

# AI

## Earthquake prediction model using python

```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sb
import plotly.express as px
from google.colab import drive
drive.mount('/content/drive')
df = pd.read_csv('/content/drive/MyDrive/Csvfiles/earth.csv')
df.head()
df.shape
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)
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()
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()
import 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()

```

## Output:

The screenshot shows a Google Colab notebook interface. The code cell contains the following Python code:

```

from google.colab import drive
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sb

drive.mount('/content/drive')
df = pd.read_csv('/content/drive/MyDrive/Csvfiles/earth.csv')
df.head()

```

Below the code, a message indicates the drive is already mounted. A table preview shows the first five rows of the 'earth.csv' dataset:

	id	impact.gap	impact.magnitude	impact.significance	location.depth	location.distance	location.full	location.latitude	location.longitude	location.name	time.day	time.epoch
0	nc72666881	122.00	1.43	31	15.12	0.10340	13km E of Livermore, California	37.672333	-121.619000	California	27	1.469590e+12
1	us200060dy	30.00	4.90	371	97.07	1.43900	58km WNW of Pakokku, Burma	21.514600	94.572100	Burma	27	1.469590e+12
2	nc72666891	249.00	0.06	0	4.39	0.02743	12km SE of Mammoth Lakes, California	37.576500	-118.859167	California	27	1.469590e+12
3	nc72666896	122.00	0.40	2	1.09	0.02699	6km SSW of Mammoth Lakes, California	37.596833	-118.994833	California	27	1.469590e+12
4	nn00553447	113.61	0.30	1	7.60	0.06300	16km SSE of Mogul, Nevada	39.377500	-119.845000	Nevada	27	1.469590e+12

The bottom of the image shows the Windows taskbar with the time 9:53 AM on 10/18/2023.