

PARAGON

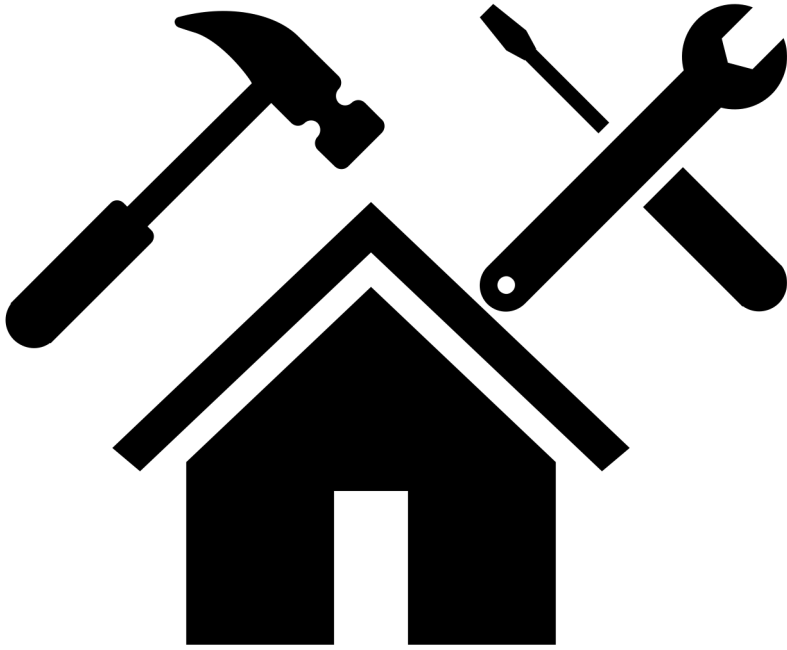
REAL ESTATE PARTNERS

## HOME RENOVATION VALUE INFERENCE

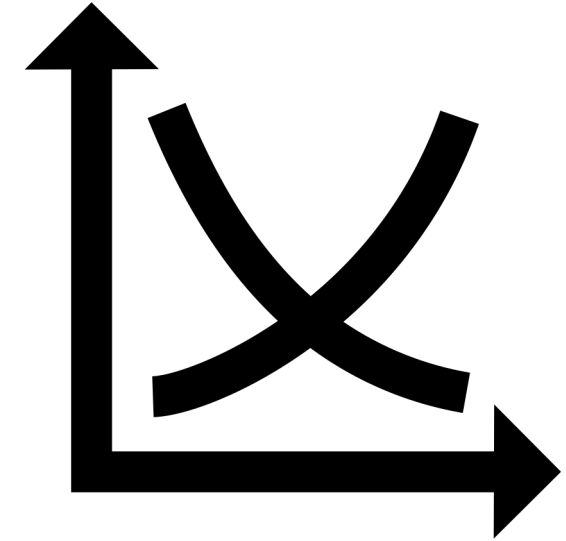
SHAYAN ABDUL KARIM KHAN

11/18/2022



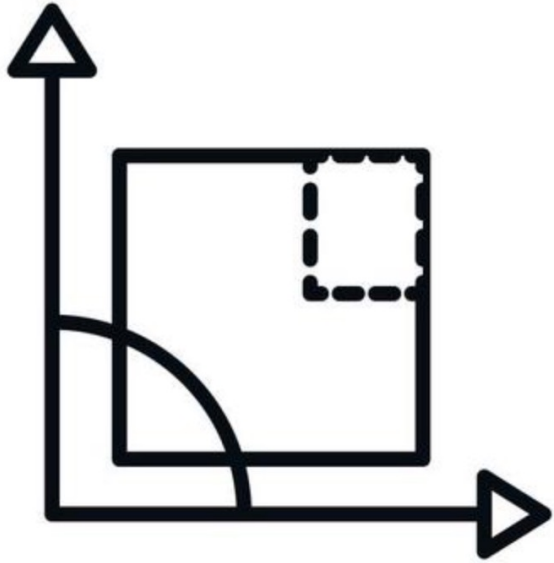


What kind of  
renovations increase  
house value?



Magnitude of Impact of  
the renovations on  
house value

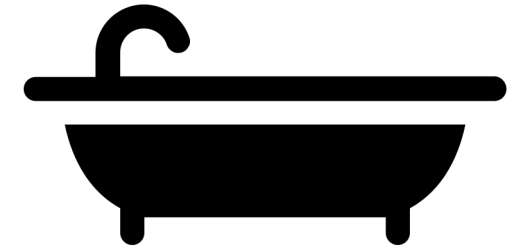
SQ FOOTAGE LIVING



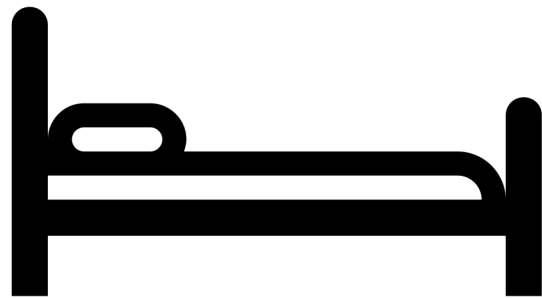
GRADE AND CONDITION



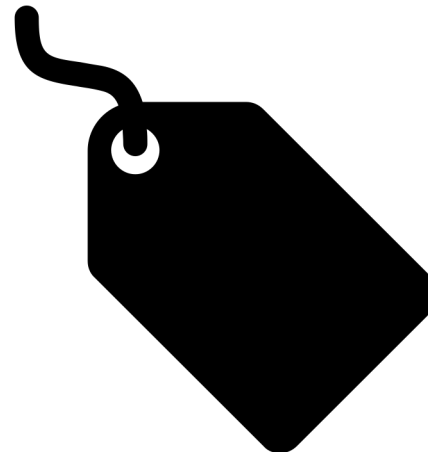
BATHROOMS



BEDROOMS



HOUSE PRICE

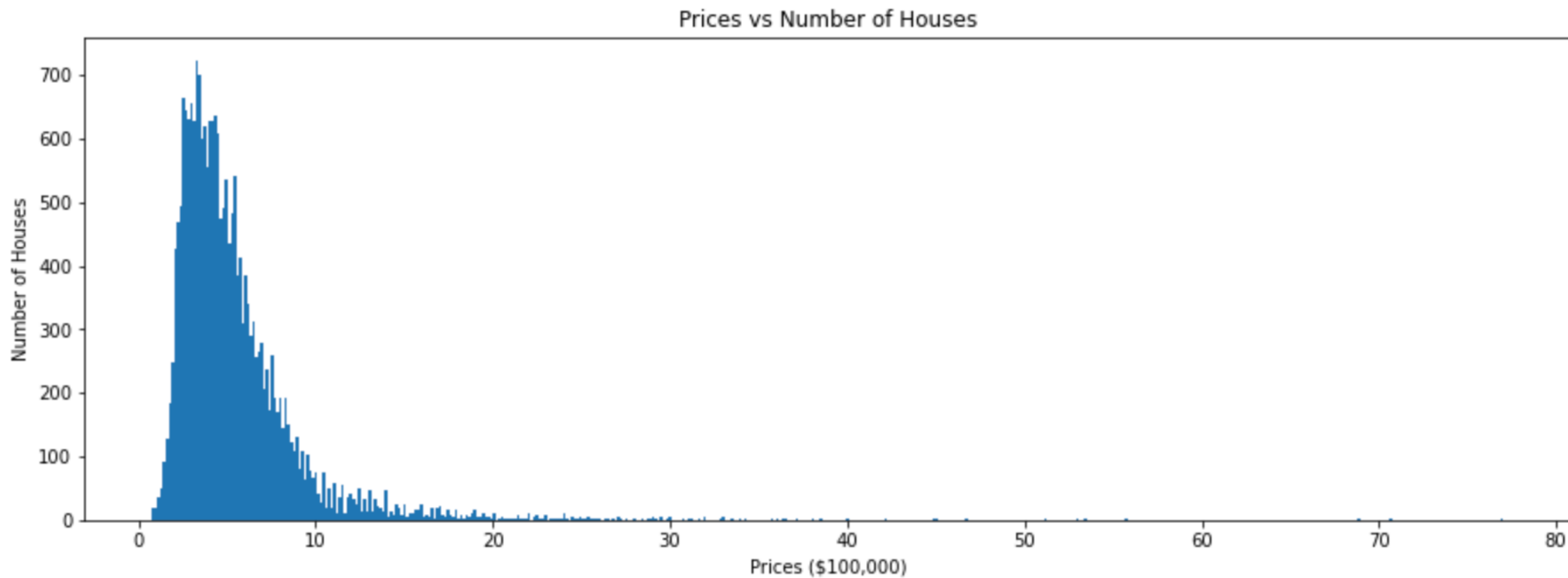


FLOORS



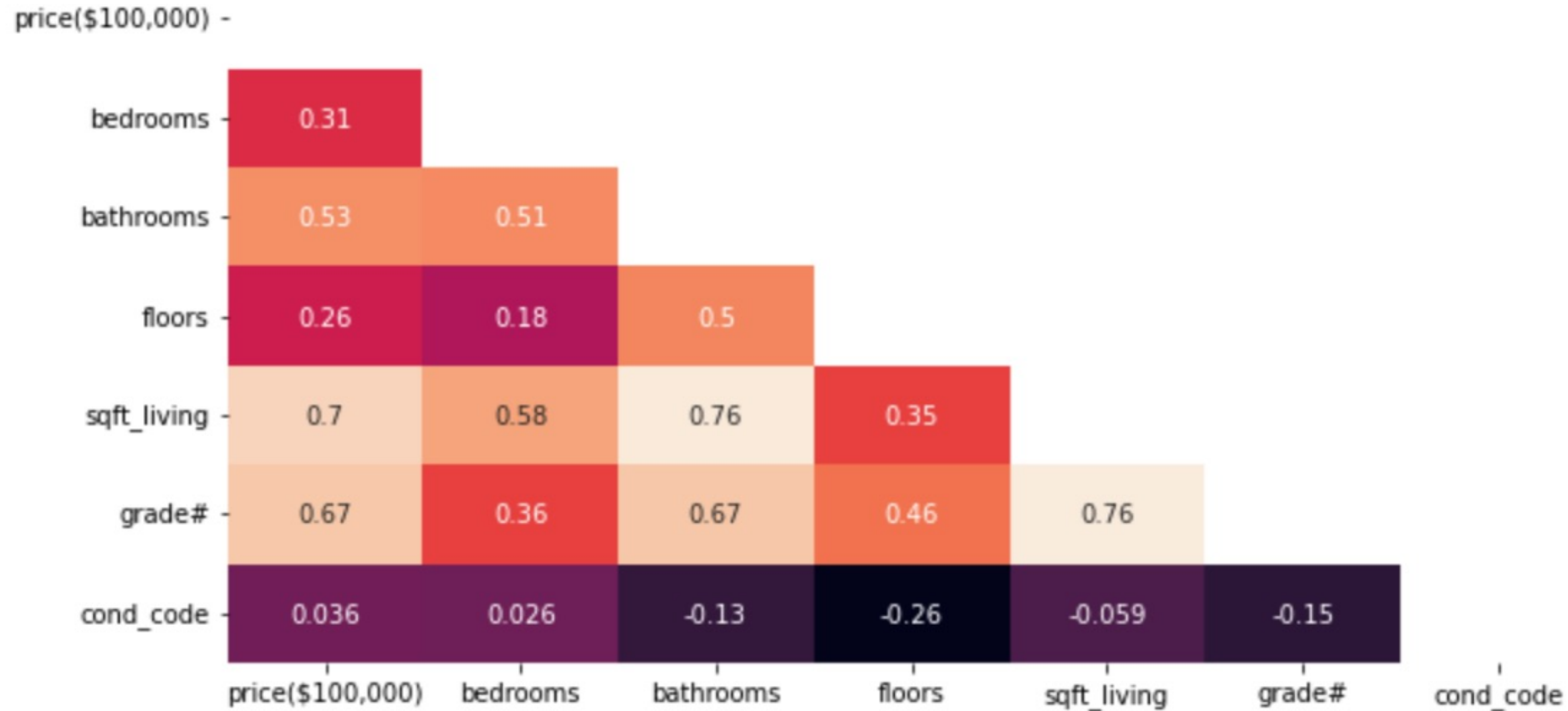


# HOUSE PRICE

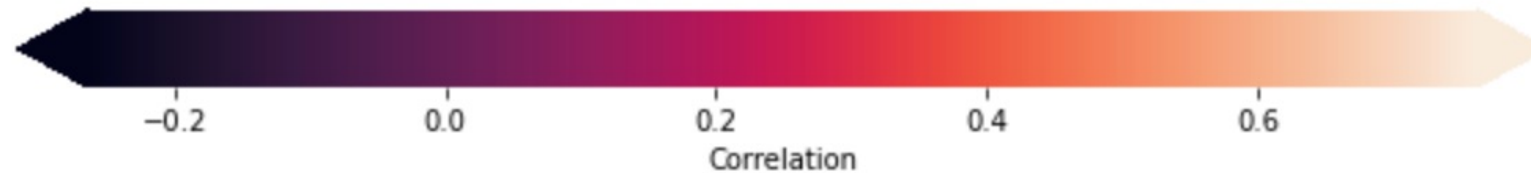


**Houses over \$1 million were not included**

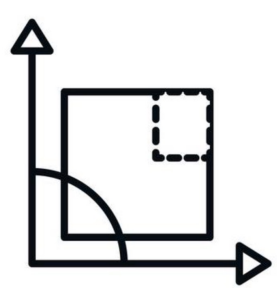
Heatmap of Correlation Between Attributes (Including Target)



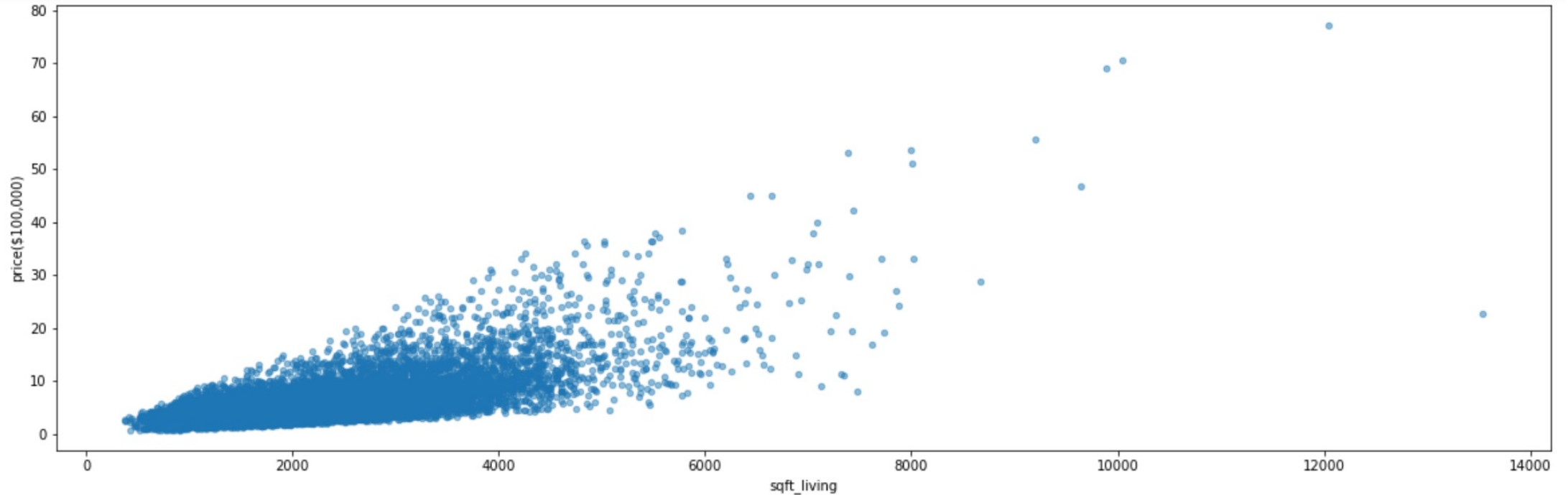
**SQFT LIVING HIGHEST CORRELATION**





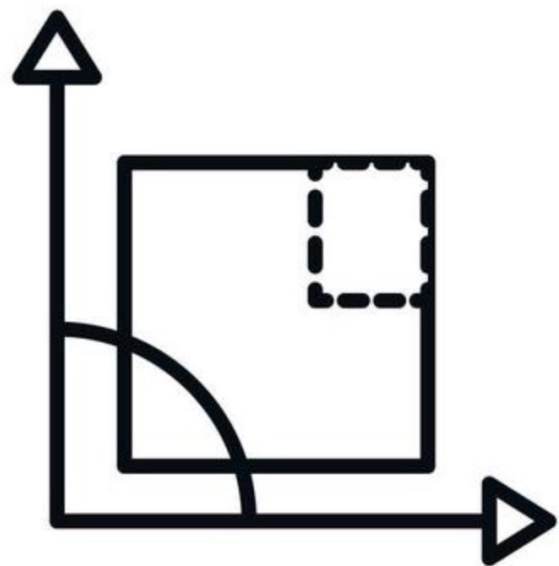


# SQ FOOTAGE LIVING



**Houses over 6000 sq ft were not included**

SQ FOOTAGE LIVING



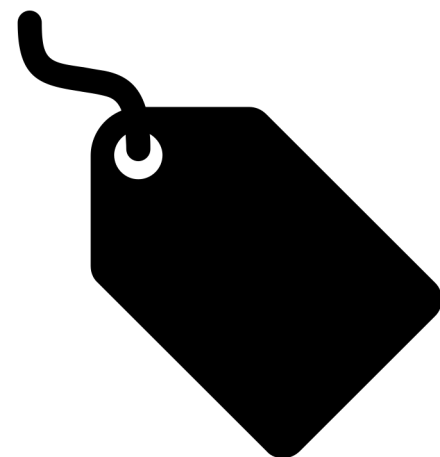
GRADE



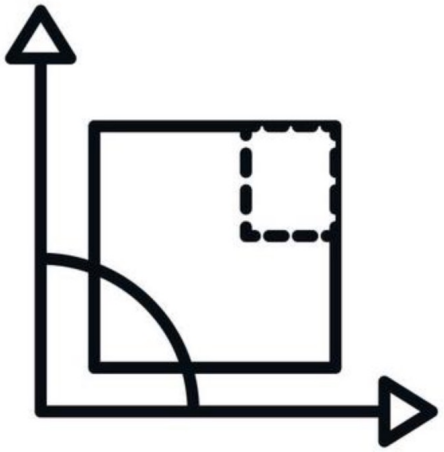
CONDITION



HOUSE PRICE



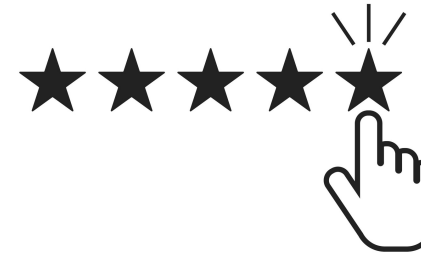




- 1% increase results in 1.5% increase in price
- Increasing floors, bedrooms, expanding decks



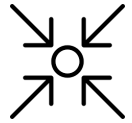
- Good condition increases the price by a multiple of 0.35
- Very good condition increased the price by a multiple of 0.94



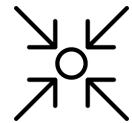
- Fair and Low Average have negative impacts on the house price
- Good Grade has a multiple of 0.86
- Very Good multiplier 2.87
- Excellent multiplier 3.64

**ERROR OF \$1.4K IN MODEL PREDICTIONS, UNDER-PREDICTION**

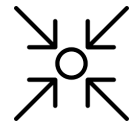
# **RECOMMENDATION**



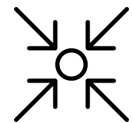
**INCREASING FLOORS, BEDROOMS, AND EXPANDING LIVING QUARTERS**



**PROPERLY FUNCTIONAL DEVICES WITH NO OBVIOUS MAINTENANCE REQUIRED**



**FOR BIG CHANGES, COMPLETE REMODELLING PROJECTS**



**RENOVATIONS TOWARDS EXTRA AMENITIES OR LUXURIOUS CHANGES**



## NEXT STEPS



**EVALUATE ZIPCODE SPECIFIC DATA**



**EVALUATE YEARLY MARKET TRENDS**

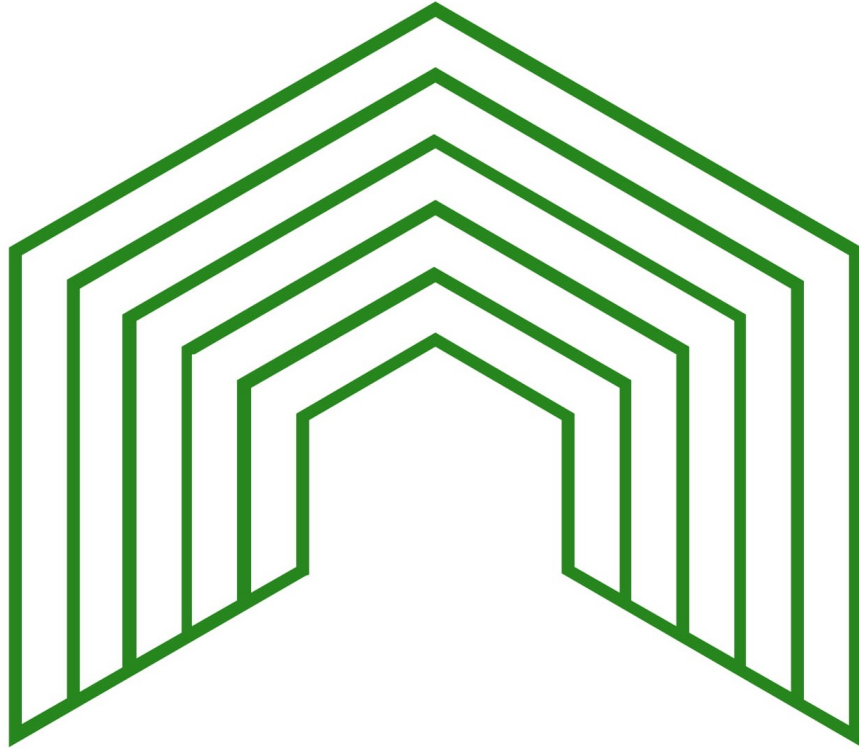


**EVALUATE HOME-TYPE SPECIFIC RENOVATIONS**



**EVALUATE RETURN ON INVESTMENT**

**QUESTIONS?**



PARAGON

REAL ESTATE PARTNERS

## HOME RENOVATION VALUE INFERENCE

SHAYAN ABDUL KARIM KHAN

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# BACK UP