PROPERTY PRICE PREDICTION TO AGENCIES
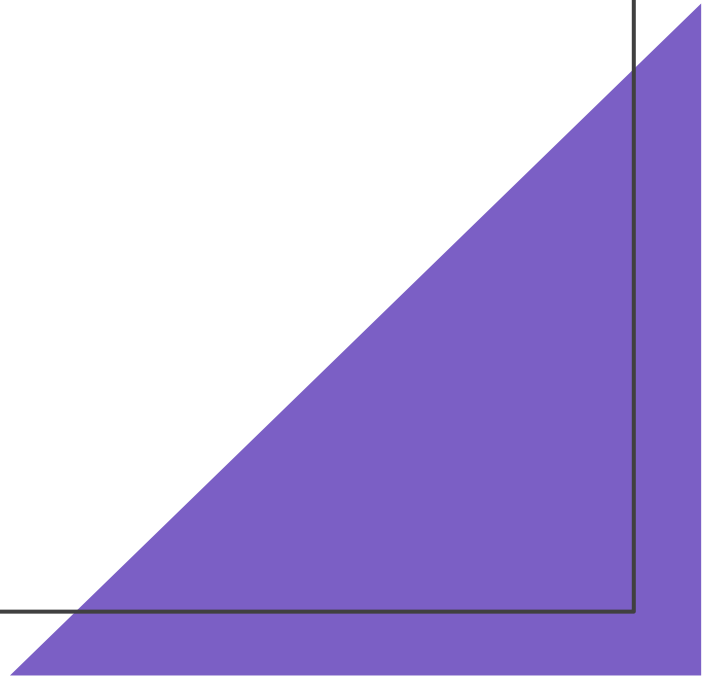
REAL ESTATE
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OUTLINE

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2. Problem Statement
3. Objectives
4. Business Understanding
5. Pricing Distribution
6. Changes in Price Compared to Characteristics
7. Influence of Property Characteristics on Price
8. Factors to Consider in Pricing
9. Conclusion & Recommendations
10. Next Steps

INTRODUCTION

- In the fast-paced world of real estate, real estate agencies guide homeowners through crucial decisions like pricing, market analysis, and property inspections.

- This project aims to equip agencies with a powerful regression-based tool, which will predict property value while analyzing various variables that may affect price.

PROBLEM STATEMENT

What is the problem

- A real estate agency in King County seeks to provide advice to homeowners on how renovations could increase estimated value of their homes but lacks data.

How to solve the problem

- Construct a predictive regression model that aids real estate agencies in empowering clients on making informed decisions on property prices

OBJECTIVES

Main Objective:

To aid real estate agencies in advising clients on house prices.

Specific Objectives:

i. Identify Key Factors Influencing House Prices.
ii. Effectiveness ways to predicting house prices.
iii. Provide suggestions to real estate agencies for enhancing profitability and market presence

BUSINESS UNDERSTANDING

King County, WA, in the northwest U.S., has a robust housing market centred around Seattle. Its growth stems from a strong economy, drawing in residents and creating high housing demand. Seattle, with its iconic skyline, is especially popular among tech workers and urbanites, reflecting the county's varied real estate options from historic areas to modern neighbourhoods.

Data time frame:

1900 - 2015

21 columns/ features

21597 records
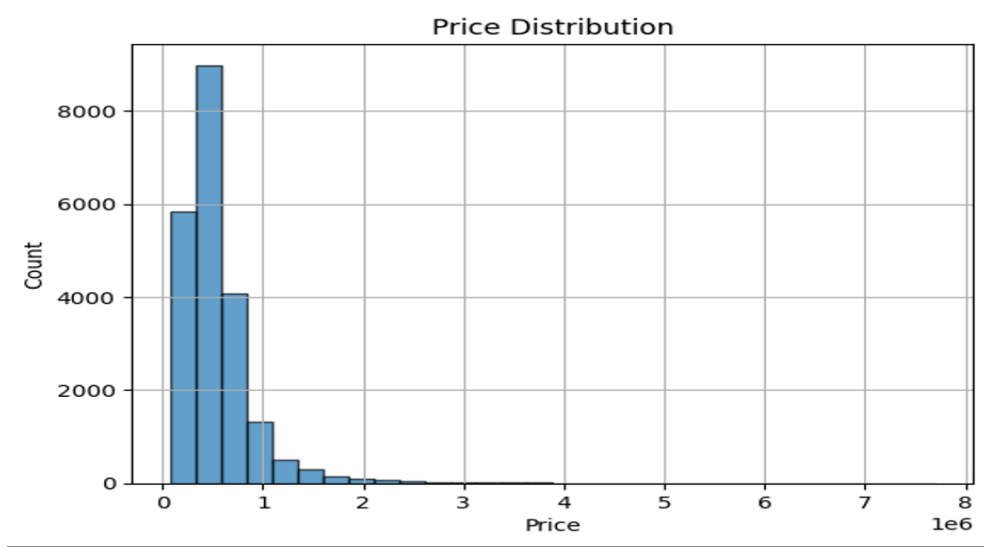
3 categorical features

3 data types
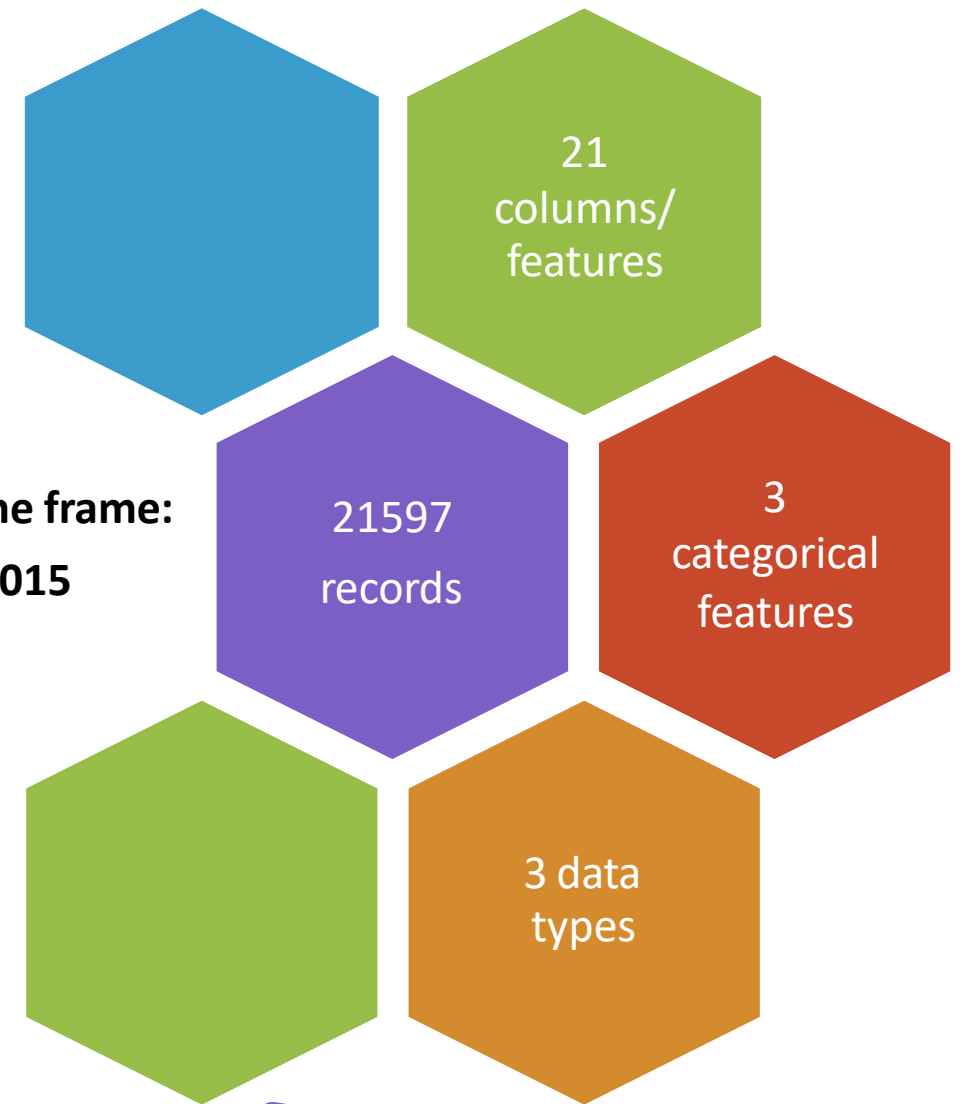
EXPLORATORY DATA ANALYSIS

- Exploratory Data Analysis (EDA) is a crucial step in data analysis where the main goal is to understand the characteristics of the data at hand.

PRICE DISTRIBUTION

Price Distribution

Price Boxplot

- This graph and boxplot shows the price distribution of houses and shows most houses cost less than 1000000
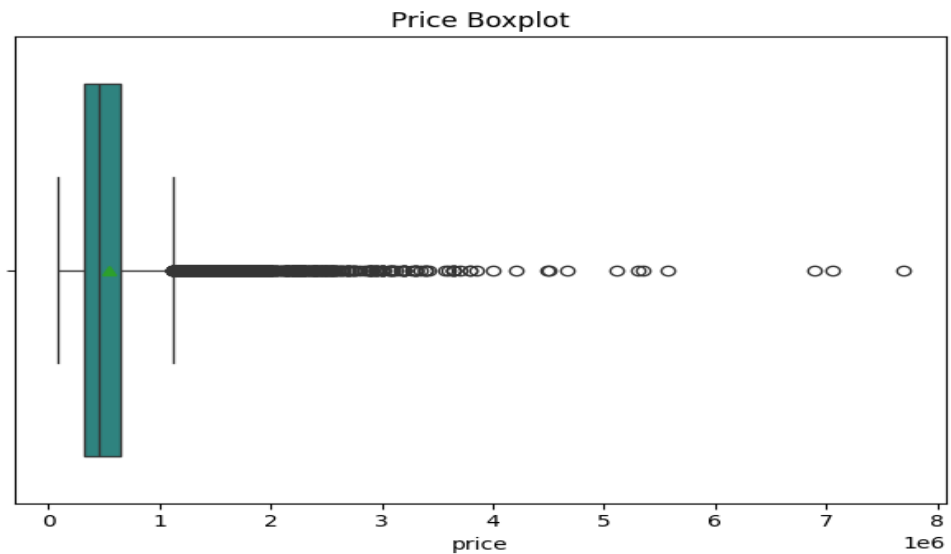
# CHANGES IN PRICE COMPATED TO CHARACTERICTCS – Price vs Rooms

- According to this graph, house prices increases with number of rooms, therefore houses with 5 or more rooms sell at around 5,000,000 while those with 2 or less rooms sell at around 70,000.

- We can also conclude that most houses have less than 4 bedrooms and the ones that have 4 or more bedrooms cost more than 1,000,000

Price vs Space

- This graph shows that bigger houses tend to have a higher price, so a house worth about 90,000 is expected to be smaller than a house worth about 6,000,000.

- We know that most houses cost less than 1,000,000 therefore, this indicates that most houses have less than 3000 square feet of living space and Houses with more than 4000 square feet of living space cost from 2,000,000

Price vs Grade

Price vs Grade
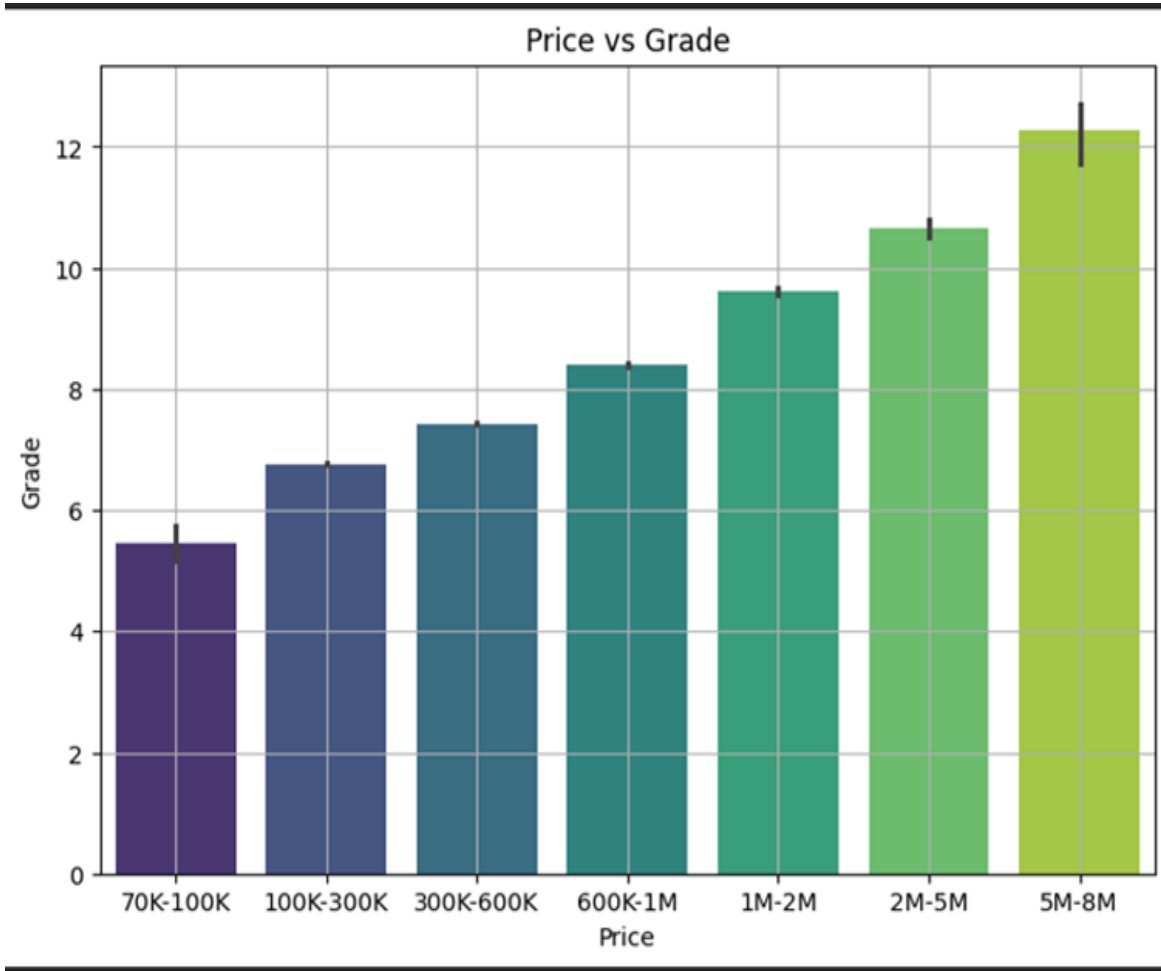
- Houses with higher grades tend to be of higher quality therefore they also have a higher price, for instance houses worth about 80,000 tend to have a lower grade (5 - 7) while houses worth about 6,000,000 tend to have a higher grade (12 - 13).

- Since most houses cost less than 1,000,000, from this graph we can conclude that most houses have a grade of 7(average) and 8 (good)

INFLUENCE OF PROPERTY CHARACTERISTICS ON PRICE (Price vs All Features)

Degree of Influence on House Price
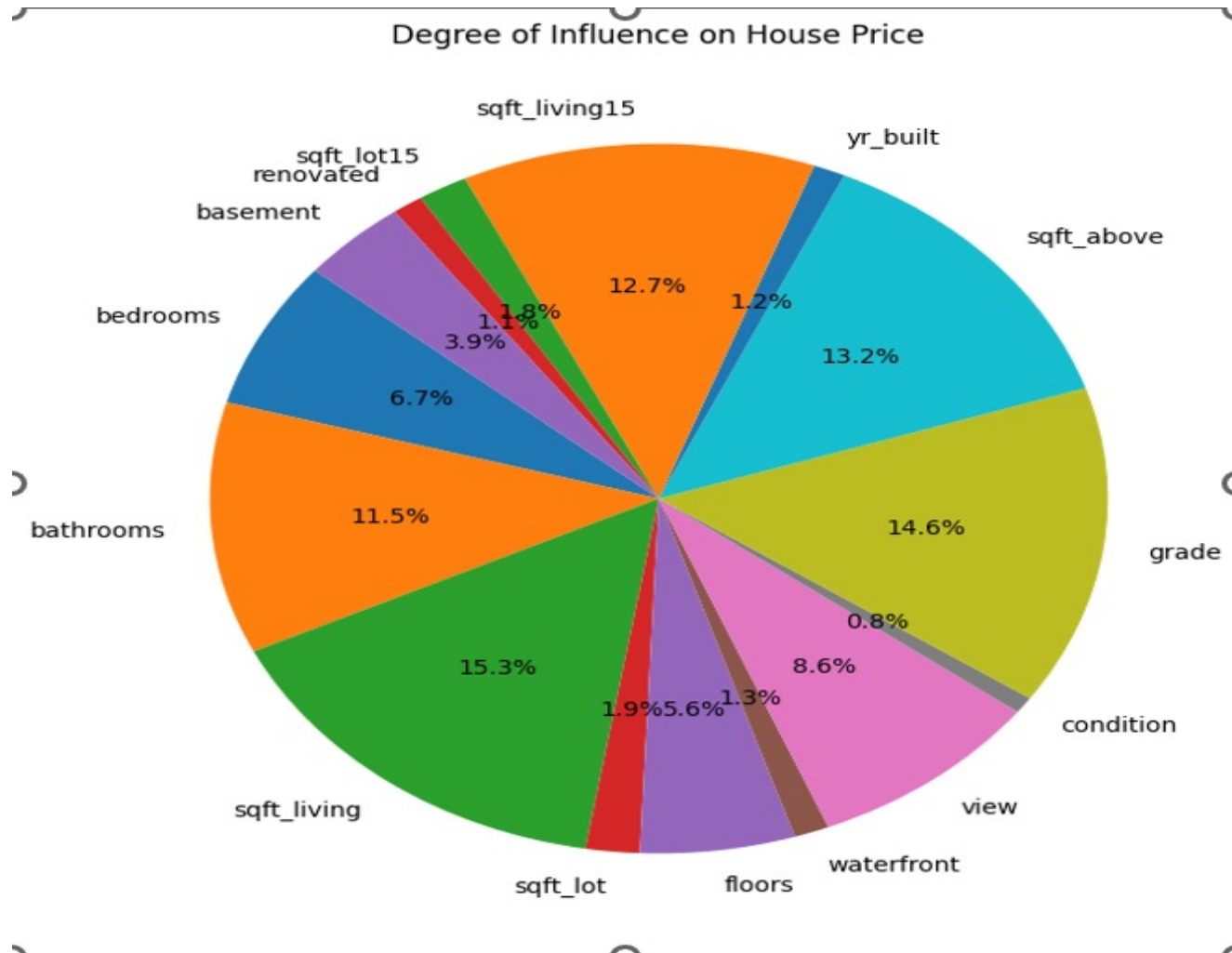
- The pie chart shows what buyers in this area prioritize when looking to buy a house.
- It indicates how much influence house variables have on the house price.
- sqft_living has significant influence on price at 15.3%.
- Renovation status has less significant influence on price at 1.1%

FACTORS TO CONSIDER IN PRICING

Multiple Linear Regression Coefficients
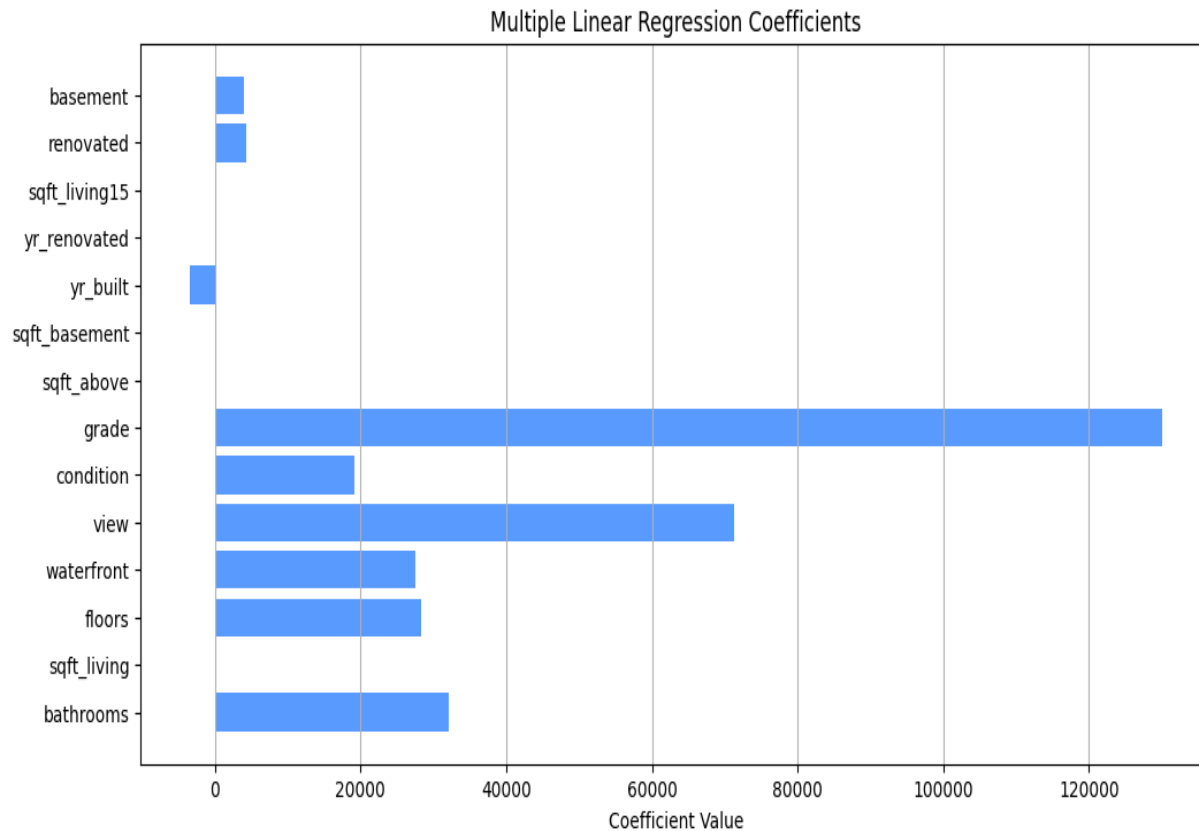
- Key features such as bathrooms, square footage, waterfront views, condition, grade, and year built demonstrate significant impacts on prices.

- Moving forward, leveraging these findings can enhance decision-making processes, refine marketing strategies, and empower clients to make well-informed investment choices in the dynamic real estate market.

CONCLUSION

- When pricing houses, real estate agents should consider features such as bedrooms, bathrooms, living space, basement space, floors,
- waterfront location, view, condition and grade.
- Renovating older houses will also increase the prices of houses.

RECOMMENDATIONS TO THE STAKEHOLDERS

- Consider the influence of neighboring properties
- Renovations can add value
- Pay attention to the year built
- Consider the number of bedroom
- Focus on the square footage
- Maintain the condition of the property

NEXT STEPS

Stay updated on market trends

Educate clients on the impact of features

Stay informed about regulations and policies

Collaborate with appraisers

Conduct thorough market analyses

Provide renovation recommendations

Thank you!