Analysis on Real Estate Market for King County
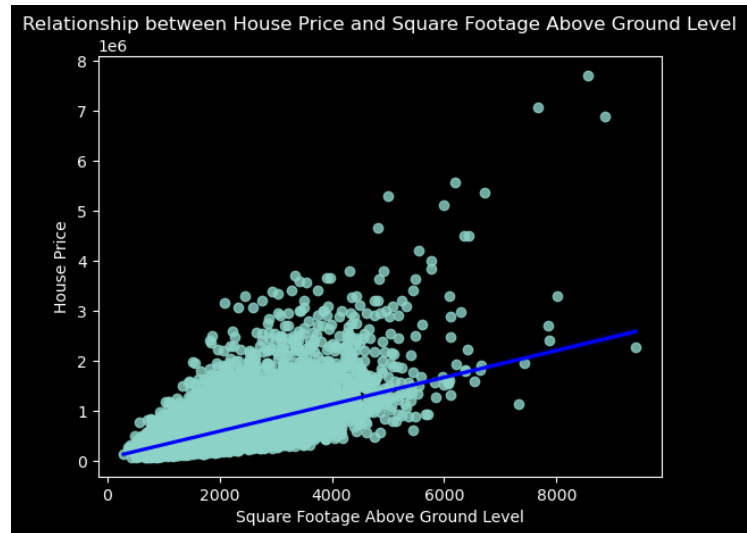
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Regression Analysis

The linear regression model revealed a strong positive correlation between house prices and the 'sqft_above' attribute, with an equation formulated as:

$$f(x)=268.47x+59953.19$$

This equation implies that for every additional square foot of space above ground level, the house price increases by approximately \$268.47, assuming all other factors remain constant.

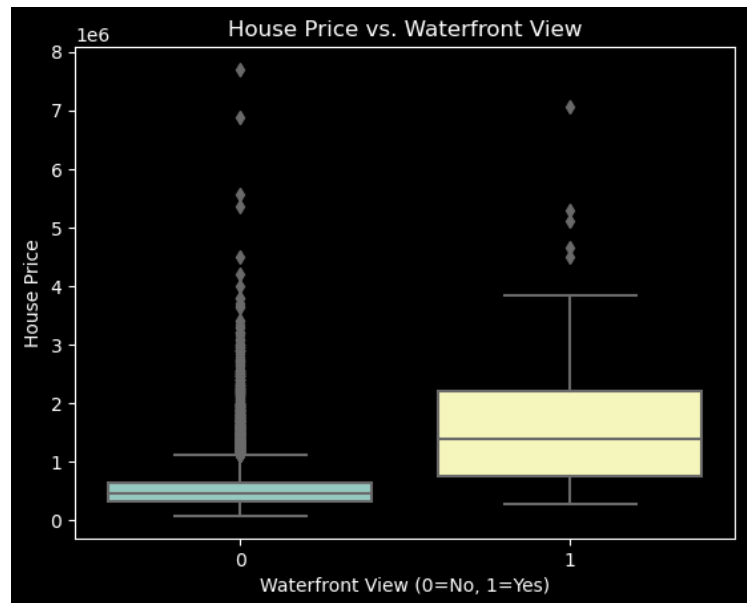Relationship between House Price and Square Footage Above Ground Level

R-Squared Value Interpretation

The R-squared value of 49.29% indicates that nearly half of the variability in house prices can be explained by the square footage of the living space alone. This substantial percentage underscores the importance of living space in determining real estate values in King County.

Waterfront Property Analysis

Properties with a waterfront view have a distinct price distribution, commanding higher prices. The boxplot analysis illustrates the premium that waterfront properties fetch in the market.

House Price vs. Waterfront View

Longitude as a Price Predictor

The model with longitude as an independent variable yielded an R-squared value of 0.0005, indicating that longitude is a weak predictor of house prices when considered in isolation.

Comprehensive Model

A more elaborate model incorporating various features — including the number of floors, presence of a waterfront view, latitude, number of bedrooms, square footage of the basement, quality of the view, number of bathrooms, square footage of living space, grade, and overall square footage — accounted for 65.77% of the variability in housing prices. This robust model significantly outperforms simpler models that consider fewer variables.

Conclusion

Square footage and waterfront views have the most significant changes in the price of real estate in King County. However, while these individual features have significant effect on house prices, a multifaceted approach that considers a range of property attributes offers a more accurate prediction model. These insights can guide the real estate investment trust in targeting investments and optimizing returns.