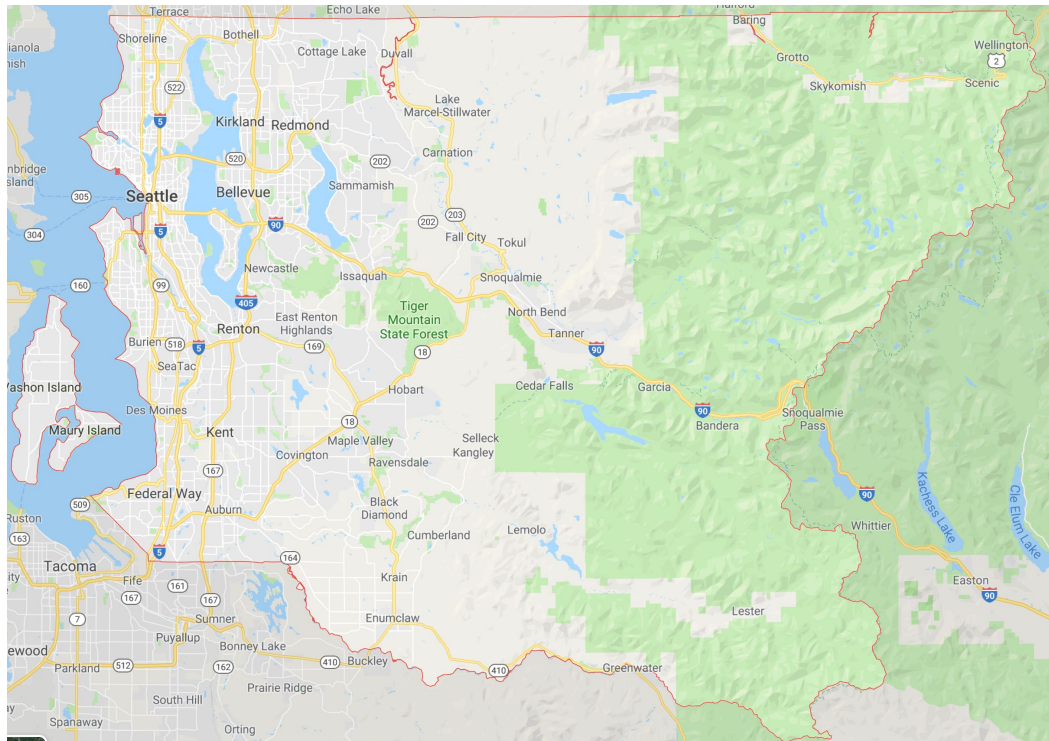# Housing Sale Prices in King County, WA

Project 1

By: Isabella Lindgren

Overview of our Data

- Homes sold from May 2014 - May 2015

- Over 21,000 houses

- In preprocessing:
  - Duplicates were removed
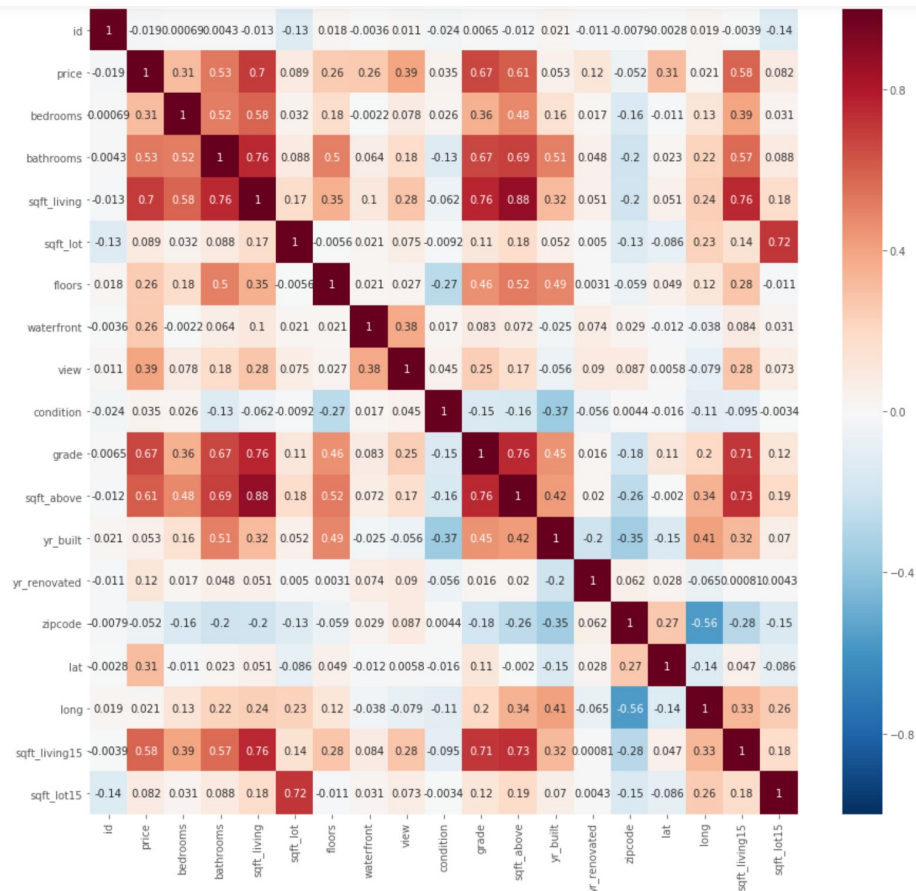 - Column median used to estimate the missing values

Objective

What housing features are the best predictors of house price in the King County, WA area?

Methods

- Excluded highly correlated variables
- Normalized continuous and target variables
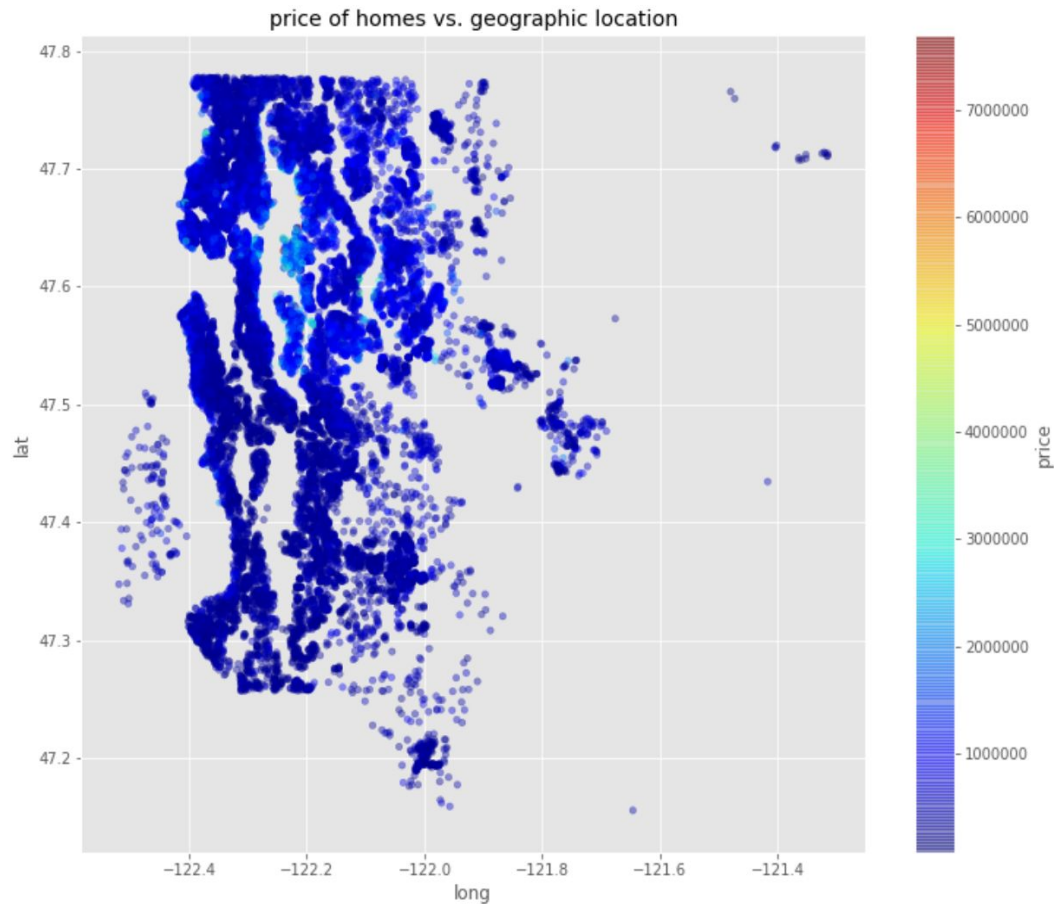- Scaled continuous data

Methods

- Multiple Linear Regression

- Stepwise Selection

- R-Squared value of 0.713/ Adj. R-Squared value of 0.712

- Split the data into train/test
    - Consistent results

Results

- Price increases with Latitude
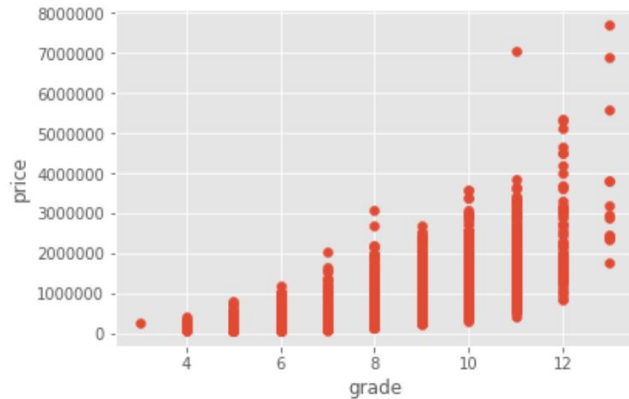- Due to proximity to Seattle

	coef	std err	t	P>|t|
lat	5.85e+05	1.06e+04	55.407	0.000

price of homes vs. geographic location

Results

- Grade is a strong predictor of house price
- Standardized index

	coef	std err	t	P>|t|
grade_7	4.853e+04	5363.310	9.048	0.000

Results

- Number of bathrooms
- May be due to the added square footage

	coef	std err	t	P>|t|
bathrooms	3.383e+05	1.55e+04	21.791	0.000

Results

- Waterfront View
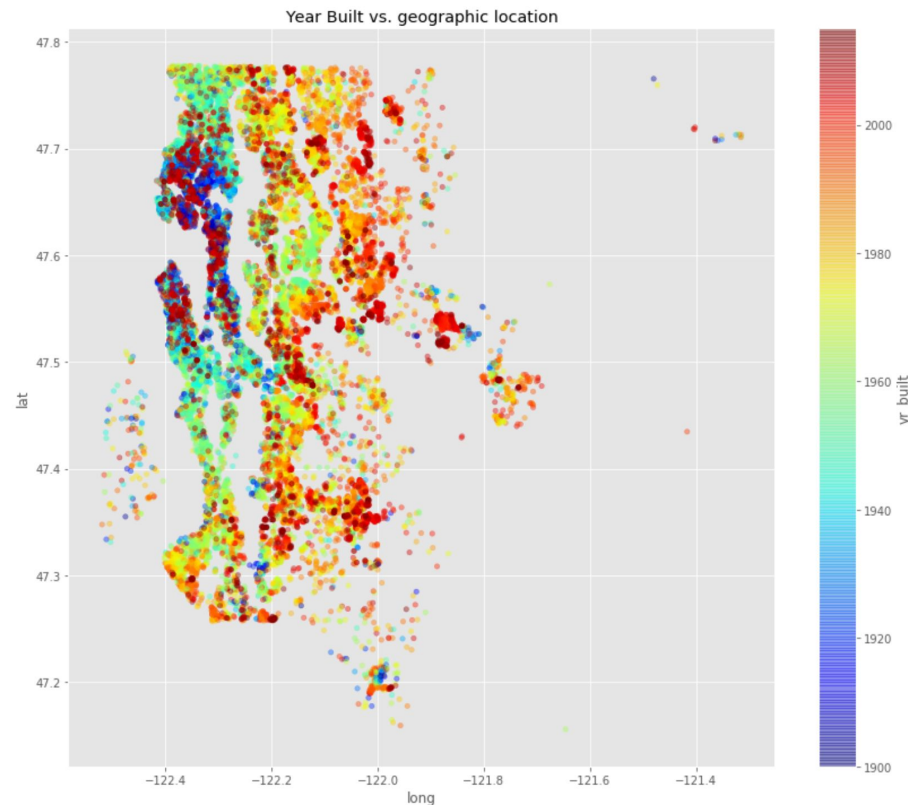- Very few waterfront properties in dataset, but had significant impact on housing price

	coef	std err	t	P>|t|
waterfront_1.0	5.764e+05	2.01e+04	28.682	0.000

Results

- Newer homes had neg relationship with price
  - Location

	coef	std err	t	P>|t|
yr_built_(1900, 1910]	4.569e+04	1.08e+04	4.222	0.000
yr_built_(2000, 2010]	-1.429e+05	9840.911	-14.518	0.000

Year Built vs. geographic location

Recommendations

Latitude

Bathrooms

Grade

Year Built

Waterfront

So What Next?

- Combine current data set with more recent data from 2015-now
  - Increase accuracy
  - Monitor trends
- More complex model to better fit the large amount of independent variables

Thank you!