Car Price Prediction Project Summary

1. Exploratory Data Analysis (EDA)

- Selling Price is right-skewed, with many cheaper cars.
- Fuel type and transmission influence price. Petrol cars dominate.
- Mileage is negatively correlated with price.
- Heatmap shows high correlation between Year and Selling Price.

2. Data Preprocessing

- Label Encoding used for categorical columns: Brand, Fuel_Type, etc.
- Numerical features scaled using StandardScaler.
- Train-test split done with 80:20 ratio.
- Target variable: Selling_Price.

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3. Model Development

- Linear Regression used as base model.
- Model trained on scaled training data.
- Predictions made on test set.

4. Model Evaluation

- Mean Absolute Error (MAE): ~1.12
- Mean Squared Error (MSE): ~2.19
- Root Mean Squared Error (RMSE): ~1.48
- R^2 Score: ~0.84
- Indicates good fit but not perfect - scope for improvement with feature engineering or other models.

5. Interpretation

- Most important features: Year, Mileage, Fuel Type.
- Model may underperform on very new or very old cars.
- No signs of strong overfitting in this baseline model.