A Study on the Housing Market of King County (Seattle, USA) 📈

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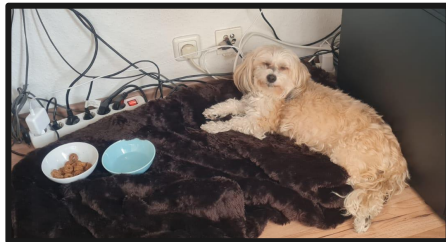Last Update: 06-04-2022 (somewhat late....)

EXECUTIVE SUMMARY

- A short overview of the housing market in Seattle.

- Insights granted from analyzing the house market data.

- Potential recommendation to our client.

Our Team:

Max Hallenberger, Geoscientist

Bella, Backscratch Developer

Fred, A Houseplant

Stakeholder: Meet the Rodriguez!

- A young and successful couple searching for **two houses**. One in the **countryside** and one in the **city**.

- **The countryside house should be** cheaper (< 500k $), so we are trying to cut costs by choosing a **non-renovated house**.

- They are in no hurry to buy their dream holiday retreat. **We can try to time the market.**

- They are both employed in the highly lucrative(?) market of Data Science. We can therefore go for **above average and grade house in the city center (< 1 M $)**.

Data overview

King County Housing Data

A large and publicly available Dataset

- A total of **21 different parameters** collected from over **21 thousand houses**.

- The data includes house sales between **2014 and 2015**.

- Includes the entire Seattle region and adjacent rural areas.
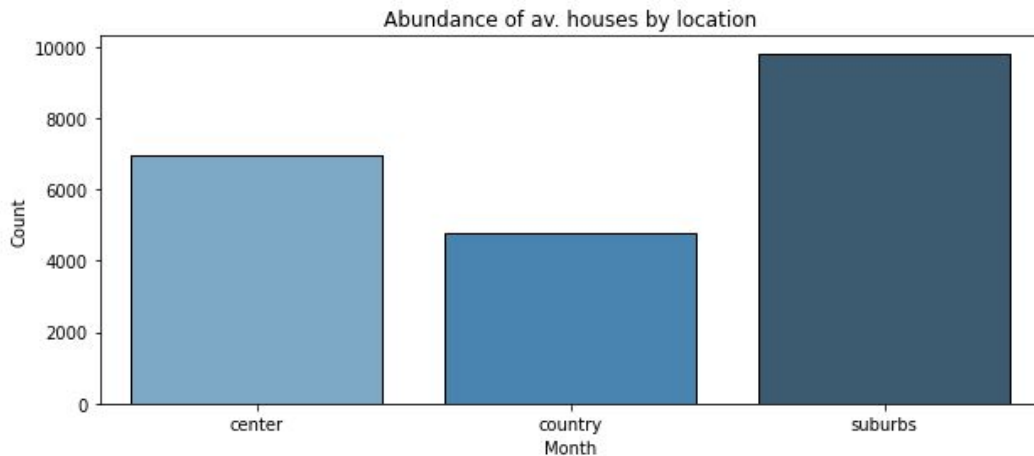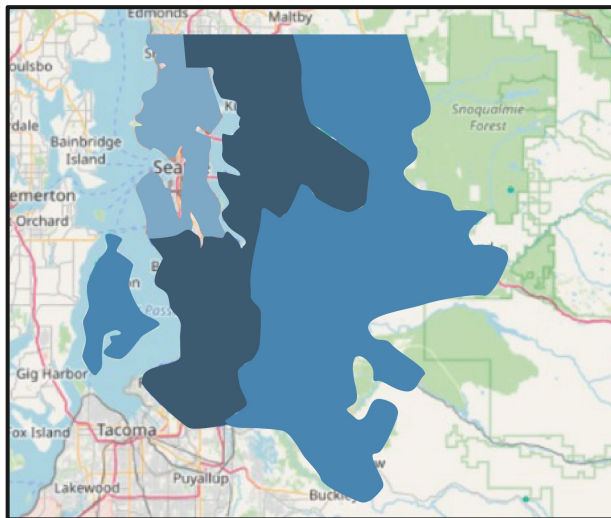
The main hypotheses

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- **Hypotheses 1: Location matters!** Depending if we search in the city center, suburbs or the countryside, we will expect changes in housing price, lot space, etc.

- **Hypotheses 2: Winter is usually the cheapest time of year to purchase a home.** Most people suspend their listings from around Thanksgiving to the New Year because they assume buyers are scarce.

- **Hypotheses 3: Renovated Houses are more expensive.** Renovations are expensive and increase the value of any house. There should be a marked increase in price with a higher renovation status.
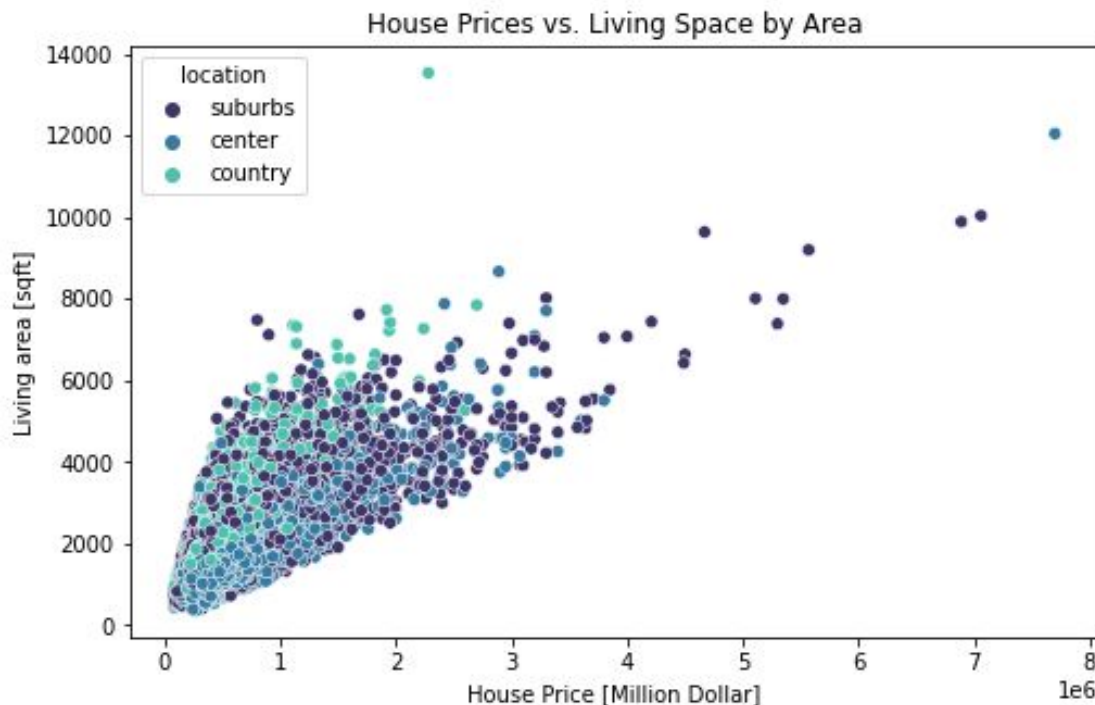
Results and analysis of hypotheses

Housing Distribution

The suburbs contribute most houses to the overall housing market

Abundance of av. houses by location

City Center   Suburbs   Countryside

The influence of location

We see a strong correlation between location and several housing parameters

House Prices vs. Living Space by Area

- Houses in the **city** center are on average **more expensive for less space**.

- **Countryside** houses appear on average **larger and cheaper**.

- **Suburbs** appear to be scattered including the ranges of city center and countryside.
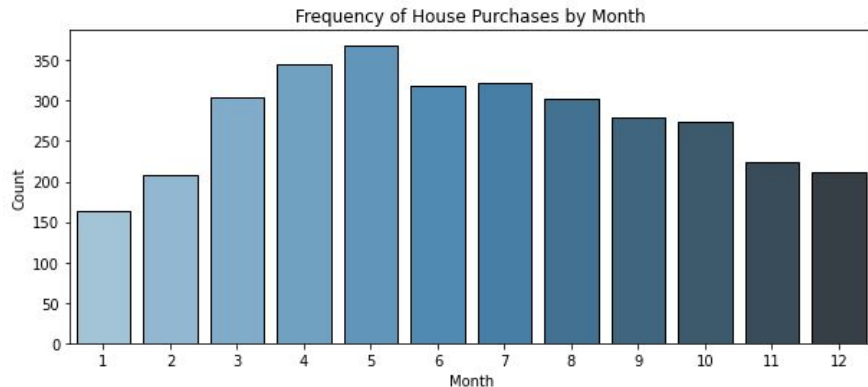
The influence of location

Some unexpected distribution.
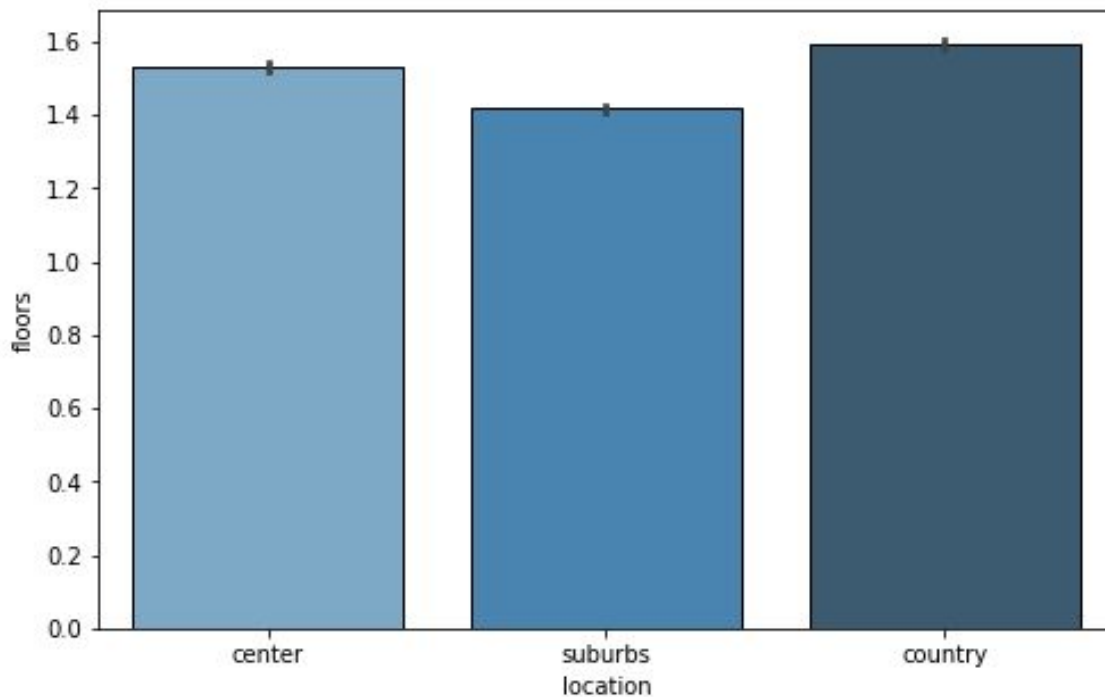
Market Timing: When do buy a home
While there is a difference in housing purchases, price stays constant

- There appears to be a **large difference in house purchases** depending on the month. Far less sales are occurring during winter months.

- However, there is almost **no fluctuation in the average selling price** of houses based on the month of sale.

The influence of renovation status

In rural areas there seems to be no influence of renovation status on price

Average Price of Houses by Renovation Status
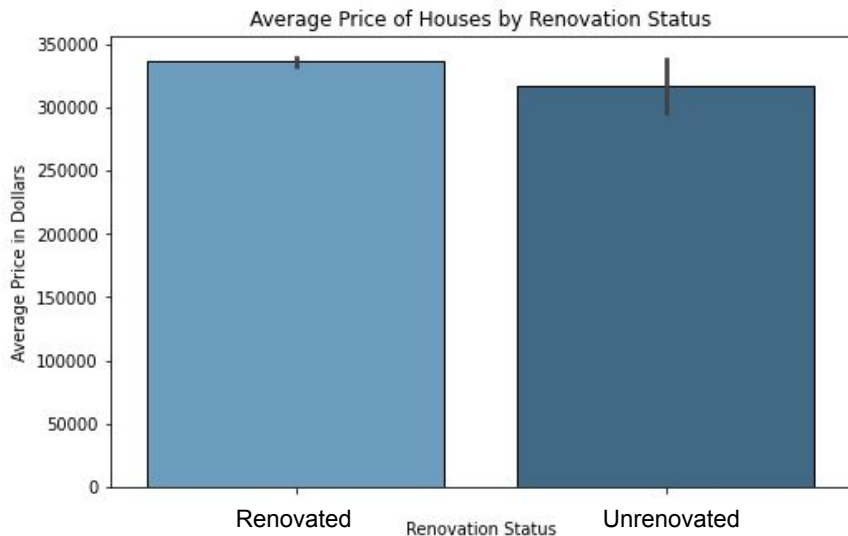
- Only **74 houses are actually renovated**. For most of them renovation has been further back than 40 years.

- There seems to be a very **limited difference in house prices** based on the renovation status during the last two years.

- A Student ttest reveals **no significant difference in means** between renovated and unrenovated houses.
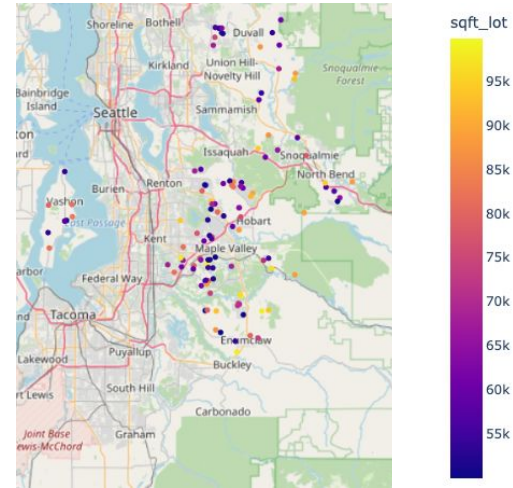
Stakeholder Recommendations

Potential Houses to Buy

Abundant potential objects, especially for the city center.
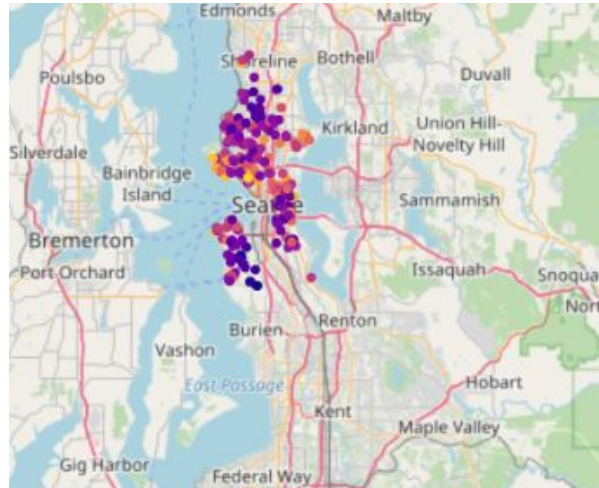
The City Apartment

Good selection of different houses within the city center.

The Countryside House

Overall less selection, but still good. We will probably manage to go for an above average lot size.

CONCLUSIONS

1

Renovation Status

The State of renovation appears to have no bearing on the price of the object. We would therefore recommend to go for a renovated house, since it might produce lower operational costs in the future and might also save some money through lower heating costs etc.

2

PRICE: Market Timing

Timing the purchase of a new house, either by day or by month does not seem to influence the ultimate market price of an object. However, there are markedly less house sales during Winter months. It might therefore be recommended to buy during summer months, when the supply is larger.

3

Location is key!

As slide 10 shows, almost all important parameters, including price, lot size, and size of living space, are dependant on the distance from the city center. One should think hard about their priorities and first adjust their by location.

👋 **Thanks!**