HOUSE PRICE PREDICTION PROJECT

How to predict the price of houses in King County, Seattle (USA)

NEED TO KNOW

- How to predict the sale price of the houses?
- Does the geographic/physical surroundings or internal features of the house affect the price?
- How to predict houses with maximum sale price and therefore profits?

HOUSING DATASET

- The data analyzed is from King County, Seattle, Washington.
- The dataset contains features about: bedrooms, bathrooms, square footage, location, view, waterfront, number of floors. The data is collected from 2014 to 2015 for 21,597 houses.
- Used multiple linear regression to build a model to predict the price sale.

RECOMMENDATIONS

For real estate investors/real estate companies:

- Render profits by looking at: **square footage, grade, house location.**
- Adde more features to double sale : **view and waterfront.**

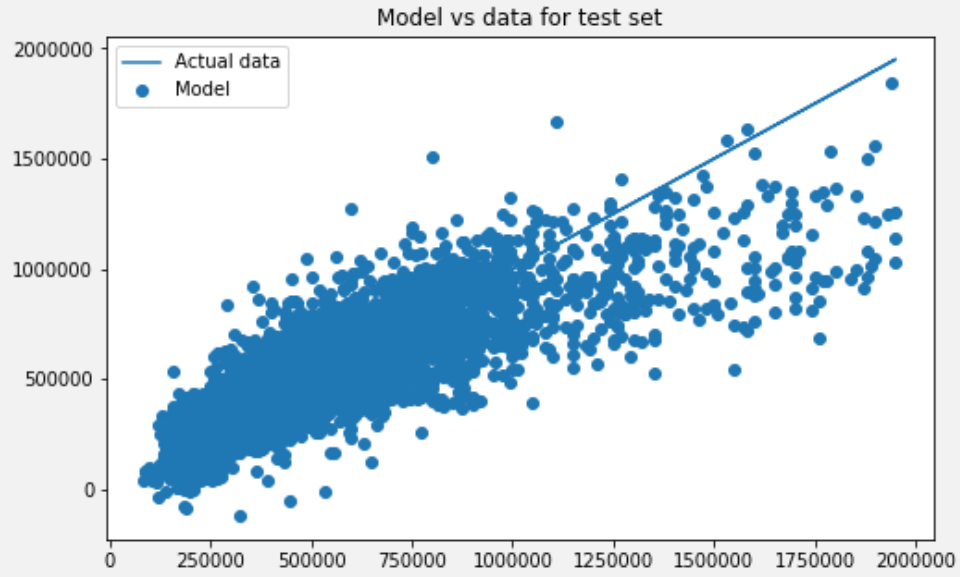
BEST PERFORMING MODELS

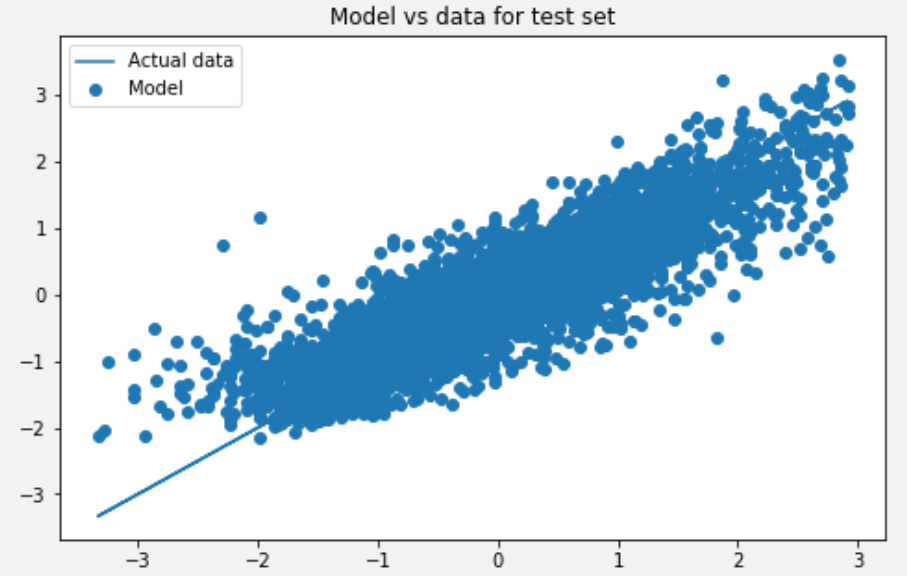
Multiple linear regression model with 6 features: Model 1

- Mean Absolute Error: 114,489

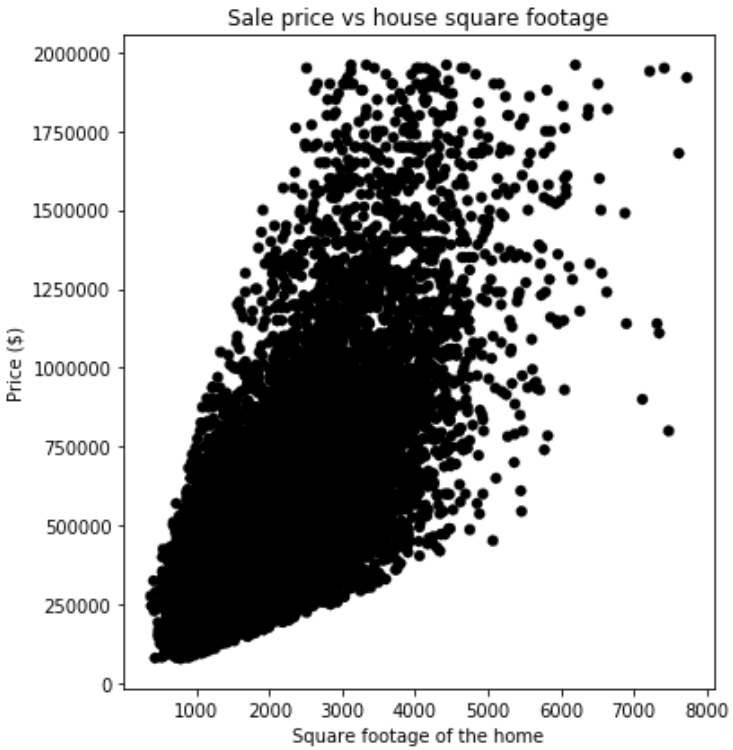
Multiple linear regression model with specific features: Model 4

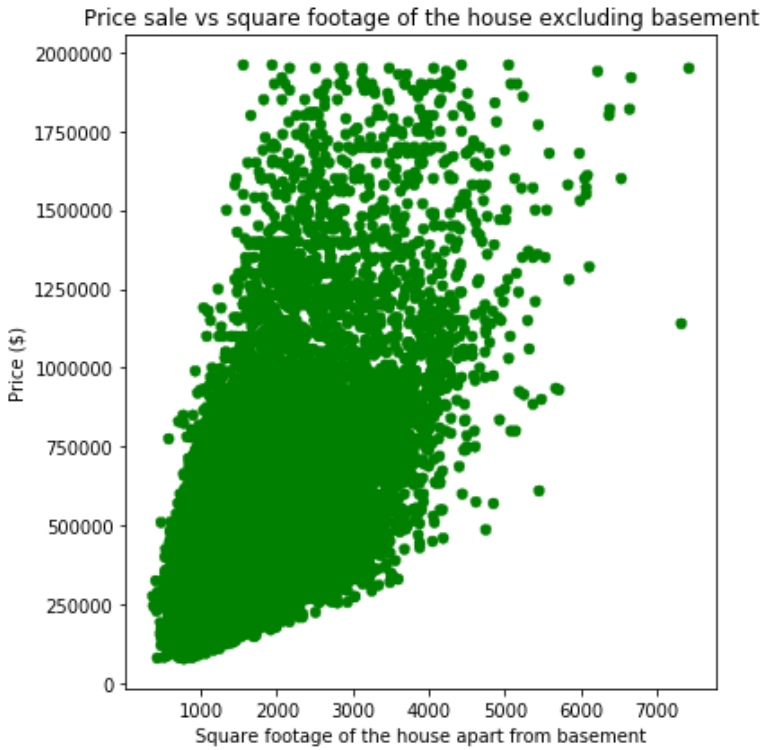
- Mean Absolute Error: 0.35



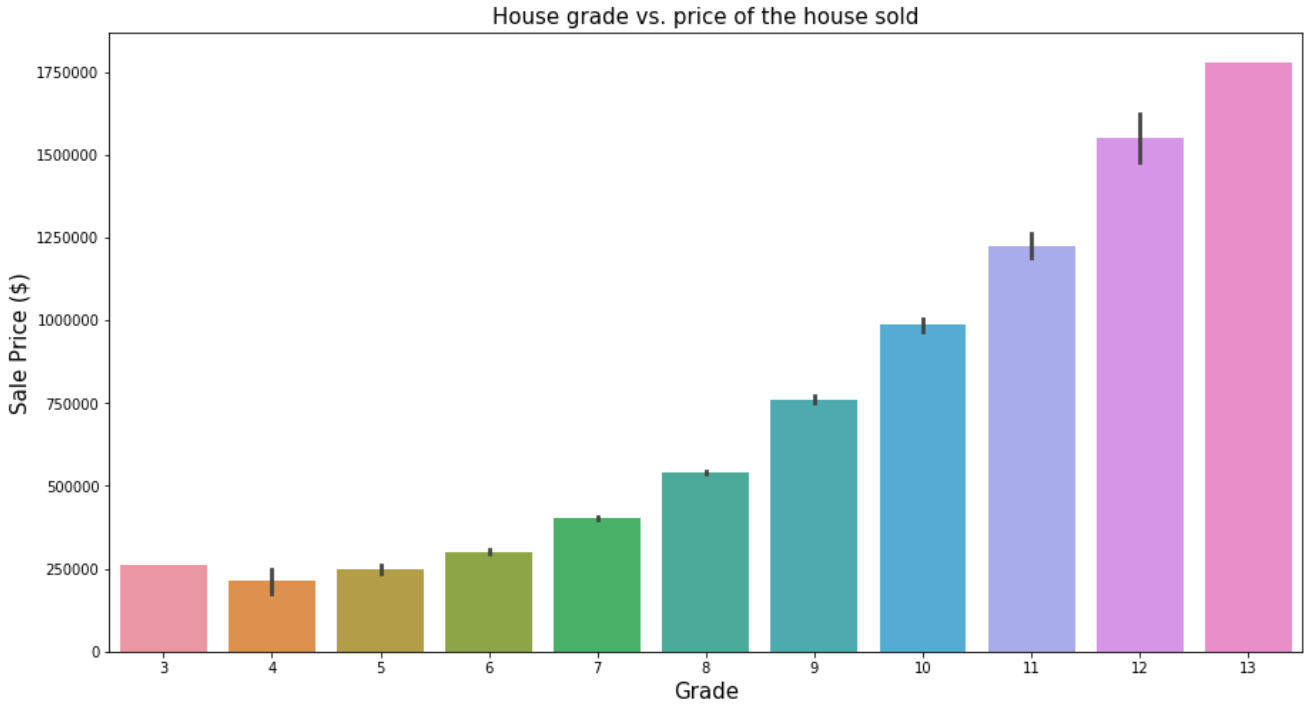


HOUSE SQUARE FOOTAGE

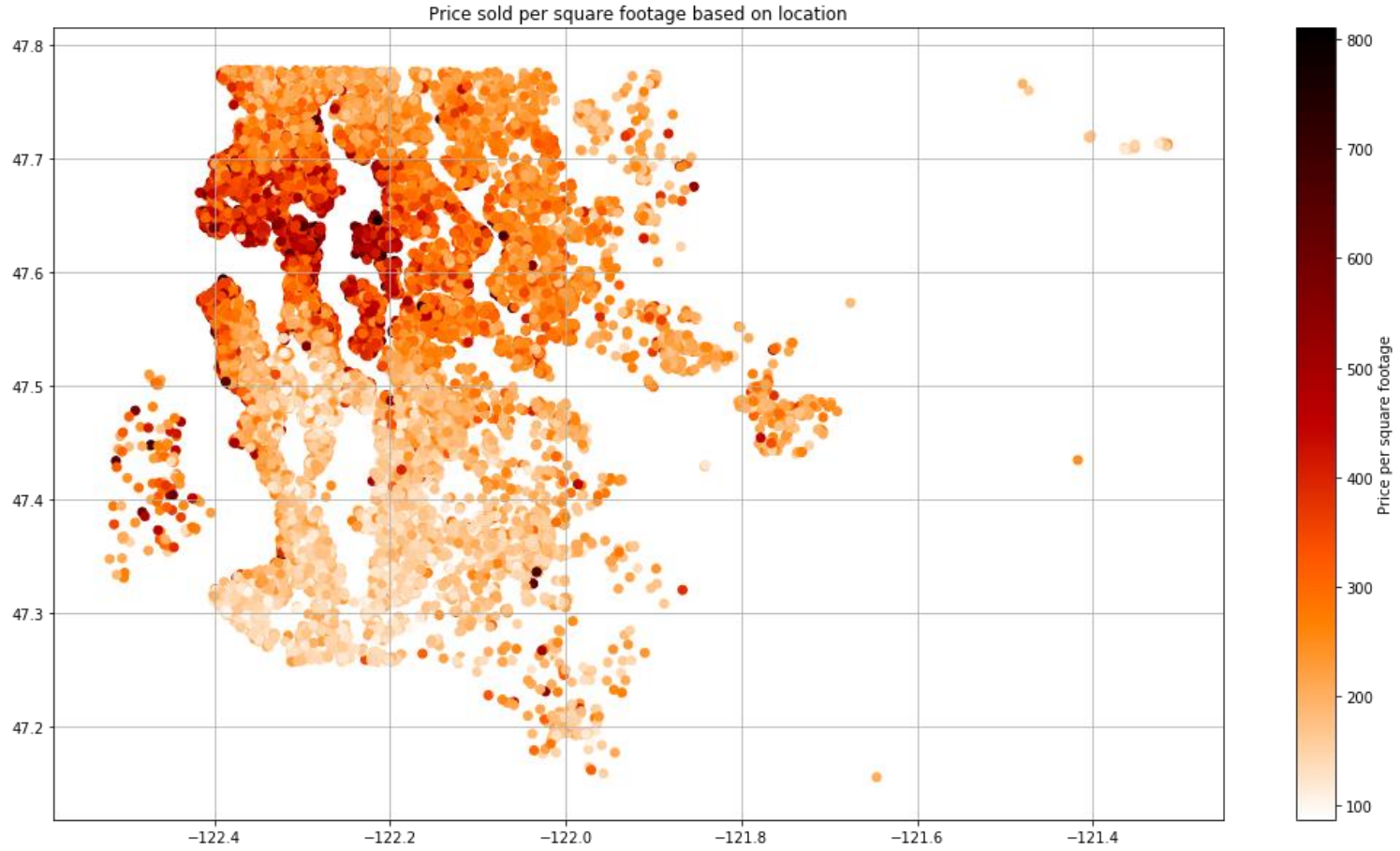




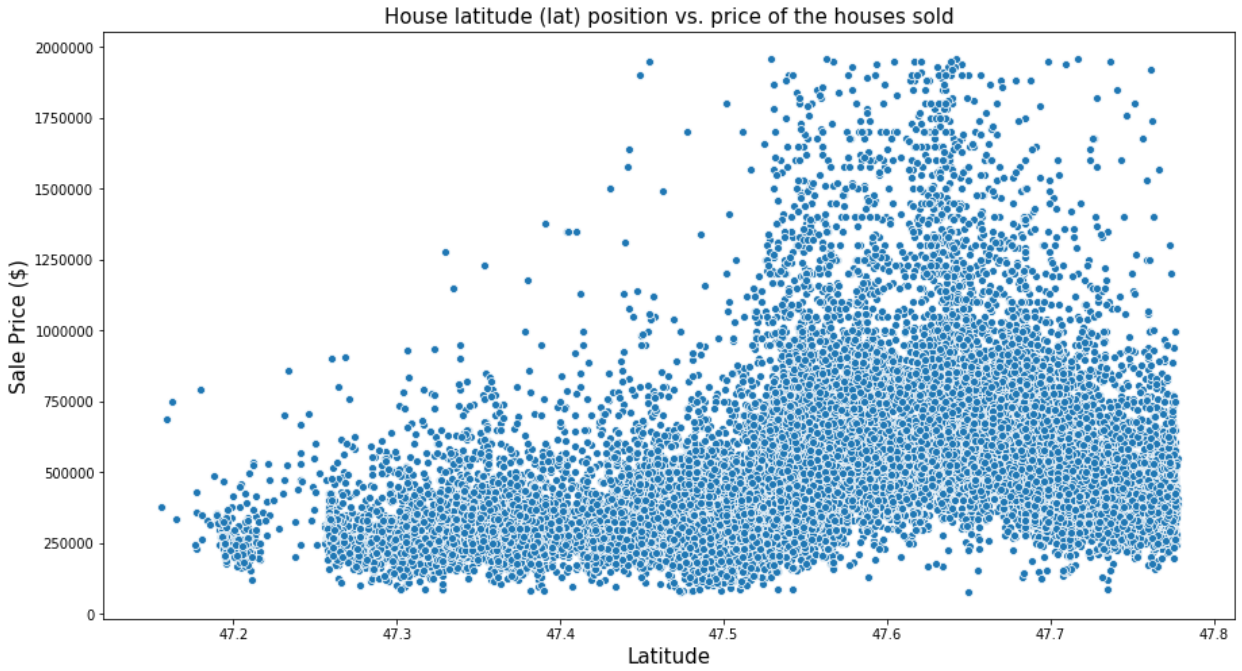
HOUSE GRADE


House grade vs. price of the house sold
Sale Price ($)
1750000
1500000
1250000
1000000
750000
500000
250000
0
3
4
5
6
7
8
9
10
11
12
13
Grade

LOCATION


Price sold per square footage based on location
47.8
47.7
47.6
47.5
47.4
47.3
47.2
−122.4
−122.2
−122.0
−121.8
−121.6
−121.4
800
700
600
500
400
300
200
100
Price per square footage

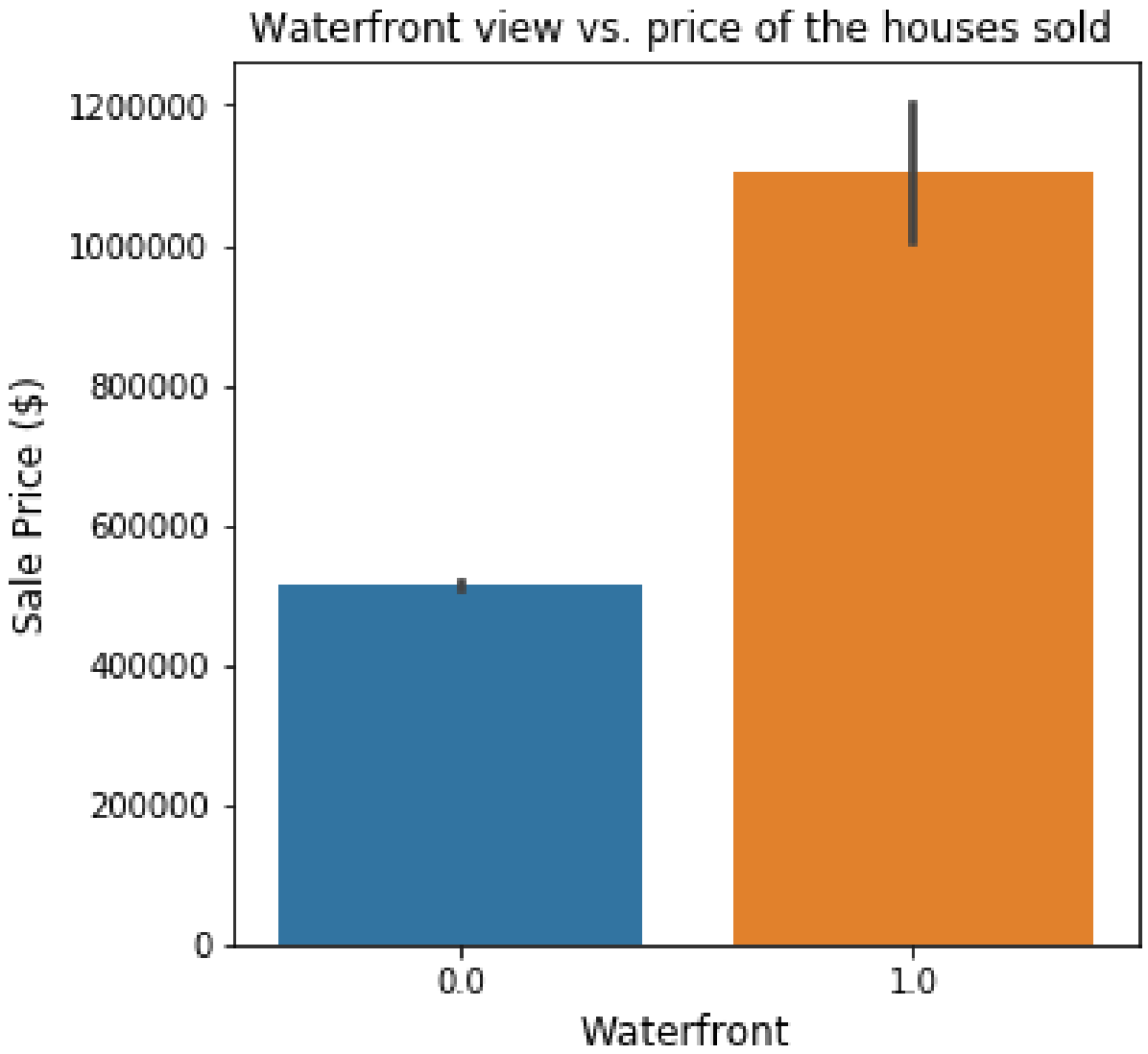
LOCATION (LATITUDE)



VIEW

View vs. Price of the houses sold
View
0.0
1.0
2.0
3.0
4.0
0
250000
500000
750000
1000000
1250000
1500000
1750000
2000000
Sale Price ($)

WATERFRONT


Waterfront view vs. price of the houses sold
Sale Price ($)
1200000
1000000
800000
600000
400000
200000
0
0.0
1.0
Waterfront

CONCLUSION

Most important features to predict the sale price of houses in King County Seattle: square footage of the house and the grade

Geographic/ physical surrounding (i.e., location, view, waterfront) and the internal features of the house (square footage, grade) do have influential effects of the price change (decrease/increase) of the sale price.

Important features that can be targeted to increase the sale price of the property: square footage, grade and location of the house. More features can be added to boost even more the price such as view and waterfront.

FUTURE WORK

More data is needed to do prediction algorithm that will help real estate investors with their concerns. When to buy/sell/hold on a property to earn maximum profits and avoid financial loses.

To be able to answer these questions, we need data at least collected for 10 years to analyze. More features are deemed necessary to incorporate into the model (upgrades, garage, pool, school district …etc..). More features will produce better algorithm for price sale prediction.

THANK
YOU