

NORTHWEST COUNTY HOUSING ANALYSIS

By Group 5

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◆ OVERVIEW

Accurately predicting house prices is crucial for both buyers and sellers. We will explore the data and model results.

Then, discuss the key insights and their implications for the market and finally conclude with recommendations for further analysis and real estate strategies.



BUSINESS UNDERSTANDING

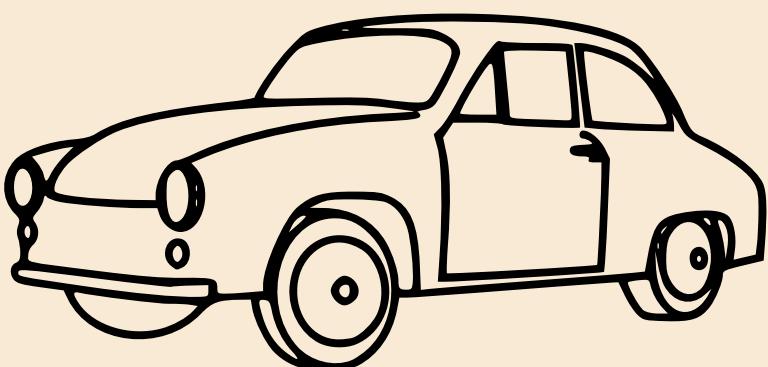
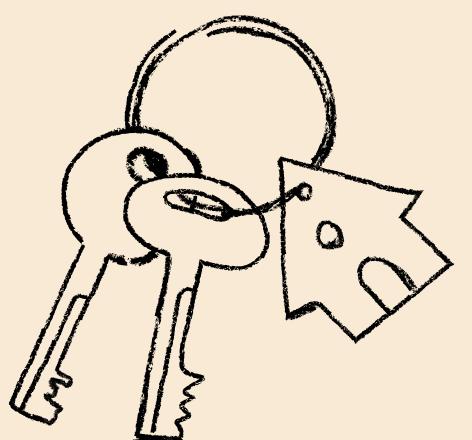
Accurately predicting house prices is a challenge in the northwestern county market. Real estate agencies struggle to give specific advice.

By analyzing this data, key factors influencing house prices in the market will be identified and high-impact recommendations will be given to clients.



PROPOSED SOLUTION & CHALLENGES

- Real estate agents -It is challenging to appropriately value properties and advise customers on competitive pricing tactics.
- Homebuyers - Uncertainty in making informed decisions due to unpredictable market trends and potential overpricing of properties.
- Homeowners - Challenges in maximizing their return on investment by figuring out the best moment to sell their property, considering the volatility of the market.
- Proposed Solution - Analysis using multiple linear regression to better understand the factors that influence house sales and forecast future trends





◆ **PROBLEM STATEMENT**

The unpredictable fluctuations in property prices within the northwestern county are making it challenging for our agency to accurately advise clients on buying, selling, or investing in real estate. This uncertainty can lead to missed opportunities for both buyers and sellers, potentially hindering the agency's ability to secure successful transactions and maximize client satisfaction. The agency needs to find an informed way to provide advice to homeowners and homebuyers.



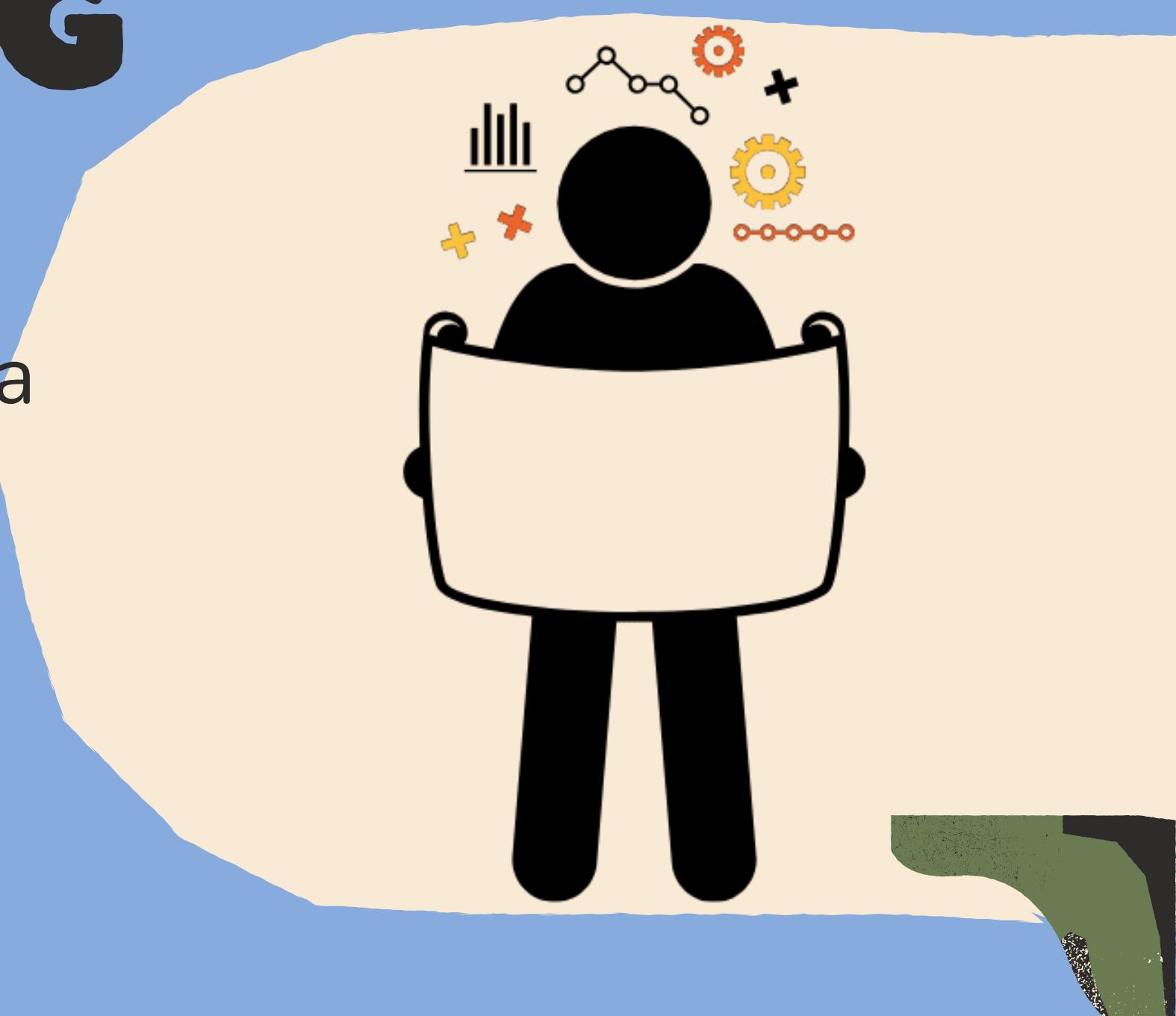
OBJECTIVES

- To analyze the King County House Sales dataset to identify statistically significant features that impact house prices, by utilizing techniques such as correlation analysis.
- To build a multiple linear regression models that predict the target variable, price, whose coefficients are easily interpretable.
- To evaluate the model's accuracy and performance of the linear regression model using appropriate metrics such as mean squared error (MSE) or R-squared.

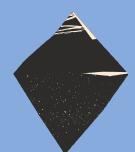


DATA UNDERSTANDING

- ◆ This study makes use of the King County House Sales dataset that is contained in a CSV file.
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- ◆ There are a total of 21597 rows and 21 columns
- There are 6 categorical columns, 12 numeric columns and 3 columns that contain temporal data.

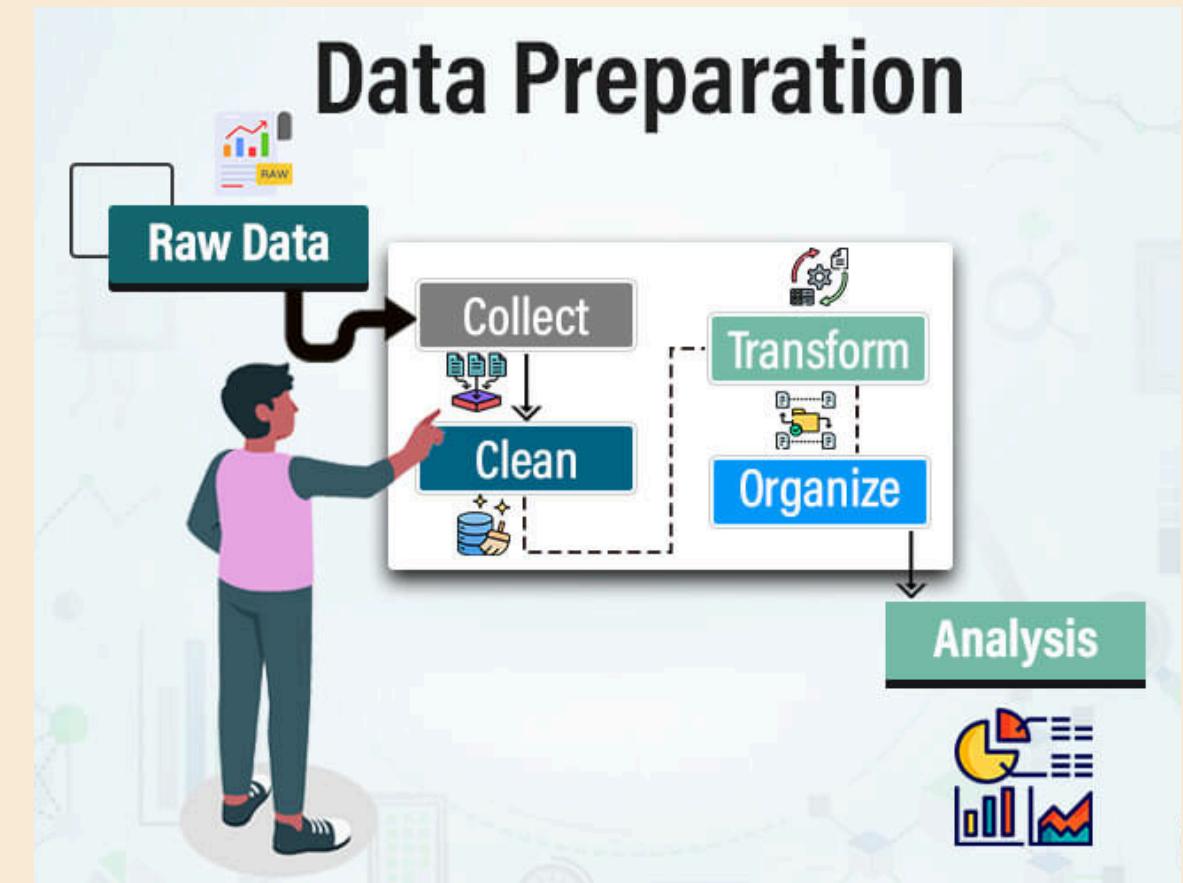


DATA PREPARATION

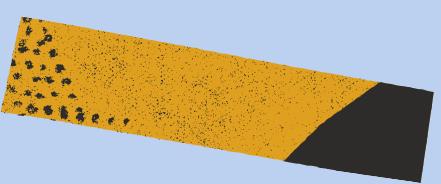
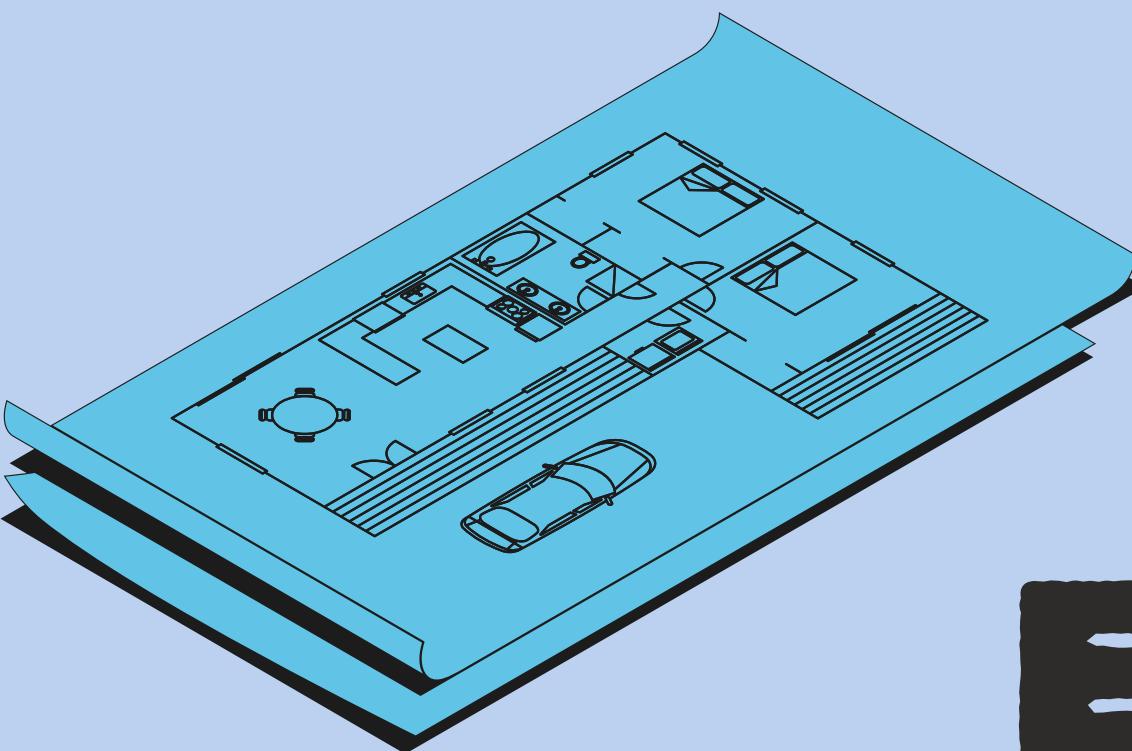


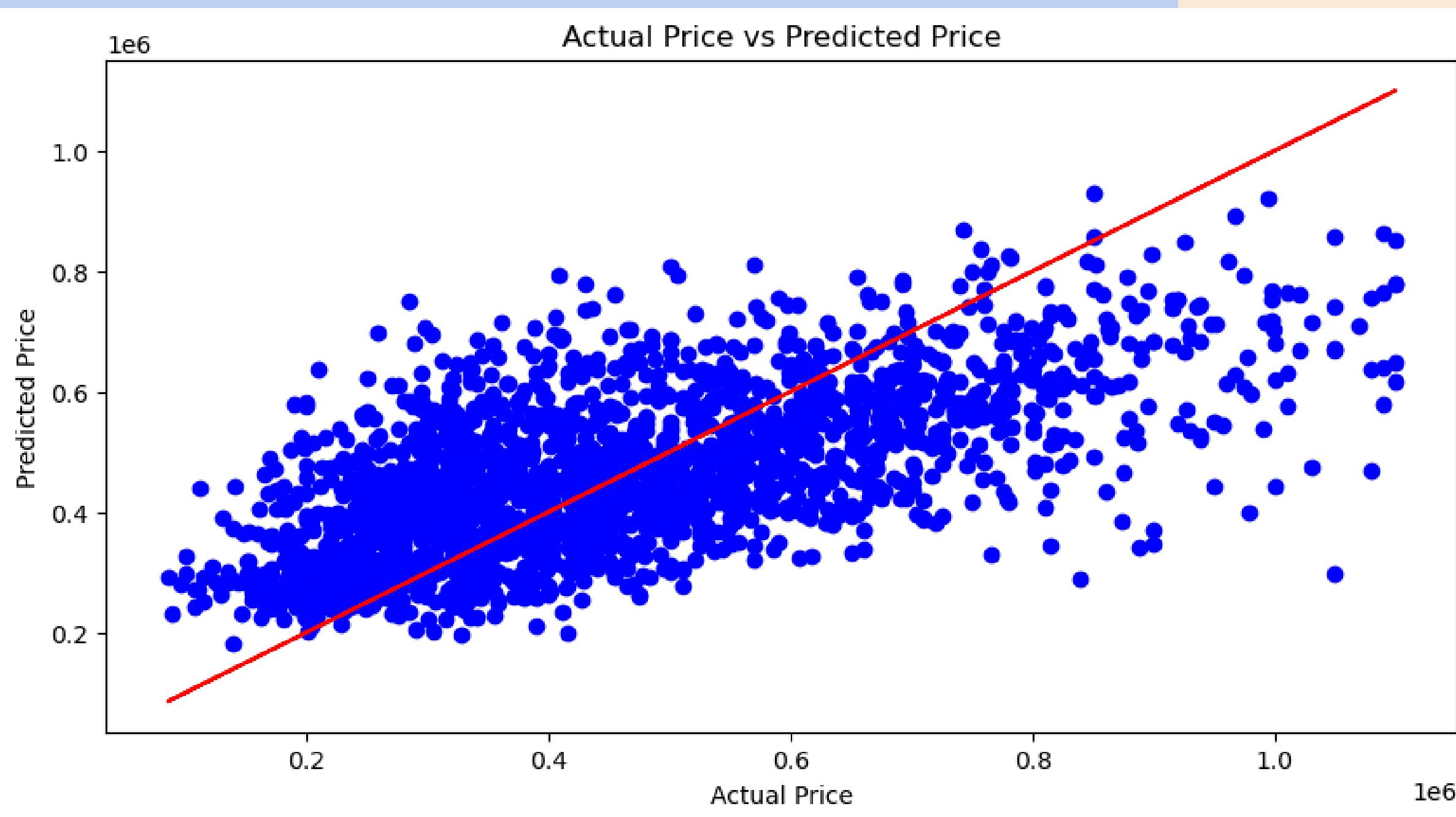
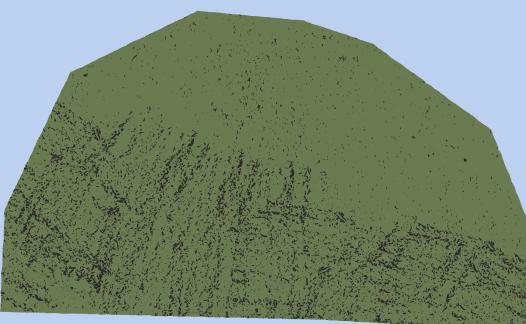
Steps:

- Data cleaning
- Exploratory Data Analysis
- Handling categorical features

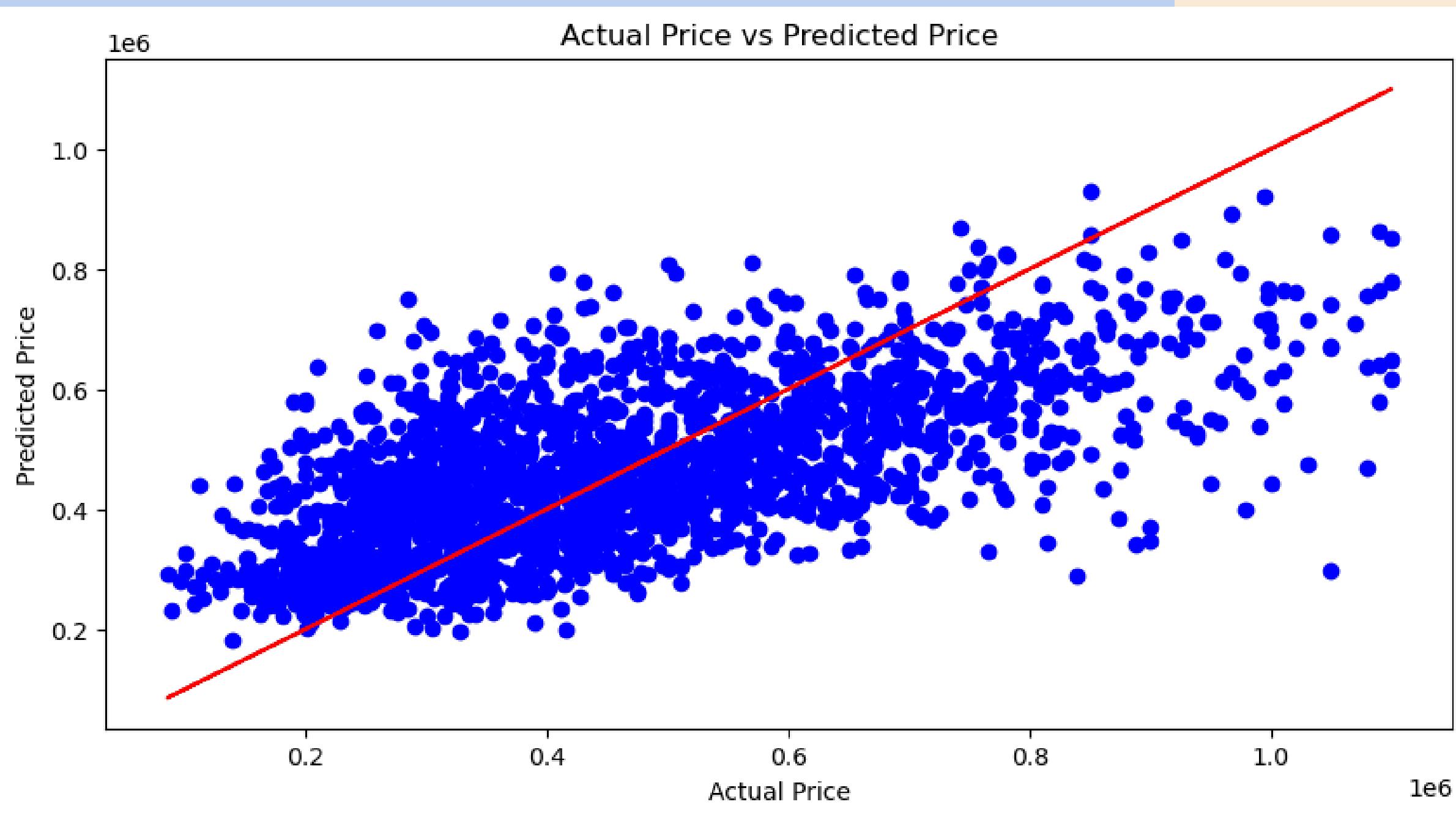


MODELING AND EVALUATION

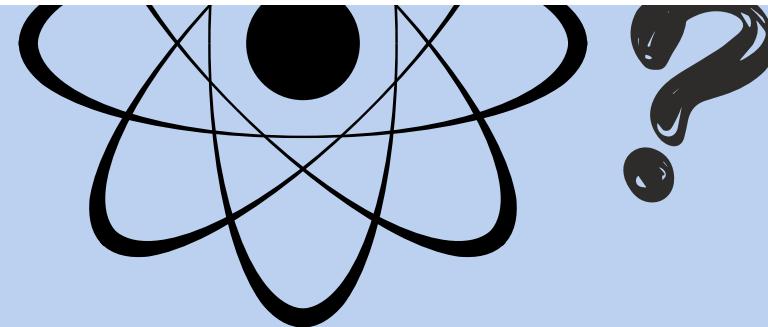


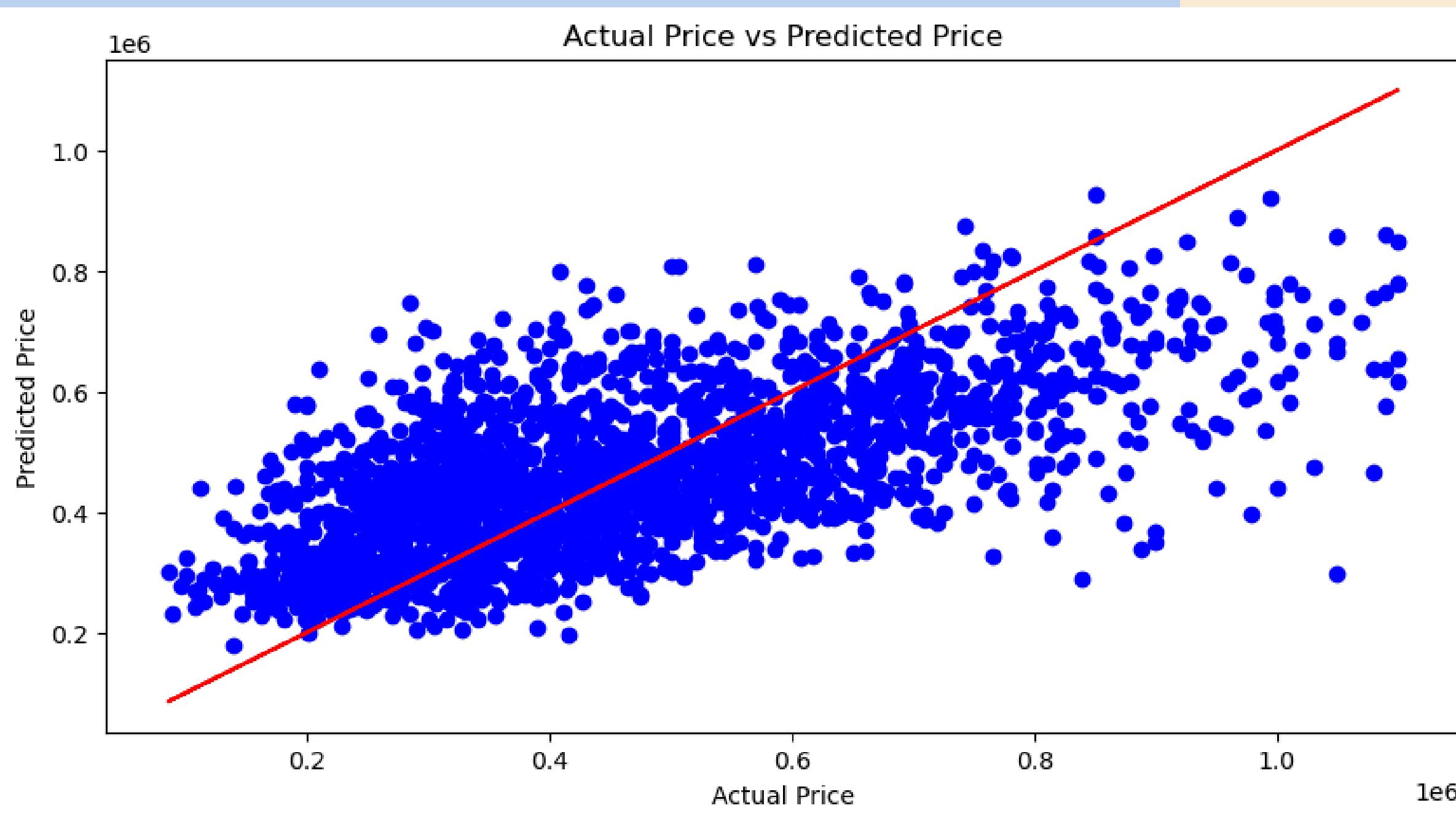


The model interprets that several factors influence home prices. Some factors that increase the price include the number of bathrooms, living space square footage, and number of floors. An unexpected finding is that building age has a positive correlation with price, possibly due to historic or unique qualities in older buildings. .



Each additional bedroom reduces the house price by about \$35,070, which might be due to smaller room size or less desirable locations. The model is statistically significant.





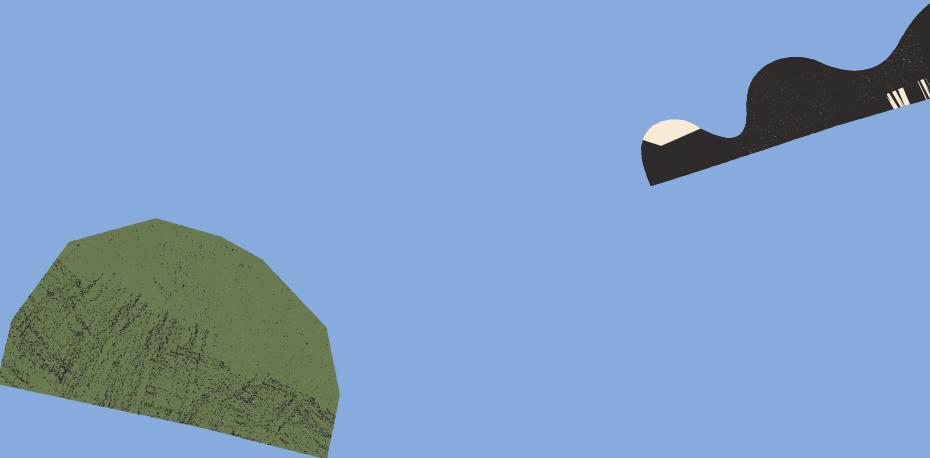
Newer homes tend to be valued higher, which aligns with the expectation that they are more modern or have better amenities. An unexpected finding is that larger lots have a slightly negative correlation with price. Our model is off by about \$152,353 in a given prediction.



CONCLUSION

This analysis of house prices in the northwest county found that larger houses with more bathrooms and floors tend to be more expensive. Newer houses were also favored. Interestingly, larger lots were associated with lower prices, and waterfront location didn't significantly impact price. Further investigation is recommended, especially for bedrooms and waterfront properties.





RECOMMENDATIONS



- Leverage the Model: strategies for their clients.
- Highlight Key Selling Points.
- Invest in model refinement.
- Stay informed about market trends.



THANK YOU

DO NOT HESiTATE TO ASK QUESTiONS