DSF-PT07: Group 6

Phase 2 Project

OUTLINE

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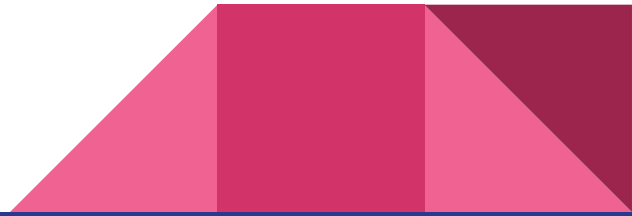


INTRODUCTION

Group 6 Members:

1. Dennis Walubengo - Group leader
2. Julian Kilyungi
3. Sharon Chebet
4. Nduku Kiteng'e
5. Omara Waldea

Problem Statement

To leverage regression modeling to provide actionable insights for homeowners and potential buyers in Kings County, enabling them to make informed decisions that maximize their investment returns and property value.

Objectives:

1. Predicting the house prices in Kings County
2. Assessing the impact of house conditions and renovations on house grade
3. Understanding the impact of structural characteristics on house grade
4. Assessing neighborhood influence on house prices

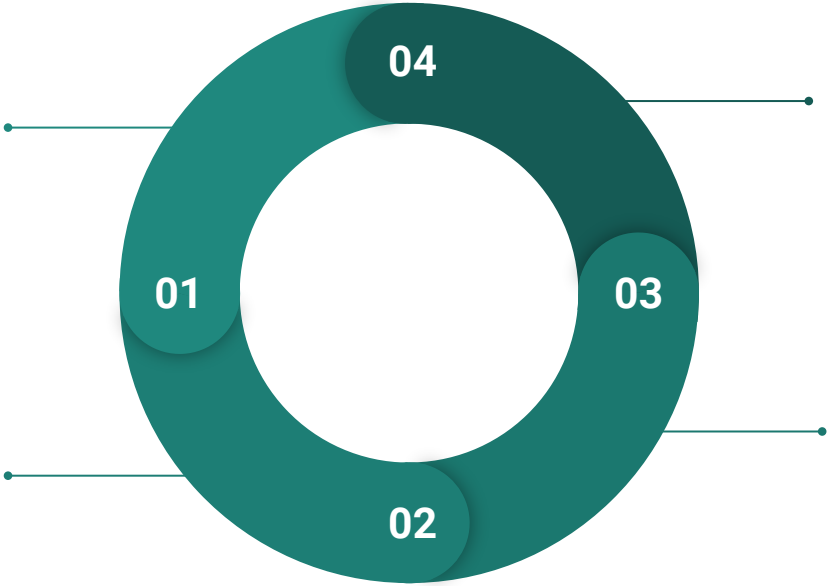
The Data Process

Data Understanding

Session to load and review the data to understand the information it can provide.

Data Preparation

Includes data cleaning for missing values, data types and null values and feature engineering for potential analysis methods and variables.



Recommendations

Develop a list of recommendations for the clients especially potential buyers and home owners.

Modelling and interpretation

Using the cleaned and prepared data, we review the potential models based on the identified objectives.

Model 1: Predicting house prices

Target variable: Price

Selected Variables: 'bedrooms', 'bathrooms', 'sqft_living', 'sqft_lot', 'floors', 'waterfront', 'view', 'condition', 'grade','sqft_above', 'sqft_basement', 'yr_built', 'yr_renovated','zipcode', 'lat', 'long', 'sqft_living15', 'sqft_lot15'

Model Summary:

- R squared: 0.685 or 68.5%
- ***Grade*** has the highest significance on house prices with a coefficient of 0.3594

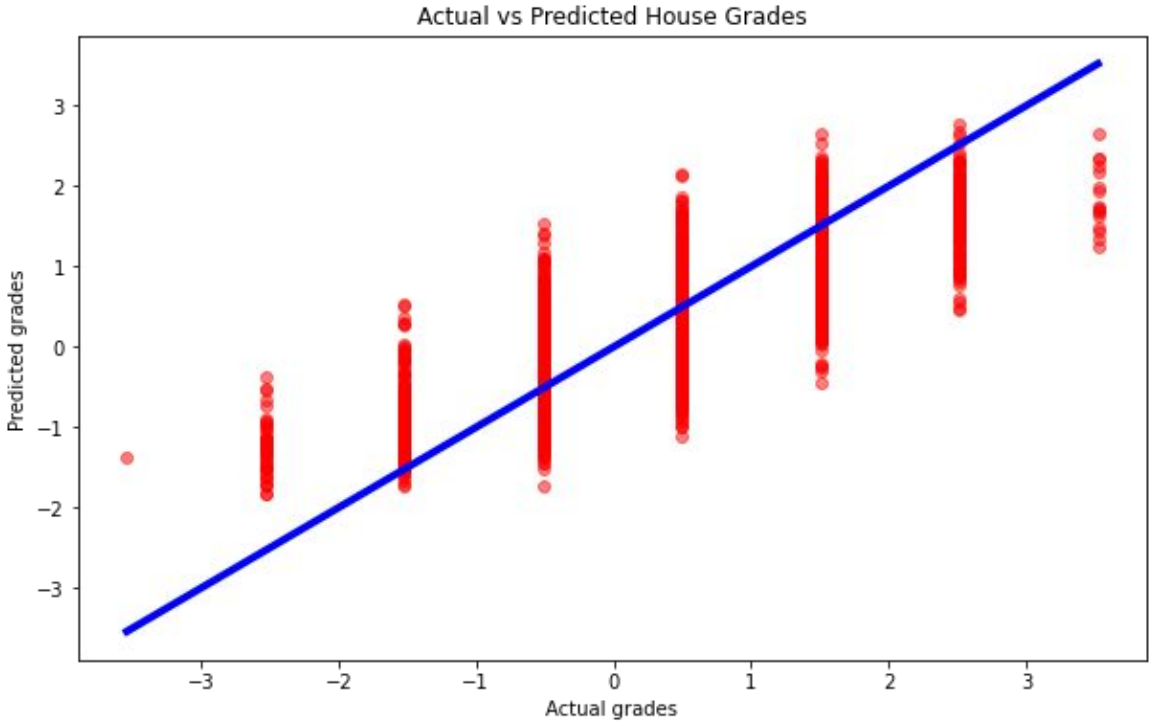
Model 2: Assessing the impact of house condition and renovation on house grade

Target variable: grade

Selected variables: 'sqft_living', 'sqft_above','sqft_basement', 'bedrooms','bathrooms' , 'condition', 'yr_built','yr_renovated','price'

Model summary:

- R squared: 0.660 or 66%
- ***Price*** has the highest impact of house grade with a coefficient of 0.3835



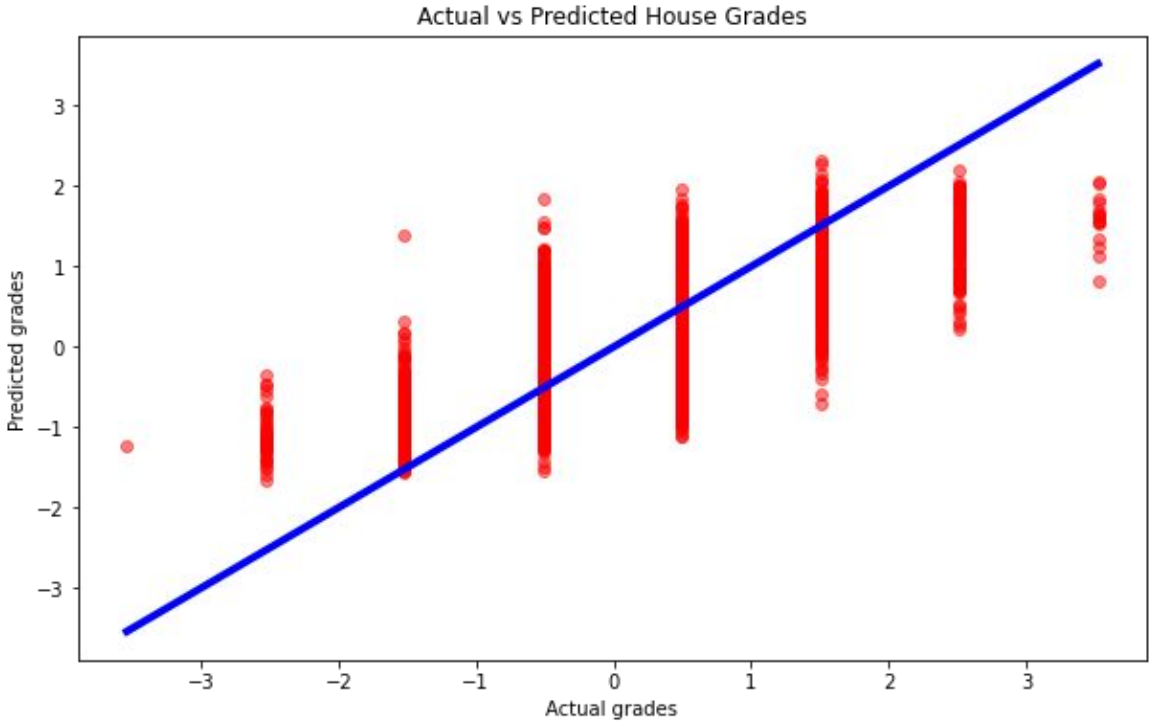
Model 3: Understanding the impact of structural characteristics on house grade

Target variable: Grade

Selected variables:
'bedrooms','bathrooms', 'sqft_living', 'sqft_lot', 'floors', 'waterfront', 'view', 'condition', 'yr_built', 'yr_renovated'

Model summary:

- R squared: 0.574 or 57.4%
- ***Sqft_living*** has the most substantial positive impact on house grades, highlighting the importance of living space.



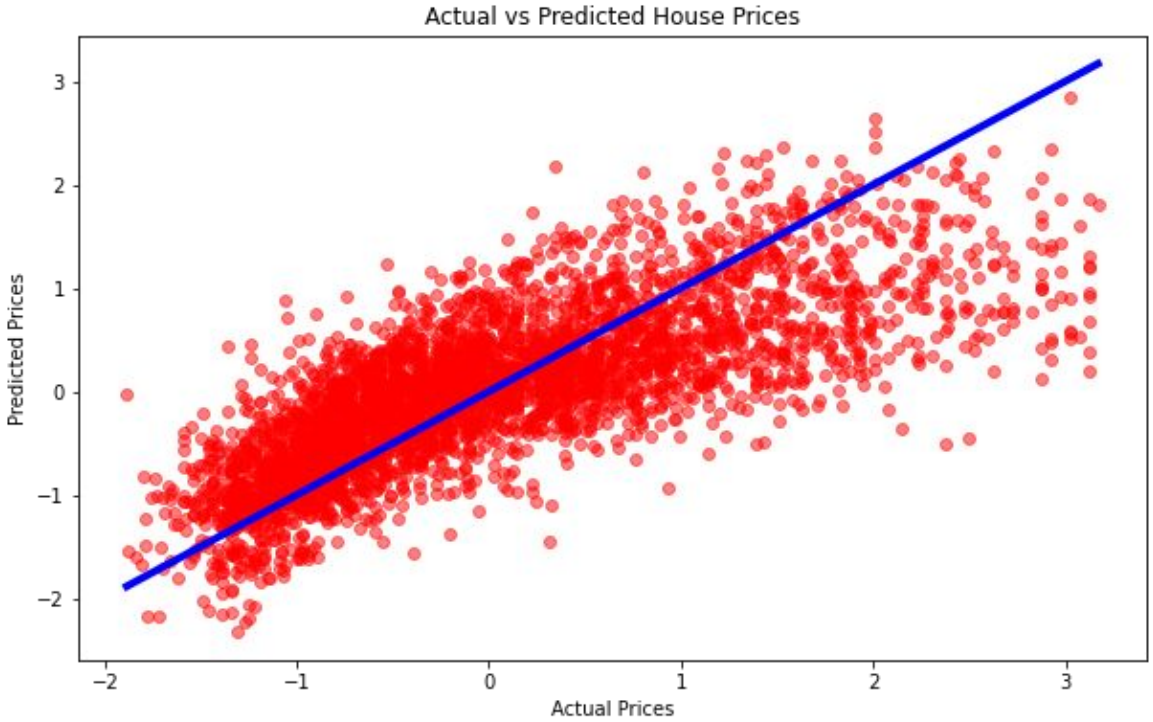
Model 4: Assessing neighborhood influence on house prices

Target variable: price

Selected variables: 'zipcode', 'lat', 'long', 'sqft_living15', 'sqft_lot15','grade'

Model summary:

- R squared: 0.685 or 68.5%
- ***Sqft_living15*** has the highest impact on house prices with a coefficient of 0.2985



Recommendations: Potential Buyers

Living space	House Grade	Waterfront views	Geographic Location	Neighbouring property sizes
Larger living areas translate to higher value and greater comfort	Higher grades lead to better quality and long term value.	If possible and within budget, views add to value of the home.	Prioritise higher latitudes and lower longitudes	Areas with larger average sizes are better for property values

Recommendations: Home Owners

Living space	Consider expanding the living area of the home to boost market value.
House Grade	Regular maintenance and improvements to the home's grades can lead to higher returns. Focus on quality enhancements that boost the overall grade of your property.

Thank you.
Questions?