Final code

Team ID	PNT2022TMID13501
Project Name	Project - Crude Oil Price Prediction

Index.html:

```
<html>
<head>
<title>Home</title>
<meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
<style>
body
{
background-image:url("https://etimg.etb2bimg.com/photo/94227420.cms");
background-position: center;
font-family:Times-new roman;
background-size:cover;
margin-top:40px;
}
.pd{
padding-bottom:100%;}
.navbar
{
margin-left:10px;
padding:10px;
background-color:hsl(180, 96%, 52%);
font-family:'Roboto',sans-serif;
font-style: italic;
```

```
border-radius:30px;
font-size:30px;
box-sizing: border-box;
max-width: 18%;
text-align:right;

}
a
{
color:grey;
float:right;
text-decoration:none;
font-style:normal;
padding-right:20px;
}
a:hover{
background-color:black;
color:white;
border-radius:15px;0
font-size:30px;
padding-left:10px;
}
p
{
color:turqouise;
font-style:italic;
font-size:30px;
text-align: left;
padding-left: 500px;
```

```
text-align: justify;
}
</style>
</head>
<body>
<div class="navbar">
<a href="/predict" >Predict</a>
<a href="/">Home</a>
<br>
</div>
<br>
<center><b class="pd"><font color="200FF3" size="15" font-family="Comic Sans MS" >Crude Oil Price Prediction</font></b></center><br><br>
</body>
</html>
```

Web.html:

```
<html>
   <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">

  <style>
  div.header{
    top: 0;
    position: fixed;
    padding-left: 400px;}
  div.header1{
    top:20;
    position: fixed;
    padding-left: 490px;
```

```
}

*{
  margin:0;
    padding:0;
    border:0;
    outline:0;
    text-decoration:none;
    font-family:montserrat;
}
.navbar
{
margin-left:10px;
padding:10px;
background-color:hsl(180, 96%, 52%);
font-family:'Roboto',sans-serif;
font-style: italic;
border-radius:30px;
font-size:30px;
box-sizing: border-box;
max-width: 18%;
text-align:center;
}
a:hover{
background-color:black;
color:white;
border-radius:16px;
font-size:30px;
padding:10px;
```

```
}

body
{
background-image:url('https://wallpapercave.com/wp/wp9553498.jpg');
background-position: center;
font-family:sans-serif;
background-size:cover;
margin-top:40px;
}

.main input[type="text"],.main input[type="text"],.main input[type="text"],.main
input[type="text"],.main input[type="text"],.main input[type="text"],.main input[type="text"]{
    border:0;
    background:none;
    display:block;
    margin:20px auto;
    text-align:center;
    border:2px solid white;
    padding:15px 3px;
    width:400px;
    outline:none;
    color:white;
    border-radius:100px;
    transition:0.25s;
    font-size:20;

}
.bor{
```

```
  border:0;
    background:none;
    display:block;
    margin:20px auto;
    text-align:center;
    border:2px solid white;
    padding:10px 3px;
    width:500px;
    outline:none;
    color:black;
    transition:0.25s;
  }
  .main input[type="text"]:focus,.main input[type="text"]:focus,.main input[type="text"]:focus,.main input[type="text"]:focus,.main input[type="text"]:focus,.main input[type="text"]:focus{
    width:280px;
    border-color:black;
  }
  .logbtn{
    display:block;
    width:35%;
    height:50px;
    border:none;
    border-radius:24px;
    background:linear-gradient(120deg,#3498db,#8e44ad,#3498db,#8e44ad);
    background-size:200%;
    color:black;
    outline:none;
    cursor:pointer;
```

```
    transition:.5s;
    font-size:25;
  }


  input::placeholder{
    color:white;
  }
  .bottom-text{
    margin-top:60px;
    text-align:center;
    font-size:13px;

  }

  </style>
  <body>
  <div class="navbar">
  <a href="index.html">Home</a>
  <br>
  </div>
    <center><div><font color="Powderblue" font-family="sans-serif" size=8 ><b>Crude Oil Price Prediction</b></font></div></center>


  <br><br><br><br>
    <form class="main" action="/login" method="post">
      <br>
```

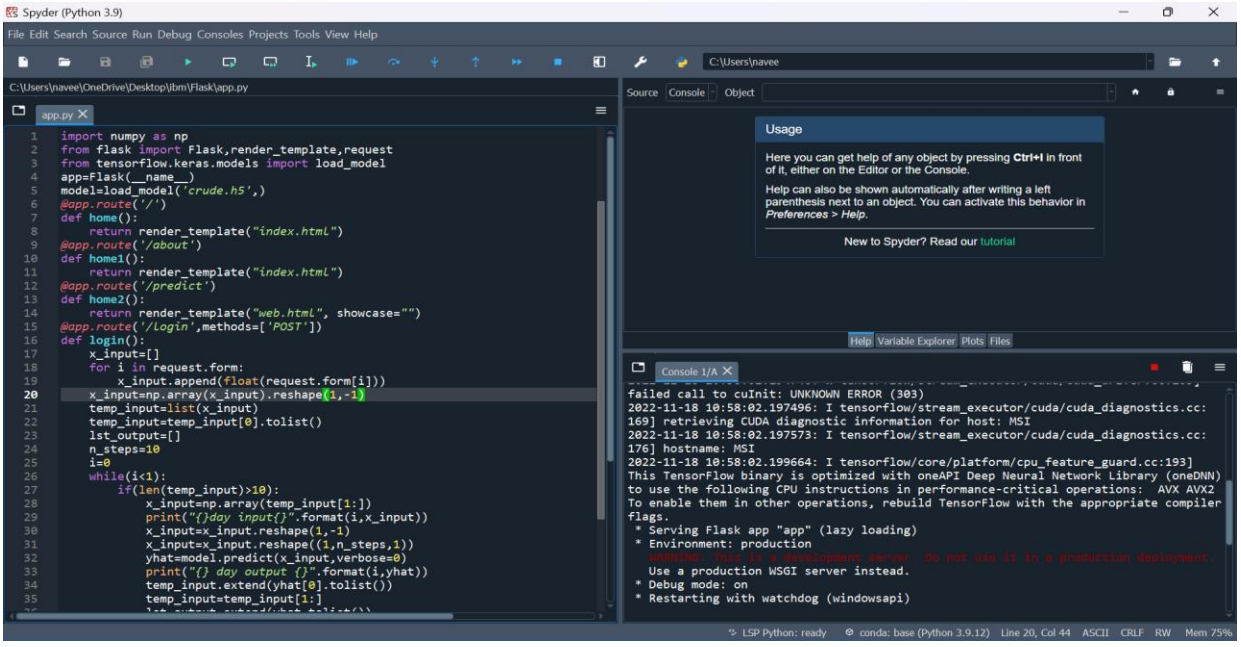
```
        <font size=20><input type="text" name="year1" placeholder="Enter previous 10th day price"/></font>

        <font size=20><input type="text" name="year2" placeholder="Enter previous 9th day price"/></font>

        <font size=20><input type="text" name="year3" placeholder="Enter previous 8th day price"/></font>

        <font size=20><input type="text" name="year4" placeholder="Enter previous 7th day price"/></font>

        <font size=20><input type="text" name="year5" placeholder="Enter previous 6th day price"/></font>

        <font size=20><input type="text" name="year6" placeholder="Enter previous 5th day price"/></font>

        <font size=20><input type="text" name="year7" placeholder="Enter previous 4th day price"/></font>

        <font size=20><input type="text" name="year8" placeholder="Enter previous 3th day price"/></font>

        <font size=20><input type="text" name="year9" placeholder="Enter previous 2nd day price"/></font>

        <font size=20><input type="text" name="year10"placeholder="Enter previous 1st day price"/></font>

        <center><input type="submit" class="logbtn" value="Predict"></center>

        <div class="bor"><b><font color="white" size=5>Next Day Price</font></b></div>

     </form>

  </div>

  </body>


  </html>
```

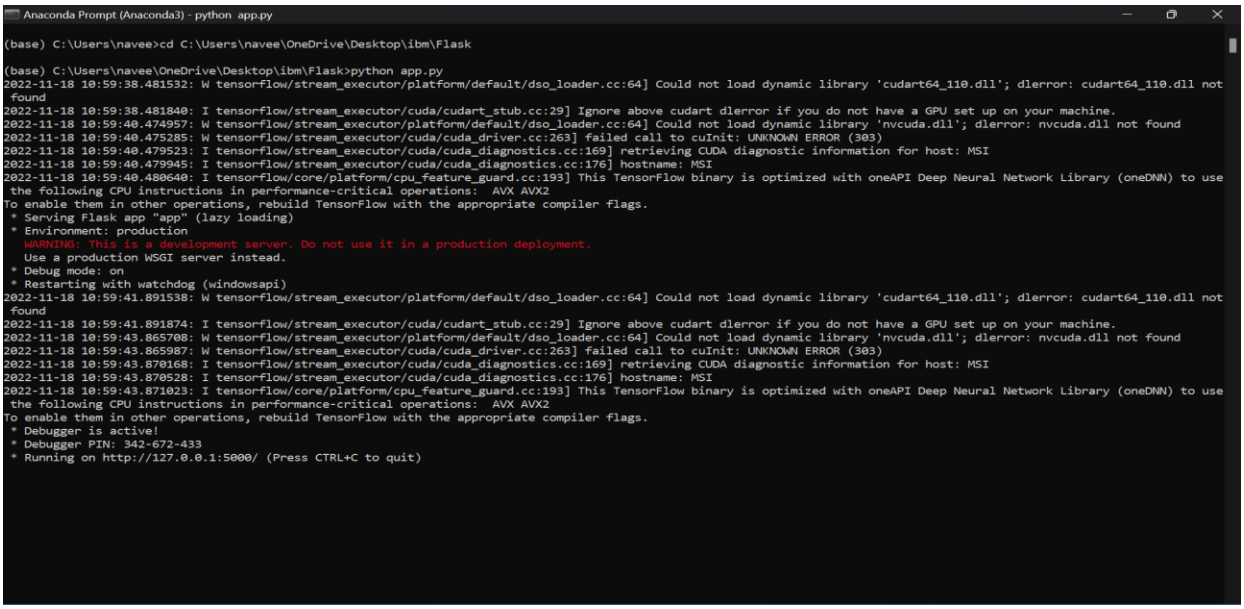
Python:

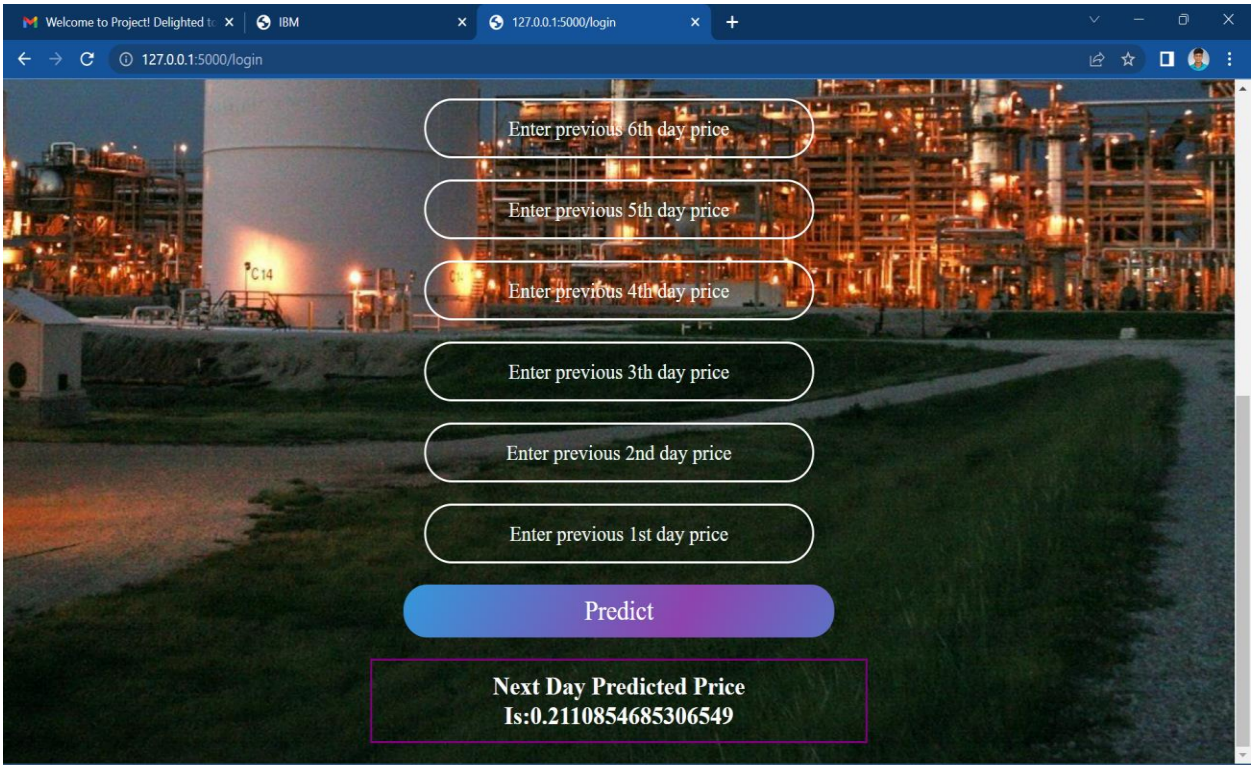
```
import numpy as np

from flask import Flask,render_template,request

from tensorflow.keras.models import load_model
```

```
app=Flask(_name_)
model=load_model('crude.h5',)
@app.route('/')
def home():
   return render_template("index.html")
@app.route('/about')
def home1():
   return render_template("index.html")
@app.route('/predict')
def home2():
   return render_template("web.html", showcase="")
@app.route('/login',methods=['POST'])
def login():
   x_input=[]
   for i in request.form:
      x_input.append(float(request.form[i]))
   x_input=np.array(x_input).reshape(1,-1)
   temp_input=list(x_input)
   temp_input=temp_input[0].tolist()
   lst_output=[]
   n_steps=10
   i=0
   while(i<1):
      if(len(temp_input)>10):
         x_input=np.array(temp_input[1:])
         print("{}day input{}".format(i,x_input))
         x_input=x_input.reshape(1,-1)
         x_input=x_input.reshape((1,n_steps,1))
         yhat=model.predict(x_input,verbose=0)
```

```
        print("{} day output {}".format(i,yhat))
        temp_input.extend(yhat[0].tolist())
        temp_input=temp_input[1:]
        lst_output.extend(yhat.tolist())
        i=i+1
    else:
        x_input=x_input.reshape((1,n_steps,1))
        yhat=model.predict(x_input,verbose=0)
        print(yhat[0])
        temp_input.extend(yhat[0].tolist())
        print(len(temp_input))
        lst_output.extend(yhat.tolist())
        i=i+1

  return render_template("web.html",showcase='Next Day Predicted Price Is:'+str(lst_output[0][0]))

if _name=='main_':
  app.run(debug=True,port=5000)
```




Anaconda Prompt (Anaconda3) - python app.py
(base) C:\Users\navee>cd C:\Users\navee\OneDrive\Desktop\ibm\Flask
(base) C:\Users\navee\OneDrive\Desktop\ibm\Flask>python app.py
2022-11-18 10:59:38.481532: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cudart64_110.dll'; dlerror: cudart64_110.dll not found
2022-11-18 10:59:38.481840: I tensorflow/stream_executor/cuda/cudart_stub.cc:29] Ignore above cudart dlerror if you do not have a GPU set up on your machine.
2022-11-18 10:59:40.474957: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'nvcuda.dll'; dlerror: nvcuda.dll not found
2022-11-18 10:59:40.475285: W tensorflow/stream_executor/cuda/cuda_driver.cc:263] failed call to cuInit: UNKNOWN ERROR (303)
2022-11-18 10:59:40.479523: I tensorflow/stream_executor/cuda/cuda_diagnostics.cc:169] retrieving CUDA diagnostic information for host: MSI
2022-11-18 10:59:40.479945: I tensorflow/stream_executor/cuda/cuda_diagnostics.cc:176] hostname: MSI
2022-11-18 10:59:40.480640: I tensorflow/core/platform/cpu_feature_guard.cc:193] This TensorFlow binary is optimized with oneAPI Deep Neural Network Library (oneDNN) to use the following CPU instructions in performance-critical operations: AVX AVX2
To enable them in other operations, rebuild TensorFlow with the appropriate compiler flags.
* Serving Flask app "app" (lazy loading)
* Environment: production
WARNING: This is a development server. Do not use it in a production deployment.
Use a production WSGI server instead.
* Debug mode: on
* Restarting with watchdog (windowsapi)
2022-11-18 10:59:41.891538: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cudart64_110.dll'; dlerror: cudart64_110.dll not found
2022-11-18 10:59:41.891874: I tensorflow/stream_executor/cuda/cudart_stub.cc:29] Ignore above cudart dlerror if you do not have a GPU set up on your machine.
2022-11-18 10:59:43.865708: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'nvcuda.dll'; dlerror: nvcuda.dll not found
2022-11-18 10:59:43.865987: W tensorflow/stream_executor/cuda/cuda_driver.cc:263] failed call to cuInit: UNKNOWN ERROR (303)
2022-11-18 10:59:43.870168: I tensorflow/stream_executor/cuda/cuda_diagnostics.cc:169] retrieving CUDA diagnostic information for host: MSI
2022-11-18 10:59:43.870528: I tensorflow/stream_executor/cuda/cuda_diagnostics.cc:176] hostname: MSI
2022-11-18 10:59:43.871023: I tensorflow/core/platform/cpu_feature_guard.cc:193] This TensorFlow binary is optimized with oneAPI Deep Neural Network Library (oneDNN) to use the following CPU instructions in performance-critical operations: AVX AVX2
To enable them in other operations, rebuild TensorFlow with the appropriate compiler flags.
* Debugger is active!
* Debugger PIN: 342-672-433
* Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)


Welcome to Project! Delighted t
IBM
127.0.0.1:5000/login
127.0.0.1:5000/login
Enter previous 6th day price
Enter previous 5th day price
Enter previous 4th day price
Enter previous 3th day price
Enter previous 2nd day price
Enter previous 1st day price
Predict
Next Day Predicted Price
Is:0.2110854685306549