

Housing Prices in Ames, Iowa

DSI 7/12: Project 2 Presentation - Clifford Cho



Problem Statement

Real estate is a stressful process for buyers. The most important factor in a sale is the bottom line, but properly pricing a house is difficult, especially for those unfamiliar with real estate.

This project will look at data regarding the Ames, Iowa housing market to give insight on what features heavily affect sale price.



Procedure and Hypothesis

Over 2000 houses were analyzed in order to create a linear regression model based on four key factors that were separately analyzed:

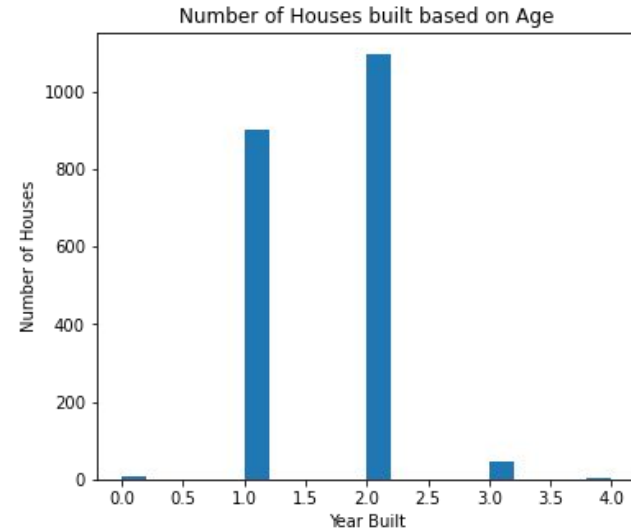
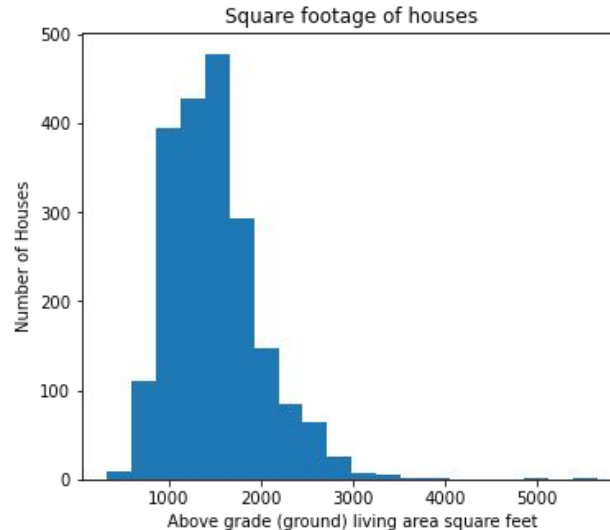
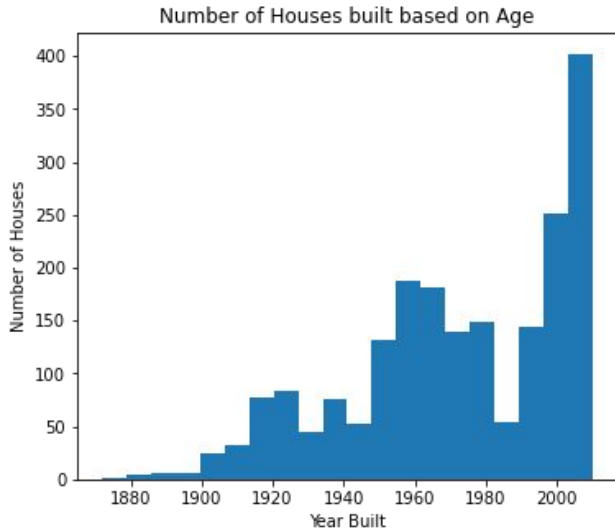
- Area - Focused on the area (sqft) of individual parts of the house
- Quality - Quality and condition of various aspects of the estate
- Location - Looks at effects of neighborhood and distance to landmarks
- Details - Focuses on details such as construction logistics and features

Location and details should improve prediction significantly.

Area and quality expected to be main predictors.



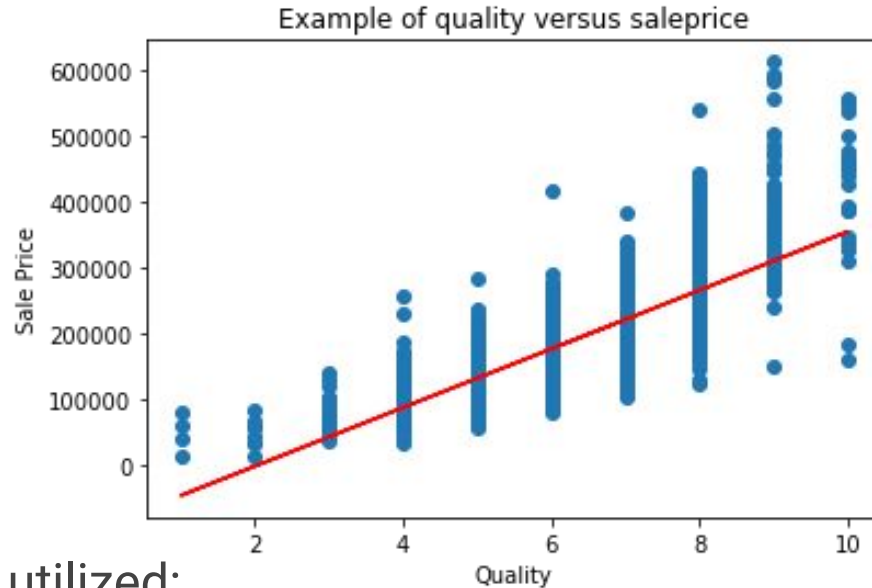
Data Visualization



Examples of data utilized:

Detail (Continuous), Area (Continuous), Detail (Discrete)

Data Visualization Continued



Examples of data utilized:

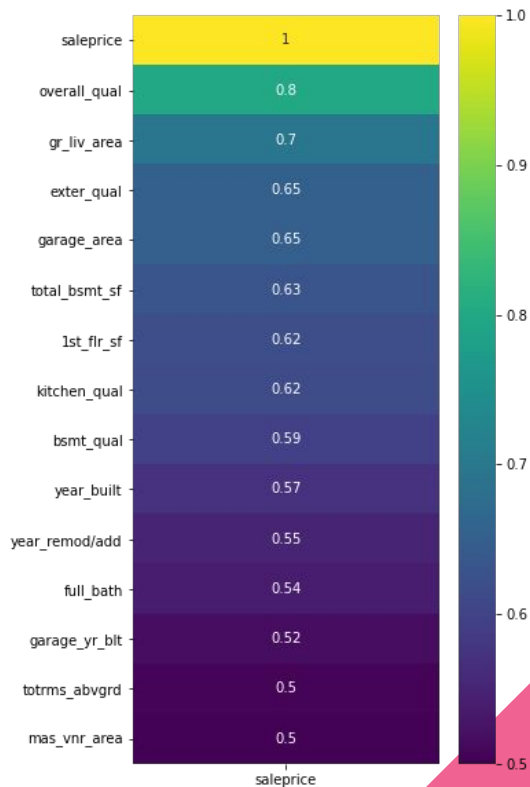
Quality (Discrete)

Visualization of Numerical Correlation

Numerical features were measured against the sale price.

The highest areas of correlation were expectedly related to quality and area. They have roughly equivalent value.

Time based details seem to be an important factor in sale price.



Evaluation of Modeling on Features

Overfitting was prominent along all numerical features.

Location features predicted sale price surprisingly well. With the categorical features, the train and test scores were closer.


Final predictive score was +80%.

	score	high_corr	low_corr	full_corr	cat	with_cat
0	train	0.788	0.623	0.815	0.641	0.855
1	test	0.848	0.666	0.863	0.597	0.871
2	cross_val	0.768	0.573	0.775	0.613	0.810

Conclusion and Recommendations

House quality and area seem to be equally important in predicting price. Specific details like the number of fixtures (fireplaces, garages) and time of construction/renovation were key factors.

In order to maximize house sale price, focus on quality is recommended. House size and location is harder to change, and details are usually inherent or big undertakings.



Thank You! Any Questions?

