Sprint 4:

Date	15 November 2022
Team ID	PNT2022TMID51231
Project Name	Predicting the energy output of wind turbine based on weather condition

In [ ]:

```
'''sprint-4

Train thd model in IBM cloud
prediction based on scoring response of Trained model at IBM CLOUD
'''
```

In [2]:

```
import numpy as np
from flask import Flask, request, jsonify, render_template
import joblib
import requests

# NOTE: you must manually set API_KEY below using information retrieved from
API_KEY  =  "eq_uB9S4u70ys6t-jeWs2uoNIscWVl0Gh0C9GTKlDloW"
token_response  =  requests.post('https://iam.cloud.ibm.com/identity/token',  da
 API_KEY, "grant_type": 'urn:ibm:params:oauth:grant-type:apikey'})
mltoken  =  token_response.json()["access_token"]

header = {'Content-Type': 'application/json', 'Authorization': 'Bearer ' + ml


app = Flask(__name__)
#model  =  joblib.load('xg_RFR_forecast_model.sav')
#model = joblib.load('dec_model.sav')

@app.route('/')
def home():
    return  render_template('intro.html')
@app.route('/predict')
def predict():
    return render_template('predict_page.html')
@app.route('/windapi',methods=['POST'])
def windapi():
    city=request.form.get('city')
    apikey="e26bb531d3393dec23475ee08ea9559b"
    url="http://api.openweathermap.org/data/2.5/weather?q="+city+"&appid="+ap
    resp = requests.get(url)
    resp=resp.json()
    temp = str((resp["main"]["temp"])-273.15) +" °C"
    humid = str(resp["main"]["humidity"])+" %"
    pressure = str(resp["main"]["pressure"])+" mmHG"
    speed  =  str((resp["wind"]["speed"])*3.6)+"  Km/hr"
    direc =
    str((resp
    ["wind"][
    "deg"]))+
    " deg"
    retur
n
render_te
mplate('p
redict_pa
ge.html',
temp=temp
,
humid=hum
id,
press
@app.rou
te('/y_p
redict',
methods=
['POST']
)
def
y_predict():
    x_test
    =[]
    month
    _dic
    =
    {"jan
    ":1,"
    feb":
    2,"ma
    r":3,
    "apr"
    :4,"m
    ay":5
    ,"jun
    ":6,"
    jul":
    7,"au
    gm =
    reque
    st.fo
    rm['m
    onth'
    ]
    mon =
    month_dic
    [m]
    print(m)
    #
    x
    _
    t
    e
    s
    t
```

```
.append(month_dic[m])  d   =
int(request.form['day'])
#x_test.append(d)
t = float(request.form['temp'])
#x_test.append(t)
direc  =  float(request.form['direc'])
#x  test.append(direc)
```

```
    speed=  float(request.form['wind'])
    #x_test.append(speed)
    #x_test = [x_test]
    x_test  =[[mon,d,t,direc,speed]]
    payload_scoring  =  {"input_data":  [{"field":  [['m','d','t','direc','speed'

    response_scoring  =  requests.post('https://us-south.ml.cloud.ibm.com/ml/v4
    print("Scoring response")
    print(response_scoring.json())

    predictions  =  response_scoring.json()
    output  =  predictions['predictions'][0]['values'][0][0]
    print("final prediction",output)



    print(x_test)

    return  render_template('predict_page.html',  prediction_text='The  energy  p


if__name__== "__main__":
    app.run(debug=False)
```

```
 * Serving Flask app '__main__' (lazy loading)
 * Environment: production
   WARNING: This is a development server. Do not use it in a production deplo
yment.
   Use a production WSGI server instead.
 * Debug mode: off
 * Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
127.0.0.1 - - [07/Nov/2022 16:56:36] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [07/Nov/2022 16:56:36] "GET /static/images/m123.gif HTTP/1.1" 4
04 -
127.0.0.1 - - [07/Nov/2022 16:56:40] "GET /predict HTTP/1.1" 200 -
127.0.0.1 - - [07/Nov/2022 16:56:40] "GET /static/css/main.css HTTP/1.1" 404
-
127.0.0.1 - - [07/Nov/2022 16:56:40] "GET /static/css/media.css HTTP/1.1" 404
-
127.0.0.1 - - [07/Nov/2022 16:56:40] "GET /static/css/items_grid.css HTTP/1.
1" 404 -
127.0.0.1 - - [07/Nov/2022 16:56:46] "POST /windapi HTTP/1.1" 200 -
127.0.0.1 - - [07/Nov/2022 16:56:47] "GET /static/css/main.css HTTP/1.1" 404
-
127.0.0.1 - - [07/Nov/2022 16:56:47] "GET /static/css/items_grid.css HTTP/1.
1" 404 -
127.0.0.1 - - [07/Nov/2022 16:56:47] "GET /static/css/media.css HTTP/1.1" 404
-
jun
127.0.0.1 - - [07/Nov/2022 16:57:10] "POST /y_predict HTTP/1.1" 200 -
127.0.0.1 - - [07/Nov/2022 16:57:10] "GET /static/css/media.css HTTP/1.1" 404
-
127.0.0.1 - - [07/Nov/2022 16:57:10] "GET /static/css/items_grid.css HTTP/1.
1" 404 -
```