# EARHQUAKE PREDICTION MODEL USING PYTHON

TEAM MEMBER

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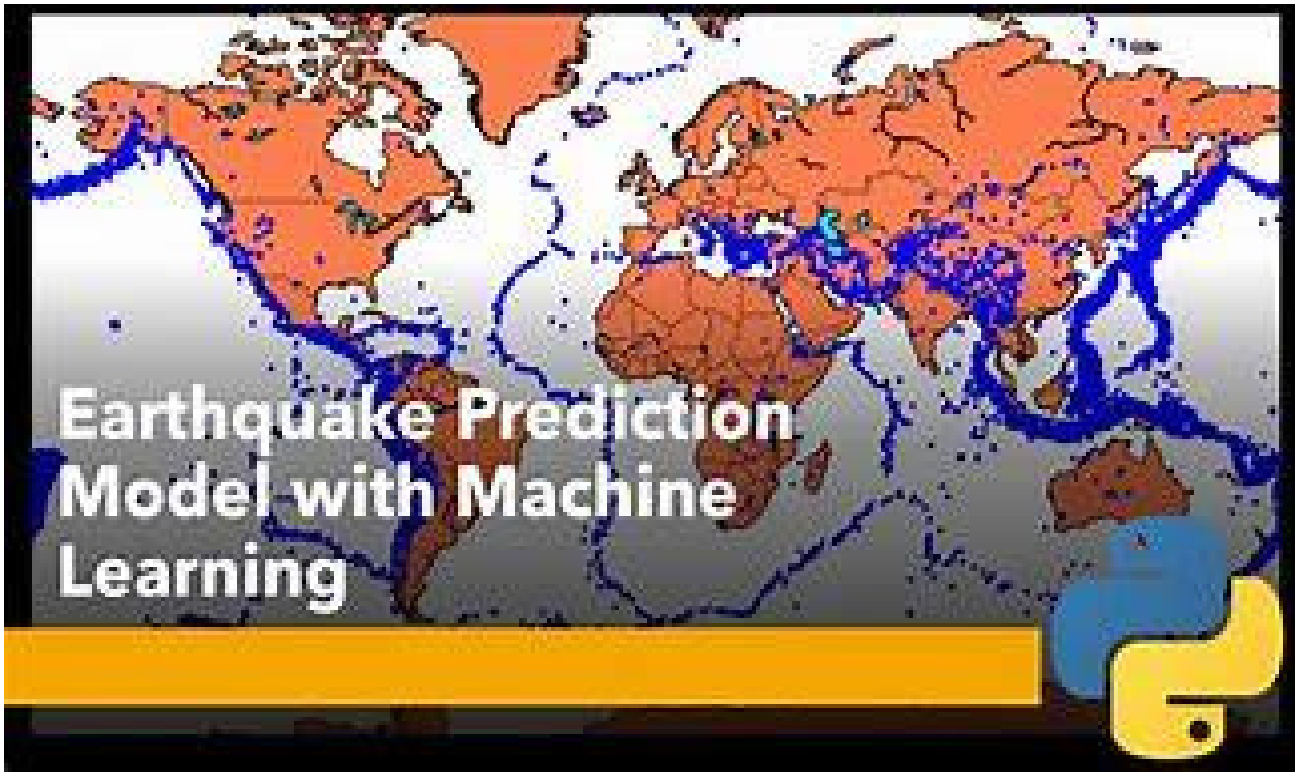
Phase - 3 Submission document

Project Title : Earthquake Prediction Model Using Python

Phase 3 : Development Part 1

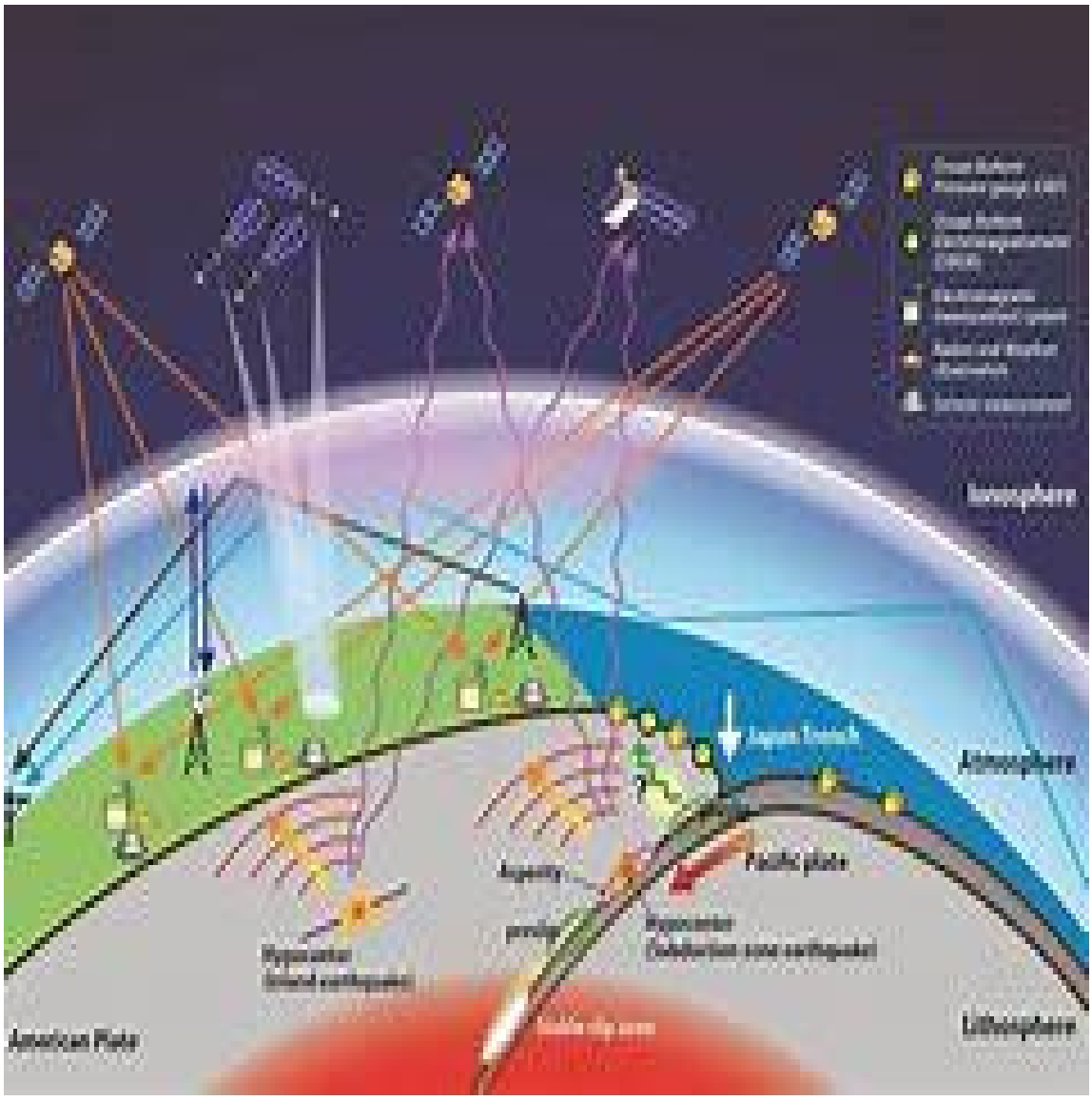
Topic: Start building the earthquake prediction model by using python loading and pre-processing the dataset



**INTRODUCTION:**

Earthquake Prediction

It is well known that if a disaster has happened in a region, it is likely to happen there again. Some regions really have frequent earthquakes, but this is just a comparative quantity compared to other regions. So, predicting the earthquake with Date and Time, Latitude and Longitude from previous data is not a trend which follows like other things, it is natural occurring.



GIVEN DATASET:

| | magnitude | cdi | mmi | tsunami | sig | nst | dmin | gap | depth | latitude | longitude |
|---|---|---|---|---|---|---|---|---|---|---|---|
| count | 782.000000 | 782.000000 | 782.000000 | 782.000000 | 782.000000 | 782.000000 | 782.000000 | 782.000000 | 782.000000 | 782.000000 | 782.000000 |
| mean | 6.941125 | 4.333760 | 5.964194 | 0.388747 | 870.108696 | 230.250639 | 1.325757 | 25.038990 | 75.883199 | 3.538100 | 52.609199 |
| std | 0.445514 | 3.169939 | 1.462724 | 0.487778 | 322.465367 | 250.188177 | 2.218805 | 24.225067 | 137.277078 | 27.303429 | 117.898886 |
| min | 6.500000 | 0.000000 | 1.000000 | 0.000000 | 650.000000 | 0.000000 | 0.000000 | 0.000000 | 2.700000 | -61.848400 | -179.968000 |
| 25% | 6.600000 | 0.000000 | 5.000000 | 0.000000 | 691.000000 | 0.000000 | 0.000000 | 14.625000 | 14.000000 | -14.595600 | -71.668050 |
| 50% | 6.800000 | 5.000000 | 6.000000 | 0.000000 | 754.000000 | 140.000000 | 0.000000 | 20.000000 | 26.295000 | -2.572500 | 109.426000 |
| 75% | 7.100000 | 7.000000 | 7.000000 | 1.000000 | 909.750000 | 445.000000 | 1.863000 | 30.000000 | 49.750000 | 24.654500 | 148.941000 |
| max | 9.100000 | 9.000000 | 9.000000 | 1.000000 | 2910.000000 | 934.000000 | 17.654000 | 239.000000 | 670.810000 | 71.631200 | |

IMPORT LIBRARIES:

PROGRAM:

Import pandas as pd

Import numpy as np

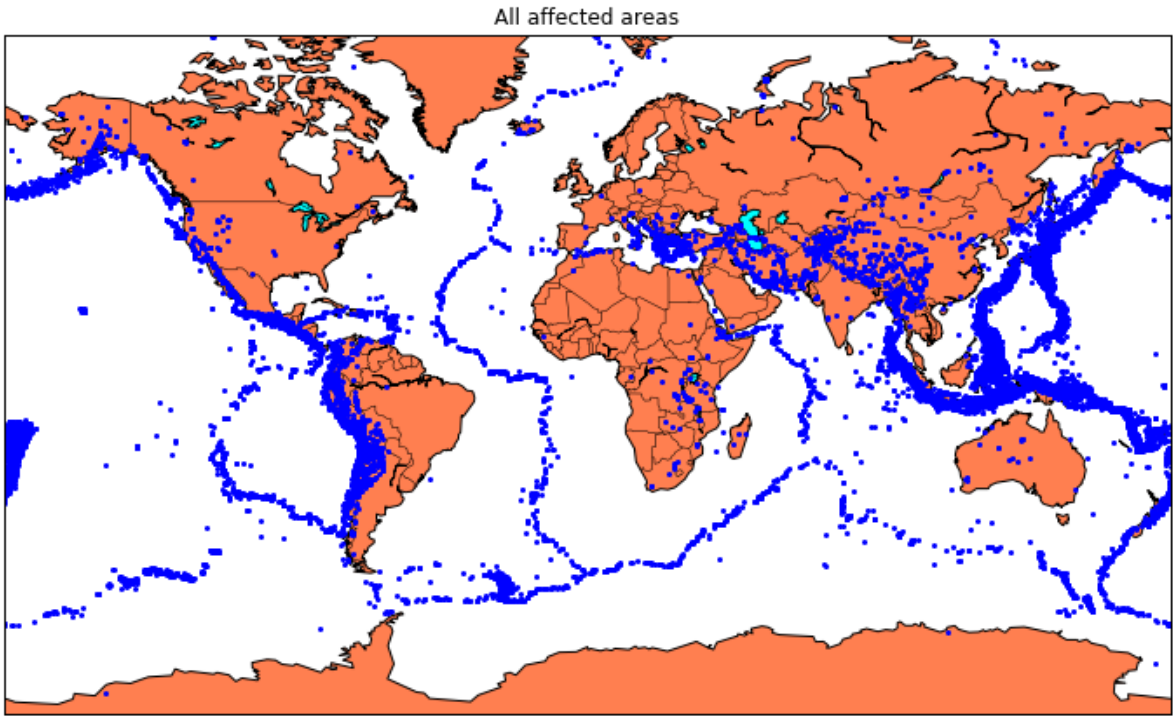
2.LOAD THE DATSET:

Load your dataset into pandas data frame. You can typically find earthquake prediction model using python datasets in CSV format .

PROGRAM:

df=pd.read_csv('E:\USA_Earthquake.csv')

Pd.read()



**Splitting the Data:**

Firstly, split the data into Xs and ys which are input to the model and output of the model respectively. Here, inputs are Time stamp, Latitude and Longitude and outputs are Magnitude and Depth. Split the X s and y s into train and test with validation. Training dataset contains 80% and Test dataset contains 20%.