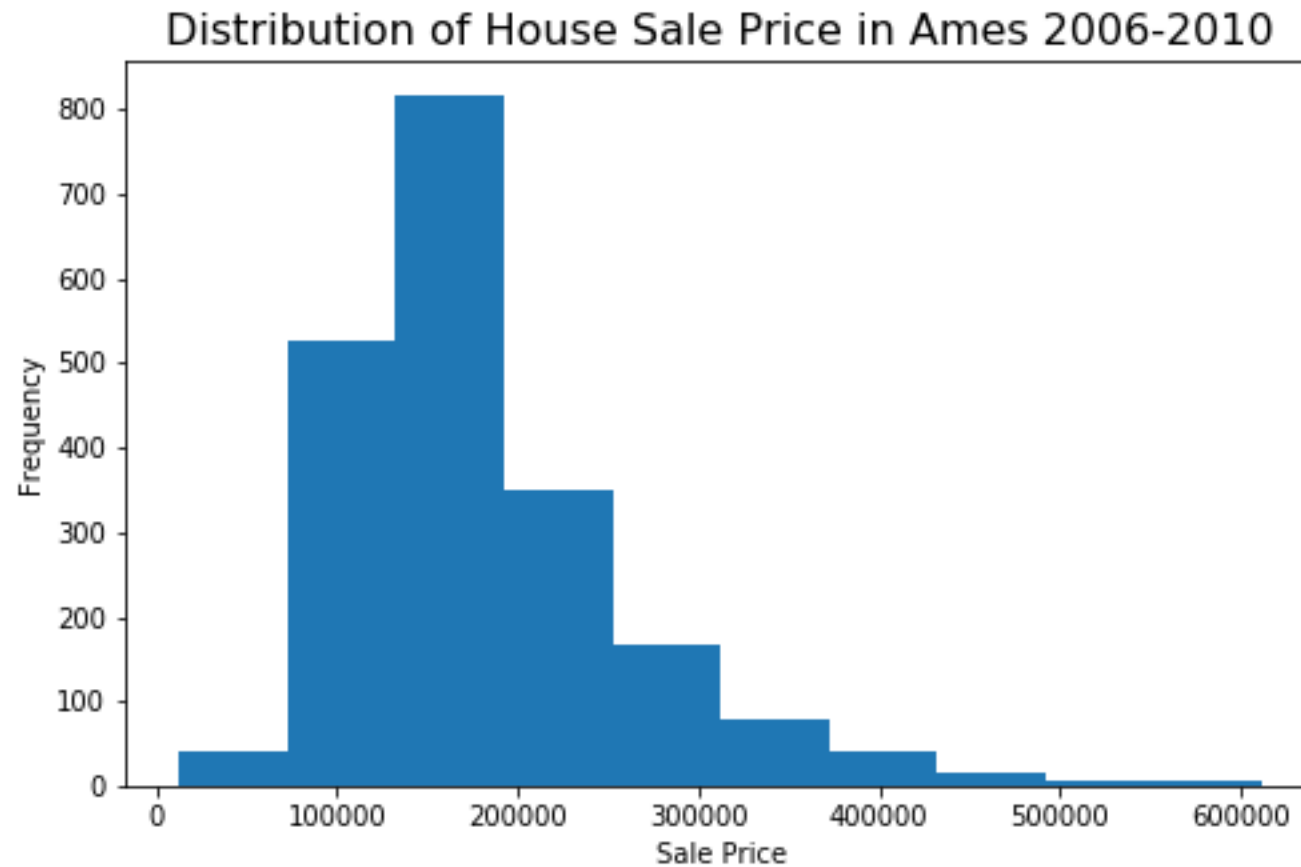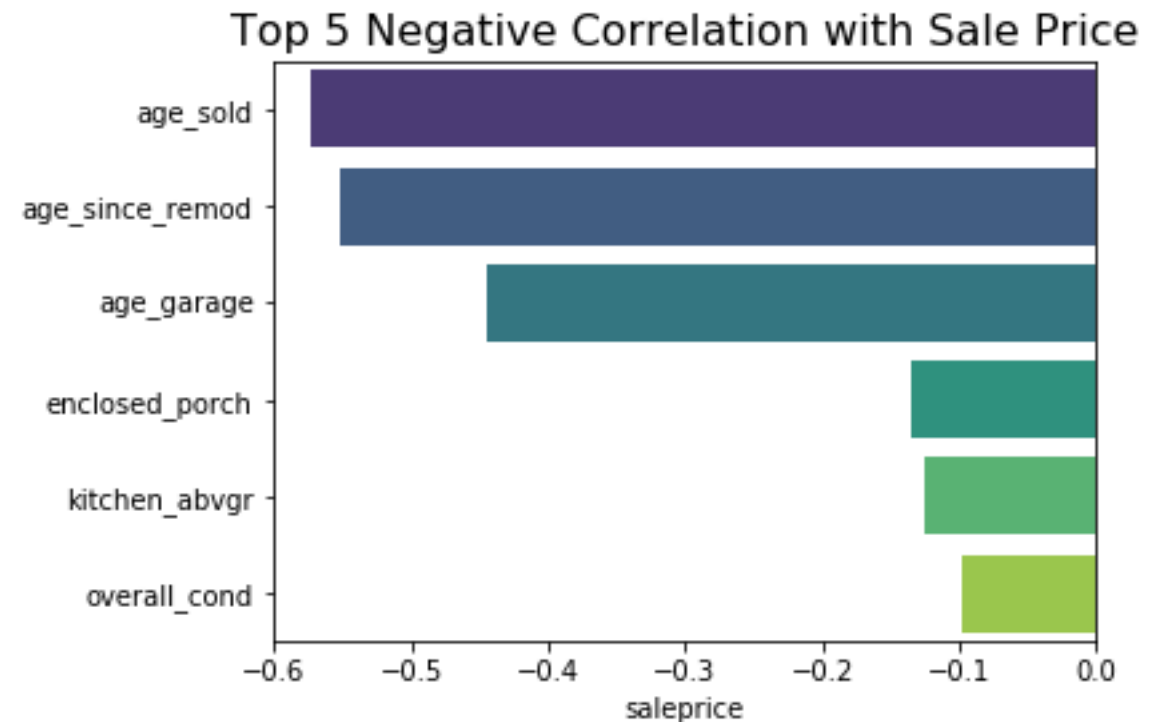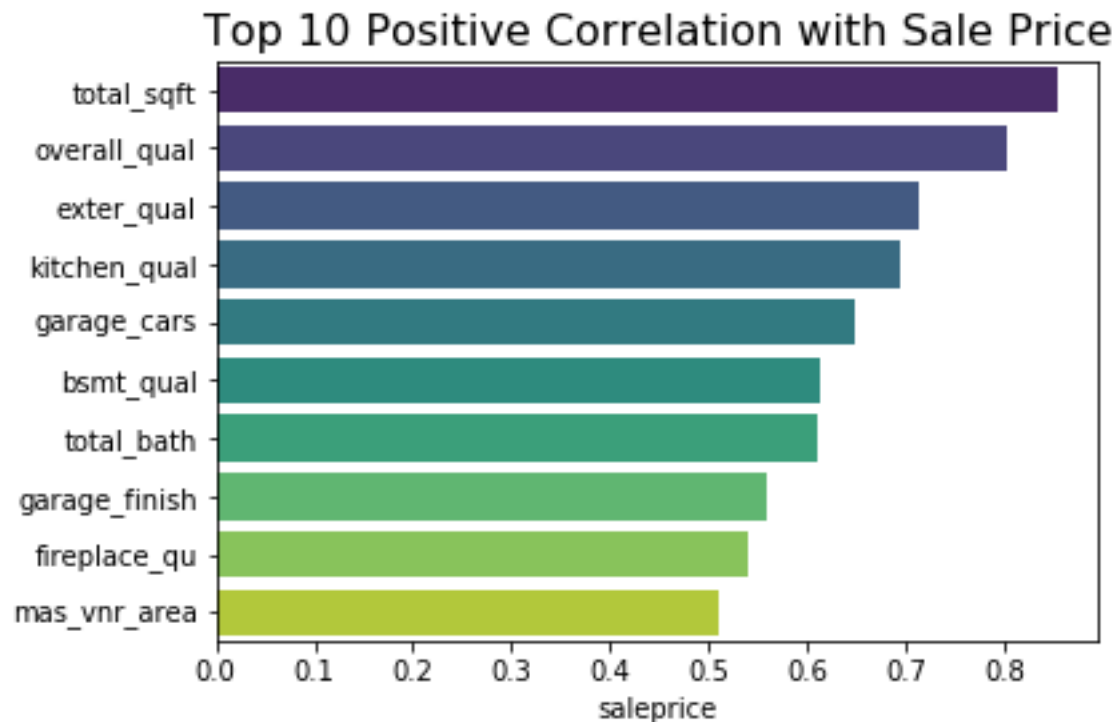# Ames House Price Prediction

Cloudy Liu

Buying a home is STRESSFUL

- Help first-time home buyers to narrow down features
- Help predict the house price
- Help identify the features significantly impact the sale price

How Does the Distribution of Sale Price Look Like?
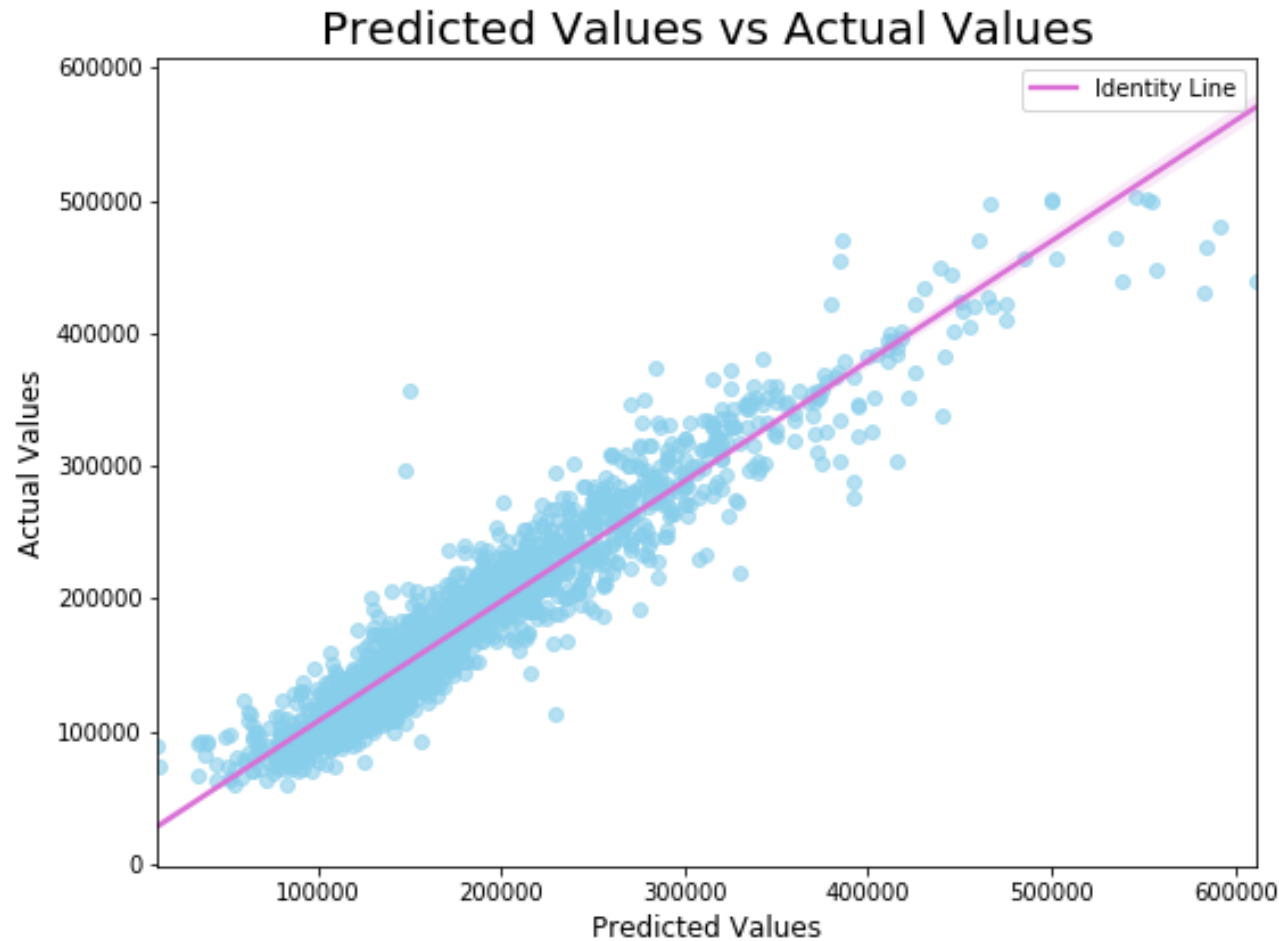

Distribution of House Sale Price in Ames 2006-2010

Feature Selections & Modeling

Top 10 Positive Correlation with Sale Price

Top 5 Negative Correlation with Sale Price

SF-related, Quality-related, age-related, Location

How Well Does The Model Fit?

Predicted Values vs Actual Values

- R^2: 91%
- RMSE: 22,274
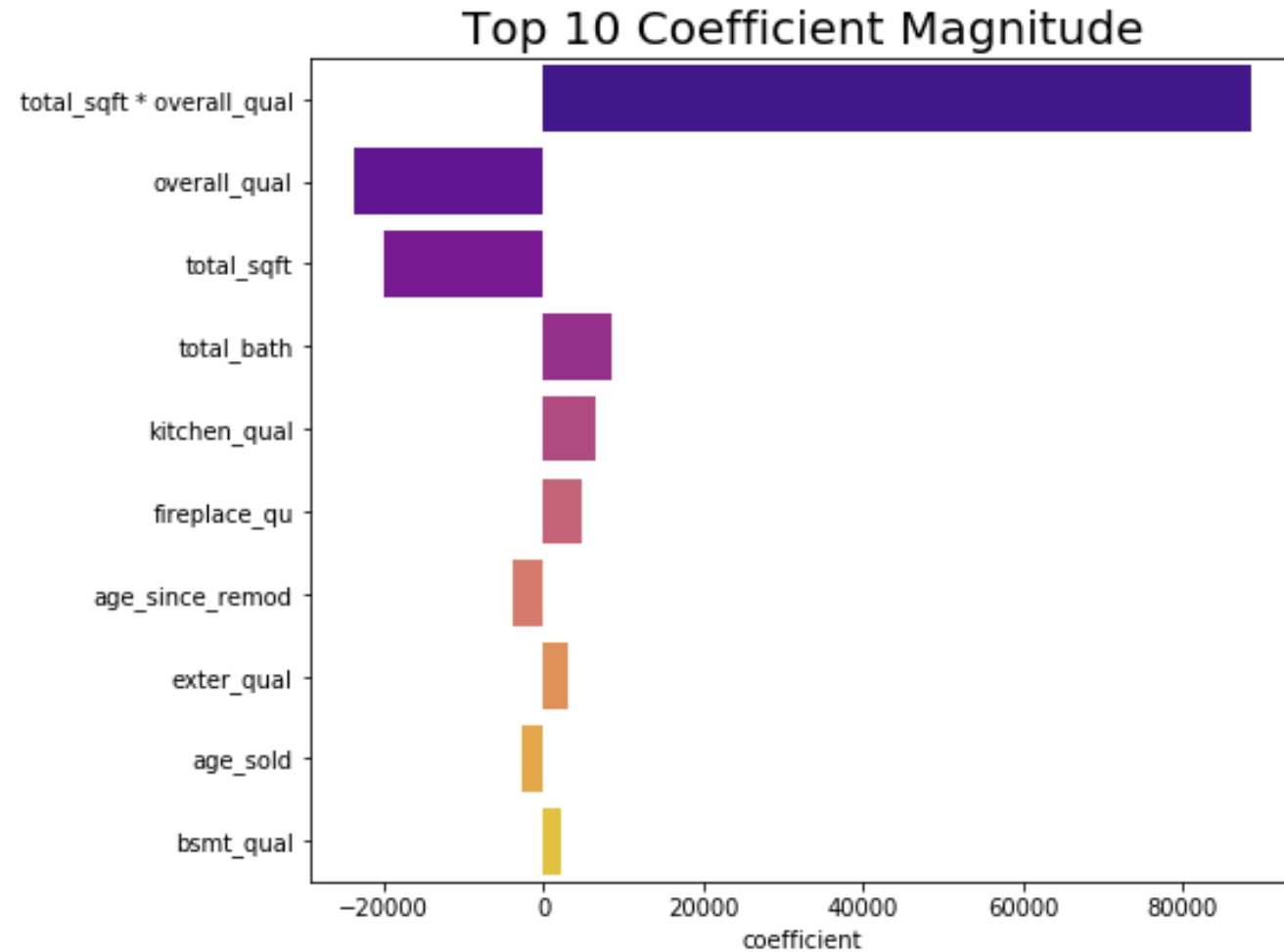
- Baseline Model: 83,323

How Much Does It Cost?

- Newly-wedded couple
- 2500-3000 sqft
- 2 baths
- 3 bedrooms
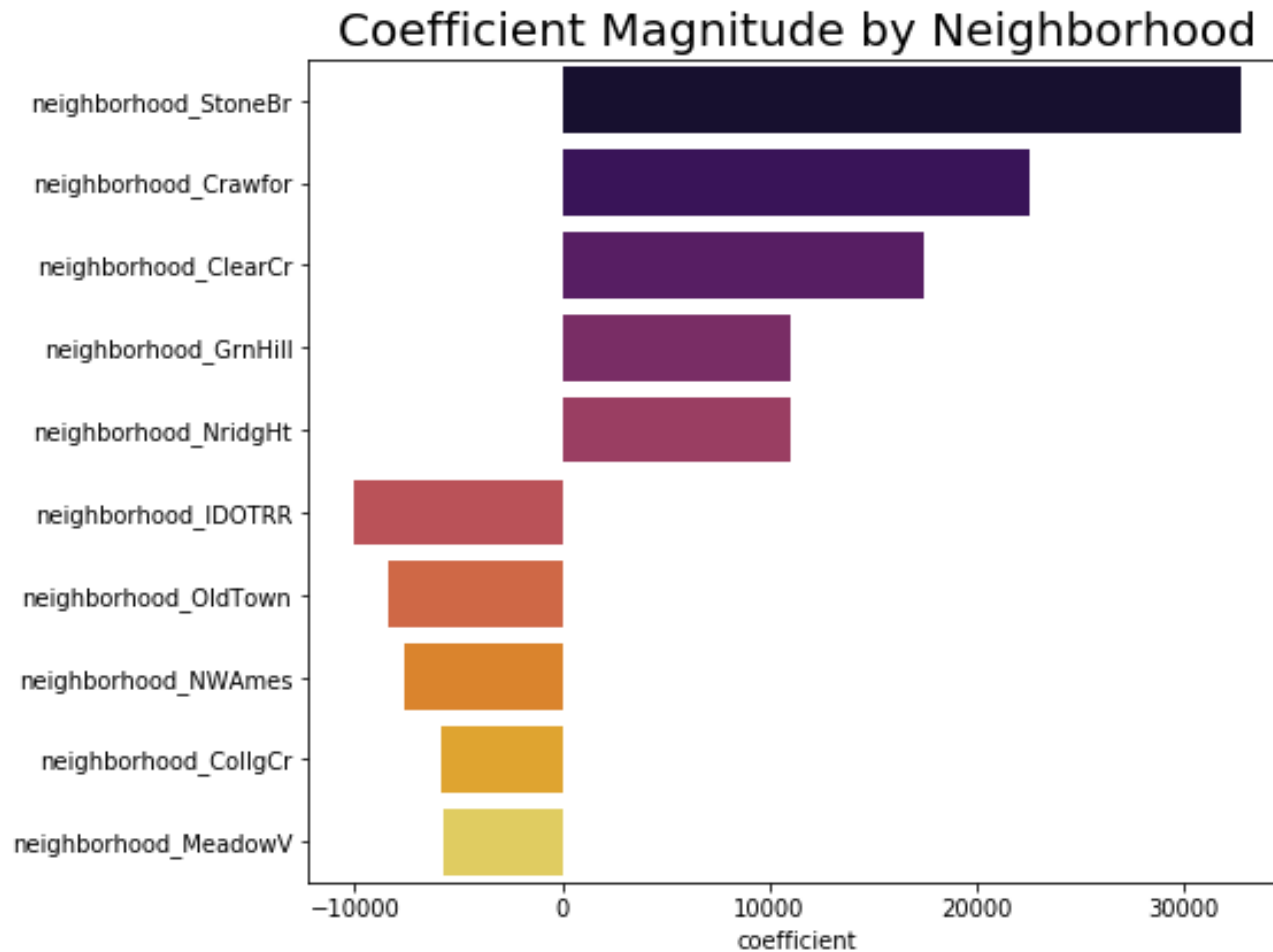- A nice kitchen
- Fair overall quality

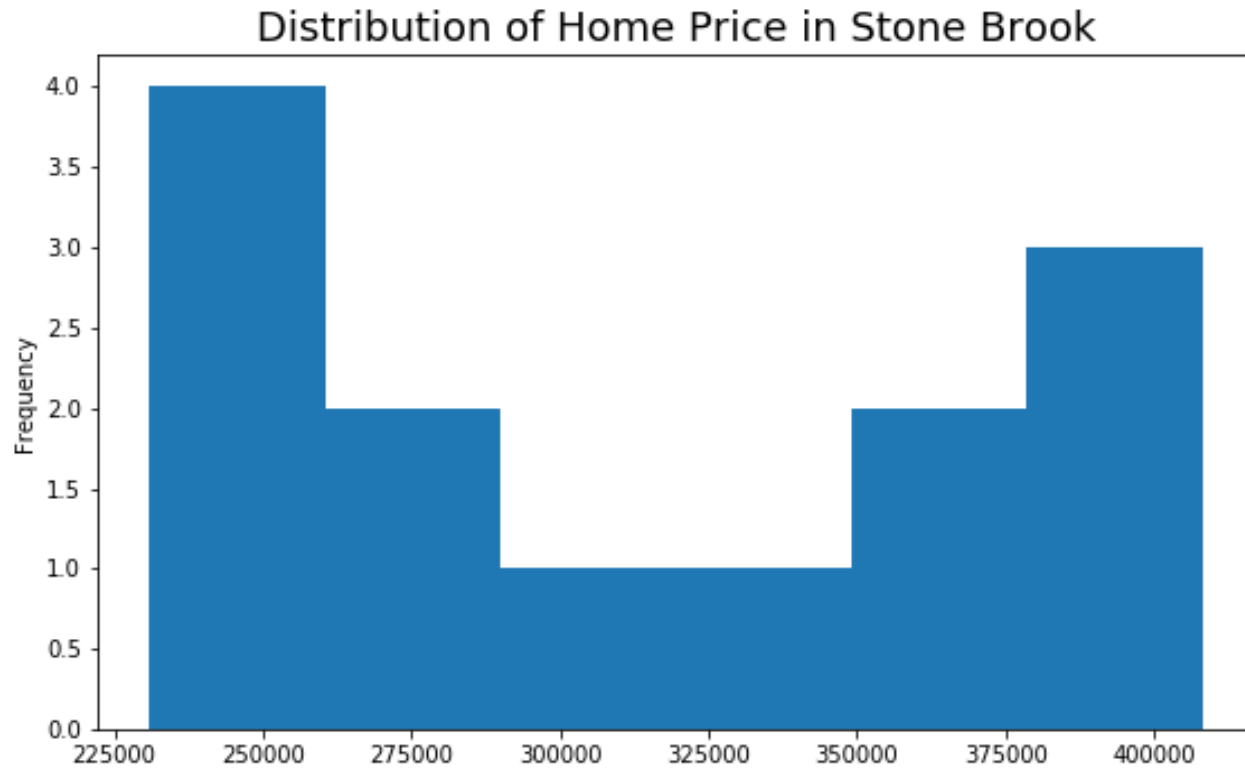$144,526

|

$197,682

Most Impactful Features

Top 10 Coefficient Magnitude

Most Desirable Neighborhood

Can they find a house within their budget in Stone Brook?

Distribution of Home Price in Stone Brook

$180,000?

Very likely

NO

Thoughts & Suggestions

- Should consider a combined force of total square footage & overall quality

- Houses with unusually large square footage might have smaller margin

- Stone Brook, Crawford, Clear Creek, Green Hill, and Northridge Heights are the most desirable/ expensive neighborhoods

- Iowa DOT and Rail Road, Old Town, Northwest Ames, College Creek, and Meadow Village are the most affordable neighborhoods

Limitations

- Hard to interpret the exact impact with lasso model
- Still too many features, need a simpler yet still well-fit model
- Some data might not be statistically significant (neighborhood subsets)
- Datasets contain non-residential info which may affect the performance of the model