# **Surprise Housing Regression Assignment**

## **Problem Statement**

Surprise Housing Company, a US-based entity, aims to leverage data analytics to purchase houses below their actual values and resell them for profit. The objective is to develop a regression model using regularisation techniques to predict the actual value of prospective properties based on a dataset containing sale details of houses in Australia. The company seeks to identify significant variables influencing house prices and assess how well those variables describe house prices.

## **General Information**

* Objective: Predict the price of a house based on various features.
* Datasets Used: Surprise Housing Dataset, containing records of house sales in Australia.
* Problem Statement:
  + Identify significant variables predicting house prices.
  + Assess the effectiveness of those variables in describing house prices.

## **Conclusions**

* Built and evaluated Linear Regression, Ridge, and Lasso models.
* Ridge model outperformed others, offering simplicity and optimization.
* Important predictors:
  + Neighborhood
  + Square footage of ground floor, 1st floor, and 2nd floor.
  + Basement build quality, foundation, exterior, overall quality, and house style.
  + Garage size.

## 

## **Technologies Used**

* Python - 3.11.5
* Pandas - 2.0.3
* Matplotlib - 3.7.2
* Seaborn - 0.12.2

## **Acknowledgements**

This project was based on the Surprise Housing Regression model Assignment from upgrad.com.