# Analysis Report

## Methods Used

Suggesting target column based on existing columns: To identify the appropriate target for modeling.

Transforming data by imputing and normalizing: To handle missing values and ensure data consistency.

Evaluating models based on the target column type: To assess performance using suitable algorithms.

Generating and saving plots for data analysis: To visualize data distributions and relationships.

## Model Results

### Linear Regression

MAE: 0.0944

MSE: 0.0124

R²: 0.8380

Confusion Matrix: See C:\Users\HimakarRaju\Desktop\Milestone2\DataReadOuts1\car\_price\_prediction\_\plots\confusion\_matrix\_Linear Regression.html

### Random Forest Regressor

MAE: 0.0010

MSE: 0.0000

R²: 0.9999

Confusion Matrix: See C:\Users\HimakarRaju\Desktop\Milestone2\DataReadOuts1\car\_price\_prediction\_\plots\confusion\_matrix\_Random Forest Regressor.html

### Gradient Boosting Regressor

MAE: 0.0017

MSE: 0.0000

R²: 0.9999

Confusion Matrix: See C:\Users\HimakarRaju\Desktop\Milestone2\DataReadOuts1\car\_price\_prediction\_\plots\confusion\_matrix\_Gradient Boosting Regressor.html

### K-Neighbors Regressor

MAE: 0.1689

MSE: 0.0473

R²: 0.3846

Confusion Matrix: See C:\Users\HimakarRaju\Desktop\Milestone2\DataReadOuts1\car\_price\_prediction\_\plots\confusion\_matrix\_K-Neighbors Regressor.html

### Support Vector Regressor

MAE: 0.1091

MSE: 0.0168

R²: 0.7819

Confusion Matrix: See C:\Users\HimakarRaju\Desktop\Milestone2\DataReadOuts1\car\_price\_prediction\_\plots\confusion\_matrix\_Support Vector Regressor.html

### Decision Tree Regressor

MAE: 0.0013

MSE: 0.0000

R²: 0.9999

Confusion Matrix: See C:\Users\HimakarRaju\Desktop\Milestone2\DataReadOuts1\car\_price\_prediction\_\plots\confusion\_matrix\_Decision Tree Regressor.html

## Best Model

The best model is: Random Forest Regressor with R²: 0.9999