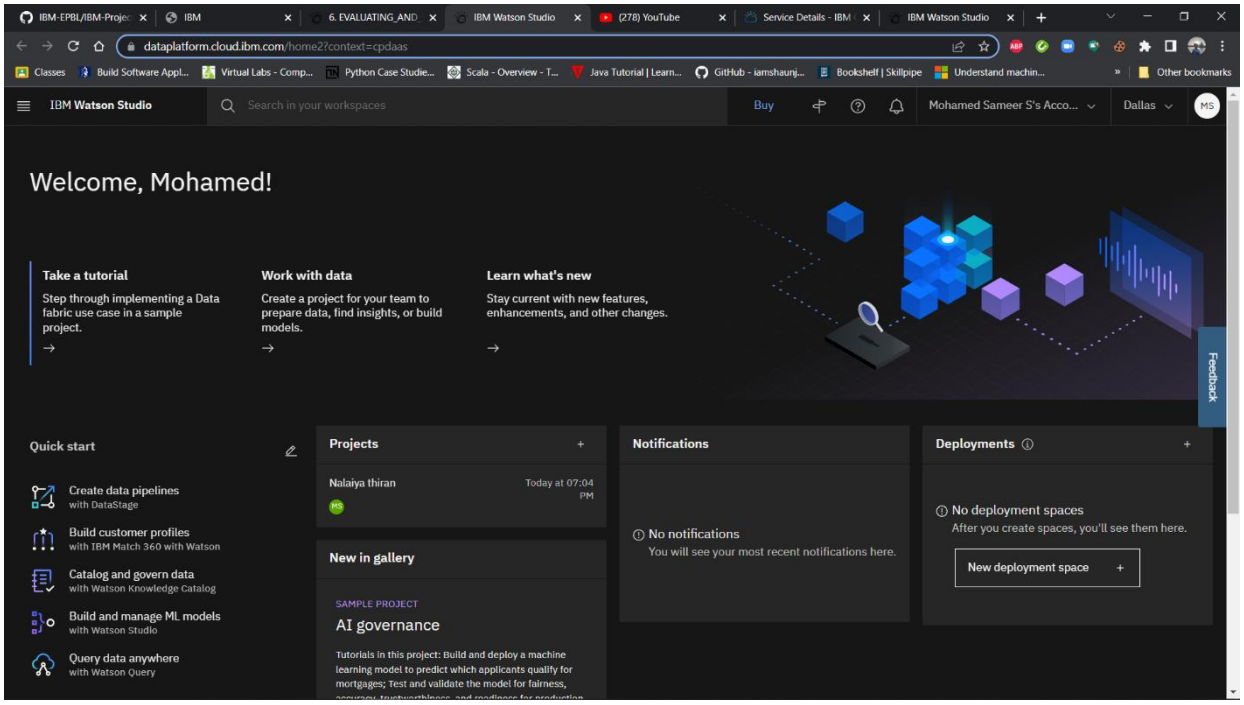
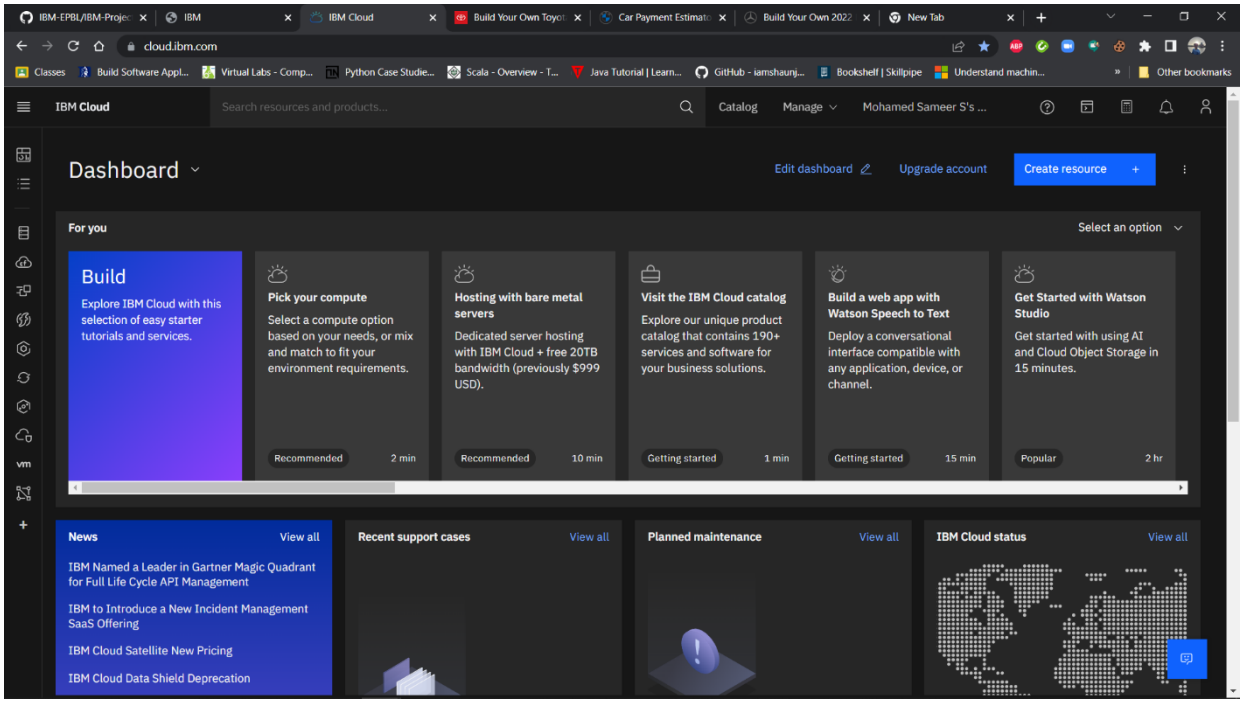
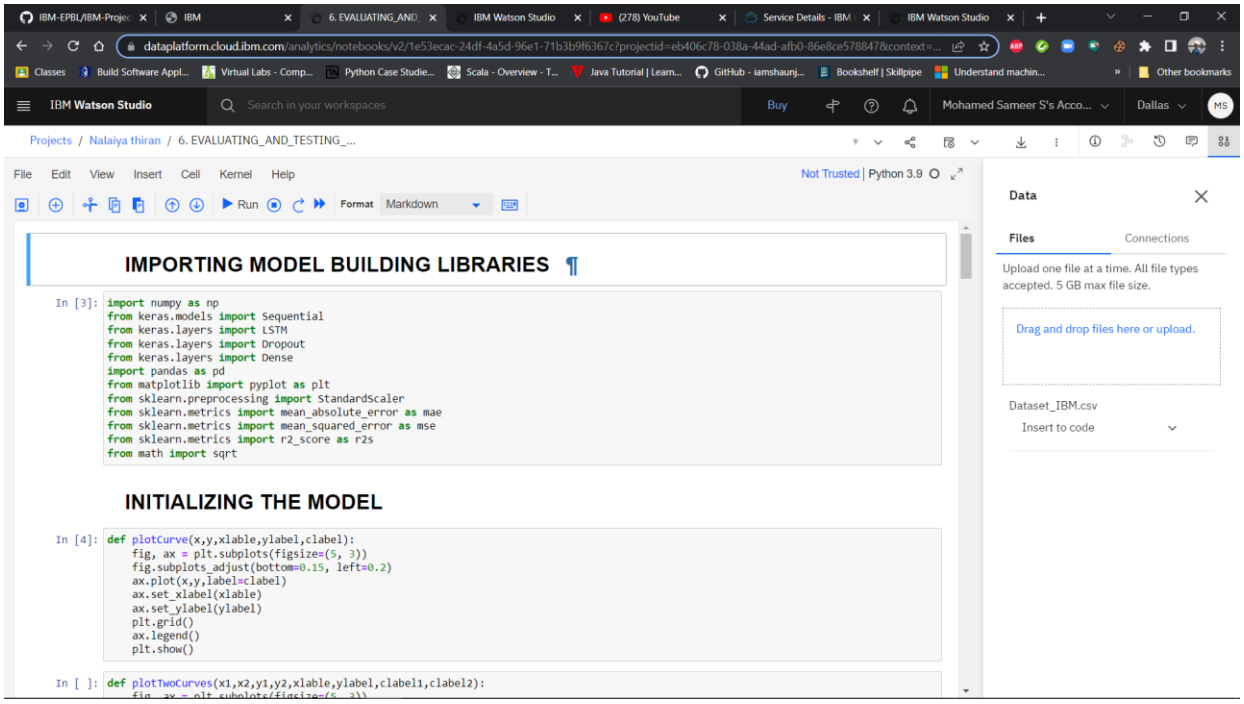
DATE	19 November 2022
TEAM ID	PNT2022TMID09300
PROJECT NAME	Crude Oil Price Prediction

REGISTERING ON IBM AND TRAINING THE MODEL



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IMPORTING MODEL BUILDING LIBRARIES ¶
In [3]:
import numpy as np
from keras.models import Sequential
from keras.layers import LSTM
from keras.layers import Dropout
from keras.layers import Dense
import pandas as pd
from matplotlib import pyplot as plt
from sklearn.preprocessing import StandardScaler
from sklearn.metrics import mean_absolute_error as mae
from sklearn.metrics import mean_squared_error as mse
from sklearn.metrics import r2_score as r2s
from math import sqrt
INITIALIZING THE MODEL
In [4]:
def plotCurve(x,y,xlable,ylabel,clabel):
fig, ax = plt.subplots(figsize=(5, 3))
fig.subplots_adjust(bottom=0.15, left=0.2)
ax.plot(x,y,label=clabel)
ax.set_xlabel(xlable)
ax.set_ylabel(ylabel)
plt.grid()
ax.legend()
plt.show()
In [ ]:
def plotTwoCurves(x1,x2,y1,y2,xlable,ylabel,clabel1,clabel2):
Data
Files
Connections
Upload one file at a time. All file types accepted. 5 GB max file size.
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Dataset_IBM.csv
Insert to code

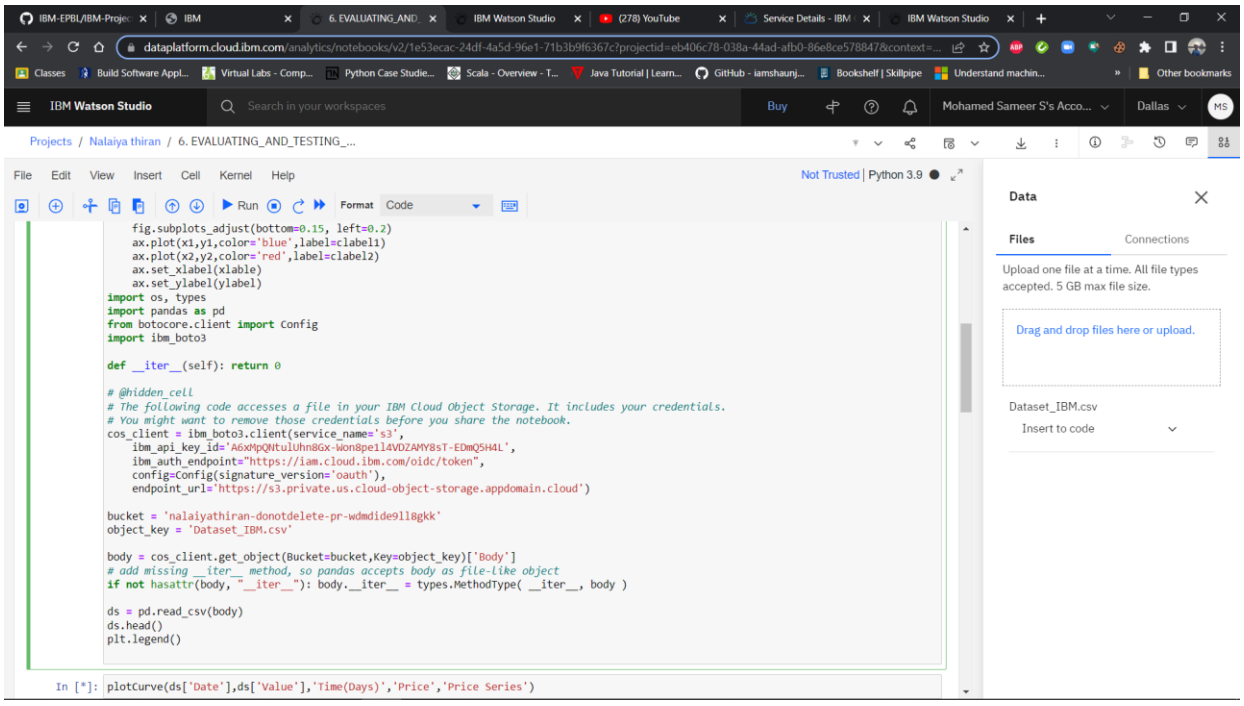
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fig.subplots_adjust(bottom=0.15, left=0.2)
ax.plot(x1,y1,color='blue',label=clabel1)
ax.plot(x2,y2,color='red',label=clabel2)
ax.set_xlabel(xlable)
ax.set_ylabel(ylabel)
import os, types
import pandas as pd
from botocore.client import Config
import ibm_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 = ibm_boto3.client(service_name='s3',
ibm_api_key_id='A6xMpQNtulUhn8Gx-Won8pe114VDZAMY8sT-EDmQ5H4L',
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 = 'nalaiyathiran-donotdelete-pr-wdmdide9ll8gkk'
object_key = 'Dataset_IBM.csv'
body = cos_client.get_object(Bucket=bucket,Key=object_key)['Body']
# add missing __iter__ method, so pandas accepts body as file-like object
if not hasattr(body, "__iter__"): body.__iter__ = types.MethodType(__iter__, body)
ds = pd.read_csv(body)
ds.head()
plt.legend()
In [*]:
plotCurve(ds['Date'],ds['Value'],'Time(Days)','Price','Price Series')
Data
Files
Connections
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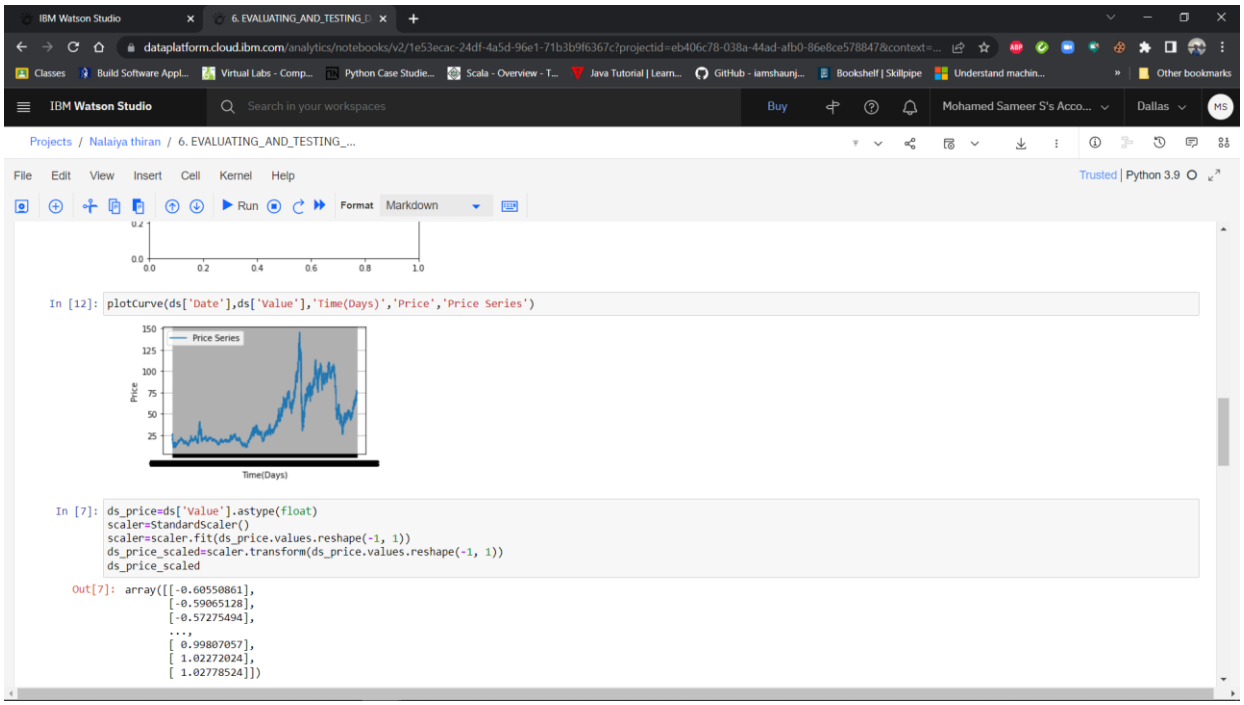
Dataset_IBM.csv
Insert to code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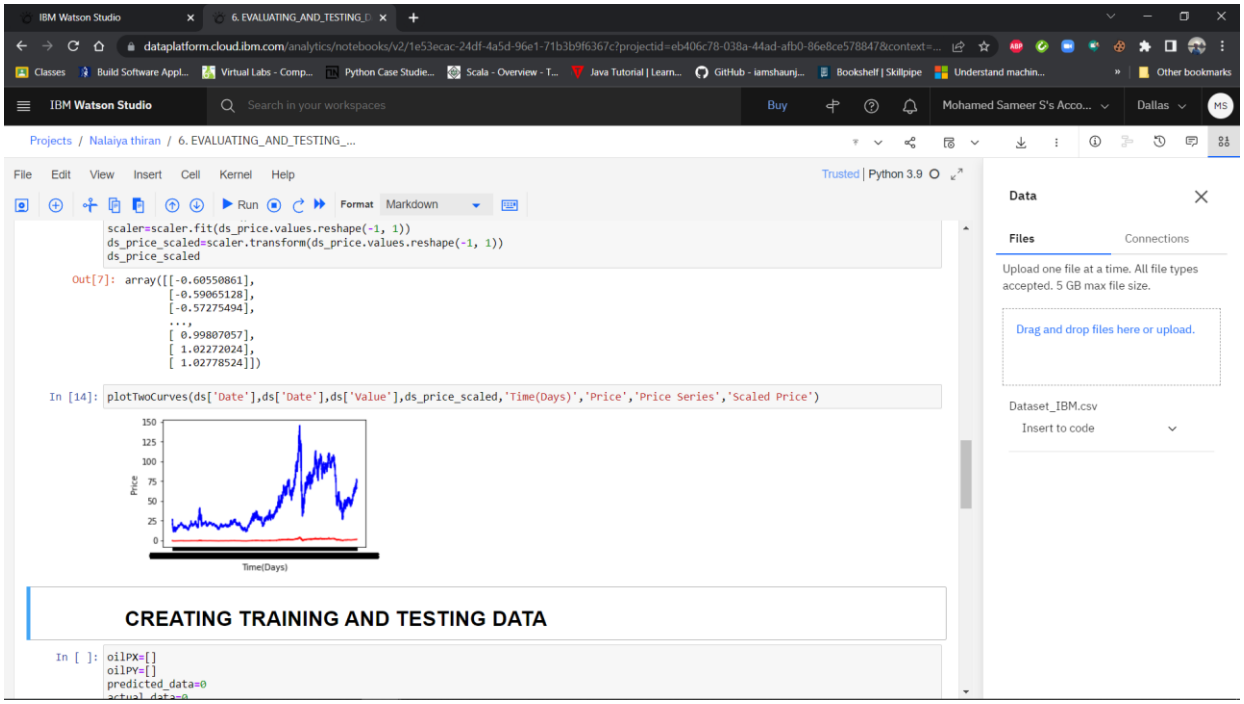
In [12]: plotCurve(ds['Date'],ds['Value'],'Time(Days)','Price','Price Series')
Price Series
Price
Time(Days)
In [7]: ds_price=ds['Value'].astype(float)
scaler=StandardScaler()
scaler=scaler.fit(ds_price.values.reshape(-1, 1))
ds_price_scaled=scaler.transform(ds_price.values.reshape(-1, 1))
ds_price_scaled
Out[7]: array([[-0.60550861],
[-0.59065128],
[-0.57275494],
...,
[0.99807057],
[1.02272024],
[1.02778524]])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Out[7]: array([[-0.60550861],
[-0.59065128],
[-0.57275494],
...,
[0.99807057],
[1.02272024],
[1.02778524]])
In [14]: plotTwoCurves(ds['Date'],ds['Date'],ds['Value'],ds_price_scaled,'Time(Days)','Price','Price Series','Scaled Price')
Price
Time(Days)
CREATING TRAINING AND TESTING DATA
In [ ]: oilPX=[]
oilPY=[]
predicted_data=0
Data
Files
Connections
Upload one file at a time. All file types accepted. 5 GB max file size.
Drag and drop files here or upload.
Dataset_IBM.csv
Insert to code