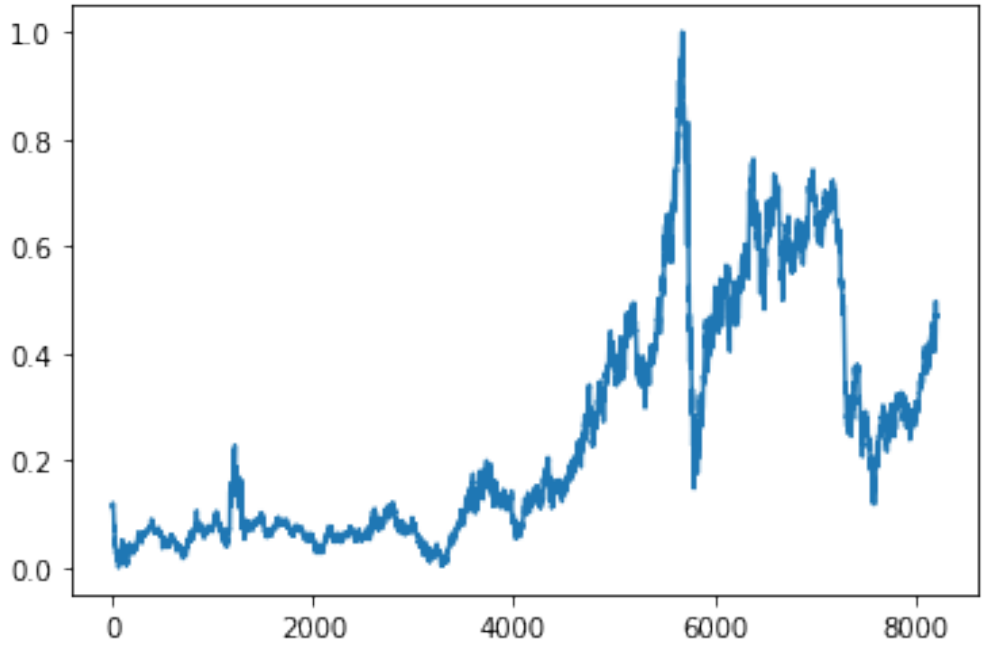
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt

data=pd.read_excel("/content/Crude Oil Prices Daily.xlsx")

data.isnull().any()

Date             False
Closing Value     True
dtype: bool

data.isnull().sum()

Date             0
Closing Value    7
dtype: int64

data.dropna(axis=0,inplace=True)

data.isnull().sum()

Date             0
Closing Value    0
dtype: int64

data_oil=data.reset_index()['Closing Value']
data_oil

0       25.56
1       26.00
2       26.53
3       25.85
4       25.87
        ...
8211    73.89
8212    74.19
8213    73.05
8214    73.78
8215    73.93
Name: Closing Value, Length: 8216, dtype: float64

from sklearn.preprocessing import MinMaxScaler
scaler=MinMaxScaler(feature_range=(0,1))
data_oil=scaler.fit_transform(np.array(data_oil).reshape(-1,1))

data_oil

array([[0.11335703],
       [0.11661484],
       [0.12053902],
       ...,
       [0.46497853],
```

```
       [0.47038353],
       [0.47149415]])
```

```
plt.plot(data_oil)
```

```
[<matplotlib.lines.Line2D at 0x7f25e8259750>]
```




```
training_size=int(len(data_oil)*0.65)
test_size=len(data_oil)-training_size
train_data,test_data=data_oil[0:training_size,:],data_oil[training_siz
e:len(data_oil),:1]
```

```
training_size,test_size
```

```
(5340, 2876)
```

```
train_data.shape
```

```
(5340, 1)
```

```
def create_dataset(dataset,time_step=1):
  dataX,dataY=[],[]
  for i in range(len(dataset)-time_step-1):
    a=dataset[i:(i+time_step),0]
    dataX.append(a)
    dataY.append(dataset[i+time_step,0])
  return np.array(dataX),np.array(dataY)
```

```
time_step=10
x_train,y_train=create_dataset(train_data,time_step)
x_test,y_test=create_dataset(test_data,time_step)
```

```
print(x_train.shape),print(y_train.shape)
```

```
(5329, 10)
(5329,)
```

```
(None, None)
```

```
print(x_test.shape),print(y_test.shape)
```

```
(2865, 10)
(2865,)
```

```
(None, None)
```

```
x_train
```

```
array([[0.11335703, 0.11661484, 0.12053902, ..., 0.10980305, 0.1089886
,
        0.11054346],
       [0.11661484, 0.12053902, 0.11550422, ..., 0.1089886 ,
0.11054346,
        0.10165852],
       [0.12053902, 0.11550422, 0.1156523 , ..., 0.11054346,
0.10165852,
        0.09906708],
       ...,
       [0.36731823, 0.35176958, 0.36080261, ..., 0.36391234,
0.37042796,
        0.37042796],
       [0.35176958, 0.36080261, 0.35354657, ..., 0.37042796,
0.37042796,
        0.37879461],
       [0.36080261, 0.35354657, 0.35295424, ..., 0.37042796,
0.37879461,
        0.37916482]])
```

```
x_train=x_train.reshape(x_train.shape[0],x_train.shape[1],1)
x_test=x_test.reshape(x_test.shape[0],x_test.shape[1],1)
```