

A wide-angle photograph of the Seattle skyline. The Space Needle is prominent on the left. The city is filled with various skyscrapers and buildings. In the background, snow-capped mountains are visible under a blue sky with light clouds. A semi-transparent dark rectangle with a thin red border is overlaid on the right side of the image, containing the title text.

# Mod 2 Project King County Real Estate

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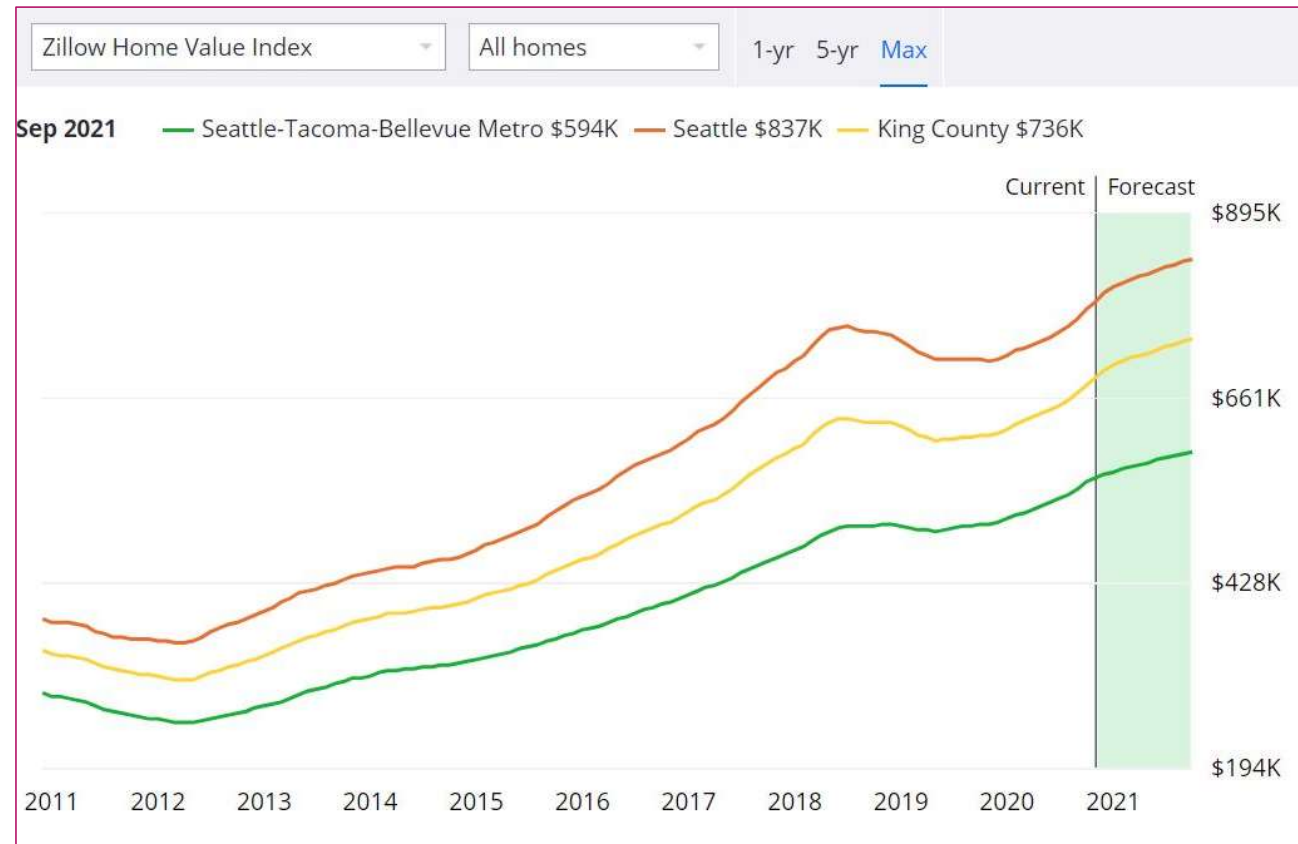


# Who Are We?

- ▶ KCC – Real Estate Consultancy Firm in King County, Washington
- ▶ Our goals:
  - ▶ Predict the price of houses
  - ▶ Determine the most important features of a house to be aware of in any transaction
  - ▶ Help our various customers make informed property decisions

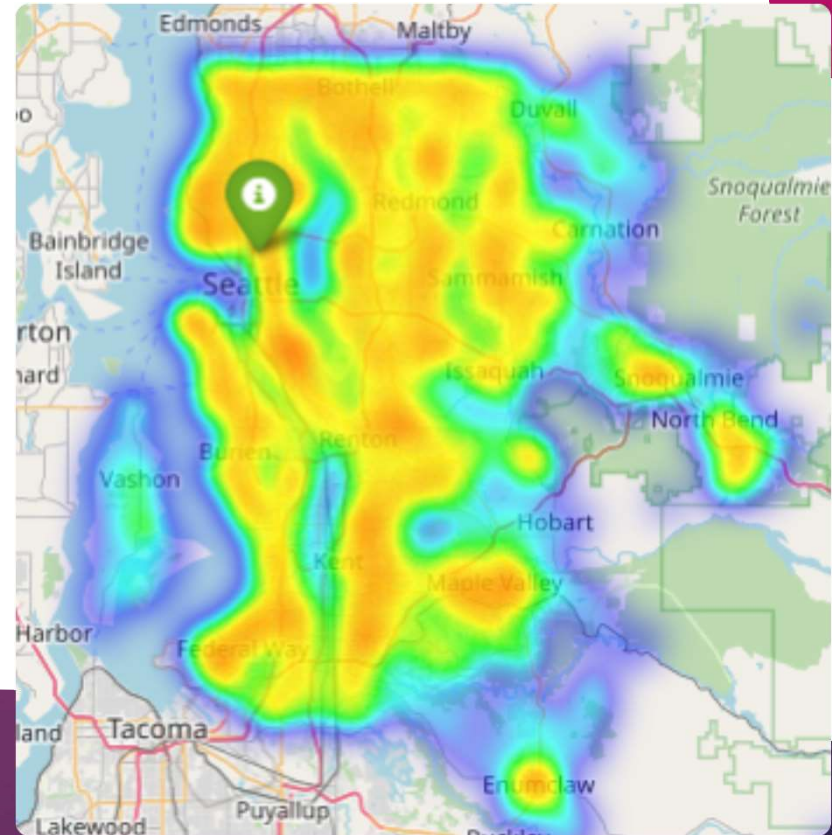
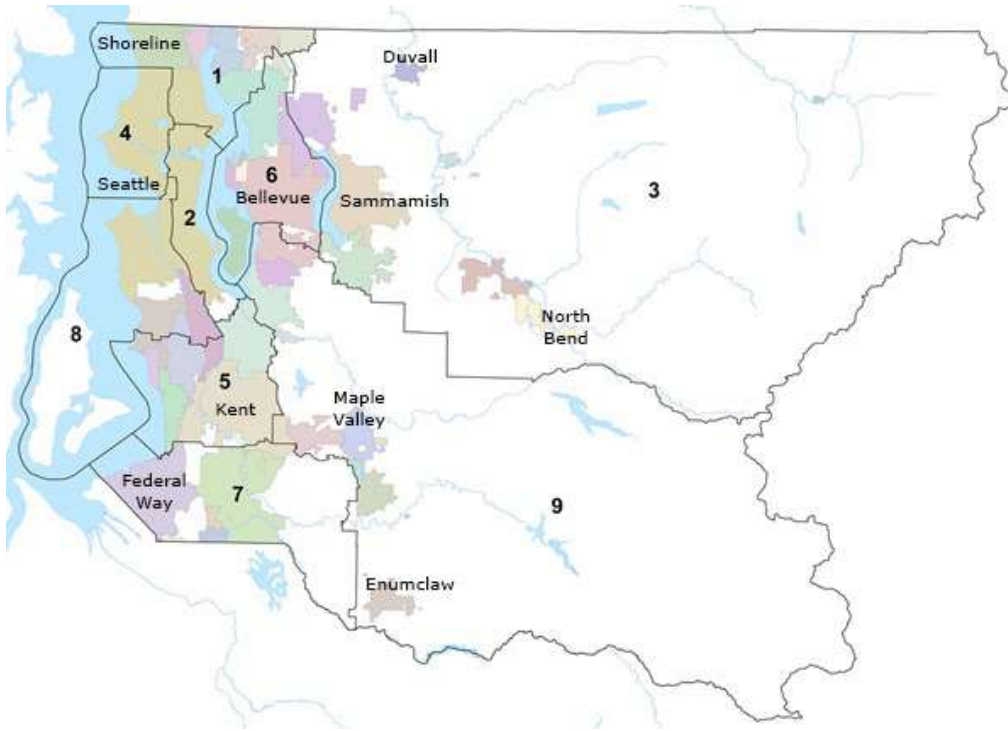
## Why is this Important?

- Property values have been growing in King County and the Seattle area almost every year since 2012.
- Projected 7% growth in 2021
- This presentation can drive value into your property decisions



Source:  
Zillow.com





Our Geography



# Today's Questions and Scenarios

## Question 1

With which single feature of a property is it easiest to guess the value of that property?

## Scenario 1

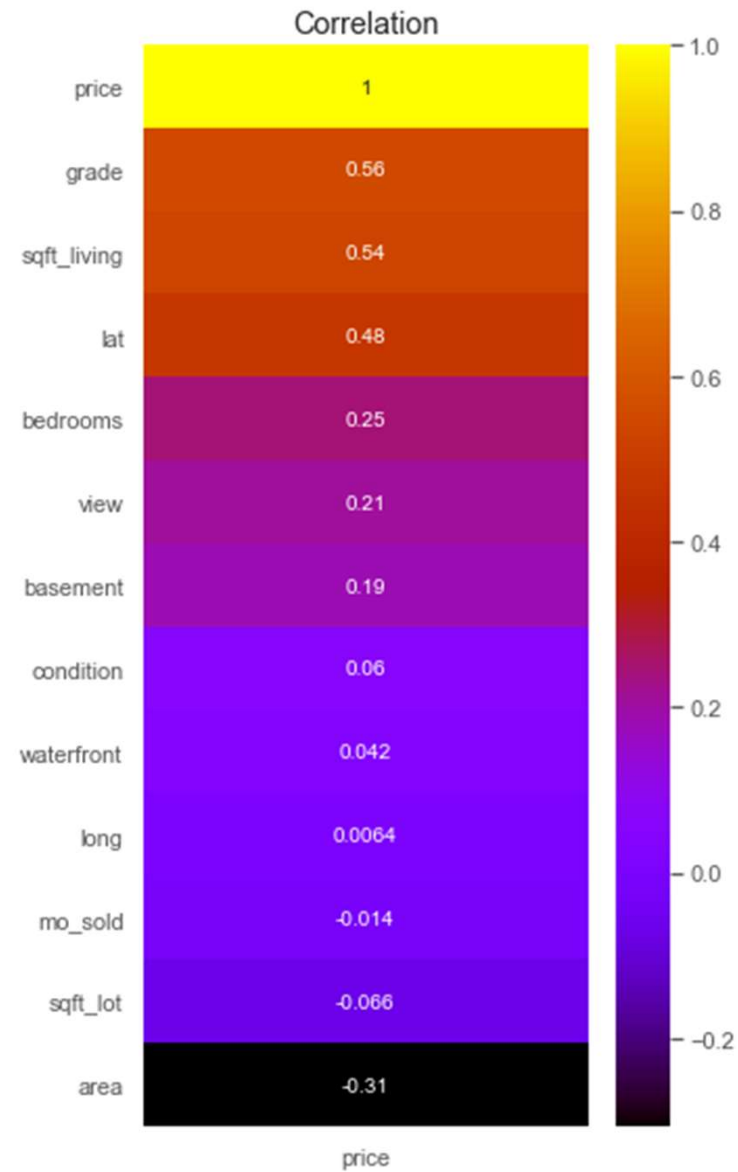
A buyer is looking for a new property in King County. They are flexible on price and property specifications, but instead want to ensure good value in purchasing it and advice on how to increase the property's value.

## Scenario 2

A real estate developer is looking for advice on where and how to enter King County. They are approaching this with a long term view with a focus on construction rather than renovation.

## Question 1 – The Best Feature

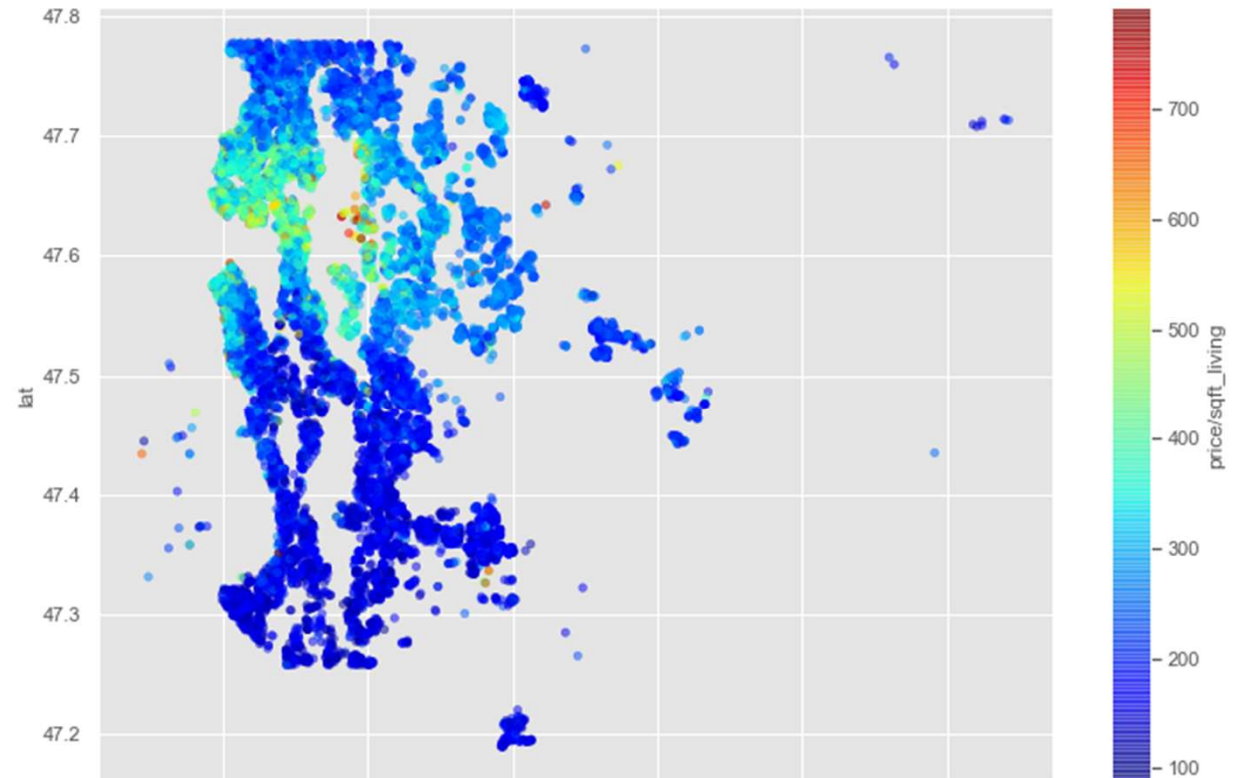
- Grade
- What is it?
  - Scale of 1 – 13
  - Government Regulated
- Relationship with Square Footage of living space



# Scenario 1 – A New Buyer

## Where should they look for value?

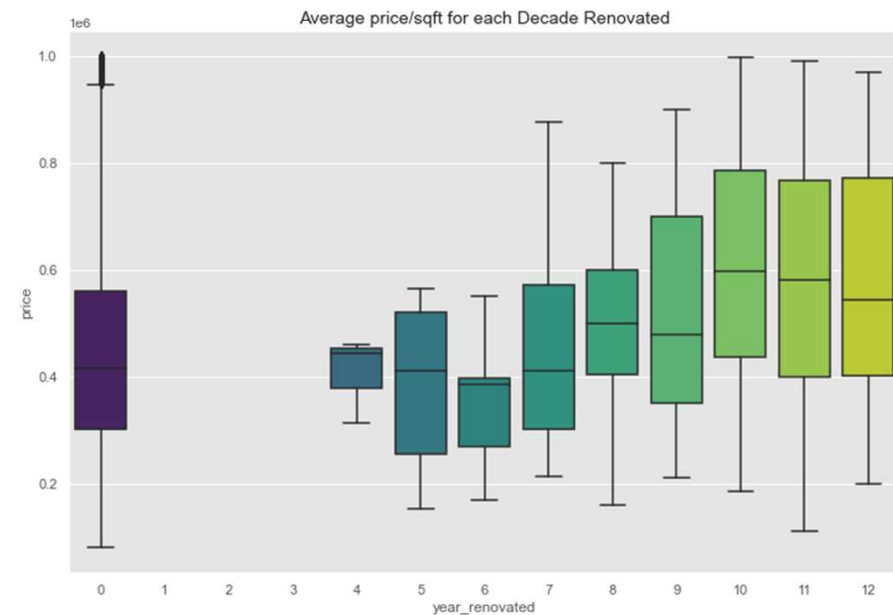
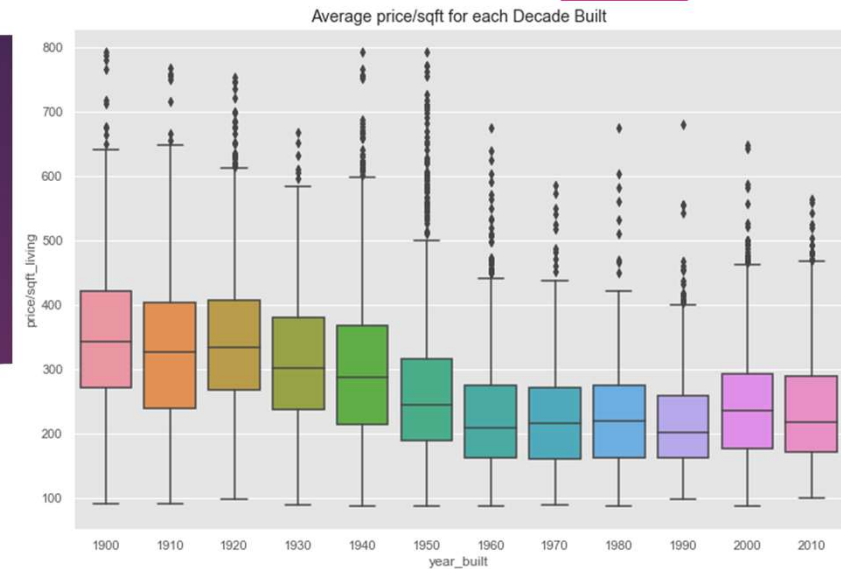
- Most expensive:
  - Seattle, Shoreline, Lake Forest Park - \$320/sqft
- Best value:
  - Federal Way, Auburn, Algona, Milton, Pacific - \$150/sqft
- Compromise Price & Loc:
  - Bellevue, Medina, Mercer Island, Newcastle - \$270/sqft
  - Sammamish, Issaquah, Carnation, Duval - \$257/sqft



# Scenario 1 – A New Buyer

## How to maximize profit?

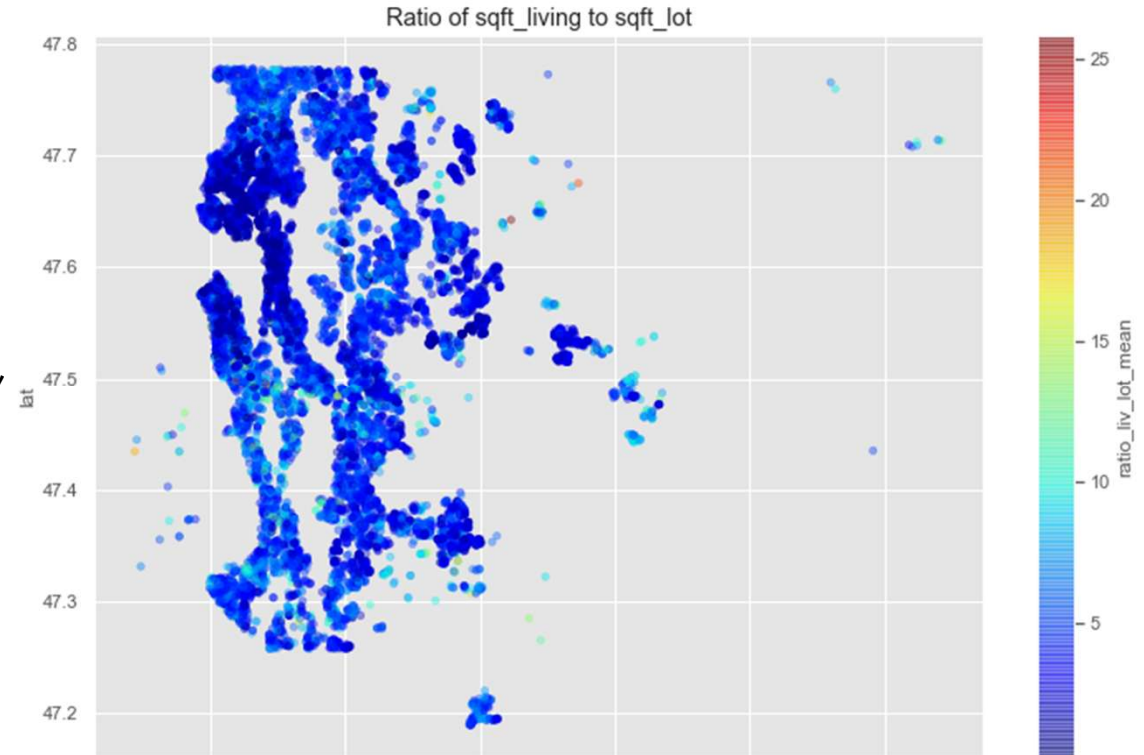
- Older houses are more expensive
- Houses renovated in the last 15 years are consistently best priced
- Recommendation:
  - Un-renovated house
  - Built between 1960 and 2000
  - Invest into renovation





# Scenario 2 – Real Estate Developer Where?

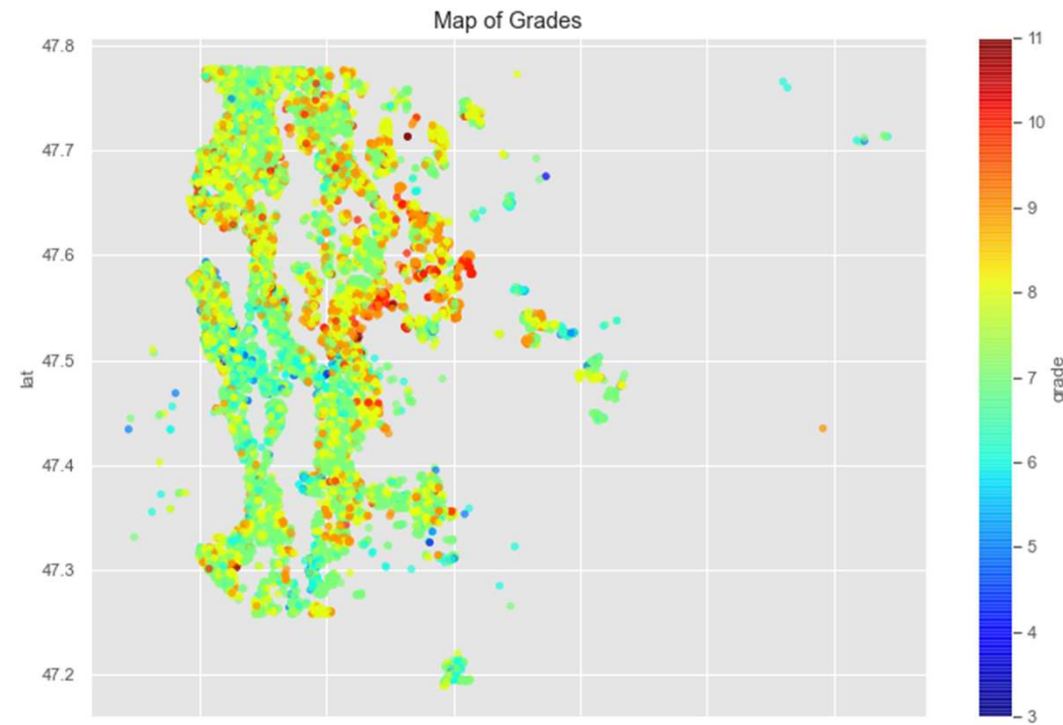
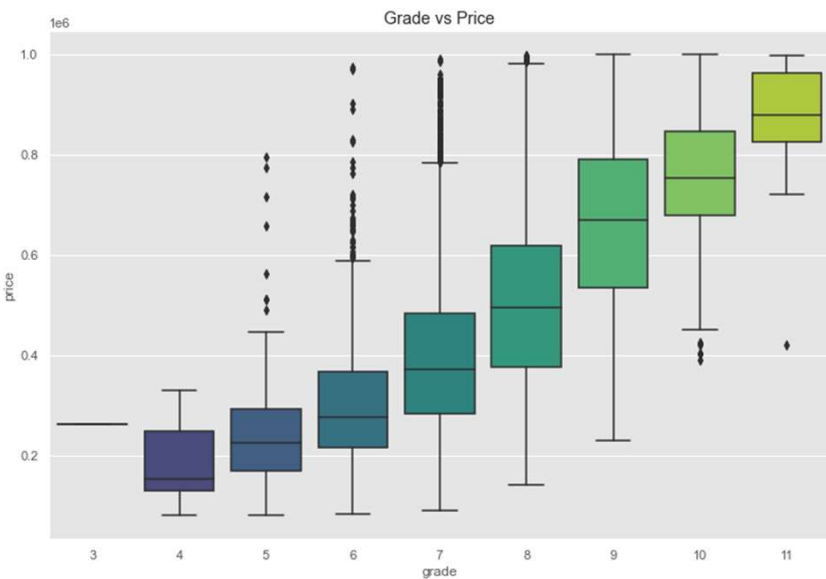
- Ratio of price/sqft\_living to price/sqft\_lot
- Worst returns:
  - Seattle, Shoreline, Lake Forest Park – 2.8x
- Best value:
  - Burien, Normandy Park, Des Moines, SeaTac, Tukwilla, Vashon Island- 5.5x
- Compromise Price & Loc:
  - Kirkland, Kenmore, Bothell, Redmond, Woodinville – 4.1x
  - Bellevue, Medina, Mercer Island, Newcastle – 4.2x



# Scenario 2 – Real Estate Developer

## What to focus on during construction?

- Focus on Grade
- There is a clear link between Grade and Price
- While concentrated, high Grade houses are spread out





## Additional Work

- ▶ Expanding the data to include earlier years
- ▶ Identifying more accurate zipcode insights
- ▶ Using polynomial regression
- ▶ Using k-means clustering on the map



# Thank you!!

Please reach out with any questions



# Appendix

- ▶ Predicting price:
  - ▶ +1 sqft\_living = + \$109
  - ▶ + 1 latitude = + \*215,500
  - ▶ Being grade 9 = + \$290,000

## The Actual Equation:

```
-156892.58301231728 * Q('lat') + 191.33176008082086 * Q('lat_sqft_living') + 264076.1197767998 * Q('grade_9') + 1685237.371799414 *  
Q('lat_area_3') + -80049817.86966655 * Q('area_3') + -1.935126273746618 * Q('sqft_lot') + 318604.7965298707 * Q('grade_10') + 182022.19055159844  
* Q('grade_8') + -14776.790851493744 * Q('year_built_1920') + -15021.586511089046 * Q('year_built_1910') + -101035.25106757344 * Q('area_4') +  
37214.57031578285 * Q('condition_3') + 163915.60725026892 * Q('view_4') + 64764.221924819634 * Q('view_2') + -8988.594752520798 *  
Q('sqft_living') + 119077.5114277574 * Q('grade_7') + -119575.5909124967 * Q('year_built_2000') + -127323.07262582479 * Q('area_6') + -  
109619.8803773802 * Q('area_5') + -50677.25091058986 * Q('area_8') + -237508.0522980736 * Q('long') + 403862.02780836873 * Q('grade_11') + -  
29800.866838100686 * Q('year_built_1930') + 82143.34476241605 * Q('view_3') + 30609.48055589417 * Q('mo_sold_4') + 57407.12822750681 *  
Q('view_1') + 80808.01258220075 * Q('condition_5') + 23185.15771759209 * Q('mo_sold_3') + -129016.16822998469 * Q('year_built_1970') + -  
123829.17565851734 * Q('year_built_1960') + 57430.120913373685 * Q('condition_4') + 51789.76957978332 * Q('year_renovated_11') + -  
171473.13157596873 * Q('waterfront_1') + -113374.79151711916 * Q('year_built_1990') + -103383.70364138969 * Q('year_built_1950') + -  
112690.81639580397 * Q('year_built_1980') + -87913.21009579858 * Q('year_built_2010') + -66808.72463113273 * Q('year_built_1940') +  
63799.886912827045 * Q('area_9') + 47899.39574256248 * Q('grade_6') + 47698.65595636547 * Q('year_renovated_12') + -5515.25510316388 *  
Q('bedrooms') + 46385.95786738206 * Q('year_renovated_10') + 85686969.01641855 * Q('area_2') + -1795041.283998692 * Q('lat_area_2') +  
76755.1567619325 * Q('area_7') + -79055.75609687502 * Q('year_renovated_6') + 7472.933241973265 * Q('mo_sold_5') + -21427879.56748773
```