

IBM Watson Studio

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Projects / Crude Oil Prediction Model / Crudeoil

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Trusted Python 3.9

In [1]:

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

In [2]:

import os, types
import pandas as pd
from boto3.client import Config
import boto3

def __iter__(self): return 0

@hidden.cell
The following code accesses a file in your IBM Cloud Object Storage. It includes your credentials.
You might want to remove those credentials before you share the notebook.
cos_client = boto3.client(service_name='s3',
 ibm_api_key_id='4151vbQ-wR4iVck6eFrrdLEjqW1-Z1_vKD5F-102x9r0',
 ibm_auth_endpoint='https://iam.cloud.ibm.com/oidc/token',
 config=Config(signature_version='oauth'),
 endpoint_url='https://s3.private.us.cloud-object-storage.appdomain.cloud')

bucket = 'crudeoilpredictionmodel-donotdelete-pr-mkucewulw0rcq'
object_key = 'Crude Oil Prices Daily.xlsx'

body = cos_client.get_object(Bucket=bucket,Key=object_key)['Body']

data = pd.read_excel(body.read())
data.head()

```
In [30]: y_train
```

```
Out[30]: array([0.10165852, 0.099906708, 0.08203761, ..., 0.37879461, 0.37916482,  
                0.38153413])
```

```
In [31]: 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)
```

```
In [32]: from tensorflow.keras.models import Sequential
from tensorflow.keras.layers import Dense
from tensorflow.keras.layers import LSTM
```

```
In [33]: model=Sequential()
```

```
In [34]: model.add(LSTM(50,return_sequences=True,input_shape=(10,1)))
          model.add(LSTM(50,return_sequences=True))
          model.add(LSTM(50))
```

```
In [35]: model.add(Dense(1))
model.compile(loss='mean_squared_error', optimizer='adam')
```

```
In [36]: model.summary()
```

Model: "sequential"

Layer (type)	Output Shape	Param #
lstm (LSTM)	(None, 10, 50)	10400

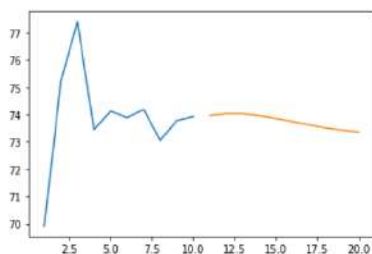
```
In [66]: day_new=np.arange(1,11)
          day_pred=np.arange(11,21)
```

```
In [67]: len(data_oil)
```

Out[67]: 8216

```
In [68]: plt.plot(day_new, scaler.inverse_transform(data_oil[8206:]))
plt.plot(day_pred, scaler.inverse_transform(1st_output))
```

```
Out[68]: []
```



```
In [69]: df3=data_oil.tolist()
df3.extend(lst_output)
plt.plot(df3[0:100,1])
```

```

dist = dist + (dist * 0.1)

```

