



GROUP 14

PHASE 2

HOUSING SALES PROJECT



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PROJECT OVERVIEW

Real world problem:

Fanaka Group, a Real Estate Investment Group is the identified stakeholders for this project. This group deals with buying, selling, renovating and financing properties. The group is seeking for ways it can provide better housing facilities for their clients. They are seeking to improve their efficiency and effectiveness in delivering their facilities to their clients.

BUSINESS UNDERSTANDING

01 Project Statement

The real estate group needs us to provide insights to homeowners that speak to how home renovations might increase the estimated values of their homes and by what amount

02 Project Solution

To cultivate the use of data in attempting to predict whether or not a property renovation affects the house sale price



OBJECTIVES



Property Features

How do the various house features affect the pricing of a property?



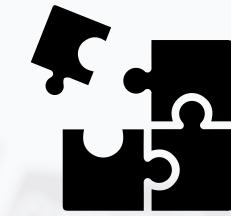
Property Valuation

How does renovation affect the valuation of a property?



Customer Satisfaction

What house features are most likely to attract customers?



Recommendations

how a customer can use these house features to set competitive prices for their properties and which of these features have the most significant impact on price

DATA UNDERSTANDING

We are using the King County House Sales dataset, King County House Sales refer to the real estate market and transactions involving residential properties in King County, Washington, including the greater Seattle area.

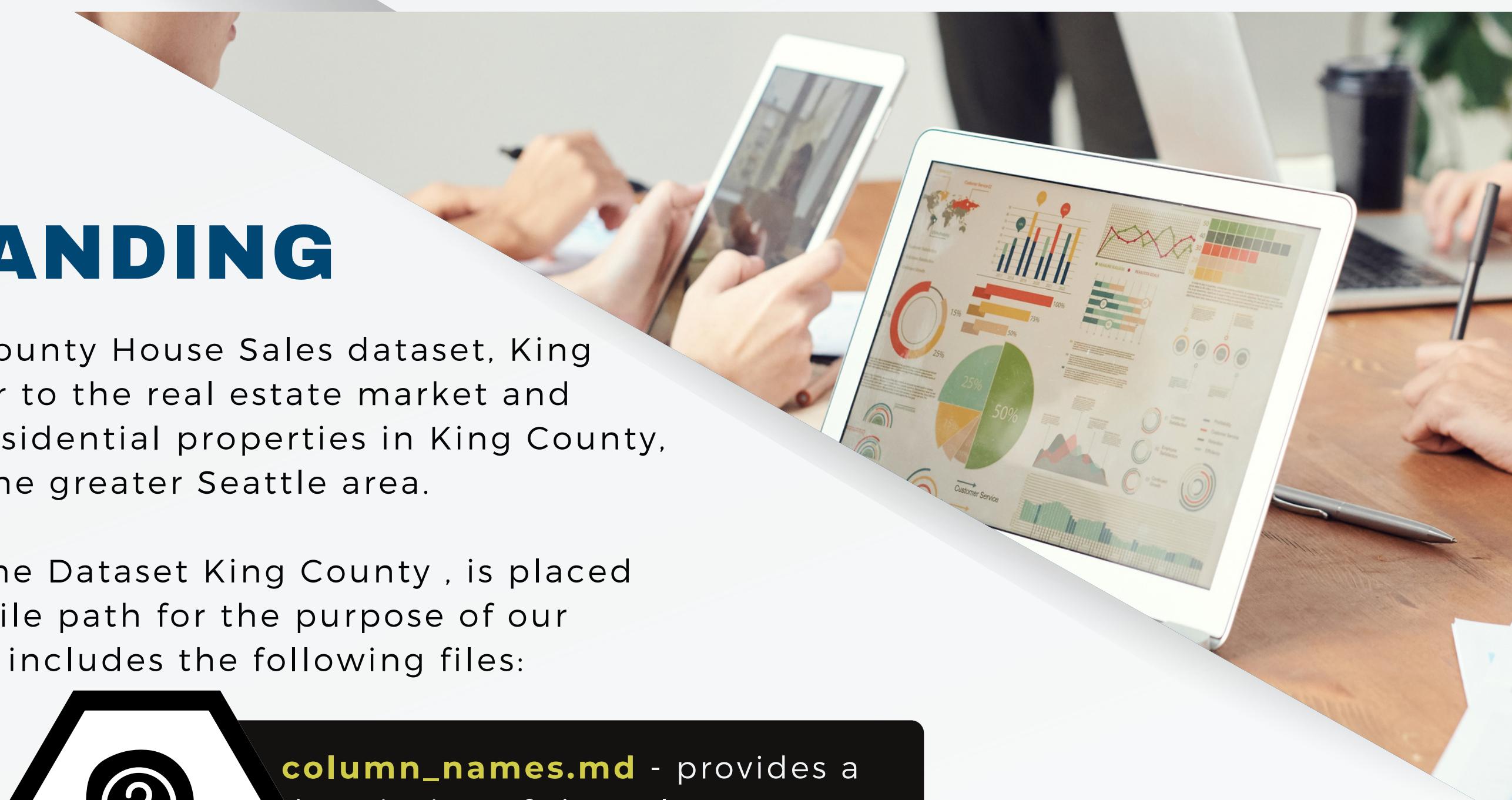
The Primary source of the Dataset King County , is placed under the `data` folder file path for the purpose of our analysis. The data folder includes the following files:



column_names.md - provides a description of the column names



kc_house_data.csv - provides list of attributes for the houses and their prices



The methods used in handling the data set given include:

Data Preparation

This process is used to load the data set provided for analysis. Here we are able to find out information such as:

- Shape of the dataset
- Characteristics of dataset
- Columns associated
- Data Types present

Data Cleaning

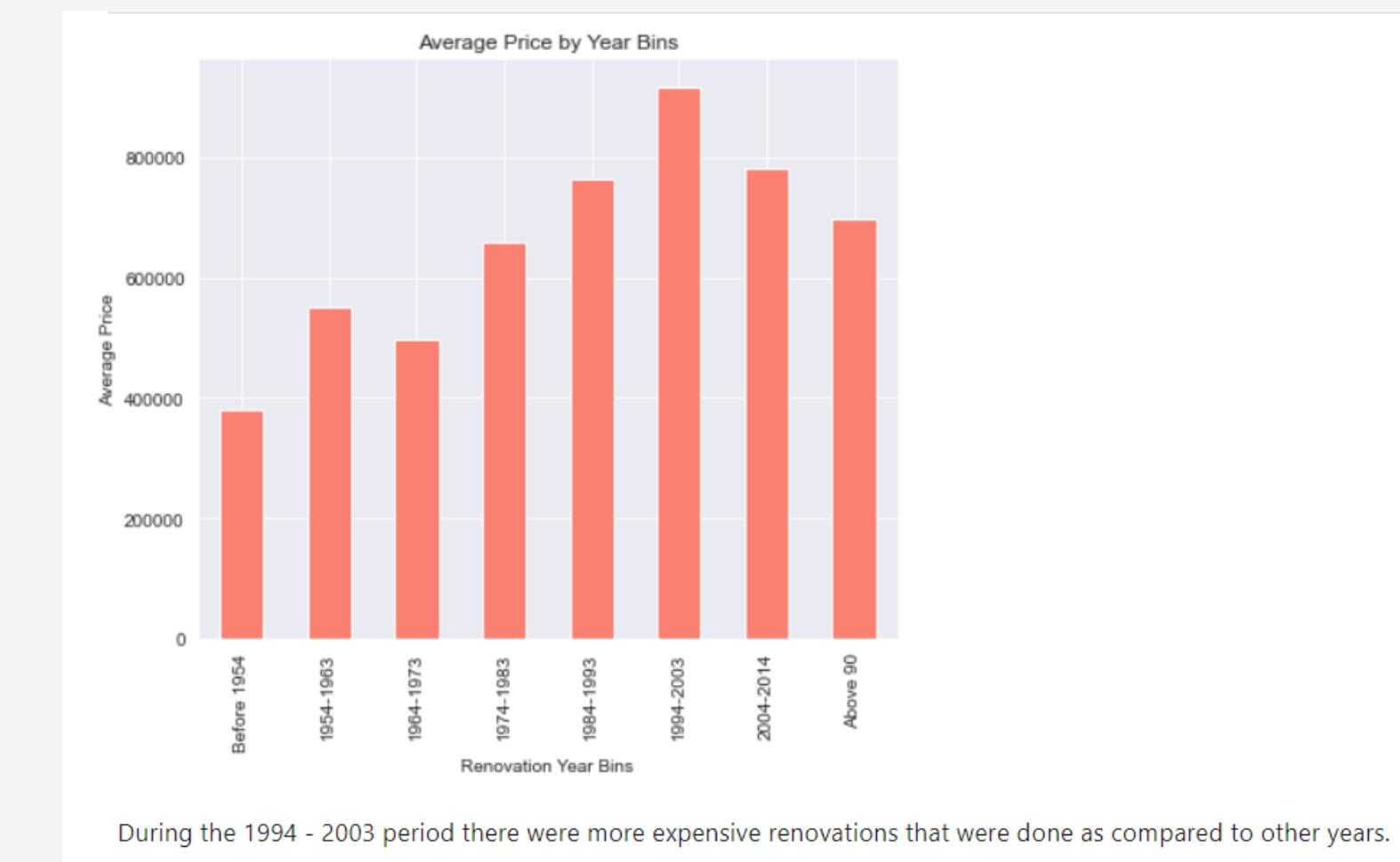
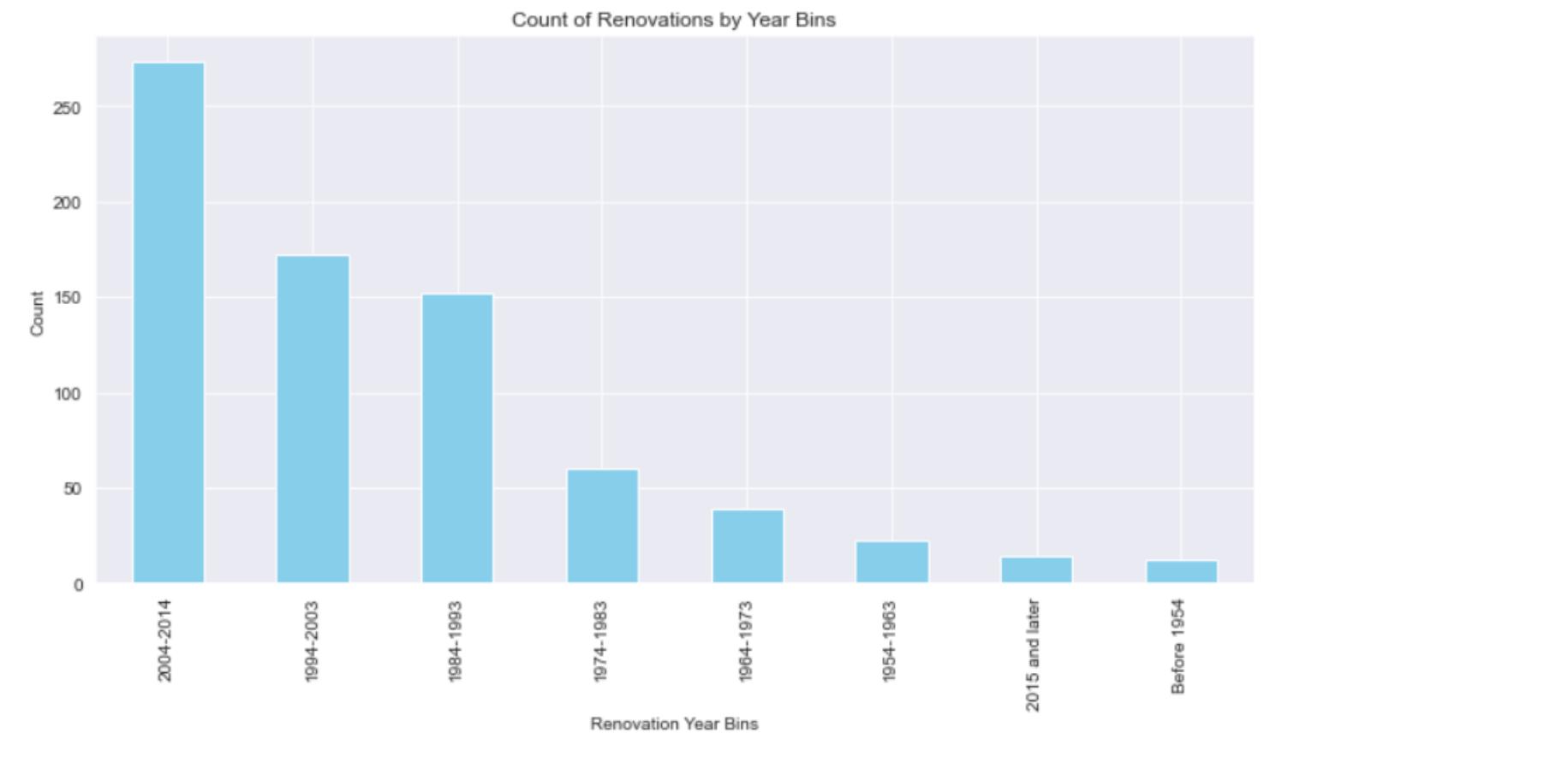
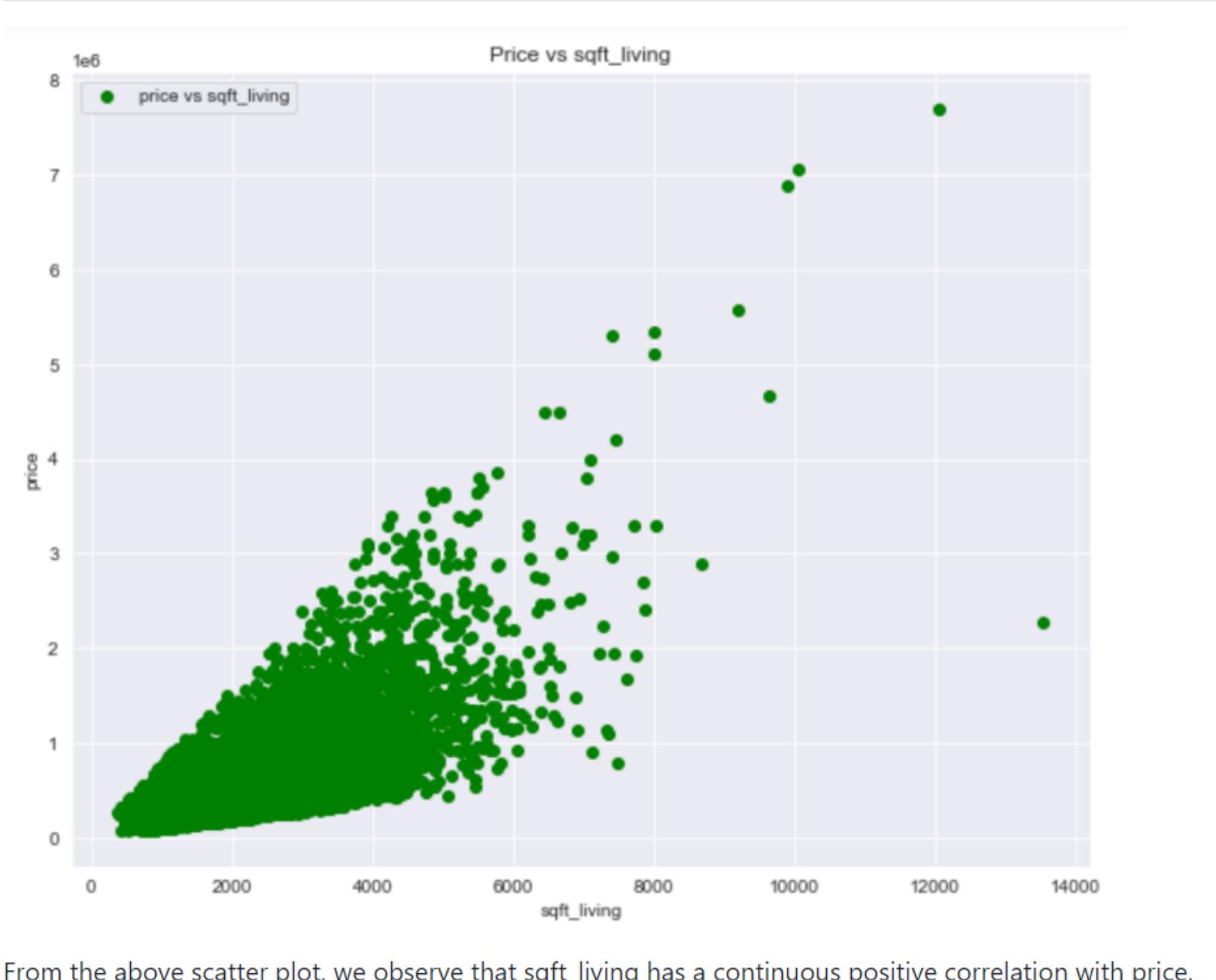
For this process, we determine action to take in terms of:

- Handling missing data
- Handling duplicated values
- Handling wrong data types

Data Visualization

This process enables us to visually represent relationships between the different columns in the dataset







MODELLING

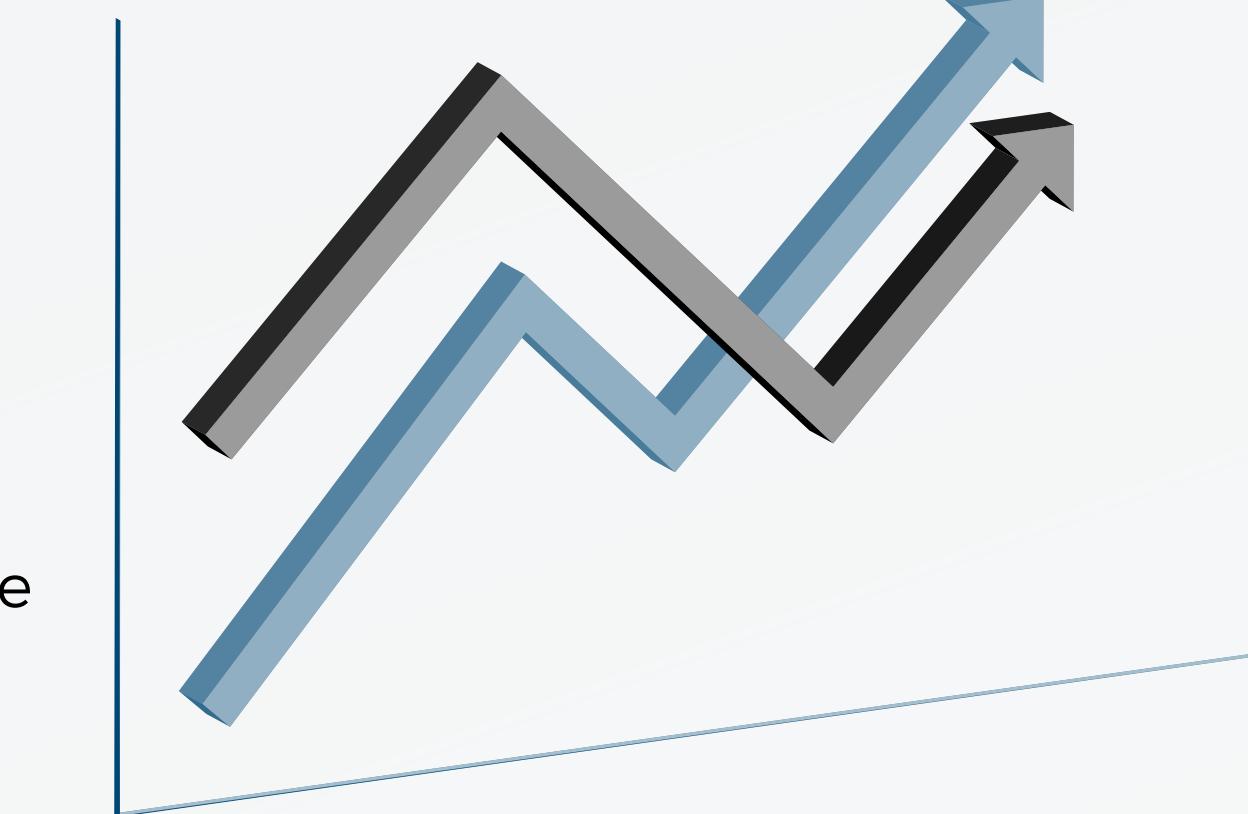
For the dataset provided, we are able to conduct regression modelling in order to draw conclusions and predictions from the data.

- Univariate Analysis
- Multivariate Analysis

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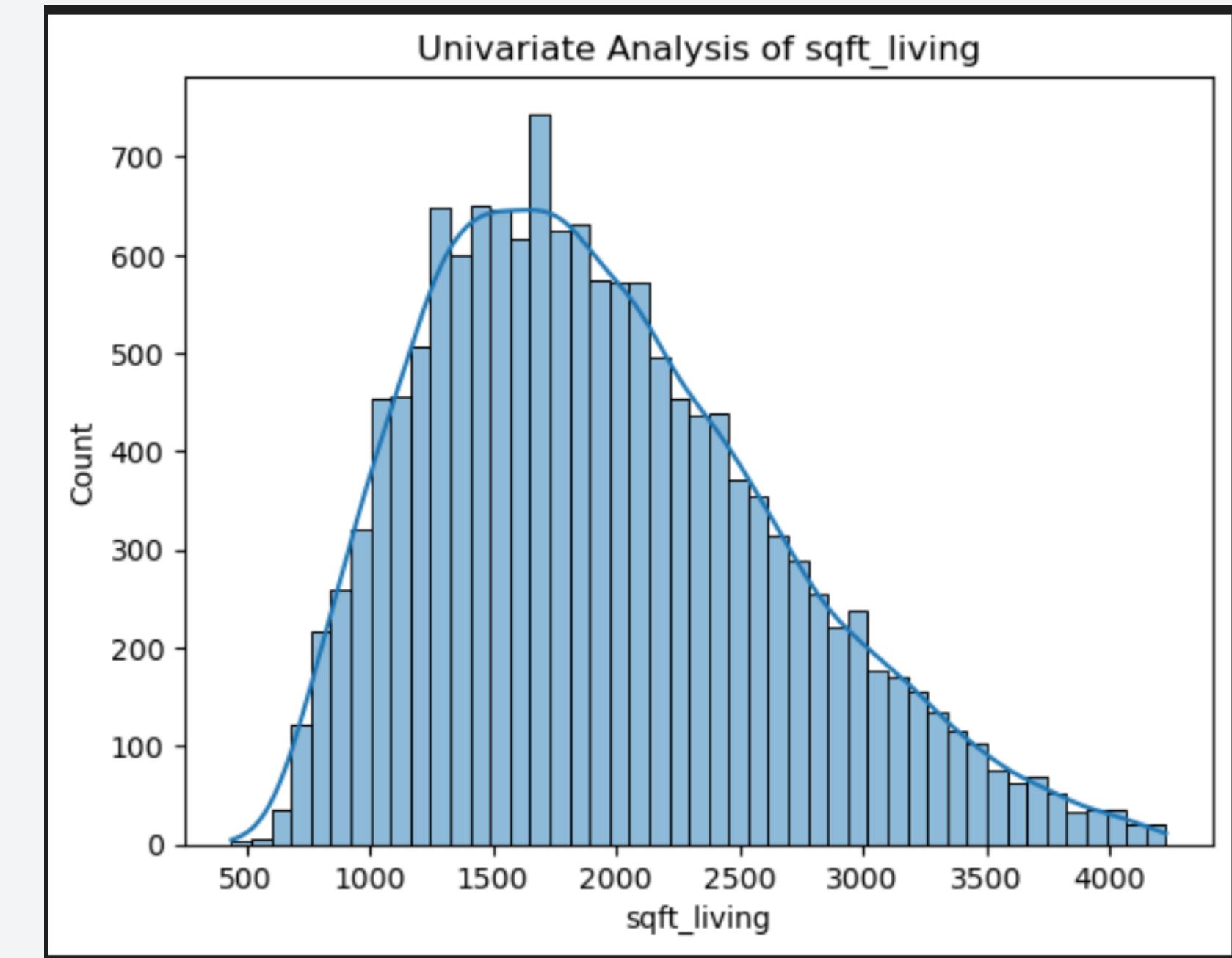
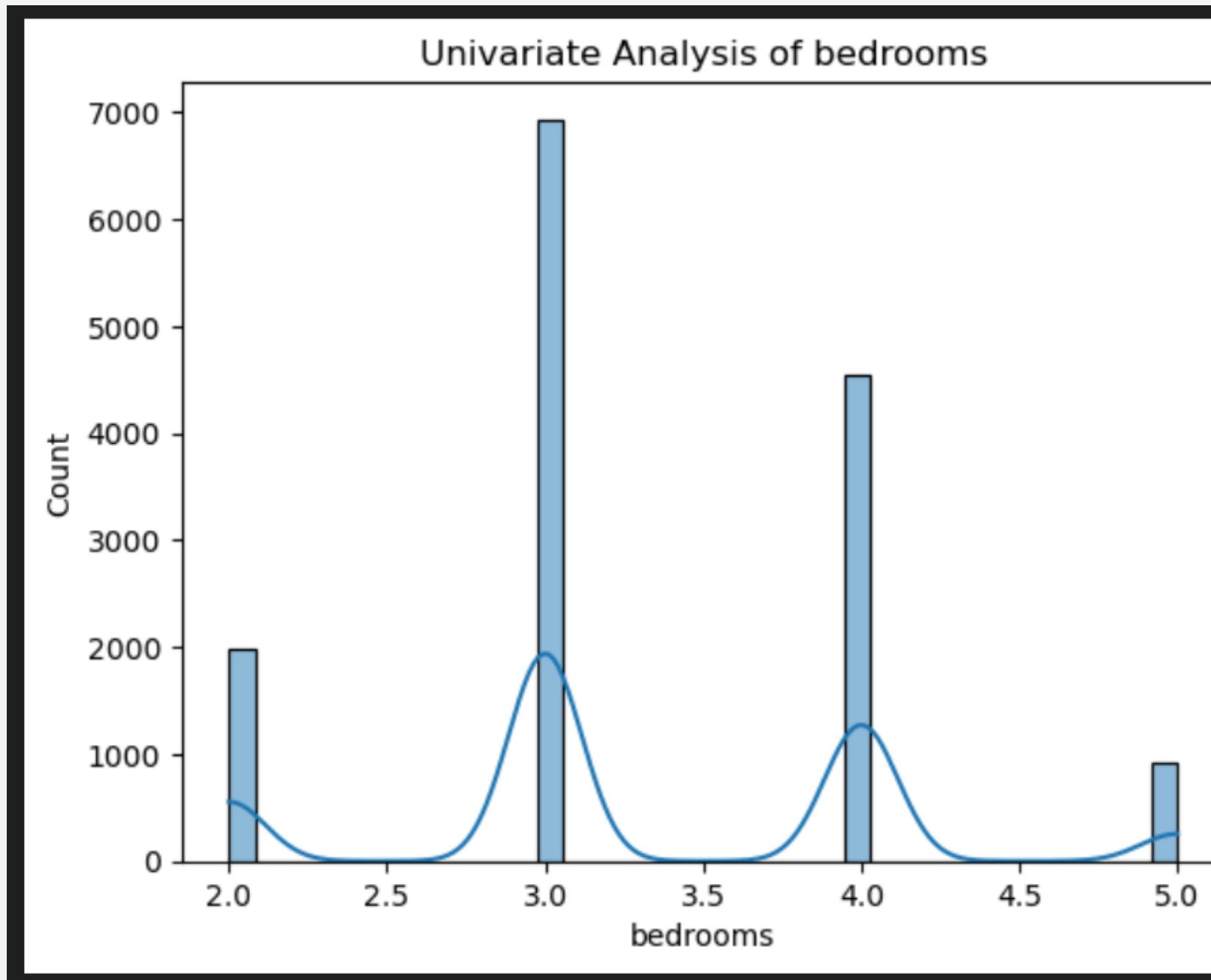


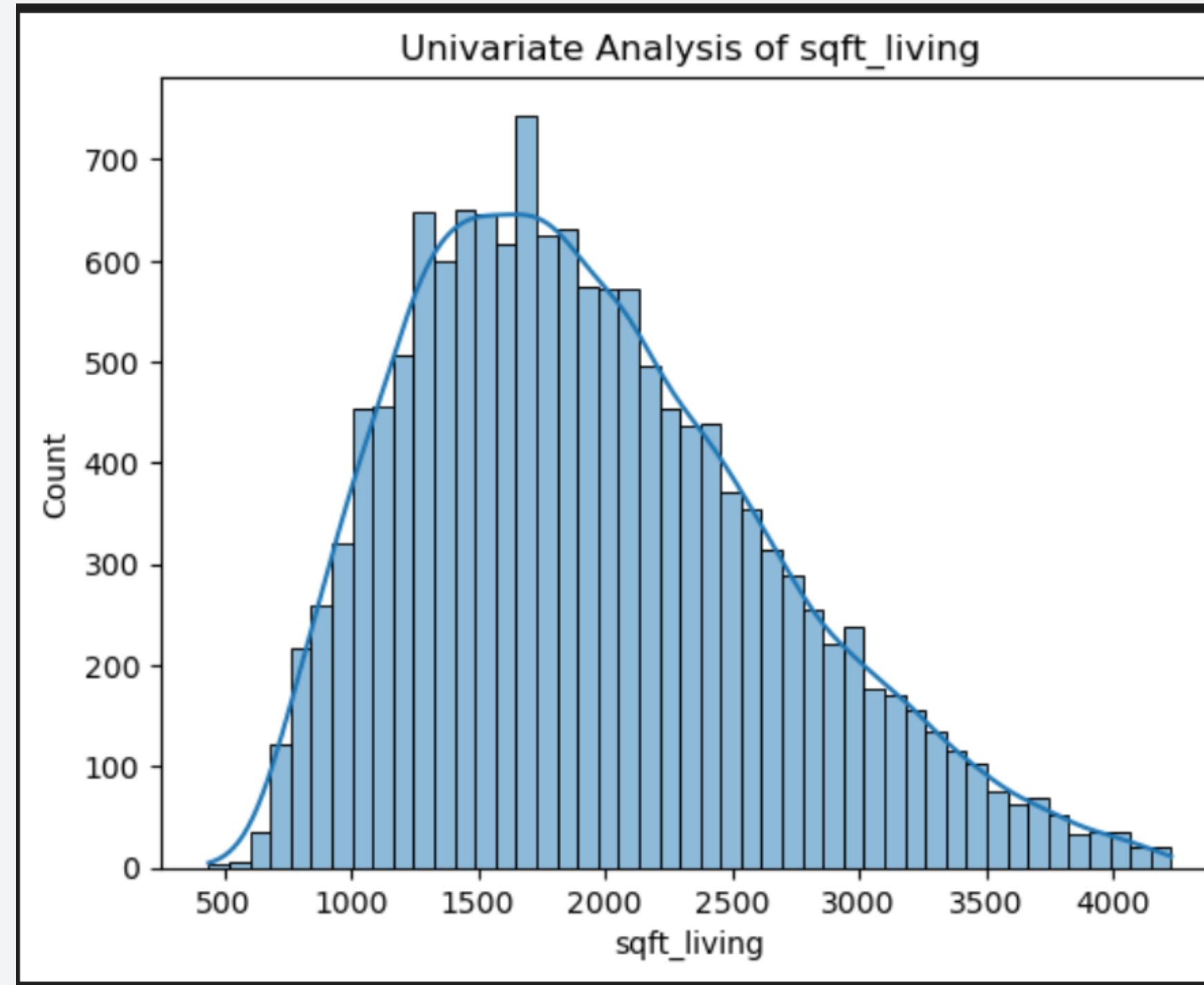
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UNIVARIATE ANALYSIS

We conducted univariate analysis to understand the distribution and characteristics of individual variables.





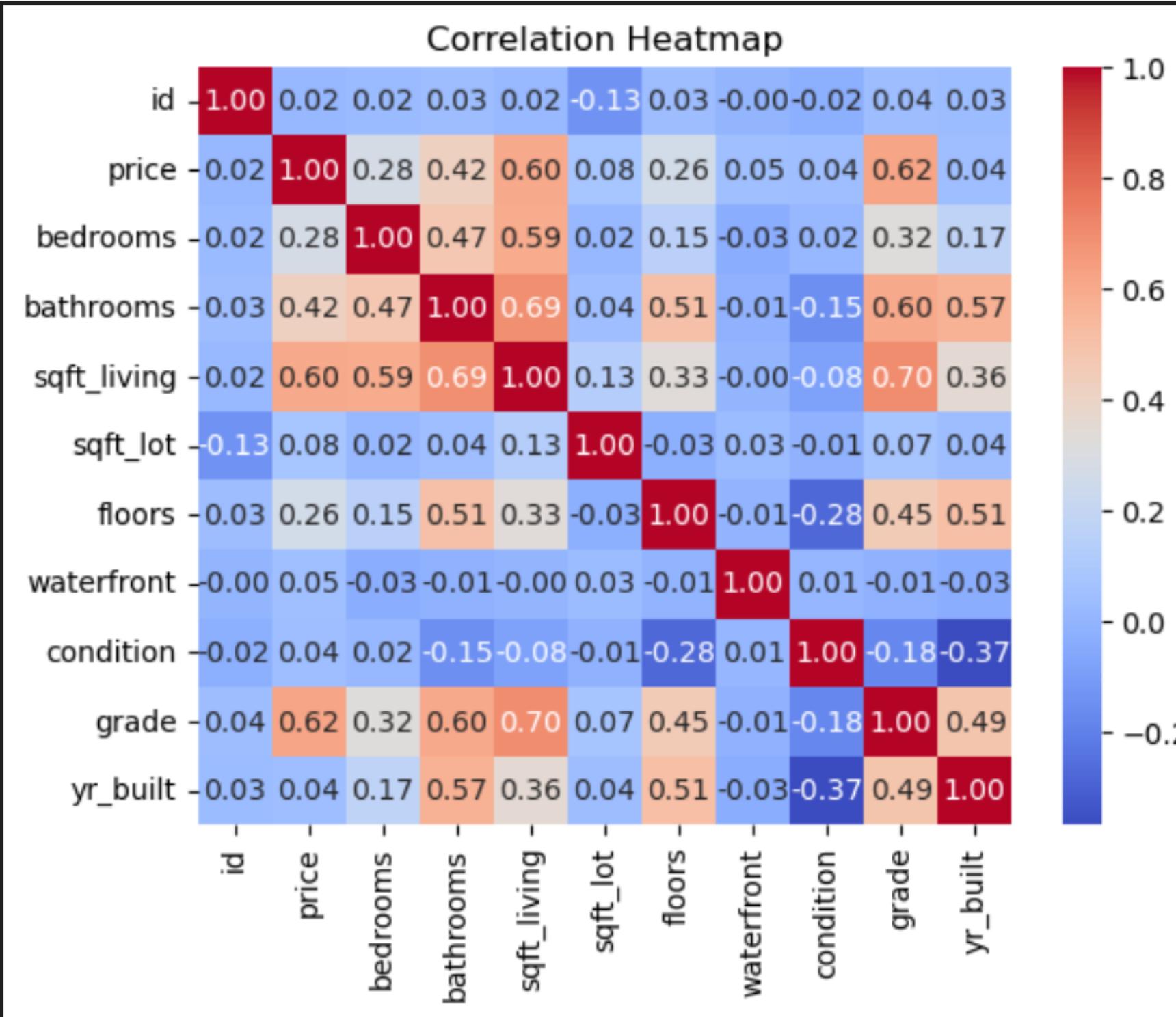
Results

For the univariate analysis of the dataset, the categorical data put into consideration include the 3 listed:

- Bedrooms
- Bathroom
- sqft_living.

We are able to conclude that from the count from this, the major features that attract customers to buy house are like the above listed

MULTIVARIATE ANALYSIS



We conducted multivariate analysis to understand the relationship between the house features and the price.

Results

The size of the living area, indicated by sqft_living, has the strongest positive impact on property prices.

The number of bathrooms also significantly influences prices. Bedrooms, while still positively correlated, have a comparatively weaker impact. Other attributes like floors, sqft_living15, and yr_built show moderate correlations with various features.

RECOMMENDATIONS

01

Pricing Strategy

The features such as square footage, bathrooms, waterfronts etc to set competitive prices for the properties

02

Market Trends

By considering the effect of the property features and at what time, stakeholders can advise clients on what trends to adopt and when

03

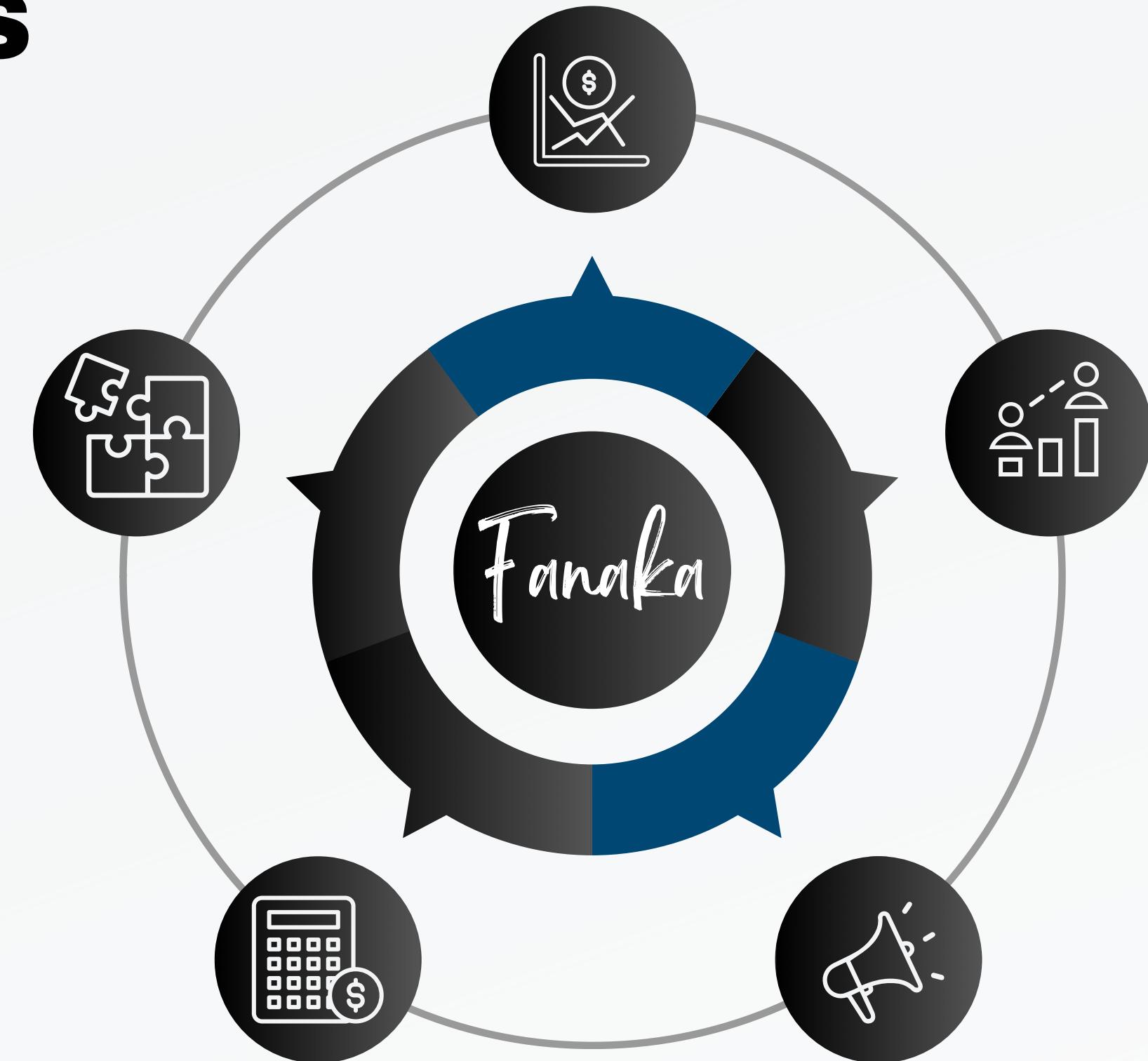
Investment opportunities

Identify property types that may offer good investment opportunities, Which provide insights to homeowners on whether to rent or adopt capital appreciation

04

Marketing campaigns

Using insights from the dataset stakeholder can develop targeted marketing campaigns. Highlight the most appealing features of properties, and use data-driven approaches to reach potential buyers and sellers effectively.



SUMMARY

01

The analysis reveals that property features like square footage, the number of bedrooms, and waterfront access significantly impact house prices. Adjusting pricing strategies based on these factors can maximize returns for real estate listings.

02

Using the findings we can Calculate the potential Return on Investment by estimating the value of the property to project future cash flows.

03

The stakeholder can use the findings to advise the property owners on what renovations will increase the value of the property and at what time which is both cost-effective and educational in terms of market trends





OUR TEAM

- 1. BUSHRA MOHAMMED**
- 2. PENNINAH GITUKU**
- 3. LESLEY KAMAMO**
- 4. CYNTHIA ADISA**

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