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BYTE PANACHE COMPETITION

FOUNDATIONS OF MODER MACHINE LEARNING

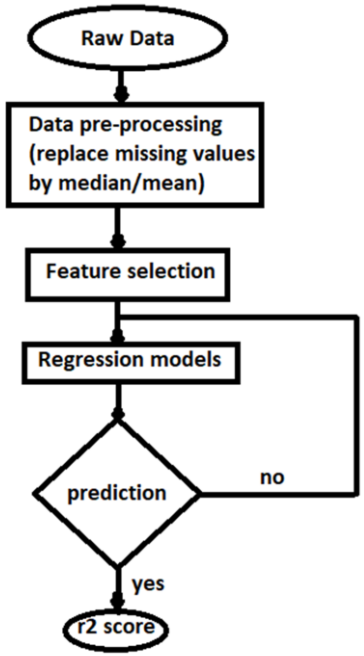
OBJECTIVES

- PREDICT THE PRICE OF AUTOMOBILES
- VALIDATE THE PREDICTION USING R2 SCORE BEFORE AND AFTER FEATURE SELECTION

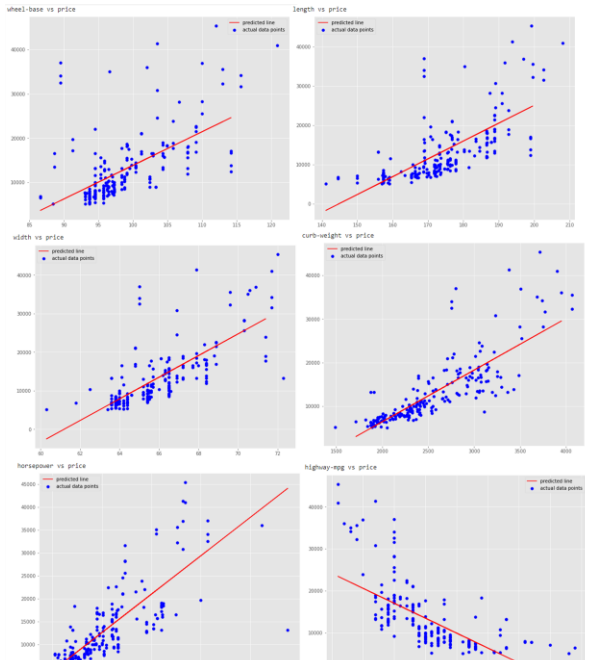
INTRODUCTION

Predicting the price of cars and houses; stock market values, weather forecast, rainfall, percentage of drug efficacy; prognosis time periods, etc. have been gaining great importance in today's world. Regression have been applied in various domains to find the likelihood of acquiring disease or spread of the infection. The present work focuses on predicting the price of the automobiles based on the given feature sets.

METHODS



RESULTS



RESULTS

Table: Regression model performance based on r2 score

Dataset	Regression Model	Training set R2 score	Testing Set R2 score
Before feature selection	Linear Regression	0.85	0.57
	Ridge Regression	0.78	0.77
	Polynomial Ridge Regression	0.77	0.98
After Feature selection	Linear Regression	0.82	0.54
	Ridge Regression	0.77	0.98
	Polynomial Ridge Regression	0.77	0.98

Features selected: wheel-base, length,width,curb-weight,engine-size, bore,horsepower, city-mpg, and highway-mpg

CONCLUSION

Polynomial ridge regression has shown a very promising performance before and after feature selection with r2 score of 0.98. But still the feature selection will reduce the training time of the model and increase the efficiency of the model's performance.