

An aerial photograph of a city skyline at sunset. The sky is filled with warm, orange and yellow clouds, with the sun low on the horizon. Several tall skyscrapers are visible, including a prominent one with a spire on the left. The foreground shows a dense urban area with various buildings and greenery.

# KING COUNTY HOUSING RENOVATION ANALYSIS

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HOW SHOULD I ADVISE MY CLIENTS?

# GENERAL BUSINESS PROBLEM

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A client comes to you seeking to sell their home in the near future and wants advice.

How should you advise them on whether it is worth renovating their home to improve its condition or add features prior to the final sale?





# QUESTIONS ADDRESSED

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- How much would renovating a home to improve the condition or grade of the home increase the sale price?
- How much would adding an extension to the living area of a home increase the sale price?
- How much would adding specific features such as an additional bathroom increase the sale price?

# DATA AND METHOD

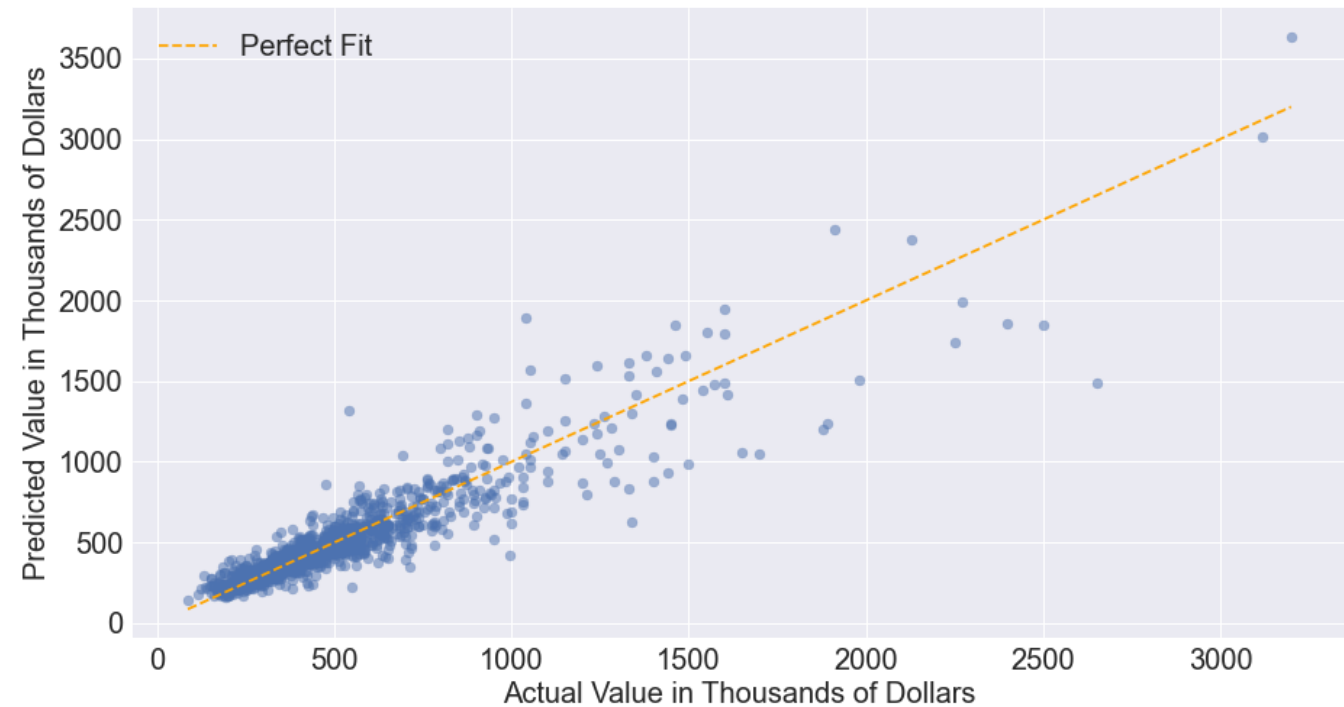
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- Data on King County house sales from 2014 – 2015 was used
- A multiple linear regression model was constructed using variables including:
  - Neighborhood
  - Numbers of bedrooms, bathrooms, and floors
  - Square footage of the living space
  - Home grade
  - Evaluation of home condition
  - Time of renovation

# THE MODEL

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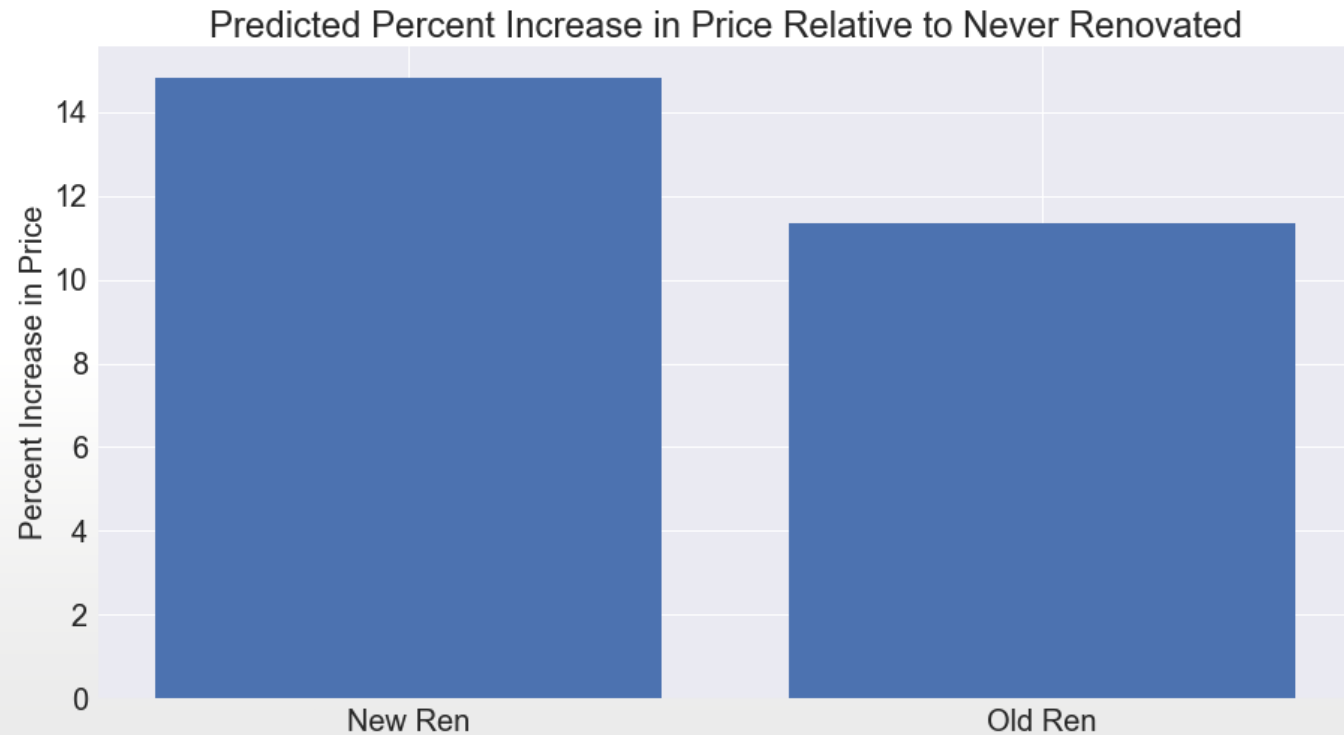
The model has an R-squared of 0.85, so it explains 85% of the variance in price



# PREDICTIONS ON RENOVATION

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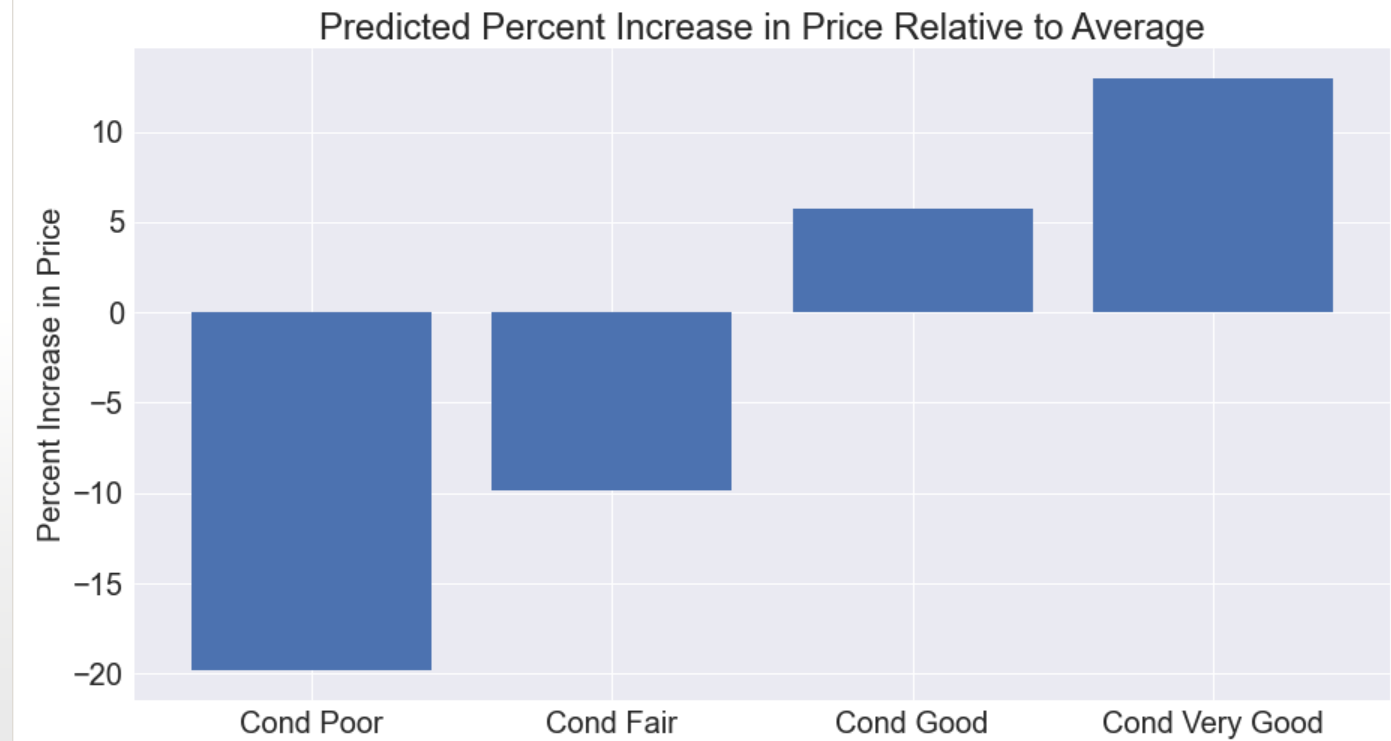
Some renovation is much better than none, but newer ones don't add much on top of old renovations.



# PREDICTIONS ON HOME CONDITION

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Improving low condition homes is predicted to have a larger return than low condition ones according to the model.

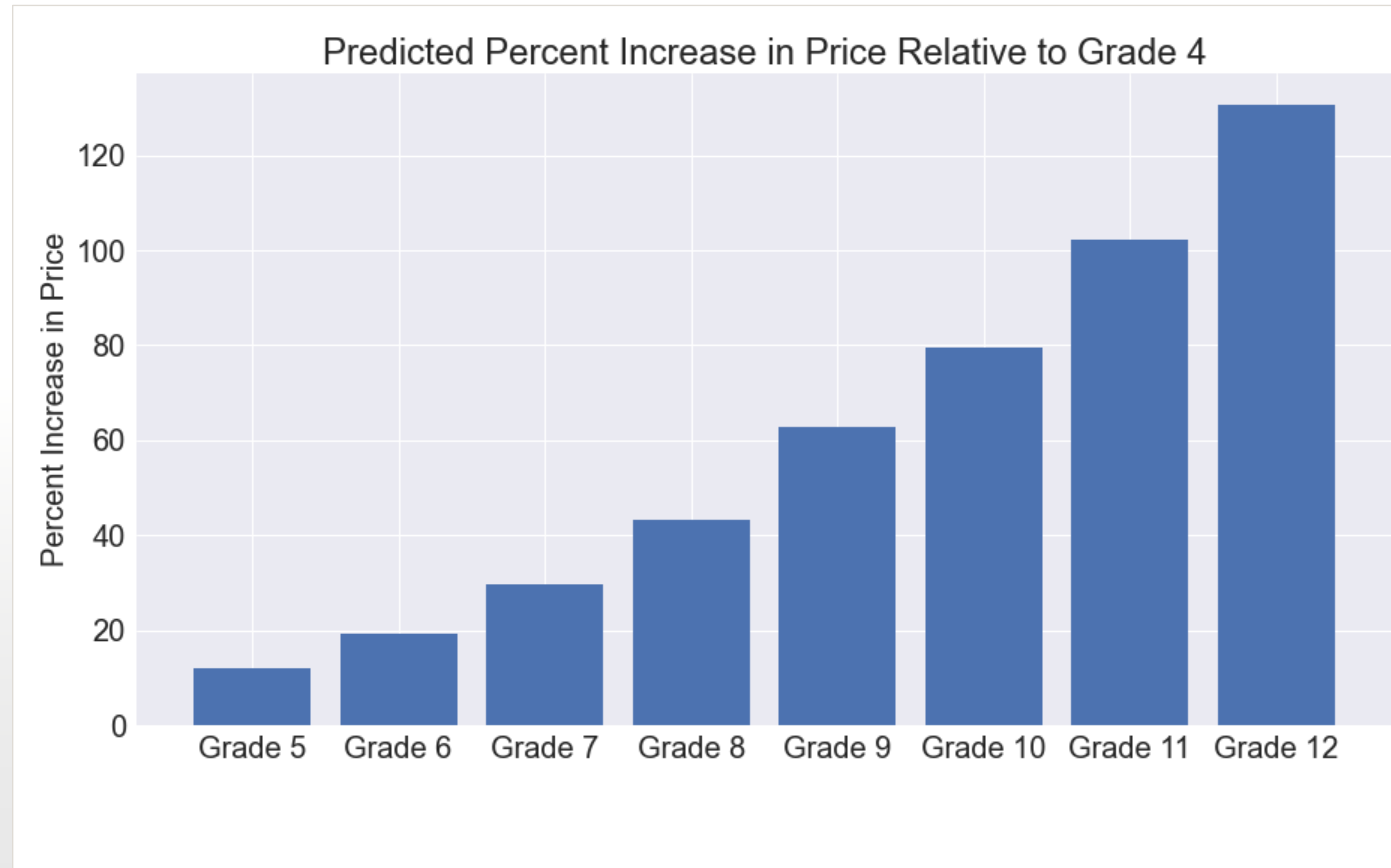




# PREDICTIONS ON HOME GRADE

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Improving higher grades  
has a higher return ~20%  
than lower grades ~10%

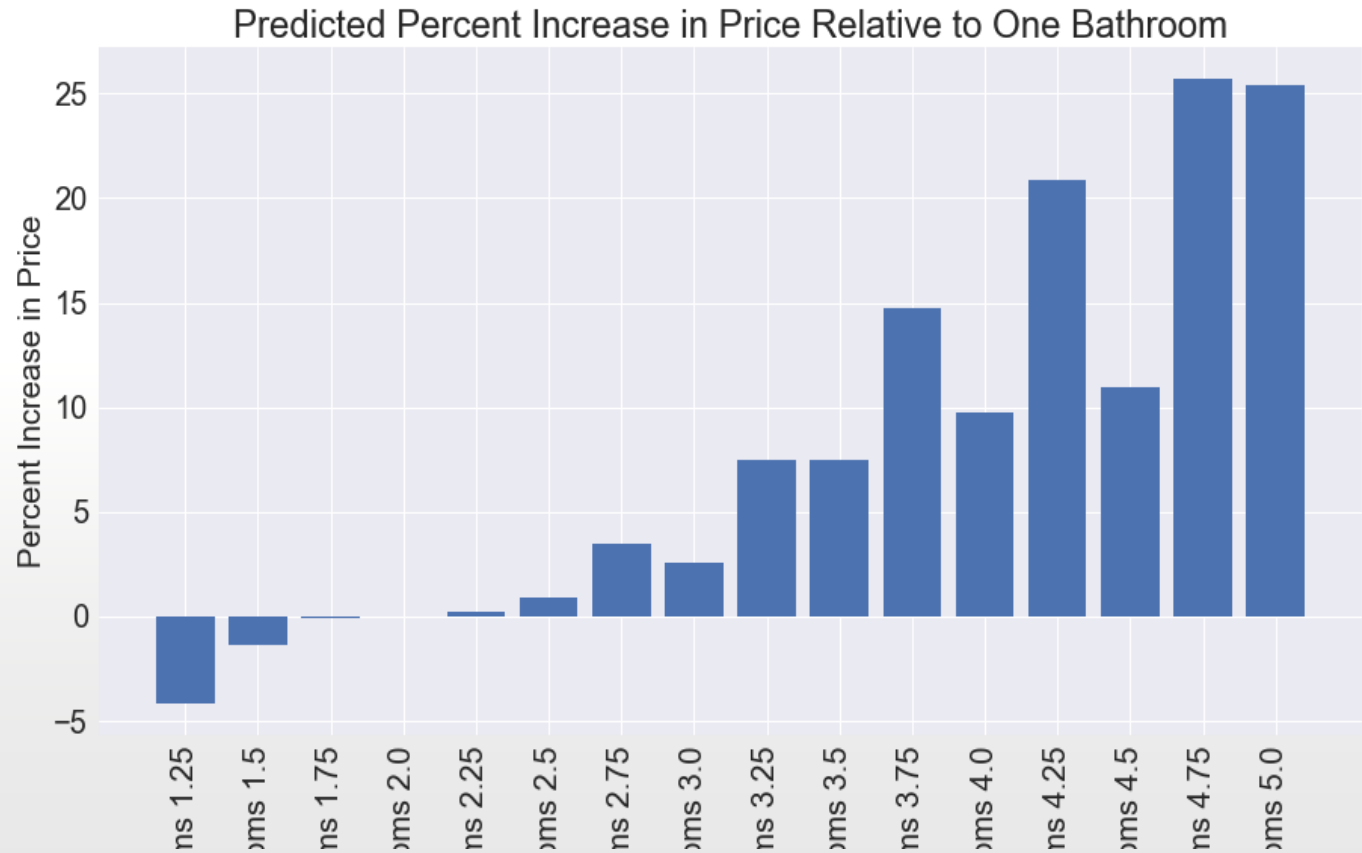




# PREDICTIONS ON NUMBER OF BATHROOMS

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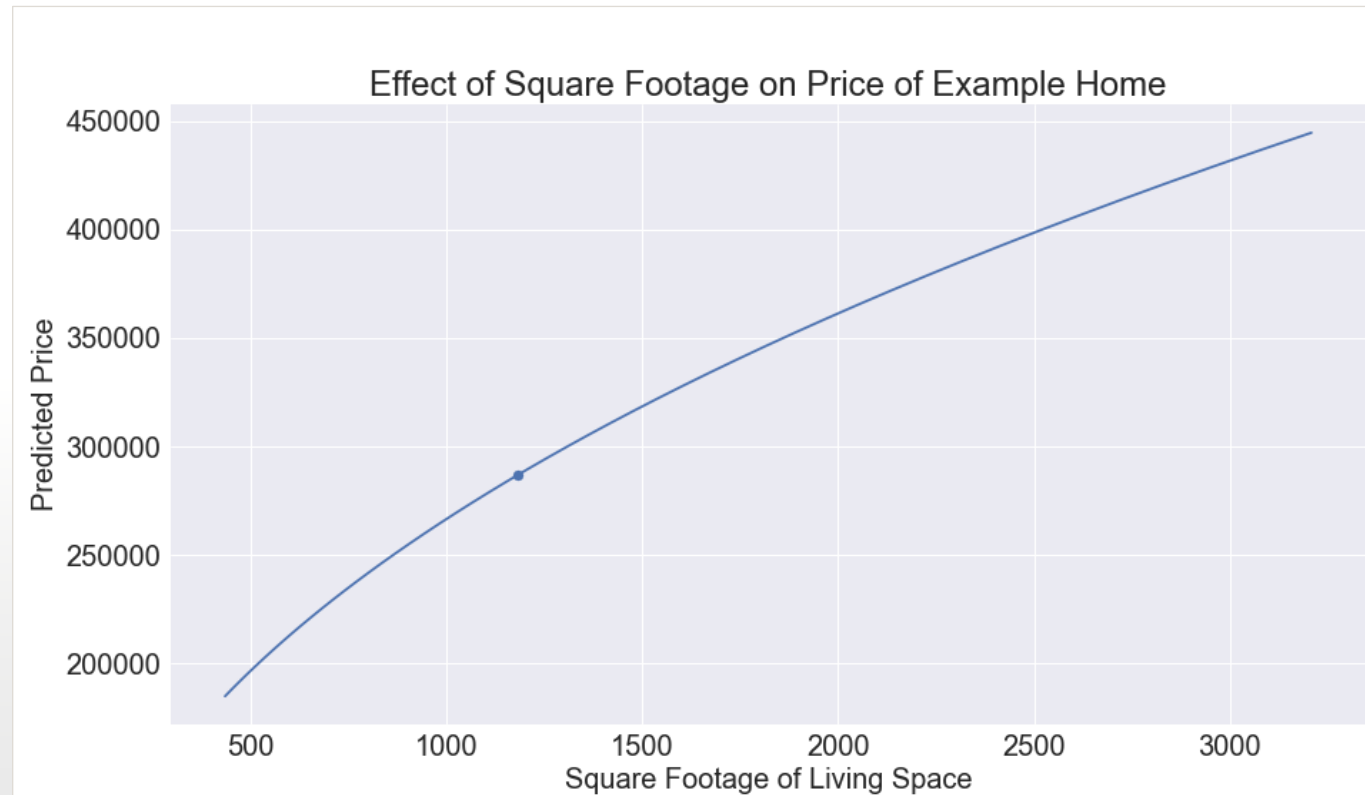
Effects of adding a bathroom is less certain, and the coefficient here are probably less reliable here.



# PREDICTIONS ON LIVING SPACE

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A 1% increase in sqft of the living area is predicted to increase home price by 0.44%



# ADDITIONAL USE OF MODEL

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- The model can also be used to make more tailored client prediction based on their unique situation.

## Example Use

- Client home: 3-bed, 2-bath, 1200 square foot never renovated home in Bellevue
- Client wants to renovate their home to increase its condition from fair to good
- The model expects such a renovation to improve their home's value by around \$102,000.





# CLIENT RECOMMENDATIONS

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- Increasing the grade score of a home by one level will increase the home value by around 10% for grades less than 8 and by about 20% for higher grades.
- Renovating an unrenovated home will typically increase its price around 14%, but only by around 2% if it has been previously renovated.
- Increasing the square footage of the home will increase the home price by about 0.44% per 1% of added space.
- Adding an additional bathroom may increase the price by around 5% but is highly dependent on context and these predictions are less reliable.

# NEXT STEPS

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- Analyze data on contractor prices, to give clients more definitive advice on the potential net gains of renovations.
- Seek out data sets that include more specific data on narrow home features, like particular kitchen features.
- Seek out data sets that cover more years to enable comparisons between sales on identical homes undergoing renovation to address concerns about causation.