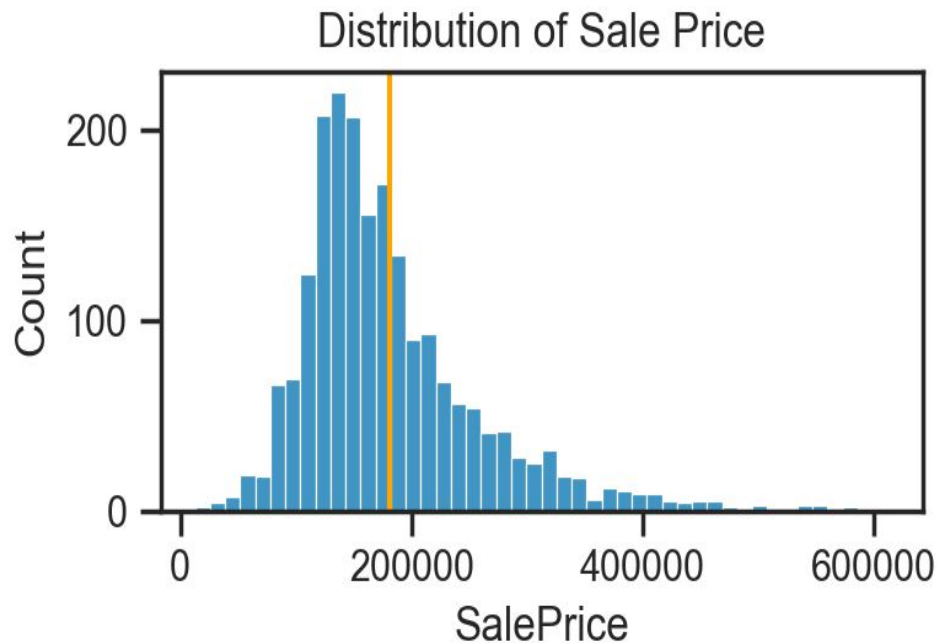# Ames Housing Market Project

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Problem Statement

I wanted to find out if there was a secret feature that would allow you to instantly add value to the **sale price** of your home.

Distribution of Sale Price

Methodology

- I used a **linear regression** model to predict the sale price of houses in our data set
- The dataset had 2051 house sale entries from *2006* to *2010*
  - Recession?
- To determine what values would have meaning I used pearson scores to help us pick the features that we considered the best candidates
- Our data set had a lot of features, to simplify I created a feature called curb appeal which serves a running total of positive features a property may have
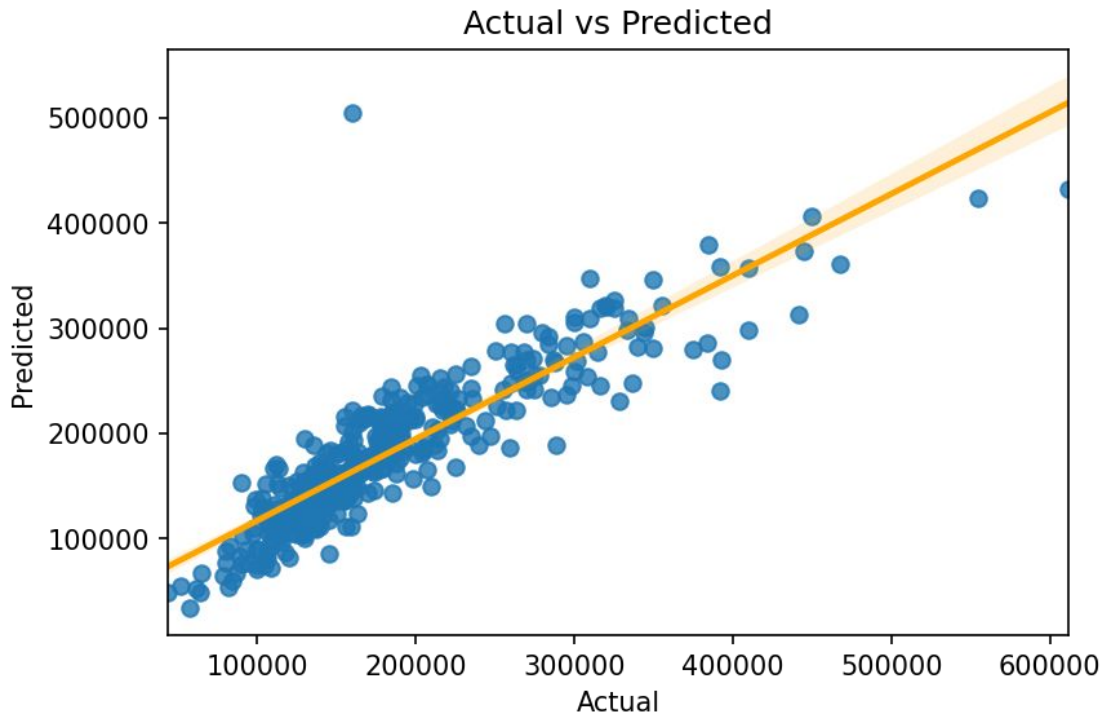

Housing Prices over Time

Linear Model

Our model was able to account for 78% of the movement of sale price on our testing data

Some of the most significant predictors were: overall quality, curb appeal, total basement sqft, and total rooms above ground

Our biggest outlier was a house with 10 overall quality, and 12 rooms above ground

Actual vs Predicted

Insights

Our model ultimately showed that the best predictors from our data set were features related **quality**, and **size** of the house

In fact the model ascribes $21,300 per point of overall quality, something you can change! Kitchen quality as gave $11,039 extra value per point.

Be warned! This does not mean it is actually adding $200k value for having 10 overall quality, just that the model is attributing that much of the sale price to the overall quality.
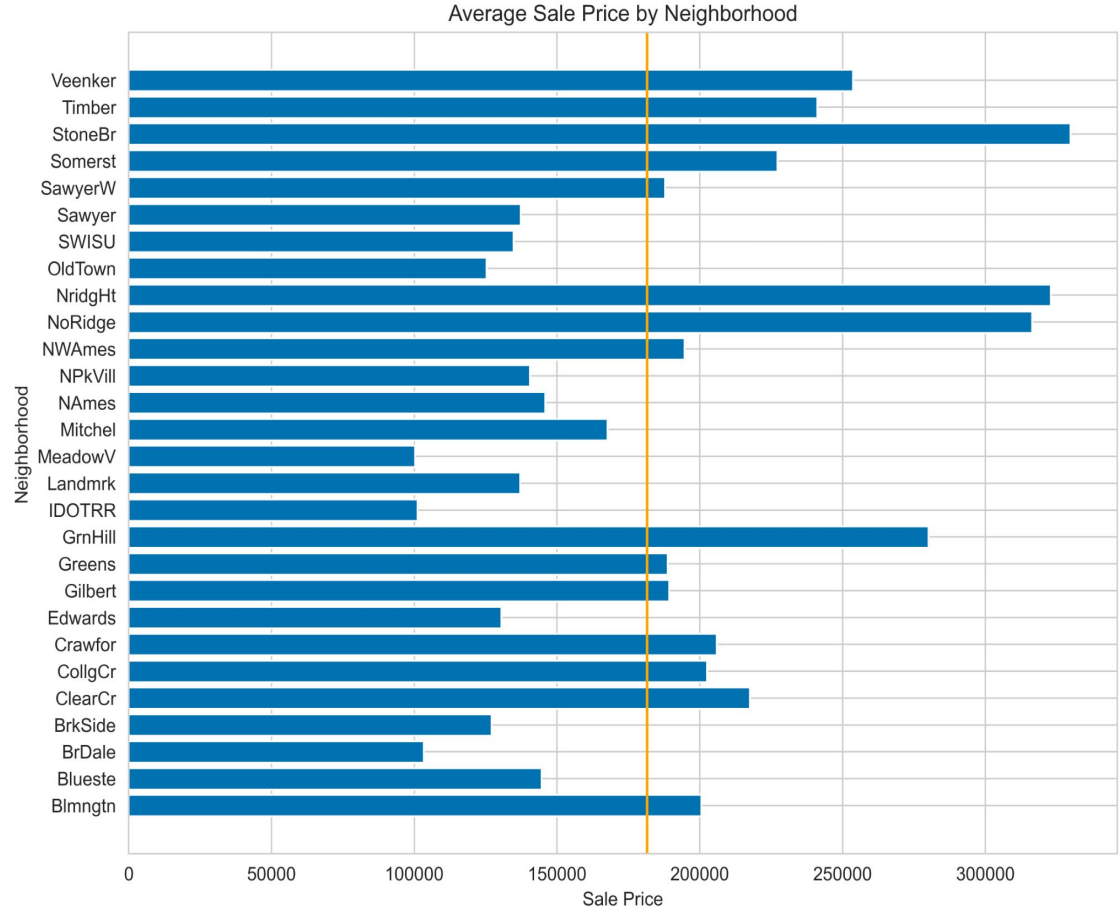

Sale Price to Overall Quality

Insights

One thing that really stood out is the lack of a strong negative correlation between sale price and a the features

Going forward, I think a big piece of what is missing is meaningful location information. The next iteration of this project I would dive a lot deeper into the neighborhoods to see what may be affecting housing prices

Ultimately the only location variable in my model was a comparison as to whether the district was in Bloomington Heights, or North Ridge Heights

Average Sale Price by Neighborhood

So what's the secret?

Overall quality, the upkeep, does impact sale price, in fact all the variables related to quality do.

Questions?