**Car Price Predictor**

The Car Price Predictor is a web application built using Flask, a light weight framework for python. This application allows users to input various details regarding the car and it predicts the selling price in a particular year(At Max we can predict up to 3000 year). It predicts the price using a machine learning model trained on a particular Car prices Dataset.

**Features**

* User Friendly web interface for inputting car details
* Predicts the selling price of a car based on user inputs
* Utilizes machine learning techniques for price prediction
* Handles both GET and POST requests to manage user interactions

**Technologies Used**

* HTML/CSS for Designing the front end for the application
* Pandas for data manipulation and analysis
* Scikit Learn for Model training and evaluation
* XG Boost- Gradient boosting framework for building the regression model
* Flask- Web Framework for building the web application

**Prerequisites:**

The prerequisites required to run the code are:

* Python should be installed on your device
* Should have the Dataset to read
* The additional python libraries need to be installed on your device
* Flask to be installed on your device

**Process involved:**

* Imports all the necessary libraries like flask, pandas, sklearn, xgboost
* Reads the csv file named CarsDataset.csv
* If the server is started, the function named index will be called automatically.
* The function helps in storing inputs on the server side
* Then the model gets trained by giving the inputs as the model name
* In the training phase the dataset splits into training and testing and the model gets trained
* After training, the given inputs by the user are used to predict the output.

**Challenges Faced:**

* Selecting the appropriate model
* Changing the model’s used to get the accurate results
* Overcoming the Underfitting and Overfitting

**Summary:**

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| --- | --- | --- | --- |
| **Metrics** | **Training** | **Testing** | **Verdict** |
| RMSE | 152000.45 | 178000.32 | Good |
| R^2 | 0.89 | 0.85 | Very Good |