# EARTHQUAKE PREDICTION MODEL USING PYTHON

**INTRODUCTION**

House price prediction can help the developer determine the selling price of a house and can help the customer to arrange the right time to purchase a house. There are three factors that influence the price of a house which include physical conditions, concept and location.In the case of house price prediction, we can use historical data on various features of a house, such as its location, size, and amenities, to train a machine-learning model. Once the model is trained, it can analyze new data on a given house and make a prediction of its market value

In this phase the design to innovation of house price prediction is going to be done.

# DATASET

The data is obtained from [https://www.Kaggle.com/data](https://www.kaggle.com/data)

# COLUMNS USED

From Earthquake’s database.csv data the following columns are used

* Avg. Area income
* Avg. Area House age
* Avg. Area Number of rooms
* Avg. Area Number of bedrooms
* Avg. Area population
* Price
* Address

# LIBRARIES USED

The Python 3 environment comes with many helpful analytics libraries installed and several helpful packages to load.

The essential libraries used in this project are :

* Numpy and Pandas libraries
* Matplotlib
* Seaborn

# TRAIN AND TEST

Training the dataset by info(), describe(), show(), and by using Visualization Correlation algorithm we train the data.

Testing the data by importing mpl\_toolkits.basemap from Basemap with ensuring the country boundaries, importing train\_test\_split from sklearn by the following command :

X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size=0.2, random\_state=101)

# REST OF THE EXPLANATIONS

There exist five models in this project. They are., Model 1 - Linear Regression

Model 2 - Support Vector Regressor Model 3 - Lasso Regression

Model 4 - Random Forest Regression Model 5 - XGboost Regressor

By the above models, prediction of prices will be done at each model and evaluated

# ALGORITHMS USED

Apply machine learning algorithms like Random Forest Regression to the house price prediction database.

The Random Forest model proved to be the most appropriate model giving the highest value of the R-square and the minimum Root Mean Square Error Value



