



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

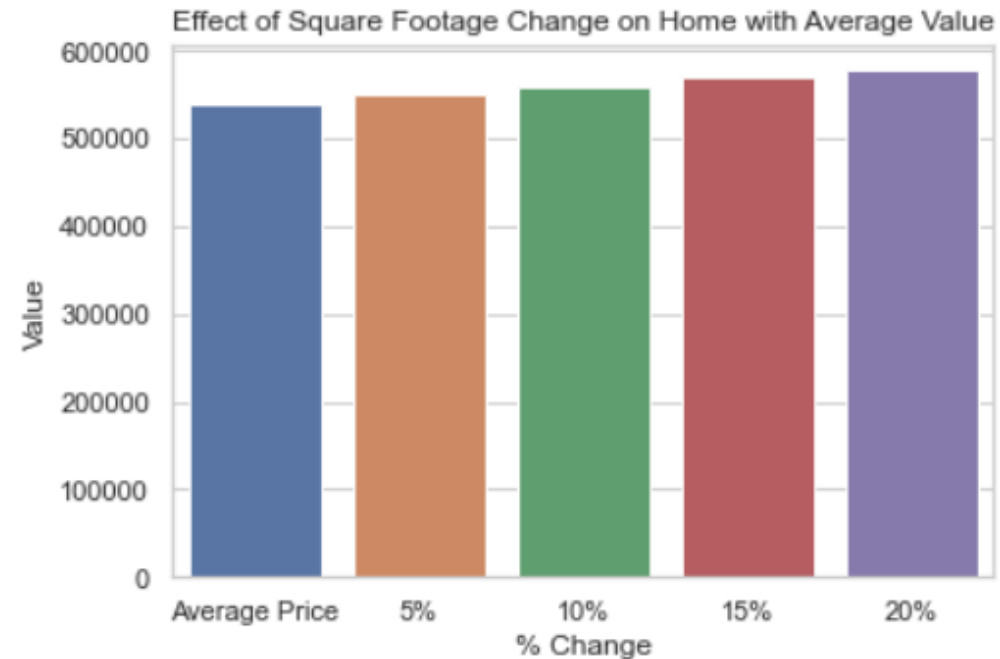
- To answer that question, I am going to look at housing sales data from King County, WA (the Seattle area) from 2014-15 when over 21k houses were sold.
- The county was generous enough to provide this data online.
- Now there are many categories in the dataset but I am limiting it to the things that 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 Washington, and other
- `view` - Quality of view from house
 - Includes views of Mt. Rainier, Olympics, Cascades, Territorial, Seattle Skyline, and other
- `condition` - How good the overall condition of the house is. Related to maintenance
 - See the [King County Assessor Website](#) for further explanation of each condition
- `grade` - Overall grade of the house. Related to the construction and design of the house
 - See the [King County Assessor Website](#) for further explanation of each building grade
- `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 nearest 15 neighbors
- `sqft_lot15` - The square footage of the land lots of the nearest 15 neighbors

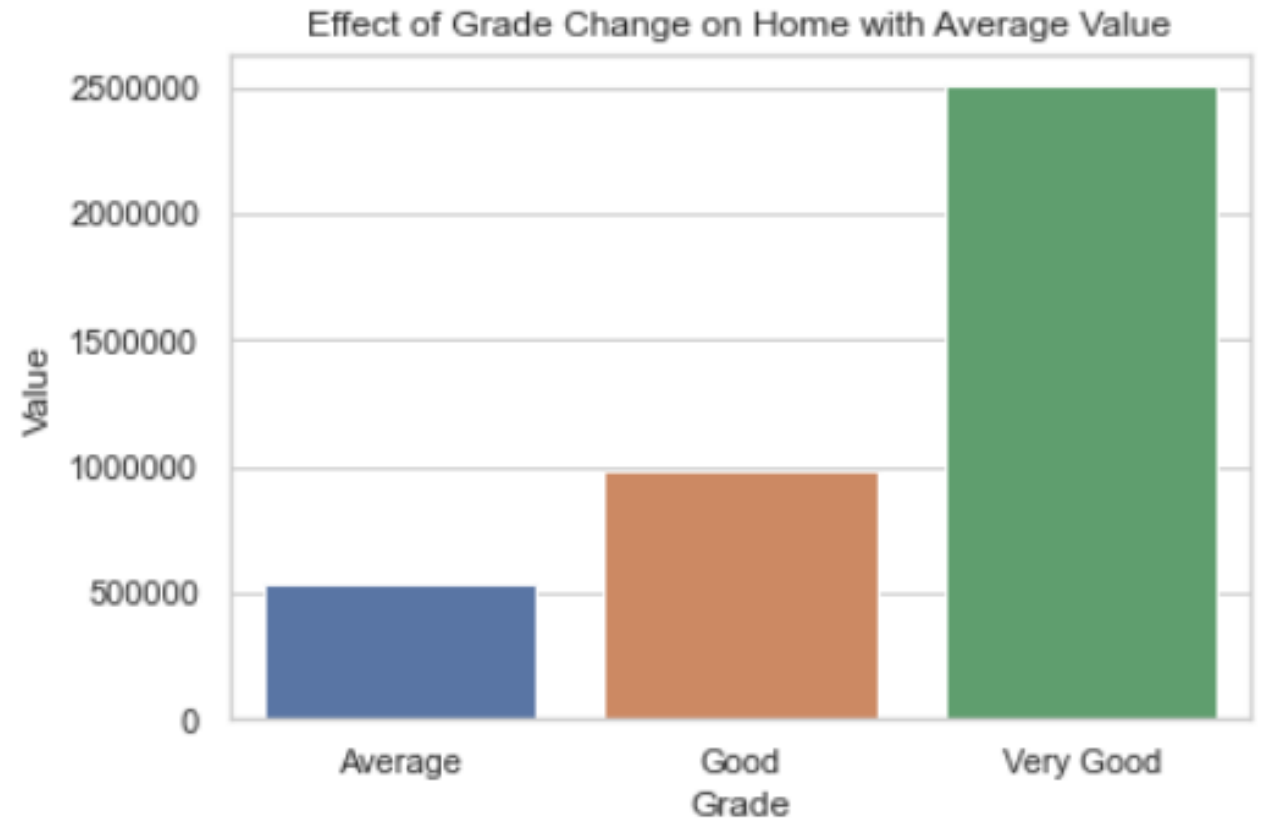
Results and Recommendation: Square Footage

- 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.**



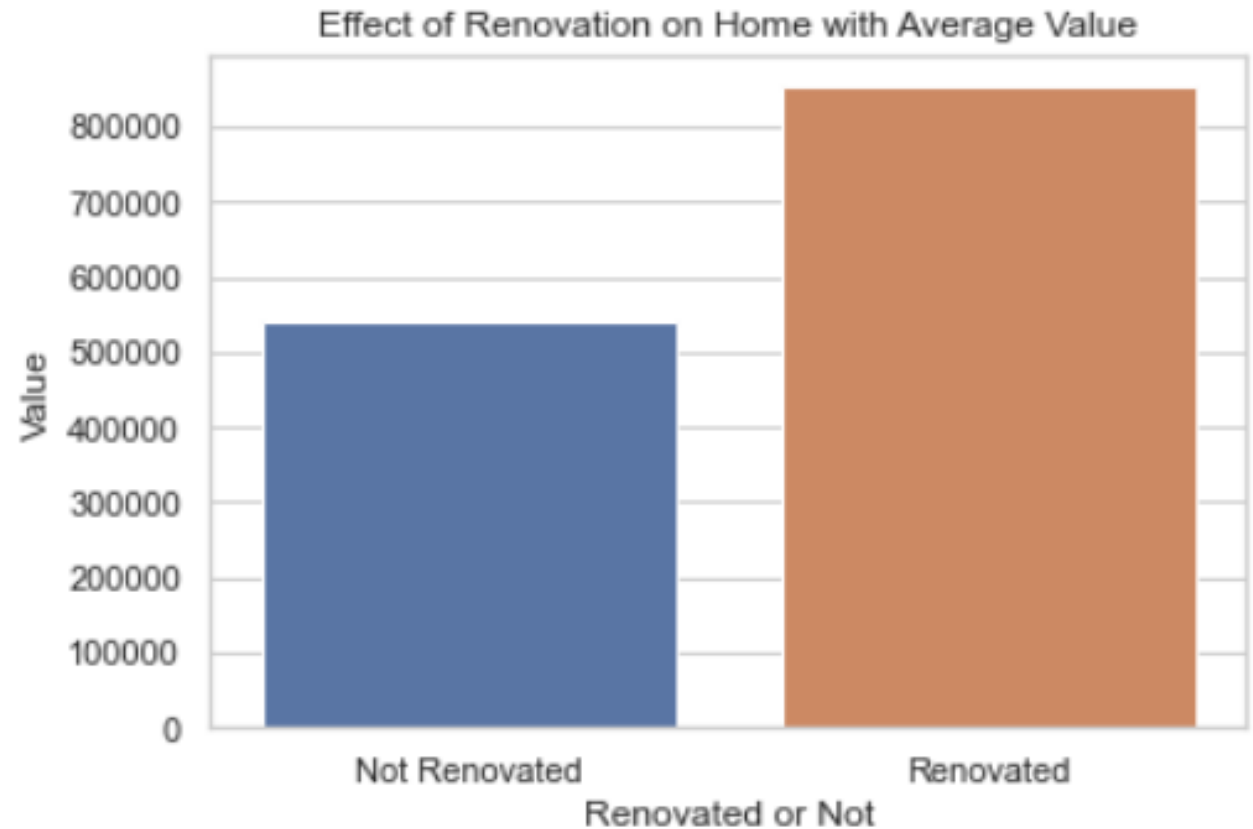
Results and Recommendation: Grade

- 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 Average to Good, there is an increase of 18% and 46% from Good to Very Good.
- Recommendation: **Improving the grade of an Average house can have a monumental effect on sale price. Therefore, a homeowner should do so, if possible.**



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.**



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 an Average house 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_project

