**Earthquake prediction model using python**

*Phase3 Development part 1*

1. \*\*Loading the Dataset\*\*:

- Obtain a dataset related to earthquake data.

Common sources include USGS Earthquake Database or Kaggle.

2. \*\*Preprocessing\*\*:

- Handle missing values, if any.

- Explore and clean the data to ensure it’s suitable for analysis.

3. \*\*Feature Engineering\*\*:

- Identify relevant features that may contribute to earthquake prediction.

- Transform or engineer features if needed.

4. \*\*Model Selection\*\*:

- Choose appropriate machine learning models suitable for the prediction task. Common choices include Random Forest, Support Vector Machines (SVM), Neural Networks, etc.

5. \*\*Model Training\*\*:

- Train the selected models on the preprocessed dataset.

6. \*\*Model Evaluation\*\*:

- Evaluate the models using suitable metrics (e.g., accuracy, precision, recall, F1-score) to assess their performance.

7. \*\*Tuning and Optimization\*\*:

- Fine-tune the model parameters for optimal performance.

8. \*\*Document Creation\*\*:

- Document the entire process, including data preprocessing, feature engineering, model selection, training, evaluation, and optimization.

Import pandas as pd

Import matplotlib.pyplot as plt

Import seaborn as sb

Import warnings

Warnings.filterwarnings(‘ignore’)

Df = pd.read\_csv(‘dataset.csv’)

Df.head()

Df.shape

Df.info()

Df.describe()

Splitted = df[‘Origin Time’].str.split(‘ ‘, n=1, Expand=True)

Df[‘Date’] = splitted[0]

Df[‘Time’] = splitted[1].str[:-4]

Df.drop(‘Origin Time’,Axis=1, Inplace=True)

Df.head()

Splitted = df[‘Date’].str.split(‘-‘, expand=True)

Df[‘day’] = splitted[2].astype(‘int’)

Df[‘month’] = splitted[1].astype(‘int’)

Df[‘year’] = splitted[0].astype(‘int’)

Df.drop(‘Date’, axis=1,Inplace=True)

Df.head()

Plt.figure(figsize=(10, 5))

X = df.groupby(‘year’).mean()[‘Depth’]

x.plot.bar()

plt.show()

plt.figure(figsize=(10, 5))

sb.lineplot(data=df, x=’month’, y=’Magnitude’)

plt.show()

plt.subplots(figsize=(15, 5))

plt.subplot(1, 2, 1)

sb.distplot(df[‘Depth’])

plt.subplot(1, 2, 2)

sb.boxplot(df[‘Depth’])

plt.show()

plt.subplots(figsize=(15, 5))

plt.subplot(1, 2, 1)

sb.distplot(df[‘Magnitude’])

plt.subplot(1, 2, 2)

sb.boxplot(df[‘Magnitude’])

plt.show()

plt.figure(figsize=(10, 8))

sb.scatterplot(data=df, x=’Latitude’, y=’Longitude’, hue=’Magnitude’)

plt.show()

mport plotly.express as px

import pandas as pd

fig = px.scatter\_geo(df, lat=’Latitude’, lon=’Longitude’,color=”Magnitude”,fitbounds=’locations’,scope=’asia’)

fig.show()