# EARTHQUAKE PREDICTION MODEL USING PYTHON

**INTRODUCTION**

The problem is to implement Artificial Intelligence Techniques for Earthquake prediction based on latitude, longitude, time, date and type. The goal is to enable fast prediction of earthquakes to prevent disasters. This project involves data collection, data pre-processing, feature engineering, clustering algorithms, visualization, and interpretation of results.

In this phase the design to innovation and data flow of customer segmentation 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

* Date
* Time
* Latitude
* Longitude
* Type

# 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 :

* Importing OS (for kaggle inputs)
* Numpy and Pandas libraries
* Matplotlib
* Seaborn

# TRAIN AND TEST

Training the dataset by head(), drop(), show(), and by using RandomForest Regression 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=42)

# REST OF THE EXPLANATIONS

The National Earthquake Information Center (NEIC) is responsible for determining the location and size of significant earthquakes worldwide and disseminating this information to national and international agencies, scientists, critical facilities, and the public. It compiles and provides an extensive seismic database, serving as a foundation for scientific research through digital seismograph networks and cooperative international agreements.

# ALGORITHMS USED

Apply clustering algorithms like Random Forest Regression to the earthquake database.

Visualization : All the earthquakes from the database in visualized on to the world map which shows clear representation of the locations where frequency of the earthquake will be more.

**DESIGN**



