



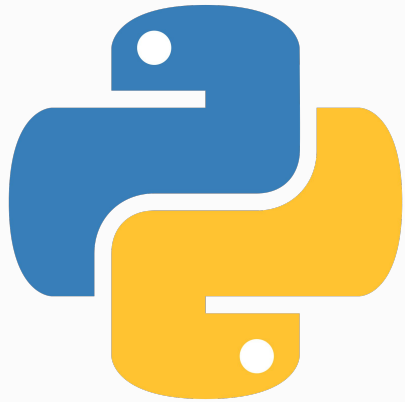
Predicting Housing Prices

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Housing Market of King County, Seattle

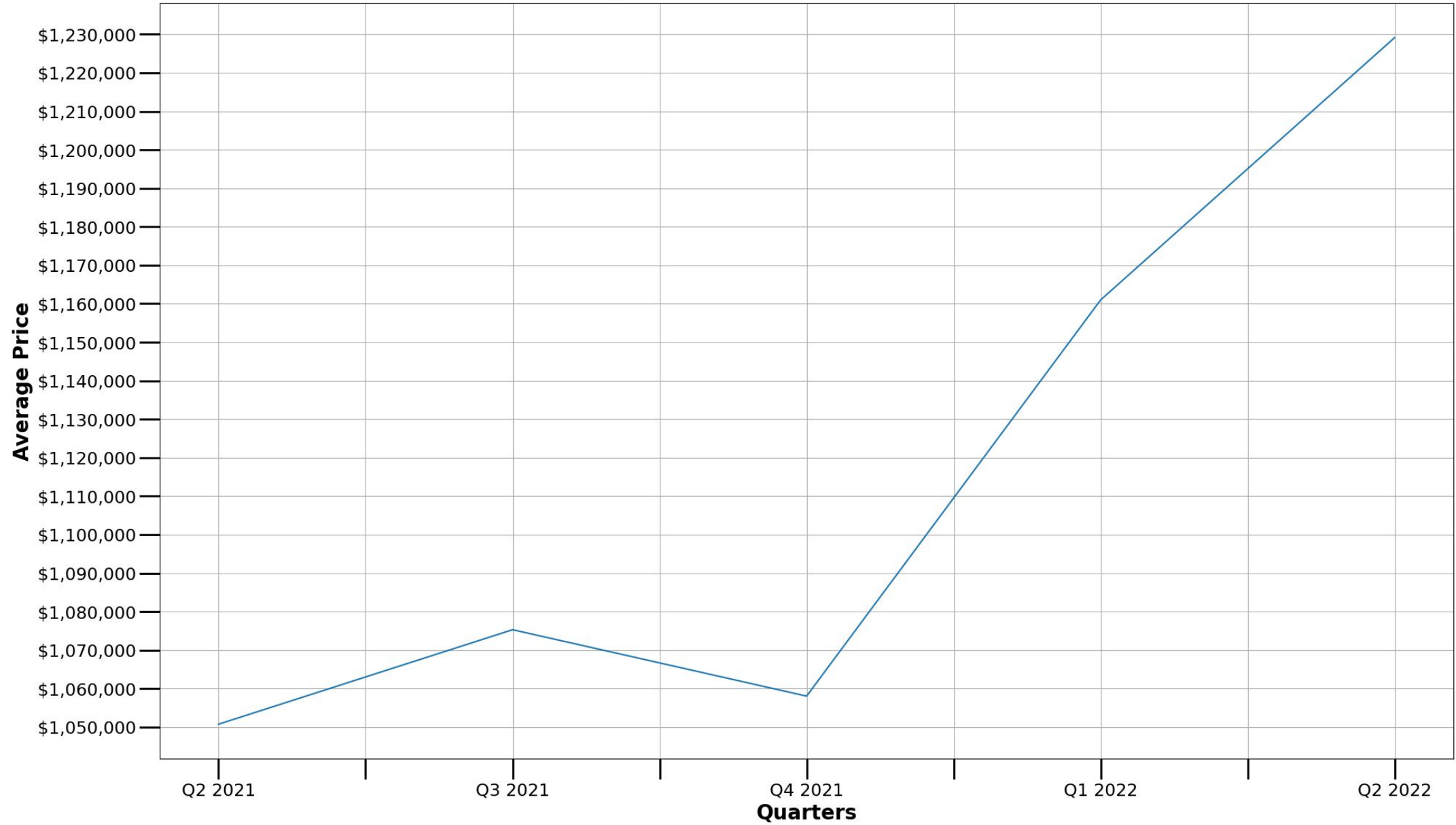
- Housing prices undergo constant changes
- Many variables affect the prices of homes
- Isolate these variables to see how prices are affected.

Programs Used



seaborn

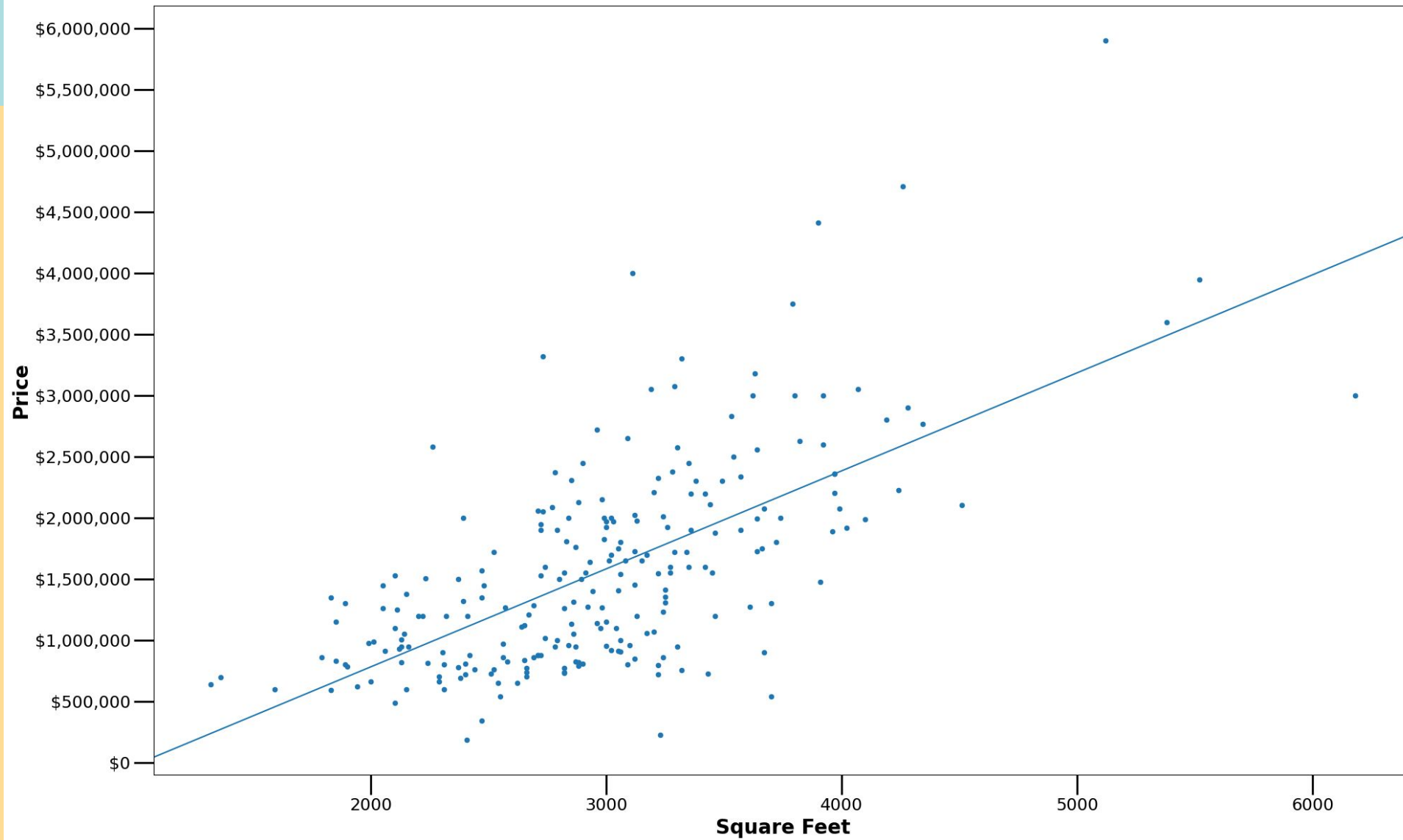
Changes in Price of Homes



Statistical Analysis

- The average prices for each fiscal quarter yielded a low z-score
 - Meaning average prices are statistically significant
 - Two tailed with an alpha = 0.05 was used
- The prices of homes change according to time

Prices of Homes with 8 Rooms



Analysis of linear model

R-Squared	0.367
Constant Coef. (P-Value)	12.73 (0.000)
sqft_living coef. (P-Value)	0.0005 (0.000)
Mean-Squared Error	0.420

- Data from quarter 2 of 2022 was used
 - most recent data is most representative to the current market
- 8 room homes contained a high number of samples and correlation

Metrics of the model: price vs. grade of home

R-squared	0.510
Constant coef.	10.9764
Square foot coef. (x_1)	0.0004
grade_10 coef. (x_2)	2.4966
grade_11 coef. (x_3)	2.5941
grade_7 coef. (x_4)	1.7681
grade_8 coef. (x_5)	1.9212
grade_9 coef. (x_6)	2.1963

- P-value for all coef. are less than 0.05
 - Statistically significant and not by chance
- Price vs. grade had the greatest correlation value (R-squared)
 - Price vs. condition and price vs. view yielded very low r-squared values

Recommendations

- Homes with a high grade (grade 10 or 11) have higher prices
 - Maximize profits by buying low grade homes and renovating to higher grades
 - Potential yield: \$1.2 million (not calculating renovation costs)
- Buying property when markets dip
 - Markets seem to bounce back (i.e. after COVID-19)

Improvements and Further Development

- A bigger dataset
 - Allows us to study the market's history
 - Better prediction
- More variables for testing
 - Mortgage rates
 - Bond market

Thank You!

GitHub Link:

<https://github.com/Jko0425>

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