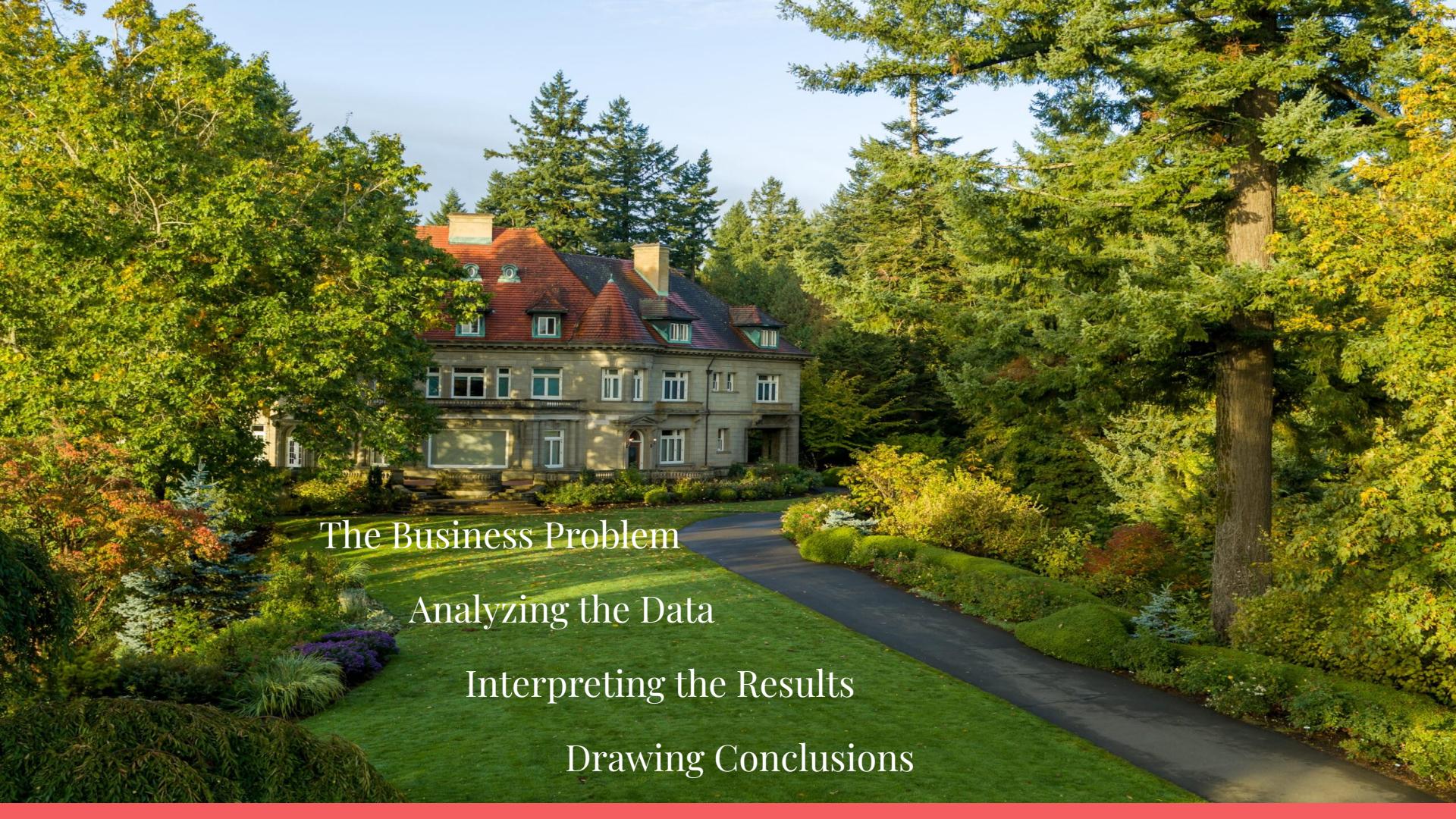


Housing Analysis in King County

By: John Harrigan

The background of the slide features a large, multi-story house with a red-tiled roof and light-colored stone walls, nestled among tall evergreen trees and colorful autumn foliage. A paved walkway leads towards the house from the bottom right corner of the frame.

The Business Problem
Analyzing the Data
Interpreting the Results
Drawing Conclusions

The Business Problem

If you are in the Business of flipping houses (buying low then renovating, then selling high) you need a few key pieces of information:

1. What kinds of houses to flip
2. Where those houses are
3. What parts of the house to renovate

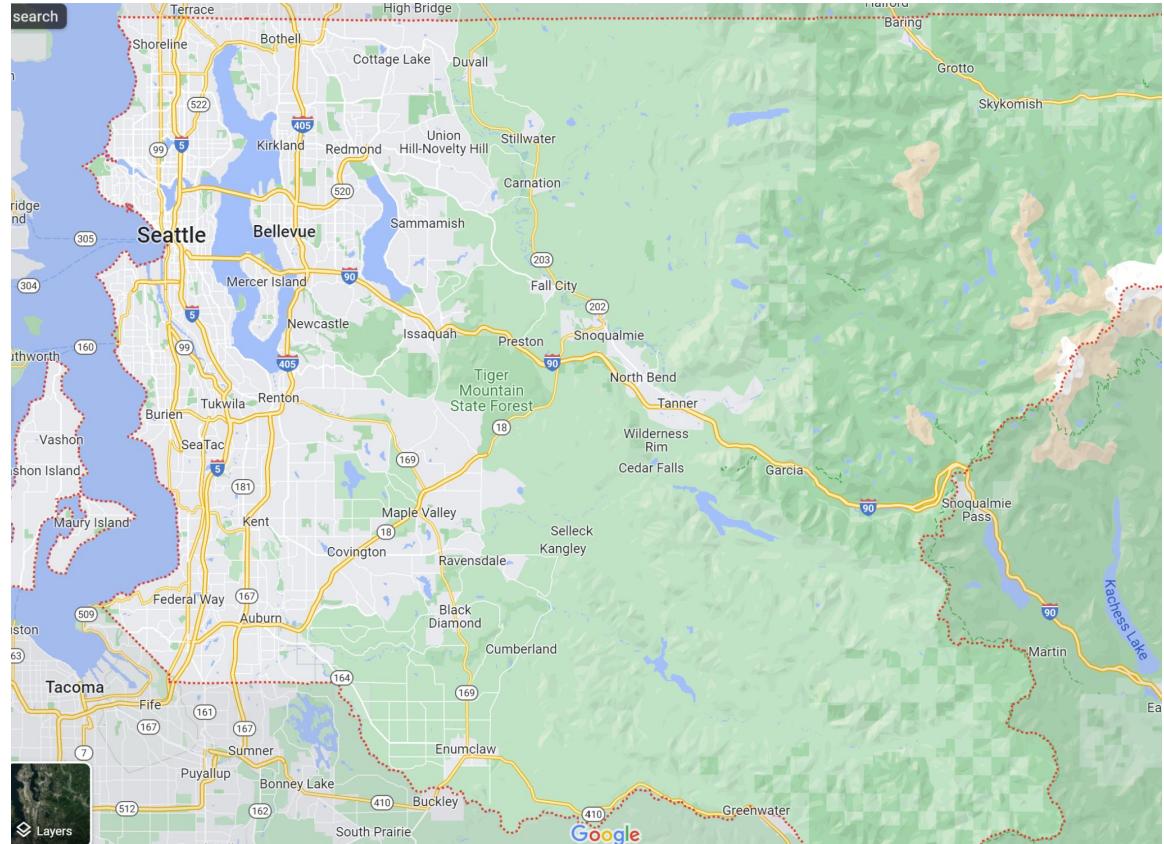


The Data

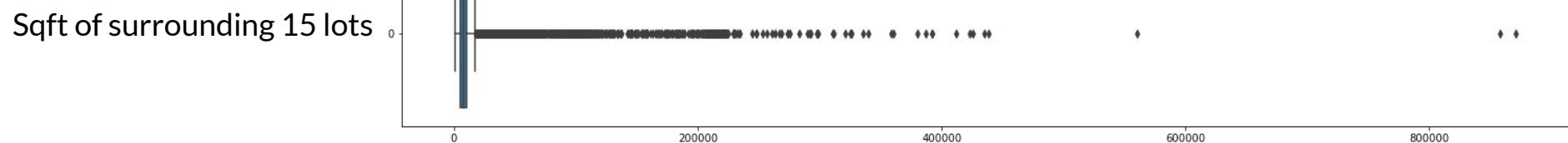
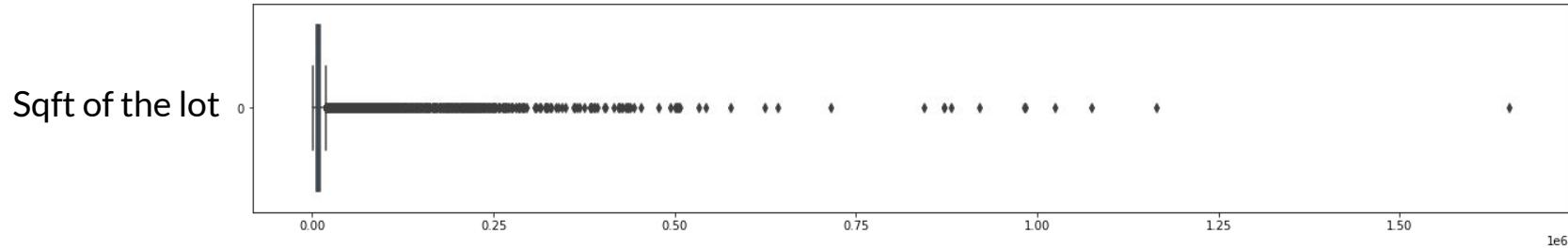
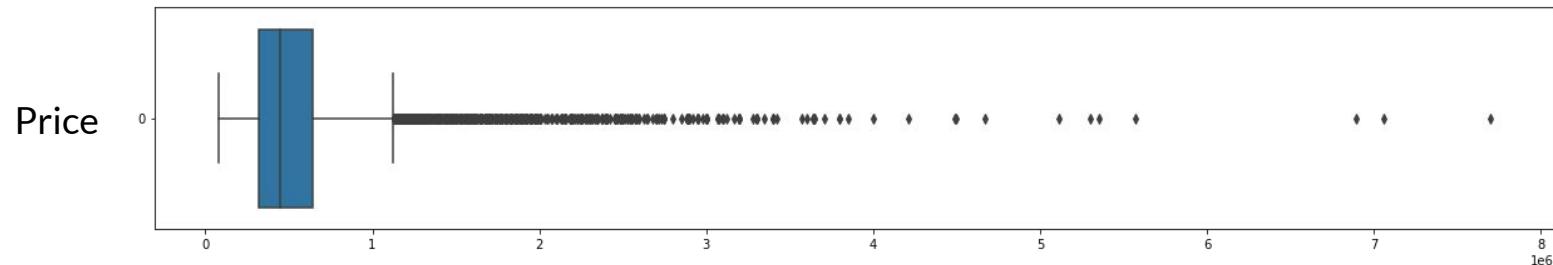
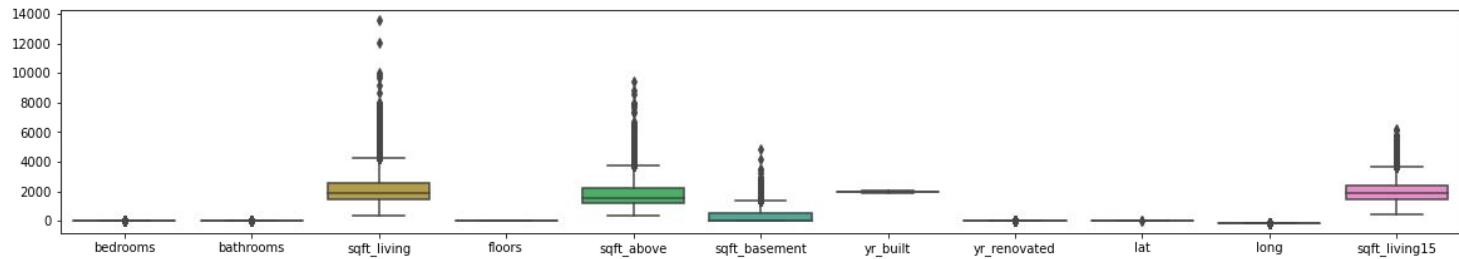
I acquired Data on over 20,000 homes in Washington's King County from Kaggle

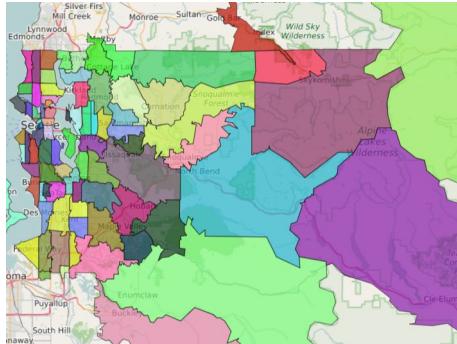
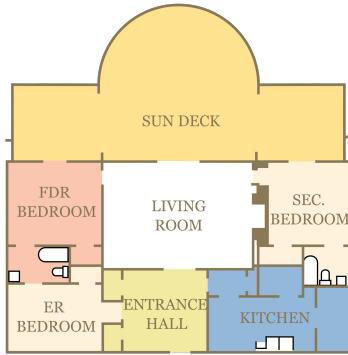
This Data Included:

- The house's market price
- The number of bedrooms,
- Number of bathrooms
- Sqft of the house
- Total sqft of the property
- Number of floors
- Whether or not it had a view
- If it was close to the water
- The year it was built
- The year it was renovated
- The condition of the house
- The house's zip code
- It's coordinates
- And the average sqft of the closest 15 houses



Outliers

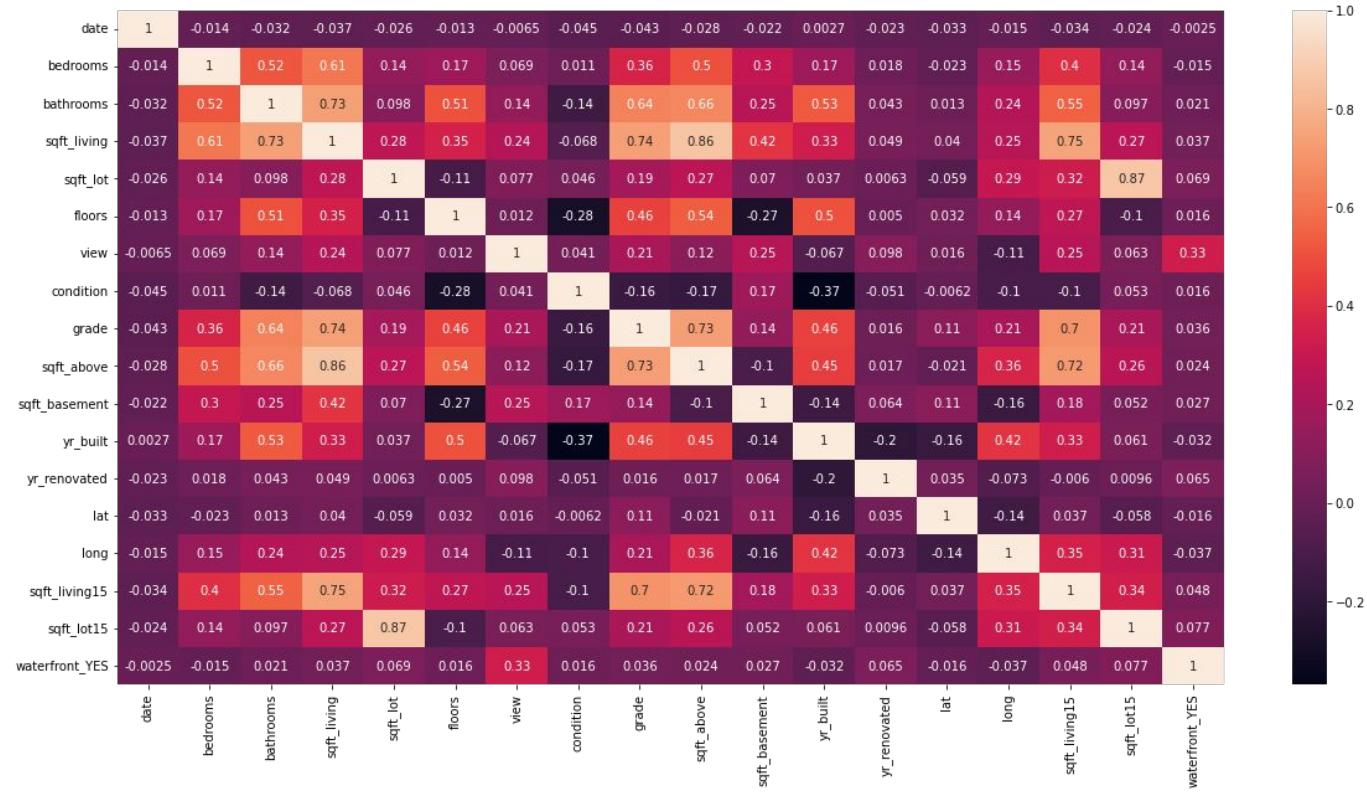




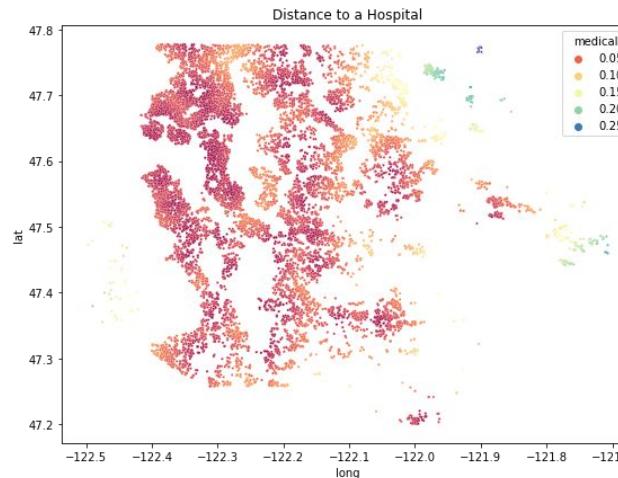
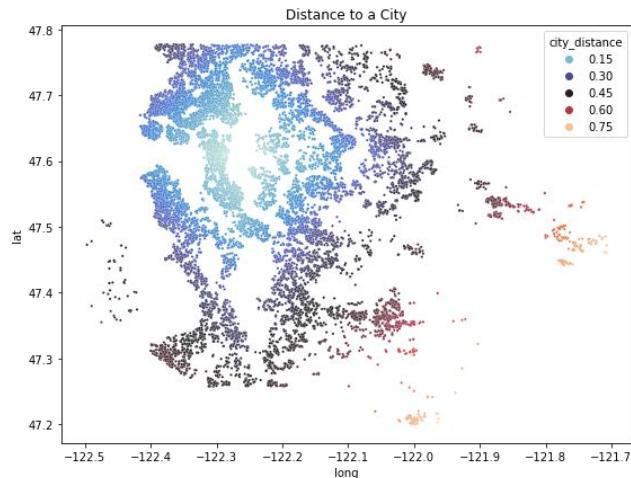
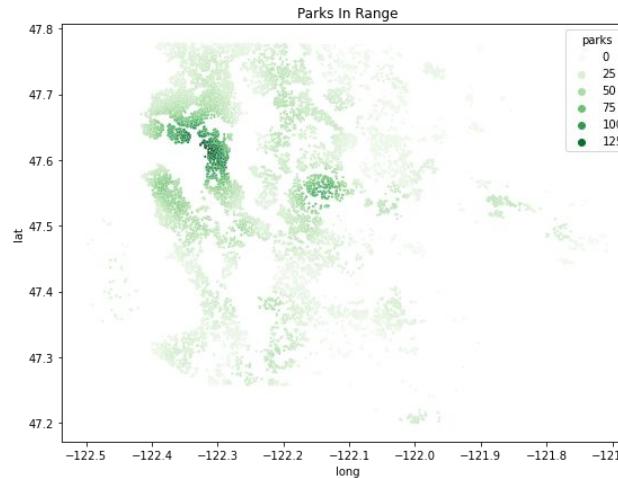
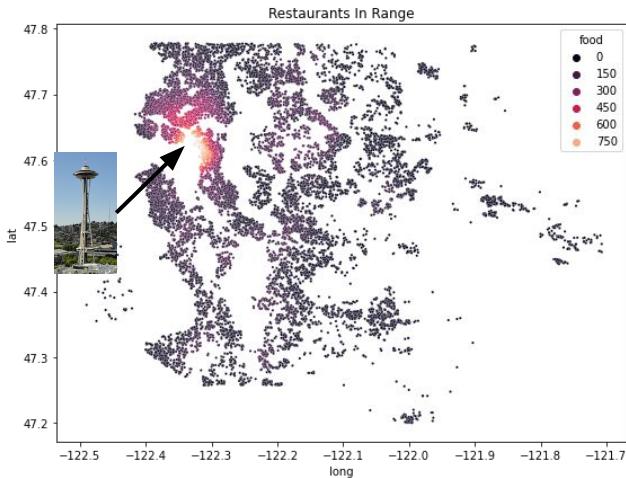
First Model



Tweaking the Formula



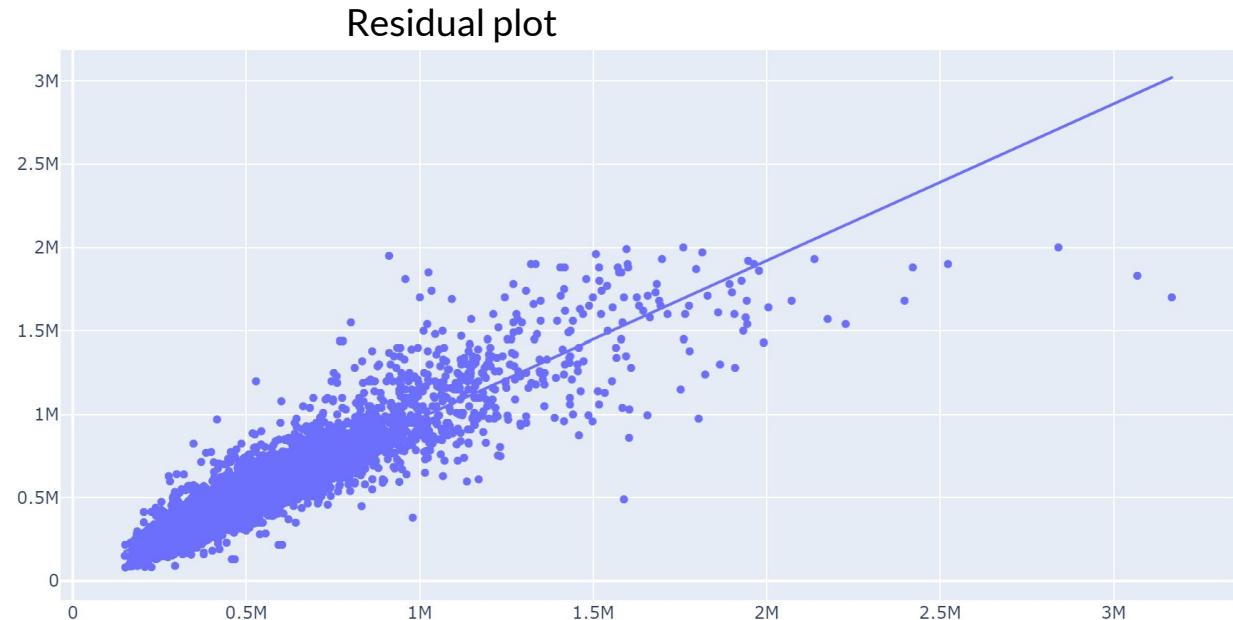
Additional Data



In addition to the basic data, I also got location data for parks, hospitals, restaurants, and major cities in King County from the same Open Data source.

Third Model

- MAE = 655592.88
- RMSE = 103253.49
- R squared = 0.876



Targeting homes between \$300,000 and \$1.2 million

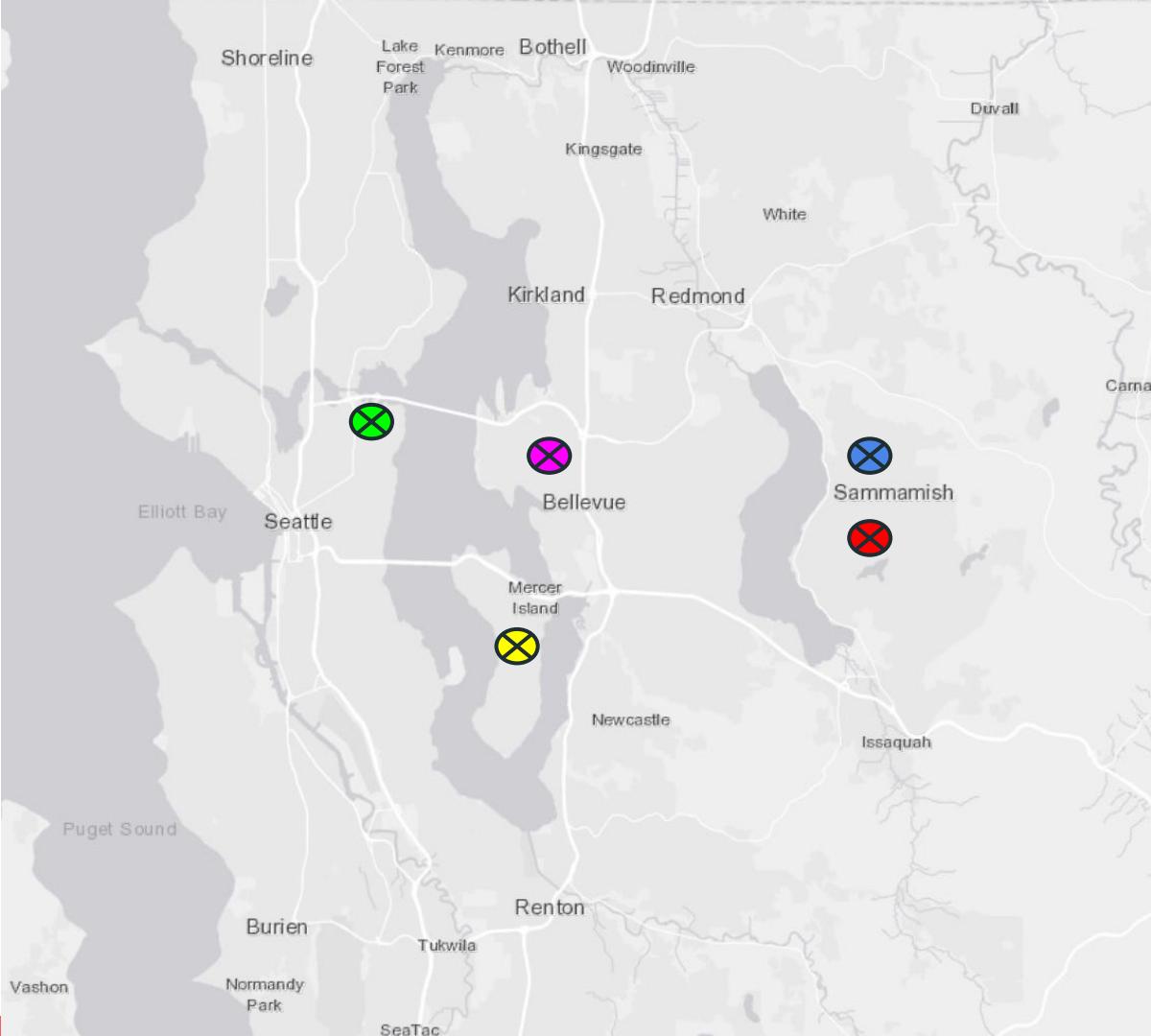
Results

Zip codes:

1. 98040 =
2. 98075=
3. 98074=
4. 98112 =
5. 98004 =

Underrated market value Range:

98040 = \$3,054,839 under valued
98004 = \$2174186.16 under valued



Results

Location:

Good view = +\$46,581.3

+5 miles away from city = -\$607,728.21

On the water = +\$393,729.19

Renovation:

+1 ft² in the house = +\$122.83

+1 overall grade level = +\$57,741.61

+1 overall condition of house = +\$21,928.5

+1 bathroom = +\$15,052.8

I would purchase a home in the range of \$300,00 - 1,200,000 and invest \$50,000 - \$150,000 in renovation.

Conclusions

1. Location is the most important factor to consider when valuing a house in King County
2. The Closer you are to Seattle and Bellevue the more your house is worth
3. Being on the waterfront or having some other sort of view can drastically increase your value
4. People value the sqft of the house much more the sqft of the land belonging to the house (bigger house and smaller yards)

Final Conclusion:

Looking for beach house in one of the zipcodes: 98040, 98075, 98074, 98112, 98004, at price range of 300,000 - 1.2 million, with room to increase the sqft of the house, and as close to one of the big cities as possible.

Going forward

Next Steps:

- Get a more updated database of homes (not just from 2014-2015)
- Do an analysis of more recent housing market data to try and quantify the effect that COVID has had on the market
- Compare the results from this county to another county with similar characteristics (near the water, contains a major city, etc.)
- Try to incorporate proximity to schools into the data set
- Try to incorporate access to public transportation (highways, busses, trains, airport)

Thank You!

Email: ooharrigan@gmail.com

Github: <https://github.com/jlharrigan/Housing-Analysis>

linkedIn: www.linkedin.com/in/john-harrigan-094761225