**Group Assignment - Predicting Airbnb Listing Prices in Melbourne**

**The Problem:**

Airbnb has become increasingly popular among travelers for accommodation across the world. . Currently, there is no convenient way for a new Airbnb host to decide the price of his or her listing. New hosts must often rely on the price of neighboring listings when deciding on the price of their own listing.

Our project aims at building a price prediction model for Airbnb in Melbourne based on the characteristics of listed properties to help hosts decide a reasonable price. We are going to find the attributes that have high relation with the predicted price. Then, We will train and make comparisons between different methods to choose the best one. The new host can enter all the relevant details found in this project such as the location of the listing, listing properties, available amenities, etc and the Machine Learning Model will suggest the Price for the listing.

We are provided the train and test dataset. We then build a model to predict the price on the final dataset, which is missing the price value.

**Evaluation Criteria:**

In this project, we will employ MSE to evaluate the performance of the linear regression model, Decision Trees, and Random Forests. The Mean Squared Error (MSE) is the average of the summation of the squared difference between the estimated values and actual values. It is important to reduce the value of MSE in evaluating the performance of machine learning models.

**Result:**

After some trials with different models, we ended up using PVC with C = 10.0, gamma = 0.01, and kernel rbf. It gave a Mean Squared Error score of 363.02973 and we ranked 4th in the class. The top 5 teams received extra points and we think this is an acceptable result for us.

I’ve done Task 2, which is Data Cleaning, Missing Observations, and Feature Engineering. However, every team members are able to do all the parts of the project given a reasonable amount of time.