

# **Car Resale Value Prediction**

Applied Data Science

## **Submitted by:**

Shubhavya K

Sivaranjani S

Parameshwaran T R

Vighnesh A K

**Project ID PNT2022TMID21553**

**Department of Information Technology,  
Thiagarajar College of Engineering, Madurai - 625015.**

**Institution Mentor: Dr.C.Jeyamala**

**Industrial Mentor: Prof Swetha**

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# **1.Introduction:**

## **1.1 Project Overview:**

The main objective of this project is to estimate the resale value of any car model using its original cost as well as additional factors like the type of fuel it uses, the number of years it has been driven, etc. Due to the fact that they will be able to find all the information they need on a single website, people will be able to save a lot of time and money as a result.

## **1.2 Purpose:**

The main goal of creating a system to predict car resale value is to practise Python and Data Science. The user-provided parameters form the basis of the system that predicts the amount of resale value for cars. The user enters the car's information into the available form, and the predicted selling price is generated.

## **2.Literature Survey**

### **2.1 Existing Problem**

1. Used Cars Price Prediction using Supervised Learning Techniques
2. Used car price prediction.
3. International Research Journal of Modernization in Engineering Technology and Science

### **2.2 References**

[https://www.researchgate.net/publication/343878698\\_Used\\_Cars\\_Price\\_Prediction\\_using\\_Supervised\\_Learning\\_Techniques](https://www.researchgate.net/publication/343878698_Used_Cars_Price_Prediction_using_Supervised_Learning_Techniques)

<https://www.irjet.net/archives/V8/i4/IRJET-V8I4278.pdf>

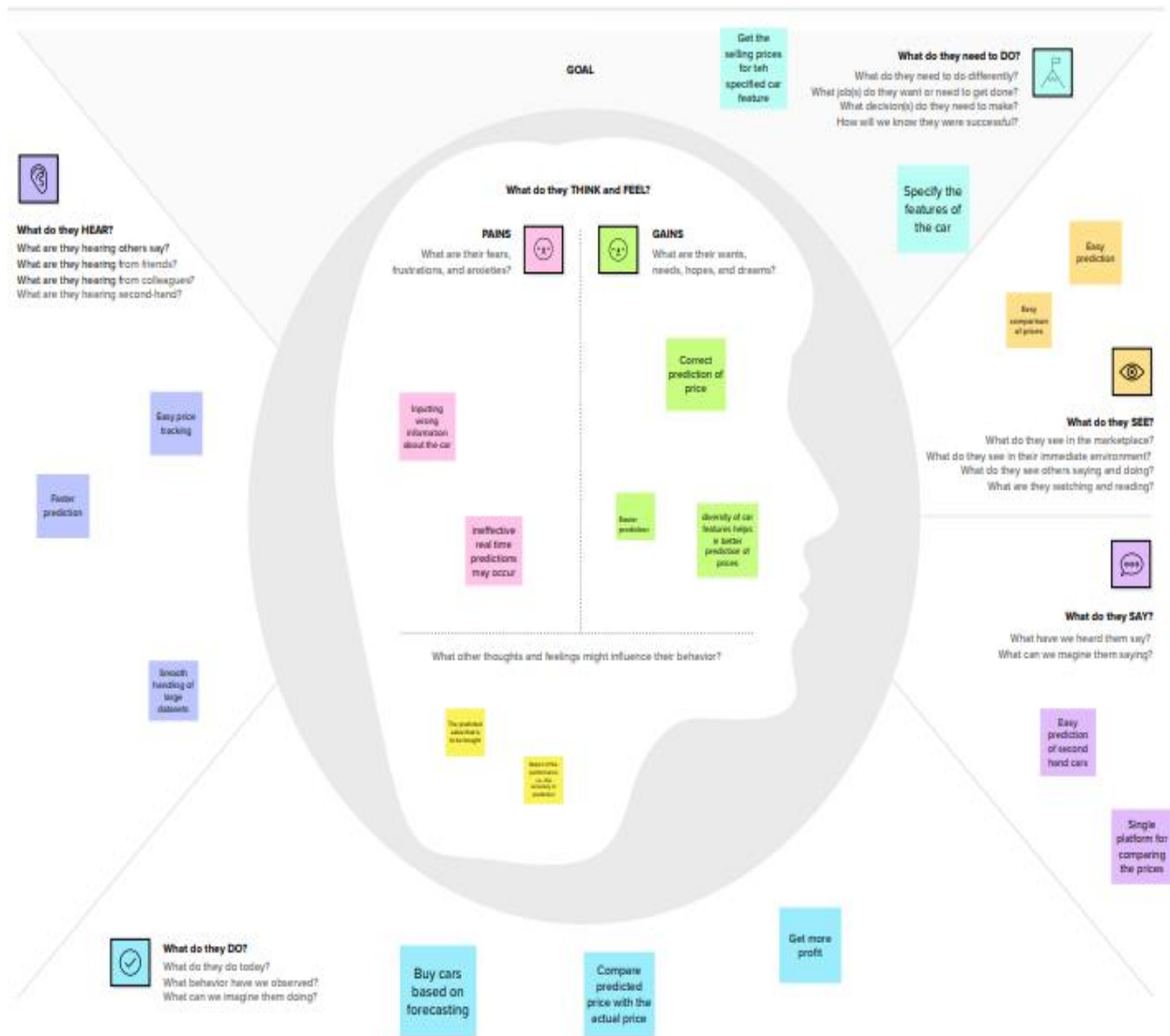
[https://www.irjmets.com/uploadedfiles/paper/volume3/issue\\_6\\_june\\_2021/12071/1628083486.pdf](https://www.irjmets.com/uploadedfiles/paper/volume3/issue_6_june_2021/12071/1628083486.pdf)

### **2.3 Problem Statement Definition**

- I am a buyer and I am trying to buy a second hand car, but I don't know the actual worth of the car because I don't know if the price fixed by the seller is worth the deliverable, which makes me feel doubtful.
- I am a customer and I am trying to sell my used car and I have no idea about the maximum price that can be fixed for my car. I don't want to incur any loss by selling my car to the lower price, which makes me feel confused


## 3.Ideation and Proposed Solution:

### 3.1 Empathy Map Canvas



## 3.2 Ideation and Brainstorming

### Step-1: Team Gathering, Collaboration and Select the Problem Statement



## Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

⌚ 10 minutes to prepare  
🕒 1 hour to collaborate  
👥 2-8 people recommended

➔

#### Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

⌚ 10 minutes

---

**A Team gathering**  
Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.

**B Set the goal**  
Think about the problem you'll be focusing on solving in the brainstorming session.

**C Learn how to use the facilitation tools**  
Use the Facilitation Superpowers to run a happy and productive session.

[Open article](#) ➔

1

#### Define your problem statement

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

⌚ 5 minutes

PROBLEM

To build a model to predict the selling price of used cars

**Key rules of brainstorming**  
To run a smooth and productive session

- Stay in topic.
- Encourage wild ideas.
- Defer judgment.
- Listen to others.
- Go for volume.
- If possible, be visual.

### Step-2: Brainstorm, Idea Listing and Grouping

2

#### Brainstorm

Write down any ideas that come to mind that address your problem statement.

⌚ 10 minutes

**Shubhanshu K**

The problem is that the current model is not accurate enough to predict the selling price of used cars. We need a more sophisticated model that can take into account more factors like the car's condition, location, and market trends.

**Sriramjani S**

The problem is that the current model is not accurate enough to predict the selling price of used cars. We need a more sophisticated model that can take into account more factors like the car's condition, location, and market trends.

**Parameshwaran T R**

The problem is that the current model is not accurate enough to predict the selling price of used cars. We need a more sophisticated model that can take into account more factors like the car's condition, location, and market trends.

**Vignesh A K**


The problem is that the current model is not accurate enough to predict the selling price of used cars. We need a more sophisticated model that can take into account more factors like the car's condition, location, and market trends.


3


#### Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

⌚ 20 minutes







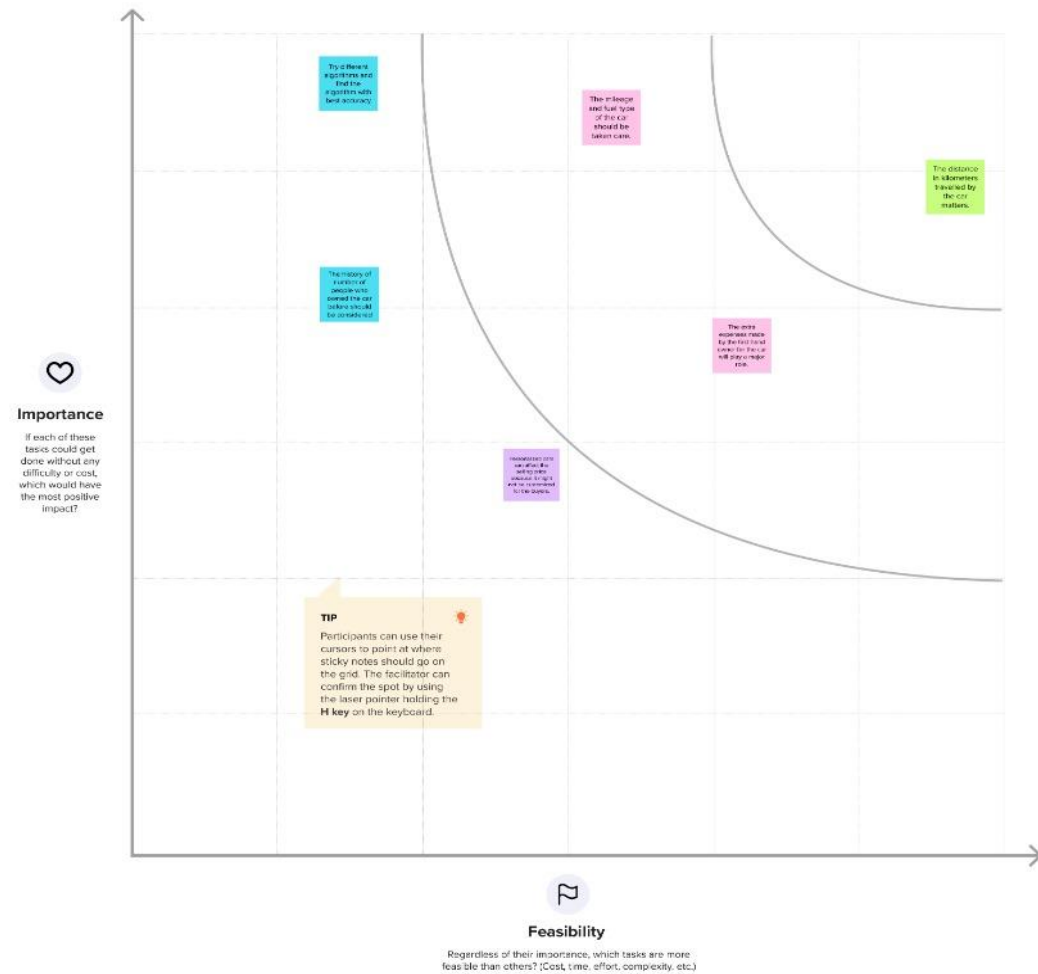
## Step-3: Idea Prioritization

4

### Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

🕒 20 minutes



### 3.3 Proposed Solution

S. No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	To predict an accurate selling price value for a second-hand car.
2.	Idea / Solution description	The solution planned for the given problem statement is that we can use any Machine Learning model to accurately predict the selling price values of resale cars with the given existing data.
3.	Novelty / Uniqueness	The uniqueness in the project comes from the dataset where we consider several parameters like the mileage, kilometres covered by the car, etc without omitting them.
4.	Social Impact / Customer Satisfaction	The gap between the seller and buyer is reduced when an accurate selling price is predicted because, no party would incur any loss and this causes immense satisfaction among the customer who turns out to be both the buyer and seller.
5.	Business Model (Revenue Model)	The business model for the algorithm and the ML model created is to create a website and deploy the model as an application so that they can generate revenue like every other website.
6.	Scalability of the Solution	The solution is scalable to a wide variety of different models of cars and the scalability can be tremendously increased when there is such availability in the dataset.



### 3.4 Problem Solution Fit

Define CS, fit into CC	<b>1. CUSTOMER SEGMENT(S)</b> <span>CS</span> <ul style="list-style-type: none"> <li>People who can't afford the luxury range can get resale car.</li> <li>Used car sellers (Dealers).</li> <li>People who are fond of cars.</li> </ul>	<b>6. CUSTOMER CONSTRAINTS</b> <span>CC</span> <ul style="list-style-type: none"> <li>Resale cars don't come with a warranty / guarantee which disappoints the customer.</li> <li>Resale car have high rate of interest on its loan</li> </ul>	<b>5. AVAILABLE SOLUTIONS</b> <span>AS</span> <ul style="list-style-type: none"> <li>There are a lot of car resale price predictions sites in the market that lacks in accurate prediction.</li> <li>Providing a true accurate apt website for the society is the ultimate goal.</li> </ul>	Explore AS, differentiate
	<b>2. JOBS-TO-BE-DONE / PROBLEMS</b> <span>J&amp;P</span> <ul style="list-style-type: none"> <li>Predicted values may not be accurate.</li> <li>User might not get the precise information about the cars.</li> </ul>	<b>9. PROBLEM ROOT CAUSE</b> <span>RC</span> <p>The prices of new cars in the industry are fixed by the manufacturer with some additional costs incurred by the Government in the form of taxes. So, customers buying a new car can be assured of the money they invest to be worthy. But due to the increased price of new cars and the incapability of customers to buy new cars due to the lack of funds, used cars sales are on a global increase. There is a need for a used car price prediction system to effectively determine the worthiness of the car using a variety of features.</p>	<b>7. BEHAVIOUR</b> <span>BE</span> <p>The observed behaviors are,</p> <ul style="list-style-type: none"> <li>Prediction through effective algorithms pave a way for users to get to know the resale care price range. Users depends more on technology rather than the tradition quotation methods.</li> <li>Purchasing the resale cars based on prediction results.</li> </ul>	Focus on J&P, top into BE, understand RC
Identify Strong TR & EM	<b>3. TRIGGERS</b> <span>TR</span> <ul style="list-style-type: none"> <li>Purchasing the top end car at low cost.</li> <li>Getting to know from different users, the efficient way of purchasing resale car triggers</li> </ul>	<b>10. YOUR SOLUTION</b> <span>SL</span> <p>Due to the unprecedented number of cars being purchased and sold, used car price prediction is a topic of high interest. Because of the affordability of used cars in developing countries, people tend more purchase used cars. A primary objective of this project is to estimate used car prices by using attributes that are highly correlated with a label. In the near future, the most sophisticated algorithm is used for making predictions, and then the model will be integrated into web page for the general public to use.</p>	<b>8. CHANNELS of BEHAVIOUR</b> <span>CH</span> <p><b>Online :</b> The prediction is done online through a serverclient model.</p> <p><b>Offline :</b> The predicted result can be downloaded and be used as a quotation for the resale car</p>	Extract online & offline CH of BE
	<b>4. EMOTIONS: BEFORE / AFTER</b> <span>EM</span> <p><b>BEFORE :</b> Cheating, Disappointment, Stressful – Without knowing the price range of their used cars</p> <p><b>AFTER :</b> Stress free, relived – By predicting the price range of cars easily</p>			

## 4. Requirement Analysis

### 4.1 Function Requirement

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail Registration through LinkedIn
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User login	Login via Google Login via email and Password
FR-4	Car Model input	Input the model of the car Input all the car details
FR-5	Resale price prediction	Prediction using the machine learning model

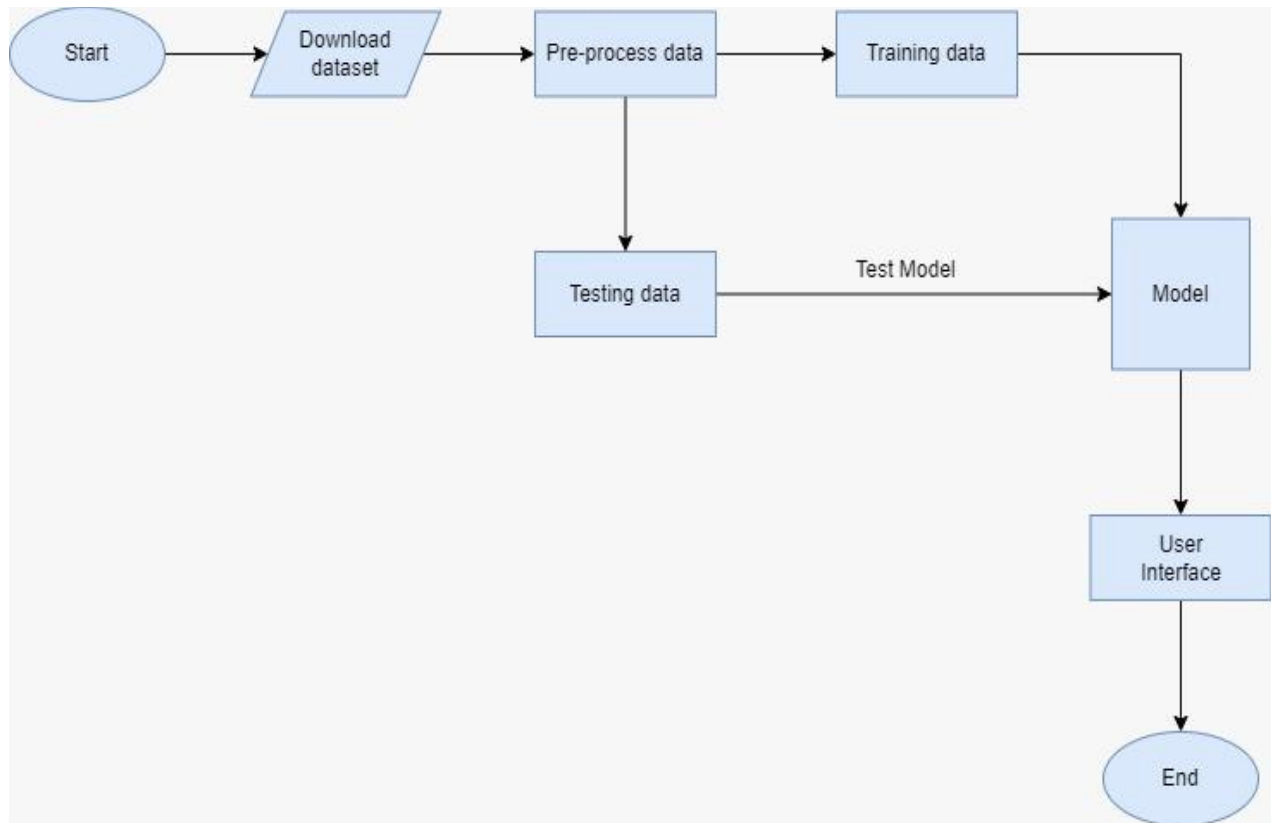
### 4.2 Non-function Requirement

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	<b>Usability</b>	Simple Design Easily to navigate inside the website
NFR-2	<b>Security</b>	Allow only strong passwords Record User Access and Administrative Privileges
NFR-3	<b>Reliability</b>	The system must perform without failure Should not create downtime
NFR-4	<b>Performance</b>	The response for any search should be fast There should be good storage capacity
NFR-5	<b>Availability</b>	Must be available for all users Resale rates for all models should be predicted
NFR-6	<b>Scalability</b>	This should be supported by all the OS. Should be able to cope with an increasing number of users concurrently interacting with the site

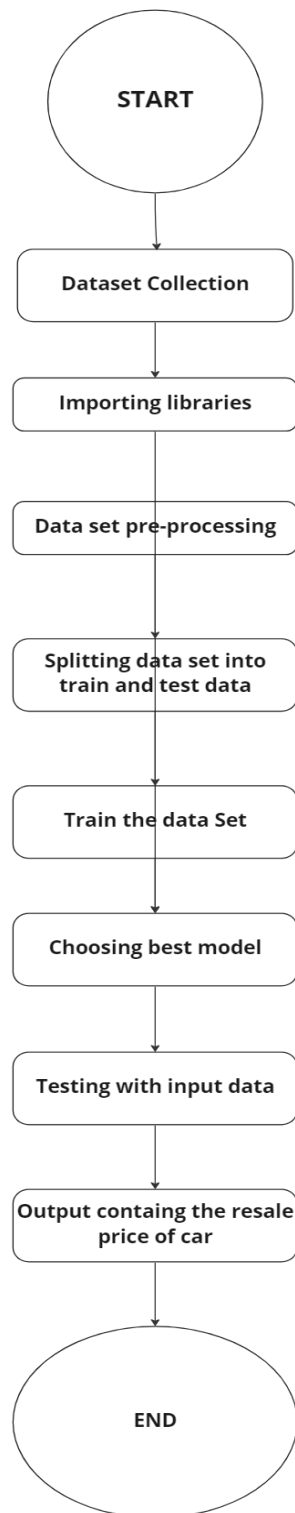
## 5. Project Design

### 5.1 Data Flow diagram

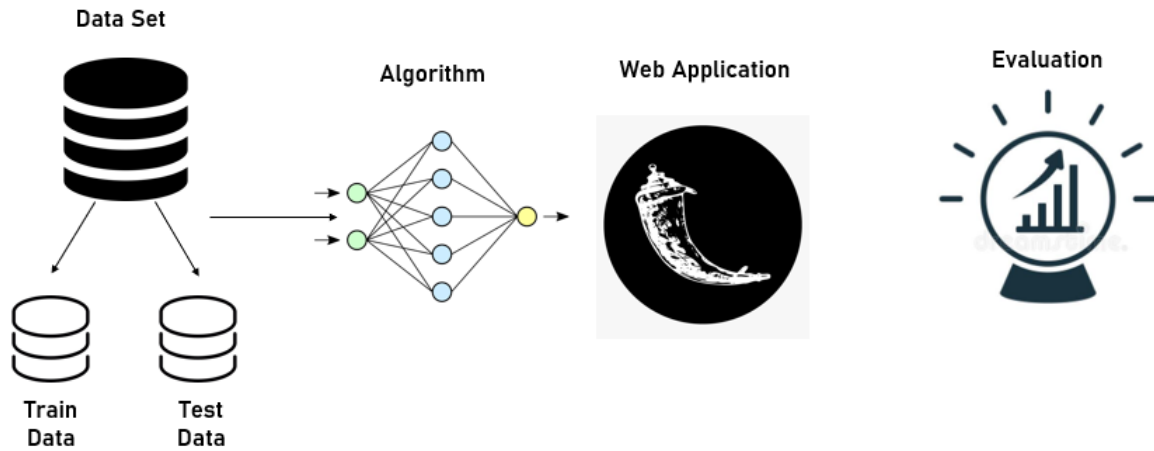


## 5.2 Solution and Technical Architecture

### Solution Architecture



## Technical Architecture



## Technical Interface

**Table-1: Components & Technologies:**

S.No	Component	Description	Technology
1.	User Interface	The user interacts with application using  Web UI	HTML, CSS, JavaScript etc.
2.	Application Logic-1	Logic for a process in the application	Python
3.	Database	The dataset containing car details is used for training the model to predict the rate	NoSQL.
4.	Cloud Database	The dataset is stored in the IBM cloud	IBM DB2.

5.	File Storage	File storage requirements	IBM Block Storage.
6.	Machine Learning Model	It is responsible for predicting the resale value of the cars.	Regression Model
7.	Infrastructure (Server / Cloud)	Application will be deployed in cloud.	Local, Cloud Foundry, Kubernetes, etc.

**Table-2: Application Characteristics:**

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Open-source frameworks used	Flask, Python, IBM Cloud
2.	Security Implementations	Security / access controls implemented, use of firewalls etc.	Encryptions
3.	Scalable Architecture	Scalability of architecture consists of 3 tiers	Web Server - HTML, CSS, Javascript Application Server - Python Flask Database Server - IBM Cloud
4.	Availability	User can access our application through cloud all the time	IBM Cloud Hosting.
5.	Performance	Multiple users can access the web application and can perform actions simultaneously	IBM Load Balance

### 5.3 User Stories

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard	High	Sprint-1
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
		USN-3	As a user, I can register for the application through Facebook	I can register & access the dashboard with Facebook Login	Low	Sprint-2
		USN-4	As a user, I can register for the application through Gmail		Medium	Sprint-1
	Login	USN-5	As a user, I can log into the application by entering email & password		High	Sprint-1
	Dashboard	USN-6	As, a user I can explore the entire website	I should be able to receive notifications based on my interest.	Medium	Sprint-1
Customer (Web user)	Search	USN-7	As a user I can view all the car models and their prices		High	Sprint-2
Customer Care Executive	Chat	USN-8	As a user I can use the chat option to clear all my doubts		low	Sprint-3
Administrator	Data collection and modification	USN-9	As an admin, I can collect the data of all my users without mis using it.		high	Sprint-3

## 6. Project Planning and Scheduling

### 6.1 Sprint Planning and Estimation

TITLE	DESCRIPTION	DATE
<b>Literature Survey &amp; Information Gathering</b>	Literature survey on the selected project and collecting other information	28 SEPTEMBER 2022
<b>Prepare Empathy Map</b>	Prepare Empathy Map Canvas to capture the user Pains & Gains, Prepare list of problem statements	19 SEPTEMBER 2022
<b>Ideation</b>	List the by organizing the brainstorming session and prioritize the top 3 ideas based on the feasibility & importance.	19 SEPTEMBER 2022
<b>Proposed Solution</b>	Prepare the proposed solution document, which includes the novelty, feasibility of idea, business model, social impact, scalability of solution, etc.	23 SEPTEMBER 2022
<b>Problem Solution Fit</b>	Prepare problem - solution fit document.	30 SEPTEMBER 2022



<b>Solution Architecture</b>	Prepare a solution architecture document.	28 SEPTEMBER 2022
<b>Customer Journey</b>	Prepare the customer journey maps to understand the user interactions & experiences with the application (entry to exit).	20 OCTOBER 2022
<b>Functional Requirement</b>	Prepare the functional requirement document.	8 OCTOBER 2022
<b>Data Flow Diagrams</b>	Draw the data flow diagrams and submit for review.	9 OCTOBER 2022
<b>Technology Architecture</b>	Prepare the technology architecture diagram.	10 OCTOBER 2022
<b>Prepare Milestone &amp; Activity List</b>	Prepare the milestones & activity list of the project.	22 OCTOBER 2022
<b>Project Development - Delivery of Sprint-1, 2, 3 &amp; 4</b>	Develop & submit the developed code by testing it.	IN PROGRESS

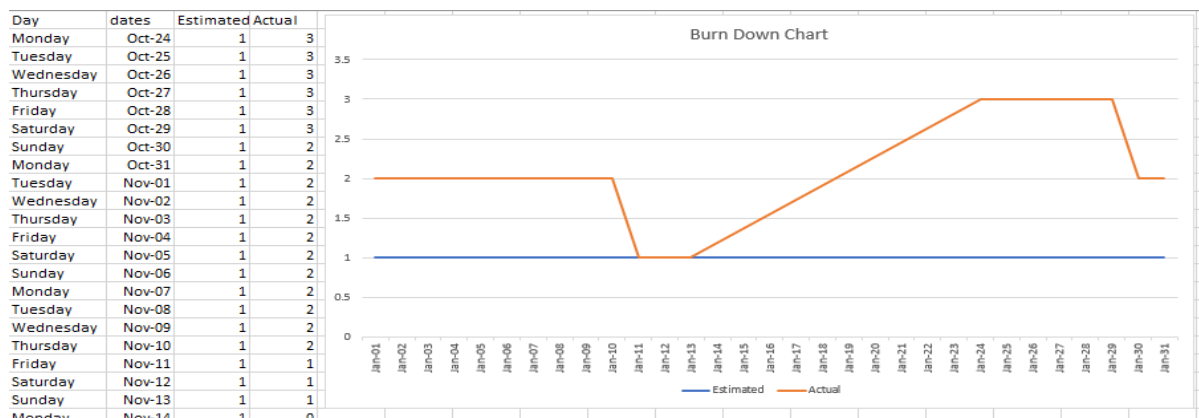
## 6.2 Sprint Delivery Schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Search	USN-1	As a user, I can find all the available car models as the result of a search	2	High	Shubhavya K, Sivaranjani S, Parameshwaran T R, Vighnesh A K
Sprint-1	Display	USN-2	As a user, I can get all the details of a selected car model	1	High	Shubhavya K, Sivaranjani S, Parameshwaran T R, Vighnesh A K
Sprint-2	Result	USN-3	As a user, I can see all the predicted results	2	High	Shubhavya K, Sivaranjani S, Parameshwaran T R, Vighnesh A K
Sprint-1	Analyse	USN-4	As an administrator, I can save the details of the users to give them best suggestions	2	Medium	Shubhavya K, Sivaranjani S, Parameshwaran T R, Vighnesh A K

## Project Tracker, Velocity & Burndown Chart: (4 Marks)

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	5 Days	24 Oct 2022	29 Oct 2022	20	15 Nov 2022
Sprint-2	20	5 Days	31 Nov 2022	05 Nov 2022	20	16 Nov 2022
Sprint-3	20	5 Days	07 Nov 2022	12 Nov 2022	20	17 Nov 2022
Sprint-4	20	5 Days	14 Nov 2022	19 Nov 2022	20	18 Nov 2022

## Burndown Chart



## 6.3 Reports from JIRA

TO DO

IN PROGRESS

DONE 3 OF 3 ISSUES

Get the user inputs from the developed HTML page.

CR-2

Develop the flask application for prediction

CR-3

Deploy the model in IBM cloud

CR-4

▼ CR Sprint 2 31 Oct – 5 Nov (1 issue)

0 0 Complete sprint

Develop the front-end to get the user inputs using HTML and CSS.

CR-2 Get the user inputs from the developed HTML page.

DONE

+ Create issue

▼ CR Sprint 3 7 Nov – 12 Nov (1 issue)

0 0 Complete sprint

Integrate the ML model and the front-end HTML web page using a Flask application for prediction.

CR-3 Develop the flask application for prediction

DONE

+ Create issue

▼ CR Sprint 4 14 Nov – 19 Nov (1 issue)

0 0 Complete sprint

Deploy the ML model in IBM Cloud.

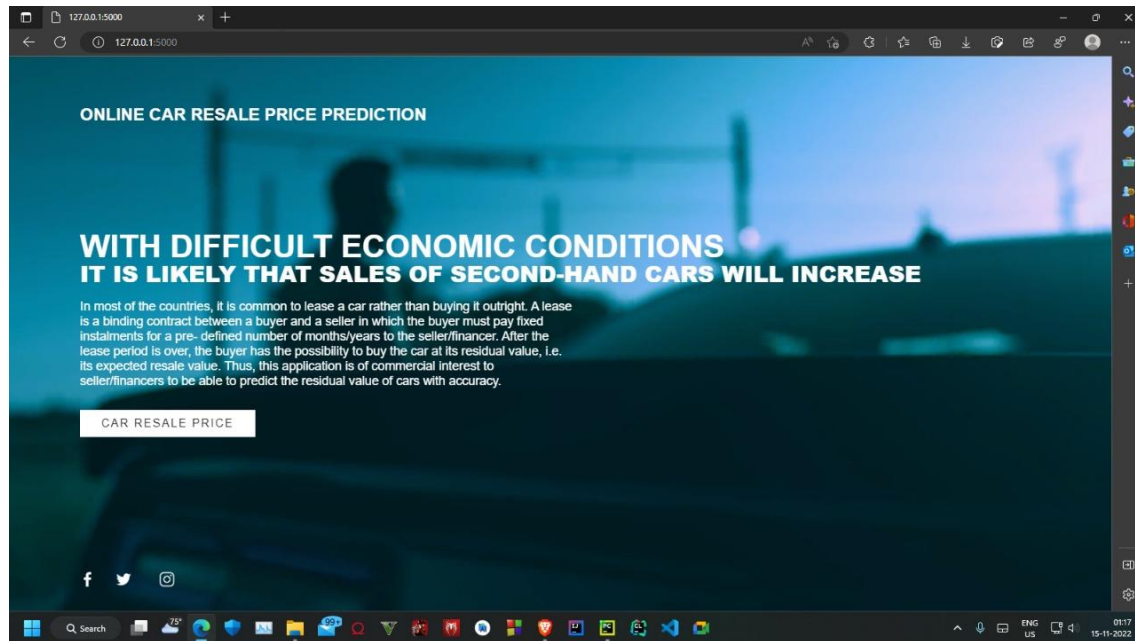
CR-4 Deploy the model in IBM cloud

DONE

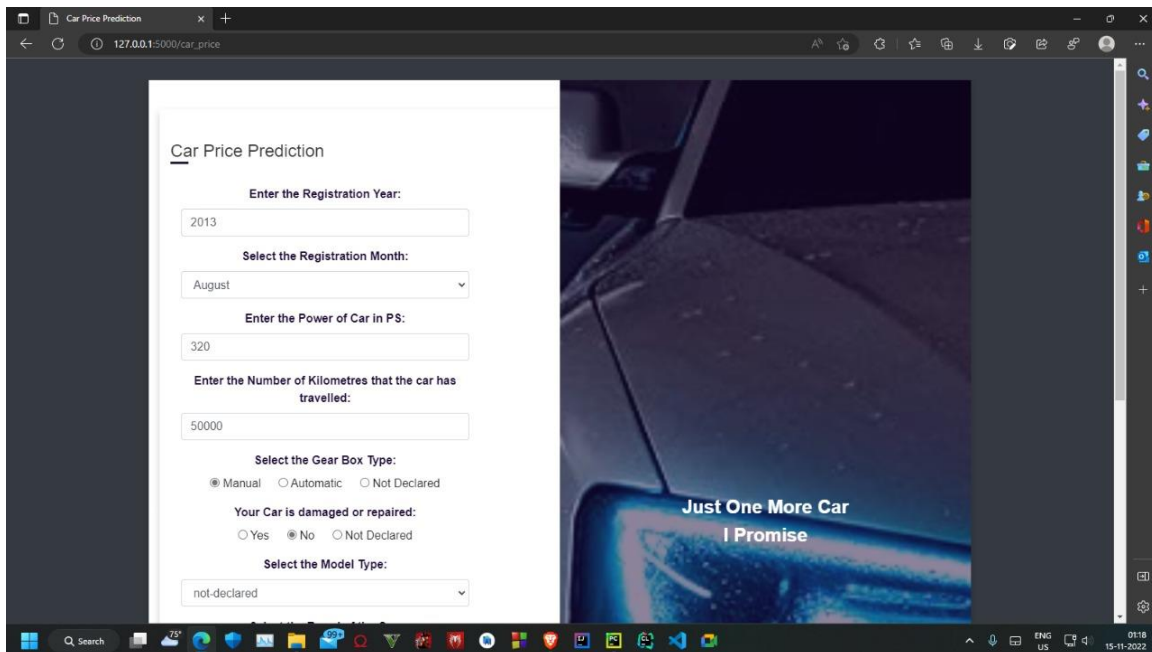
+ Create issue

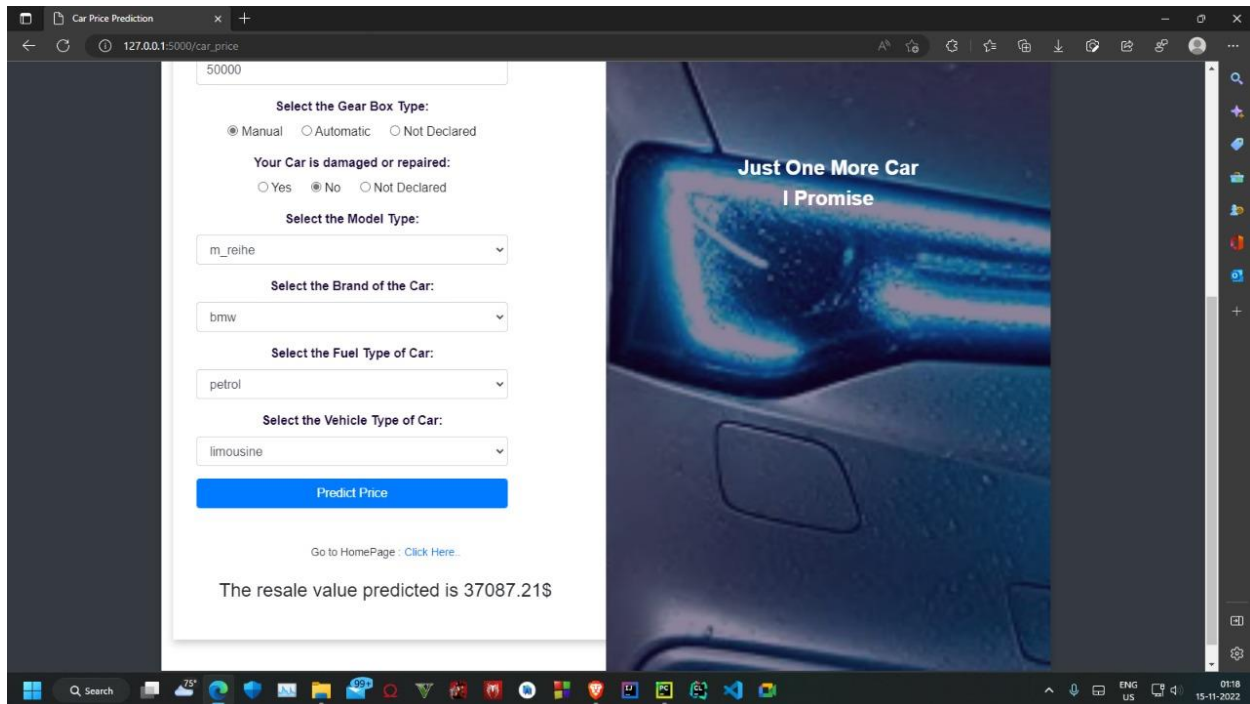
## 7.Coding and Solutioning

### 7.1 Home Page:



### 7.2 Prediction Page





## Coding

### IMPORT REQUIRED LIBRARIES

"""

```
import pandas as pd
import numpy as np
import matplotlib as plt
from sklearn.preprocessing import LabelEncoder
import pickle
```

"""READ THE DATASETS"""

```
from google.colab import drive
drive.mount('/content/drive')
```

```
df = pd.read_csv("/content/drive/MyDrive/IBM_Nalaiya Thiran/car_resale.csv", encoding='latin-1')
df.head()
```

```
df.tail()
```

"""CLEANING THE DATASET"""

```
#different sellers
print(df.seller.value_counts())
```

```

#remove the seller 'gewerblich'
df[df.seller != 'gewerblich']

#all entries of column 'seller' are same
#drop the column 'seller'
df = df.drop('seller', 1)

#different offer types
print(df.offerType.value_counts())

#remove the offertype 'Gesuch'
df[df.offerType != 'Gesuch']

#column 'offerType' has same entires
#drop the column 'offerType'
df = df.drop('offerType', 1)

print(df.shape)

#remove cars having power less than 50p and greater than 900p
df = df[(df.powerPS > 50) & (df.powerPS < 900)]
print(df.shape)

#remove cars with year of registration before 1950 and after 2017
df = df[(df.yearOfRegistration >= 1950) & (df.yearOfRegistration < 2017)]
print(df.shape)

#remove columns that are not relevant
df.drop(['name', 'abtest', 'dateCrawled', 'nrOfPictures', 'lastSeen', 'postalCode', 'dateCreated'],
axis='columns', inplace=True)

#creating a copy of the dataframe and remove the duplicates in the columns
new_df = df.copy()
new_df = new_df.drop_duplicates(['price', 'vehicleType', 'yearOfRegistration', 'gearbox', 'powerPS',
'model', 'kilometer', 'monthOfRegistration', 'fuelType', 'notRepairedDamage'])

#clean the dataset of German words and replace with proper English words
new_df.gearbox.replace(('manuell', 'automatik'), ('manual', 'automatic'), inplace=True)
new_df.fuelType.replace(('benzin', 'andere', 'elektro'), ('petrol', 'others', 'electric'), inplace=True)
new_df.vehicleType.replace(('kleinwagen', 'cabrio', 'kombi', 'andere'), ('small car', 'convertible',
'combination', 'others'), inplace=True)
new_df.notRepairedDamage.replace(('ja', 'nein'), ('Yes', 'No'), inplace=True)

#Outlier Removal
new_df = new_df[(new_df.price >= 100) & (new_df.price <= 150000)]

#Fill the not declared values of the columns as NaN using fillna function
new_df['notRepairedDamage'].fillna(value='not-declared', inplace=True)
new_df['fuelType'].fillna(value='not-declared', inplace=True)
new_df['gearbox'].fillna(value='not-declared', inplace=True)

```

```

new_df['vehicleType'].fillna(value='not-declared', inplace=True)
new_df['model'].fillna(value='not-declared', inplace=True)

#save the dataframe as csv
new_df.to_csv('car_resale_preprocessed.csv')

#label encode the categorical data
labels = ['gearbox', 'notRepairedDamage', 'model', 'brand', 'fuelType', 'vehicleType']

mapping = {}
for i in labels:
    mapping[i] = LabelEncoder()
    mapping[i].fit(new_df[i])
    tr = mapping[i].transform(new_df[i])
    np.save(str('classes'+i+'.numpy'), mapping[i].classes_)
    print(i, ":", mapping[i])
    new_df.loc[:, i+'_labels'] = pd.Series(tr, index=new_df.index)

#labeled' dataframe contains the final data

labelled = new_df[ ['price', 'yearOfRegistration', 'powerPS', 'kilometer', 'monthOfRegistration'] +
[x+"_labels" for x in labels]]
print(labelled.columns)

"""SPLITTING DATA INTO INDEPENDENT AND DEPENDENT VARIABLES"""

#split price and other data into Y and X respectively
Y = labelled.iloc[:, 0].values
X = labelled.iloc[:, 1:].values
Y = Y.reshape(-1, 1)

#split dataset into train and test dataset
from sklearn.model_selection import cross_val_score, train_test_split
X_train, X_test, Y_train, Y_test = train_test_split(X, Y, test_size=0.3, random_state=3)

"""MODEL BUILDING

CHOOSE THE APPROPRIATE MODEL AND CHECK THE METRICS OF THE MODELS
"""

from sklearn.ensemble import RandomForestRegressor
from sklearn.metrics import r2_score

regressor = RandomForestRegressor(n_estimators=1000, max_depth=10, random_state=34)

regressor.fit(X_train, np.ravel(Y_train, order='C'))

pred_1 = regressor.predict(X_test)

print(r2_score(Y_test, pred_1))

```

```
from sklearn.tree import DecisionTreeClassifier

ds = DecisionTreeClassifier(max_depth=5000, max_features=0.9, max_leaf_nodes=5000,
random_state=2, splitter='best')

ds.fit(X_train, np.ravel(Y_train, order='C'))

pred_3 =ds.predict(X_test)

print(r2_score(Y_test, pred_3))

""""SAVE THE MODEL""""

file_name = 'resale_model.pkl'
pickle.dump(regressor, open(file_name, 'wb'))
```



8. Testing

8.1 Test cases

					Date	07-Nov-22							
					Team ID	PMT2302TMD2953							
					Project Name	Project - Car Resale Value Prediction							
					Maximum Marks	4 marks							
Test case ID	Feature Type	Component	Test Scenario	Pre-Requisite	Steps To Execute	Test Data	Expected Result	Actual Result	Status	Comments	TC for Automation(Y/N)	BUG ID	Executed By
HomePage_TC_001	Functional	Home Page	Verify if the user is able to click and navigate through all the elements present in the home page	Nil	1.Enter URL and click go 2.Click on the elements available in the home page.		The user should be able to go to other pages from the home page	Working as expected	Pass		N		Shubhavya K
HomePage_TC_002	UI	Home Page	Verify if all the elements in the home page are properly arranged	Nil	1.Enter URL and click go 2.View the elements available in the home page.		All the elements in the home page should be visible to the user	Working as expected	Pass		N		Parameshwaran T R
InputPage_TC_001	Functional	Input page	Check to see if the user can choose anything from the drop-down menus on the input page.	Nil	1.Enter URL and click go 2.Go to the input page 3. select anything from the drop down list		User should be able to select anything from the drop down list displayed	Working as expected	Pass		N		Sivaranjani S
InputPage_TC_002	Functional	Input page	Check if the user can select one of the radio buttons	Nil	1.Enter URL and click go 2.Go to the input page 3. select one of the options given in the radio button.		User should be able to select one option from the radio button	Working as expected	Pass		N		Vignesh A K
InputPage_TC_003	UI	Input page	Verify if all the elements in the home page are properly displayed	Nil	1.Enter URL and click go 2.Go to the input page 3. View and check if the elements are displayed properly		User should be able to view all the elements in the input page	Working as expected	Pass		N		Parameshwaran T R
OutputPage_TC_001	Functional	Output page	Check if the user is taken to the output page from the input page	Nil	1.Enter URL and click go 2.Go to the input page 3. Enter all the input data 4. Check if you are directed to the output page		User should be directed to the output page	Working as expected	Pass		N		Shubhavya K

8.2 User Acceptance Testing

Defect Analysis

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal
By Design	10	4	2	2	18
Duplicate	1	0	3	0	4
External	1	3	0	1	5
Fixed	10	2	3	20	35
Not Reproduced	0	0	1	0	1
Skipped	0	0	0	0	0
Won't Fix	0	0	0	0	0
Totals	22	9	6	23	63

Test Case Analysis

Section	Total Cases	Not Tested	Fail	Pass
Checking the structures	3	0	0	3
Predicting output	1	0	0	1
Giving input	2	0	0	2

## 9.Results

### 9.1 Performance Metrics

Selenium IDE - ResaleCar

Project: ResaleCar

Executing -

✓ 'Untitled'

http://127.0.0.1:5000/

Command	Target	Value
28	select	id=brand
29	click	id=brand
30	select	label=BMW
31	click	id=fuel_type
32	select	id=fuel_type
33	click	css=col-md-10:nth-child(10)
34	click	id=veh_type
35	select	id=veh_type
36	click	label=convertible
37	click	linkText=Click Here...

Command: click

Target: linkText=Click Here...

Value:

Description:

Runs: 1 Failures: 0

Log Reference

Running 'Untitled' 21:14:30

'Untitled' completed successfully 21:14:30

Selenium IDE - ResaleCar

Project: ResaleCar

Executing -

✓ 'Untitled'

http://127.0.0.1:5000/

Command	Target	Value
23	click	css=col-md-10:nth-child(5)
24	click	css=col-md-10:nth-child(5)
25	click	id=gt_id2
26	click	id=dr_id3
27	click	id=model
28	select	id=model
29	click	label=e_klasse
30	select	id=brand
31	click	label=BMW
32	select	id=fuel_type
33	click	id=fuel_type
34	click	label=hybrid

Command:

Target:

Value:

Description:

Runs: 1 Failures: 0

Log Reference

Running 'Untitled' 21:14:30

'Untitled' completed successfully 21:14:30

Selenium IDE - ResaleCar

Project: ResaleCar

Executing -

http://127.0.0.1:5000/

✓ Untitled\*

	Command	Target	Value
12	click	id=reg_month	
13	select	id=reg_month	label=June
14	type	id=car_power	1
15	click	id=car_power	
16	mouse down at	css=bg-dark	188,396
17	mouse move at	css=bg-dark	188,396
18	mouse up at	css=bg-dark	188,396
19	click	css=bg-dark	
20	type	id=car_power	302
21	click	id=kilo_driven	
22	type	id=kilo_driven	5000

Command

Target

Value

Description

Runs: 1

Failures: 0

Log

Reference

Running 'Untitled'

'Untitled' completed successfully

21:14:30

21:14:30

Windows Taskbar

Search

99°

ENG US

21:17

18-11-2022

## **10.Advantages and Disadvantages**

### **Advantages**

- This website makes the buying of resale cars very easy to the users.
- Users will not waste time by asking and collecting information from various places

### **Disadvantages**

- This model can only give an idea to the user about which car they can buy according to their budget, so this prediction may not be 100% true.

## **11.Conclusion**

Since many of the customers can afford to purchase brand-new cars, they will undoubtedly spend a lot of money and time gathering information about used cars, and even after wasting all of this time, it is still uncertain whether the price at which they are purchasing a used car will be accurate or not. As a result, this system will be very helpful in assisting the users to obtain an overall understanding of the prices of all used cars. Additionally, this system can be used by sellers who are unsure of the exact price at which they should list their used cars.

## **12. Future Scope**

In the future, we're going to add a chat feature to our website to quickly answer user questions, and we also have plans to use user data to suggest cars based on past searches.

## 13. Appendix

**GitHub :**

<https://github.com/IBM-EPBL/IBM-Project-26948-1660041142>

**Video Link:**

<https://youtu.be/0LMUuryrkoI>

**Source Code Link:**

[https://colab.research.google.com/drive/1qepEk\\_vjLUnL8TKCHiF9CezhWnB1re7S?usp=sharing](https://colab.research.google.com/drive/1qepEk_vjLUnL8TKCHiF9CezhWnB1re7S?usp=sharing)