**import** pandas **as** pd

**import** numpy **as** np

**import** matplotlib.pyplot **as** plt

In [2]:

data**=**pd**.**read\_excel("/content/Crude Oil Prices Daily.xlsx")

In [3]:

data**.**isnull()**.**any()

Out[3]:

Date False

Closing Value True

dtype: bool

In [4]:

data**.**isnull()**.**sum()

Out[4]:

Date 0

Closing Value 7

dtype: int64

In [5]:

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

In [6]:

data**.**isnull()**.**sum()

Out[6]:

Date 0

Closing Value 0

dtype: int64

In [7]:

data\_oil**=**data**.**reset\_index()['Closing Value']

data\_oil

Out[7]:

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

In [8]:

**from** sklearn.preprocessing **import** MinMaxScaler

scaler**=**MinMaxScaler(feature\_range**=**(0,1))

data\_oil**=**scaler**.**fit\_transform(np**.**array(data\_oil)**.**reshape(**-**1,1))

In [9]:

data\_oil

Out[9]:

array([[0.11335703],

[0.11661484],

[0.12053902],

...,

[0.46497853],

[0.47038353],

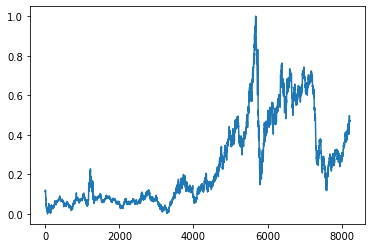
[0.47149415]])

In [10]:

plt**.**plot(data\_oil)

Out[10]:

[]



In [11]:

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\_size:len(data\_oil),:1]

In [12]:

training\_size,test\_size

Out[12]:

(5340, 2876)

In [13]:

train\_data**.**shape

Out[13]:

(5340, 1)

In [14]:

**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)

In [15]:

time\_step**=**10

x\_train,y\_train**=**create\_dataset(train\_data,time\_step)

x\_test,y\_test**=**create\_dataset(test\_data,time\_step)

In [16]:

print(x\_train**.**shape),print(y\_train**.**shape)

(5329, 10)

(5329,)

Out[16]:

(None, None)

In [17]:

print(x\_test**.**shape),print(y\_test**.**shape)

(2865, 10)

(2865,)

Out[17]:

(None, None)

In [18]:

x\_train

Out[18]:

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]])

In [19]:

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)