Introduction:

Car price prediction is a significant area of research in machine learning, aiming to forecast the price of a car based on various factors such as brand goodwill, car features, Selling_Price, Driven_kms, and more. This project focuses on developing a machine learning model to accurately predict car prices using relevant features.'

Project Goals:

- Build a machine learning model capable of predicting car prices with high accuracy.
- Identify the key features that significantly influence car prices.
- Evaluate the performance of the model using appropriate metrics and techniques.

Methodology:

1. Data Preprocessing: Clean the dataset, handle missing values, and perform feature engineering to extract relevant features.
2. Exploratory Data Analysis (EDA): Analyze the relationships between different features and the target variable (car prices) to gain insights into the data.
3. Model Development: Train and evaluate various machine learning models, such as linear regression, decision trees, random forests, and gradient boosting, to predict car prices.
4. Model Evaluation: Assess the performance of each model using metrics such as mean absolute error (MAE), mean squared error (MSE), and R-squared score.

Observation

Strong Positive Correlation: Selling Price and Present Price have a very strong positive correlation indicating a nearly perfect linear relationship. This makes sense as present market value likely influences selling price.

Year's Influence: Year seems weakly negatively correlated with Selling Price, Present Price, and Driven_Kms. Newer cars (lower Year values) tend to have higher selling prices, lower present prices, and lower driven kilometers.

Mileage Matters: Driven_Kms shows a weak negative correlation with Selling Price and Present Price. Cars with lower mileage (lower Driven_Kms values) tend to sell for more.

Price Match: The plot reveals a strong positive correlation between Present Price and Selling Price. Cars with a higher present market value tend to sell for more.

Market Influence: This suggests the present market value heavily influences the final selling price.

Conclusion:

This project aims to demonstrate the effectiveness of machine learning techniques in predicting car prices accurately. By leveraging advanced algorithms and thorough data analysis, we aim to provide insights into the factors influencing car prices and develop a reliable predictive model.