



Return on Renovation

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Flatiron School
Phase 2 Project



Outline

Business Problem

Summary

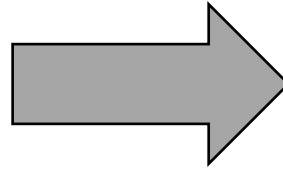
Data

Methods

Results

Conclusions

Business Problem



Home-owners want to know: will renovations increase the price of their home, and by how much?

Make strong inferences with home sale data.



- Build app within real-estate tech company
 - Zillow, Redfin, Opendoor, Flip, etc.
- Users visit to learn how renovations will increase their home price
- Increases revenue via product suite
 - Funnel more users to platform



Summary

Top 5 Recommendations:

1. Improve the Condition
2. Improve the Grade
3. Increase Square Footage
4. Improve the View
5. Add a Bathroom

Data

Housing Data from King County, Washington

Meaning of Residential Terms:

- Condition – Interior and Exterior
 - Fair – Badly worn, much repair needed.
 - Very Good – All items well maintained, many overhauled and repaired.
- Grade – Architecture and Design Quality
 - Good(8): Just above average in construction and design, ex. older subdivisions
 - Better(9): Better architectural design, extra interior and ext. design quality.

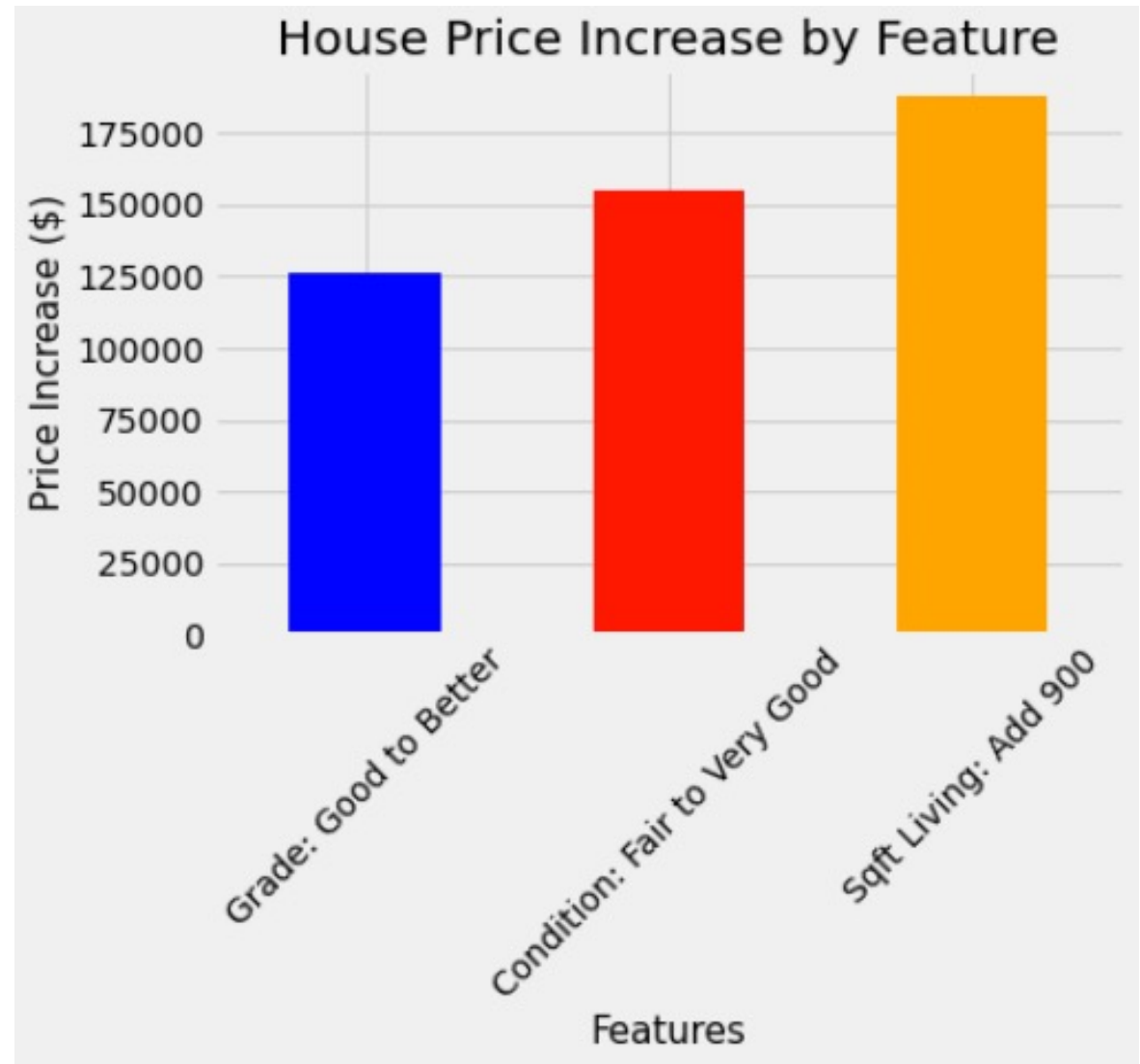


Methods

- Linear Modeling
 - Multiple Features in the same mode
- Features Included:
 - Square feet of living space
 - Number of Bathrooms, Bedrooms, and Floors
 - Year Built
 - Measures of Condition, Grade, and View
 - Waterfront (yes/no)
- Identify features with most influence on Price
- Calculate how much features influence Price

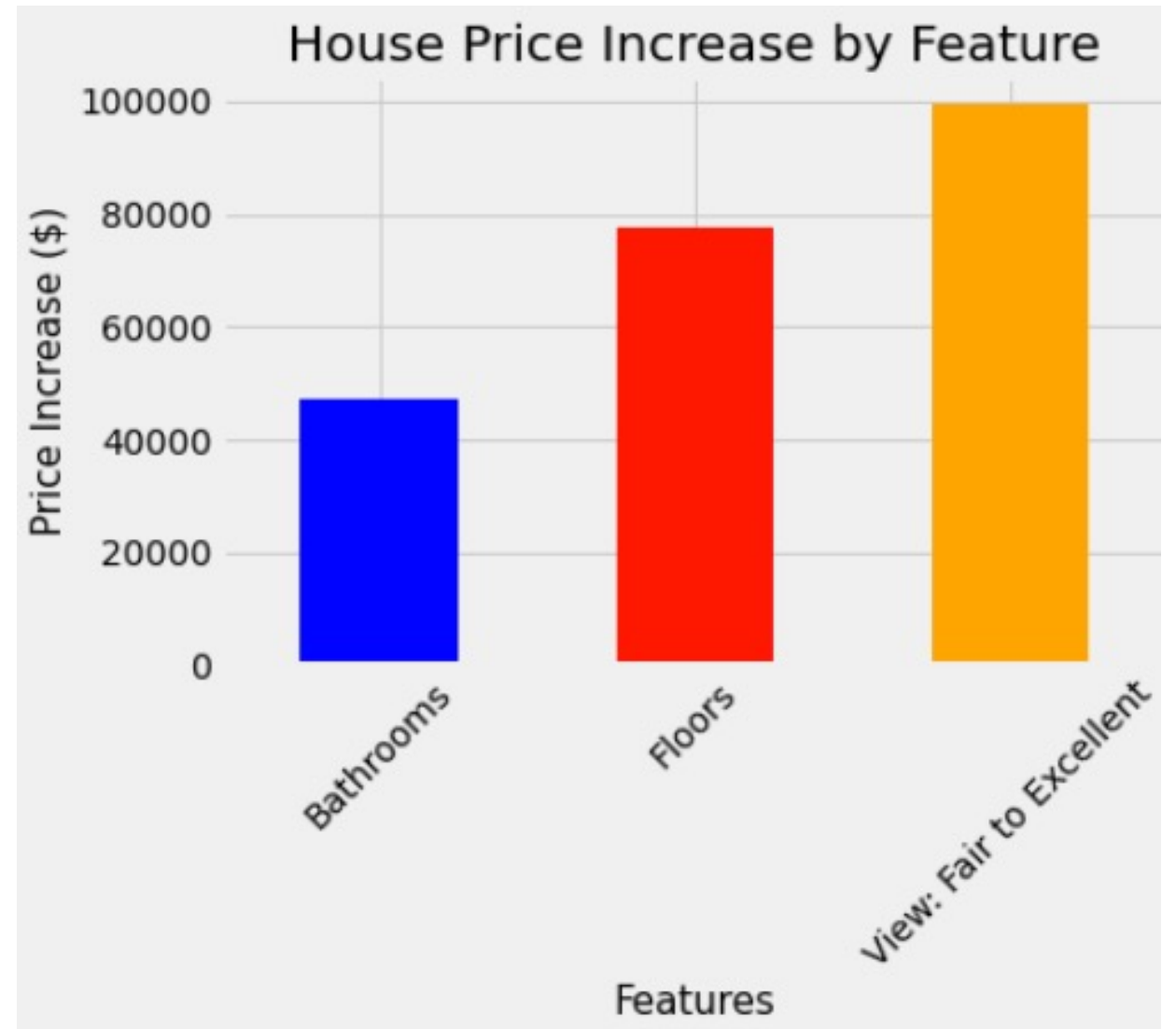
Results – Top Features

- Condition: Improve from Fair to Very Good
 - Increased price by \$155,000
- Grade: Improve from Good(8) to Better(9)
 - Increased price by \$125,000
- Livable Square Footage: Increase of ~900 square feet
 - Increased price by \$190,000



Results – Secondary Features

- Add a Bathroom
 - Increased ~\$45,000
- Add a Floor
 - Increased ~\$80,000
- Improve View: Fair to Excellent
 - Increased \$100,000



Conclusions

- There are excellent opportunities to increase home price for homeowners planning to renovate their property.
- Top priorities to increase price:
 - Improve condition of home – update to modern fixtures and appliances
 - Improve grade of home – structural renovation and improved craftsmanship
 - Add livable square footage – convert garage, build guest house, expand
- Other options exist -
 - Improving or adding a view – rooftop deck, patio, bigger window, landscaping
 - Add a Floor or Bathroom – more livable space increases price

Further Studies Recommended

- Examine other housing data sets to determine if they contain similar trends to predictors in the King County Data Set.
- Find additional predictors to better estimate how much certain home changes alter sale price.
 - Type of remodel or home additions.
 - Ex. Kitchen, Garage, Patio, additional Bedrooms/Bathrooms.
- Estimate return on investment for renovations.
 - How do certain projects increase sale price?
 - What amount of spending that reaps a higher gain for a given project?