CAR RESALE VALUE PREDICTION

IBM NALAIYATHIRAN BASED LEARNING

ON

PROFESSIONAL READINESS FOR INNOVATION, EMPLOYABILITY AND ENTREPRENEURSHIP

A PROJECT REPORT

Submitted by

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BACHELOR OF ENGINEERING
IN
COMPUTER SCIENCE AND ENGINEERING

AKT MEMORIAL COLLEGE OF ENGINEERING & TECHNOLOGY
KALLAKURICHI-606202

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BONAFIDE CERTIFICATE

Certified that this Project report titled **"CAR RESALE VALUE PREDICTION by NALAIYATHIRAN PROJECT BASED LEARNING Program**" , is the bonafide work of **SEETHA J (420119104036)** , **Parvathi V (420119104026)** , **Subhalakshmi S (420119104040)** , **Yuvasri E (420119104046)** who carried out the work under faculty mentor and indudtry mentor supervision, for the partial fulfillment of the requirements for the award of the degree of **BACHELOR OF ENGINEERING IN COMPUTER SCIENCE AND ENGINEERING**.

Certified further that to the best of my knowledge and belief, the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or an award was conferred on an earlier occasion.

DECLARATION

I, hereby declare that the Project work entitled **"Car Resale Value Prediction by NALAIYATHIRAN PROJECT BASED LEARNING program**" submitted to the IBM November 2022 in partial fulfillment for the award of the degree of **BACHELOR OF ENGINEERING IN COMPUTER SCIENCE AND ENGINEERING**, is the report of the original project work done by us under the guidance of Mrs.R.Aishwarya (Faculty Mentor), Assistant Professor, Department of Computer Science and Engineering, AKT Memorial College of Engineering and Technology, Kallakurichi.

NAME

SEETHA J
(TEAM LEADER)

I certify that the declaration made by the above candidate is true.

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and Technology,
Kallakurichi-606202.

11. CONCLUSION

12. FUTURE SCOPE

13. APPENDIX

Source Code

GitHub & Project Demo Link

1 - INTRODUCTION

1.1 Project Overview

With difficult economic conditions, it is likely that sales of second-hand imported (reconditioned) cars and used cars will increase. In many developed countries, it is common to lease a car rather than buying it outright. After the lease period is over, the buyer has the possibility to buy the car at its residual value, i.e. its expected resale value. Thus, it is of commercial interest to sellers/financiers to be able to predict the salvage value (residual value) of cars with accuracy.
In order to predict the resale value of the car, we proposed an intelligent, flexible, and effective system that is based on using regression algorithms. Considering the main factors which would affect the resale value of a vehicle a regression model is to be built that would give the nearest resale value of the vehicle. We will be using various regression algorithms and algorithm with the best accuracy will be taken as a solution, then it will be integrated to the web-based application where the user is notified with the status of his product.

1.2 Purpose

This project aims to deliver price prediction models to the public, to help guide the individuals looking to buy or sell cars and to give them a better insight into the automotive sector. Buying a used car from a dealer can be a frustrating and an unsatisfying experience as some dealers are known to deploy deceitful sale tactics to close a deal. Therefore, to help consumers avoid falling victims to such tactics, this study hopes to equip consumers with the right tools to guide them in their shopping experience. Another goal of the project is to explore new methods to evaluate used cars prices and to compare their ac-curacies. Considering this is an interesting research topic in the research community, and in continuing their footsteps, we hope to achieve significant results using more advanced methods of previous work.

2 - LITERATURE SURVEY

2.1 Existing Problem

www.olxautos.in

www.cars24.com

2.2 References

https://www.atlantis-press.com/article/25894858.pdf

https://www.grandviewresearch.com/industry-analysis/used-car-market

2.3 Problem Statement Definition

The prices of new cars in the industry is 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 (Pal, Arora and Palakurthy, 2018). There is a need for a used car price prediction system to effectively determine the worthiness of the car using a variety of features. Even though there are websites that offers this service, their prediction method may not be the best. Besides, different models and systems may contribute on predicting power for a used car's actual market value. It is important to know their actual market value while both buying and selling.

3 - IDEATION & PROPOSED SYSTEM

3.1 Empathy Map Canvas

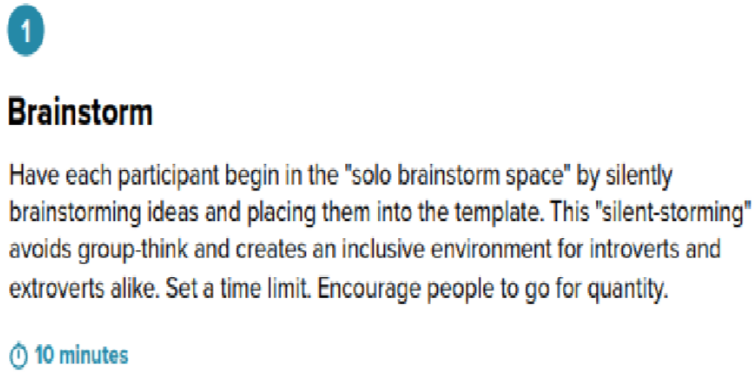
3.2 Ideation & Brainstorming

Brainstorm & Idea Prioritization

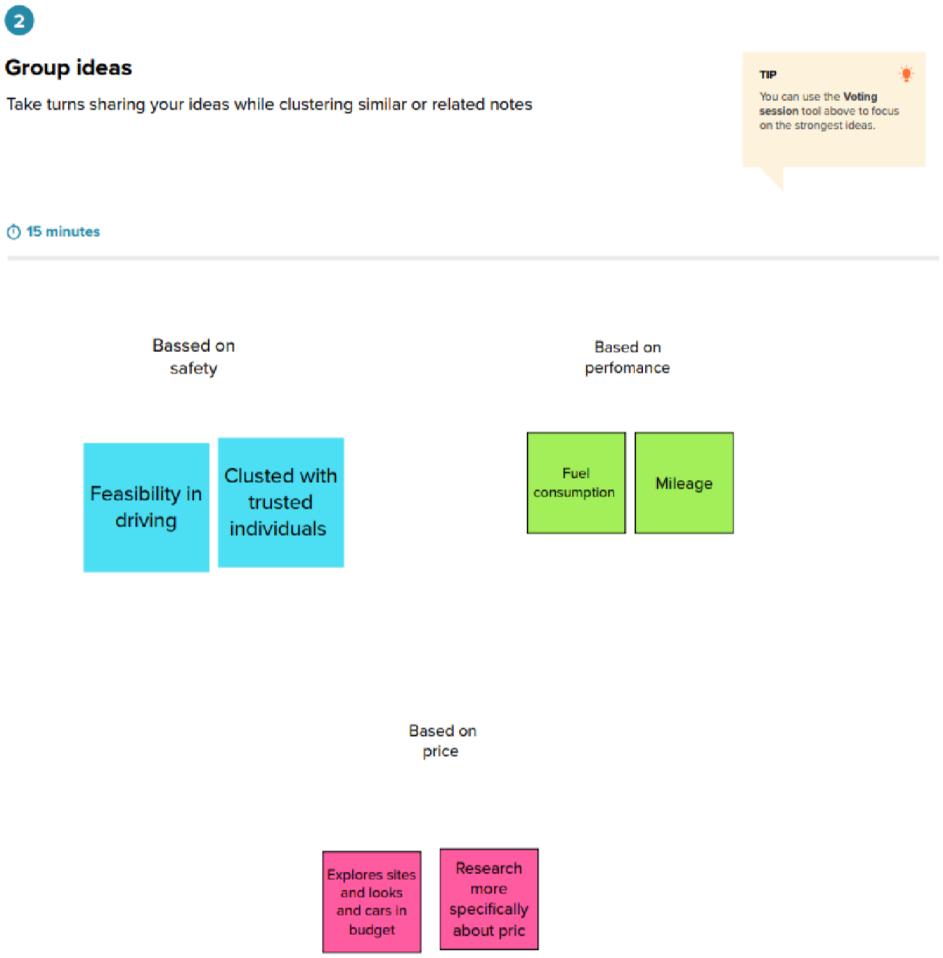
Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions.

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

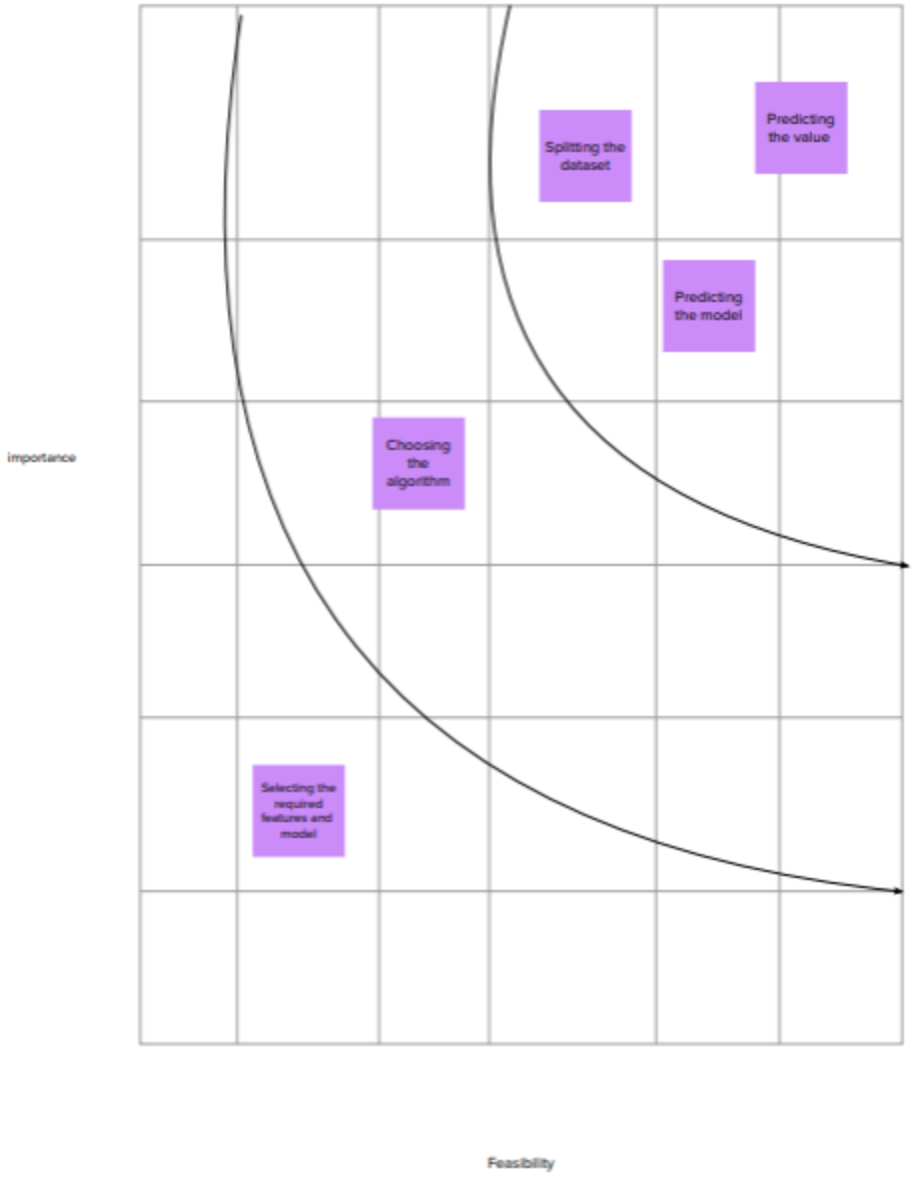
Step-2: Brainstorm, Idea Listing and Grouping



Step-3: Idea Prioritization



Step-3: Idea Prioritization



3.3 Proposed Solution

Proposed Solution Template:

S.NO	Parameter	Description
1	Problem Statement (Problem to be solved)	To predict resale value for any second hand imported cars and used cars considering its usage
2	Idea / Solution description	To develop an Machine Learning Algorithmwhich predicts the resale value for anyusedcars which is displayed with UI
3	Novelty / Uniqueness	Car Resale value can be predicted at ahigher accuracy
4	Social Impact / Customer Satisfaction	Our software is very cheap and It canbeused in any device with minimumconfiguration
5	Business Model (Revenue Model)	The Software can be accessed by anyonewho owns from anywhere . Since it is beingdeployed in cloud it can be accessedbyeveryone
6	Scalability of the Solution	As the software is being deployed incloudit can be even accessed in mobile phones

3.4 Problem Solution Fit

Problem – Solution Fit Template:

The Problem-Solution Fit simply means that you have found a problem with your customer and that the solution you have realized for it actually solves the customer's problem. It helps entrepreneurs, marketers and corporate innovators identify behavioral patterns and recognize what would work and why

Purpose:

• Solve complex problems in a way that fits the state of your customers.
• Succeed faster and increase your solution adoption by tapping into existing mediums and channels of behavior.
• Sharpen your communication and marketing strategy with the right triggers and messaging.
• Increase touch-points with your company by finding the right problem-behavior fit and building trust by solving frequent annoyances, or urgent or costly problems.
• Understand the existing situation in order to improve it for your target group.

Template:

4 - REQUIREMENT ANALYSIS

4.1 Functional Requirement

Following are the functional requirements of the proposed solution.

FR No	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration to the related websites	Registration through Form Registration through Gmail Registration through LinkedIN
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Users Profile	Personal details, Bank account ,Is He/She interested in buying a car
FR-4	Gather information about the vehicle	Through the registered websites they collect information
FR-5	Display the functionality of the vehicle	Details: Fuel type , Manufactured year , Miles Driven , Record

Non-functional Requirements:

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

FR NO	Non-Functional Requirement	Description
FR-1	Usability	User friendly UI Simple and easy to Understand
FR-2	Security	Aware of scams
FR-3	Reliability	The system must perform without failure
FR-4	Performance	The landing page must support several users must provide 5 second or less response time
FR-5	Availability	Uninterrupted services must be available all time except the time of server updation.
FR-6	Scalability	that can handle any amount of data and perform many computations in a cost-effective and time-saving way to instantly serve millions of users residing at global locations

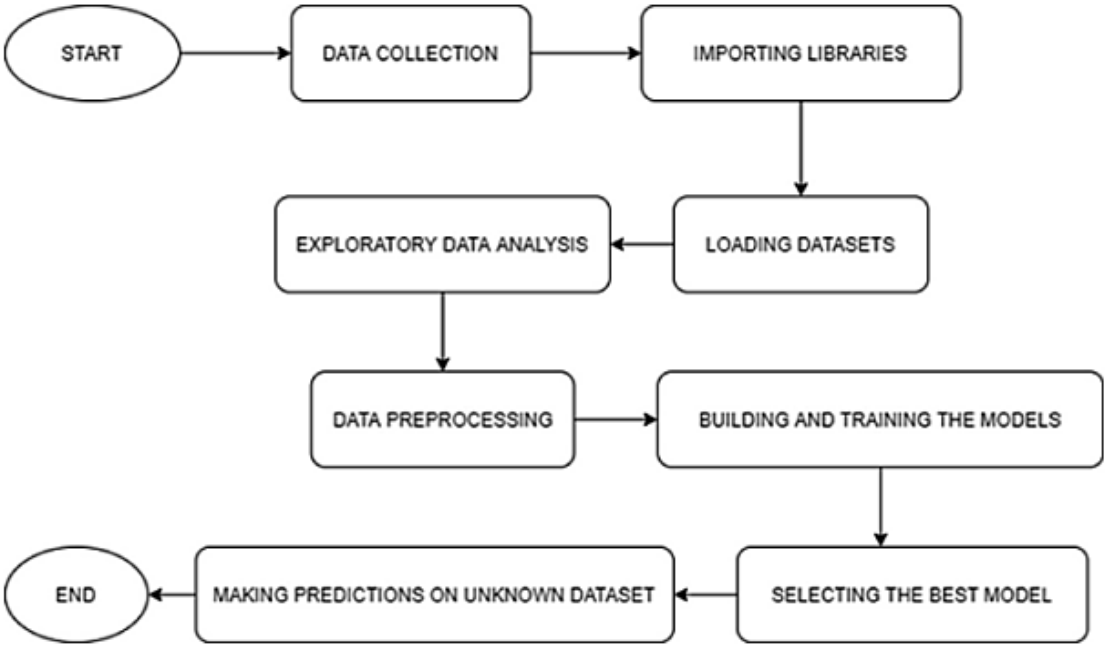
5 - PROJECT DESIGN

5.1 Data Flow Diagrams

Data Flow Diagrams:

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

FLOW :



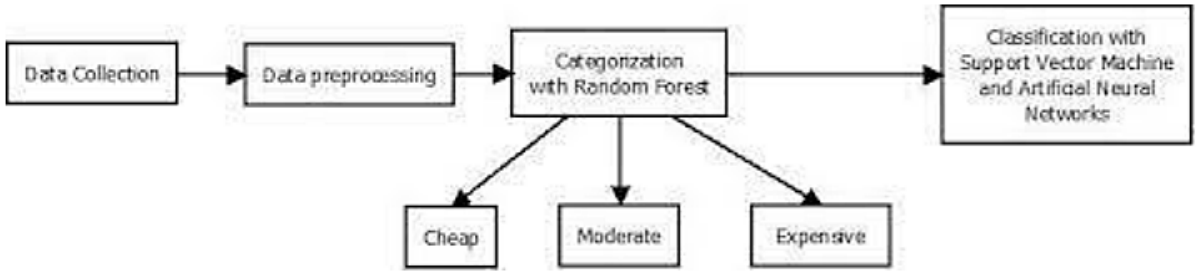
5.2 Solution & Technical Architecture

Solution Architecture:

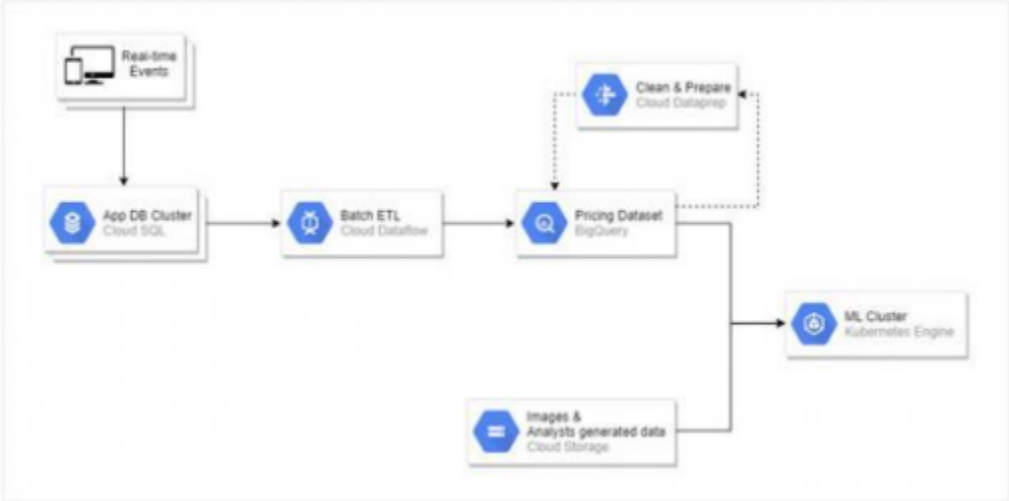
Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions. Its goals are to:

• Find the best tech solution to solve existing business problems.
• Describe the structure, characteristics, behavior, and other aspects of the software to project stakeholders.
• Define features, development phases, and solution requirements.
• Provide specifications according to which the solution is defined, managed, and delivered.

Solution Architecture Diagram:



Technical Architecture:



5.3 User Stories

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (user)	I want to buy a used car	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	I can receive confirmati	High	Sprint-1

			confirmation email once I have registered for the application	on email & click confirm		
		USN-3	As a user, I can register for the resource i want	I can access the resources and know about the car varieties and their model and value of the car	Low	Sprint-2
		USN-4	As a user, I can register for the resource i want		Medium	Sprint-2
	Login	USN-5	As a user, I can log into the application by entering email & password		High	Sprint-1
	Dashboard					
Customer						

(Web user)						
Customer Care Executive						
Administrator						

6 - PROJECT PLANNING & SCHEDULING

6.1 Sprint Planning & Estimation

Product Backlog, Sprint Schedule, and Estimation

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Pre-process data	USN-1	Collect Dataset	1	Low	Seetha J & Parvathi V
Sprint-1		USN-2	Import required libraries	1	Low	Seetha J & Parvathi V
Sprint-1		USN-3	Read and clean data sets	2	Low	Subhalakshmi S & Yuvasri E
Sprint-2	Model building	USN-1	Split data into independent and dependent variables	3	Medium	Yuvasri E & Subhalakshmi S
Sprint-2		USN-2	Apply using regression model	3	Medium	Parvathi V & Yuvasri E
Sprint-3	Application building	USN-1	Build python flask application and HTML page	5	High	Yuvasri E
Sprint-3		USN-2	Execute and test	5	High	Parvathi V
Sprint-4	Training the model	USN-1	Train machine learning model	5	High	Subhalakshmi S
Sprint-4		USN-2	Integrate	5	High	Seetha J

			flask			

6.2 Sprint Delivery Scheddule

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	6 Days	24 Oct 2022	29 Oct 2022	20	31 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	20	07 Nov 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	20	14 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	20	19 Nov 2022

7 - CODING & SOLUTIONING

7.1 Feature 1

- IoT device
- IBM Watson Platform
- Node red
- Cloudant DB
- Web UI
- MIT App Inventor
- Python code

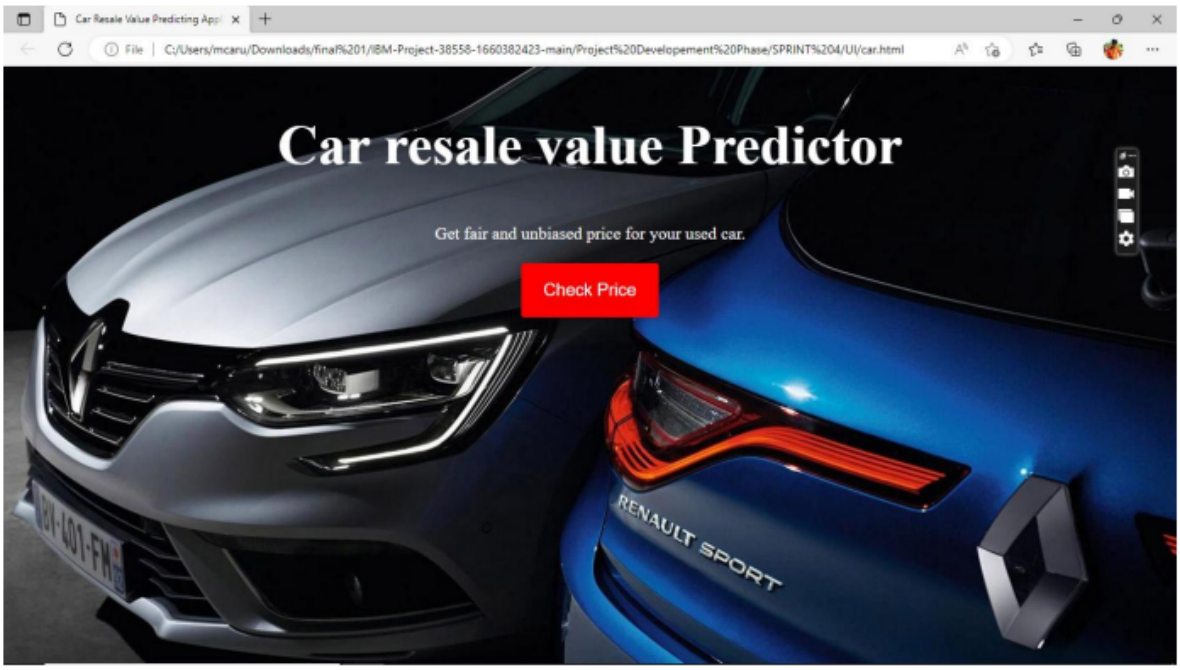
7.2 Feature 2

- Login
- Wokwi

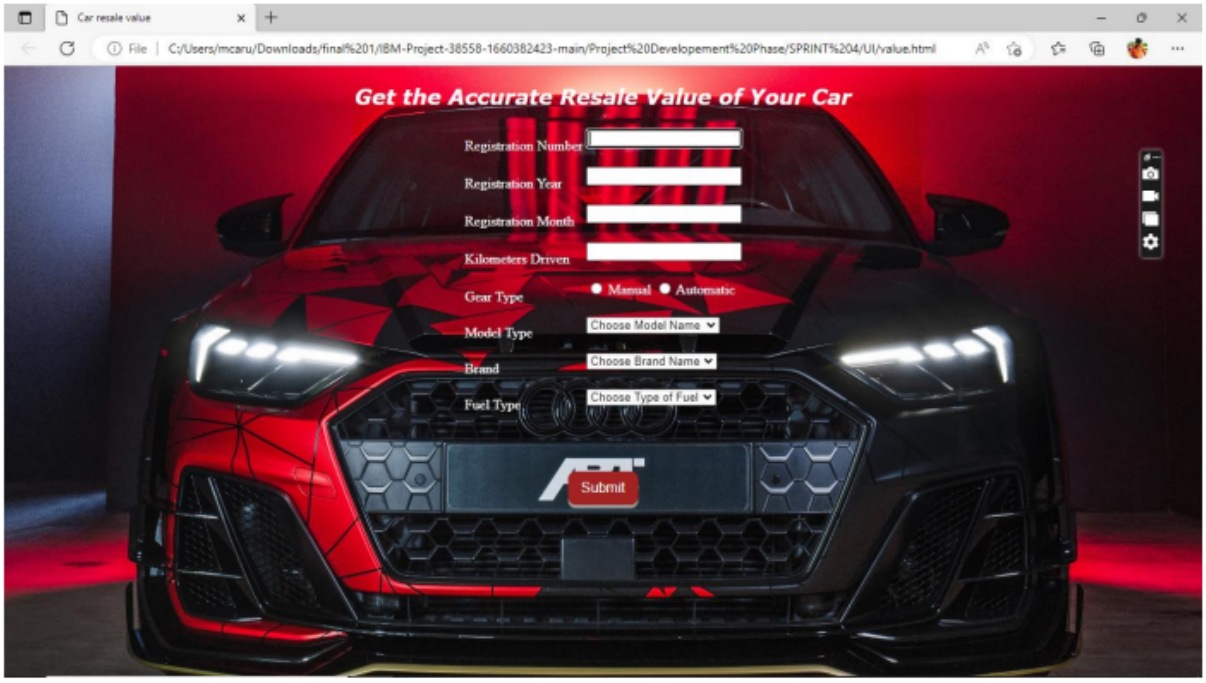
8 -TESTING AND RESULTS

8.1 Test Cases

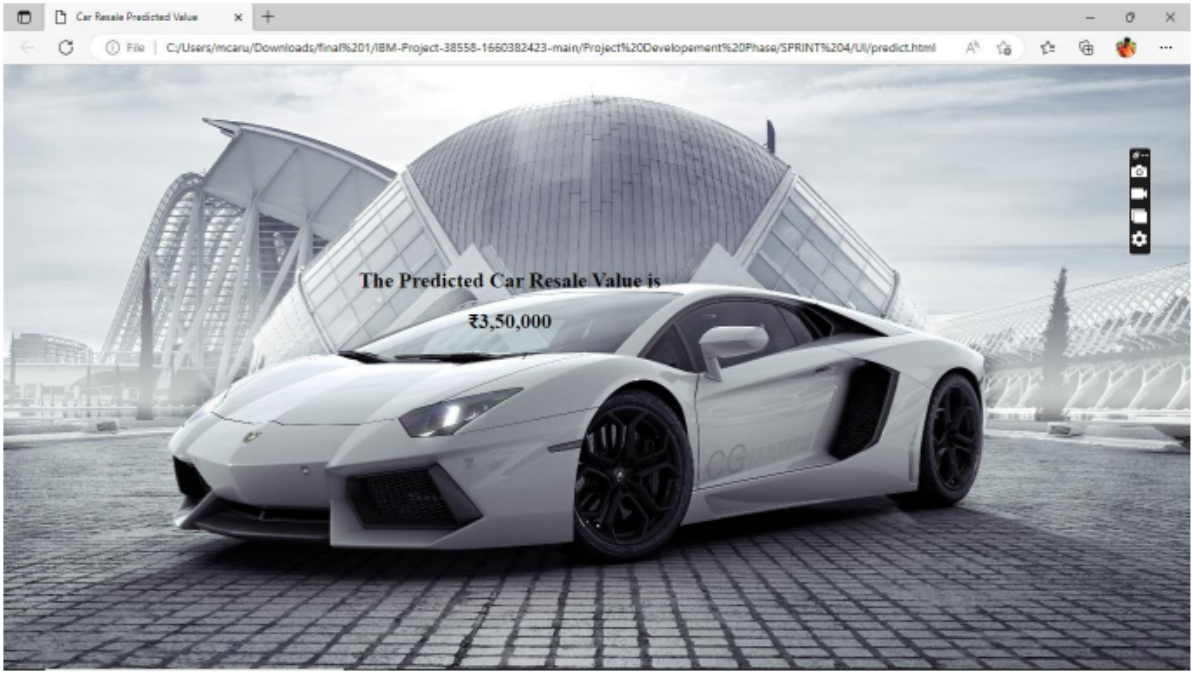
Test case 1:



Test case 2:


Car resale value
File | C:/Users/mcaru/Downloads/final%201/IBM-Project-38558-1660382423-main/Project%20Developement%20Phase/SPRINT%204/UI/value.html
Get the Accurate Resale Value of Your Car
Registratson Number
Registration Year
Registration Month
Kilometers Driven
Gear Type
Manual
Automatic
Model Type
Choose Model Name
Brand
Choose Brand Name
Fuel Type
Choose Type of Fuel
Submit

9 - RESULTS



10 - ADVANTAGES & DISADVANTAGES

ADVANTAGES :

- This will reduced installation c
- It will monitor 24/7
- Reliability
- Financing terms may be expaned
- Updated safety features
- Very useful to sale the car for reasonable price

DISADVANTAGES :

- Car Resale value can not be used by the person who doesn’t have access to the interner
- Very hard to use for targeted range of people

11 - CONCLUSION

CONCLUSION :

Price prediction analyses a good or service based on its attributes, demand, and current market trends using an algorithm. The pricing is then adjusted by the programme at a level that it believes would both draw people and optimise sales. The method is known as price forecasting or predictive price

11 - FUTURE SCOPE

FUTURE SCOPE :

When compared to February 2020, average prices were up 42.5% in September 2022. While it's possible that used vehicle prices have peaked, new car prices are expected to be high through the end of 2022. Prices are anticipated to drop for both newand used automobiles in 2023, by 2.5% to 5% for new cars and 10% to 20% for used cars

13 - APPENDIX

Source Code

HTML FILES:

car.html

```
<!DOCTYPE html>
<html lang="en" dir="ltr">
  <head>
    <meta charset="utf-8">
    <title>Car resale value Prediction</title>
    <link rel="stylesheet" href="..\static\css\style.css">
     <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/4.7.0/css/font-awesome.min.css">
  </head>
  <body>
    <section class="header">
      <nav>
        <a href="/"><img src="..\static\Images\car.png" width="100" height="100"></a>

      </nav>
        <div class="text-box">
          <h1>Car resale value Predictor</h1>
          <p>Best system to predict the amount of resale value based on the parameters provided by the user .</p>
          <a href="./predict_page" class="visit-btn ">Check price</a>
        </div>
    </section>

  </body>
```

```
</html>
```

Predict.html

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta http-equiv="X-UA-Compatible" content="IE=edge">
   <meta name="viewport" content="width=device-width, initial-
scale=1.0">
   <link rel="stylesheet" href="..\static\css\predict.css">
   <title>Car Resale Value Prediction</title>
</head>
<body>
       <section class="header">
     <nav>
      <a href="/"><img src="..\static\Images\car1.png" width="100"
height="100"></a>
     </nav>
      <div class="text-box">
       <h1>The Predicted Car Resale Value is </h1>
              <h1>{{predict}}</h1>
      </div>
   </section>


</body>
</html>
```

Value.html

```
<!DOCTYPE html>
<html lang="en" dir="ltr">
<head>
<link rel="stylesheet" href="..\static\css\value.css">
<title>Car Resale Value Prediction</title>

</head>
<body>
        <section class="form">
        <form action="http://localhost:5000/predict" method="GET">
    <table border="0" align="center">
    <tbody>
                <h1>Get the Accurate Resale Value of Your Car</h1>
    <tr>
        <td><label for="year" padding:10px>Registration year :
</label></td>
        <td><input id="year" maxlength="50" name="regyear"
type="text" />
        <br>
        <br>
        </td>
        </tr>

        <tr>
        <td><label for="month">Registration Month : </label></td>
        <td><input id="month" maxlength="50" name="regmonth"
```

```
type="text" />
        <br>
        <br>
        </td>
        </tr>

        <tr>
        <td><label for="power">Power of car in PS: </label></td>
        <td><input id="power" maxlength="50" name="powerps"
type="text" />
        <br>
        <br>
        </td>
        </tr>

        <tr>
        <td><label for="kilometer">Kilometers that car have driven :
</label></td>
        <td><input id="kilometer" maxlength="50" name="kms"
type="text" />
        <br>
        <br>
        </td>
        </tr>

        <tr>
        <td><label for="geartype">Gear type : </label></td>
```

```
<td><input type="radio" name="geartype" value="manual"/>
Manual
<input type="radio" name="geartype" value="automatic"/>
Automatic
<input type="radio" name="geartype" value="not-declared"/>
Not declared
<br>
<br>
</td>
</tr>

<tr>
<td><label for="damage">Your car is repaired or damaged :
</label></td>
<td><input type="radio" name="damage" value="yes"/> Yes
<input type="radio" name="damage" value="no"/> No
<input type="radio" name="damage" value="not-declared"/>
Not declared
<br>
<br>
</td>
</tr>

<tr>
<td><label for="model">Model Type : </label></td>
<td>
<select name="model" id="model">
```

```
        <option value="" disabled selected hidden>Choose Model
Name...</option>
    <option value="golf">Golf </option>
        <option value="grand">Grand </option>
        <option value="fabia">Fabia </option>
        <option value="3er">3er </option>
        <option value="2_reihe">2 Reihe </option>
        <option value="andere">Andere </option>
        <option value="c_max">C Max </option>
        <option value="3_reihe">3 Reihe </option>
        <option value="passat">Passat </option>
        <option value="navara">Navara </option>
        <option value="ka">Ka </option>
        <option value="polo">Polo </option>
        <option value="twingo">Twingo </option>
        <option value="a_klasse">A klasse </option>
        <option value="scirocco">Scirocco </option>
        <option value="5er">5er </option>
        <option value="meriva">Meriva </option>
        <option value="arosa">Arosa </option>
        <option value="c4">C4 </option>
        <option value="civic">Civic </option>
        <option value="transporter">Transporter </option>
        <option value="punto">Punto </option>
        <option value="e_klasse">E Klasse </option>
        <option value="clio">Clio </option>
        <option value="kadett">Kadett </option>
```

<option value="kangoo">Kangoo </option>
<option value="corsa">Corsa </option>
<option value="one">One </option>
<option value="fortwo">Fortwo </option>
<option value="1er">1er </option>
<option value="b_klasse">B Klasse </option>
<option value="signum">Signum </option>
<option value="astra">Astra </option>
<option value="a8">A8 </option>
<option value="jetta">Jetta </option>
<option value="fiesta">Fiesta </option>
<option value="c_klasse">C Klasse </option>
<option value="micra">Micra </option>
<option value="vito">Vito </option>
<option value="sprinter">Sprinter </option>
<option value="156">156 </option>
<option value="escort">Escort </option>
<option value="forester">Forester </option>
<option value="xc_reihe">Xc Reihe </option>
<option value="scenic">Scenic </option>
<option value="a4">A4 </option>
<option value="a1">A1 </option>
<option value="insignia">Insignia </option>
<option value="combo">Combo </option>
<option value="focus">Focus </option>
<option value="tt">Tt </option>
<option value="a6">A6 </option>

<option value="jazz">Jazz </option>
<option value="omega">Omega </option>
<option value="slk">Slk </option>
<option value="7er">7er </option>
<option value="80">80 </option>
<option value="147">147 </option>
<option value="glk">Glk </option>
<option value="100">100 </option>
<option value="z_reihe">Z Reihe </option>
<option value="sportage">Sportage </option>
<option value="sorento">Sorento </option>
<option value="v40">V40 </option>
<option value="5er">5er </option>
<option value="ibiza">Ibiza </option>
<option value="3er">3er </option>
<option value="mustang">Mustang </option>
<option value="eos">Eos </option>
<option value="touran">Touran </option>
<option value="getz">Getz </option>
<option value="a3">A3 </option>
<option value="almera">Almera </option>
<option value="megane">Megane </option>
<option value="7er">7er </option>
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<option value="lupo">Lupo </option>
<option value="r19">R19 </option>
<option value="zafıra">Zafıra </option>

<option value="caddy">Caddy </option>
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<option value="mondeo">Mondeo </option>
<option value="cordoba">Cordoba </option>
<option value="colt">Colt </option>
<option value="impreza">Impreza </option>
<option value="vectra">Vectra </option>
<option value="berlingo">Berlingo </option>
<option value="80">80 </option>
<option value="m_klasse">M Klasse </option>
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<option value="i_reihe">I Reihe </option>
<option value="espace">Espace </option>
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<option value="panda">Panda </option>
<option value="up">Up </option>
<option value="seicento">Seicento </option>
<option value="ceed">Ceed </option>
<option value="5_reihe">5 Reihe </option>
<option value="yeti">Yeti </option>
<option value="octavia">Octavia </option>
<option value="mii">Mii </option>
<option value="rx_reihe">Rx Reihe </option>
<option value="6er">6er </option>
<option value="modus">Modus </option>
<option value="fox">Fox </option>

<option value="matiz">Matiz </option>
<option value="beetle">Beetle </option>
<option value="c1">C1 </option>
<option value="rio">Rio </option>
<option value="touareg">Touareg </option>
<option value="logan">Logan </option>
<option value="spider">Spider </option>
<option value="cuore">Cuore </option>
<option value="s_max">S Max </option>
<option value="a2">A2 </option>
<option value="x_reihe">X Reihe </option>
<option value="a5">A5 </option>
<option value="galaxy">Galaxy </option>
<option value="c3">C3 </option>
<option value="viano">Viano </option>
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<option value="1_reihe">1 Reihe </option>
<option value="avensis">Avensis </option>
<option value="sl">Sl </option>
<option value="roomster">Roomster </option>
<option value="q5">Q5 </option>
<option value="kaefer">Kaefer </option>
<option value="santa">Santa </option>
<option value="cooper">Cooper </option>
<option value="leon">Leon </option>
<option value="4_reihe">4 Reihe </option>
<option value="500">500 </option>

<option value="laguna">Laguna </option>
<option value="ptcruiser">Ptcruiser </option>
<option value="clk">Clk </option>
<option value="primera">Primera </option>
<option value="exeo">Exeo </option>
<option value="159">159 </option>
<option value="transit">Transit </option>
<option value="juke">Juke </option>
<option value="qashqai">Qashqai </option>
<option value="carisma">Carisma </option>
<option value="accord">Accord </option>
<option value="corolla">Corolla </option>
<option value="lanos">Lanos </option>
<option value="phaeton">Phaeton </option>
<option value="boxster">Boxster </option>
<option value="verso">Verso </option>
<option value="swift">Swift </option>
<option value="rav">Rav </option>
<option value="kuga">Kuga </option>
<option value="picanto">Picanto </option>
<option value="kalos">Kalos </option>
<option value="superb">Superb </option>
<option value="stilo">Stilo </option>
<option value="alhambra">Alhambra </option>
<option value="911">911 </option>
<option value="mx_reihe">Mx Reihe </option>
<option value="m_reihe">M Reihe </option>

<option value="roadster">Roadster </option>
<option value="ypsilon">Ypsilon </option>
<option value="cayenne">Cayenne </option>
<option value="galant">Galant </option>
<option value="justy">Justy </option>
<option value="90">90 </option>
<option value="sirion">Sirion </option>
<option value="crossfire">Crossfire </option>
<option value="6_reihe">6 Reihe </option>
<option value="agila">Agila </option>
<option value="duster">Duster </option>
<option value="cr_reihe">Cr Reihe </option>
<option value="v50">V50 </option>
<option value="discovery">Discovery </option>
<option value="c_reihe">C Reihe </option>
<option value="v_klasse">V Klasse </option>
<option value="yaris">Yaris </option>
<option value="c5">C5 </option>
<option value="aygo">Aygo </option>
<option value="cc">Cc </option>
<option value="carnival">Carnival </option>
<option value="fusion">Fusion </option>
<option value="bora">Bora </option>
<option value="forfour">Forfour </option>
<option value="100">100 </option>
<option value="cl">Cl </option>
<option value="tigra">Tigra </option>

<option value="156">156 </option>
<option value="300c">300c </option>
<option value="100">100 </option>
<option value="147">147 </option>
<option value="q3">Q3 </option>
<option value="spark">Spark </option>
<option value="v70">V70 </option>
<option value="x_type">X Type </option>
<option value="5_reihe">5 Reihe </option>
<option value="ducato">Ducato </option>
<option value="s_type">S Type </option>
<option value="x_trail">X Trail </option>
<option value="toledo">Toledo </option>
<option value="altea">Altea </option>
<option value="7er">7er </option>
<option value="voyager">Voyager </option>
<option value="calibra">Calibra </option>
<option value="bravo">Bravo </option>
<option value="range_rover">Range Rover </option>
<option value="antara">Antara </option>
<option value="tucson">Tucson </option>
<option value="q7">Q7 </option>
<option value="citigo">Citigo </option>
<option value="jimny">Jimny </option>
<option value="cx_reihe">Cx Reihe </option>
<option value="wrangler">Wrangler </option>
<option value="lybra">Lybra </option>

```
        <option value="range_rover_sport">Range Rover Sport
</option>
        <option value="lancer">Lancer </option>
        <option value="159">159 </option>
        <option value="freelander">Freelander </option>
        <option value="captiva">Captiva </option>
        <option value="c2">C2 </option>
        <option value="500">500 </option>
        <option value="range_rover_evoque">Range Rover Evoque
</option>
        <option value="sandero">Sandero </option>
        <option value="note">Note </option>
        <option value="900">900 </option>
        <option value="147">147 </option>
        <option value="defender">Defender </option>
        <option value="cherokee">Cherokee </option>
        <option value="clubman">Clubman </option>
        <option value="samara">Samara </option>
        <option value="2_reihe">2 Reihe </option>
        <option value="1er">1er </option>
        <option value="3er">3er </option>
        <option value="601">601 </option>
        <option value="3_reihe">3 Reihe </option>
        <option value="4_reihe">4 Reihe </option>
        <option value="5er">5er </option>
        <option value="6_reihe">6 Reihe </option>
        <option value="legacy">Legacy </option>
```

<option value="pajero">Pajero </option>
<option value="auris">Auris </option>
<option value="niva">Niva </option>
<option value="5_reihe">5 Reihe </option>
<option value="s60">S60 </option>
<option value="nubira">Nubira </option>
<option value="vivaro">Vivaro </option>
<option value="g_klasse">G Klasse </option>
<option value="lodgy">Lodgy </option>
<option value="850">850 </option>
<option value="serie_2">Serie 2 </option>
<option value="6er">6er </option>
<option value="charade">Charade </option>
<option value="croma">Croma </option>
<option value="outlander">Outlander </option>
<option value="gl">Gl </option>
<option value="doblo">Doblo </option>
<option value="musa">Musa </option>
<option value="amarok">Amarok </option>
<option value="156">156 </option>
<option value="move">Move </option>
<option value="9000">9000 </option>
<option value="v60">V60 </option>
<option value="145">145 </option>
<option value="aveo">Aveo </option>
<option value="200">200 </option>
<option value="300c">300c </option>

```
<option value="b_max">B Max </option>
<option value="delta">Delta </option>
<option value="terios">Terios </option>
<option value="rangerover">RangeRover </option>
<option value="90">90 </option>
<option value="materia">Materia </option>
<option value="kalina">Kalina </option>
<option value="elefantino">Elefantino </option>
<option value="i3">I3 </option>
<option value="kappa">Kappa </option>
<option value="serie_3">Serie 3 </option>
<option value="48429">48429 </option>
<option value="serie_1">Serie 1 </option>
<option value="discovery_sport">Discovery Sport </option>

</select>
<br>
<br>
</td>
</tr>

<tr>
<td><label for="brand">Brand :</label></td>
<td>
<select name="brand" id="brand">
<option value="" disabled selected hidden>Choose Brand
Name...</option>
```

<option value="volkswagen">Volkswagen </option>
<option value="audi">Audi </option>
<option value="jeep">Jeep </option>
<option value="skoda">Skoda </option>
<option value="bmw">Bmw </option>
<option value="peugeot">Peugeot </option>
<option value="ford">Ford </option>
<option value="mazda">Mazda </option>
<option value="nissan">Nissan </option>
<option value="renault">Renault </option>
<option value="mercedes_benz">Mercedes Benz </option>
<option value="opel">Opel </option>
<option value="seat">Seat </option>
<option value="citroen">Citroen </option>
<option value="honda">Honda </option>
<option value="fiat">Fiat </option>
<option value="mini">Mini </option>
<option value="smart">Smart </option>
<option value="hyundai">Hyundai </option>
<option value="sonstige_autos">Sonstige Autos </option>
<option value="alfa_romeo">Alfa Romeo </option>
<option value="subaru">Subaru </option>
<option value="volvo">Volvo </option>
<option value="mitsubishi">Mitsubishi </option>
<option value="kia">Kia </option>
<option value="suzuki">Suzuki </option>
<option value="lancia">Lancia </option>

```
<option value="porsche">Porsche </option>
<option value="toyota">Toyota </option>
<option value="chevrolet">Chevrolet </option>
<option value="dacia">Dacia </option>
<option value="daihatsu">Daihatsu </option>
<option value="trabant">Trabant </option>
<option value="saab">Saab </option>
<option value="chrysler">Chrysler </option>
<option value="jaguar">Jaguar </option>
<option value="daewoo">Daewoo </option>
<option value="rover">Rover </option>
<option value="land_rover">Land Rover </option>
<option value="lada">Lada </option>
</select>
<br>
<br>
</td>
</tr>

<tr>
<td><label for="fuelType">Fuel Type :</label></td>
<td>
<select name="fuelType" id="brand">
<option value="" disabled selected hidden>Choose Fuel
Type...</option>
<option value="petrol"> Petrol </option>
<option value="diesel"> Diesel </option>
```

```
        <option value="not-declared"> Not Declared </option>
        <option value="lpg">LPG </option>
        <option value="cng">CNG </option>
        <option value="hybrid">Hybrid </option>
        <option value="others">Others </option>
        <option value="electric">Electric </option>
        </select>
        <br>
        <br>
        </td>
        </tr>

        <tr>
        <td><label for="vehicletype">Vehicle type:</label></td>
        <td>
        <select name="vehicletype" id="vehicle" >
        <option value="" disabled selected hidden>Choose Vehicle
Type...</option>
        <option value="coupe">Coupe </option>
    <option value="suv">SUV </option>
    <option value="kleinwagen">Kleinwagen </option>
    <option value="limousine">Limousine </option>
        <option value="cabrio">Cabrio </option>
        <option value="bus">Bus </option>
        <option value="kombi">Kombi </option>
        <option value="andere">Andere </option>
        <option value="volkswagen">Volkswagen </option>
```

```
        </select>
        <br>
        <br>
        </td>
        </tr>
        </tbody>
        </table>
        <input name="Submit" type="Submit" value="Submit"
id="button"/>
        </form>
  </section>

</body
</html>
```

GITHUB & PROJECT DEMO LINK:

GITHUB LINK : https://github.com/IBM-EPBL/IBM-Project-47772-1660802128

DEMO LINK :

https://drive.google.com/file/d/1kLkM80Q3hLbhRrLhzPNV8CjlNFKQkJ36/view?usp=share_link