
EDA Project

— King County House Prices —

Outline

1. The Client
2. The Data
3. Main Hypotheses
4. Results of Data Analysis
5. Conclusion and Outlook

1. The Client

William Rodriguez:

2 people, wants two houses, country (best timing & non-renovated) & city house (fast & central location)

(Buyer)

Requirements:

- middle - high price range (400 000 \$ - 800 000 \$)
- middle - high house size
- good condition and high quality
- country house should have big space outside
- prefer two bathrooms, at least one full bathroom
- prefer 3 bedrooms, at least two bedrooms (for future kids and guests)

2. The Data

Working Data:

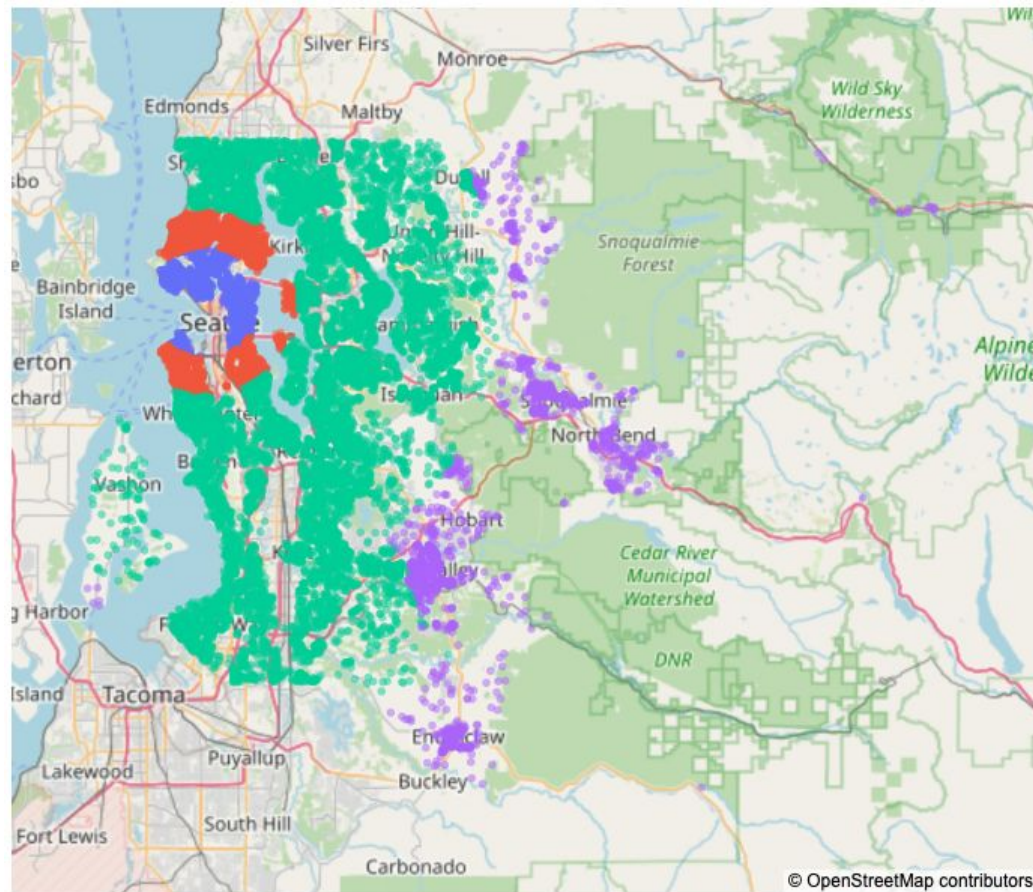
- Information about home sales in King County (USA)
- Sales from May 2014 - May 2015 (13 Months)
- Number of data points: 21 579
- Described features:
 - date
 - price
 - number of bedrooms and bathrooms
 - square foot of living space and lot
 - grade based on King County grading system
 - year built and year renovated
 - coordinates of location and zip code

Added Features:

- Categories for the location (center, city, suburbs, country)
- Categories for the size of the living space and lot
- Categories for price

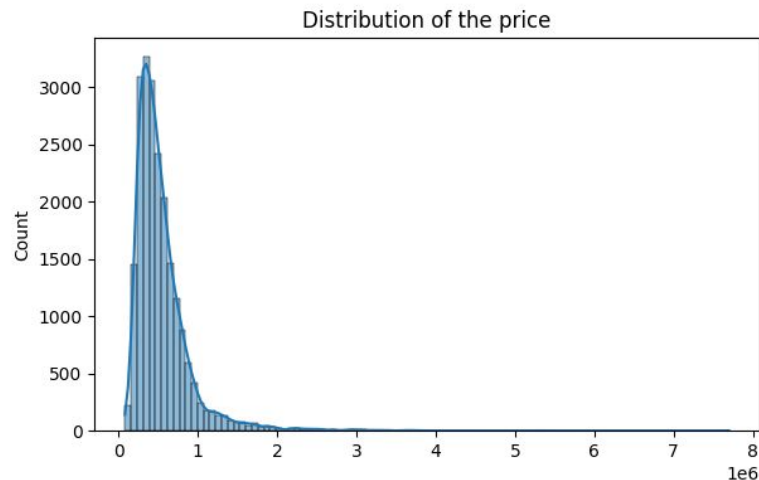
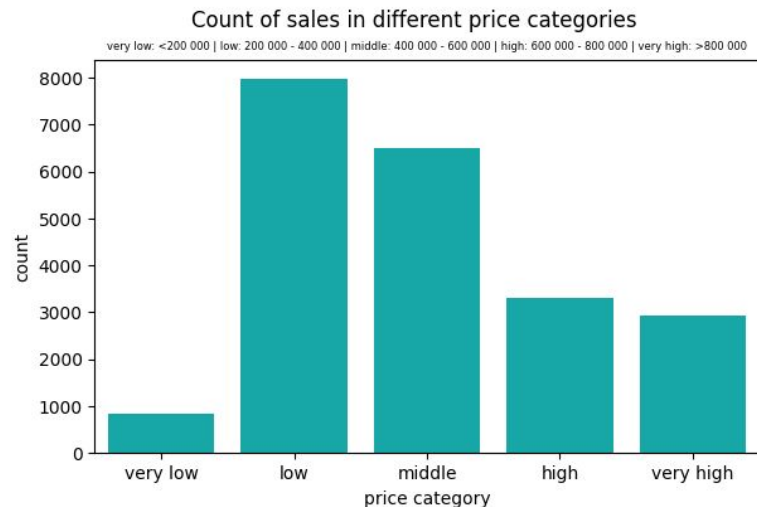
Main features - distribution of location

- Most sales in the suburbs
- Densest accumulation in the center of Seattle



Main features - distribution of price

- The price is right-skewed (outliers on the right side)
 - Min: 78 000
 - Max: 7 700 000
 - Median: 450 000
 - Mean: 540 311



3. Hypotheses

The Client

William Rodriguez

- interested in the city and country
- want to buy the city house soon
- can wait for good time to buy country house
- city house should be near to the center
- interested in non-renovated country houses
- country house should have big space outside
- middle - high house size
- middle - high price range
- good condition (at least 3) and high grade (at least 7)
- prefer two bathrooms, at least one full bathroom
- prefer 3 bedrooms, at least two bedrooms

City house:

1. The closer a house is located to the city center, the higher the price.
2. Houses with a high grade are more expensive.

Country house:

3. The better the condition of a (non-renovated) house is, the higher the price.
4. The prices for houses in the country are higher in the summer.

4. Results of Data Analysis

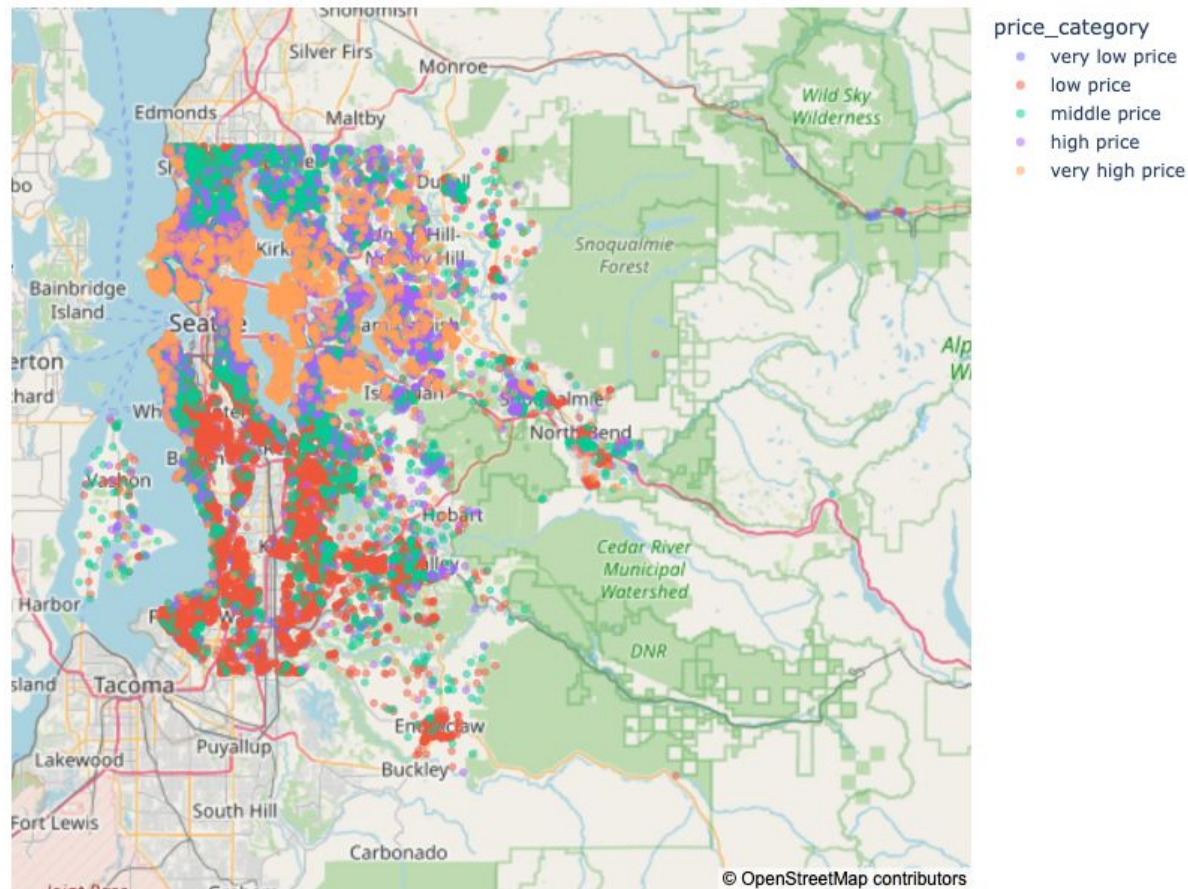
Hypothesis - location and price

- no direct linear relationship



Hypothesis - location and price

- Accumulation of the high price and very high price category in the center

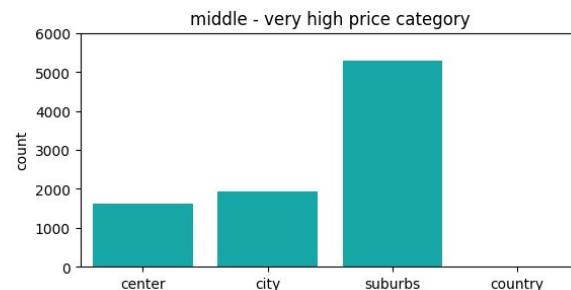
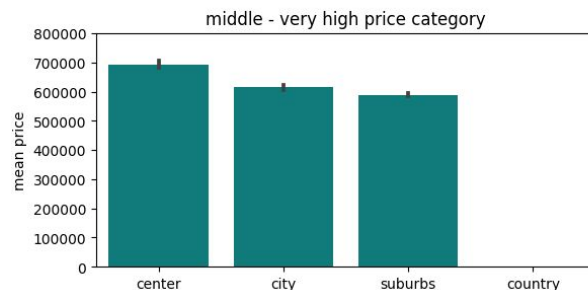
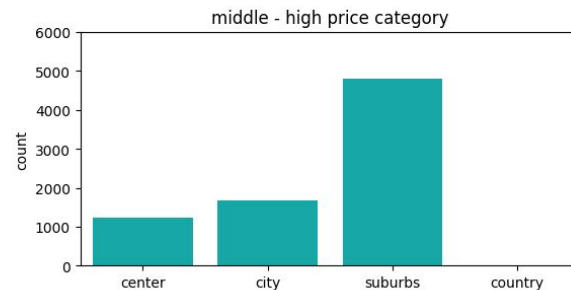
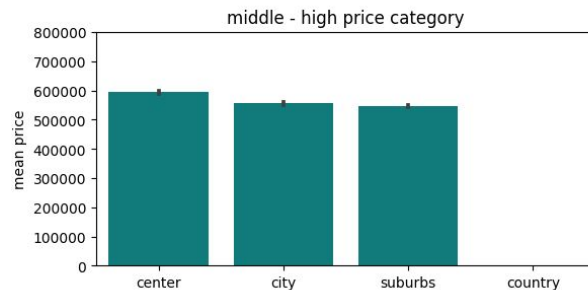


Hypothesis - location and price

Recommendations for a fast buy in the city center

- Middle price category:
should consider the city and
suburbs
- Center: should consider the
higher price categories

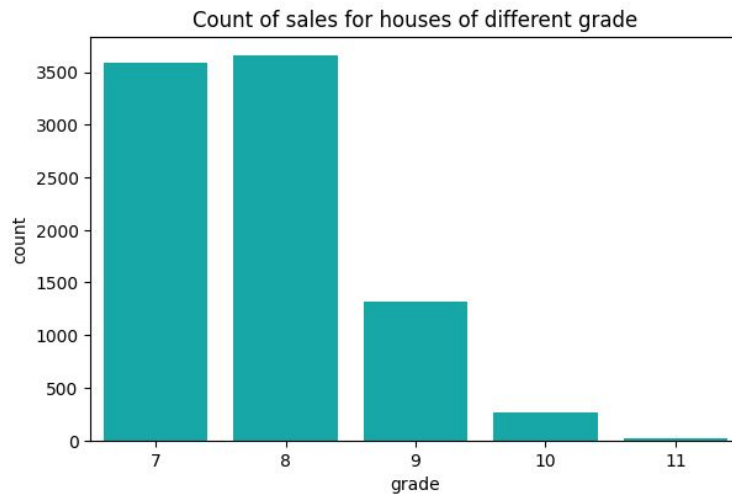
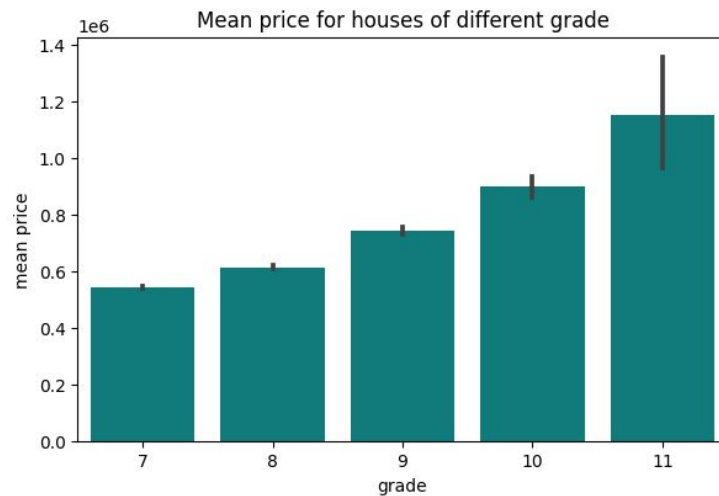
Count of sales in different price categories



Hypothesis - grade and price

Recommendations for a fast buy
in the city center

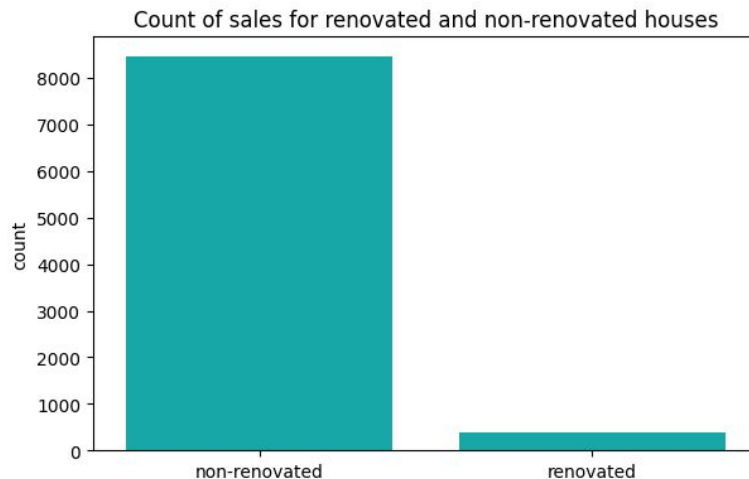
- should consider the low
graded houses



Hypothesis - condition and price

Recommendations for a buy of a
non-renovated house at the right
time

- Go for non-renovated houses

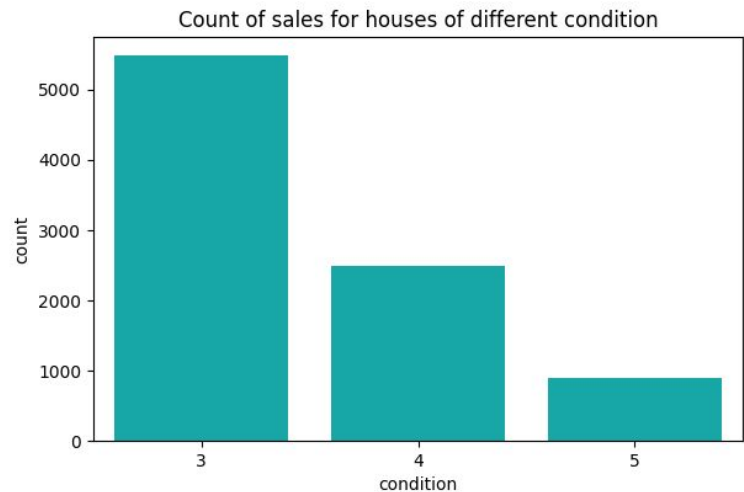
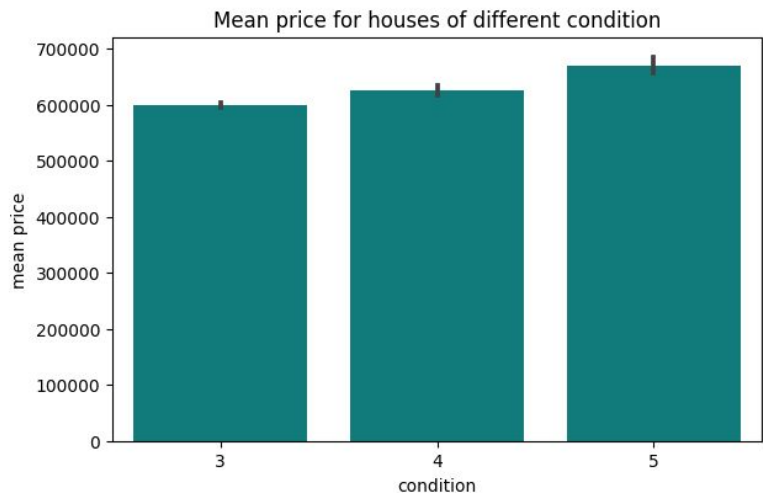


Hypothesis - condition and price

- The number of houses in a good condition are less
- The mean price is just a bit higher

Recommendations for a buy of a non-renovated house at the right time

- Wait for house in a good condition

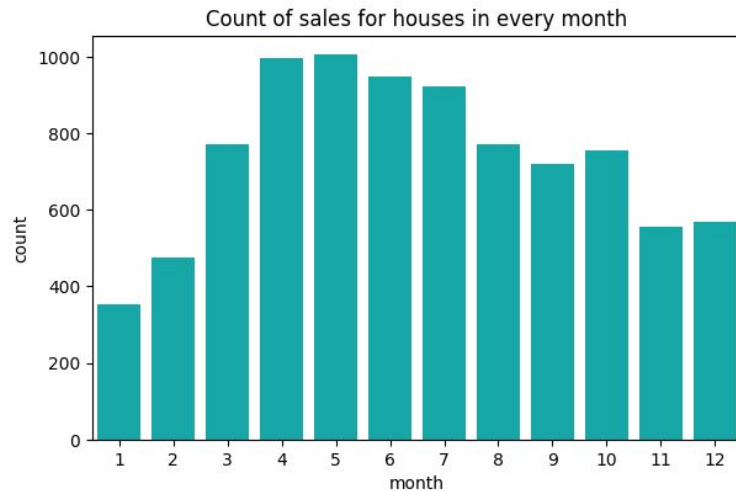


Hypothesis - Time and price

- The mean price doesn't change significantly
- The number of houses are much higher in the spring and summer

Recommendations for a buy of a non-renovated house at the right time

- Wait for the spring to have more houses available that meet the requirements



Conclusion

City house:

- If fast and middle price, then should consider the city and suburbs too
- If fast and in the center, should consider the higher price ranges

Country house:

- Go for non-renovated houses
- With enough time you can find a house in a good condition in the middle price range
- Wait for the spring to have more houses available that meet the requirements

Outlook

- How are the prices affected by the number of bathrooms and bedrooms?
- How are the prices affected by the sqft of the living space and the lot?
- Are there other small cities outside of Seattle that could meet the requirements?