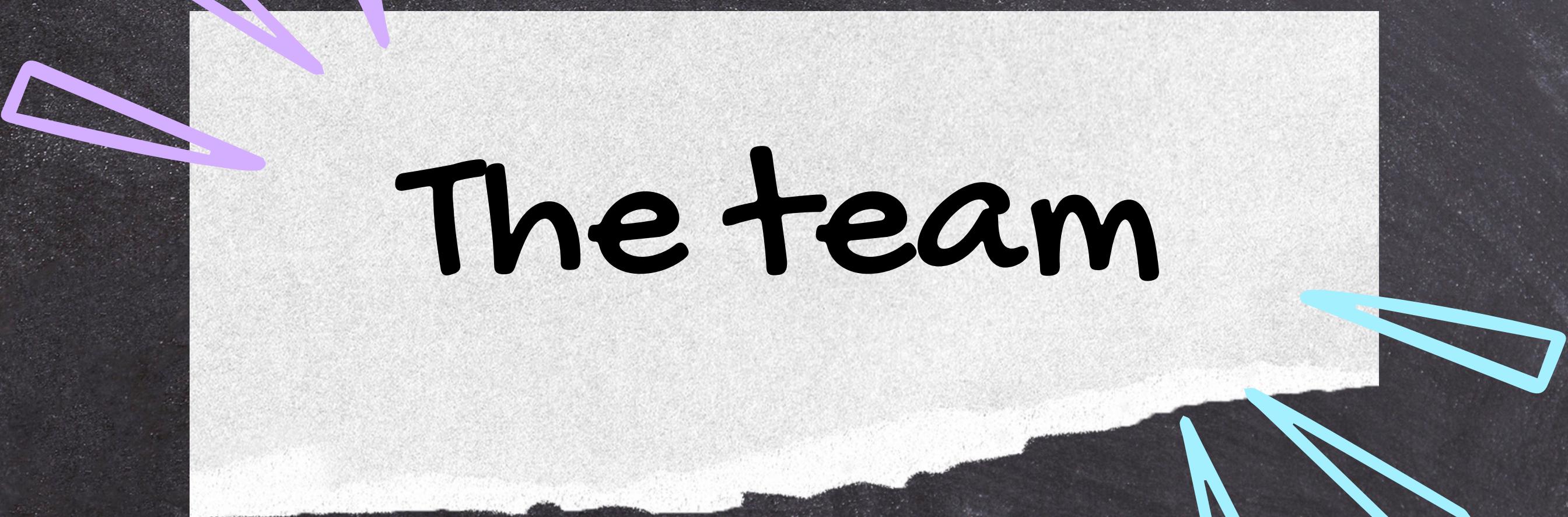




# UNLOCKING PROPERTY INSIGHTS



The team

# The team

Alpha Guya

Daniel Muriithi

Lucy Njambi

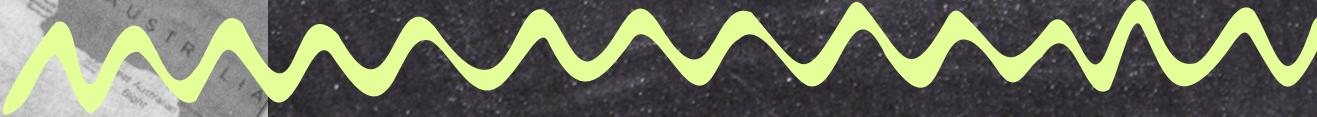
Lewis Mwangi





# Project overview

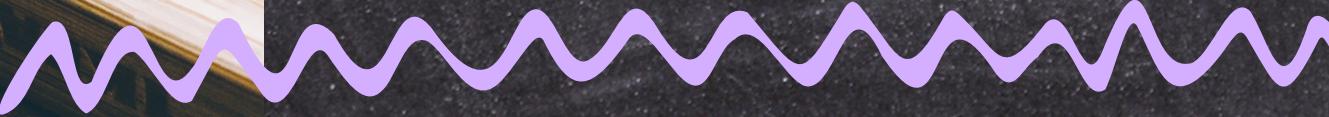
For this project, we will use simple linear regression and multiple linear regression modeling to analyze house sales in a northwestern county.





# Business Problem

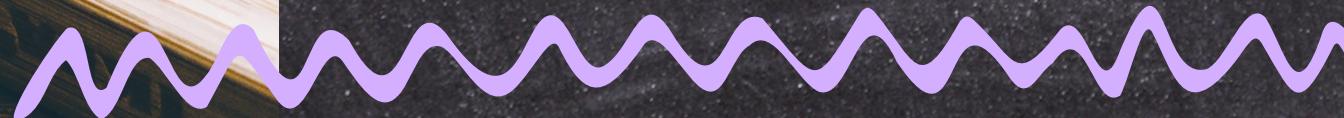
Maximizing on Profitability while offering affordability  
in real estate





# Stakeholder's Problem

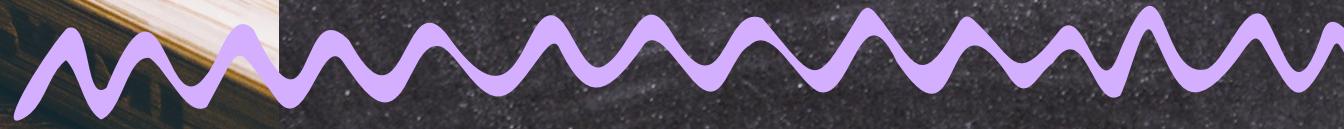
Real estate agencies in the northwestern county, USA are facing a challenge in pricing of properties that offers both optimal profits to the agencies and affordability to buyers and investors.. This has led to stagnation in property sales despite a strong demand, stakeholders citing affordability as the key challenge in property acquisition.





# Data Understanding

The dataset used is kc\_housing.csv. The dataset explores real estate data obtained from the King County located in the US, state of Washington



# About

This project explores real estate data obtained from the King County located in the US, state of Washington and creates a model that accurately estimates the sale price of residential properties in the county based on their realty features.



# Objectives

1

To determine the property feature that most impacts real estate pricing

2

To determine the set of realty features that most impact the price.

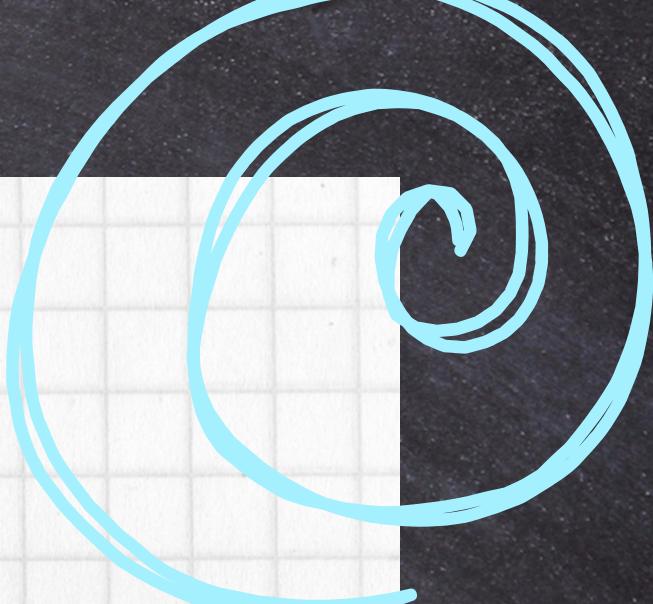
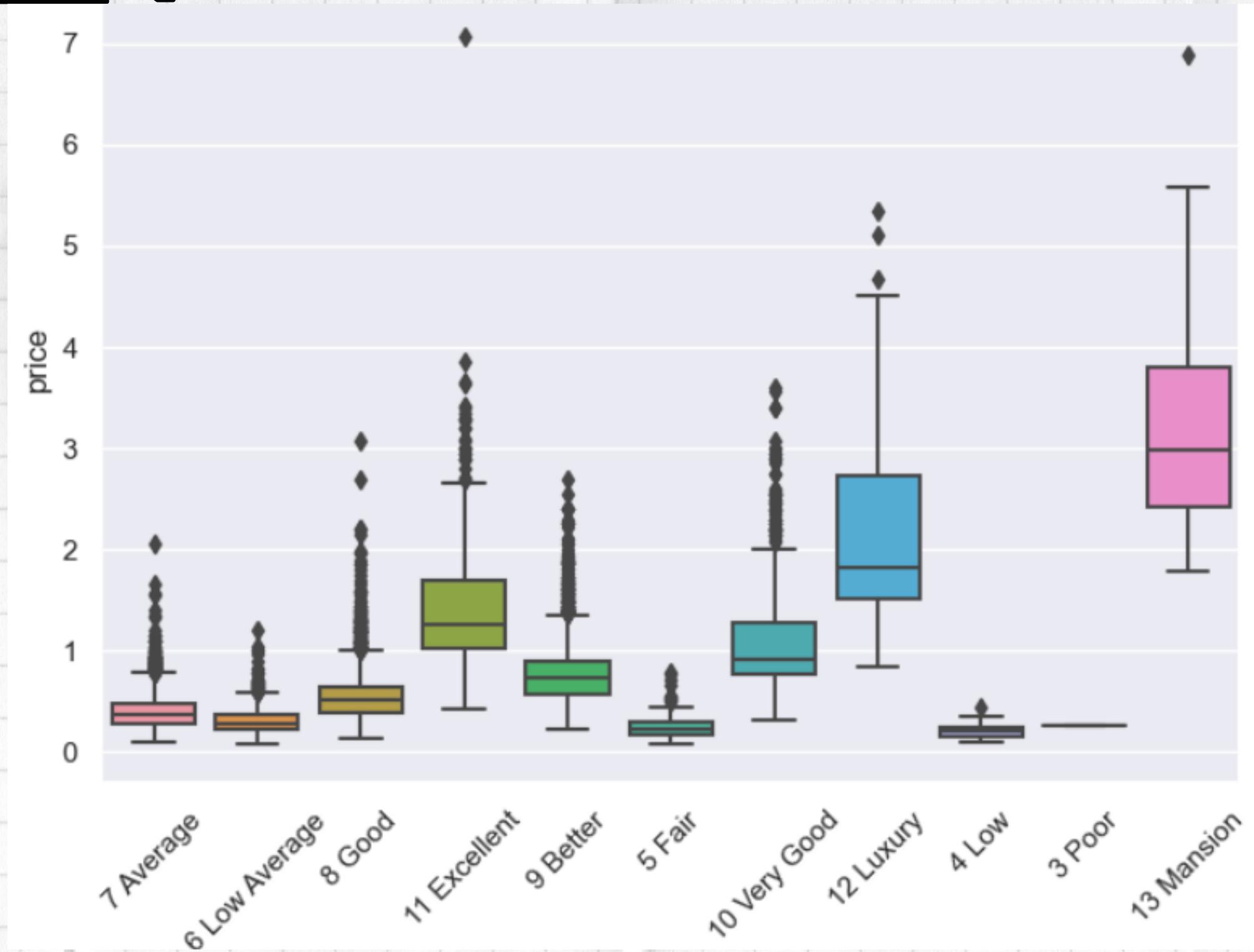
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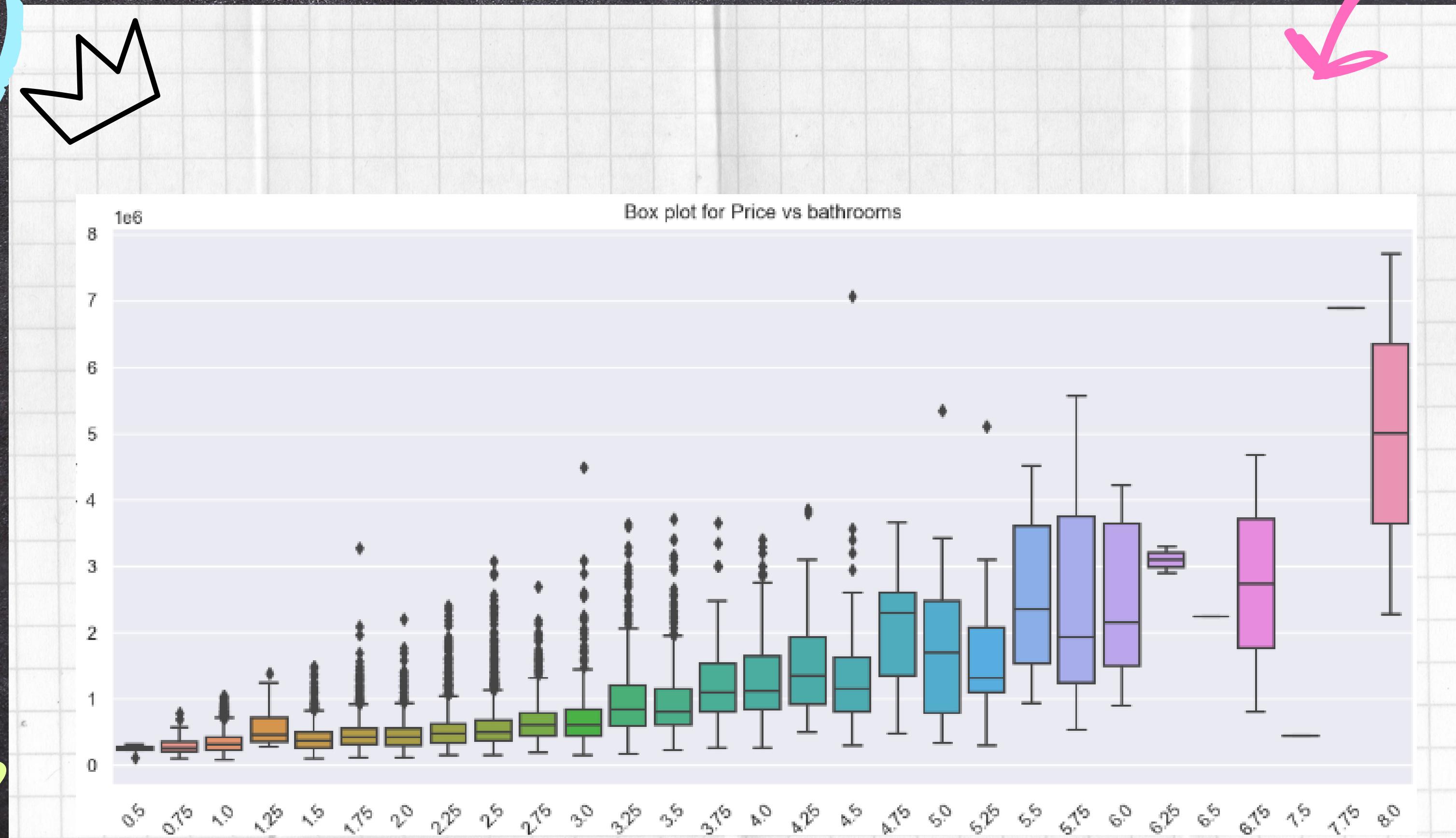
To develop a linear regression model that can be used to accurately predict house prices in King County

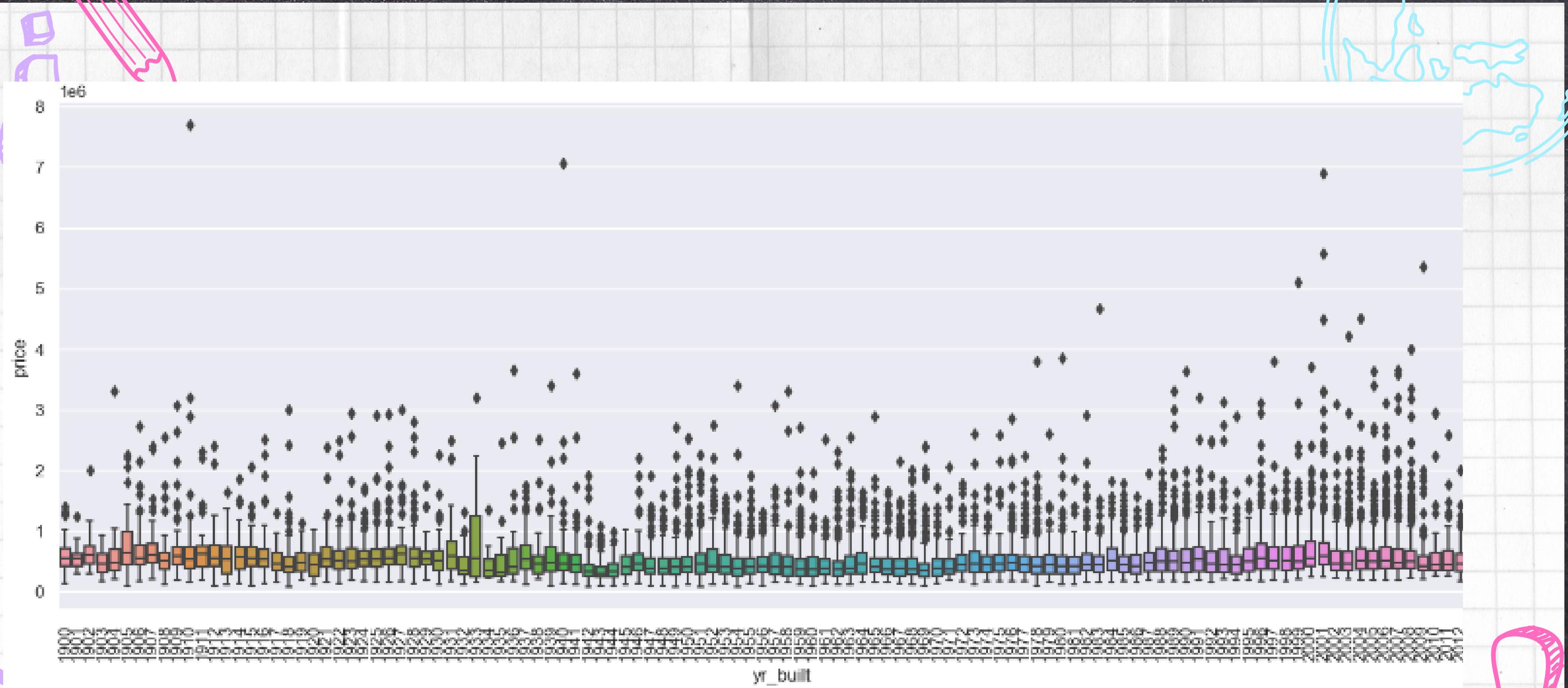


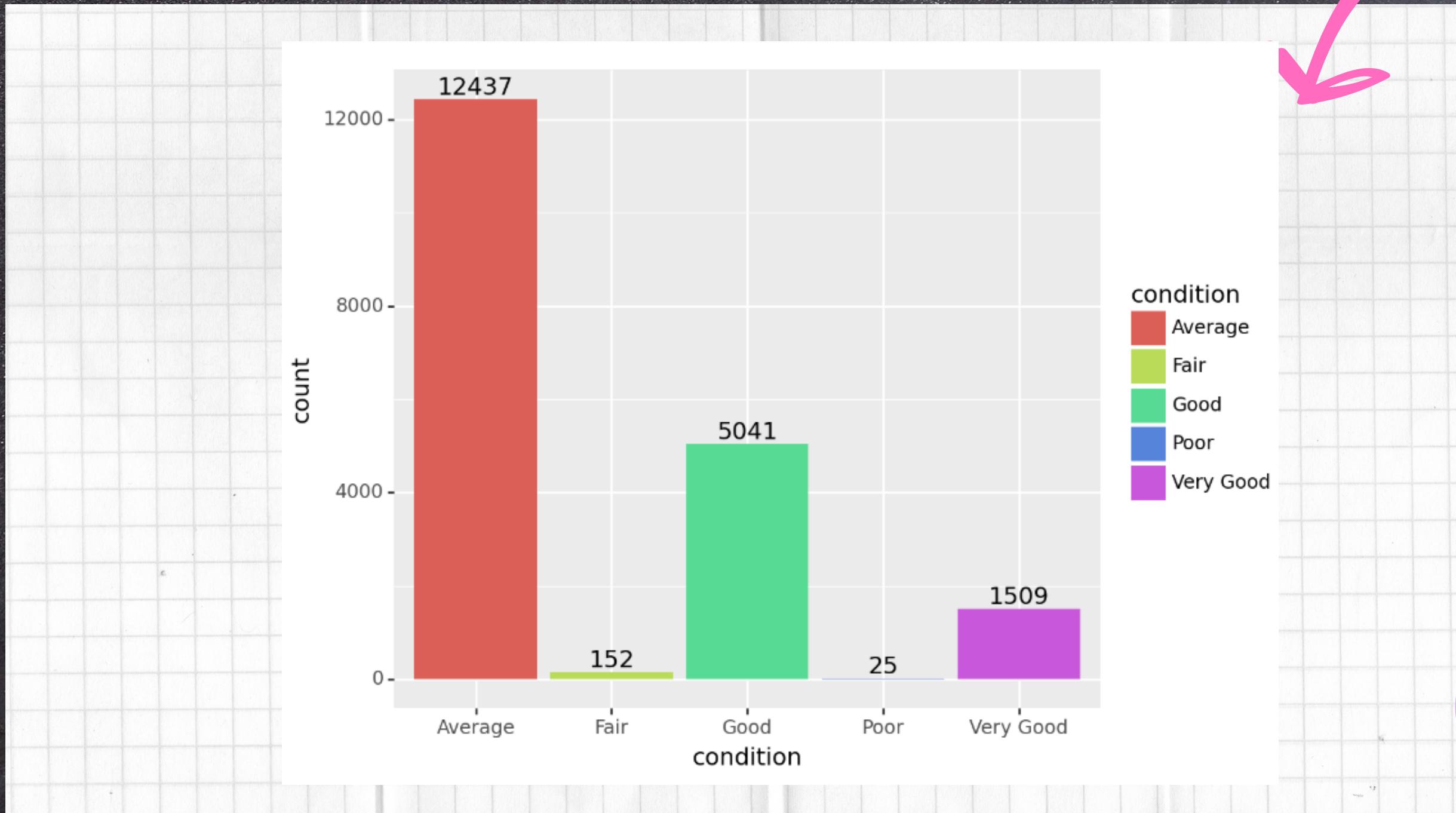


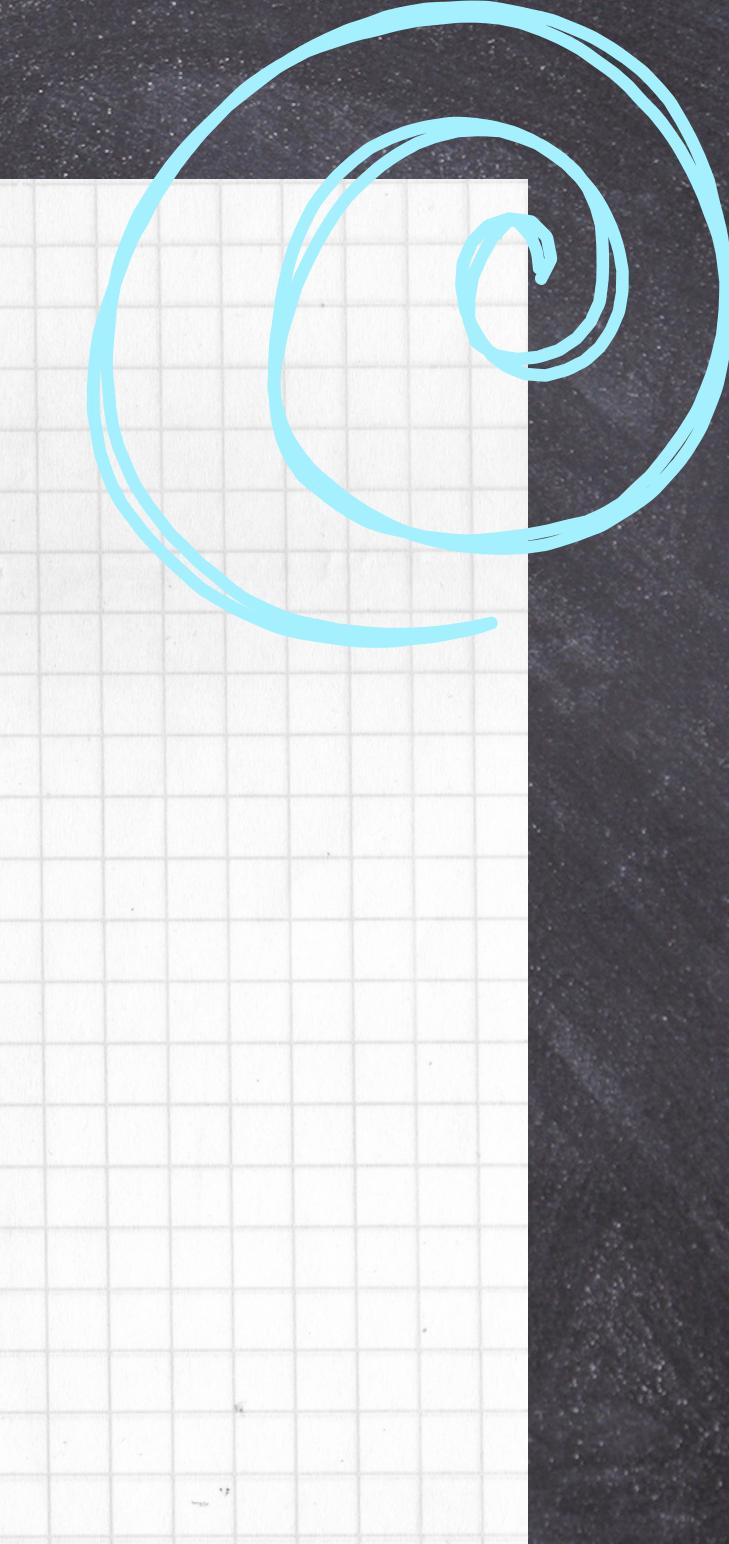
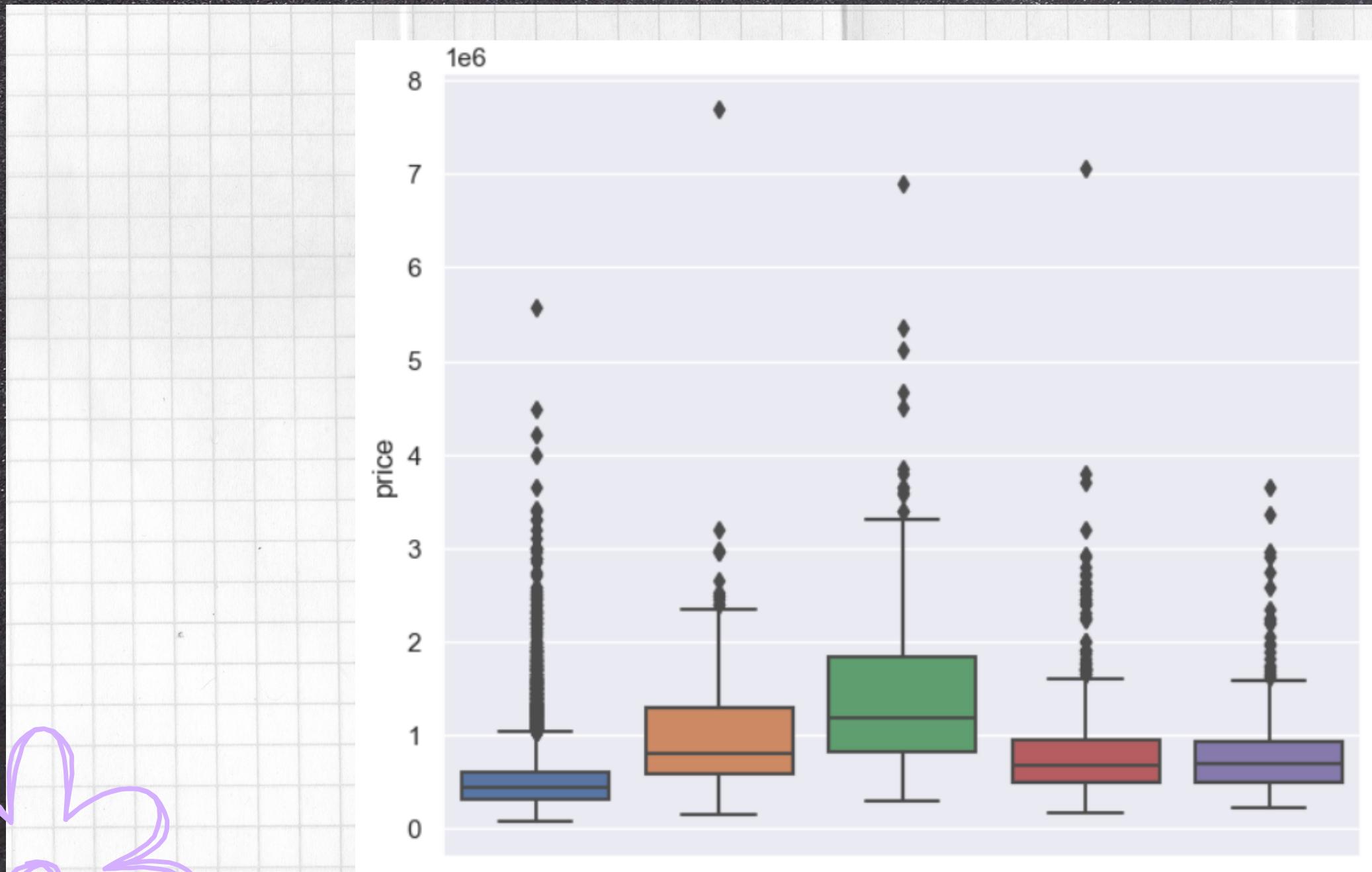
# Visualizations

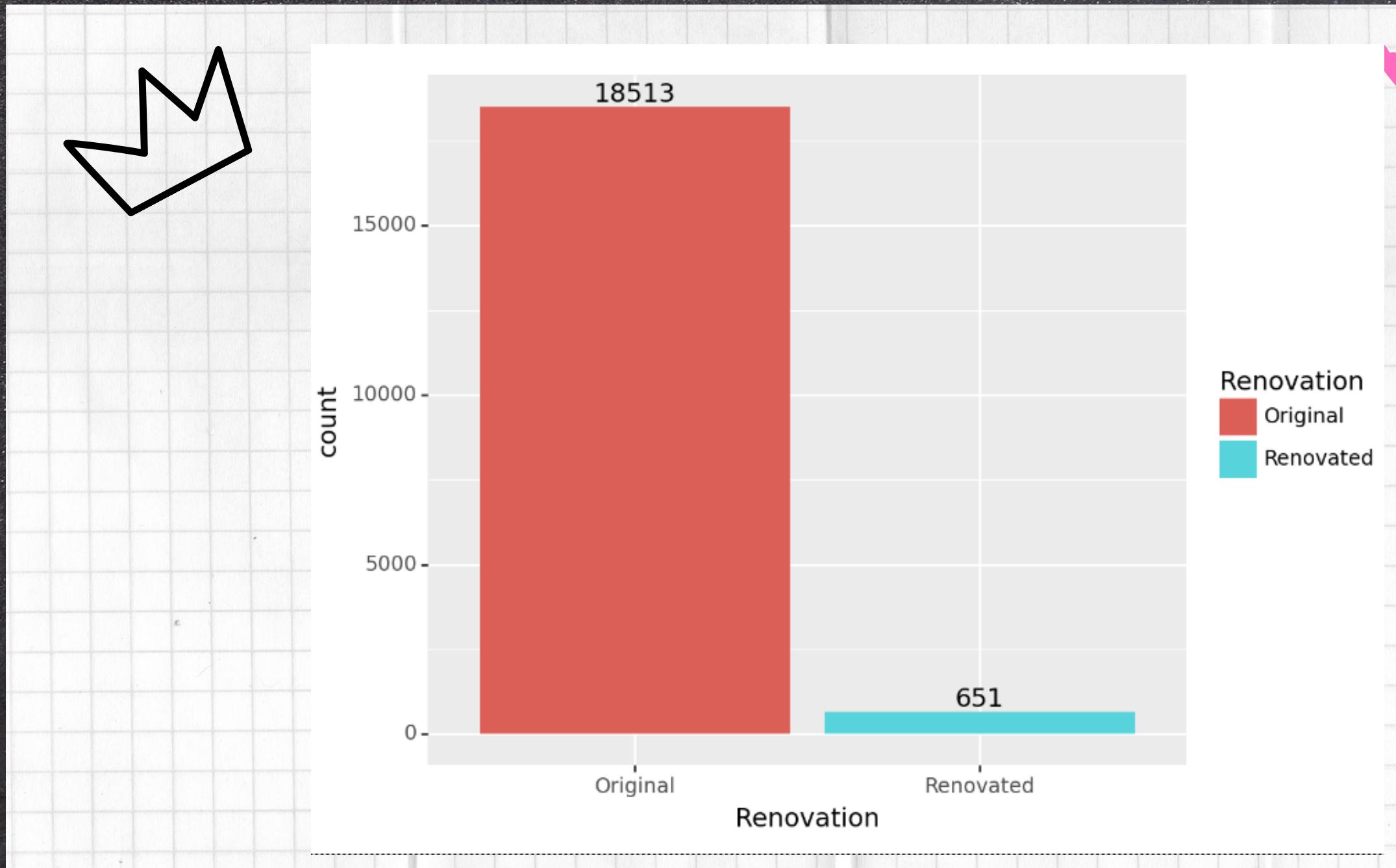


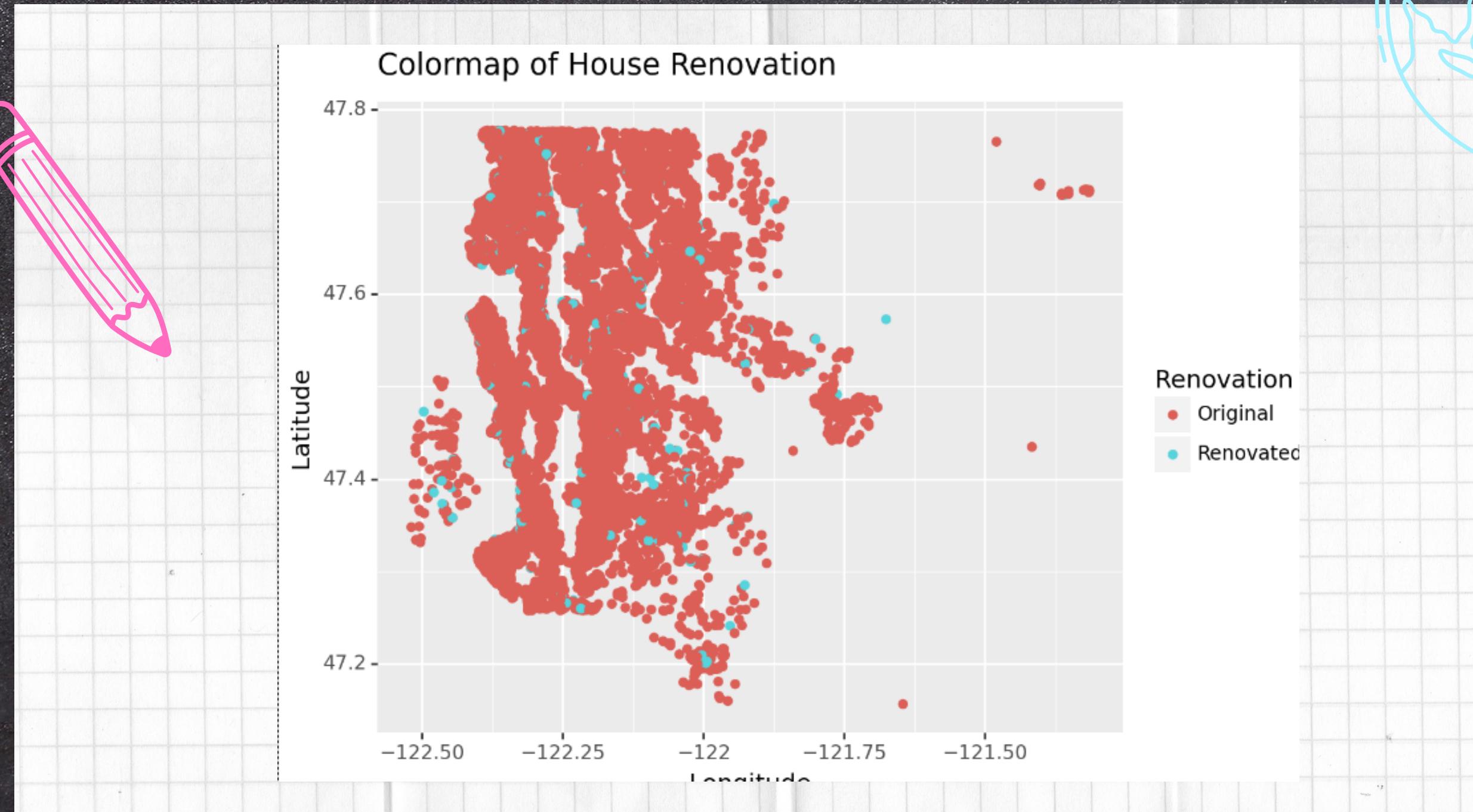


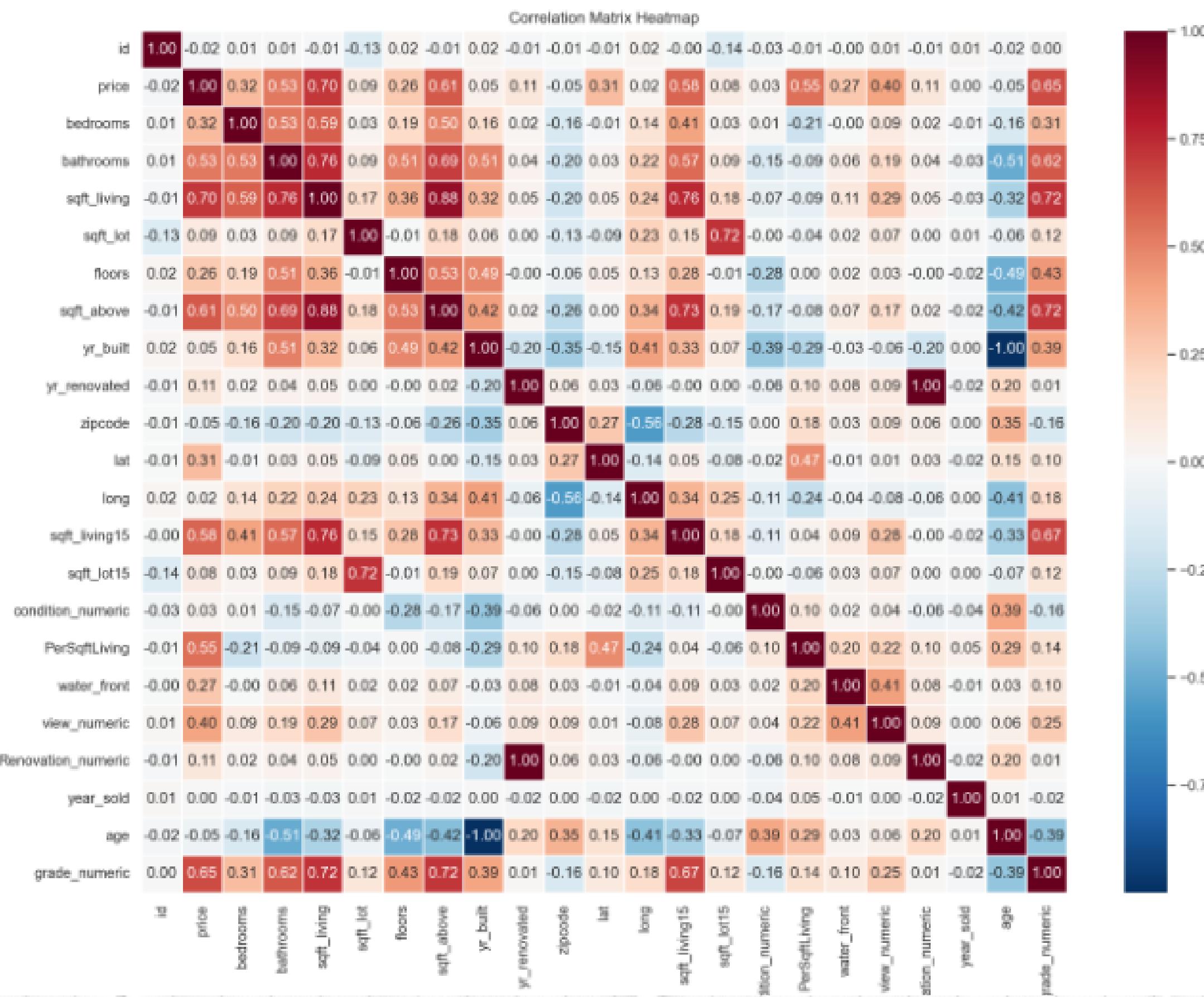












OLS Regression Results

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Dep. Variable: price R-squared: 0.890  
Model: OLS Adj. R-squared: 0.890  
Method: Least Squares F-statistic: 4657  
Date: Sun, 10 Sep 2023 Prob (F-statistic): 0.000  
Time: 21:03:16 Log-Likelihood: -1.5102e+00  
No. Observations: 11498 AIC: 3.021e+00  
Df Residuals: 11477 BIC: 3.022e+00  
Df Model: 20  
Covariance Type: nonrobust

=====

====

	coef	std err	t	P> t	[0.025]
0.975]					
---					
const	2.113e+07	5.55e+06	3.811	0.000	1.03e+07
3.2e+07					
bedrooms	-768.4590	1688.555	-0.455	0.649	-4078.316
2541.398					
bathrooms	1.91e+04	2733.646	6.988	0.000	1.37e+04
2.45e+04					
sqft_living	285.7081	3.766	75.858	0.000	278.325
293.091					
sqft_lot	-0.2110	0.043	-4.894	0.000	-0.295
-0.126					
floors	-2.312e+04	2992.575	-7.726	0.000	-2.9e+04
-1.73e+04					
sqft_above	6.9305	3.639	1.905	0.057	-0.202
14.063					
yr_renovated	244.1489	422.541	0.578	0.563	-584.104
1072.402					

# Conclusion

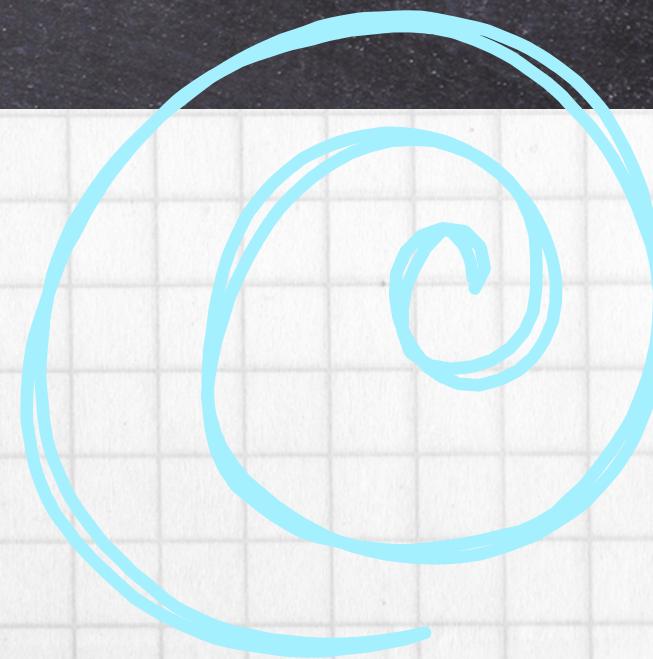
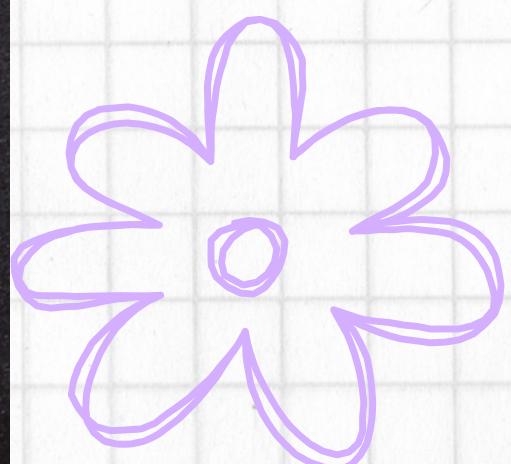
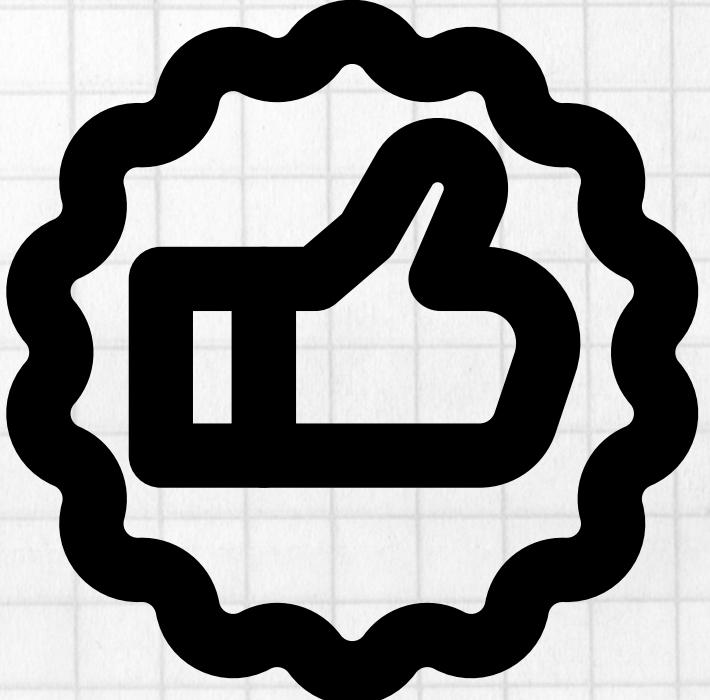
The 5 main realty features that affect the pricing of houses are

- a) Size of the living room ie `sqft_living`
- b) Number of bathrooms in the house
- c) Number of bedrooms
- d) Number of floors
- e) The overall grade and condition of the house.



# Recommendation

1. An ample living room size should be an investment priority for home developers and home owners looking into renovating their properties. This will attract more potential buyers and has a more significant impact on the house prices.
2. Properties that effectively incorporate desirable real estate attributes tend to draw a greater number of prospective buyers. Homeowners and real estate developers can capitalize on the qualities found within a property as a selling point and a basis for price negotiations.
3. The real estate industry is constantly evolving, and it's essential for all parties involved to stay well-informed about market trends.
4. Engaging real estate experts is paramount in real estate dealings. Consult experts for insights, inspections and due diligence.



THANK  
YOU