

Data Science

KING COUNTY HOUSING PRICE

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INTRODUCTION

- Real estate plays an integral role in the U.S. economy.
- In 2018, real estate construction contributed **\$1.15 trillion** to the nation's economic output, adding **6.2%** to U.S. gross domestic product.
- Purchasing and selling a house is among the biggest commitments and a great source of income for most people. Therefore, accurate prediction of prices based on other sale data can be a critical tool to assist the buyer/seller in making an informed decision.



DATA SOURCE

- King County dataset
- Located in the U.S. state of Washington.
- The most populous county in Washington and the 12th-most populous in the United States.
- 21,597 listings from May 2014 to May 2015
- 21 features cover the price, attractiveness, size, location and comparison to 15 nearby homes



Business Statement



01

What are the most predictive features to predict the price of a home?

02

How does location affect the price of the home?

03

If location does not matter, what features adds value and what features decrease the value of a home?

04

How do age and condition affect the value of a home?



METHODOLOGY

- Perform exploratory data analysis to understand the insight of the data.
- Create different regression models and pick the best one with highest performance and accuracy that is able to accurately estimate the price of the house given the features.
- **Outcome:** By cross-referencing our initial EDA and the model coefficients, we not only help you predict the price of house accurately but also give you insights on what to look for when you buy a home or what to do to improve your current home's value.

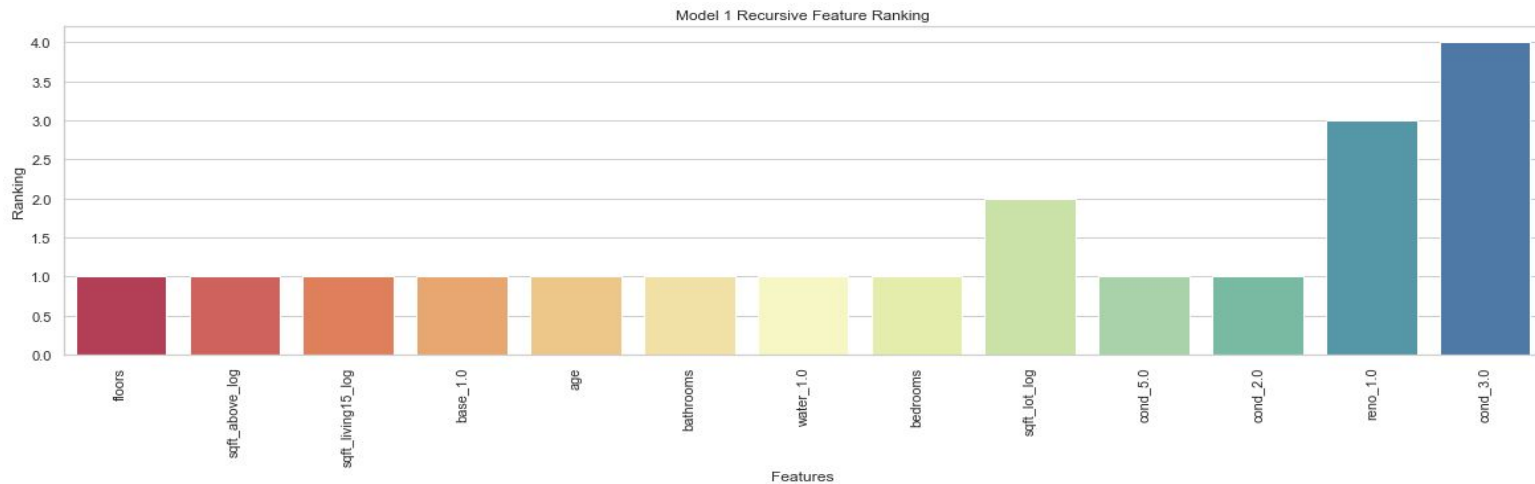
Home Features



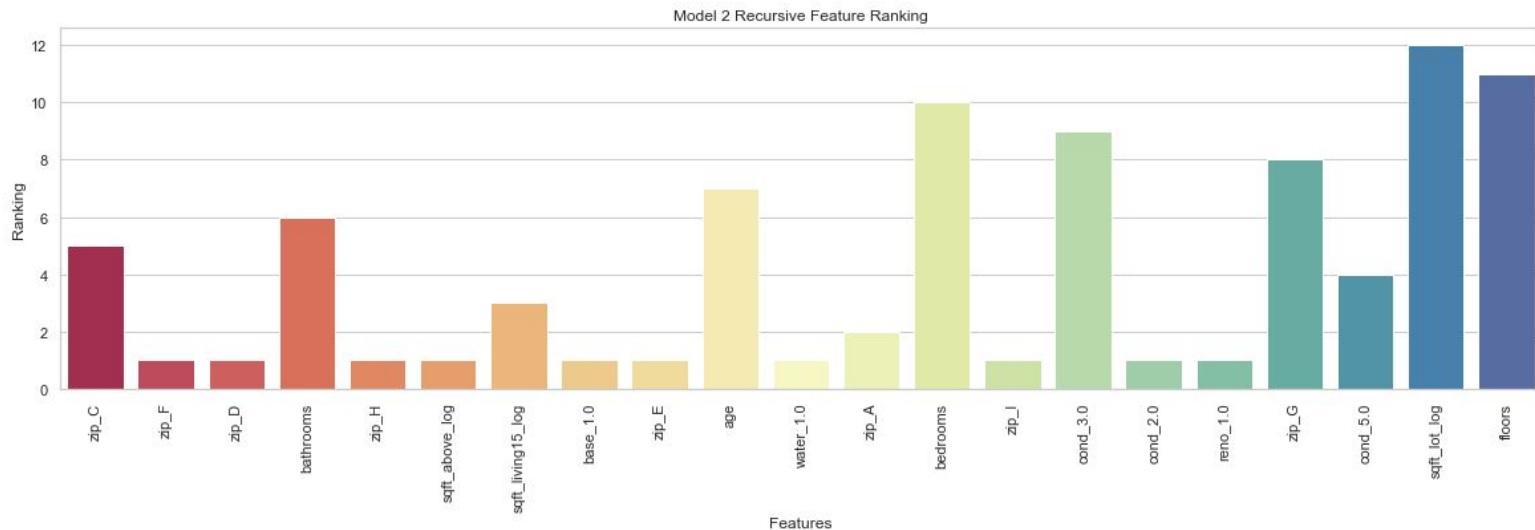


**What are the most
predictive features to
predict the price of a home?**

Accuracy
59%

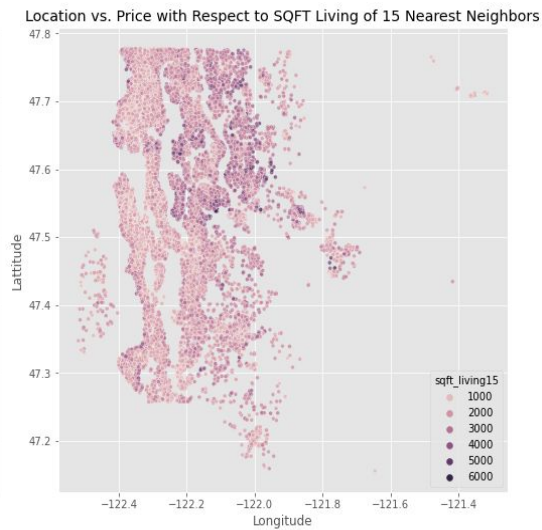
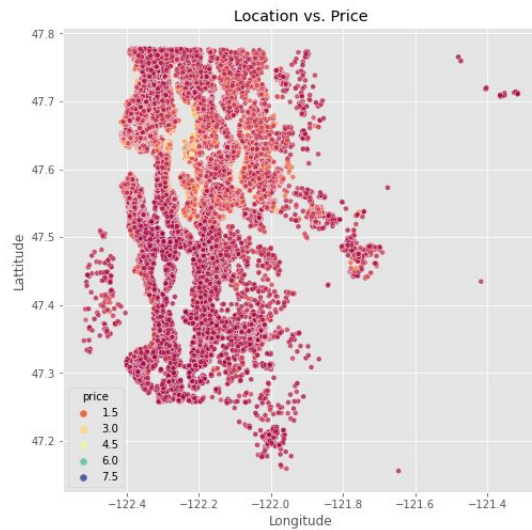
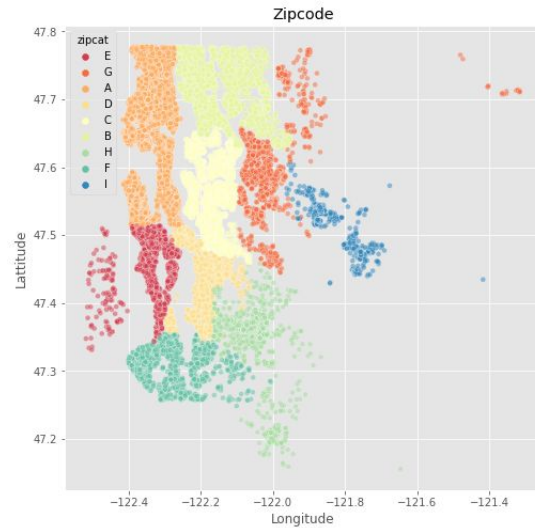


Accuracy
73%





**How does location
affect the price of a home?**

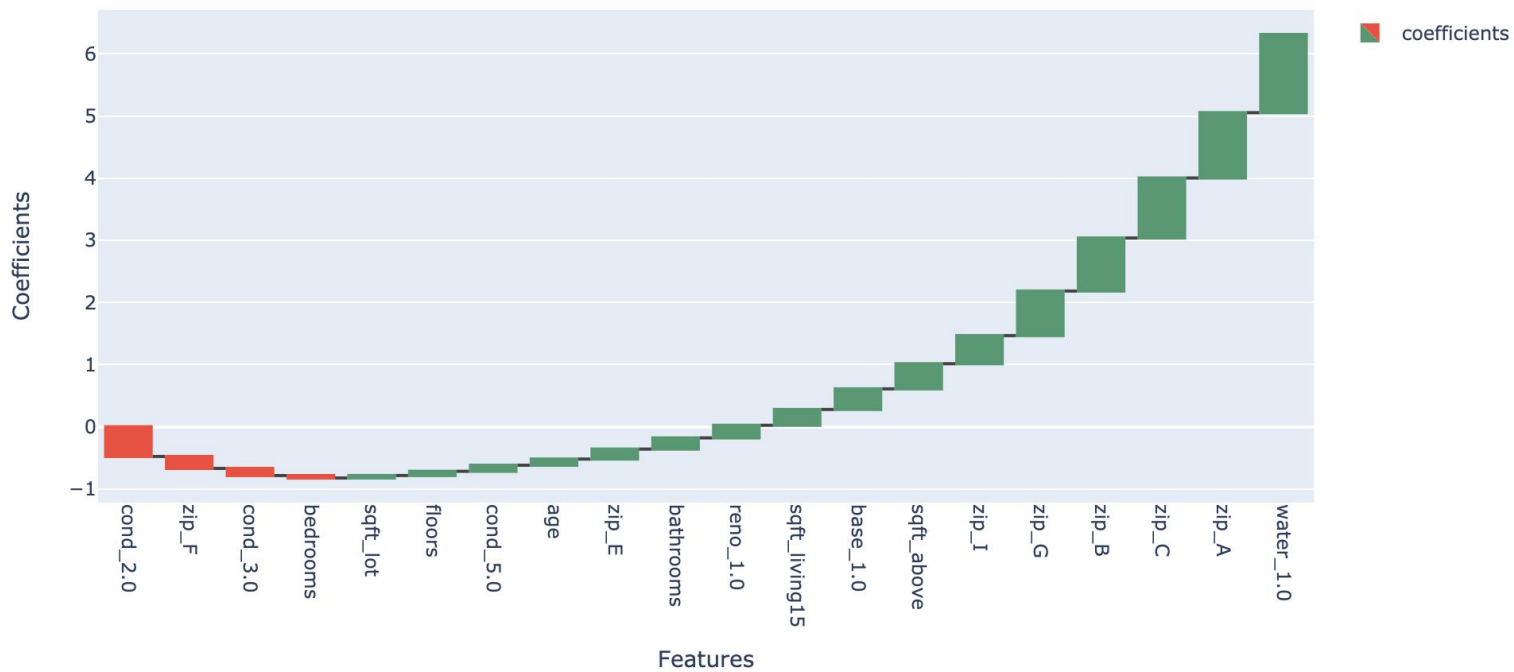


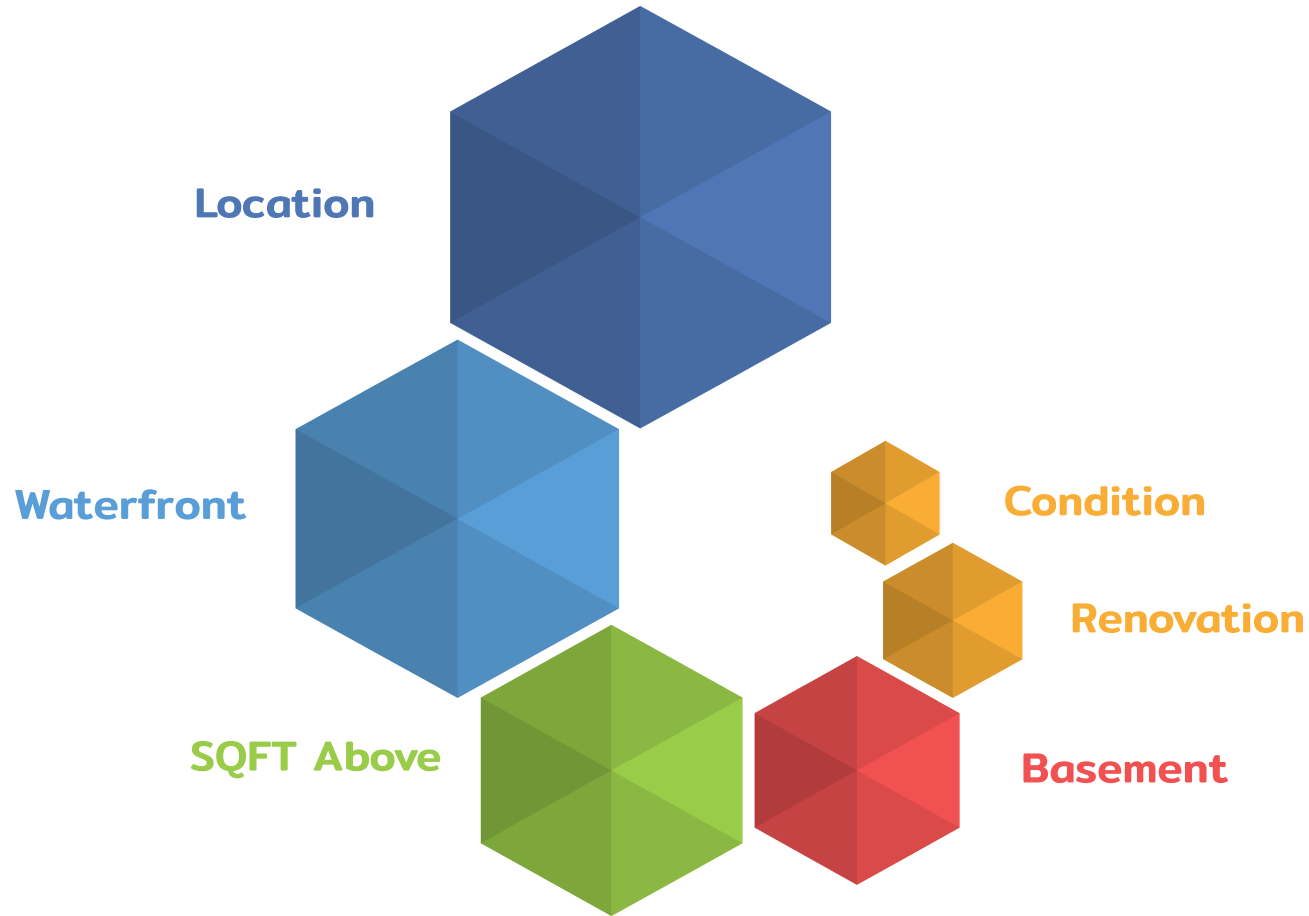


**What features adds value
and
what features decrease the
value of a home?**

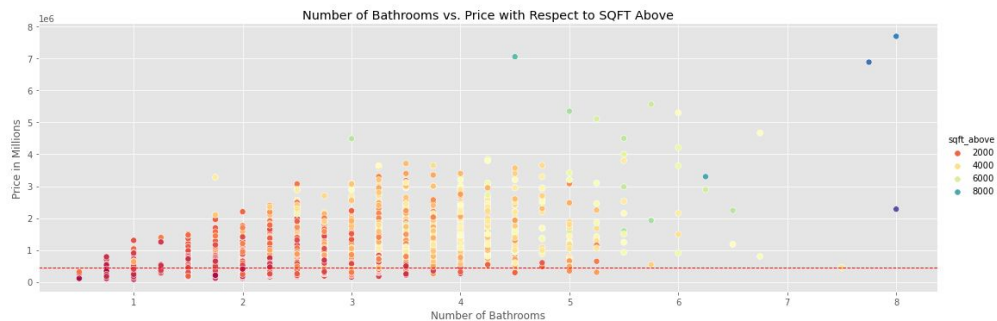
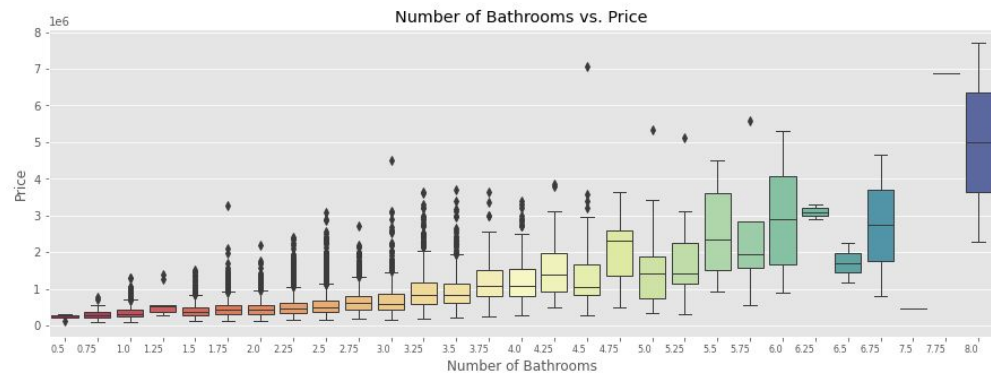
Model E Coefficients

Accuracy
76%

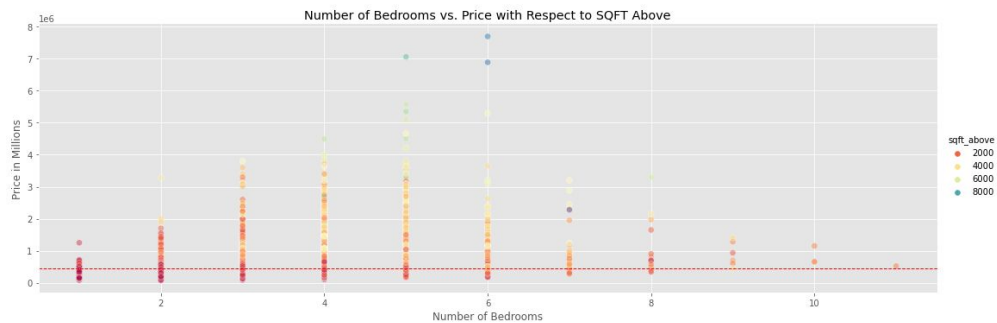
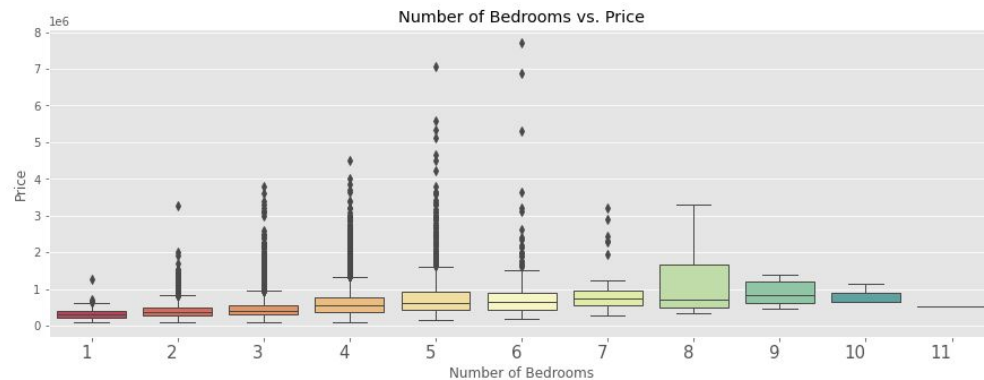




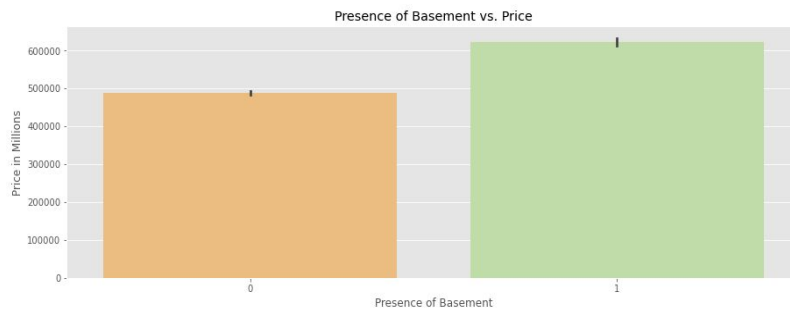
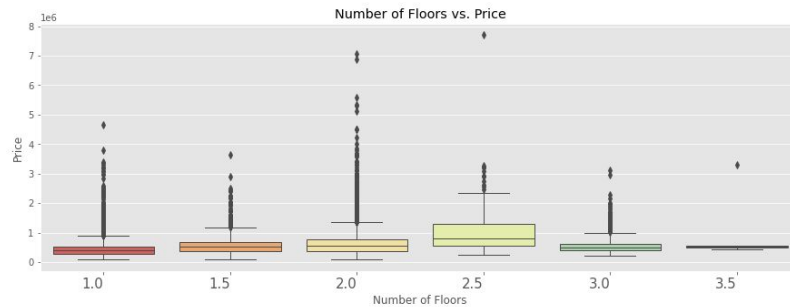
Bathrooms



Bedrooms



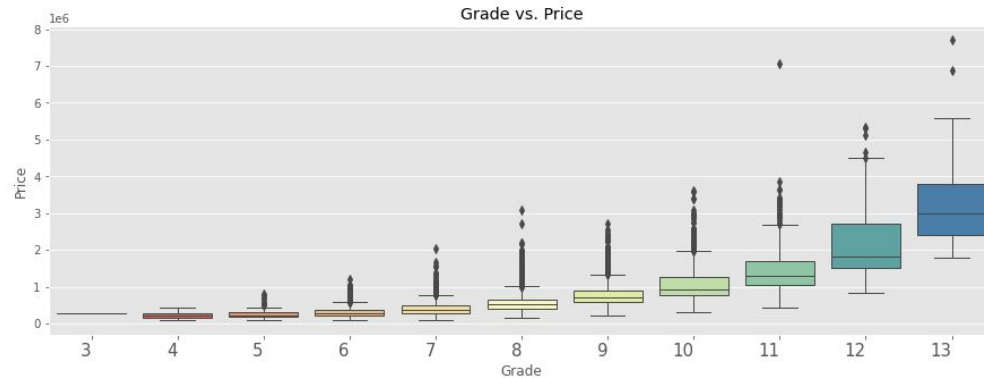
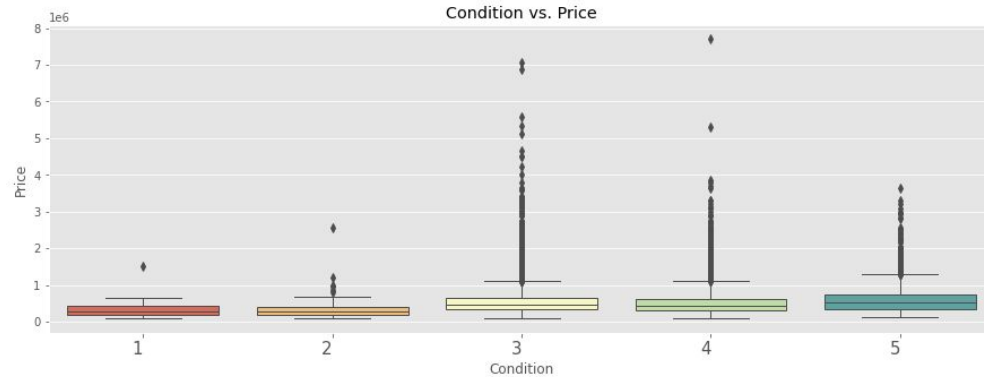
Floors Basement Renovation





How do age, condition, and grade affect the value of a home?

Condition Grade



Age

Condition

Grade





ACTIONABLE INSIGHTS



Location



Waterfront



Livable Square Footage



Age & Condition



Renovation & Grade



Bedrooms, Bathrooms, Floors



OTHER FACTORS



- The quality of local schools
- Employment opportunities
- What are the neighbors like?
- Proximity to shopping, entertainment, and recreational centers
- Proximity to hospitals and other common services
- Proximity to highways, utility lines, and public transit
- Proximity to the nearest major city

When is the best time to buy or sell?



How hot (or cold) is the area's real estate market?





THANK YOU



APPENDIX