# Car\_Price\_Prediction

* The csv file contains multi-class regression data set with 206 samples and 25 numerical features.
* The target variable is the price of the car.
* After importing the required libraries and the csv file, the data-frame is checked for missing values and unique values.
* The Data-set is checked for missing values and rows with missing values are dropped.
* Data-set is visualized using pair plot for better visualization.
* The Features contains categorical data, which are Converted in dummies.
* Dummies change the categorical data into binary data.
* Converted Data is splited into train and test data.
* The Heat-map is plotted for the data and feature Porsche is dropped as it has less correlation with other features.
* The models are build which are Linear Regression, Decision Tree, Random Forest, Ridge Regression, Lasso Regression.
* The Scores obtained in each models are

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| --- | --- | --- |
| **Learning Algorithm** | **Train Score** | **Test Score** |
| **Linear Regression** | 0.9492630667253936 | 0.8511987391778814 |
| **Decision Tree** | 0.9984099513572218 | 0.8769409473114727 |
| **Random Forest** | 0.9686407530194834 | 0.9105876456242858 |
| **Ridge Regression** | 0.9599153508207816 | 0.8806614678791718 |
| **Lasso Regression** | 0.9740092284105089 | 0.9203400221806047 |

* Considered the Ridge Regression as my Final Model.
* The scores obtained by the model are Train Score=0.9599153508207816,Test Score=0.8806614678791718
* Mean Squared Error=4516843.33353326
* Median Absolute Error=1231.1034115454595
* R2 Score=0.880661467879171