Kings County Housing Project

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Flatiron Self-Paced
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Summary

The goal of this project was to create a linear regression model that predicts housing prices in Kings County, Washington.

Housing data spanning from 5/2014 - 5/2015 was provided. The Cross-Industry Standard Process for Data Mining (CRISP-DM) was used throughout this project. Statistics and and visualizations were used to identify and analyze linearity assumptions and data distributions. The retained model predicts housing prices on test data with a ~$251,000 margin of error.

The main questions addressed were: ***What attributes of the data contributed to higher housing prices, and which attributes had the greatest effect on price?***

Presentation Outline

- Business Value
- Methods
- Results
- Next Steps

Business Value

- This project's predictive model can be used by real estate agents and brokers, in addition to their domain-specific knowledge, to predict trends and housing prices.
- The model can also be used by home-buyers and sellers in their decision-making processes.

Methods

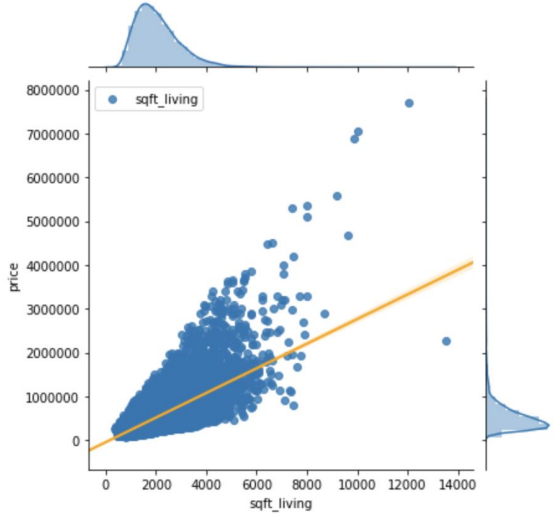
- The Cross-Industry Standard Process for Data Mining (CRISP-DM) was used for this project.
- ‘Price’ was our target variable. We compared this variable to various attributes in the data set (see descriptions)
- Special consideration was given to location, grade, square footage and amount of bedrooms/bathrooms.

Column Names and descriptions for Kings County Data Set

#	name	description
1	id	unique ID for a house
2	date	Date day house was sold
3	price	Price is prediction target
4	bedrooms	Number of bedrooms
5	bathrooms	Number of bathrooms
6	sqft_living	square footage of the home
7	sqft_lot	square footage of the lot
8	floors	Total floors (levels) in house
9	waterfront	Whether house has a view to a waterfront
10	view	Number of times house has been viewed
11	condition	How good the condition is (overall)
12	grade	overall grade given to the housing unit, based on King County grading system
13	sqft_above	square footage of house (apart from basement)
14	sqft_basement	square footage of the basement
15	yr_built	Year when house was built
16	yr_renovated	Year when house was renovated
17	zipcode	zip code in which house is located
18	lat	Latitude coordinate
19	long	Longitude coordinate
20	sqft_living15	The square footage of interior housing living space for the nearest 15 neighbors
21	sqft_lot15	The square footage of the land lots of the nearest 15 neighbors

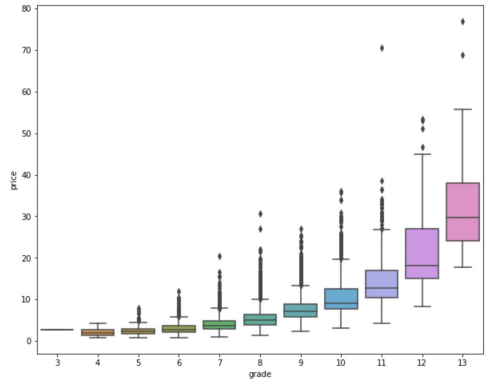
Results

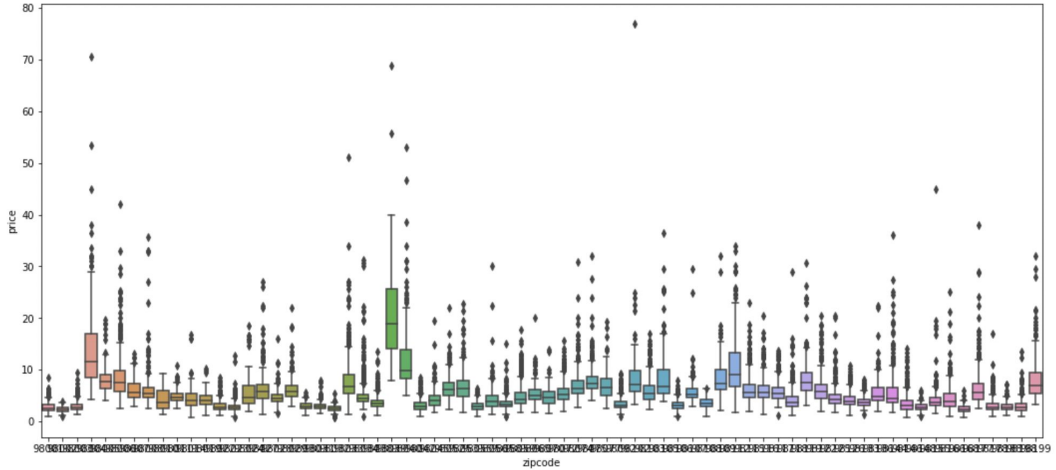
- Total square footage of living space, number of bedrooms/bathrooms and location had a high influence on price.



- Grade-the overall grade given to the housing unit, based on King County grading system, was also a strong indicator of price

- Relationships were confirmed to create this model that predicted within ~$250k of housing prices in Kings County, Washington. The model is $406 off on average with each prediction.





Next Steps

For next steps, I would analyze, in greater detail, the geography of the Kings County, Washington. I would specifically look at the proximity to certain zip codes to schools, amenities, public transportation, etc. I would also analyze census data to see how demographics affect housing prices.

Thank You!

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