SPRINT3:

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| Date | 15 November 2022 |
| Team ID | PNT2022TMID45948 |
| Project Name | Predicting the energy output of wind turbine based on weather condition |

In [ ]:

'''Application Building:

After the model is built, integrating it to a web application using Flask framework so that normal users can also use it

to predict the energy in a no-code manner. In the application,

the user provides the required values and get the prediction.

user provides input as city and get the weather conditions for that city such as temperature, wind direction, wind speed from openweather API and give the particular month,day to predict the output energy power for a gi



In [ ]:

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

**from** flask **import** Flask, request, jsonify, render\_template

**import** joblib

**import** requests

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="](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"

**return** render\_template('predict\_page.html', temp**=**temp, humid**=**humid, press @app**.**route('/y\_predict',methods**=**['POST'])

**def** y\_predict(): x\_test **=**[]

month\_dic **=** {"jan":1,"feb":2,"mar":3,"apr":4,"may":5,"jun":6,"jul":7,"aug

m **=** request**.**form['month'] print(m)

x\_test**.**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]

print(x\_test)

prediction **=** model**.**predict(x\_test) print(prediction)

output **=** prediction[0]



**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 - - [04/Nov/2022 11:27:39] "POST /windapi HTTP/1.1" 200 -

127.0.0.1 - - [04/Nov/2022 11:27:40] "GET /static/css/main.css HTTP/1.1" 404

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127.0.0.1 - - [04/Nov/2022 11:27:40] "GET /static/css/media.css HTTP/1.1" 404

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127.0.0.1 - - [04/Nov/2022 11:27:40] "GET /static/css/items\_grid.css HTTP/1. 1" 404 -

127.0.0.1 - - [04/Nov/2022 11:28:06] "POST /y\_predict HTTP/1.1" 200 -

127.0.0.1 - - [04/Nov/2022 11:28:06] "GET /static/css/main.css HTTP/1.1" 404

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127.0.0.1 - - [04/Nov/2022 11:28:06] "GET /static/css/media.css HTTP/1.1" 404

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| 127.0.0.1 | - - [04/Nov/2022 | 11:26:00] | "GET | / HTTP/1.1" 200 - |
| 127.0.0.1 | - - [04/Nov/2022 | 11:26:00] | "GET | /static/images/m123.gif HTTP/1.1" 4 |
| 04 - |  |  |  |  |
| 127.0.0.1 | - - [04/Nov/2022 | 11:26:00] | "GET | /favicon.ico HTTP/1.1" 404 - |
| 127.0.0.1 | - - [04/Nov/2022 | 11:26:02] | "GET | /predict HTTP/1.1" 200 - |
| 127.0.0.1 | - - [04/Nov/2022 | 11:26:02] | "GET | /static/css/main.css HTTP/1.1" 404 |
| -  127.0.0.1 | - - [04/Nov/2022 | 11:26:02] | "GET | /static/css/items\_grid.css HTTP/1. |
| 1" 404 -  127.0.0.1 | - - [04/Nov/2022 | 11:26:02] | "GET | /static/css/media.css HTTP/1.1" 404 |
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