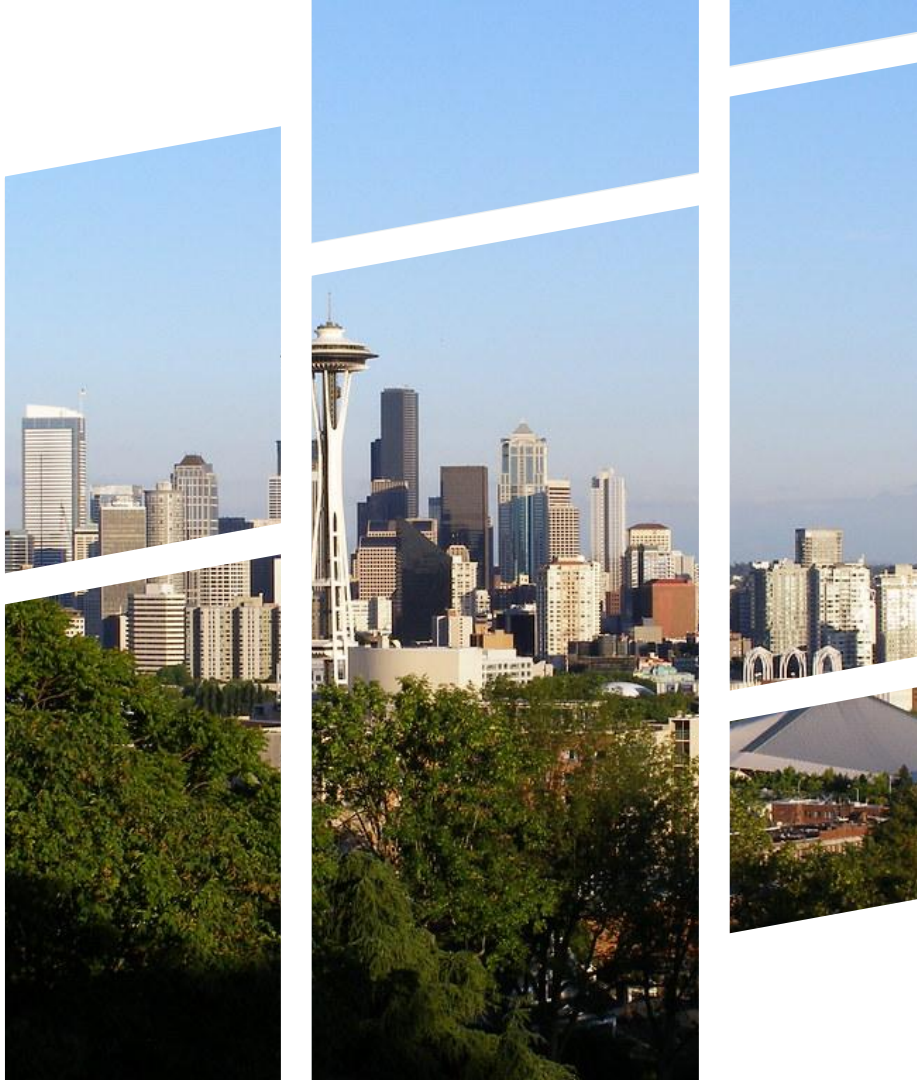
What increases the price of a house?

A product of many factors

To know how the price of a house increases is a combination of several key factors, mostly size

Looking at Seattle

To answer the above question, we looked at the Kings County housing dataset, which includes data on more than 20,000 houses in the Seattle area.



How I crunched the numbers

Zip Codes

divide the houses by "in Seattle", and "outside Seattle" (neighboring areas)

Extreme cases

Removed 102 houses from the data set With very high prices

Floors?

Removed the 'floors' column. It turned out to be too perfect (statistically impossible)

1.
Run Linear regression model

A simple model comparing Price to Square footage

Results

Find correlation between Square footage, and price

- Price increases by $239 per square foot above basement
- Statistically relevant
- Only accounted for %35 of available houses

Not enough to make predictions

2.

Multiple Linear regression model

Let's get get complicated (Shove every available variable into the model, and see what happens)

Results

- Price increases by $58 per square foot
- Accounted for %67 of available houses (significant)
- Higher Grade = $100k per grade
- Better Condition = $30k per condition level
- Bathroom = $8000 per bathroom

Strange outcome, bathrooms probably a factor of larger houses

2.5
Remove bad performers

Remove any factor that decreases the price

Results

- Accounted for %100 of data (impossibility)
- Better condition DECREASED price
- Larger Living room DECREASED price
- Statistical significance DECREASED for several factors

While accounting for more, this was bad,

Transform the data

With too many strange occurrences in my model, it needed change. namely , removing certain factors.

Went back to version 2.0

Remove, Scale

Remove factors that didn't show probable relationships

Scale factors to be about the same range

Split dataset to train model

Test against model to see margin of error

Success!

The model had a reasonable Margin of error

The model was validated as having less errors than our test case

Takeaway:

Ideally invest in a house Where

- High Grade, (expect %39 increase in price)
- Large square feet of living room, or general lot, (%20 increase, each)
- On the waterfront, (%10 increase)
- Within the Seattle area, (%20 increase)

Thank you!

Questions?
Please feel free to ask!

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