AUTOMOBILE PRICE PREDICTION

Presented By

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INTRODUCTION

Car price prediction using machine learning is an innovative approach that leverages data-driven models to estimate the value of new and used vehicles. Determining the fair market price of a car relied heavily on manual assessments and subjective evaluations. However, with the advent of machine learning, this process has become more accurate, consistent, and efficient. By analyzing historical car sales data, vehicle specifications, and prevailing market trends, machine learning models such as Linear Regression, Random Forest, and Neural Networks can predict car prices based on key features like make, model, year, mileage, condition, and location.

PROBLEM

STATEMENT

Develop a machine learning-based model that can accurately predict the price of a used car based on several input features such as car brand, model, year of manufacture, mileage, fuel type, transmission type, and ownership history. By utilizing historical data of car sales, the model will be trained to learn patterns and relationships between these features and the market value of cars. This will allow users to receive an estimated price for a car instantly, making the process more efficient and reliable.

EXISTING SYSTEM

An existing system for car price prediction using machine learning typically involves analyzing historical car sales data, vehicle specifications, and market trends to train models like Linear Regression, Random Forest, or Neural Networks. These models then predict the fair market value of cars based on various features such as make, model, year, mileage, condition, and location.

PROPOSED SYSTEM

The proposed system uses advanced machine learning techniques to forecast more accurate, scalable, and user-friendly predictions of new and used cars. To do this, it's going to build upon existing methodologies by making use of real-time data ingestion, feature rich in analysis and explainability, all together with modern practices of deployment for it to reach out to a wider audience like buyers, sellers, and dealerships.

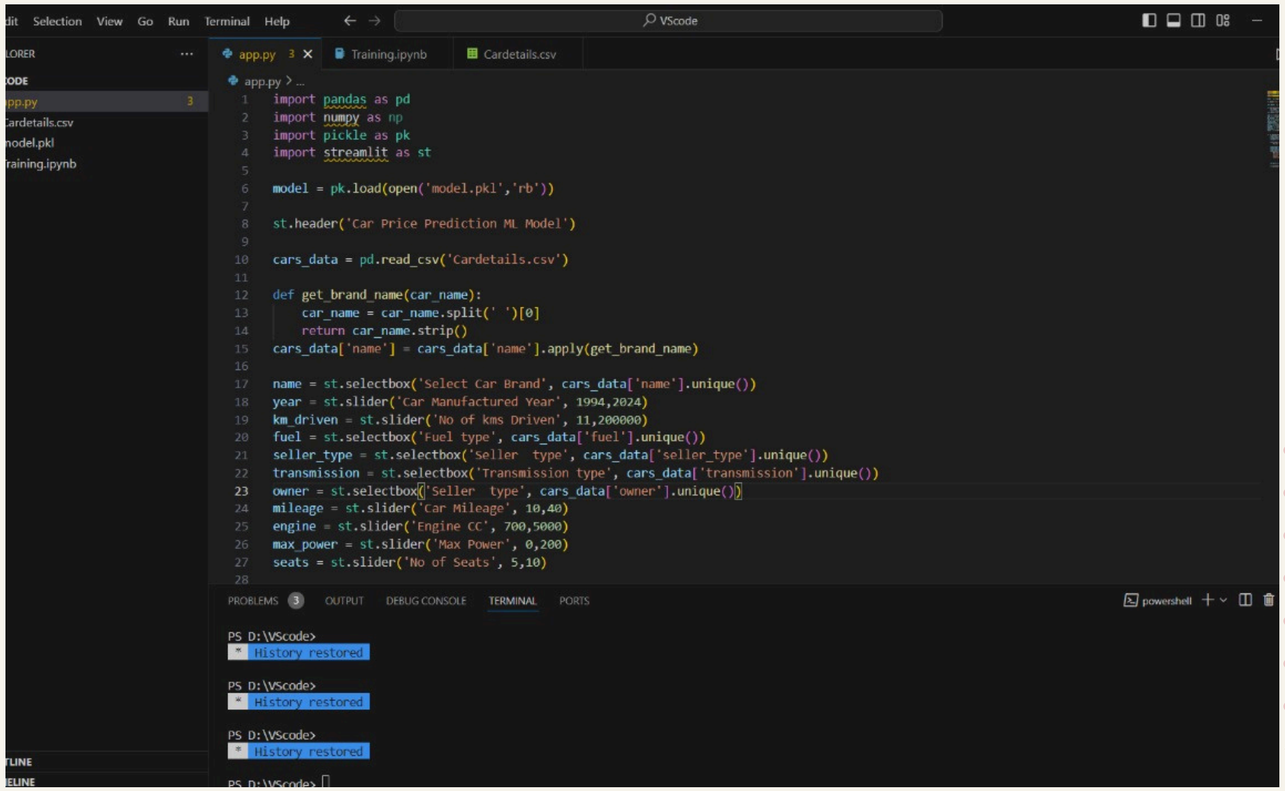
HOW IT WORKS

```
[ ] model = LinearRegression()

[ ] model.fit(x_train, y_train)

    ▾ LinearRegression
    LinearRegression()

[ ] predict = model.predict(x_test)

[ ] predict

    array([378844.93028124, 347161.92986535, 381845.91985837, ...,
            84333.96746337, -26166.2537024 , 332515.64289612])

    x_train.head(1)
```

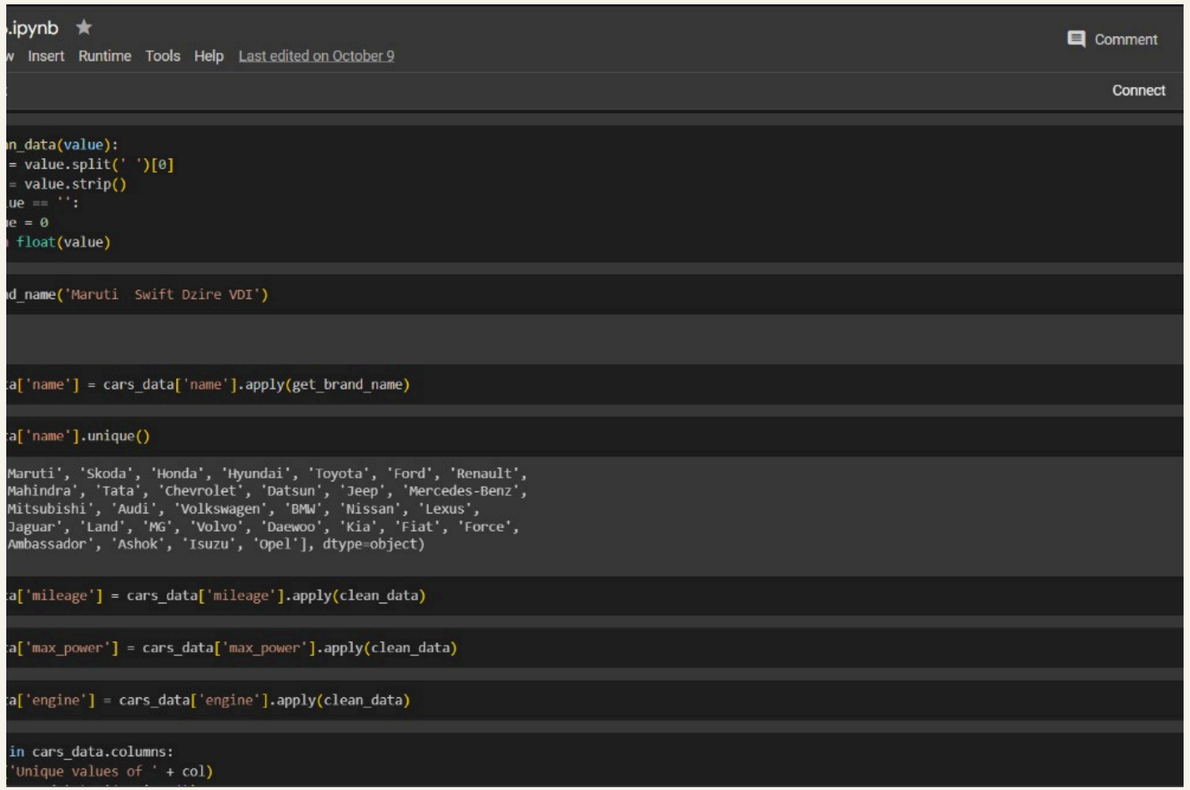
	name	year	km_driven	fuel	seller_type	transmission	owner	mileage	engine	max_power	seats
3864	1	2015	30000	2	1	1	1	23.1	998.0	67.04	5.0

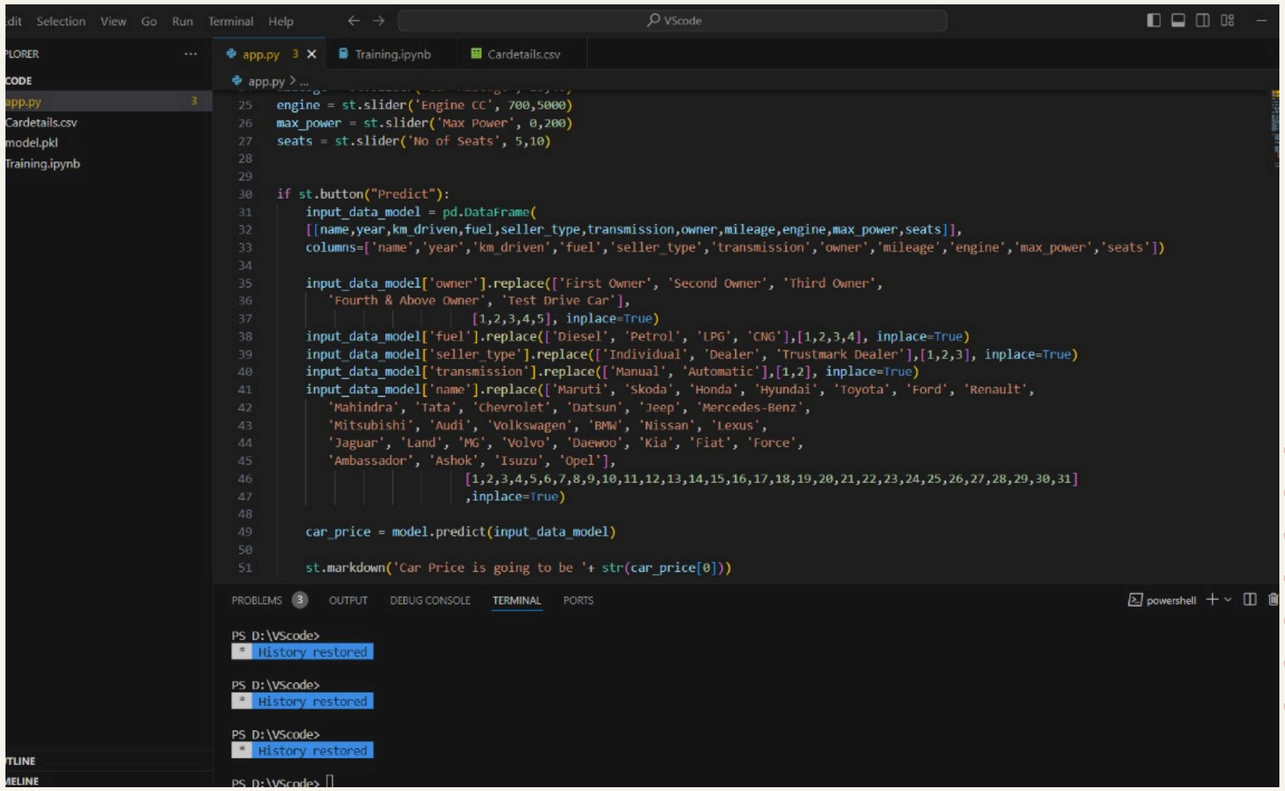
```
[ ] input_data_model = pd.DataFrame([[4,2020,5900,1,2,2,1,17.01,1582.0,126.2,5.0]],columns=['name', 'year', 'km_driven',

[ ] input_data_model
```

	name	year	km_driven	fuel	seller_type	transmission	owner	mileage	engine	max_power	seats
0	4	2017	5900	1	2	2	1	17.01	1582.0	126.2	5.0



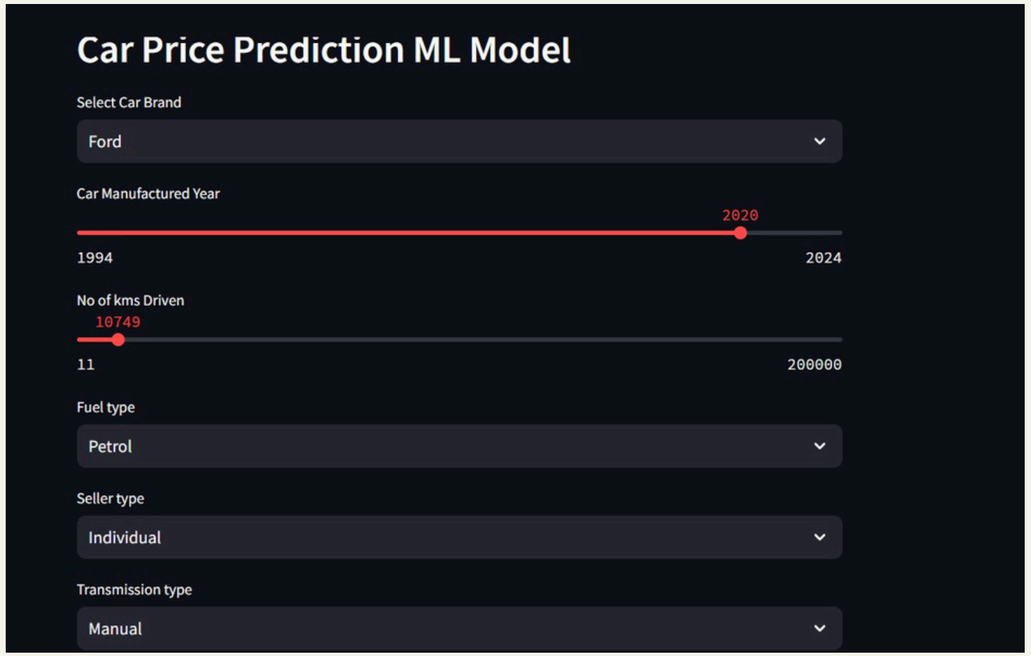
HOW IT WORKS

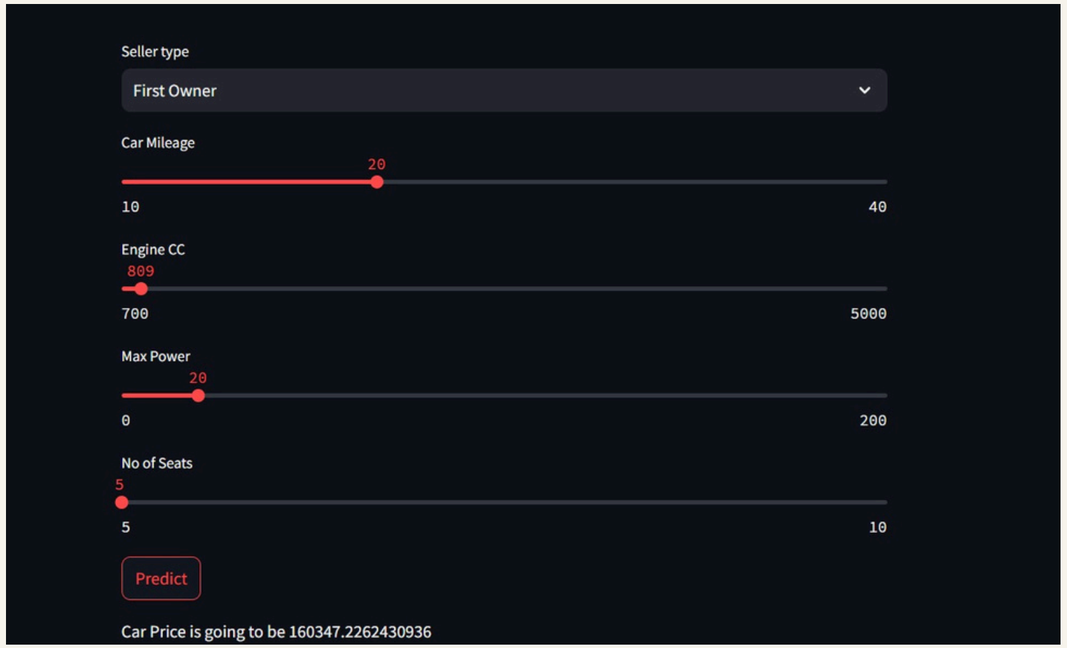




Automobile price prediction

Proposed Output





CONCLUSION

The new method was able to efficiently automate the complicated process of the estimation of car prices, which is one of the benefits both car sellers and buyers get in terms of decision-making, as well as dealers, through the immediate prediction of prices. As far as the integration of the model with Streamlit seems to open up an interface where the user will be required to input the details of the car that they are interested in acquiring. That is to say, the accuracy of predictions is highly dependent on the quality and breadth of the training data in addition to the capacity of this model to generalize to unseen data.

THANK YOU