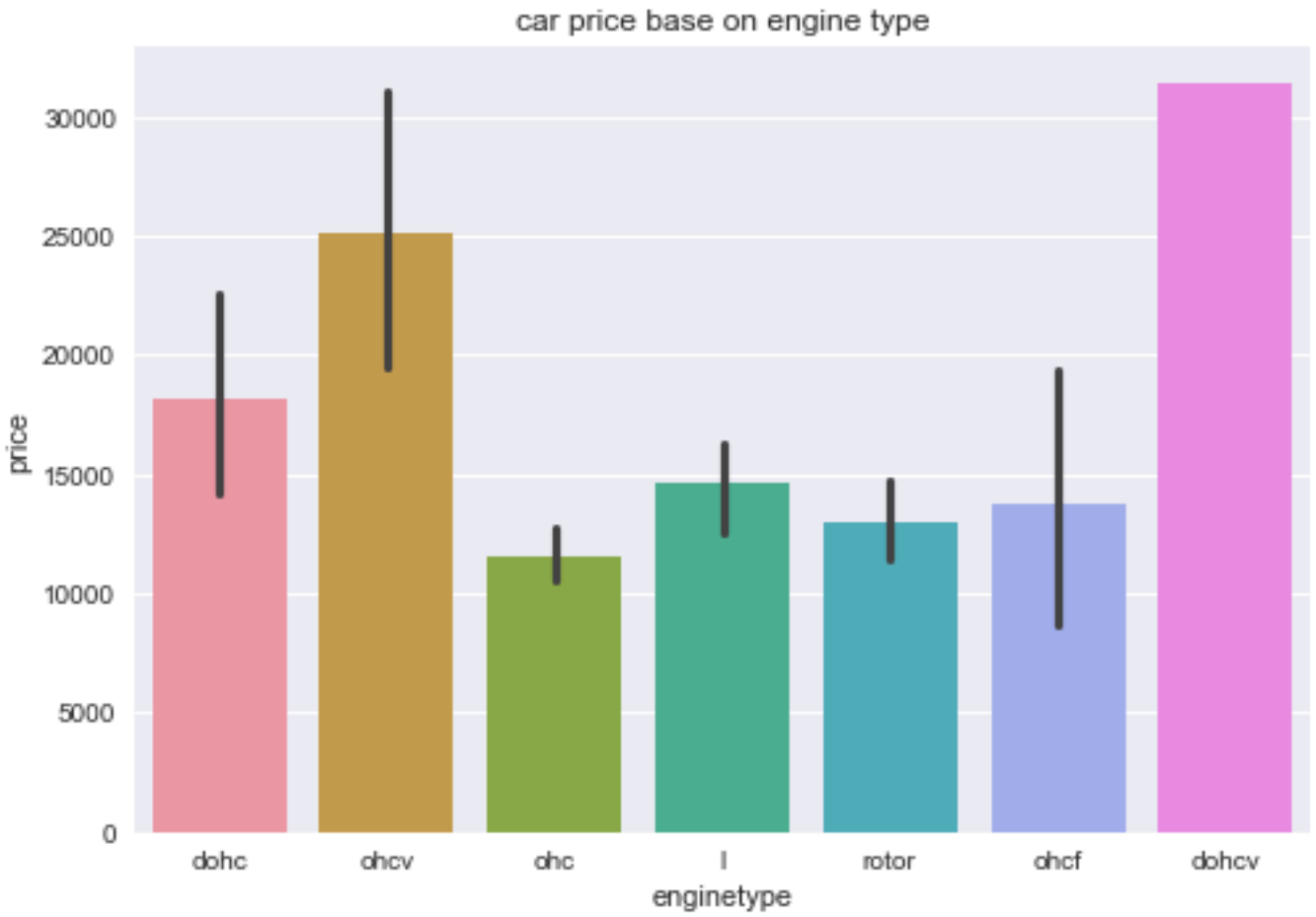
Which of the car is the most expensive base on the carbody?¶



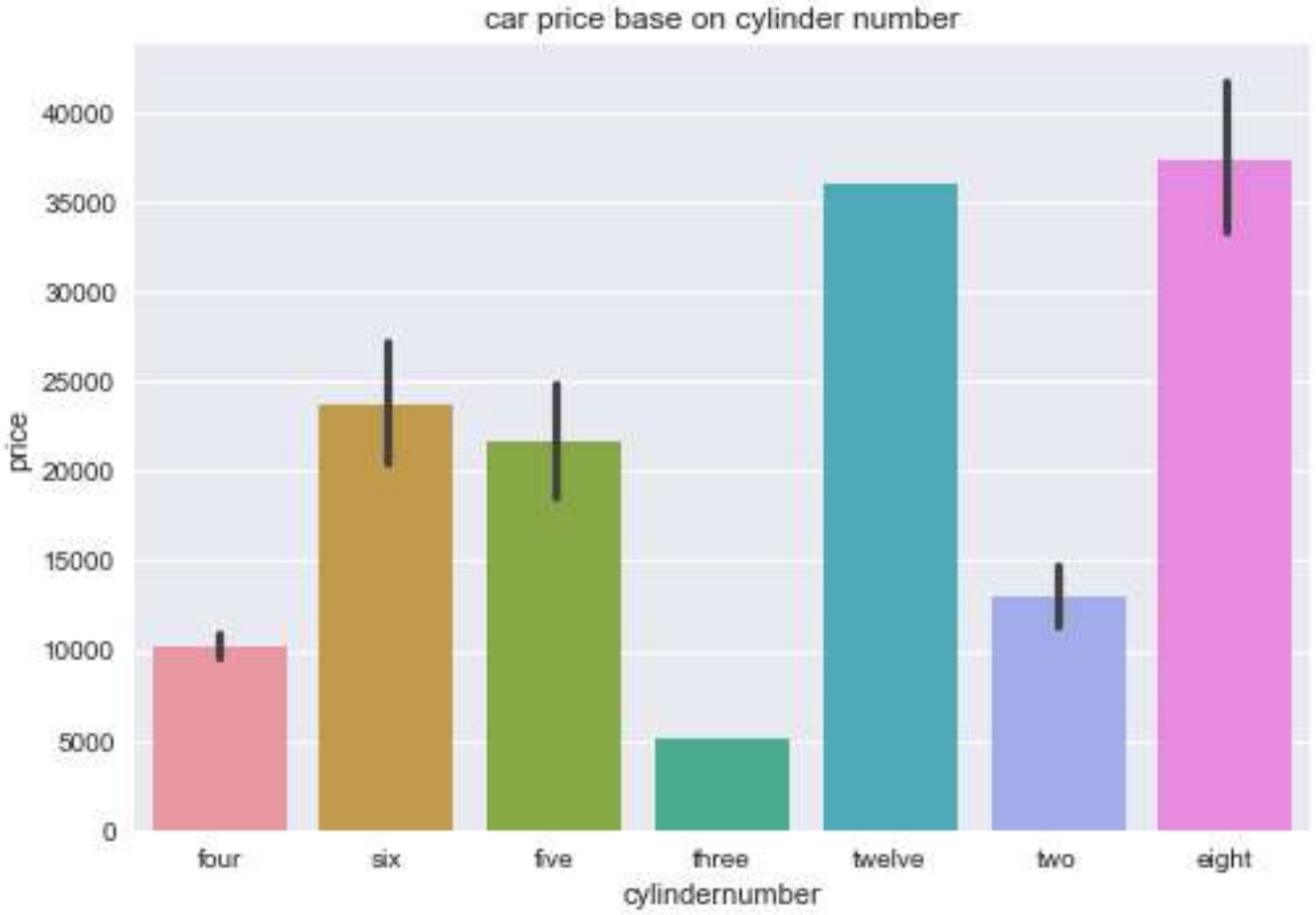
Which of the car is the most expensive base on the carbody and aspiration?



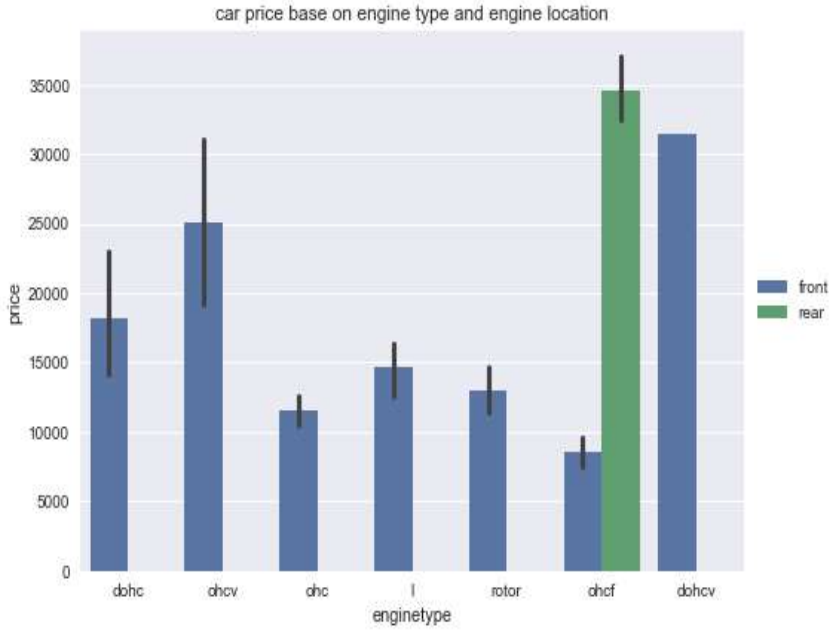
what type of car is the most expensive base on the engine type?

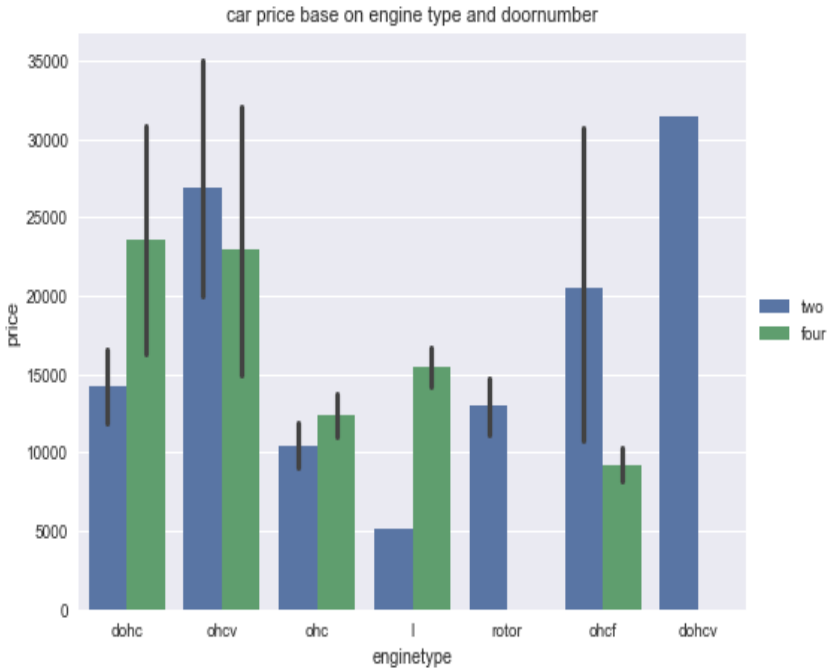


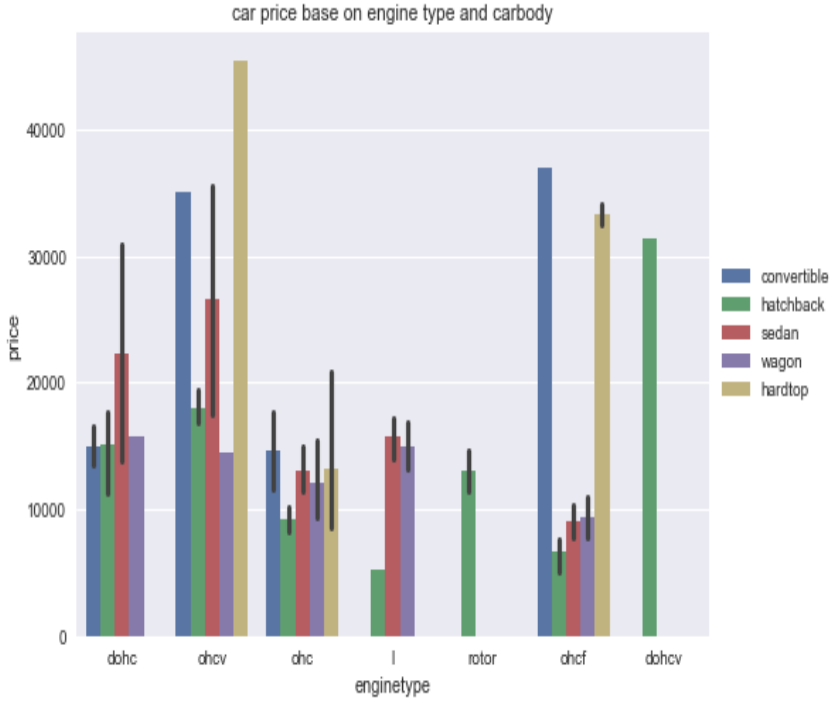
Which of the car is the most expensive base on the cylinder number?

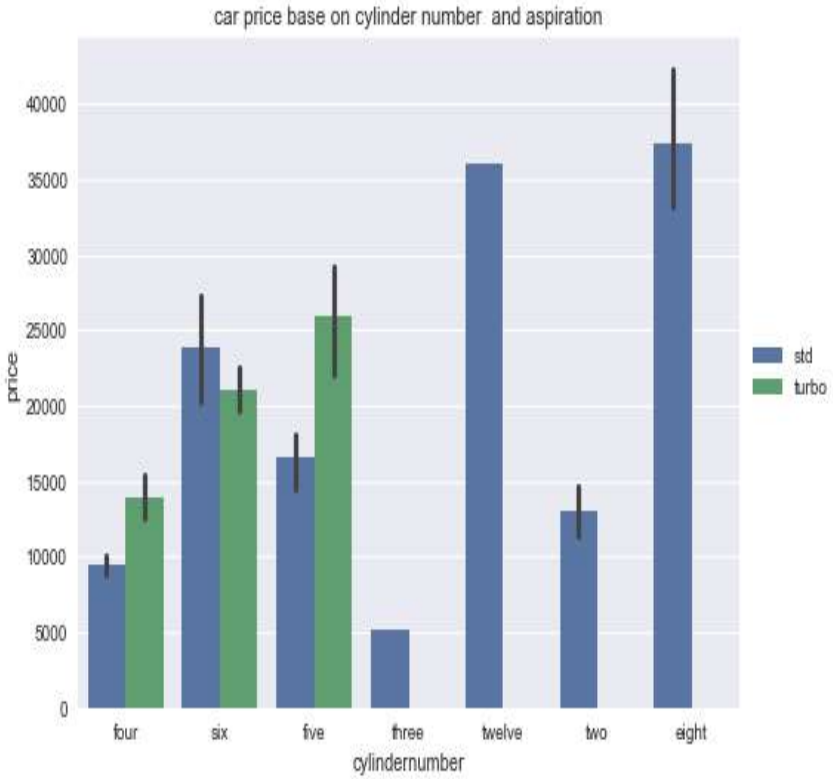


PRICE-FEATURES EXPLORATION






car price base on engine type and carbody
price
40000
30000
20000
10000
0
dohc
ohcv
ohc
l
rotor
ohcf
dohcv
enginetype
convertible
hatchback
sedan
wagon
hardtop


car price base on cylinder number and aspiration
price
40000
35000
30000
25000
20000
15000
10000
5000
0
four
six
five
three
twelve
two
eight
cylindernumber
std
turbo

FEATURES IMPORTANCES

- Curbweight, highway mpg, horsepower, wheel base, fuel system, citympg, car width,engine size ...

MODEL INSIGHT

- Linear regression, Random Forest and Elastic Net models were used for this project and the r2 score are 0.6858, 0.8338, 0.6962 respectively. The Random Forest Regressor performed excellent and it’s a good model for predicting the prices.

THANK YOU