

Housing Trends in Kings County, WA

By Matt Pucci



What can affect house prices?

- | | |
|--------------------------------------|--|
| <input type="checkbox"/> Id | <input type="checkbox"/> View |
| <input type="checkbox"/> Date | <input type="checkbox"/> Condition |
| <input type="checkbox"/> Price | <input type="checkbox"/> Grade |
| <input type="checkbox"/> bedrooms | <input type="checkbox"/> Sqft_above |
| <input type="checkbox"/> Bathrooms | <input type="checkbox"/> Sqft_basement |
| <input type="checkbox"/> Sqft_living | <input type="checkbox"/> Yr_built |
| <input type="checkbox"/> Sqft_lot | <input type="checkbox"/> Yr_renovated |
| <input type="checkbox"/> Floors | <input type="checkbox"/> Zipcode |
| <input type="checkbox"/> Waterfront | <input type="checkbox"/> Latitude |
| | <input type="checkbox"/> Longitude |
| | <input type="checkbox"/> Sqft_living15 sqft_lot15 |

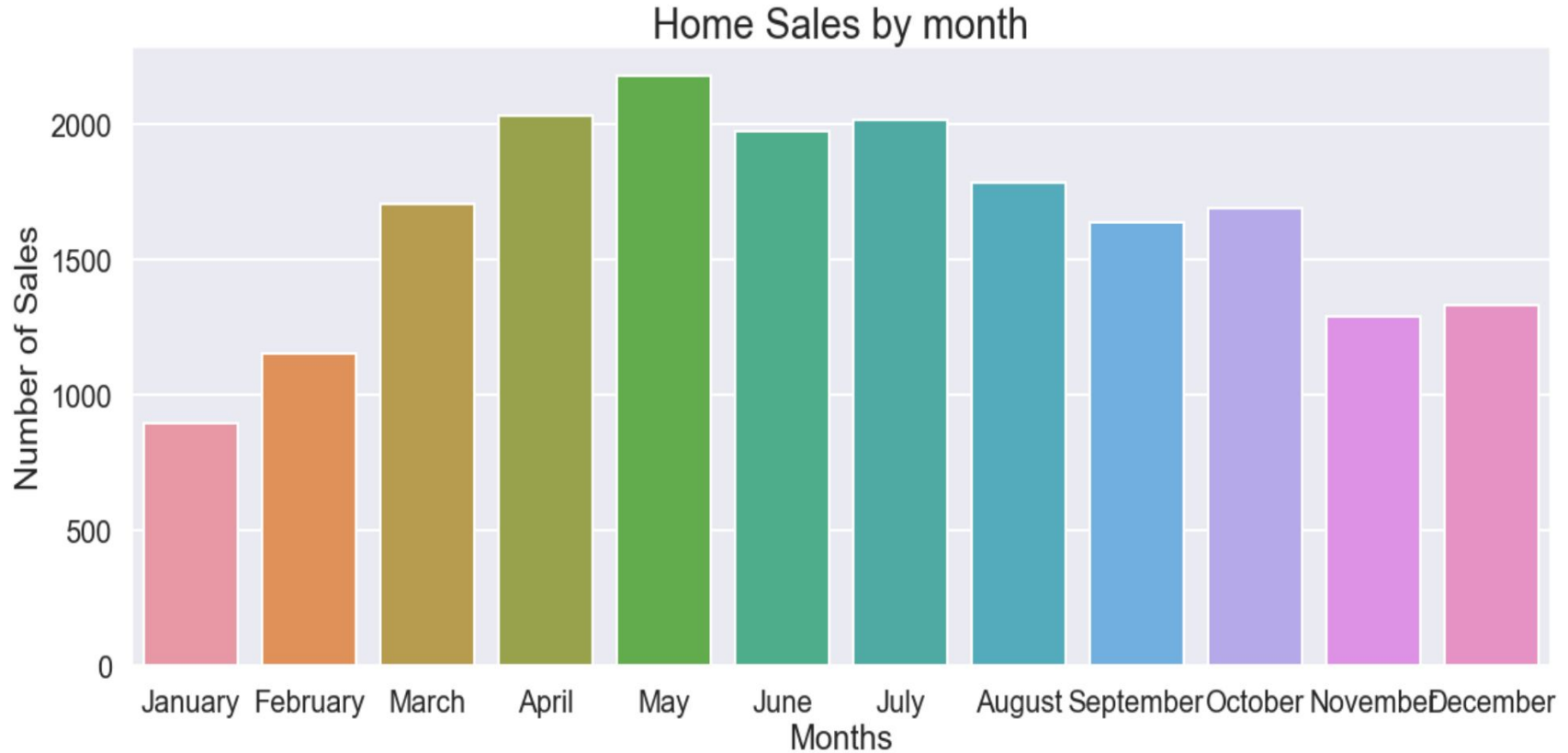
Methodology

- In this project the OSEMIN strategy was used to properly analyze and interpret the data.
- Obtain
- Scrub
- Explore
- Model
- Interpret/Analyze

Problem Statement

- As a homeowner, what features make it possible to maximize return on a property?
- How can we interpret location as a major factor?
- Does timing play a role?

Best time of year to sell a home



Final Feature List

- By using a forward regression and transforming a number of the features the final list of features that this model used was:
 - Square Foot Living
 - Grade (category variable)
 - Latitude (bins)
 - Longitude (bins)
 - Year Built (category variable)
 - View
 - Floors
 - Condition
 - Zip-code (category variable)
 - Bathrooms (category variable)
 - Bedrooms (category variable)
 - Waterfront (category variable)

Business Value

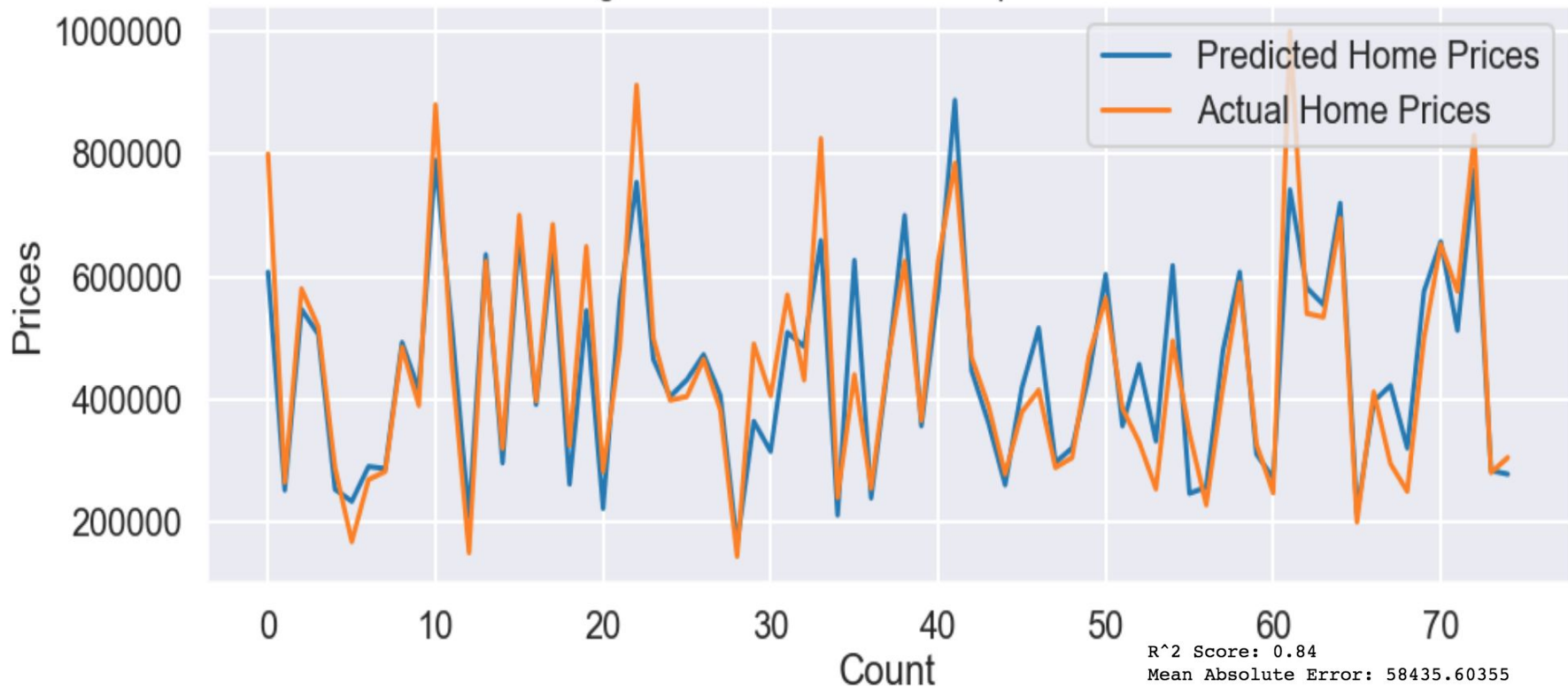
- Maximize profit on sales
- Minimize losses
- Predict future prices and determine when a home is under/overvalued

Findings

- Square footage of home as well as lot play a major role in home price.
- Location as well as water proximity also contributes significantly to home price.
- The warmer, summer months is the hottest time to sell in Kings County.

Model Results

Figure 2: Predicted Prices Compared to Actual



Model Accuracy: 83.0 %

[0.83797756 0.83159663 0.8238575 0.82203422 0.84703661 0.80980868

R² Score: 0.84

Mean Absolute Error: 58435.60355

Root Mean Squared Error: 79219.81697

Average Predicted Price: 463314.8315

Average Actual Price: 464056.6173

Conclusions and Future Work

- The model predicted prices with 83% accuracy.
- Although the forward regression gave us a number of variables that would perform best in our model, I altered many of them to become dummy variables.
- Dig deeper into the effect of waterfront property and city proximity on house prices.
- How does public school quality alter the price of a home?
- Crime Rates?
- Average age of the population

Thank you!

- Q&A