Improving Your Home: What any homeowner can do!

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Business Problem

- For many Americans, the most important and valuable asset they own is their home. Owning a home is not just the American dream. Owning a home is an avenue to prosperity. The American real estate market is the most important in the world. Academia, TV shows, and books all offer tips on how to make money in the real estate industry. **The goal of this project is to examine, using linear regression, how an existing homeowner can improve the value of their home. Using King County, WA sales data from 2014-15, I will determine which features are most valuable.**

- This study will put a special focus on a few features: the home's **square footage, grade, and whether the home was renovated in the last 10 years**.

Data

- To answer that question, I am going to look at housing sales data from King County, WA (the Seattle area) from 2014-15 when over 21k houses were sold.

- The county was generous enough to provide this data online.

- Now there are many categories in the dataset but I am limiting it to the things that an existing homeowner can control like:

Here are the definitions of each category:

- `id` - Unique identifier for a house
- `date` - Date house was sold
- `price` - Sale price (prediction target)
- `bedrooms` - Number of bedrooms
- `bathrooms` - Number of bathrooms
- `sqft_living` - Square footage of living space in the home
- `sqft_lot` - Square footage of the lot
- `floors` - Number of floors (levels) in house
- `waterfront` - Whether the house is on a waterfront
  - Includes Duwamish, Elliott Bay, Puget Sound, Lake Union, Ship Canal, Lake
- `view` - Quality of view from house
  - Includes views of Mt. Rainier, Olympics, Cascades, Territorial, Seattle Skyline creek, and other
- `condition` - How good the overall condition of the house is. Related to maintena
  - See the King County Assessor Website for further explanation of each conditi
- `grade` - Overall grade of the house. Related to the construction and design of the
  - See the King County Assessor Website for further explanation of each buildin
- `sqft_above` - Square footage of house apart from basement
- `sqft_basement` - Square footage of the basement
- `yr_built` - Year when house was built
- `yr_renovated` - Year when house was renovated
- `zipcode` - ZIP Code used by the United States Postal Service
- `lat` - Latitude coordinate
- `long` - Longitude coordinate
- `sqft_living15` - The square footage of interior housing living space for the nea
- `sqft_lot15` - The square footage of the land lots of the nearest 15 neighbors

Results and Recommendation: Square Footage

- A 5% and 10% increase in square footage yield a price increase of 3% and 5%, respectively so increasing square footage may not be worth the cost. The average price of a home in the dataset was 540k. Let's see the effect of adding more sq. footage to its price.

- Recommendation: **Improving the square footage effects price but that strongly. A homeowner's resources may be better spent elsewhere**.

Effect of Square Footage Change on Home with Average Value
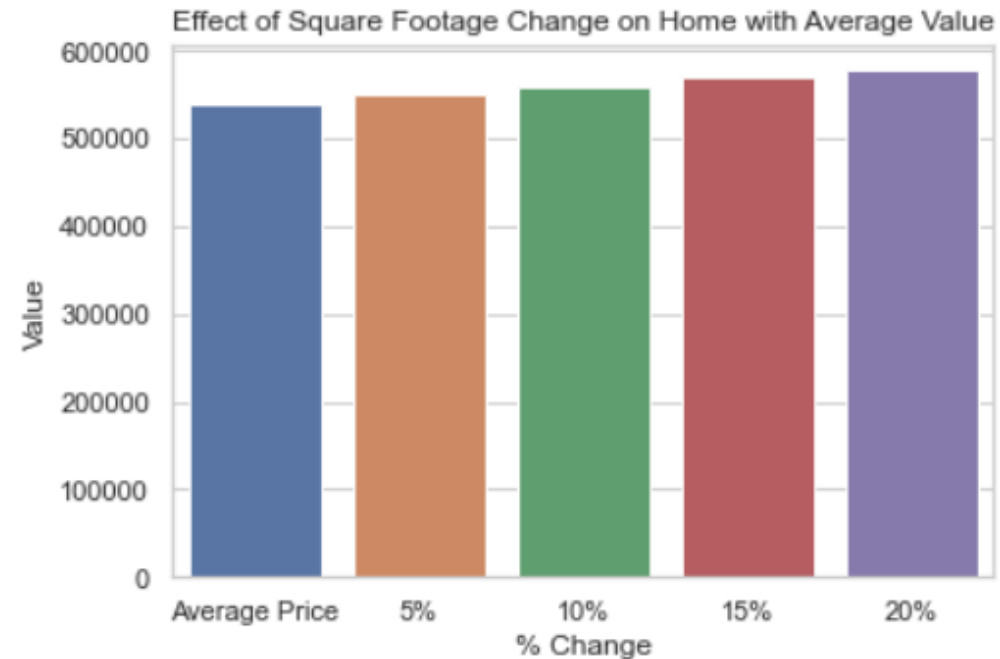
King County Building Grades

BUILDING GRADE

Represents the construction quality of improvements. Grades run from grade 1 to 13. Generally defined as:

1-3 Falls short of minimum building standards. Normally cabin or inferior structure.

4 Generally older, low quality construction. Does not meet code.

5 Low construction costs and workmanship. Small, simple design.

6 Lowest grade currently meeting building code. Low quality materials and simple designs.

7 Average grade of construction and design. Commonly seen in plats and older sub-divisions.

8 Just above average in construction and design. Usually better materials in both the exterior and interior finish work.

9 Better architectural design with extra interior and exterior design and quality.

10 Homes of this quality generally have high quality features. Finish work is better and more design quality is seen in the floor plans. Generally have a larger square footage.

11 Custom design and higher quality finish work with added amenities of solid woods, bathroom fixtures and more luxurious options.

12 Custom design and excellent builders. All materials are of the highest quality and all conveniences are present.

13 Generally custom designed and built. Mansion level. Large amount of highest quality cabinet work, wood trim, marble, entry ways etc.

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Results and Recommendation: Grade

- The average value of a home in King County, WA is 540k. Let's see how improving its grade from Average to Good to Very Good effects price.

- From Minimum Quality to Average, there is a 29% increase in price. From Minimum Quality to just Above Average, there is an increase of 66%.

- Improving the grade of a home that only barely meets the county's standards can have a monumental effect on sale price. So a homeowner should do so, if possible.

Effect of Grade Change on Home with Average Value
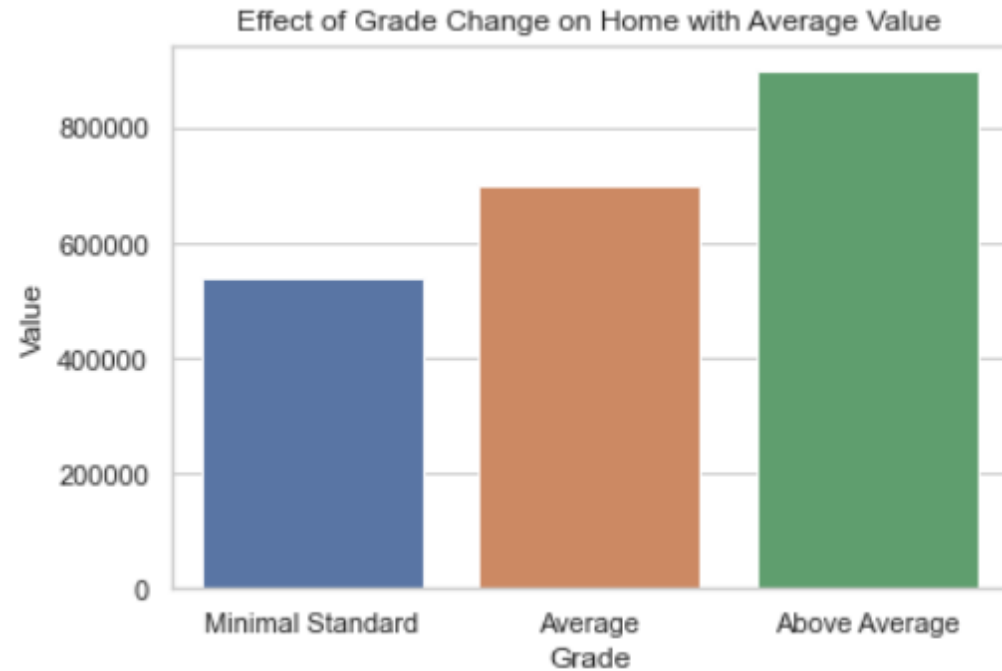
Results and Recommendation: Recent Renovated Homes

- The average value of a home in King County, WA is 540k. Let's see how a Recent Renovation effects a home sale price.

- An average valued home of 540k would increase to 853k with a recent renovation.

- **Renovating the house sometime in the 10 years before you sell has a 58% positive effect on sale price. So, a homeowner should do so, if possible.**

Effect of Renovation on Home with Average Value
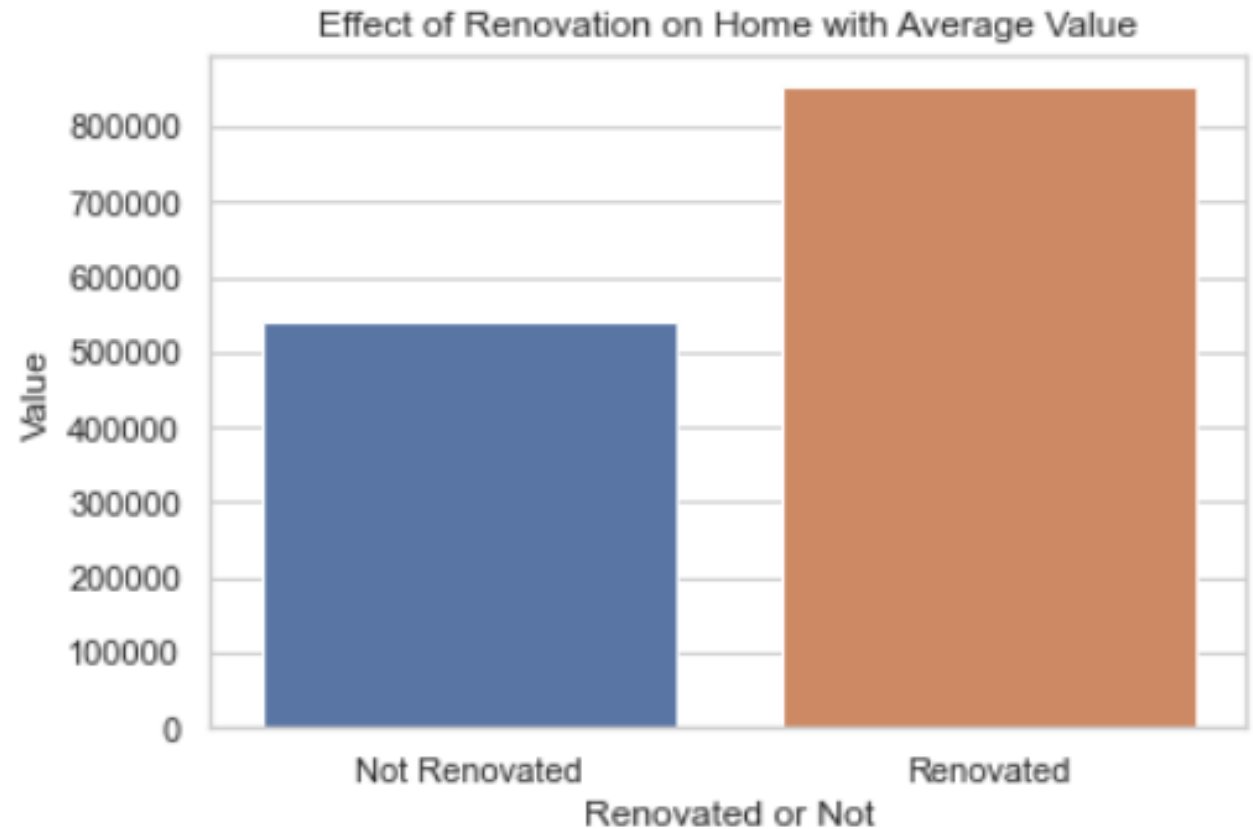
Recommendations

- 1. Improving the square footage effects price but perhaps not as strong as I thought. A homeowner's resources may be better spent elsewhere.

- 2. Improving the grade of a home that only barely meets the county's standards can have a monumental effect on sale price. So a homeowner should do so, if possible.

- 3. Renovating the house sometime in the 10 years before you sell also has a 58% positive effect on sale price. So, a homeowner should do so, if possible.

Conclusion

- Even so, this study, at the very least provides very useful information for any King County, WA homeowner on how they can improve the value of their home. While increasing square footage is not as important, improving the grade and a recent renovation will yield high sale prices for homeowners. Since home is where the heart is, homeowners may rest easier if they renovate and improve their homes' grade before they sell!

Next Steps

- Moving beyond the King County area: the Seattle area is very unique and the trends we see in the 2014-15 years may not be representative for the country.

- Isolating by individual zipcodes and examining how they effect of the features on the price.

Thanks

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Github:
https://github.com/icapeli/phase_2_proje
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