Return on Renovation

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Flatiron School

Phase 2 Project

Outline

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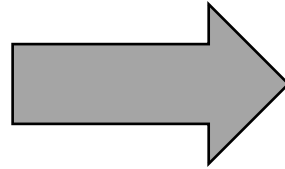
Home-owners want to know: will renovations increase the price of their home, and by how much?

Make strong inferences with home sale data.

Business Opportunity

- 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.
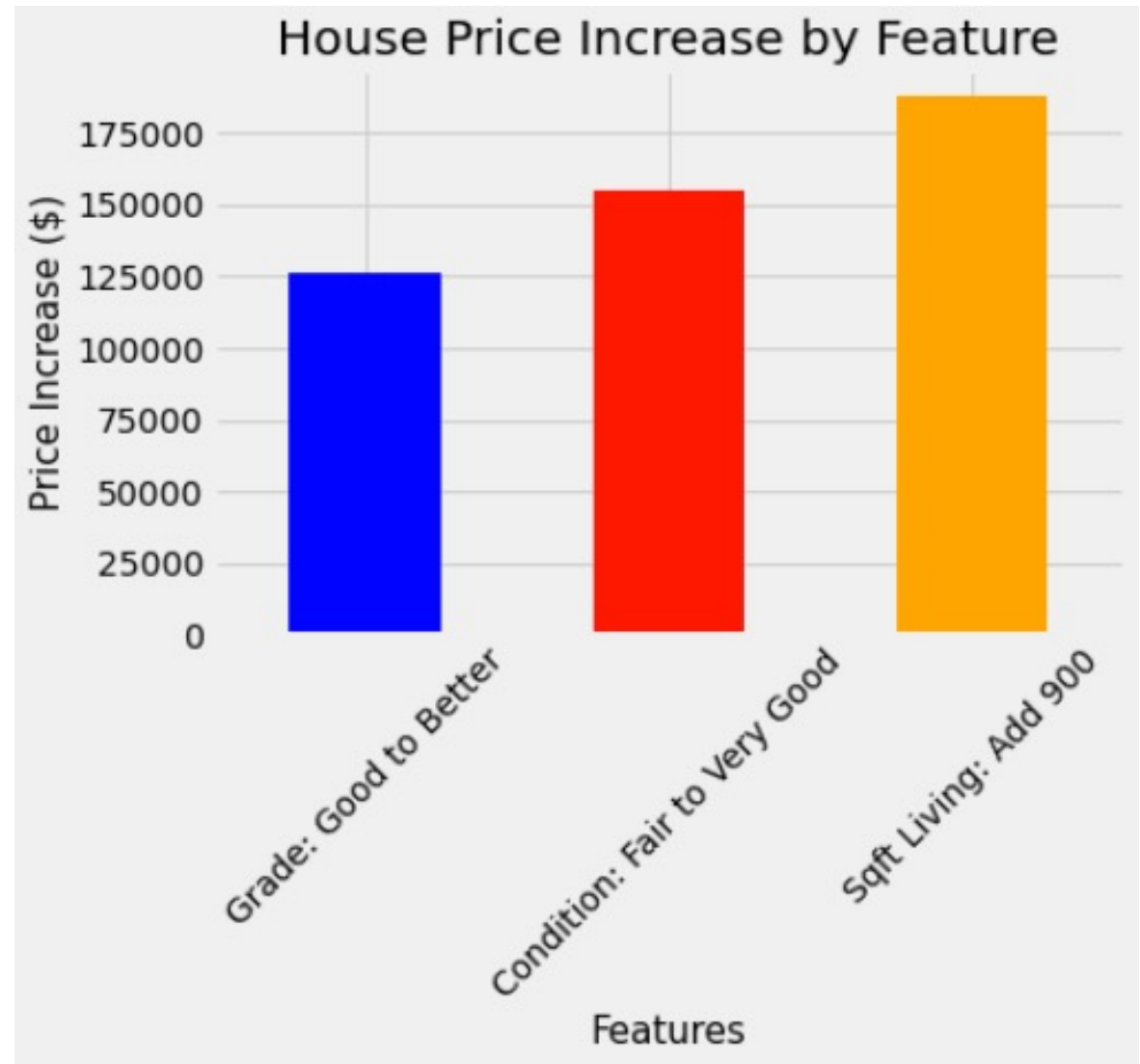
Methods

- 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
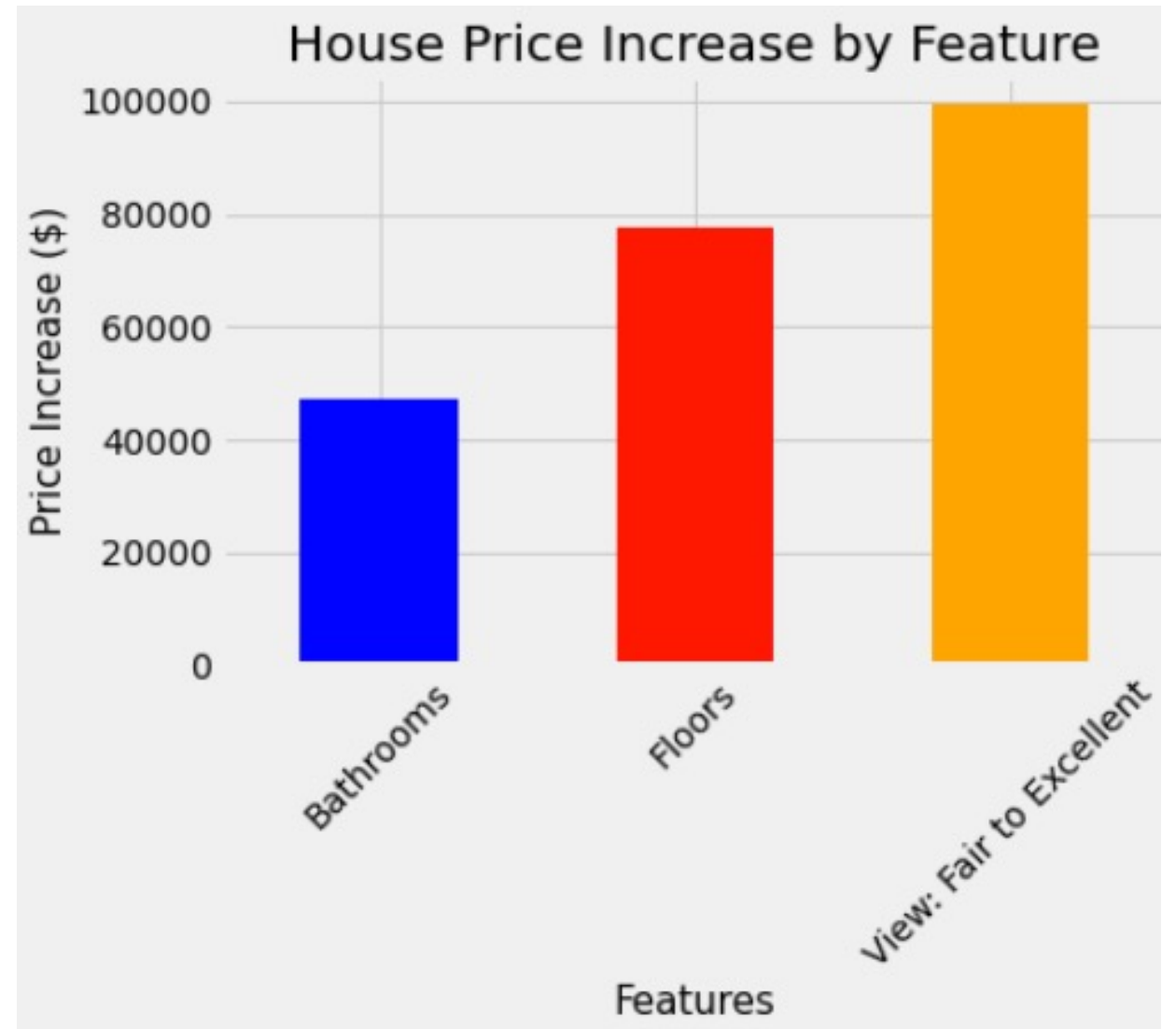- Calculate how much features influence Price

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

House Price Increase by Feature

Results – Secondary Features

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

House Price Increase by Feature

Conclusions

- There are excellent opportunities to increase home price for home-owners 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?