

A decorative graphic on the left side of the slide, consisting of a dark blue parallelogram and a light teal parallelogram, both pointing towards the right.

# Predicting Housing Prices using Linear Regression

Lynn Anderson

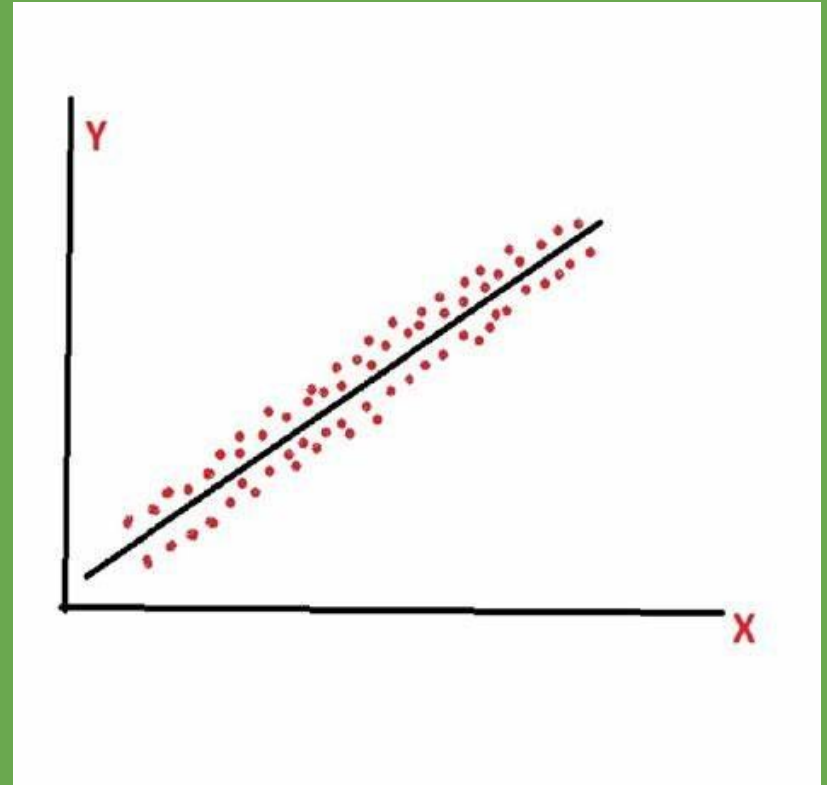
# Outline

- Overview
- Business Understanding
- Data
- Methods
- Results
- Conclusions



# Overview

- Objective was to create a multiple linear regression model to predict the sale price of a house
- Linear regression is more measurable than a simple graph or correlation



# Business Understanding

- A rental company in King County, WA has acquired some houses and plans to renovate
- How can the value of the homes be increased?
- Identify relevant features associated with higher selling price



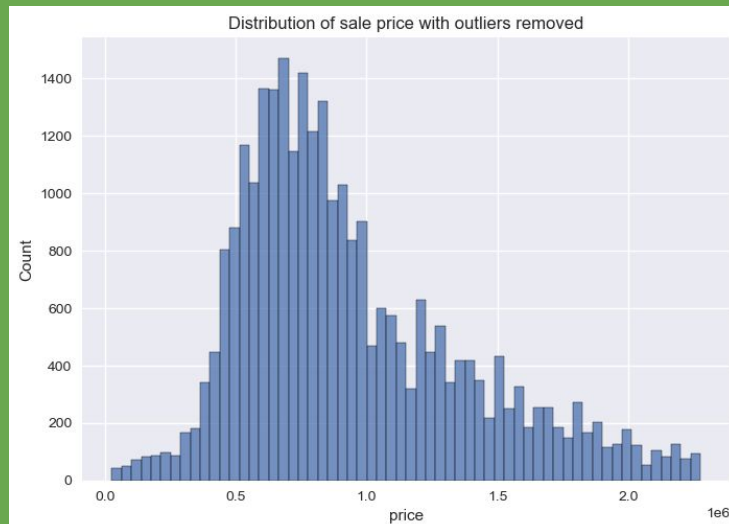
<https://blacklinerenovations.com/remodeling-tips/living-in-your-house-during-a-remodel-10-proven-tips/>

# Data

- King County, WA
- 28,120 records
- Mean price was \$940k
- Median was \$830k
- Houses sold in 2021 (18,000) and 2022 (10,000)
- Built 1900-2022



<https://washeriffs.org/counties/king-county/>





# Modeling

- Used multiple linear regression
- Baseline model with living room size
- Other variables were added to the model
- Results and error metrics were analyzed

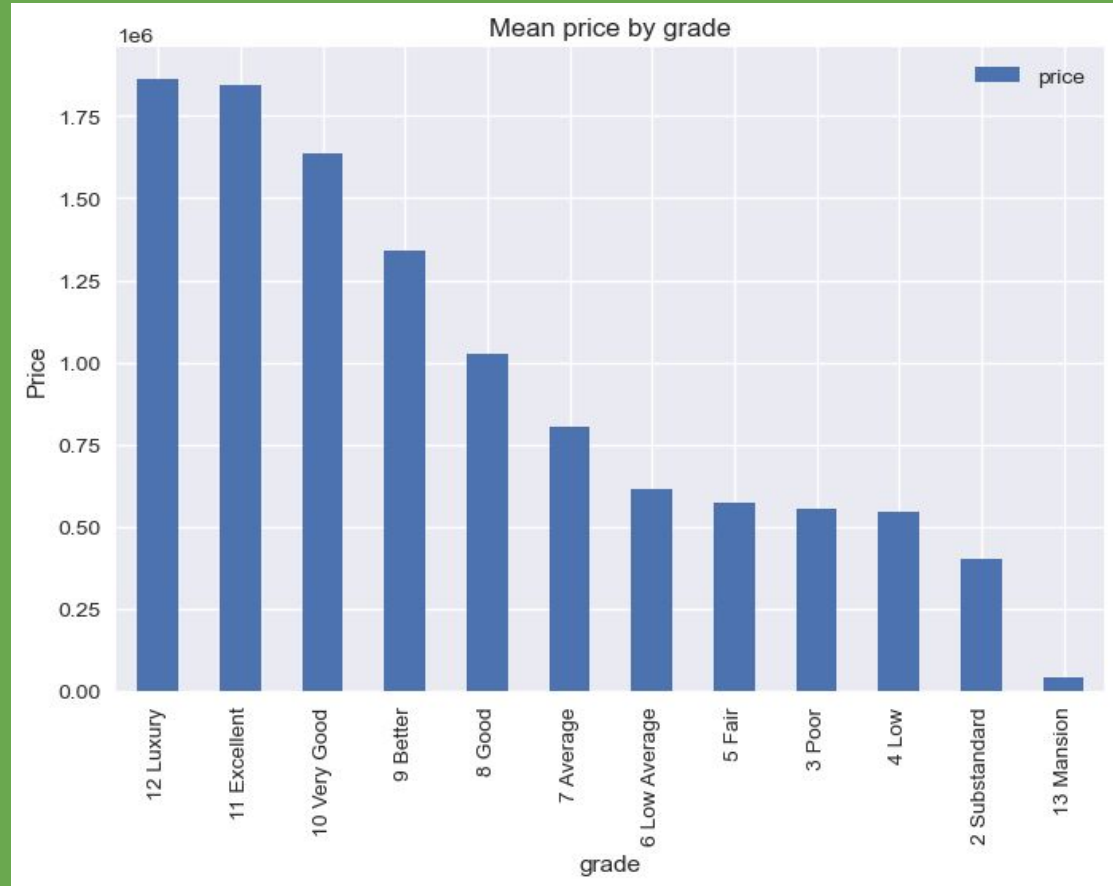
# Results

- Living room size added \$190 per additional squarefoot



# Results

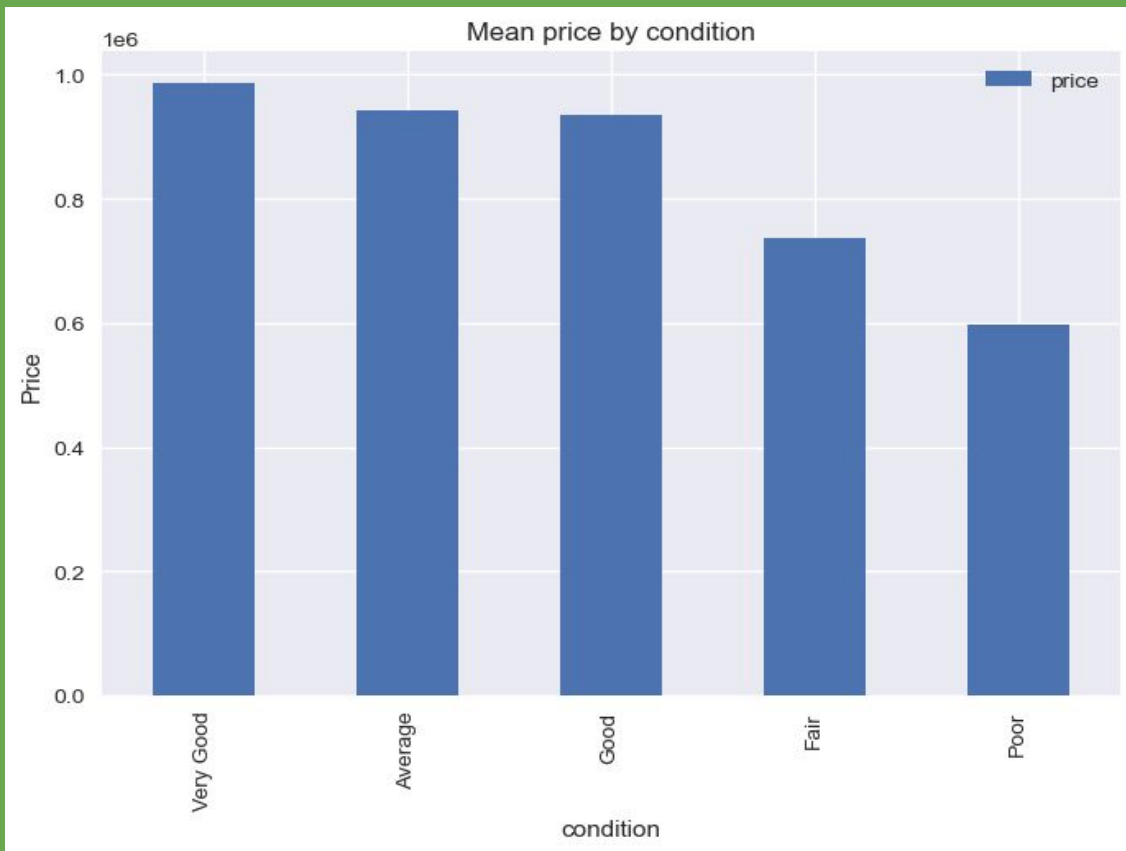
- Grade - one grade above average added \$150,000
- “Better materials in both the exterior and interior finish work”





# Results

- Condition - “Very good” added \$150,000
- “All items well maintained, little deterioration evident”





# Conclusions

- Enlarge the living room.
- Use high quality materials and pay attention to design quality.
- Ensure any underlying issues or problems with the house structure or design are addressed.



# Next Steps and Limitations

- Determine specific designs and materials associated with an increase in home value.
- Are different factors in some neighborhoods?
- Because outliers were removed, extremely high priced mansion grade homes were left out.



# Thank You!

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