Predict Vehicle Prices

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Title: Predict Vehicle Prices using Vehicle dataset

Description: This project focuses on predicting the price of a vehicle using machine learning techniques. In the automobile market, vehicle prices depend on many factors such as brand, model, year of manufacture, mileage, engine type, fuel type, transmission, and overall vehicle specifications. Manually estimating the correct price can be difficult and time-consuming, especially when large amounts of data are involved.

To solve this problem a machine learning model is developed that learns from historical vehicle data and identifies patterns that influence vehicle pricing. The dataset is first cleaned and prepared by removing missing values and converting text-based features into numerical form so that the model can understand them. After preprocessing, the data is divided into

training and testing sets to ensure reliable evaluation.

A Random Forest Regression model is used to predict vehicle prices because it provides high accuracy and handles complex relationships between features effectively. The model's performance is measured using standard evaluation metrics to ensure the predictions are close to real vehicle prices.

This project demonstrates how machine learning can be applied in real-world applications such as the automobile industry to help buyers, sellers, and dealers make better pricing decisions. It also highlights the importance of data preprocessing, feature selection, and model evaluation in building an accurate predictive system.

Tech Stack:

Programming Language:

- **Python**

Libraries & Frameworks:

- **NumPy – Numerical computations**
- **Pandas – Data handling and preprocessing**
- **Matplotlib – Data visualization**
- **Seaborn – Statistical data visualization**
- **Scikit-learn – Machine learning algorithms and evaluation**

Machine Learning Model:

- **Random Forest Regressor**

Development Environment:

- **Google Colab / Jupyter Notebook**

Dataset Type:

- **CSV (Comma Separated Values)**