

Housing Price Predictions With Linear Regression Models

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City of Ames, Iowa - Our Data Problem

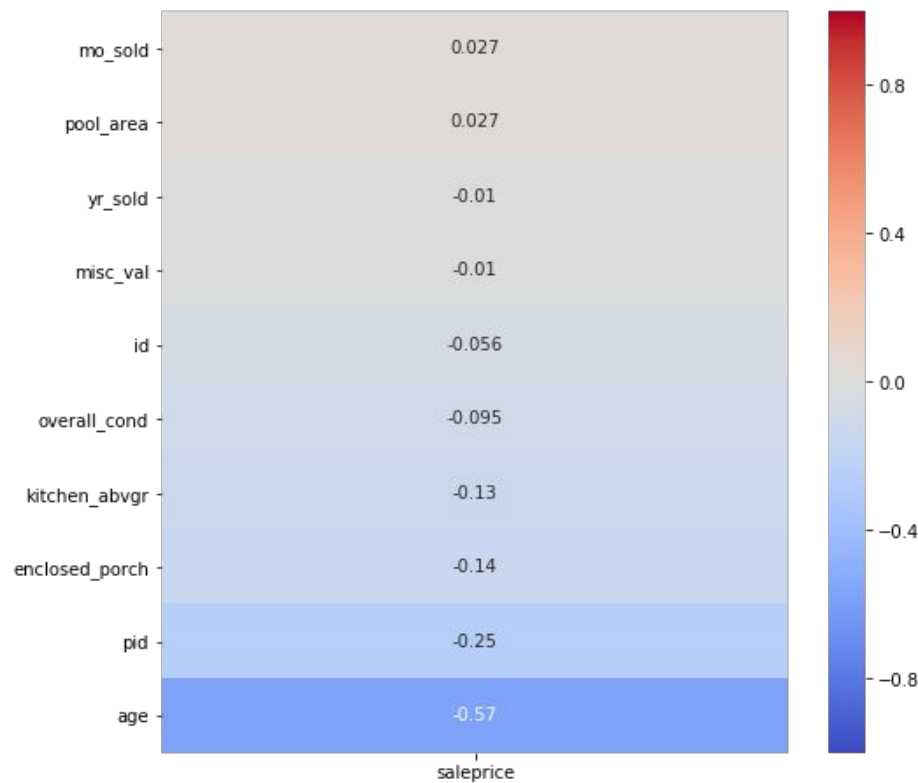
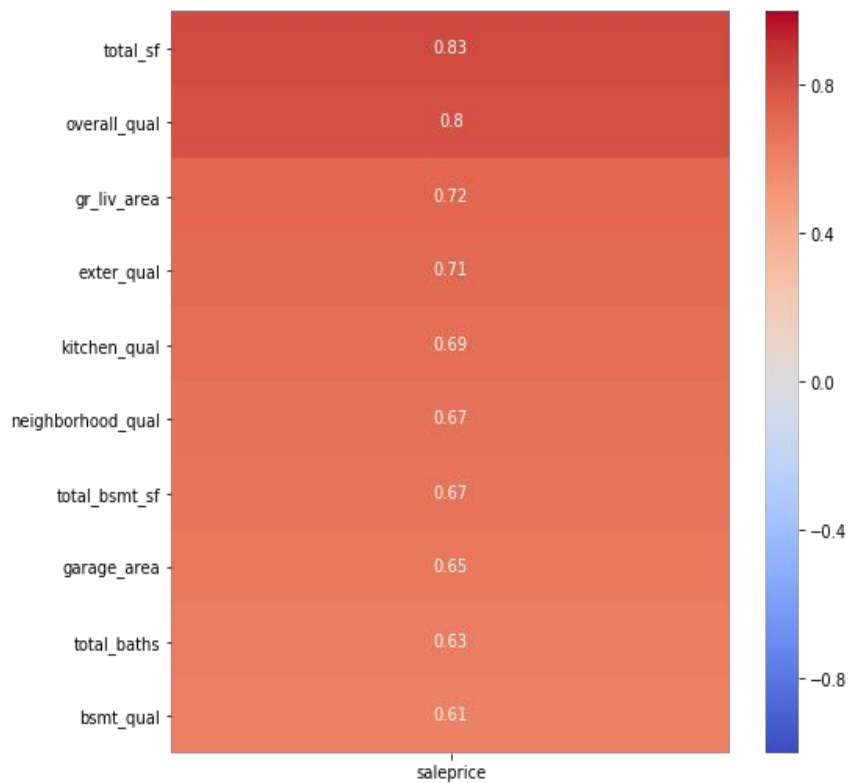
- Regression models will help us predict the price of a house at sale.
- The Ames Housing Dataset is an exceptionally detailed and robust dataset with over *70 columns of different features* relating to houses.
- What features have the best and worst impact on housing prices?
- What neighborhoods are a good investment in Ames, Iowa?



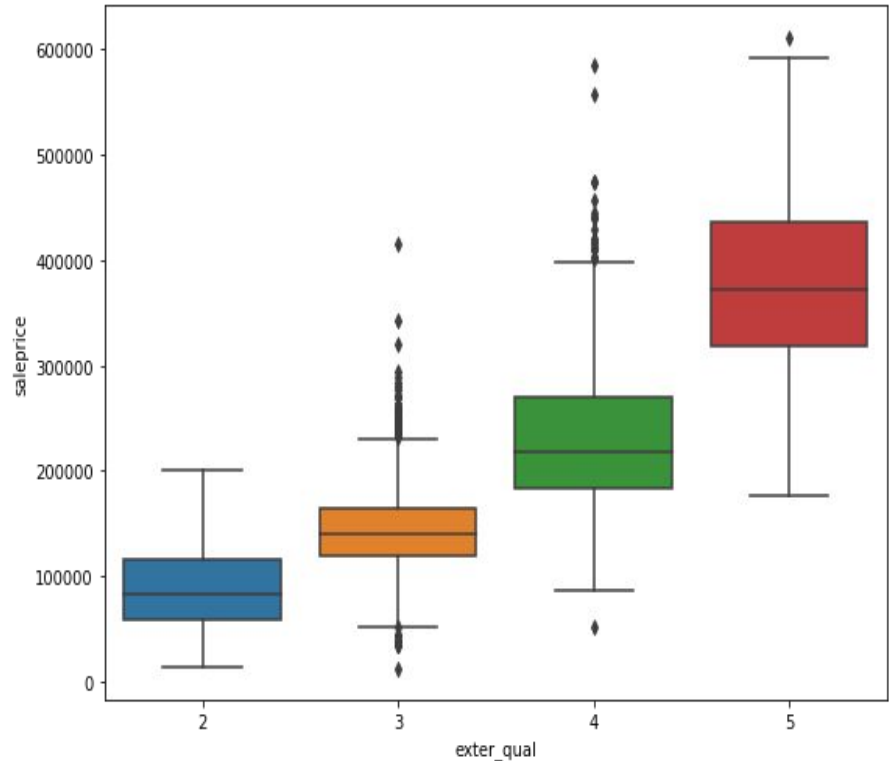
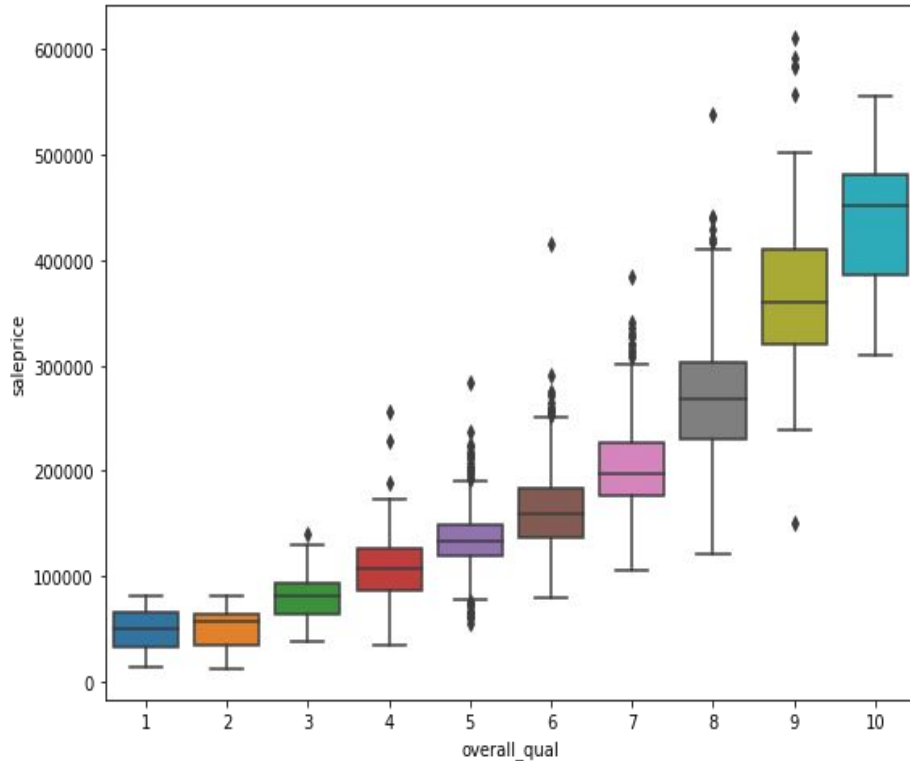
Our Process

- Explore and clean the data
 - Feature engineer, remove outliers, fill missing values
- Visualize the data
- Build our models
 - Scaled and un-scaled model
- Refine our models
 - Change features and models
- *Predict housing prices*

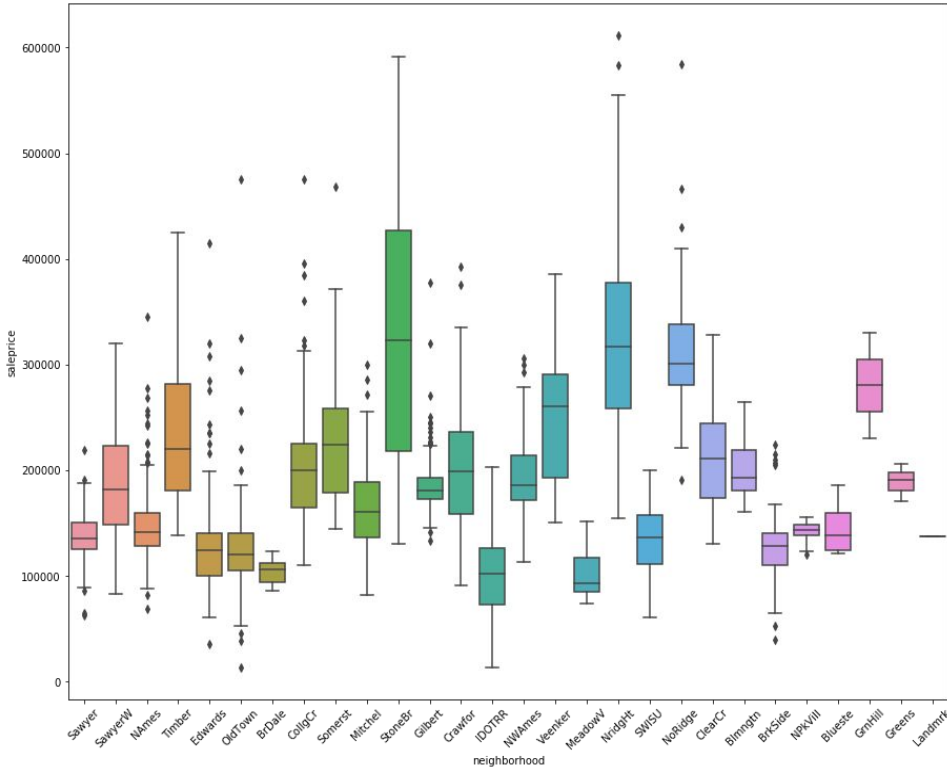
Highest and Lowest Correlations to Sale Price



Quality Metrics as Related to Price

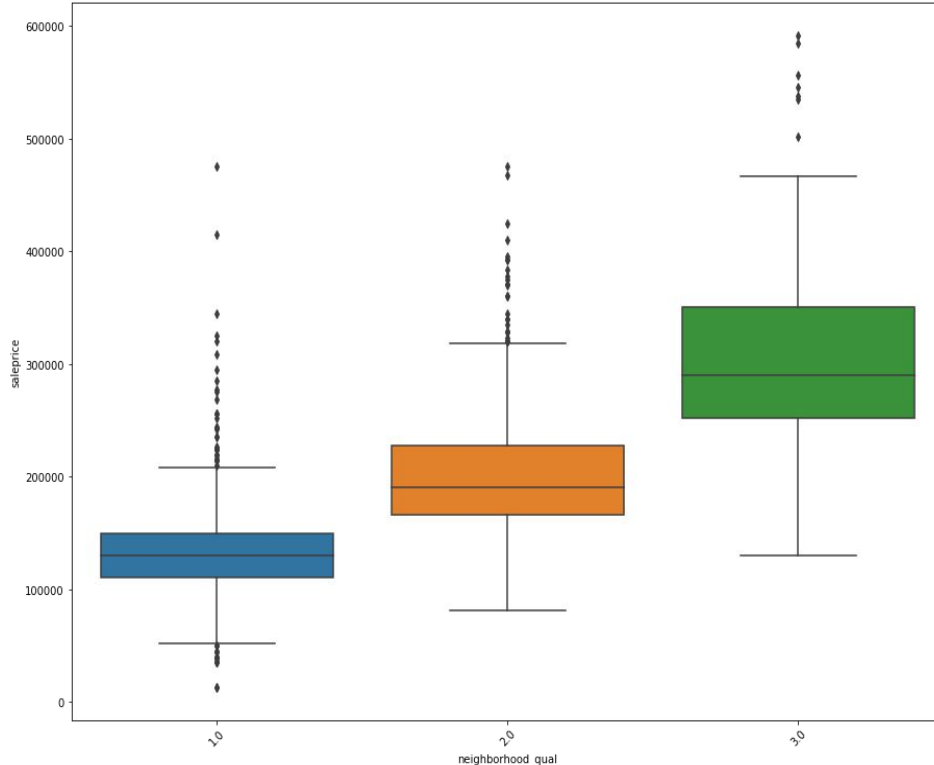


How Neighborhood Impacts Housing Prices



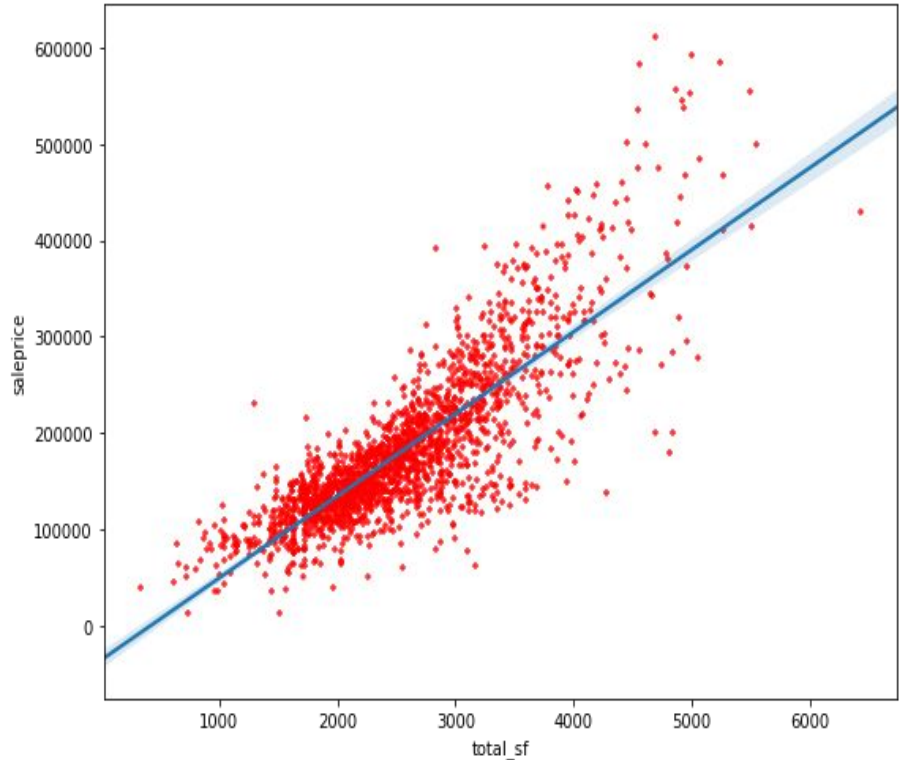
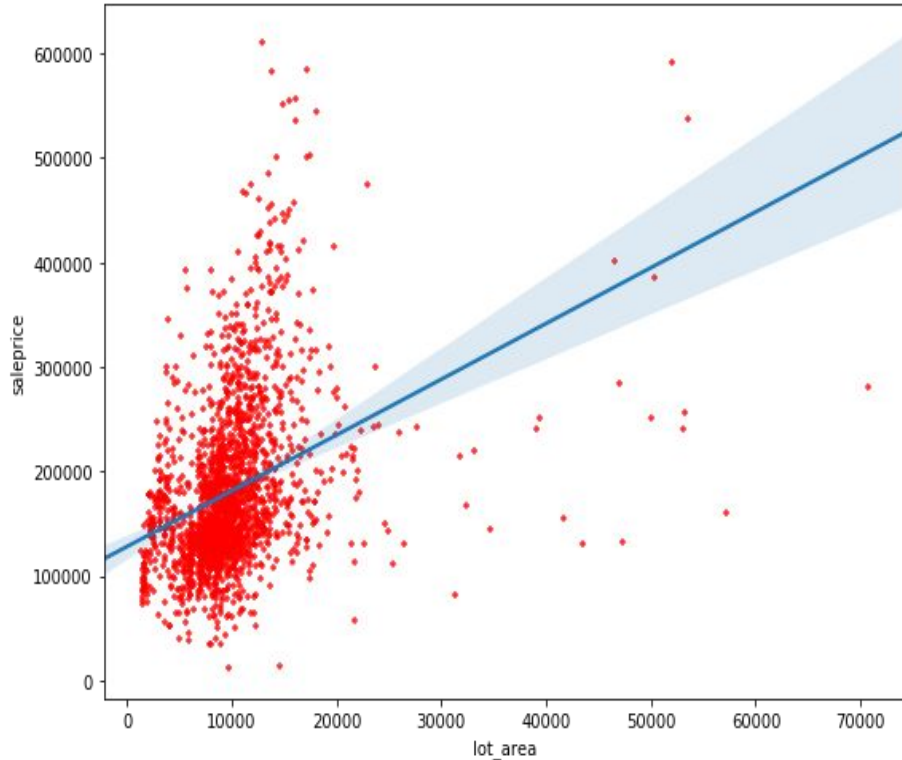
- Neighborhoods seem to split themselves into three major distributions
- Clear evidence that some neighborhoods tend to have higher median home prices

A Deeper Dive into Neighborhoods



- Splitting neighborhoods into the three distinct distributions confirms our suspicion that location appears to directly correlate to increased median home price

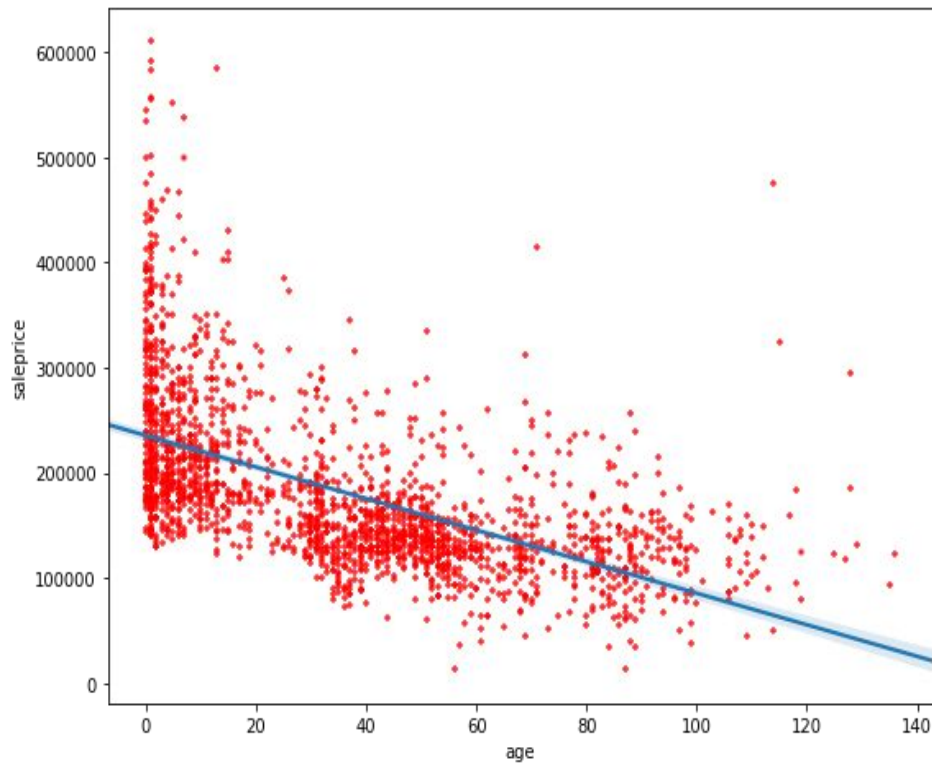
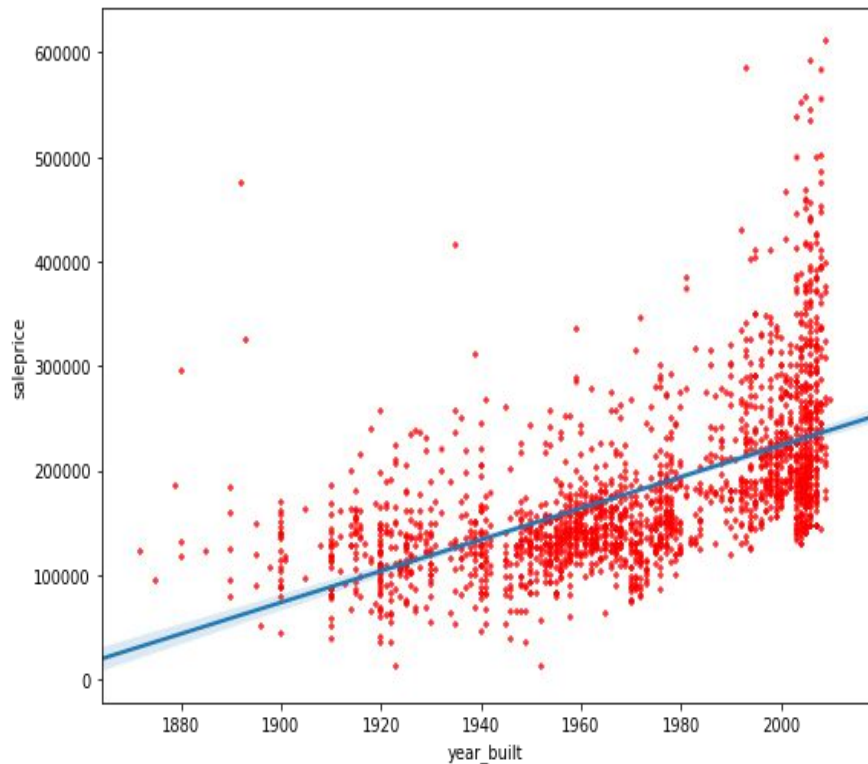
Lot Area and Total Building SF



The Three Most Important Things in Real Estate



Let's Look at the Negatives...



Conclusions / Recommendations

- The best neighborhoods to invest in are our rank 3 neighborhoods:
 - Green Hills, Northridge, Northridge Heights, Stone Brook, Veenker
- The features with greatest positive impact on housing prices are:
 - Location, Square Footage, Overall Quality and Feature Quality
- The single feature with the greatest negative impact on housing price is Age
- A majority of “Quality” features are those that can be renovated
 - Spend money to make money
- While this model may apply to other areas of the country, we’ll need to adjust for overall housing prices



Questions?
