

# House Price Prediction Model For King County

# Business overview.

- The real estate industry is a complex business that is pushed by various factors that affect house prices.
- Due to these factors, giving a valuation to a property is a challenging task.
- The project aims to explore King County house data set and factor in some of the factors provided, which will help to derive a model that will help to predict the price of a house.
- Overall the model will help buyers and sellers to identify factors that will increase the price of the house.

# Objectives

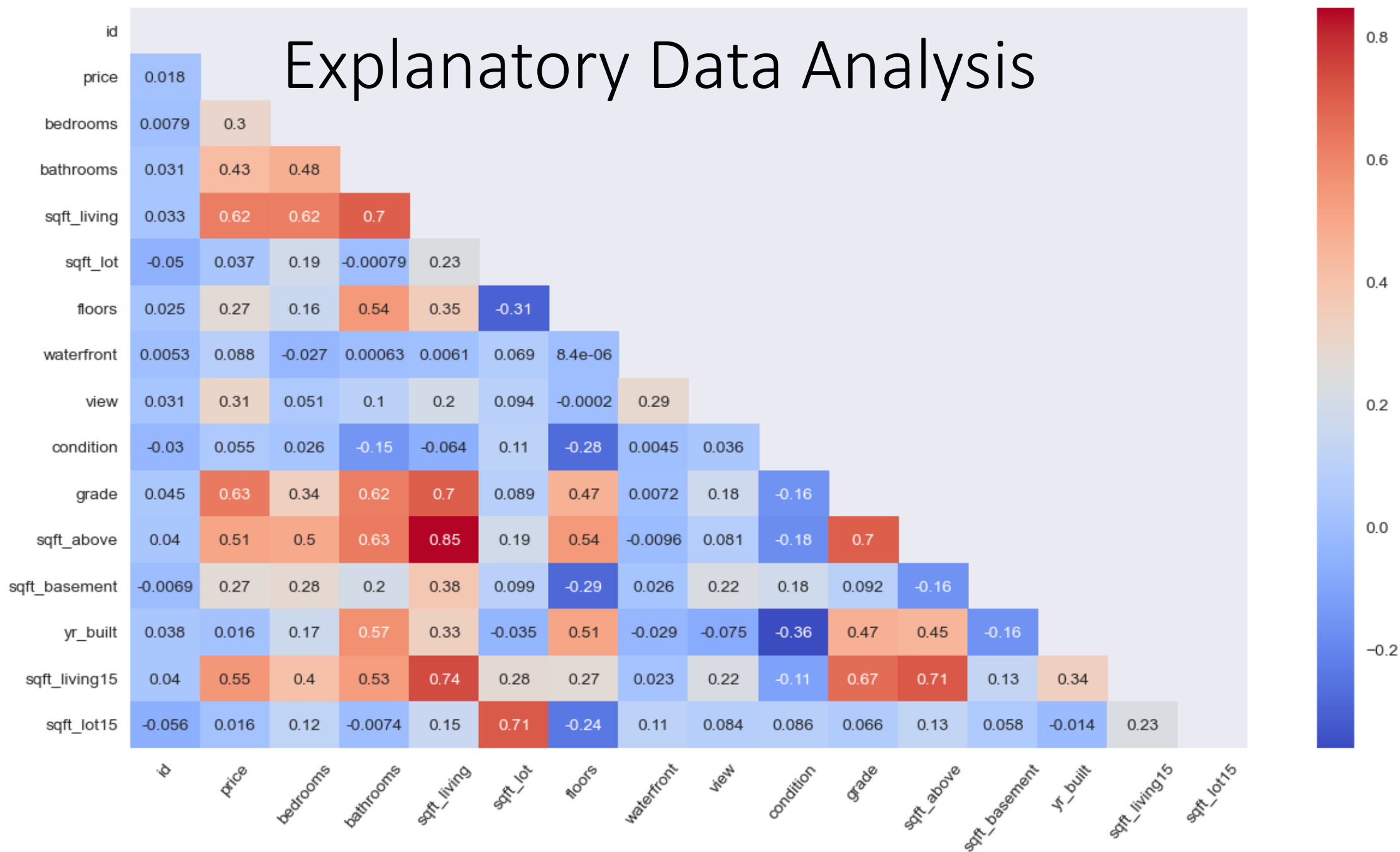
- Determining the relationship between the square footage of the house and the sale price of the houses.
- Examine the relationship between the overall grade of the house and the sale price of the houses.
- Explore the relationship between the year built and the sale price of the houses.
- Investigate the relationship between the number of bedrooms and the sale price of the houses.

# Sources of data set.

- The data came from house sale prices in King County, Washington between the year (2014 to 2015.)
- The data had 18,678 showing the number of house sold and 21 features.

Correlation of the features

# Explanatory Data Analysis



# Explanatory Data Analysis

- The focus is on sqft\_living, bedrooms and yr\_built. More analysis will be given in the “Conclusion” section.

# Models

## First Model

- **Baseline**
- Analysed how the size of living space affected price.
- Living space size could only predict the price with a 36.8% accuracy.
- Made updates to the data but there was no improvement in the accuracy.

## Second Model

- **Living space and Bedrooms**
- We checked how related the two features are to price.
- This still did not give us a good value for prediction.
- It could only account for 38.1% accuracy.

# Models

## Third Model

- **Grades**
- We checked if grade could have any influence.
- It had a small effect on the price.
- It had a 40% accuracy thus a little better than the previous models.

## Fourth Model

- **Combined features.**
- We combined this features to identify their effect.
- This proved to be better as it has a 56.8% accuracy.
- However, it did not meet the target.



# Conclusion

- We can conclude that there is a strong linear relationship between price and square foot living and square foot above.
- We can conclude that as the grade of the house increases, its price also increases and this will determine the selling price of the house.
- We can conclude that the number of bedrooms has a weak positive correlation with the house price

# Recommendations

- Build houses that have a high-grade rating.
- Target houses with a big living square footage.
- The bedrooms are also a factor in the price so they can look for buildings with at least 4 bedrooms

# THANK YOU

- If you have any questions, please reach out at Vanessa Mwangi:  
[vanessamwangi82@gmail.com](mailto:vanessamwangi82@gmail.com)