

Housing Trends in Kings County, WA

By Matt Pucci



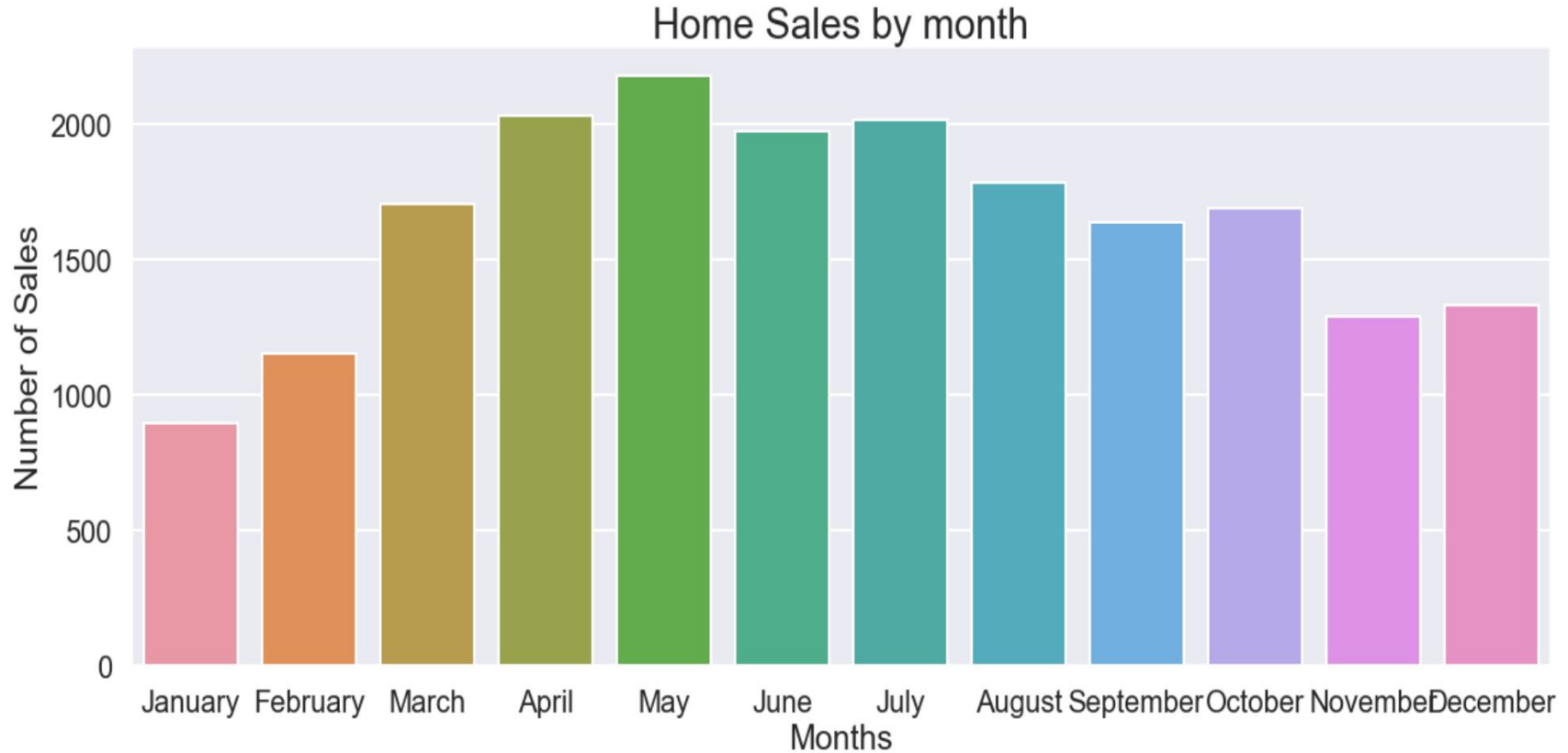
What can affect house prices?

- **id** - unique identified for a house
- **dateDate** - house was sold
- **pricePrice** - is prediction target
- **bedroomsNumber** - of Bedrooms/House
- **bathroomsNumber** - of bathrooms/bedrooms
- **sqft_livingsquare** - footage of the home
- **sqft_lotsquare** - footage of the lot
- **floorsTotal** - floors (levels) in house
- **waterfront** - House which has a view to a waterfront
- **view** - Has been viewed
- **condition** - How good the condition is (Overall)
- **grade** - overall grade given to the housing unit, based on King County grading system
- **sqft_above** - square footage of house apart from basement
- **sqft_basement** - square footage of the basement
- **yr_built** - Built Year
- **yr_renovated** - Year when house was renovated
- **zipcode** - zip
- **lat** - Latitude coordinate
- **long** - Longitude coordinate
- **sqft_living15** - The square footage of interior housing living space for the nearest 15 neighbors
- **sqft_lot15** - The square footage of the land lots of the nearest 15 neighbors

Methodology

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

Best time of year to sell a home

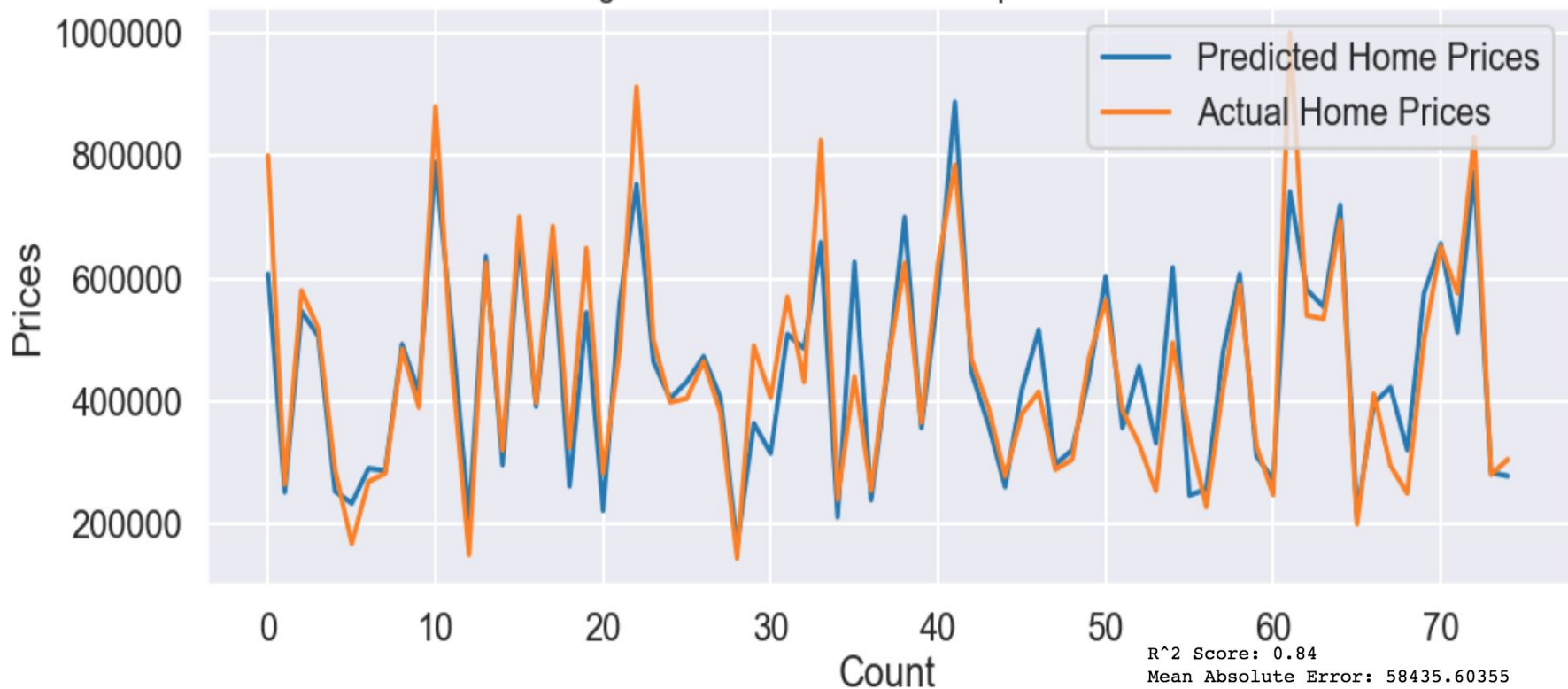


Best variables for price prediction.

- By using a forward regression, the best variables that affect home prices are:
 - Square Foot Living
 - Grade
 - Latitude
 - Longitude
 - Year Built
 - View
 - Floors
 - Condition
 - Zip-code
 - Bathrooms
 - Bedrooms
 - Waterfront
 - Square Foot Lot

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

Ways to improve

- 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.