

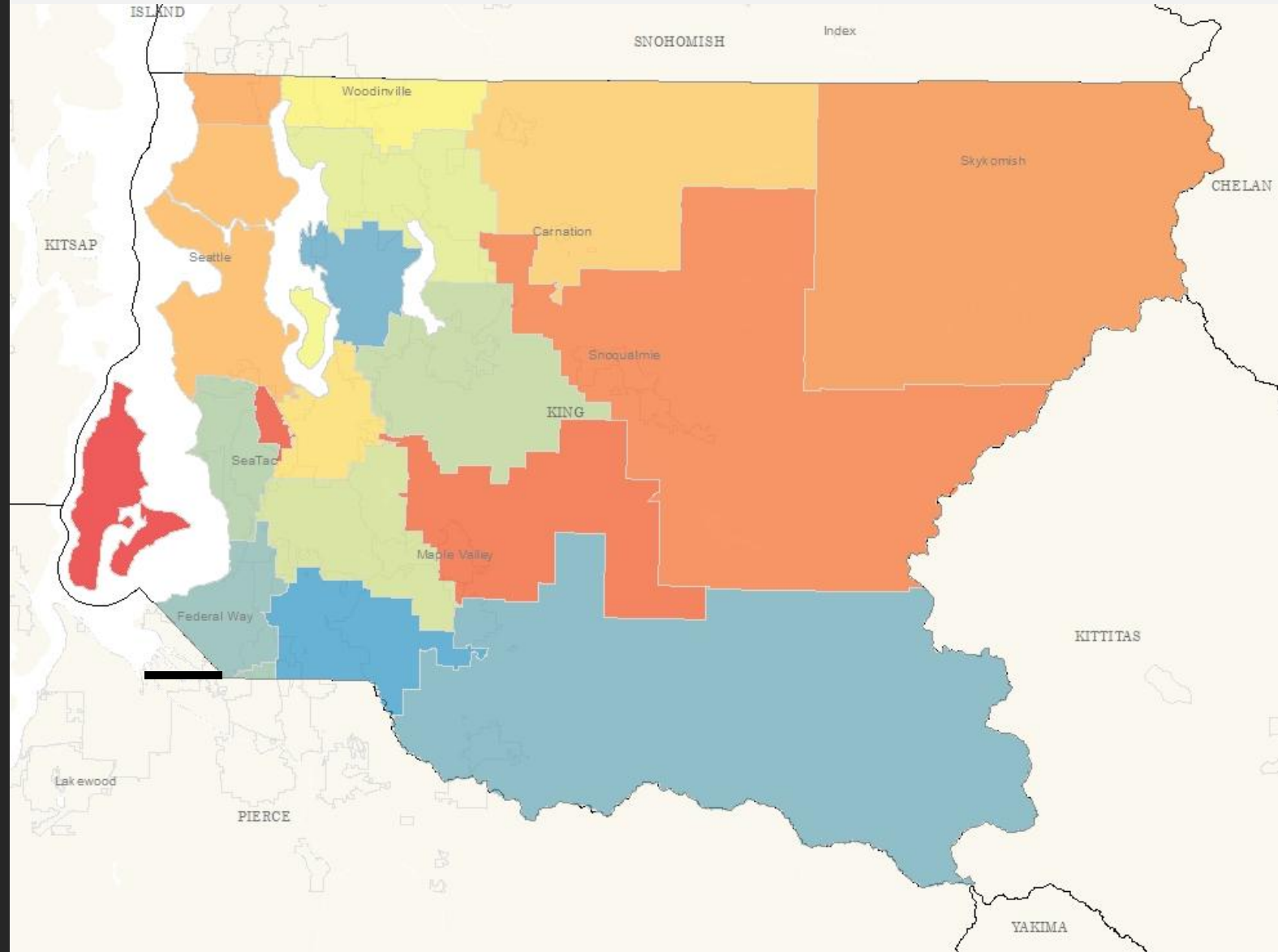


# Regression Analysis on Homes in King County

Author: Anastasiia Leskiv

## Project overview

A client wants to buy single family home. I observed properties of King County for various home features and analyzed it. Build a predictive regression model to predict the price of a home.



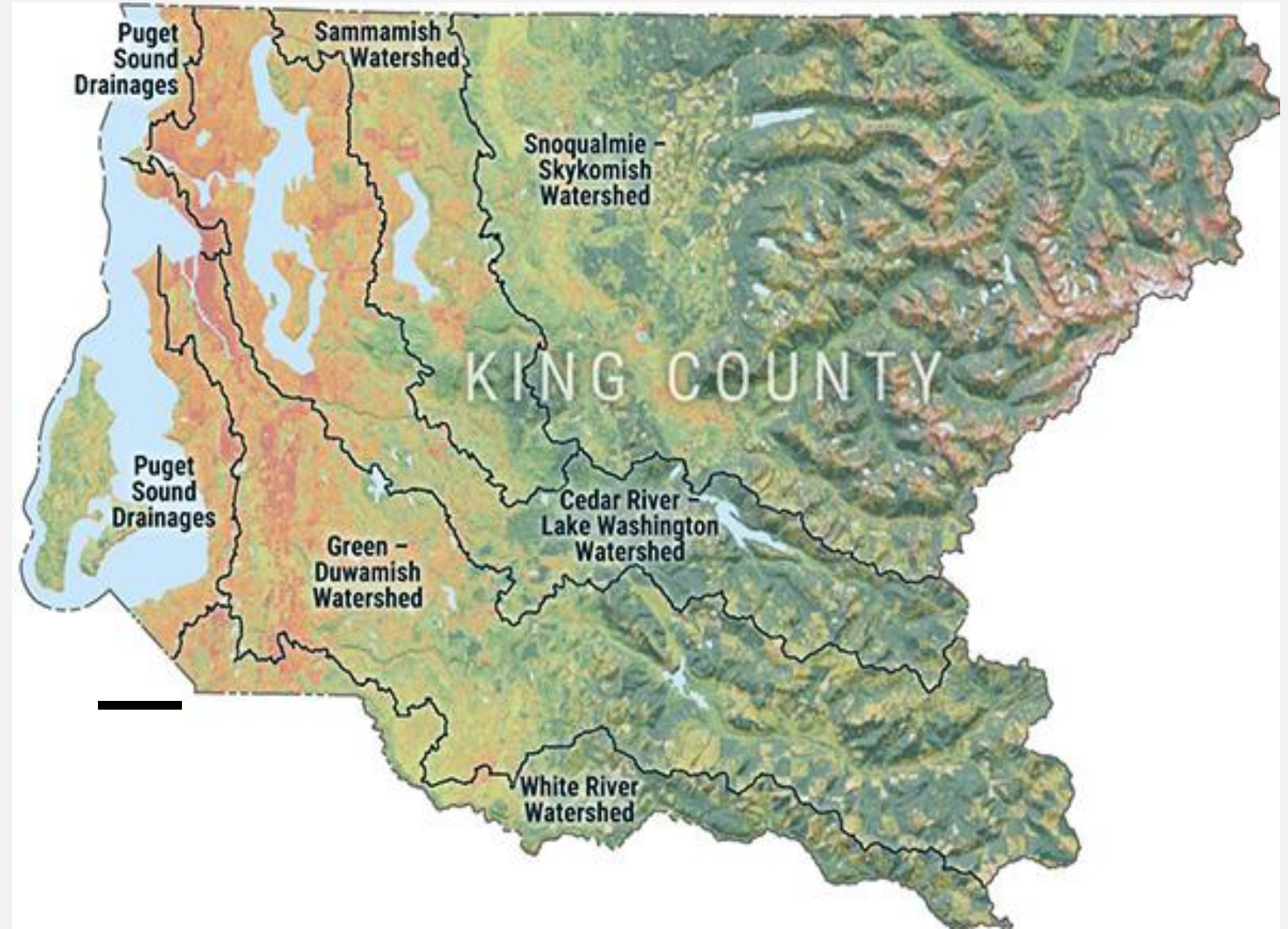
## Business and Data Understanding

For the best prediction I used

- Data collecting
- Data cleaning
- Modeling
- Exploratory data analysis
- Visualization

For my client I checked

- The chipset house
- The most expensive
- How the footage of the home (sqft\_living) affect the price?
- What features effect price



# Tools

- CSV
- Pandas
- Numpy
- Matplotlib
- Seaborn
- Statsmodel
- SciPy Stats
- LinearRegression
- Lasso Regration

# Data

Home Features I used for this project

- Price of each home sold
- Number of bedrooms
- Number of bathrooms
- Square footage of the interior living space
- Waterfront
- Greenbelt
- Condition
- Heat source
- Sanitary sewer
- Year Build
- The year of the house's last renovation
- Address
- Latitude
- Longitude



The most expensive

---





The cheapest



The cheapest houses  
for  
3 bedrooms 2 bathrooms

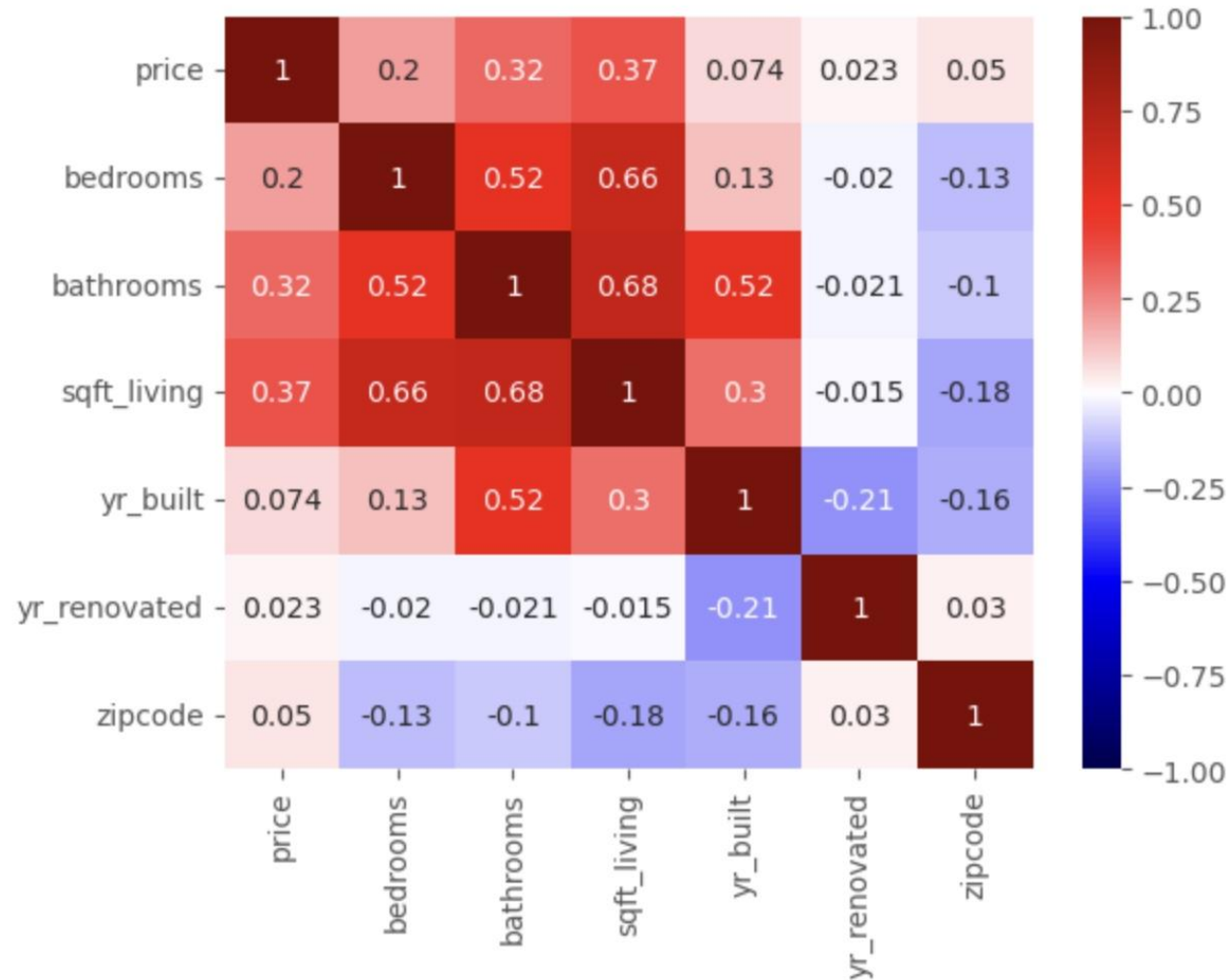
Federal Way  
Renton



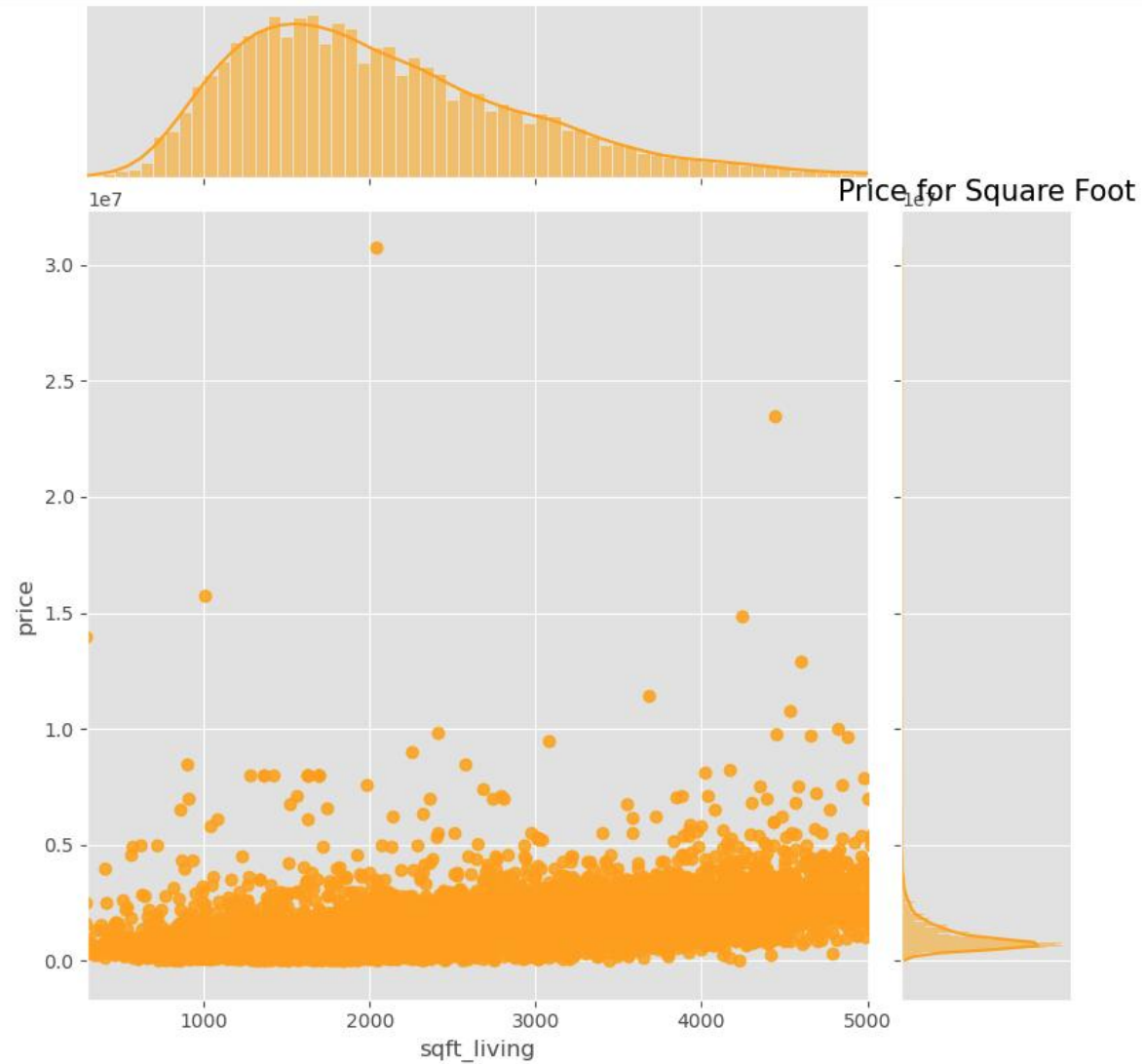
Expensive Houses  
for  
3 bedrooms 2 bathrooms

-Seattle

During the exploratory analysis I saw a good correlation between square footage and price

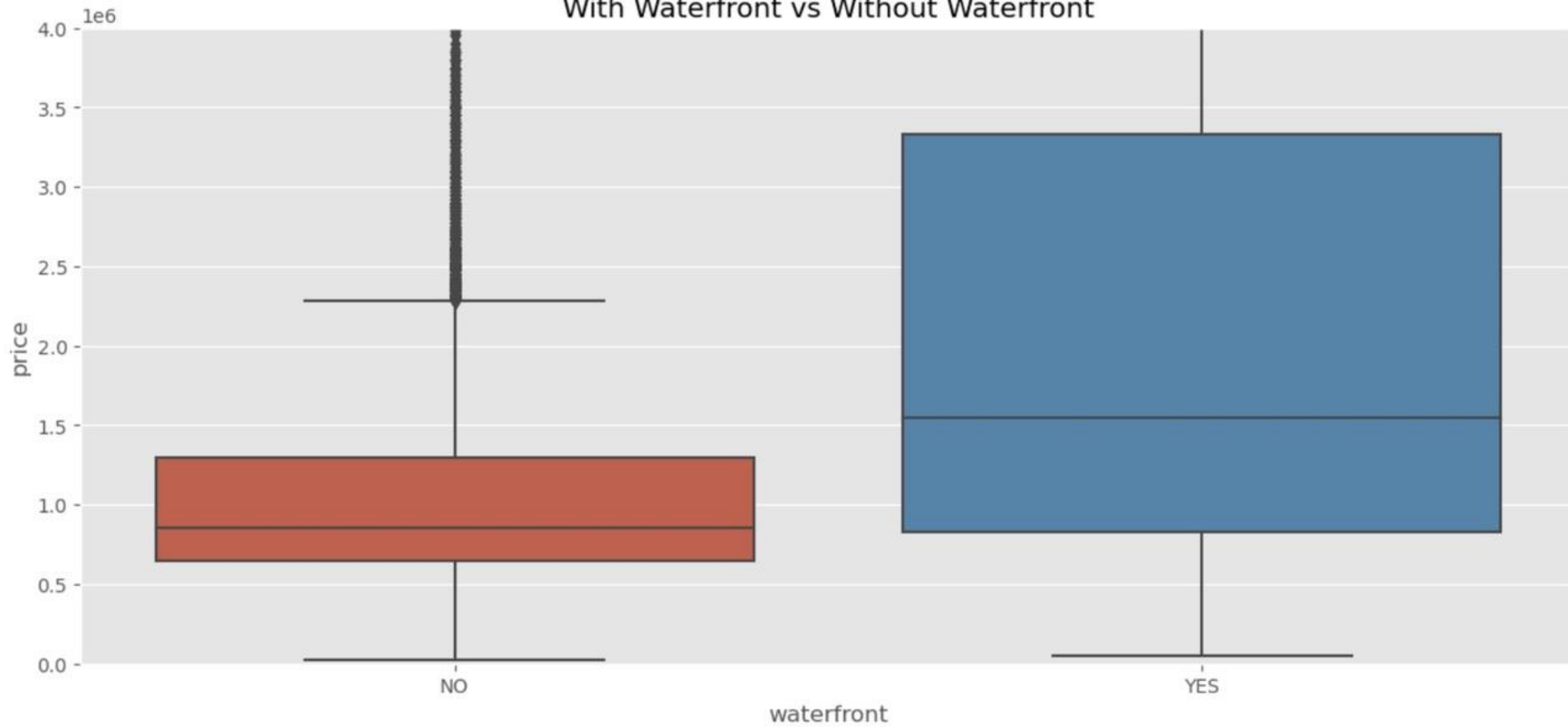


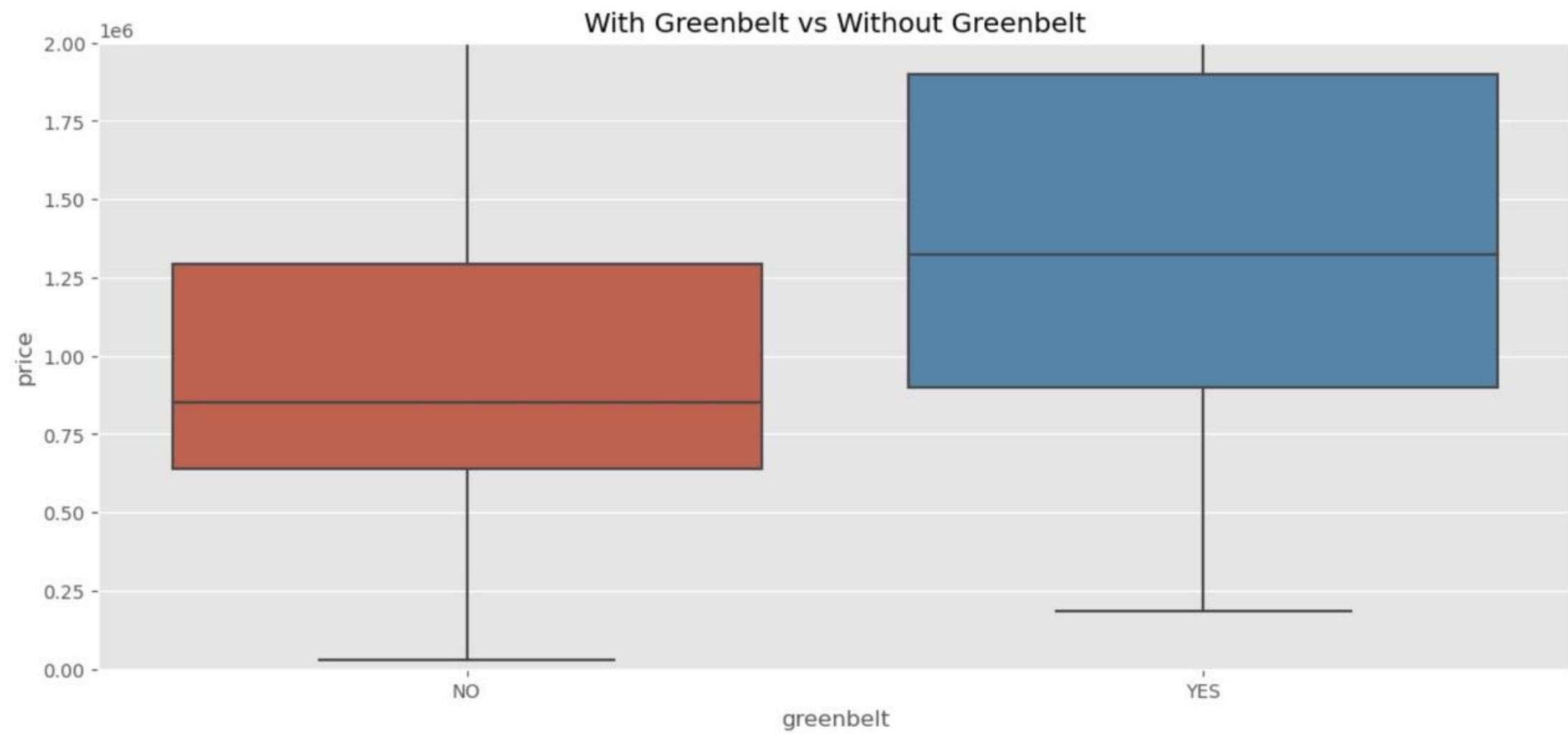
The estimated change in price for every sqft and came up with the price of 560 USD.

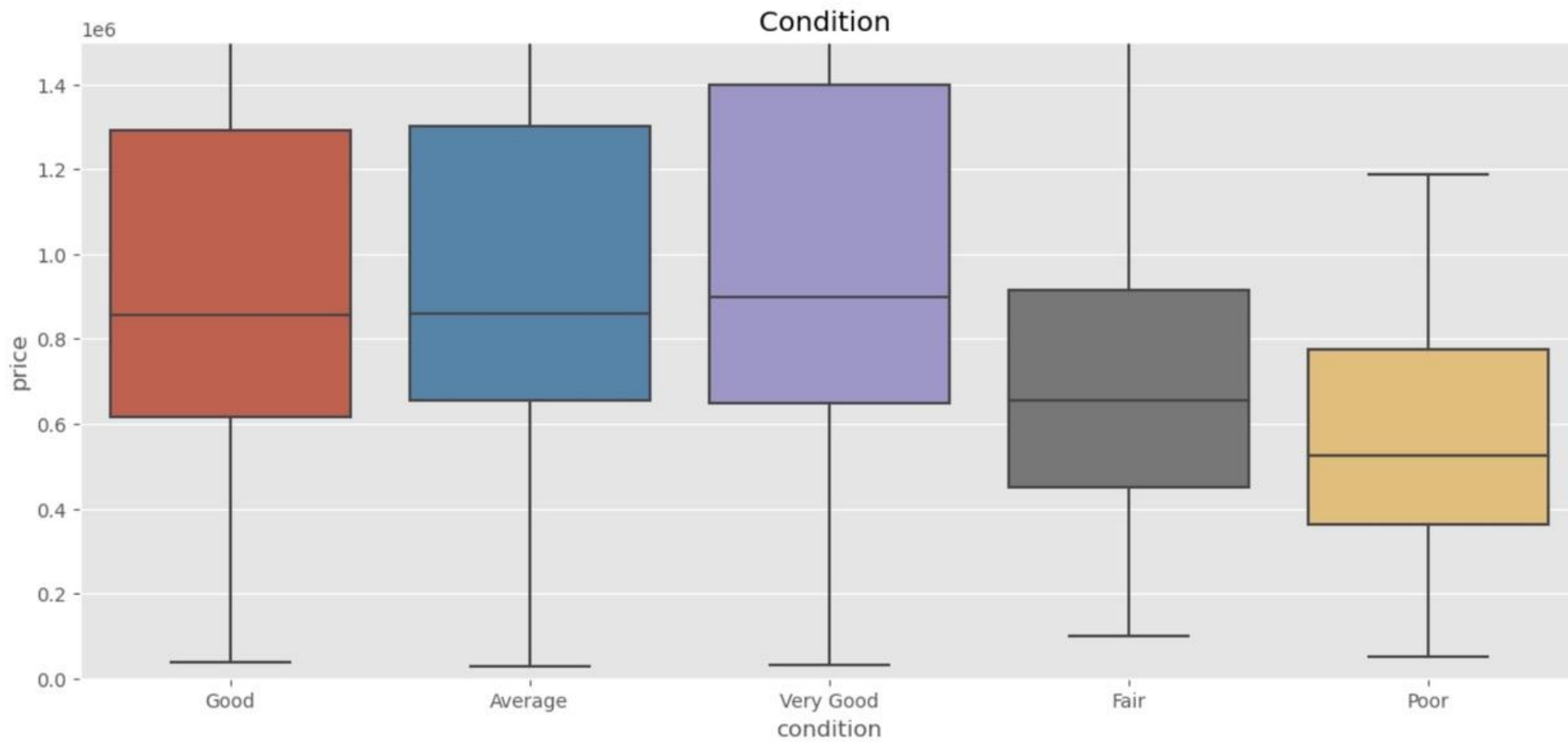




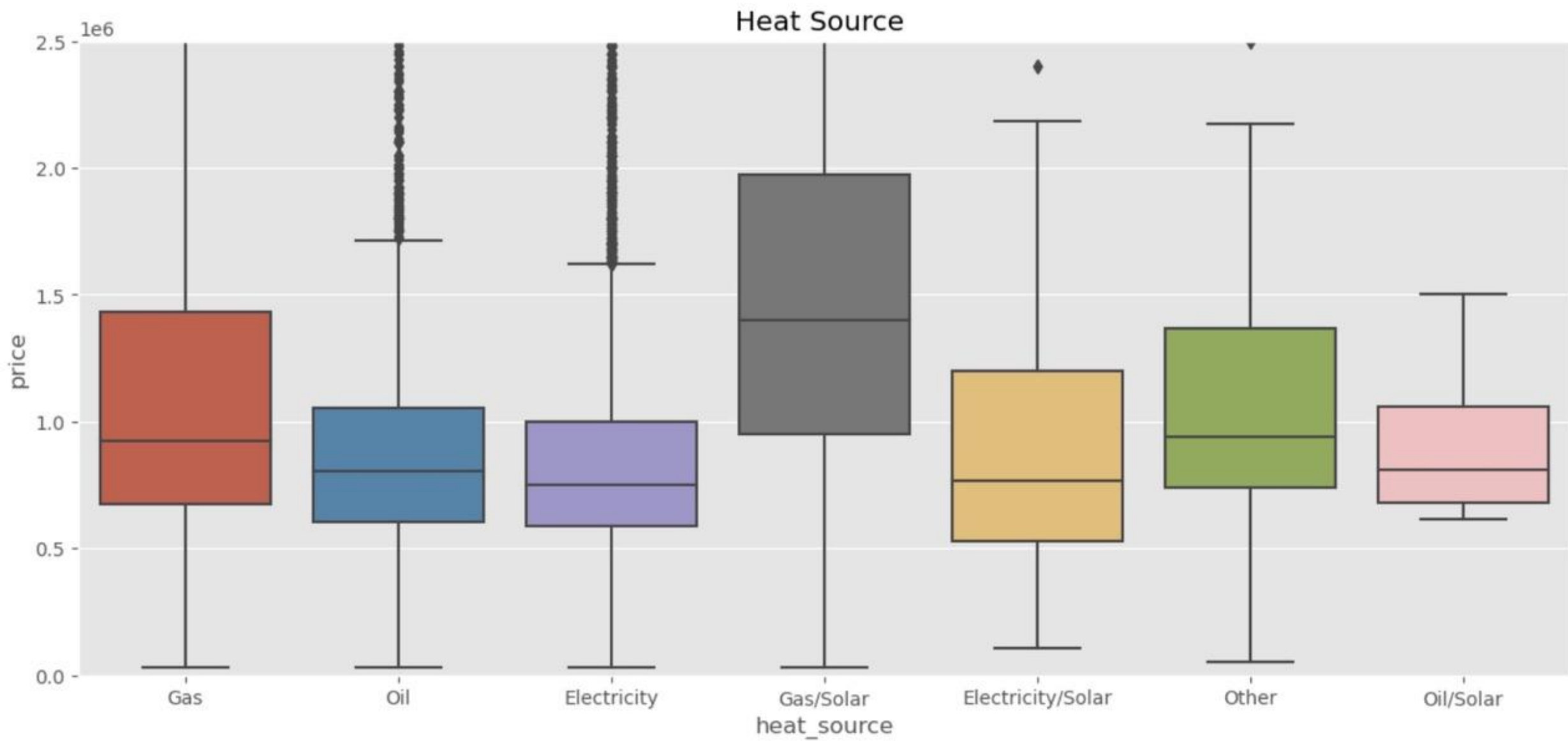
With Waterfront vs Without Waterfront



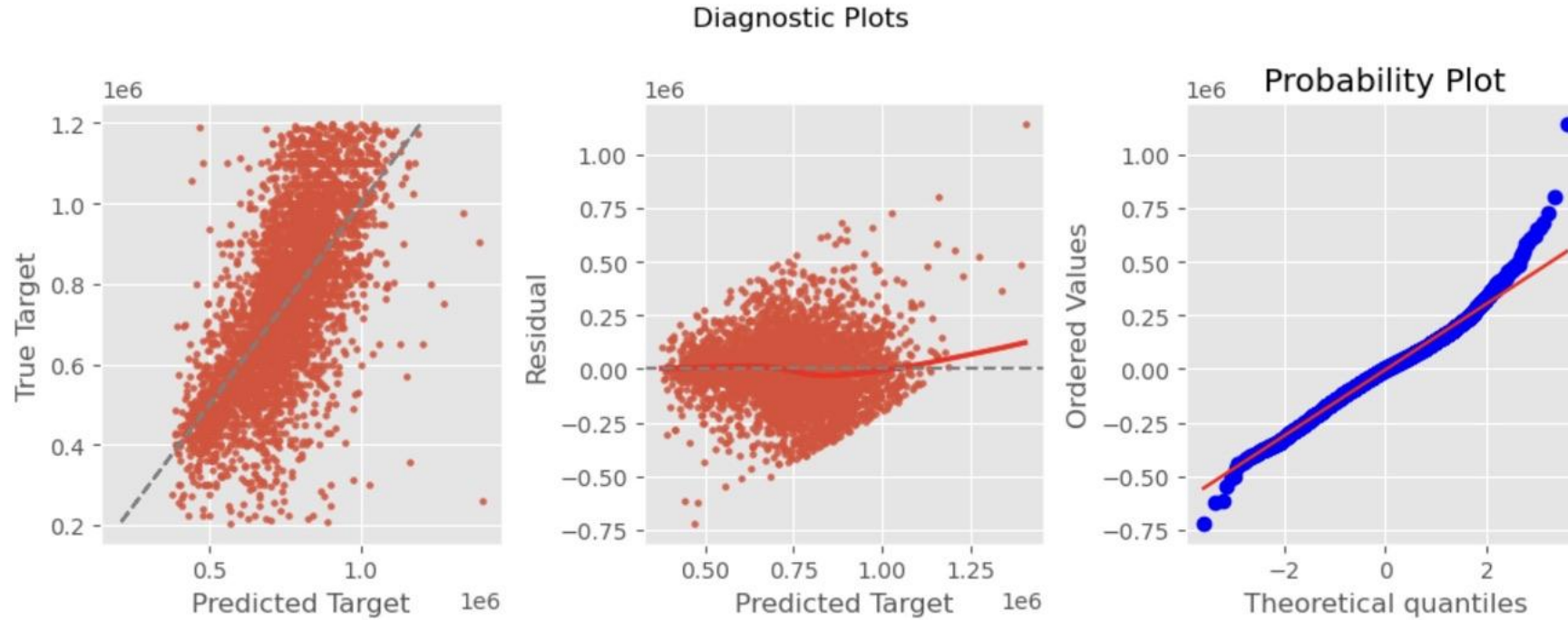








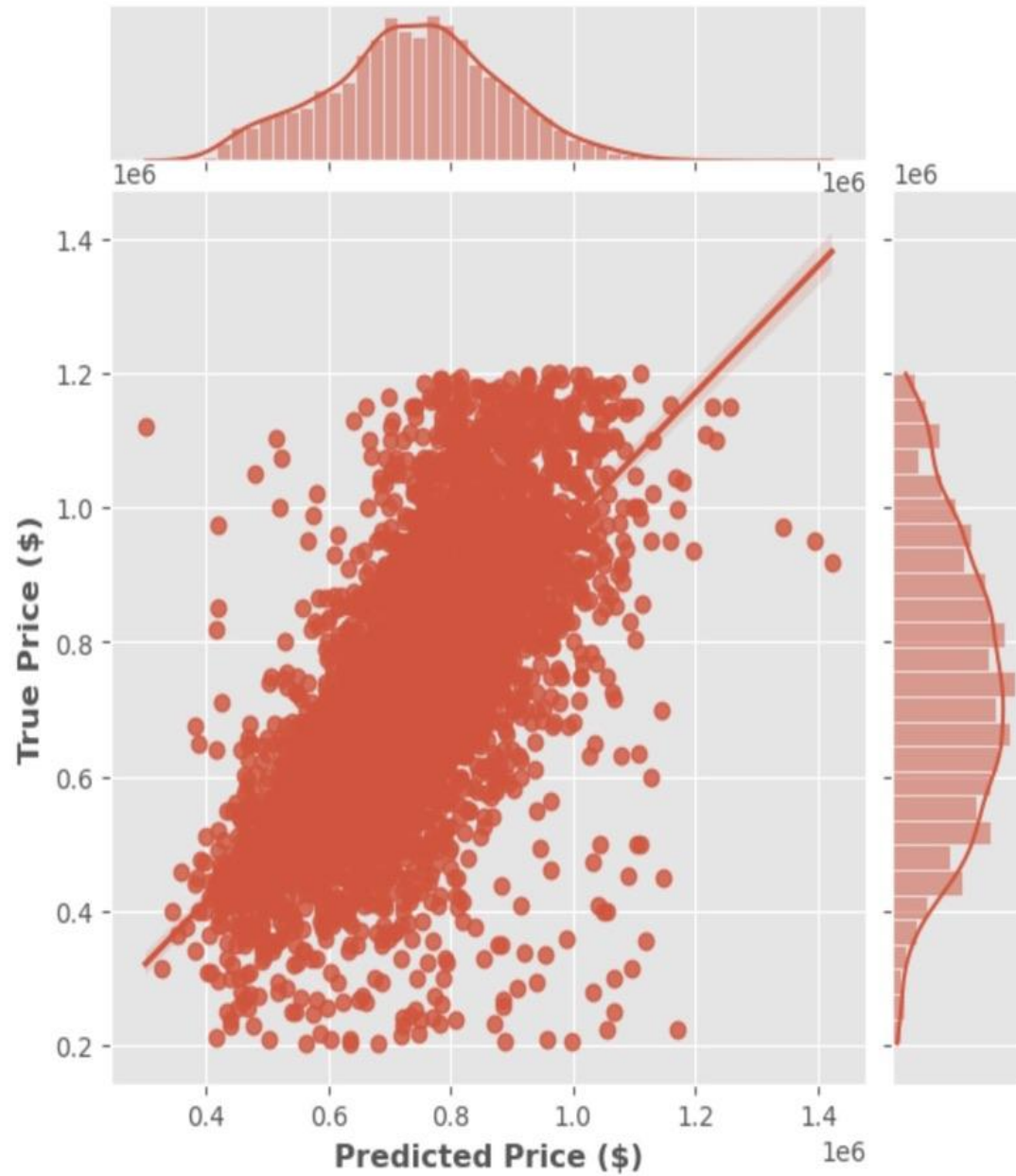
# Linear Regressions



Ridge Model - Reduces  
effect  
of colinear features

$R^2$  Adjusted = 0.46

MAE(mean absolute error) –  
\$116,866



City	Mean variance
Osceola	1360.2
Renton	1878.3
Longmont	-1276.1



## **Recommendation**

I would recommend to my client to buy a house with 3 bedrooms 2 bathrooms in Renton city because this city has better option the houses, we can find a house which is new build in 2021 it would not be big its world be around 1310-1290 square feet and the price would be around 243 thousand USD. The squarer footage the higher price would be.

## **Next Steps**

Schools in the area

Property tax

Email [prokopivanastasiia@gmail.com](mailto:prokopivanastasiia@gmail.com)

Linkedin <https://www.linkedin.com/in/anastasiia-leskiv-684b4b250/>

---

Thank  
You