

IRONHACK MID-BOOTCAMP PROJECT

# HOUSE PRICE PREDICTION

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# TODAY'S DISCUSSION

## OUTLINE OF TOPICS

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Intro to project

Tableau & SQL insights

Machine learning & Results

Lesson learned

Questions



# INTRO TO PROJECT

Using the dataset that consist historic information of houses sold between 2014 to 2015 in King County, Washington with over 20K transactions describing 19 unique features about the transaction, the building, the property, and the location we will present a machine learning model using a regression algorithm.

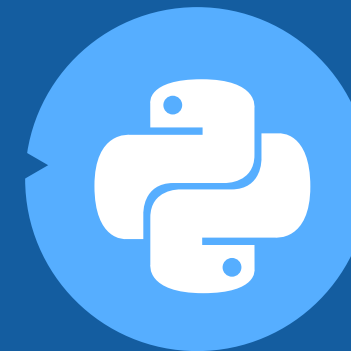
## PROJECT GOALS



STEP 1  
**CLEAN DATA**



STEP 2  
**EXPLORE DATA**

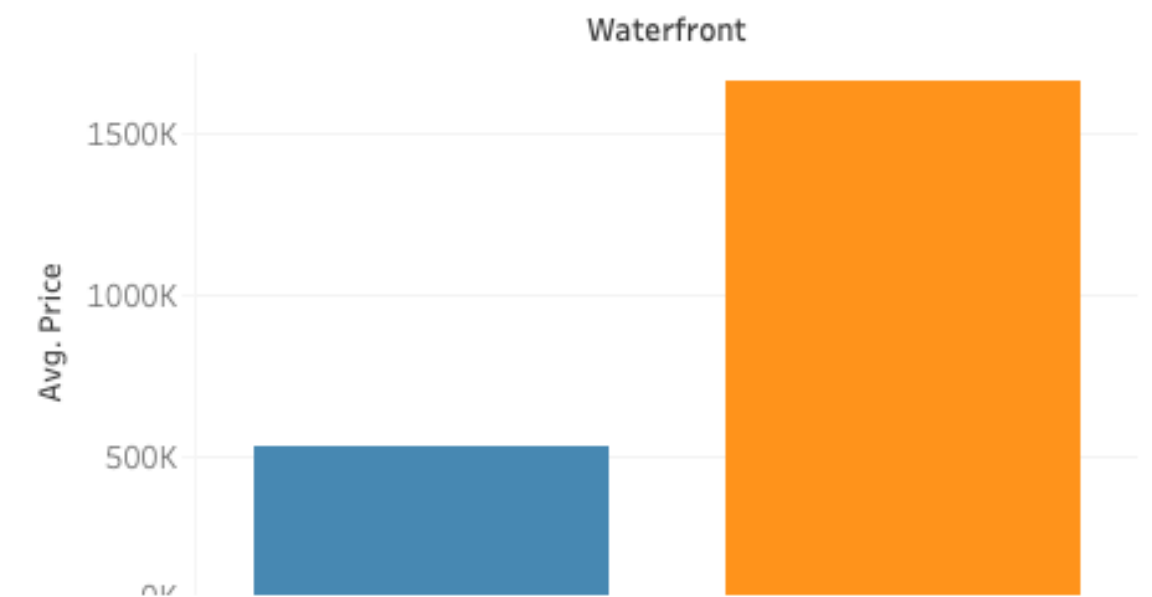
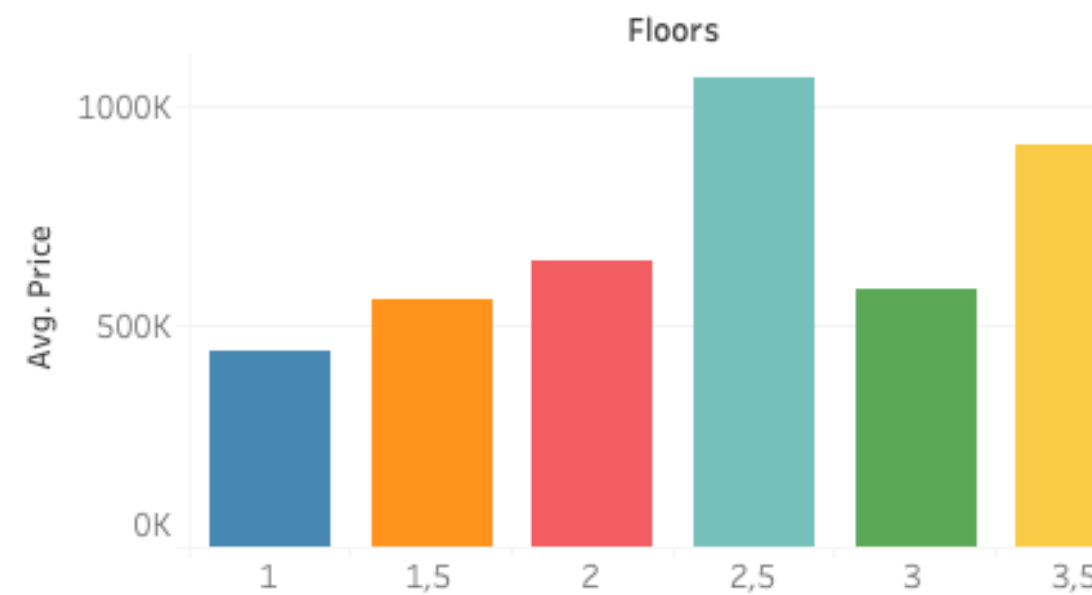
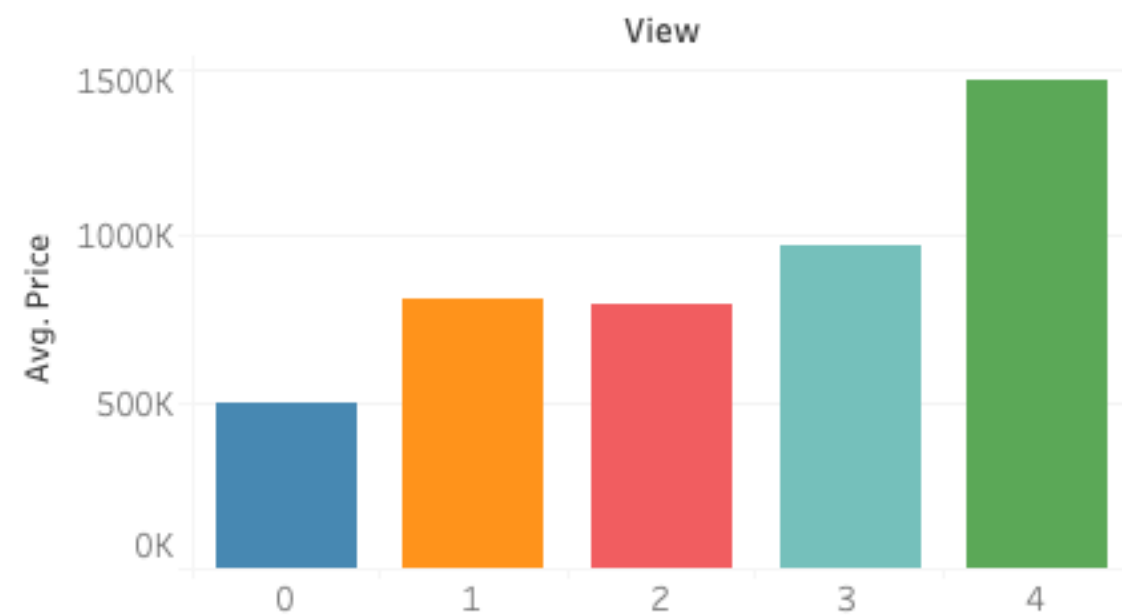
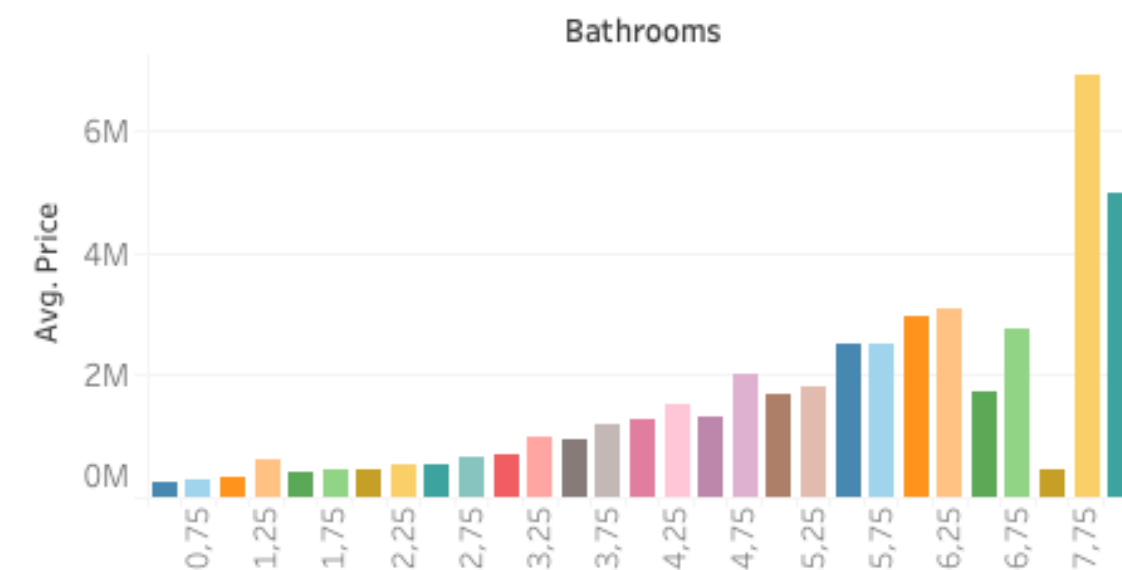
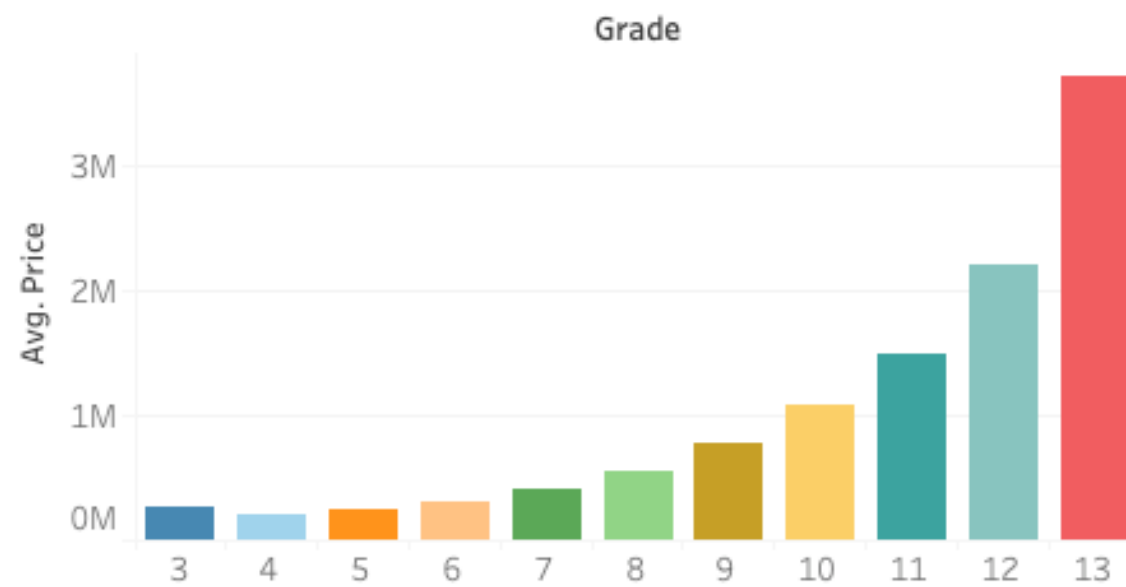


STEP 3  
**MODEL**

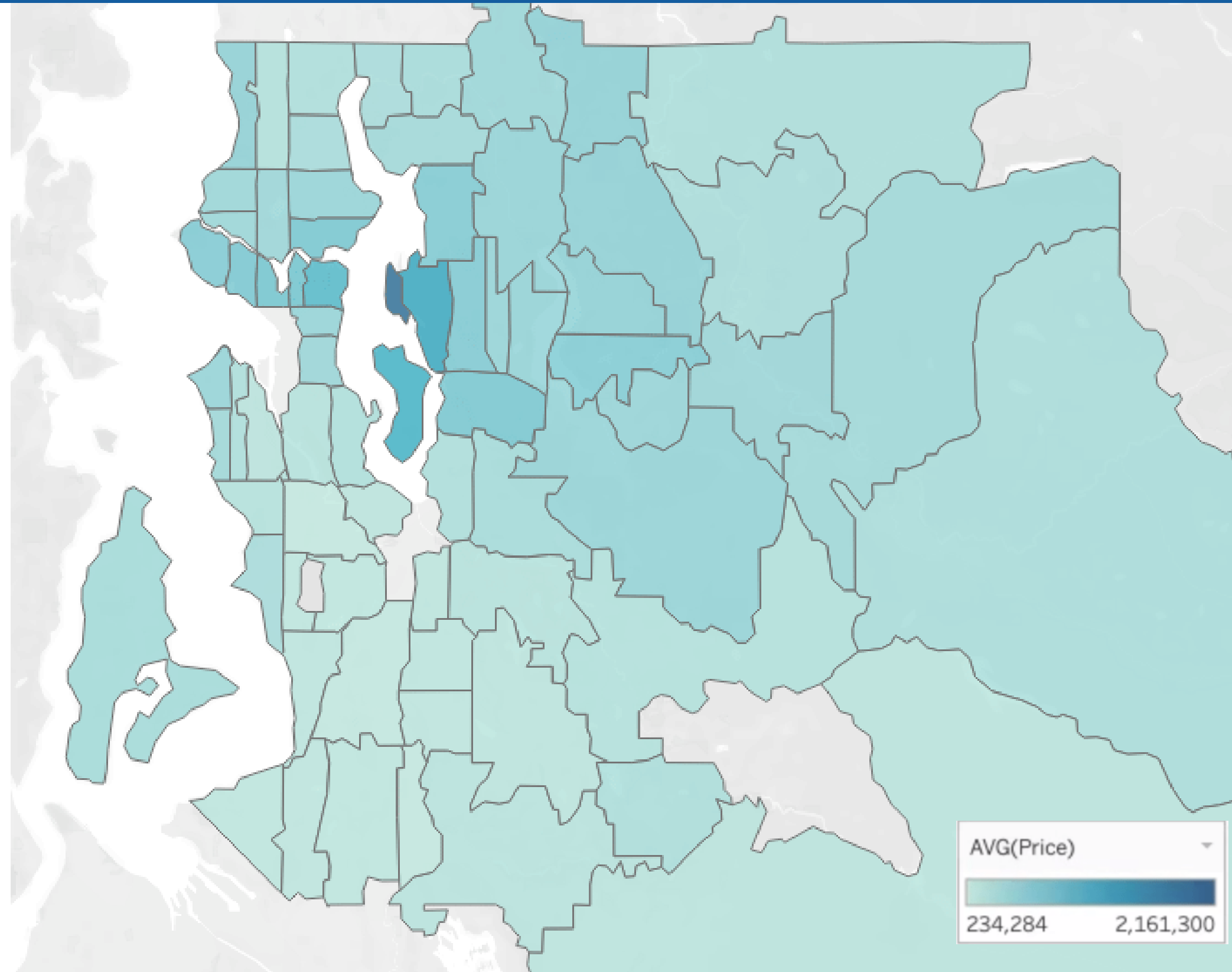


STEP 4  
**PRICE  
PREDICTION**

# Tableau & SQL insights



# Tableau & SQL insights



# MACHINE LEARNING & RESULTS

## FEATURE ENGINEERING

- changing zip code to categorical and getting dummies
- removing outliers from price and scaling it with log10
- extracting additional information from data

## RESULT ANALYSIS

- final model has a score of 84%
- house price is correlated with a location, which was not obvious at the beginning
- model performs well in predicting houses above \$650K
- model is not good enough in predicting house price below \$100K

## NEXT STEPS

- removing outliers from specific features
- finding patterns between high errors features



# LESSON LEARNED

## LESSON 1

Features in given data may have some hidden information. So always look deeper beyond the surface value of the columns.

## LESSON 2

Additional features can be extracted from already existing features, which can impact on your model performance.

## LESSON 3

This project forced us to pay more attention to scaling techniques and be more sensitive when and where to apply them.

## LESSON 4

Checking out the relationship between the features and target variables on Tableau can be very helpful in understanding your data set.

# QUESTIONS

