

Linear and Logistic Regression

Implementation Steps

- Read the Dataset From the Diamonds.csv File.
- Displayed the size and the shape of the data.
- Started Running a regression model Using 2 and 3 Features that predicts the Mean absolute error , Root mean Square error and Regressor score.
- Changed the categorical features into numerical to allow the machine to deal with it and determined the features using correlation.
- Split the data into training (80%) and testing (20%).
- Determined the testing and training error.
- Visualized many different plot graphs and the final best fit line.

Used Recipes

- Linear Regression
- Polynomial Regression
- Decision Tree Regression
- Support Vector Regression
- Logistic Regression

Models Accuracies and errors

Technique	Mean absolute error	R-squared score	Root mean squared error
Linear Regression	895.345484	0.861508	1469.665116
Polynomial Regression (n=2)	549.500225	0.933456	1018.734087
Polynomial Regression (n=3)	912.372488	-188.653181	54385.88115
Decision tree Regression	373.421487	0.961235	777.550255
Support Vector Regression	2672.06559	-0.097922	4138.012816
Random Forest	662.102892	0.119454	1423.369221
Logistic Regression	1294.865468	0.011185	2107.933862

Summary

- Now, let's compare all the recipes to see which one turns out to be the best one for this problem.
- Decision tree Regression proved to be the best recipe for a diamond's price prediction which was shortly followed by Polynomial regression of degree 2.