

Housing Price Regression Analysis

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Summary

- Linear regression analysis of house prices reveals features to target with renovations:
 - House condition
 - Number of bathrooms
 - House Grade



Outline

- Business Problem
- Data
- Modeling
- Results
- Conclusions
- Next Steps

Business Problem

- Real Estate agency helps customers sell their homes
- Desires analysis of how renovations may impact price



Data

- King's County Housing Data
 - Over 21,000 homes
 - 2014-2015
- Included Features
 - Age
 - Size
 - Surroundings
 - Bedrooms/Bathrooms
 - Condition

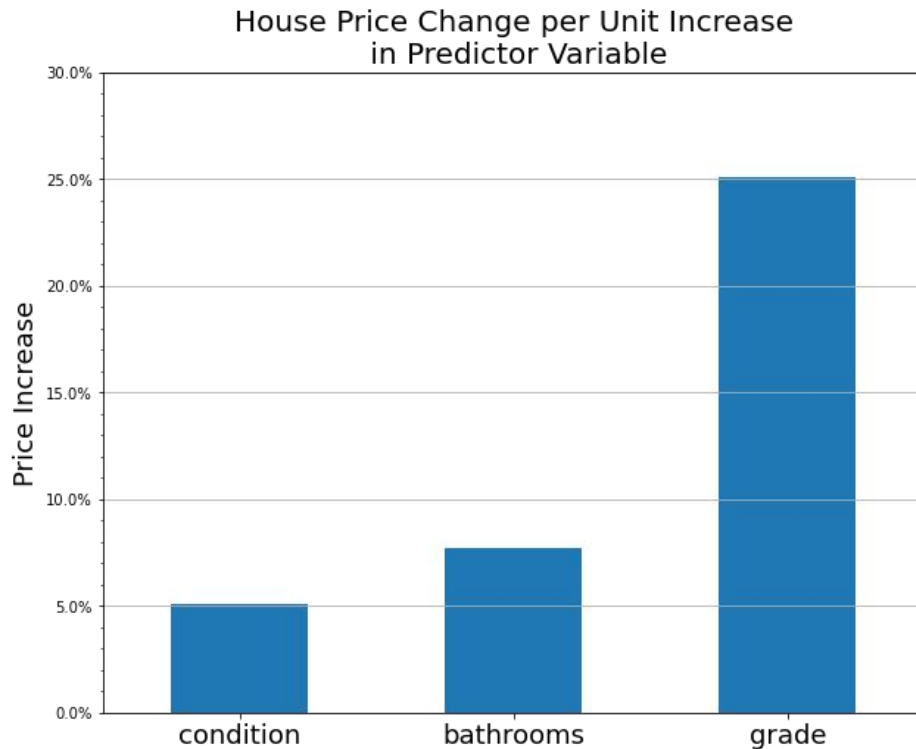
Model

- Multiple Linear Regression Model
- Data Transformation and Scaling
- Feature Selection:
 - Maximizing model fit
 - Ensuring independence

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_i X_i$$

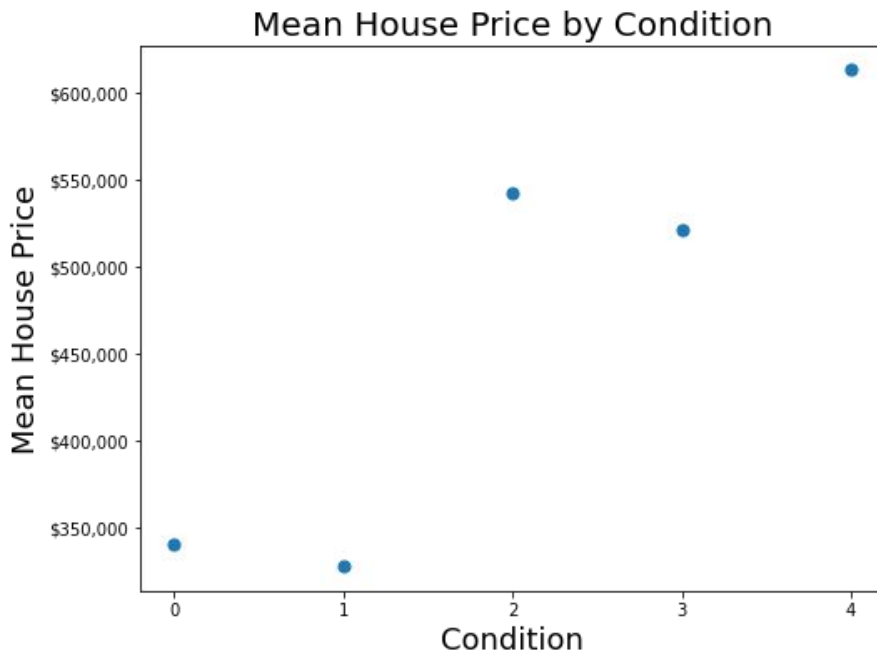
Results

- Model Fit:
 - R-squared: 0.65
- Model Coefficients:
 - Grade
 - Bathrooms
 - Condition



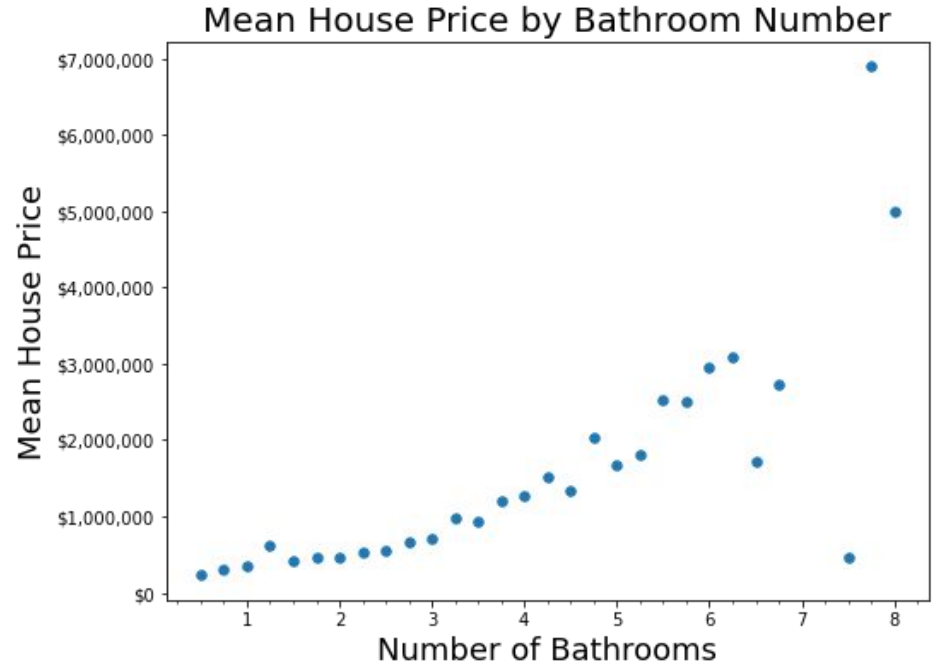
Conclusions

- Conduct maintenance and repair of worn out house features to improve condition



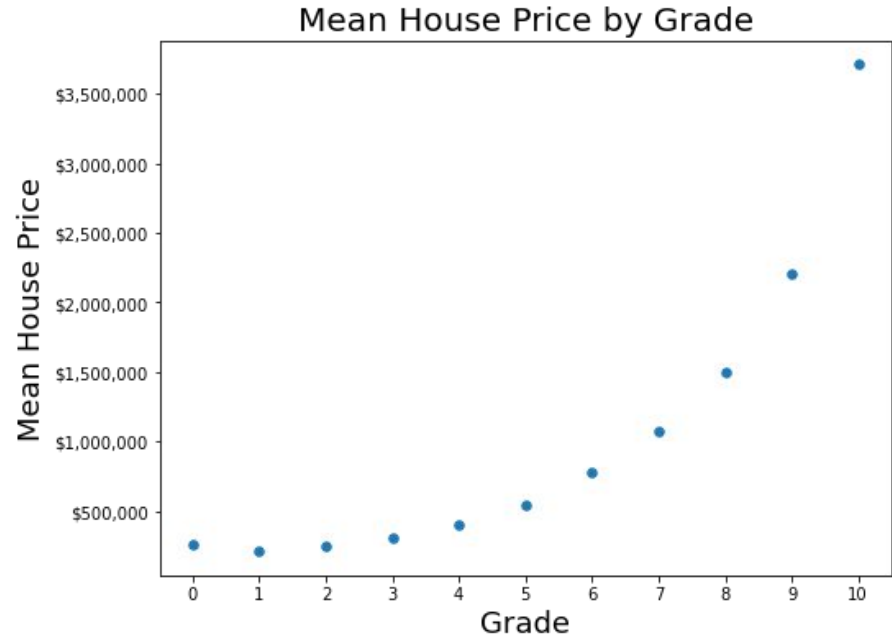
Conclusions

- Add a half or full bathroom to an existing unused area of the house



Conclusions

- Invest in higher quality finishes and appliances and an improved design to increase grade



Next Steps

- Find additional data to improve model accuracy. Allow for use in prediction
- Investigate current design trends to determine what type of design renovations are most optimal
- Examine the impact of location of our model

