CAR RESALE VALUE PREDICTION

ABSTRACT

When looking at postings online, it can be challenging to determine whether a used car is worth the asking price. The actual value of an automobile might vary depending on a number of factors, including mileage, make, model, year, kilometres driven, etc. It might be challenging to price a second hand car fairly from the seller's standpoint. The objective is to create forecasting models for used car prices using machine learning methods. Features include Distance travelled - We are aware that the distance travelled by a vehicle plays a significant influence in the decision to put the vehicle up for sale. Horsepower is a measure of a vehicle's power output, and the older a car is, the more miles it has been driven. Used car resale market in India was marked at 24.2 billion US dollars in 2019. Due to the huge requirement of used cars and lack of experts who can determine the correct valuation, there is an utmost need of bridging this gap between sellers and buyers. This project focuses on building a system that can accurately predict a resale value of the car based on minimal features like Kms-driven, year of purchase, Fuel Type, Transmission, Mileage, Engine etc. The sole goal of this general-purpose system for estimating resale value is to estimate the amount that the user can probably acquire. So that the user can acquire an estimated value before reselling the car and avoid making a deal at a loss, we attempt to anticipate the amount of resale with a best 70% accuracy. Without manual or human interference and hence it remains unbiased. In this study, we examine the use of supervised machine learning methods to forecast used automobile prices. The forecasts are based on previously gathered information from the KAGGLE dataset. To make the predictions, a variety of approaches, including Random Forest, have been employed. The predictions are then assessed and contrasted to determine which ones offer the best performances. A seemingly simple issue turned out to be quite challenging to accurately handle.

1. INTRODUCTION

1.1 PROJECT OVERVIEW

Modern machine learning differs from machine learning in the past due to new computing technologies. Researchers interested in artificial intelligence wanted to discover if computers could learn from data; pattern recognition and the idea that they can learn without being programmed to do certain tasks gave rise to it. The machine's iterative nature learning is crucial because it enables models to freely change as they are presented with fresh data. In order to provide trustworthy, reproducible decisions and results, they learn from earlier calculations. It's an old science, but it has recently garnered new momentum. While machine learning has countless practical applications, prediction issues are one of the more well-known ones. The globe is expanding daily, and with it, so are everyone's expectations. One of them is going to purchase a car out of all the expectations. However, not everyone can afford to buy a new car every time, so they will get a used one. However, a new person is unaware of the used car market pricing for his or her ideal vehicle. Where we are at now a platform that aids novice users in car price prediction is required. We introduce that platform, which was created utilising machine learning technologies, in this study.

1.2 PURPOSE

Making a system to forecast car resale value is primarily intended as a way to practise Python using Machine Learning. The system that forecasts the amount of resale value for cars is based on the user-provided parameters. The car's details are entered into the provided form by the user, and the value at which it will be sold is then forecasted.

2. LITERATURE REVIEW

2.1 EXISTING PROBLEM

2.1.1 TITLE : CAR RESALE VALUE PREDICTION SYSTEM

AUTHOR : DHWANI NIMBARK,2021

In 2019, the Indian used car resale market was valued at $24.2 billion USD. Due to the substantial demand for old vehicles and the dearth of professionals who can assess the. In order to achieve accurate valuation, it is crucial to close the gap between sellers and buyers. The goal of this project is to create a system that can impartially predict a car's resale value based on minimal information such as the number of miles driven and the year of purchase. In this project, we've developed car resale value prediction systems using a variety of algorithms and techniques that take into account a variety of car. In a nutshell, car resale value prediction enables users to forecast the resale value of a car based on features such as miles driven, fuel type, etc. This system for estimating resale value is designed for merely attempt to estimate the potential amount taken on by the user. Our goal is to accurately anticipate the quantity of resale by 70%.So that the user can obtain an estimated value before he sells the car again without taking a loss. In order to predict the car's resale value, the system only considers a small number of features due to the scarcity of data. This system is online, thus the existing one does not when estimating the resale value, consider any physical damage to the car's body or engine. The newly created system is divided into two sections: data collection and prediction using machine learning-based algorithms.

2.1.2 TITLE: OLD CAR PRICE PREDICTION WITH MACHINE LEARNING

AUTHOR: PRASHANT GAJERA ,2021.

The globe is expanding daily, and with it, so are everyone's expectations. One of them is going to purchase a car out of all the expectations. However, not everyone can afford to buy a new car every time, so they will get a used one. However, a new person is unaware of the used car market pricing for his or her ideal vehicle. In order to predict car prices, we need a platform that assists new users. We introduce that platform, which was created using machine learning technology, in this paper. . Let's try to develop a statistical model that can forecast the cost of a used car using supervised machine learning methods like linear regression,KNN, Random Forest, XG boost, and Decision tree. For those before consumer information and the specified

features will supports us. In order to choose the best model, we will also compare these ones' predictive accuracy. When looking at postings online, it can be challenging to determine whether a used car is worth the asking price. The actual value of an automobile might vary depending on a number of factors, including mileage, make, model, year, kilometers driven, etc. It might be challenging to price a secondhand car fairly from the seller's standpoint. The objective is to create forecasting models for used car prices using machine learning methods. features include Distance travelled - We are aware that the distance travelled by a vehicle plays a significant role in the decision to put the vehicle up for sale.

2.1.3 TITLE: OBJECT DETECTION AND USED CAR PRICE PREDICTING ANALYSIS SYSTEM (UCPAS) USING MACHINE LEARNING TECHNIQUE

AUTHOR : ANU YADAV,2021.

The incredibly fascinating research area that was identified in the recent years, object detecting and predicting outcomes based on the characteristics that can help the market and consumers. In this study, we clarify the idea of object detection, such as the automated detection, to investigate the cost of a used car approaches for machine learning. We also comprehend the idea of a thing. categories for detection. The most difficult challenge nowadays is to find out how much a used car is being sold for on the market, there may be a variety of factors that influence used car prices. The primary goal of this study is to create machine learning models that allow for precise second-hand car price prediction.Based on its properties or parameters. The selling prices of several car models in various Indian cities are used as the dataset for this paper's implementation approaches and evaluation methods. The results of this experiment demonstrate that linear regression and the Random Forest model combined with clustering produce the best accuracy results. Compared to the aforementioned self, the machine learning model produces a satisfactory result in a short amount of time. Predicting the price of used cars is an intriguing and difficult business subject because these vehicles are not produced in factories. New car prediction and used car prediction are very different from one another. Pertaining to companies like cars24 and car dheko. Based on information released in March 2021 by the Statista Research Department. The size of the used car market in India in 2020 is almost close to 4.44 million units. This industry's growth is based on the unorganized, semi-organized, and organized segments.

2.1.4 TITLE: VEHICLE PRICE CLASSIFICATION AND PREDICTION USING MACHINE LEARNING IN THE IOT SMART MANUFACTURING ERA

AUTHOR: FADI AL-TURJMAN,2022.

In this study, machine learning (ML) techniques were used to forecast car prices and good offers. With the growth of IoT for sustainability, predicting the value of vehicles has been regarded as one of the most important study subjects. This is because it necessitates obvious effort.And extensive field data. We used three ML techniques (linear regression, neural networks, decision trees, and support vector machines) to create a model that predicts the price of the vehicles. However, a hybrid model has been developed using the referenced methodologies to work as a unit. The data used was gathered from a school of information and computer science that has access to various datasets. To determine which ML technique is best for the accessible information index, separate comparisons of the various ML methods were made. Numerous obstacles and challenge also been discussed in relation to this design. Additionally, the model was tested, and 90% accuracy was attained. This outcome may contribute to the provision of accurate vehicle deals in the IoT is an emerging technology for the sustainability paradigm. In our world, everyone is involved in at least one business. Businesses today need to be financially stable to survive. The business's success is determined by its sales and the display of its product, and it is also primarily distinguished by its deals. Consequently, business strategies and procedures are used to raise the standard of the systems. The process develops certain crucial terminologies, such advantage and misfortune. The term "sales" refers to each of these crucial terms. One of the business cards that can help open doors to learning about current market trends and strategies to dominate the market is sales expectation.

2.1.5 TITLE : VEHICLE RESALE PRICE PREDICTION USING MACHINE LEARNING

AUTHOR : B.LAVANYA,2021.

Over the past ten years, the number of automobiles produced has steadily increased, and more than 70 million passenger vehicles were supplied in 2017.

2016. This has led to the growth of the trade-in automobile market, which is now a booming sector of the economy. The new method of using internet gateways has complied with the need that both the customer and the merchant be better informed about the trends and examples that determine the value of a used car that is being sought after. using linear regression and multiple regression machine learning algorithms. We will try to develop a factual model that will actually want to forecast the price of a used car based on past shopper data and a predetermined set of features. Our primary goal in this research is to analyze the Vehicle Resale Predict and then predict the outcomes using training data. An business that is always growing is the trade-in automobile market, which over the past few years, its fairly estimated value has nearly multiplied. A vehicle's retail value can be predicted using AI computations based on a certain configuration of features. Numerous sites have different calculations to determine the retail cost of the trade-in automobiles, therefore there isn't a single method used to determine the cost. One may surely acquire a good sense of the cost without really entering the fine details into the ideal site by creating quantifiable models to predict prices. This paper's main goal is to compare the degrees of precision of three different expectation models used to forecast the retail price of a used car.

2.2 REFERENCES

[1] Dhwani Nimbark ,“ Car Resale Value Prediction System”,2021.

[2] Prashant Gajera ,“ Old Car Price Prediction with Machine Learning”,2021.

[3] Anu Yadav “ Object Detection And Used Car Price Predicting Analysis System (ucpas) Using Machine Learning Technique”,2021.

[4] Fadi Al-Turjman “ Vehicle Price Classification and Prediction Using Machine Learning in the IoT Smart Manufacturing Era”

[5] B.Lavanya “ Vehicle Resale Price Prediction Using Machine Learning”,2021.

2.3 PROBLEM STATEMENT DEFINITION

With certain additional costs imposed by the Government in the form of taxes, the manufacturer sets the prices of new cars in the market. Customers who purchase a new car can be sure that their investment will be worthwhile. Used car sales, however, are rising globally as a result of the rising cost of new cars and the inability of consumers to purchase new cars due to a lack of funds. To accurately assess the value of the car using a number of features, a system for

predicting used car prices is required. Despite the fact that there are websites that offer this service, they might not use the best prediction approach. A used car's actual market value may also be predicted using a variety of models and algorithms. Knowing their true market value is crucial when purchasing and selling.

3. IDEATION & PROPOSED SOLUTION

3.1 EMPATHY MAP CANVAS

3.2 IDEATION & BRAINSTORMING

3.3 PROPOSED SOLUTION

Because the price of a used automobile depends on the vehicle's attributes, precise and accurate price prediction of used cars needs specialist domain knowledge. Consequently, this paper proposed a machine learning-based using random forest algorithm to predict the value of the resale car software system where the price is dependent on factors like model of car, manufacturing year, Brand, city, version, safety, colour, if dealer/individual, mileage, fuel type (CNG, Petrol, Diesel), alloy rims, the braking system, the air conditioning, its physical state, the number of previous owners, interior, and power steering These elements are used to forecast used automobile prices. Choosing whether a used car's listed internet pricing is reasonable or not might be challenging.

3.4 PROBLEM SOLUTION FIT

The application user can login with their registered framework and they can see the car details and price of the used car value for the user defined parameter. The car model should take the car related parameters like fuel type, manufacturing year transmission, miles driven, number of history owners, and maintenance record.

4. REQUIREMENT ANALYSIS

4.1 FUNCTIONAL REQUIREMENT

DATASET

In this paper, we put forth a research proposal based on a dataset for used cars, specifically. The Kaggle website's Cardekho Used Car Sales Vehicle Dataset.

- Car Name: The cars with this name are considered used car models.
- Year: The used car's year of production
- Selling Price: The cost at which the current owner purchases a used car, based on the vehicle's specifications and state.
- Present Price: The price stated by the seller Kms Driven: The total distance the owner has driven the pre-owned vehicle
- Fuel Type: The type of fuel your car uses, such as CNG, gasoline, diesel, or CNG+petrol.
- Transmission: There are two driving modes: manual and automatic.

PREPROCESSING

It is a crucial step in the process where we modify the raw data to make it suitable for studies on machine learning models. We must utilise charts to plot data, such as the data's histogram, in order to comprehend the dataset. It is established that the dataset contained many outliers due to the enormous number of results for used autos. The most recent model years of automobiles and those with low mileage (in kilometres travelled) sell at a premium. Other variables like accident history and condition, though, did not support this premium sell.

ANALYSING THE DATASET

In this module , admin can train the dataset like car name, year selling price ,Km-driven, transmission etc. user can give the inputs in the user defined paramaters

SELECTING MODEL

In this selecting module user can select the car models from the trained dataset in the default value

PREDICTING VALUE

Using the machine learning algorithm, predicting the car resale's value in the user defined dataset,

Training Phase
Given

- X: the objects in the training data set (an $N \times n$ matrix)
- Y: the labels of the training set (an $N \times 1$ matrix)
- L: the number of classifiers in the ensemble
- K: the number of subsets
- $\{\omega_1, \ldots, \omega_c\}$: the set of class labels

For $i = 1 \ldots L$

- Prepare the rotation matrix R_i^a:
  - Split $\mathbf{F}$ (the feature set) into K subsets: $\mathbf{F}_{i,j}$ (for $j = 1 \ldots K$)
  - For $j = 1 \ldots K$
    - Let $X_{i,j}$ be the data set X for the features in $\mathbf{F}_{i,j}$
    - Eliminate from $X_{i,j}$ a random subset of classes
    - Select a bootstrap sample from $X_{i,j}$ of size 75% of the number of objects in $X_{i,j}$. Denote the new set by $X'_{i,j}$
    - Apply PCA on $X'_{i,j}$ to obtain the coefficients in a matrix $C_{i,j}$
  - Arrange the $C_{i,j}$, for $j = 1 \ldots K$ in a rotation matrix R_i as in equation (1)
  - Construct R_i^a by rearranging the the columns of R_i so as to match the order of features in $\mathbf{F}$.
- Build classifier D_i using (XR_i^a, Y) as the training set

Classification Phase

- For a given $\mathbf{x}$, let $d_{i,j}(\mathbf{x}R_i^a)$ be the probability assigned by the classifier D_i to the hypothesis that $\mathbf{x}$ comes from class ω_j. Calculate the confidence for each class, ω_j, by the average combination method:

$$\mu_j(\mathbf{x}) = \frac{1}{L} \sum_{i=1}^{L} d_{i,j}(\mathbf{x}R_i^a), \quad j = 1, \ldots, c.$$

- Assign $\mathbf{x}$ to the class with the largest confidence.

4.2 NON FUNCTIONAL REQUIREMENTS

Usability

The system shall allow the users to access the system with pc using web application. The system uses a web application as an interface. The system is user friendly which makes the system easy

Availability

The system is available 100% for the user and is used 24 hrs a day and 365 days a year. The system shall be operational 24 hours a day and 7 days a week.

Scalability

Scalability is the measure of a system's ability to increase or decrease in performance and cost in response to changes in application and system processing demands.

Security

A security requirement is a statement of needed security functionality that ensures one of many different security properties of software is being satisfied.

Performance

The information is refreshed depending upon whether some updates have occurred or not in the application. The system shall respond to the member in not less than two seconds from the time of the request submittal. The system shall be allowed to take more time when doing large processing jobs. Responses to view information shall take no longer than 5 seconds to appear on the screen.

Reliability

The system has to be 100% reliable due to the importance of data and the damages that can be caused by incorrect or incomplete data. The system will run 7 days a week. 24 hours a day.

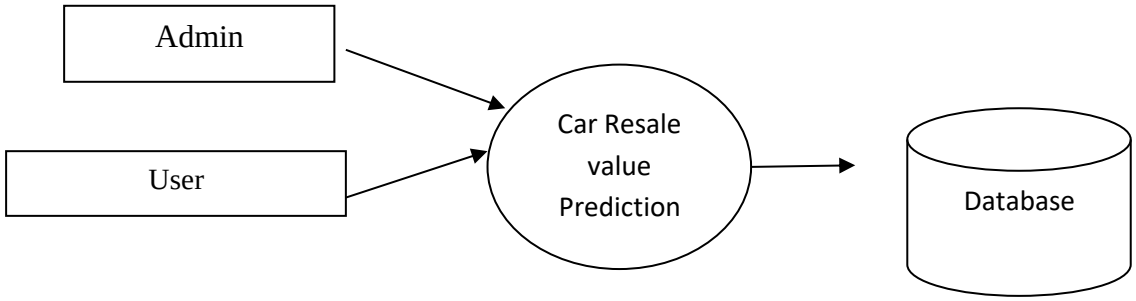
5. PROJECT DESIGN

5.1 DATA FLOW DIAGRAMS

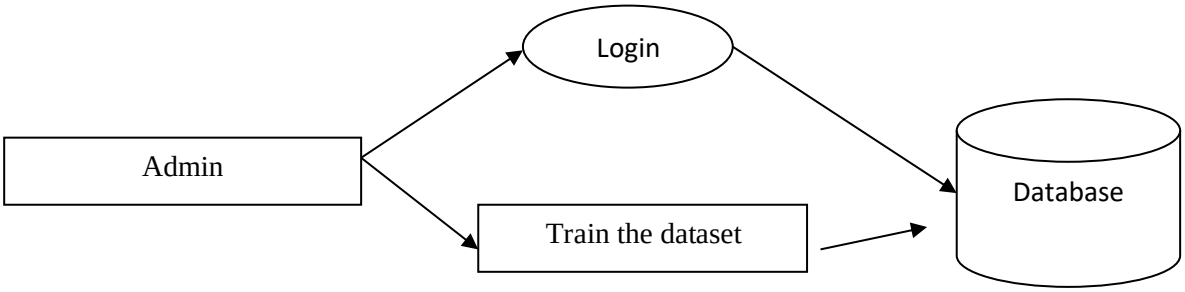
Data Flow Diagrams:

The classic visual representation of how information moves through a system is a data flow diagram (DFD). A tidy and understandable DFD can graphically represent the appropriate quantity of the system demand. It can be done manually, automatically, or both.It demonstrates how information enters and exits the system, what modifies the data, and where information is kept.A DFD's goal is to outline the boundaries and scope of a system as a whole. It can be utilised as a communication tool between a system analyst and any participant in the sequence that serves as the foundation for system redesign.

LEVEL-0



LEVEL-1



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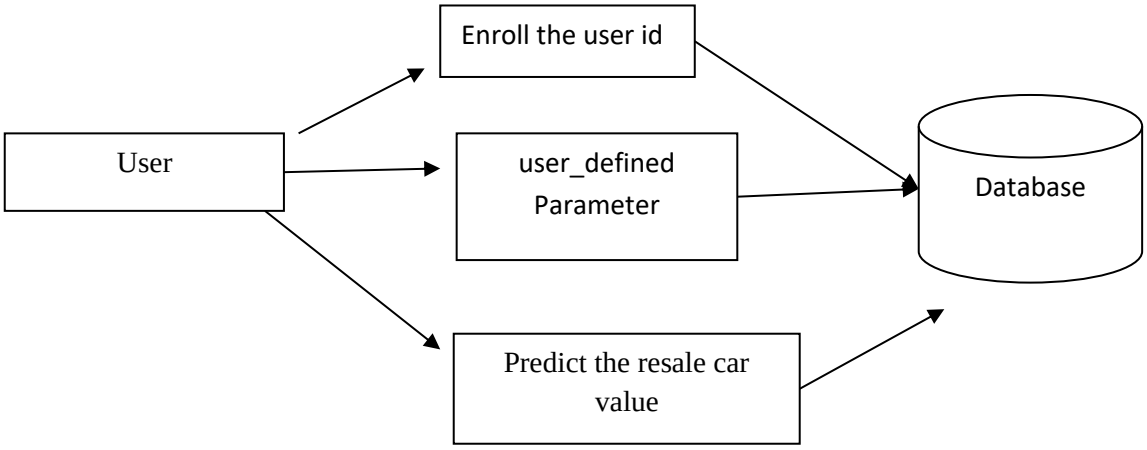
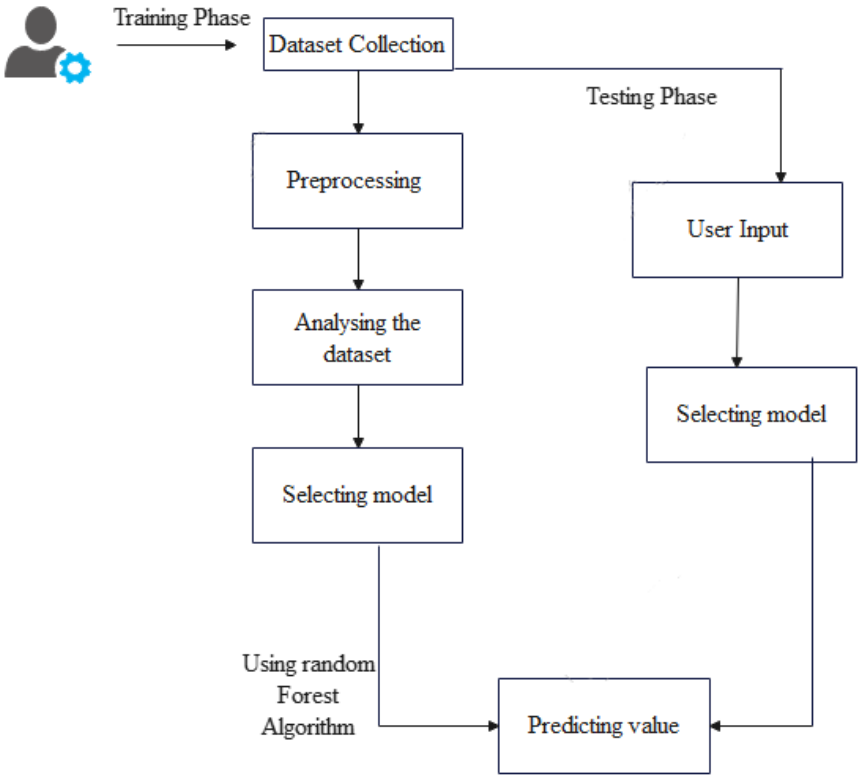


5.2 SOLUTION & TECHNICAL ARCHITECTURE

System architecture involves the high level structure of software system abstraction, by using decomposition and composition, with architectural style and quality attributes. A

software architecture design must conform to the major functionality and performance requirements of the system, as well as satisfy the non-functional requirements such as reliability, scalability, portability, and availability. System architecture must describe its group of components, their connections, interactions among them and deployment configuration of all components.



5.3 USER STORIES

6. PROJECT PLANNING & SCHEDULING

6.1 SPRINT PLANNING & ESTIMATION

6.2 SPRINT DELIVERY SCHEDULE

6.3 REPORTS FROM JIRA

7. CODING & SOLUTION

7.1 FEATURE 1

7.2 FEATURE 2

7.3 DATABASE SCHEMA

8. TESTING

8.1 TEST CASES

A test case has components that describe input, action and an expected response, in order to determine if a feature of an application is working correctly. A test case is a set of instructions on “HOW” to validate a particular test objective/target, which when followed will tell us if the expected behavior of the system is satisfied or not.

Characteristics of a good test case:

- Accurate: Exacts the purpose.
- Economical: No unnecessary steps or words.
- Traceable: Capable of being traced to requirements.
- Repeatable: Can be used to perform the test over and over.
- Reusable: Can be reused if necessary

S.NO	FUNCTION	DESCRIPTION	EXPECTED OUTPUT	ACTUAL OUTPUT	STATUS
1	Framework construction	Generate the GUI for admin and user	Individual page for admin and user	Individual page for admin and user	Success
2	Read the comments	Comments analysis	Comments in text format	Comments in text format	Success
3	Classification	Classify the datasets	Negative comments	Negative comments	Success
4	Rules implementation	Block the comments and friends	Block the users	Block the users	Success

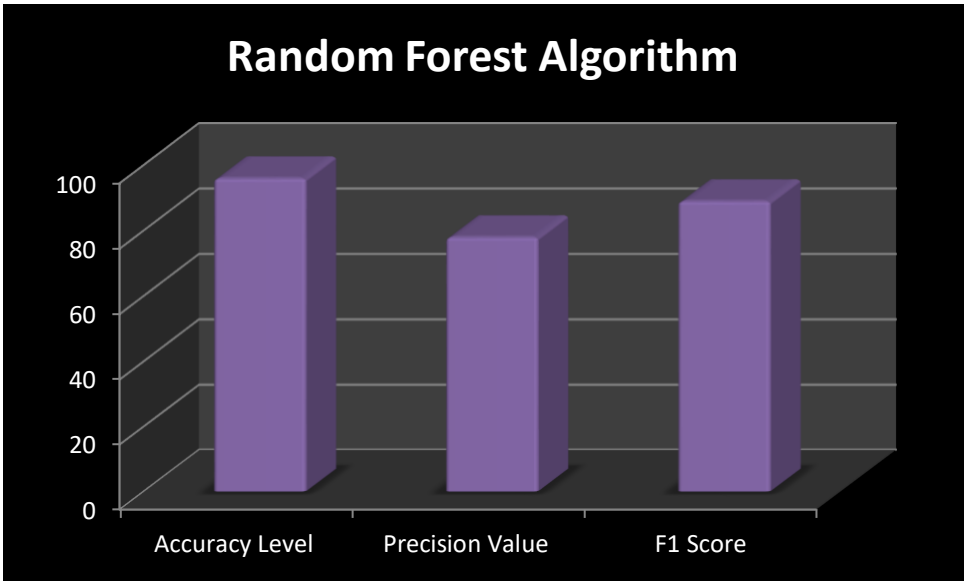
8.2 USER ACCEPTANCE TESTING

Acceptance testing can be defined in many ways, but a simple definition is the succeeds when the software functions in a manner that can be reasonable expected by the customer. After the acceptance test has been conducted, one of the two possible conditions exists. This is to fine whether the inputs are accepted by the database or other validations. For example accept only numbers in the numeric field, date format data in the date field. Also the null check for the not null fields. If any error occurs then show the error messages. The function of performance characteristics to specification and is accepted. A deviation from specification is uncovered and a deficiency list is created. User Acceptance Testing is a critical phase of any project and requires significant participation by the end user. It also ensures that the system meets the functional requirements.

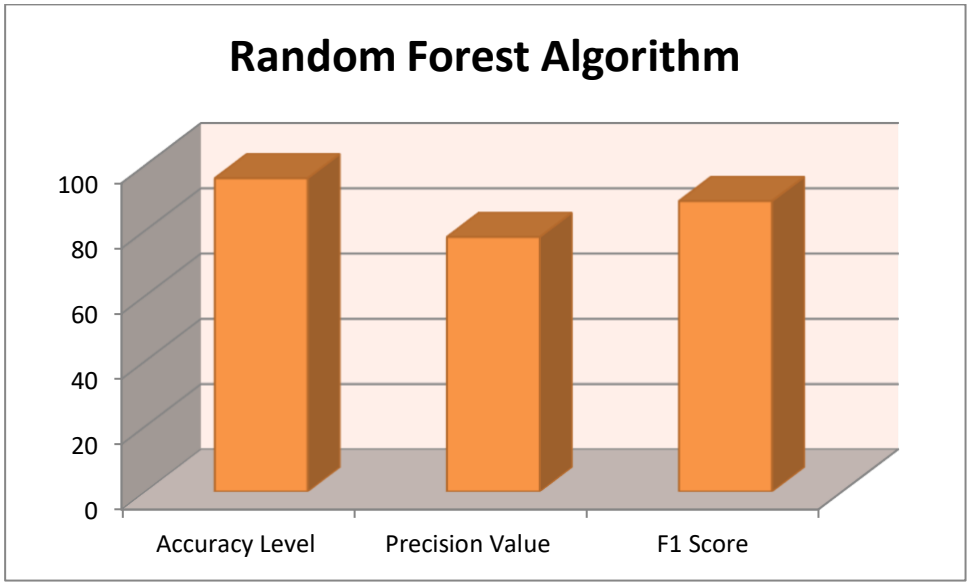
9. RESULTS

9.1 PERFORMANCE METRICS

EXISTING SYSTEM



PROPOSED SYSTEM



10. ADVANTAGES & DISADVANTAGES

DISADVANTAGES

- Not accurate
- Not efficient

ADVANTAGES

- Time Consuming
- Well-known of the product
- Efficient and Accuracy

11. CONCLUSION

Employing the Random Forest Algorithm with a 97 accuracy level in this project. The lack of records for vintage cars is a weakness of this study. We can retrain our models in the future if we have more data, which could lead to a model that is more accurate and stable. In order to forecast used automobile prices, this study used a variety of models. However, because there were only 92386 observations, there was a relatively tiny dataset for drawing a firm conclusion. More data can lead to predictions that are more reliable. Second, there might be additional traits that are reliable predictors. For instance, the following elements could enhance the model: the quantity of doors, the color, the length of time required for mechanical and cosmetic reconditioning, the used-to-new ratio, and the appraisal-to-trade ratio.

12. FUTURE SCOPE

Once sufficient data has been gathered, efficient deep learning techniques like LSTM (Long Short-Term Memory) or RNN (Recurrent Neural Networks) can be used. This can significantly increase accuracy while lowering RMSE.

Only a few features are currently used to forecast a car's resale value. Additional features could be added to this.

CNN can also be used to assess a car's physical condition from images, such as spotting dents and scratches, and to forecast a more accurate resale value.

13. APPENDIX

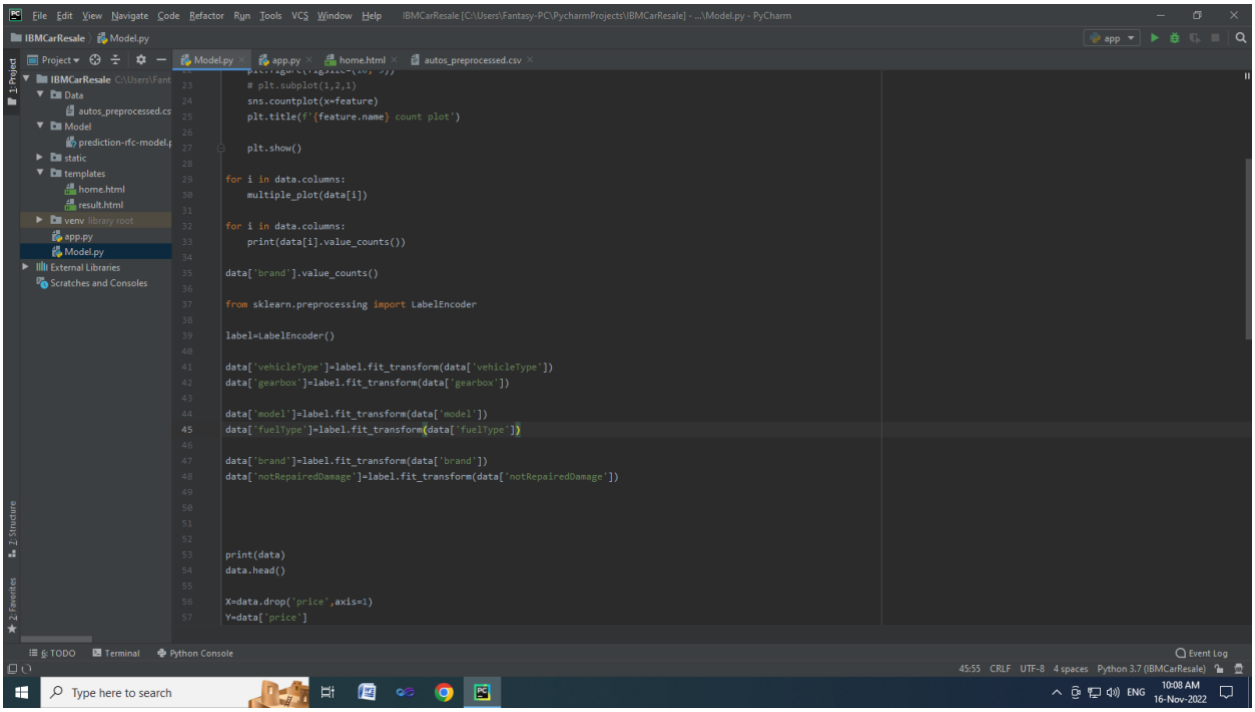
SOURCE CODE

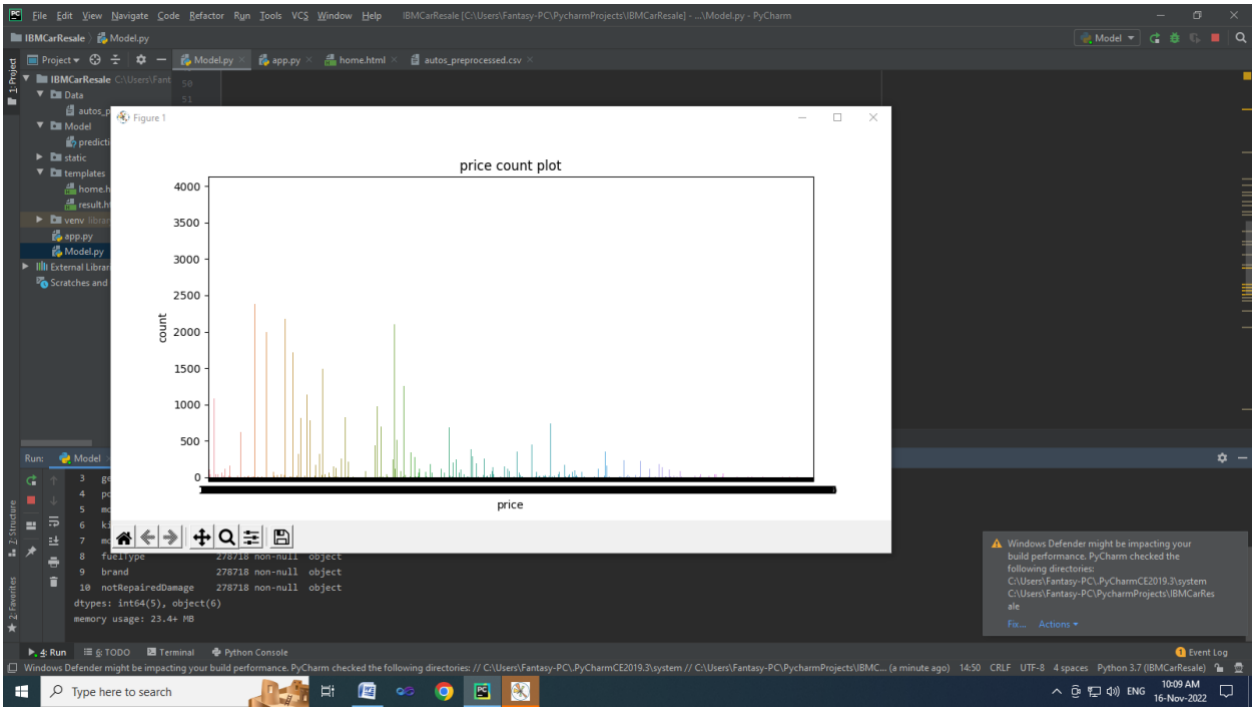
```
from flask import Flask, render_template, flash, request, session,send_file
from flask import render_template, redirect, url_for, request

import sys

import pickle


import numpy as np

app = Flask(__name__)
app.config['DEBUG']
app.config['SECRET_KEY'] = '7d441f27d441f27567d441f2b6176a'

@app.route("/")
def homepage():
    return render_template('home.html')



@app.route("/result", methods=['GET', 'POST'])
def result():
    if request.method == 'POST':

        vehicleType = request.form['s1']
        yearOfRegistration = request.form['t1']
        gearbox = request.form['s2']
        powerPS = request.form['t3']
        kilometer = request.form['t4']
        monthOfRegistration = request.form['t5']
        fuelType = request.form['s3']
        brand = request.form['s4']
        notRepairedDamage = request.form['s5']
```

```
s1 = 0
s2 = 0
s3 = 0
s4 = 0
s5 = 0

if(vehicleType=="bus"):
    s1 = 0
elif(vehicleType=="limousine"):
    s1 = 1
elif (vehicleType == "coupe"):
    s1 = 2
elif (vehicleType == "convertible"):
    s1 = 3

elif (vehicleType == "small car"):
    s1 = 4


if (gearbox == "automatic"):
    s2 = 0
elif (gearbox == "manual"):
    s2 = 1
elif (gearbox == "not-declared"):
    s2 = 2

if (fuelType == "diesel"):
    s3 = 0
elif (fuelType == "petrol"):
    s3 = 1
elif (fuelType == "not-declared"):
    s3 = 2
```

```
if (brand == "audi"):
    s4 = 0
elif (brand == "bmw"):
    s4 = 1
elif (brand == "skoda"):
    s4 = 2
```

```
if (notRepairedDamage == "No"):
    s5 = 0
elif (notRepairedDamage == "not-declared"):
    s5 = 1
```




price count plot
count
price
4000
3500
3000
2500
2000
1500
1000
500
0

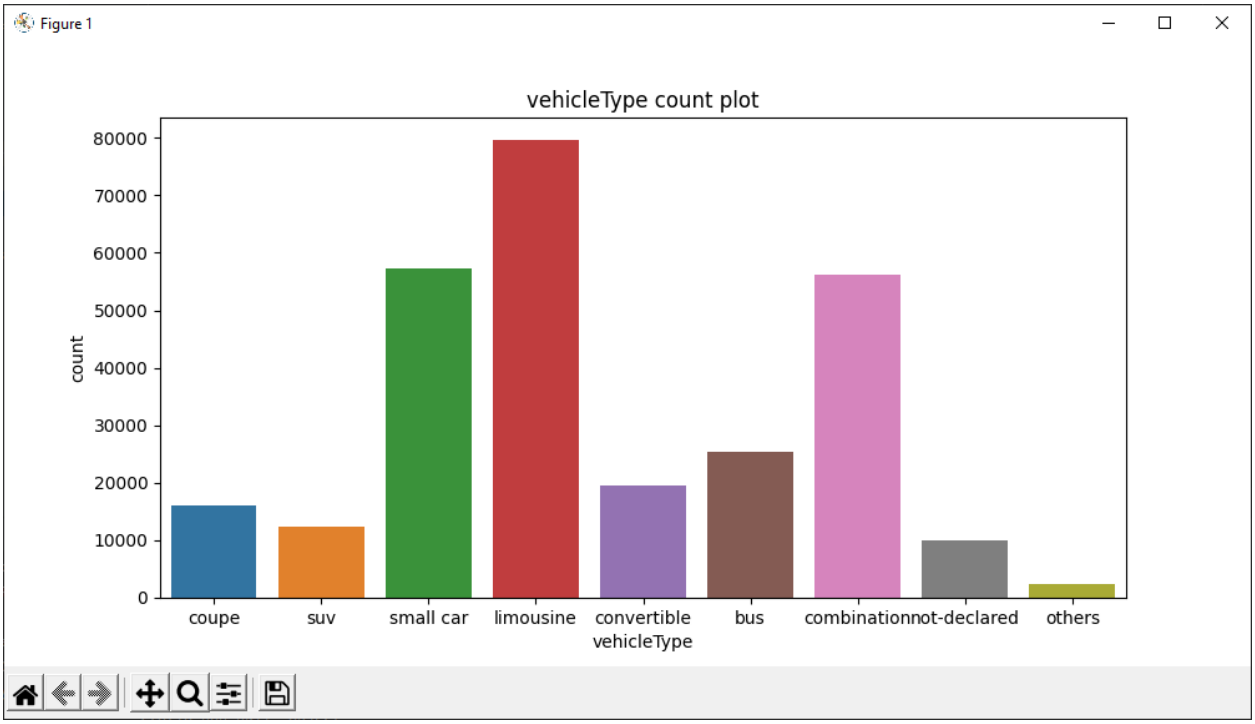


Figure 1
vehicleType count plot
count
vehicleType
80000
70000
60000
50000
40000
30000
20000
10000
0
coupe
suv
small car
limousine
convertible
bus
combination
not-declared
others

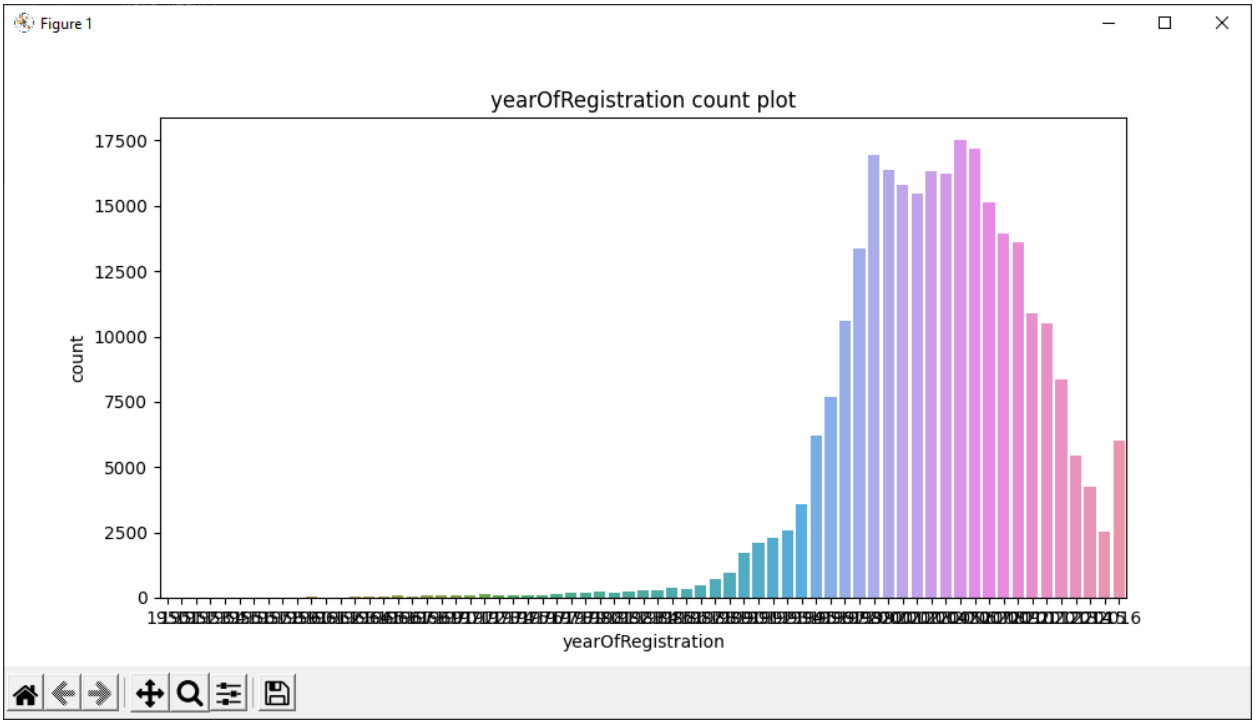


Figure 1
yearOfRegistration count plot
count
17500
15000
12500
10000
7500
5000
2500
0
yearOfRegistration

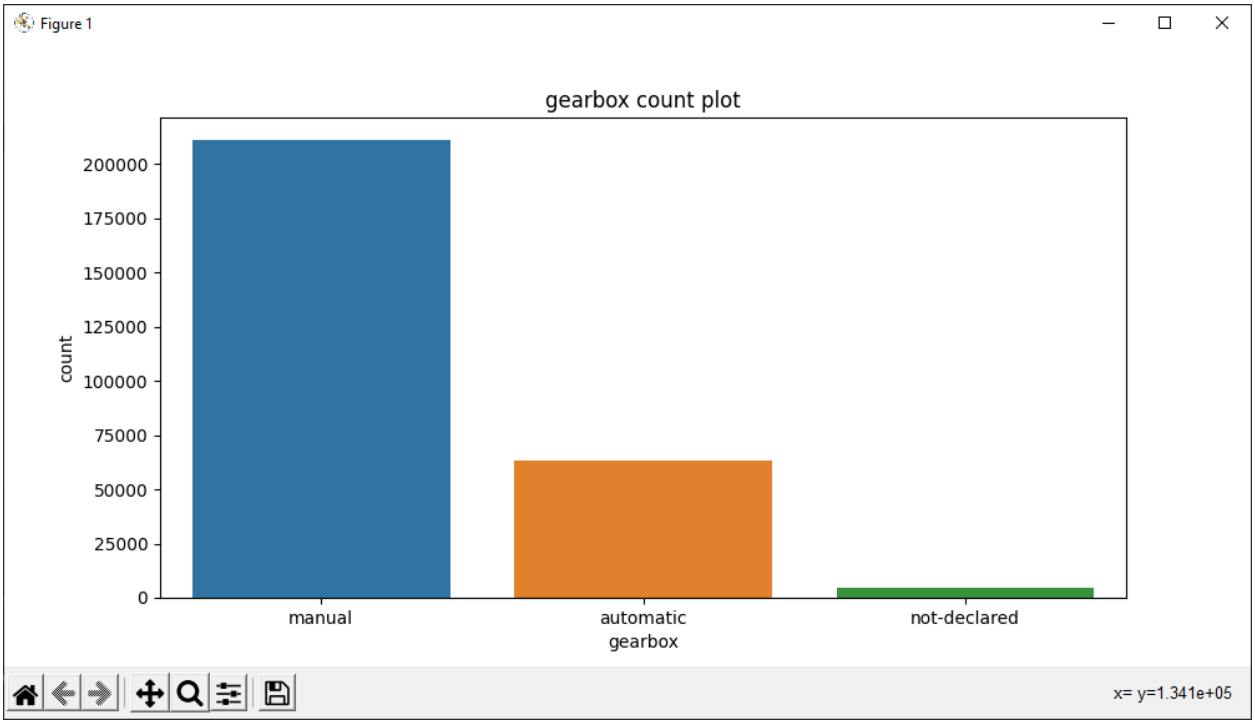
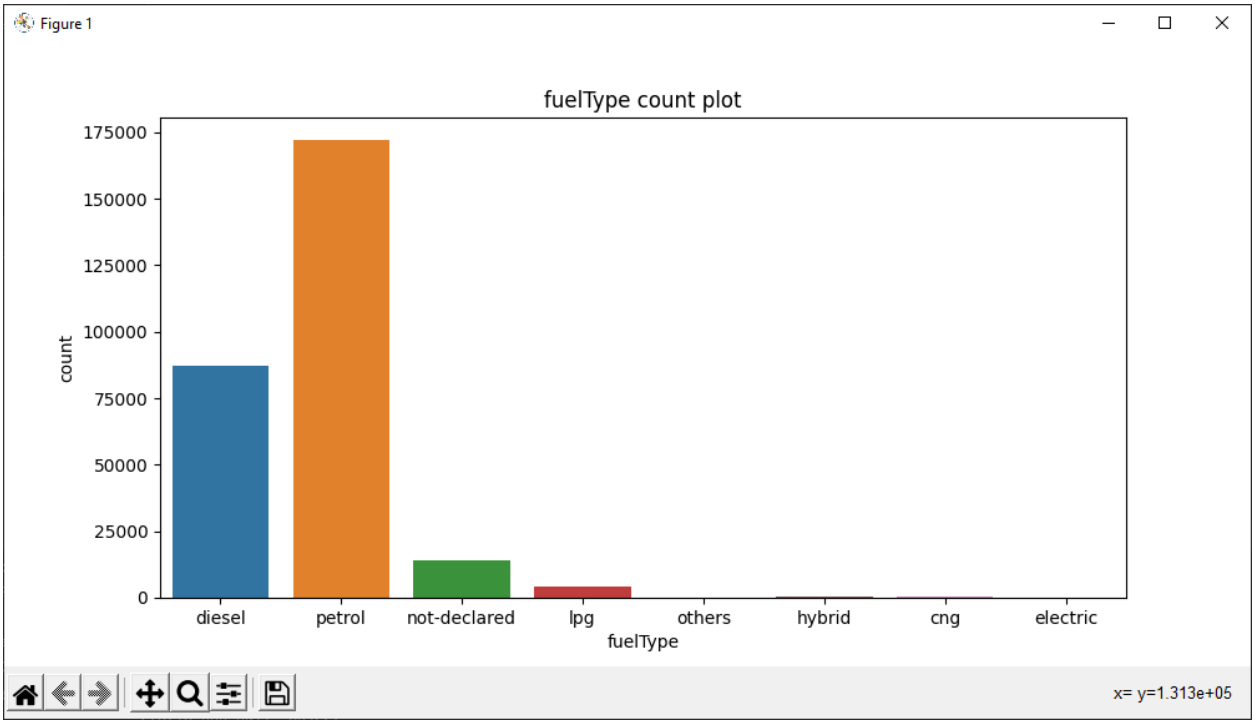


Figure 1
gearbox count plot
count
200000
175000
150000
125000
100000
75000
50000
25000
0
manual
automatic
not-declared
gearbox
x= y=1.341e+05



C:\Users\Fantasy-PC\PycharmProjects\IBMCarResale\venv\Scripts\python.exe C:/Users/Fantasy-PC/PycharmProjects/IBMCarResale/Model.py

<class 'pandas.core.frame.DataFrame'>

RangeIndex: 278718 entries, 0 to 278717

Data columns (total 11 columns):

#	Column	Non-Null Count	Dtype
0	price	278718 non-null	int64
1	vehicleType	278718 non-null	object
2	yearOfRegistration	278718 non-null	int64
3	gearbox	278718 non-null	object
4	powerPS	278718 non-null	int64
5	model	278718 non-null	object
6	kilometer	278718 non-null	int64
7	monthOfRegistration	278718 non-null	int64
8	fuelType	278718 non-null	object

```
 9   brand              278718 non-null  object
 10  notRepairedDamage  278718 non-null  object
dtypes: int64(5), object(6)
memory usage: 23.4+ MB
1500     3934
500      3855
2500     3315
1200     3277
1000     3159
        ...
915         1
987         1
1378        1
3591        1
10985       1
Name: price, Length: 5344, dtype: int64
limousine       79552
small car       57353
combination     56198
bus             25471
convertible     19472
coupe           15964
suv             12392
not-declared    10014
others          2302
Name: vehicleType, dtype: int64
2005    17506
```

2006 17176

1999 16943

2000 16398

2003 16306

...

1956 10

1954 9

1953 6

1950 6

1952 3

Name: yearOfRegistration, Length: 67, dtype: int64

manual 210968

automatic 63054

not-declared 4696

Name: gearbox, dtype: int64

75 20186

60 13362

150 13238

140 11794

101 11409

...

619 1

589 1

337 1

319 1

564 1

Name: powerPS, Length: 496, dtype: int64

golf 23081

andere 20474

3er 16568

not-declared 10503

astra 8321

...

serie_2 5

kalina 4

rangerover 4

serie_3 3

discovery_sport 1

Name: model, Length: 250, dtype: int64

150000 177225

125000 29657

100000 12267

90000 10006

80000 8915

70000 8137

60000 7106

50000 6321

40000 5297

30000 4879

20000 4461

5000 2989

10000 1458

Name: kilometer, dtype: int64

3 28643

6 26067

4 24600

5 24138

7 22841

10 21448

11 19889

9 19817

12 19753

1 19107

8 18605

2 17773

0 16037

Name: monthOfRegistration, dtype: int64

petrol 171926

diesel 87414

not-declared 14233

lpg 4367

cng 447

hybrid 237

others 51

electric 43

Name: fuelType, dtype: int64

bmw 69433

volkswagen 57052

mercedes_benz 34953

audi 26587

ford 18700

renault 12631

seat 4936

skoda 4678

mazda 4444

citroen 3903

toyota 3851

nissan 3768

smart 3267

hyundai 2932

mini 2872

volvo 2689

mitsubishi 2391

honda 2259

kia 2006

sonstige_autos 1935

porsche 1894

alfa_romeo 1879

suzuki 1777

chevrolet 1432

chrysler 1111

dacia 742

jeep 658

land_rover 632

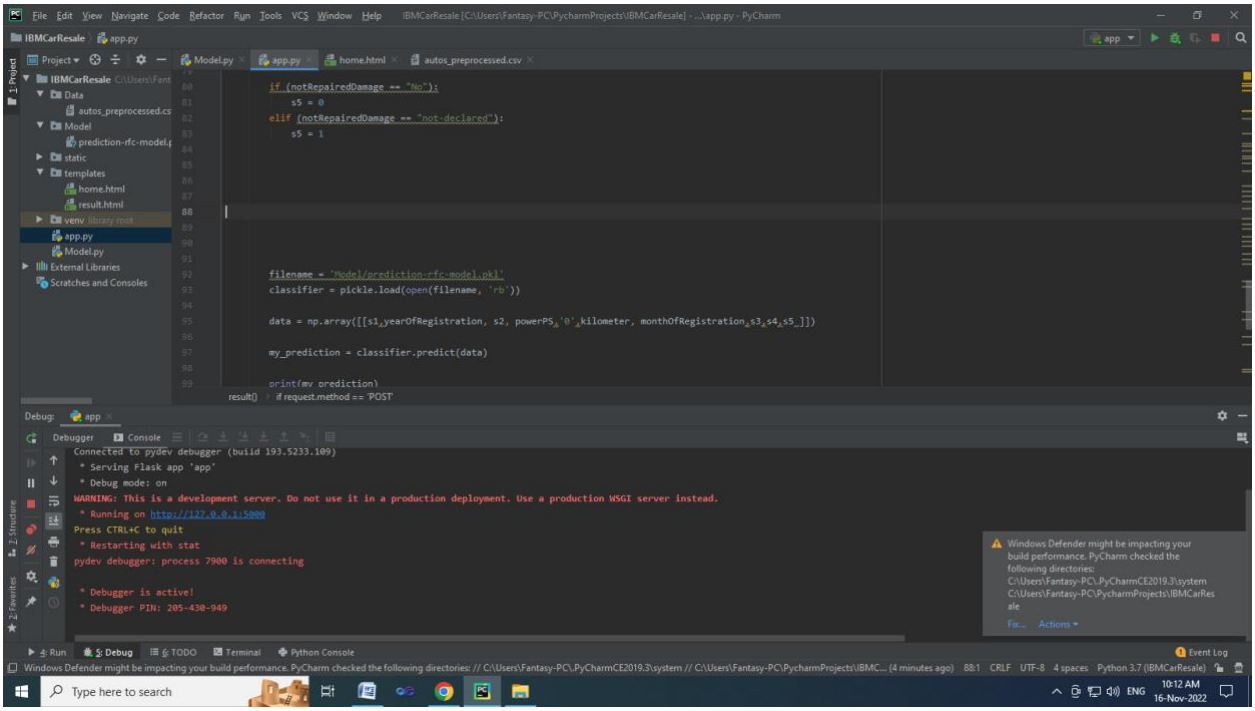
subaru 621

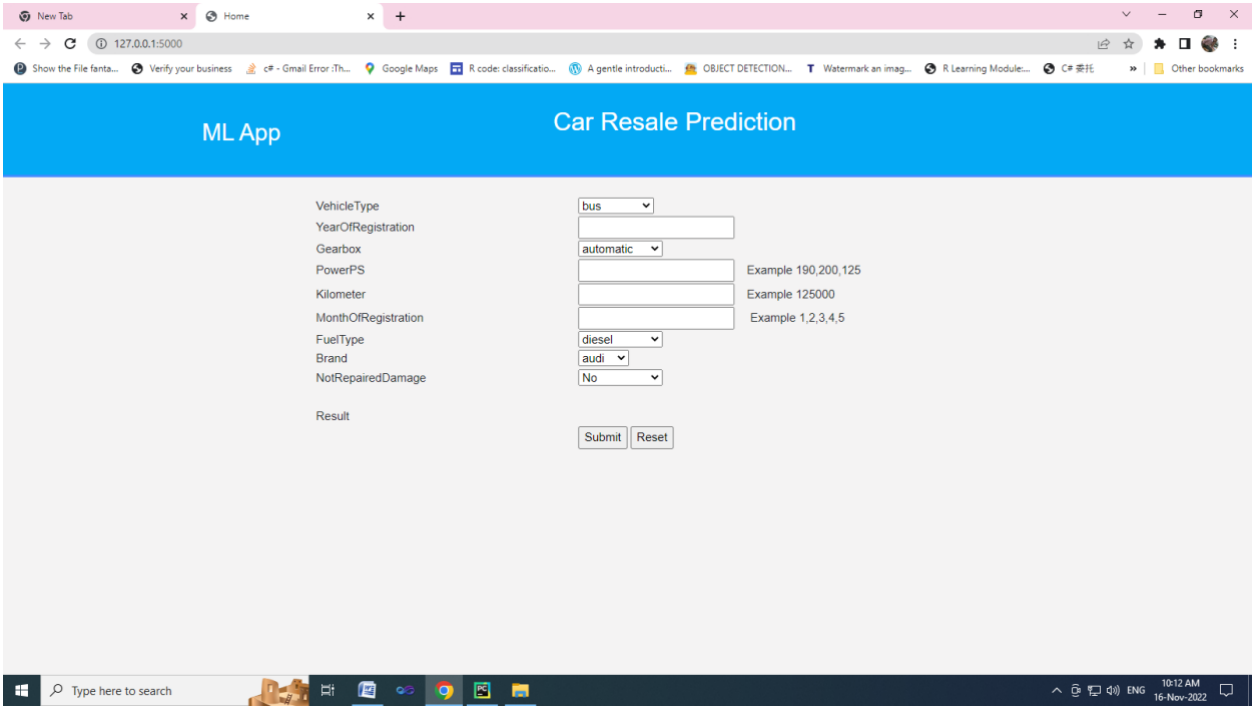
jaguar 519

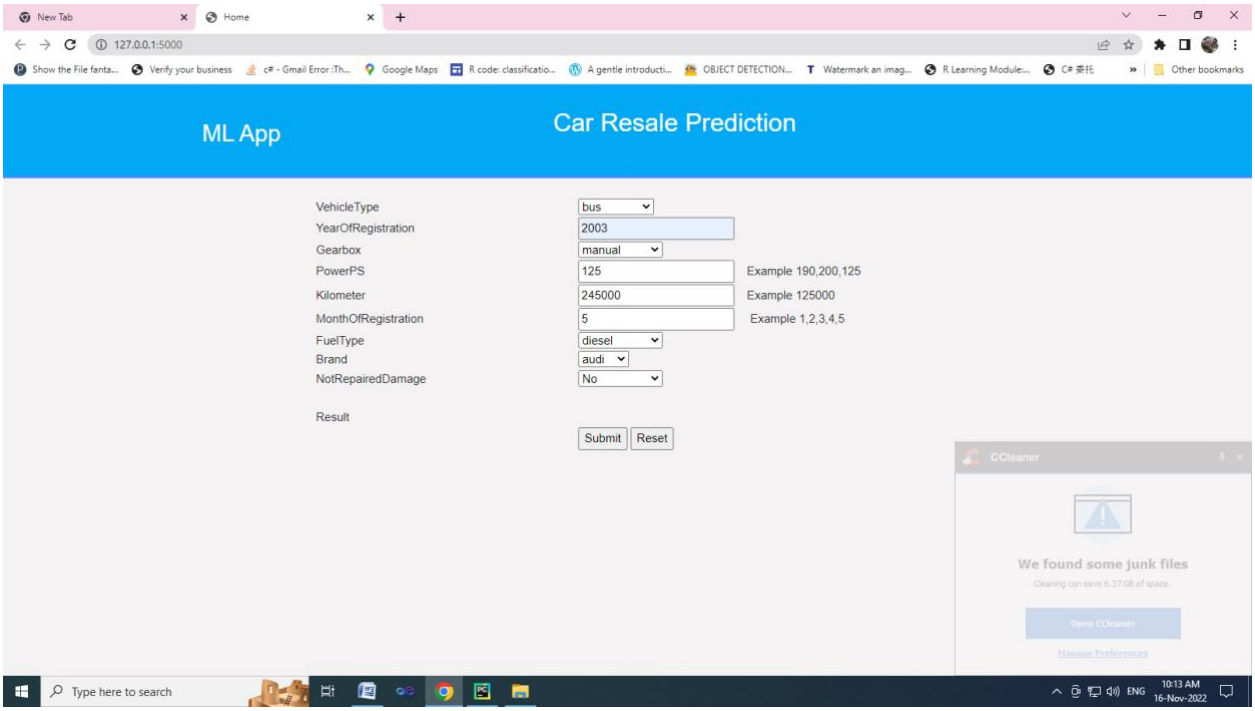
daihatsu 501

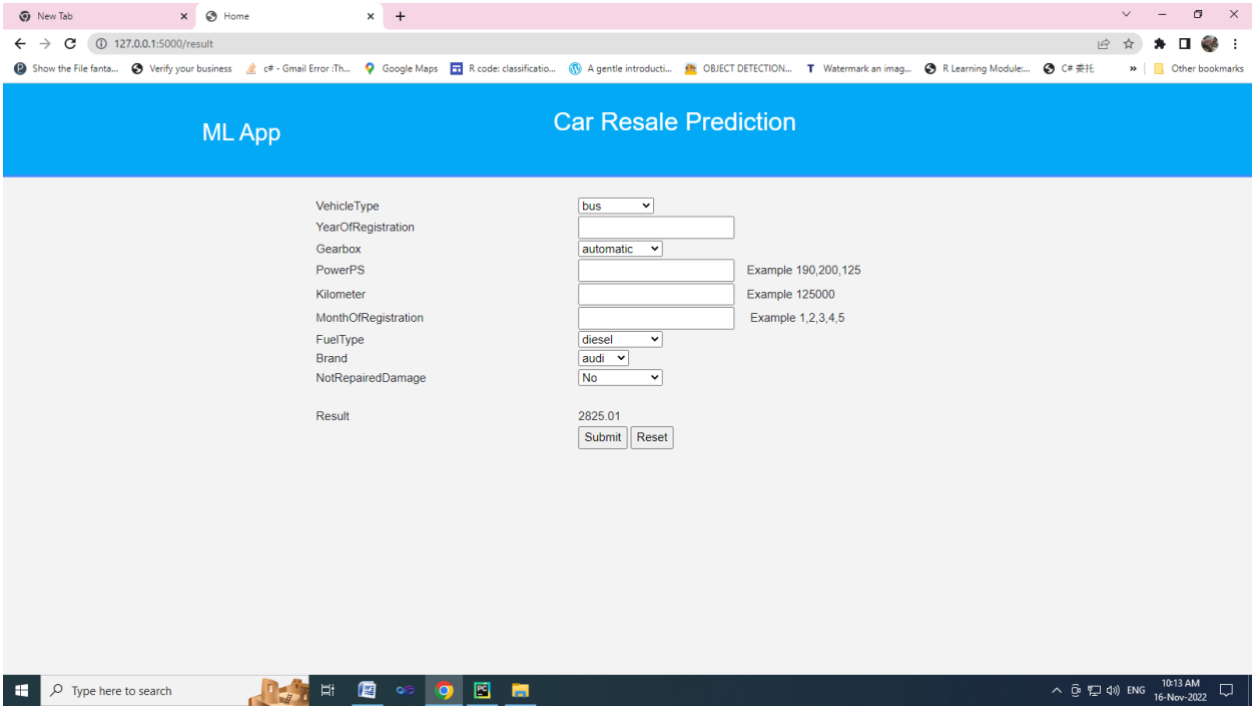
saab 442

```
daewoo            374
lancia            356
rover             340
lada              147
trabant             6
Name: brand, dtype: int64
No            213788
not-declared    38755
Yes            26175
Name: notRepairedDamage, dtype: int64
       price  vehicleType  ...  brand  notRepairedDamage
0      18300          3  ...     1              1
1       9800          8  ...    13              2
2       1500          7  ...    35              0
3       3600          7  ...    28              0
4        650          4  ...     2              1
...      ...        ...  ...   ...            ...
278713   3200          4  ...    27              1
278714   1199          2  ...    29              0
278715   9200          0  ...    35              0
278716   3400          1  ...    35              2
278717  28990          4  ...     2              0

[278718 rows x 11 columns]
```


if (notRepairedDamage == "No"):
s5 = 0
elif (notRepairedDamage == "not-declared"):
s5 = 1
filename = 'Model/prediction-rfc-model.pkl'
classifier = pickle.load(open(filename, 'rb'))
data = np.array([[s1,yearOfRegistration, s2, powerPS,'0',kilometer, monthOfRegistration,s3,s4,s5_]])
my_prediction = classifier.predict(data)
print(my_prediction)
Connected to pydev debugger (build 193.5233.109)
* Serving Flask app 'app'
* Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on http://127.0.0.1:5000
Press CTRL+C to quit
* Restarting with stat
pydev debugger: process 7900 is connecting
* Debugger is active!
* Debugger PIN: 205-430-949


ML App
Car Resale Prediction
VehicleType
bus
YearOfRegistration
Gearbox
automatic
PowerPS
Example 190,200,125
Kilometer
Example 125000
MonthOfRegistration
Example 1,2,3,4,5
FuelType
diesel
Brand
audi
NotRepairedDamage
No
Result
Submit
Reset


New Tab
Home
127.0.0.1:5000
ML App
Car Resale Prediction
VehicleType
bus
YearOfRegistration
2003
Gearbox
manual
PowerPS
125
Example 190,200,125
Kilometer
245000
Example 125000
MonthOfRegistration
5
Example 1,2,3,4,5
FuelType
diesel
Brand
audi
NotRepairedDamage
No
Result
Submit
Reset
CCleaner
We found some junk files
Open CCleaner
Type here to search
ENG
10:13 AM
16-Nov-2022


New Tab
Home
127.0.0.1:5000/result
ML App
Car Resale Prediction
VehicleType
bus
YearOfRegistration
Gearbox
automatic
PowerPS
Example 190,200,125
Kilometer
Example 125000
MonthOfRegistration
Example 1,2,3,4,5
FuelType
diesel
Brand
audi
NotRepairedDamage
No
Result
2825.01
Submit
Reset
Type here to search
ENG
10:13 AM
16-Nov-2022

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