

SPRINT 4
Project Deliverables (Flask Code & Deployment)

Team ID	PNT202022TMID35159
Project Name	Efficient Water Quality Analysis & Prediction using Machine Learning

App.py:

```
app.py x Water_quality.ipynb home.html 2 water_potability.csv
app.py > Python > hello
1 from flask import Flask, request, render_template
2 import pickle
3 import pandas as pd
4 import numpy as np
5 import joblib
6 scaler = joblib.load("my_scaler.save")
7
8
9 app = Flask(__name__)
10 model = pickle.load(open('model.pkl', 'rb'))
11
12 @app.route("/home")
13 @app.route("/")
14 def hello():
15     return render_template("home.html")
16
17 @app.route("/predict", methods = ["GET", "POST"])
18 def predict():
19     if request.method == "POST":
20         input_features = [float(x) for x in request.form.values()]
21         features_value = [np.array(input_features)]
22
23         feature_names = ["ph", "Hardness", "Solids", "Chloramines", "Sulfate",
24                         "Conductivity", "Organic_carbon", "Trihalomethanes", "Turbidity"]
25
26         df = pd.DataFrame(features_value, columns = feature_names)
27         df = scaler.transform(df)
28         output = model.predict(df)
29
30         if output[0] == 1:
31             prediction = "safe"
32         else:
33             prediction = "not safe"
```

The flask file (app.py) which we have used as a framework which will present (home.html) file to user and model.pkl file to use the trained model to predict whether the water is safe for consumption or not

```
@app.route("/predict", methods = ["GET", "POST"])
def predict():
    if request.method == "POST":
        input_features = [float(x) for x in request.form.values()]
        features_value = [np.array(input_features)]

        feature_names = ["ph", "Hardness", "Solids", "Chloramines", "Sulfate",
                          "Conductivity", "Organic_carbon", "Trihalomethanes", "Turbidity"]

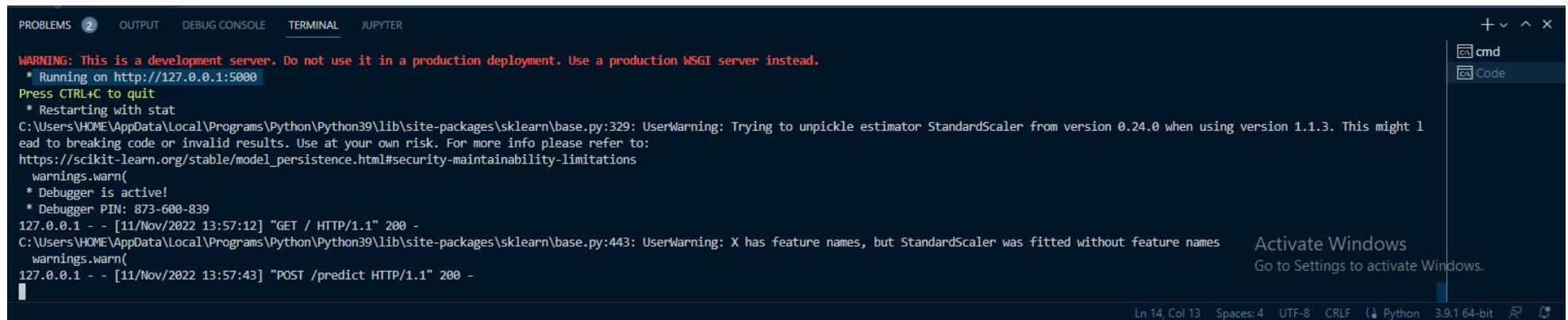
        df = pd.DataFrame(features_value, columns = feature_names)
        df = scaler.transform(df)
        output = model.predict(df)

        if output[0] == 1:
            prediction = "safe"
        else:
            prediction = "not safe"

        return render_template('home.html', prediction_text= "water is {} for human consumption ".format(prediction))

if __name__ == "__main__":
    app.run(debug=True)
```

To run our ML model, we have to run **app.py** model where it gives a port number in terminal. We have to copy and paste that link in our browser to use the prediction model



```
PROBLEMS 2 OUTPUT DEBUG CONSOLE TERMINAL JUPYTER
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on http://127.0.0.1:5000
Press CTRL+C to quit
* Restarting with stat
C:\Users\HOME\AppData\Local\Programs\Python\Python39\lib\site-packages\sklearn\base.py:329: UserWarning: Trying to unpickle estimator StandardScaler from version 0.24.0 when using version 1.1.3. This might lead to breaking code or invalid results. Use at your own risk. For more info please refer to: https://scikit-learn.org/stable/model_persistence.html#security-maintainability-limitations
warnings.warn(
* Debugger is active!
* Debugger PIN: 873-600-839
127.0.0.1 - - [11/Nov/2022 13:57:12] "GET / HTTP/1.1" 200 -
C:\Users\HOME\AppData\Local\Programs\Python\Python39\lib\site-packages\sklearn\base.py:443: UserWarning: X has feature names, but StandardScaler was fitted without feature names
warnings.warn(
127.0.0.1 - - [11/Nov/2022 13:57:43] "POST /predict HTTP/1.1" 200 -
Ln 14, Col 13 Spaces: 4 UTF-8 CRLF Python 3.9.1 64-bit
```

OUTPUT:

Water Quality_prediction

By_PNT202022TMID35159

Enter values

pH value :

pH value

Hardness :

Hardness

Solids :

Solids

Chloramines :

Chloramines

Sulfate :

Sulfate

Conductivity :

Conductivity

Organic_carbon :

Organic_carbon

Trihalomethanes :

Trihalomethanes

Turbidity :

Turbidity

Water quality Test

water is safe for human consumption

Team Members: Varshini M(963319106120) - Thulasi S(963319106118) - Siva Jothi R(963319106096) - Sona T (963319106100)
for any queries contact varshinimurugan22102001@gmail.com

[Github link](#)

Test case 1 : (water is safe for human consumption)

Water Quality_prediction

By PNT202022TMID35159

Enter values

pH value :

13

Hardness :

120

Solids :

40

Chloramines :

12

Sulfate :

3

Conductivity :

350

Organic_carbon :

15

Trihalomethanes :

46

Turbidity :

7

Water quality Test

water is safe for human consumption

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[Github link](#)

Test case 2: (water is not safe for human consumption)

Water Quality_prediction

By PNT202022TMID35159

Enter values

pH value :

1

Hardness :

400

Solids :

3

Chloramines :

10

Sulfate :

10

Conductivity :

800

Organic_carbon :

5

Trihalomethanes :

120

Turbidity :

4

Water quality Test

water is not safe for human consumption

Team Members: Varshini M(963319106120) - Thulasi S(963319106118) - Siva Jothi R(963319106096) - Sona T (963319106100)

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