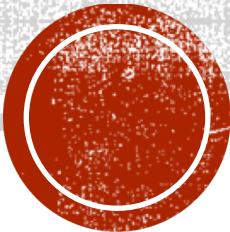




AMES HOUSING SALE PRICE PREDICTION



INTRODUCTION

- Ames is a city in Story County, Iowa, United States approximately 30 miles (48 km) north of Des Moines in central Iowa.
- It is best known as the home of Iowa State University (ISU), with leading Agriculture, Design, Engineering, and Veterinary Medicine colleges.



PROBLEM STATEMENT

This project will study the various features which affects the sale price of the house and create a regression model based on the Ames Housing Dataset, which can be used to predict the sale price of a house based on those influential features.



DATASET

This project uses the following two dataset :

Train

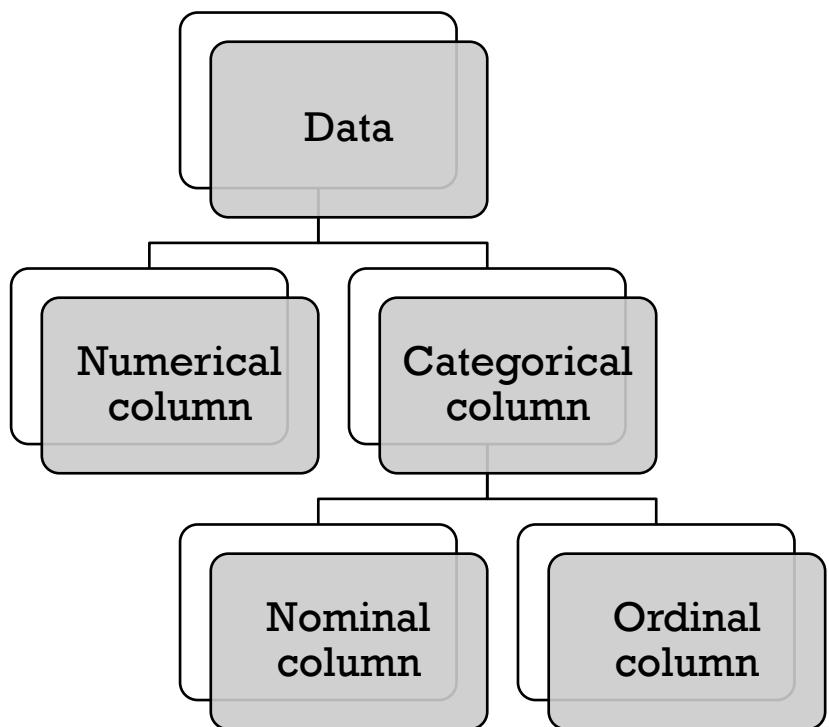
- 2051 rows
- 81 columns

Test

- 879 rows
- 80 columns



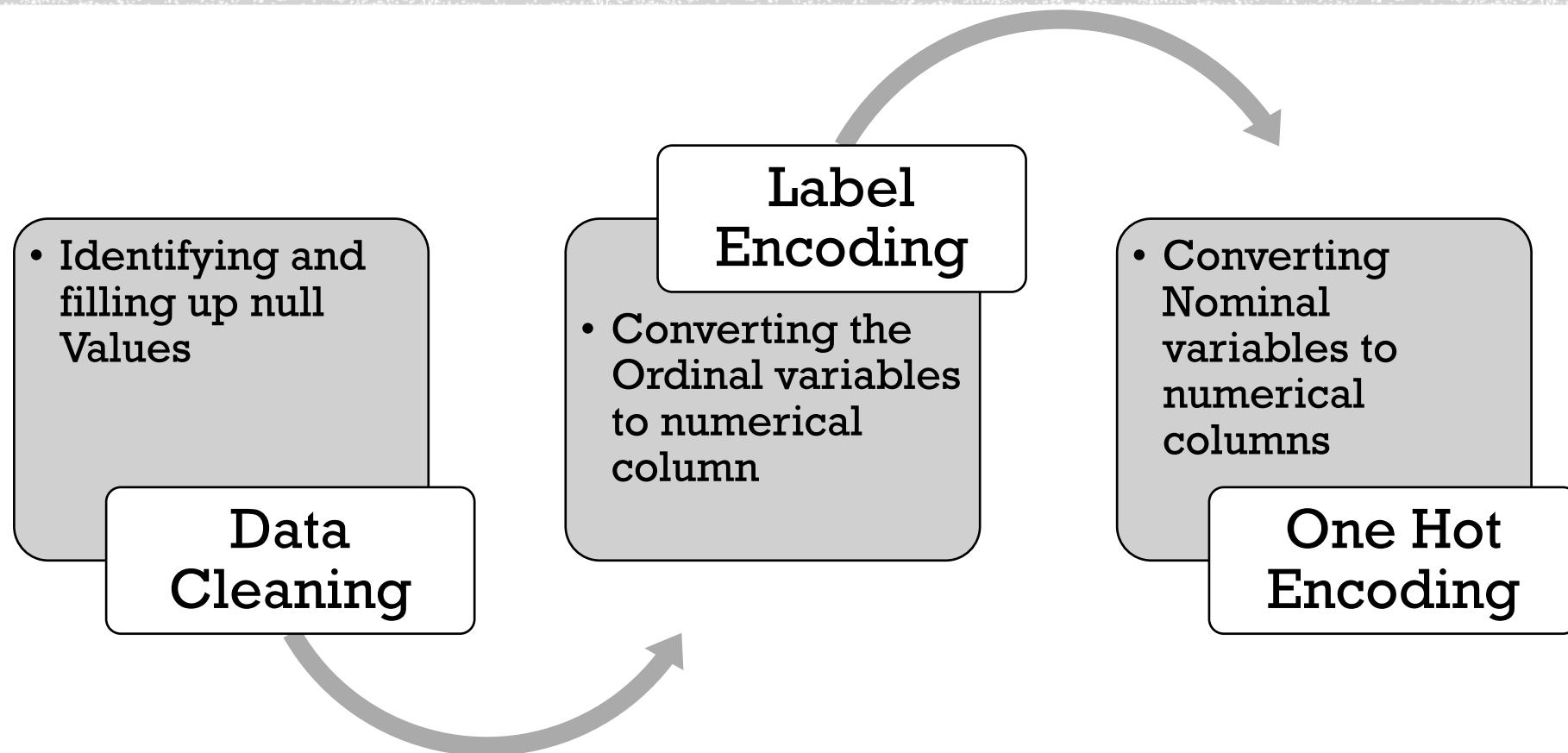
DATASET



- The dataset provides information about the various factors that influence the sale price of house in Ames city.
- Most of the variables are exactly the type of information that a typical home buyer would want to know about a potential property.
- The data can be classified as shown.



PRE-PROCESSING



FEATURE SELECTION

Ridge
Regression

Lasso
Regression

Elastic Net
Regression

Linear
Regression

The following Models were
performed on the entire
dataset



FEATURE SELECTION

R2 SCORE FOR VARIOUS MODELS

Regression Type	R2 Values
Linear Regression	-1.56852
Lasso Regression	0.79699423
Ridge Regression	0.839138
Elastic Net Regression	0.84045

- Based on r2 values, Elastic net performs better than other models ,hence it is used in final model
- Features that are highly correlated in Elastic Net are selected for final model



TOP FEATURES THAT AFFECT SALE PRICE

Positive impact on sale price

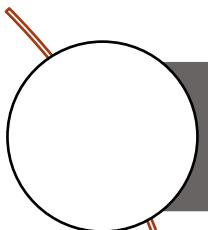
- Overall Quality
- Living Area
- Garage Area
- Fireplaces
- Basement Area

Negative impact on sale price

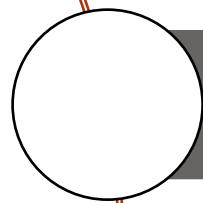
- Exterior Quality
- Kitchen Quality
- Basement Exposure
- Pool Area
- Town house End Unit



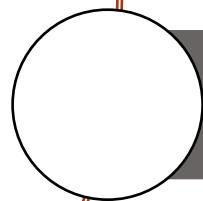
CONCLUSIONS AND RECOMMENDATIONS



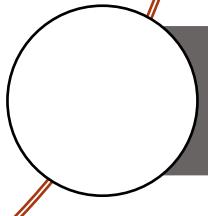
Overall Quality, Living Area, Garage Area highly affects the Sale price which is obvious as the potential buyer will look forward for all these qualities.



Fireplace is also one of the most influencing feature, as the temperature in winter drops to average 12-degree Fahrenheit.



Stone Brooke is a residential community in Ames, Iowa. Conveniently located on the north side of the city, it is within a few minutes drive or public transport ride to the Iowa State University campus and the Ames Shopping Mall.



However it is interesting to note that Exterior quality and kitchen quality is negatively related to Sale price.

