

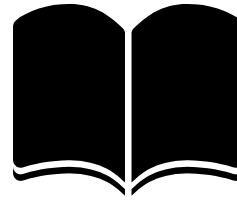
King County Housing Recommendations



Srini R & Diego R

Overview

1. Business Problem
2. Data Understanding
3. First Model
4. Data Preparation
5. Final Model
6. Recommendations
7. Next Steps



Business Problem

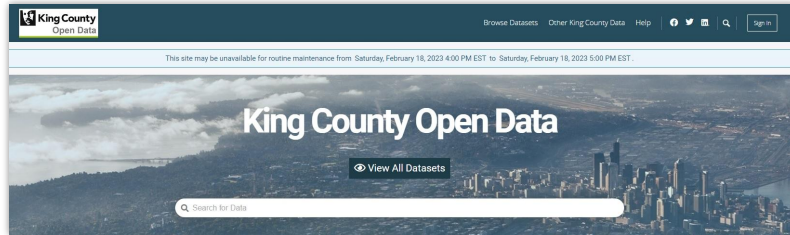


A Real Estate Agency is currently facing a business problem of losing potential clients due to overpriced properties.

By implementing our model, the agency can more accurately price properties and increase their chances of making a sale. Additionally, the agency can identify undervalued properties that they could purchase and resell for a profit.



Data Understanding



- King County House Data **(30156 rows)**

King County Open Data:

- King County Crime Data **(20450 rows)**

King County GIS (Geographic information system) **(3600 rows)**

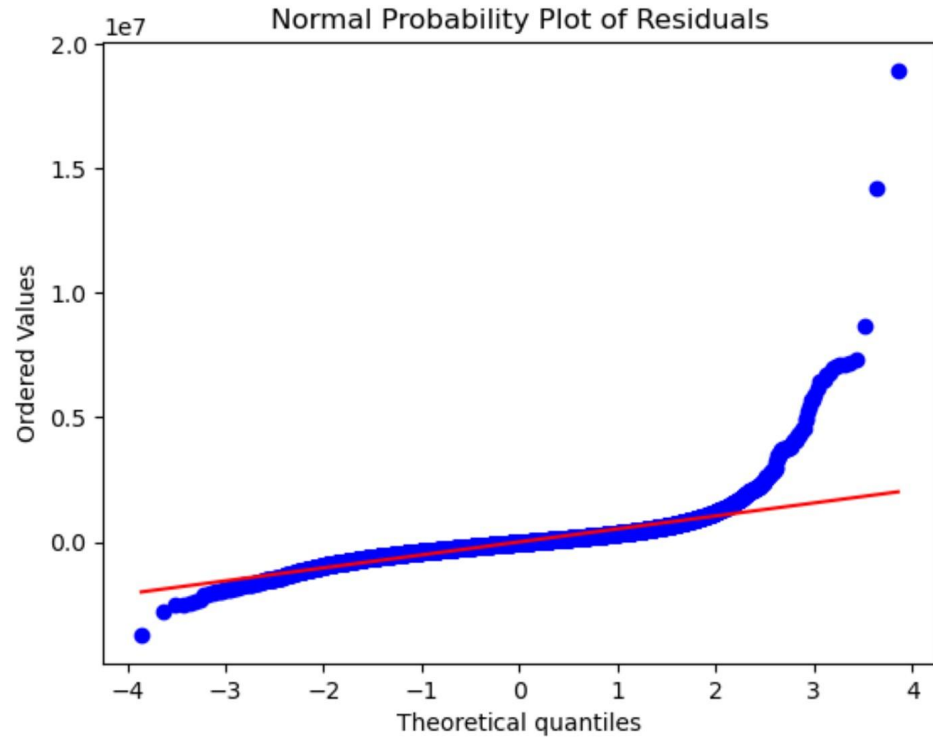
- Airports
- Fire / Police Station
- Commercial Farms
- Places of Culture
- Places of Education
- Cemeteries
- Gated Residential Areas
- Public Gathering Spaces
- Utilities

First Model

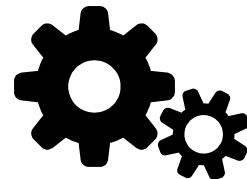
- 40% of variability in price can be explained by the model's variables
- Model prediction off by \$698,310

First model cleaning:

- Dropping null values
- Deleting duplicates



Data/Model Preparation



DATA CLEANING

Remove unnecessary columns, unusual values, outliers or null values

EDA

Visualization and correlation matrices to understand the data

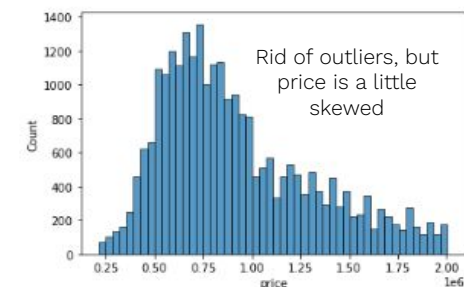
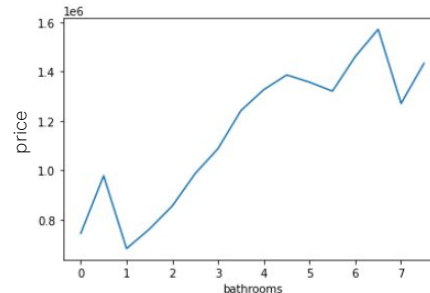
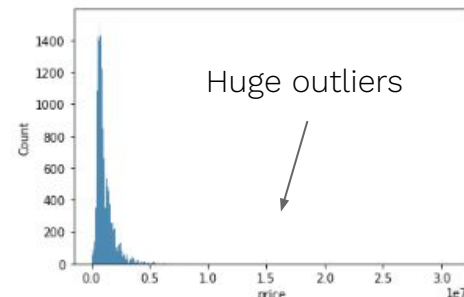
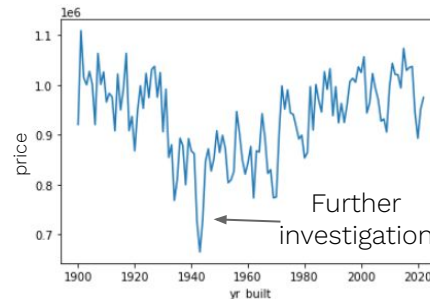
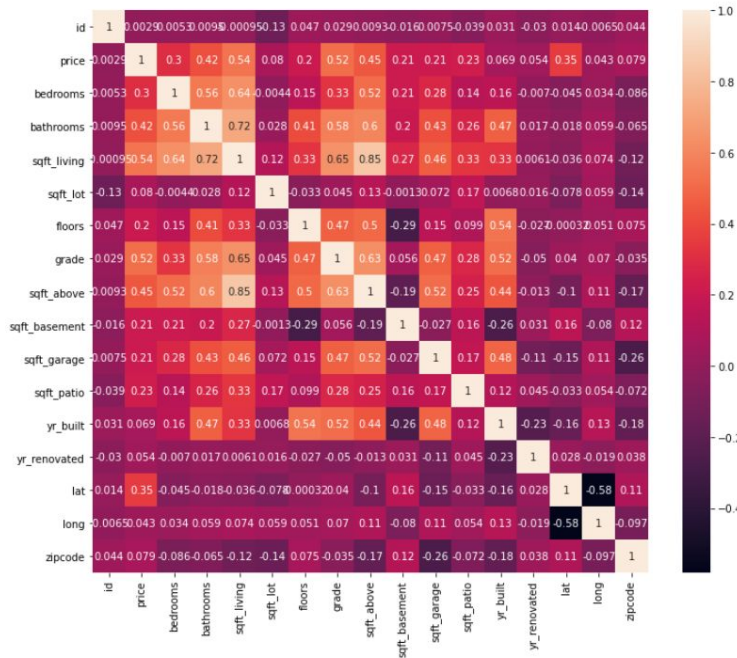
DATA TRANSFORMATION

We log transformed, one-hot encoded, ordinal encoded, and scaled all features

REPETITION

These steps were repeated until sufficient results were generated

Data/Model Preparation

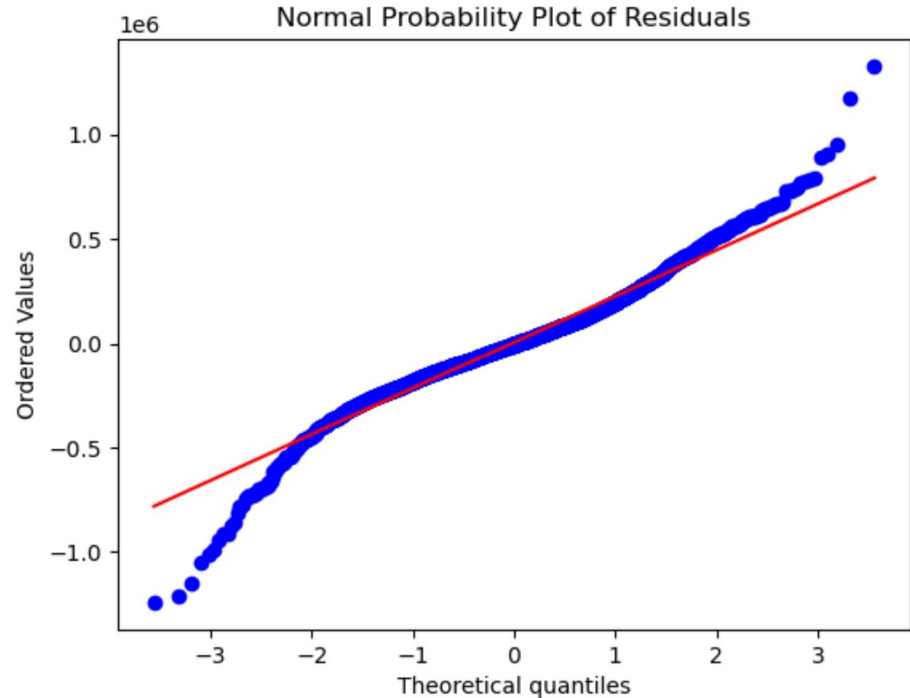


Final Model

- 69% of variability in price can be explained by the model's variables
- Model prediction off by \$224,163

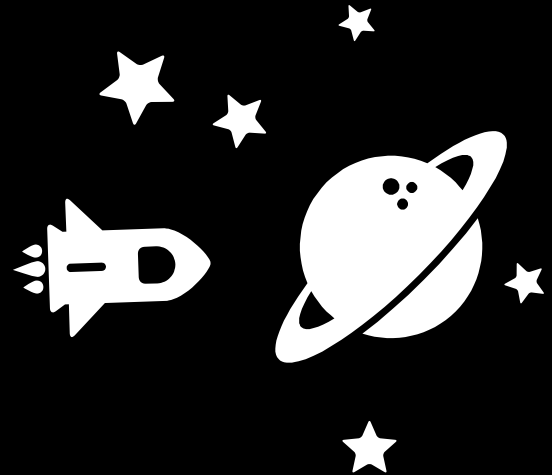
Coefficients:

- Sqft_living = 88.71
- Grade = 83,944.19
- Min Dist to Gated Building = 2,187,461
- Total_sqft = 43.91
- Sqft_lot = -43.64
- Sqft_basement = -40.49



Recommendations

- Sell smaller basement and lot size for a house at a lower price
- Do not sell lower grade houses at a higher price
- Sell houses close to gated residential buildings to a higher price based on distance



Next Steps

- Look at the zipcodes and check to see how the price change based on towns/cities
- Look at how schools in each district affect the price of houses in that town/city
- Try to use the crime data in more detail to see how crime affects the prices of houses in each town/city

Thank You

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