

Sales Price Prediction of King County, WA single-family homes

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Presentation Outline

- Business Problem
- Data
- Models
- Predictions
- Recommendations
- Next Steps



Business Problem

Client: Bon Jovi Real Estate Advisors

Industry: Residential real estate brokerage

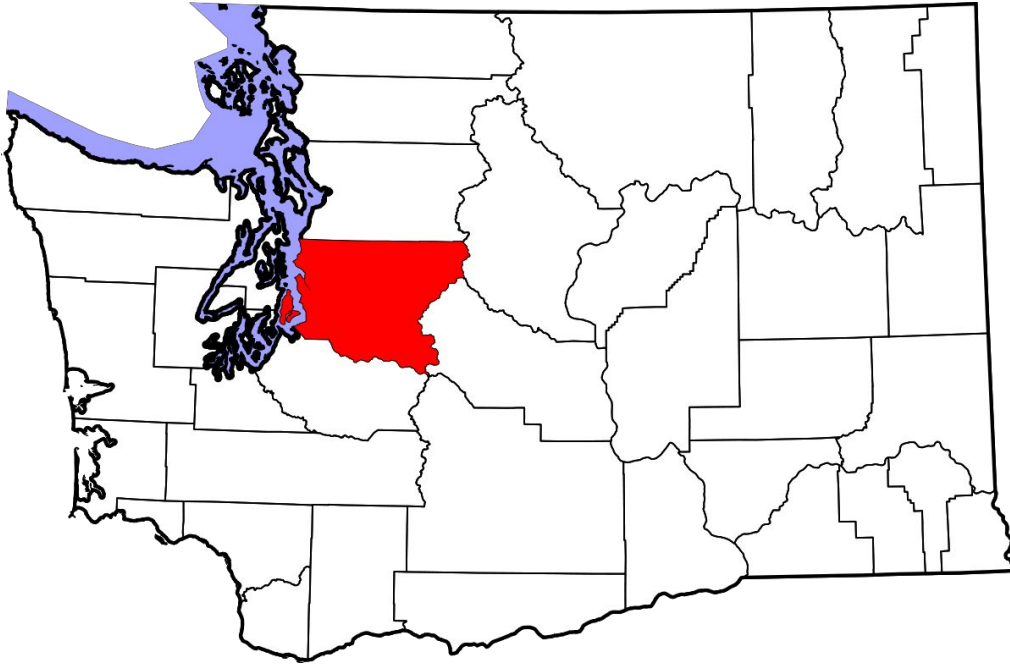
Location: King County, WA

Needs: A tool to determine the best sales price of single-family homes.

Business Solution

- Develop a model to predict the sales price range from features of single family home properties in King County, WA.
- Use this model to make cost-benefit analysis of improvements to a home.
- Use this model to identify high-value customers to target for marketing.

King County, WA

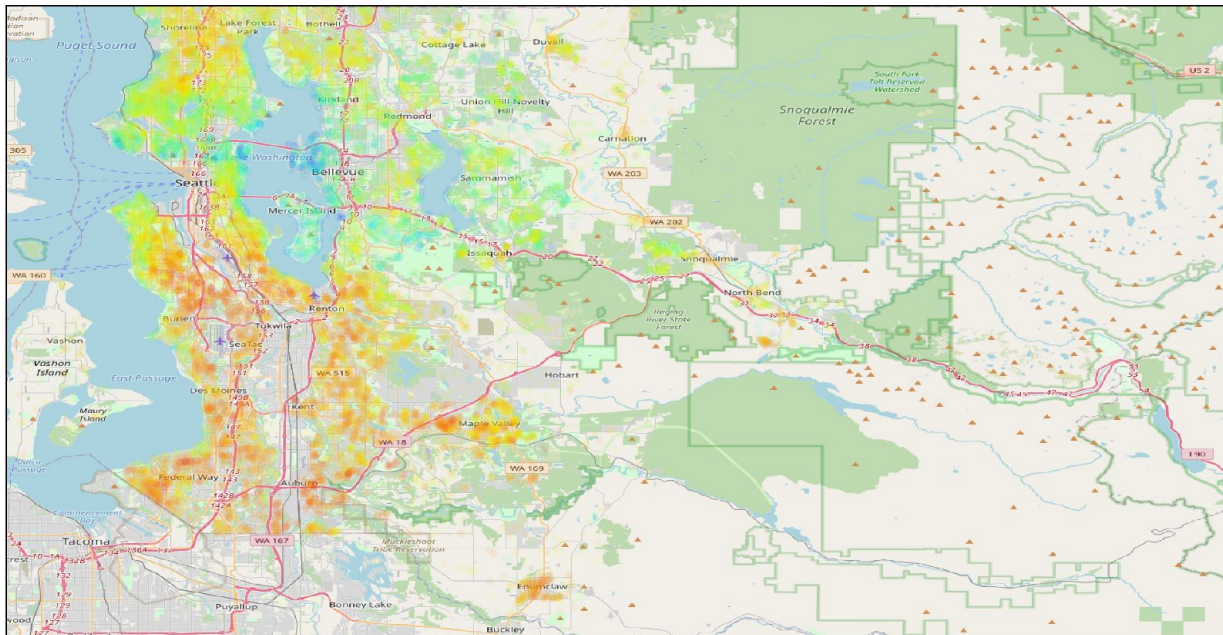


- Population: ~ 2.25 million
 - Largest populated area in Washington state
 - 13th most populous county in the United States
- Median income: \$99,000
 - United States median income: \$67,000
- 2,307 square miles (5,980 km²)
 - 8.3% is water

King County, WA home sales data

- Between 2014 to 2015
- Total of 21,597 records
 - Median: \$450,000
 - \$78,000 - \$7,700,000
- Data was cleaned and made tidy
- 17 Variables used
 - Sale price
 - Bed / Bath number
 - Size of area
 - Condition
 - Grade ...

King County, WA home sales between May 2014 - May 2015



Model Predictions

House 1

- **Features**
 - **Sqft living: 2450ft²**
 - **Bedrooms: 4**
 - **Bathrooms: 2.5**
 - **Zip code: 98023**
 - **Age: 25 years**
 - **Grade: 8**
 - **Floors: 2**
- **Actual: \$300,000**
- **Predicted: \$324,000**

House 2

- **Features**
 - **Sqft living: 1950ft²**
 - **Bedrooms: 3**
 - **Bathrooms: 1**
 - **Zip code: 98055**
 - **Age: 55 years**
 - **Grade: 7**
 - **Floors: 1**
- **Actual: \$422,000**
- **Predicted: \$352,000**

House 3

- **Features**
 - **Sqft living: 2,580ft²**
 - **Bedrooms: 4**
 - **Bathrooms: 2.25**
 - **Zip code: 98027**
 - **Age: 38 years**
 - **Grade: 8**
 - **Floors: 2**
- **Actual: \$588,000**
- **Predicted: \$558,000**

Actionable Recommendations

1. Sale price will increase by 6% with each improvement in condition.
 - A \$500,000 house would have an increase sales price by \$25,000
2. Sales price will increase by 3.9% for an additional full bathroom is added to a house.
 - \$19,500 sales price increase on a \$500,000 house.
3. Focus market efforts in Zip codes in King County other than 98002, 98003, 98023, 98032, 98042, and 98198 as the value of the homes sold in these Zip codes are well under the surrounding Zip codes.
 - Homes in Zip code 98003 sold for 228% less than homes in Zip code 98039.
4. Waterfront properties have an increased sale price of 58.8% over non-waterfront properties.
 - Acquiring these customers would result in increased sales revenue.

Next Steps

- Create an user-friendly dashboard that allows real estate agents to input home features and returns the predicted price range.
- Gather more data such as school rankings or crime rates to improve the model's predictive power for sales price and identify variables that drive differences in sales price.

Thank You!

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