**Car Price Prediction**

**Introduction:**  
This project focuses on predicting car prices using machine learning techniques. By analyzing various features such as mileage, model year, engine size, and brand, the model aims to provide an accurate estimation of a car's market value.

**Dataset Description:**  
The dataset consists of numerical and categorical features, including:

* Mileage (km or miles)
* Model Year
* Engine Size (L)
* Fuel Type
* Transmission Type
* Car Brand
* Price (Target Variable)

**Data Preprocessing:**  
To ensure the model's effectiveness, the following preprocessing steps were performed:

1. Handling missing values by filling or dropping incomplete records.
2. Converting categorical variables (e.g., Fuel Type, Brand) using **Label Encoding** and **One-Hot Encoding**.
3. Scaling numerical features to ensure uniformity in data distribution.
4. Splitting the dataset into training and testing sets for model evaluation.

**Model Selection and Training:**  
A **Linear Regression** model was used to predict car prices based on historical data. The model was trained using **Mean Squared Error (MSE)** as the loss function, and hyperparameters were optimized for improved accuracy.

**Results and Conclusion:**  
The trained model provided a reasonably accurate prediction of car prices, with an acceptable error margin. Future improvements could involve experimenting with advanced algorithms such as **Random Forest Regression** or **Gradient Boosting** to enhance predictive performance.

This project demonstrates the potential of machine learning in the automotive industry, aiding buyers and sellers in making informed decisions about car pricing.