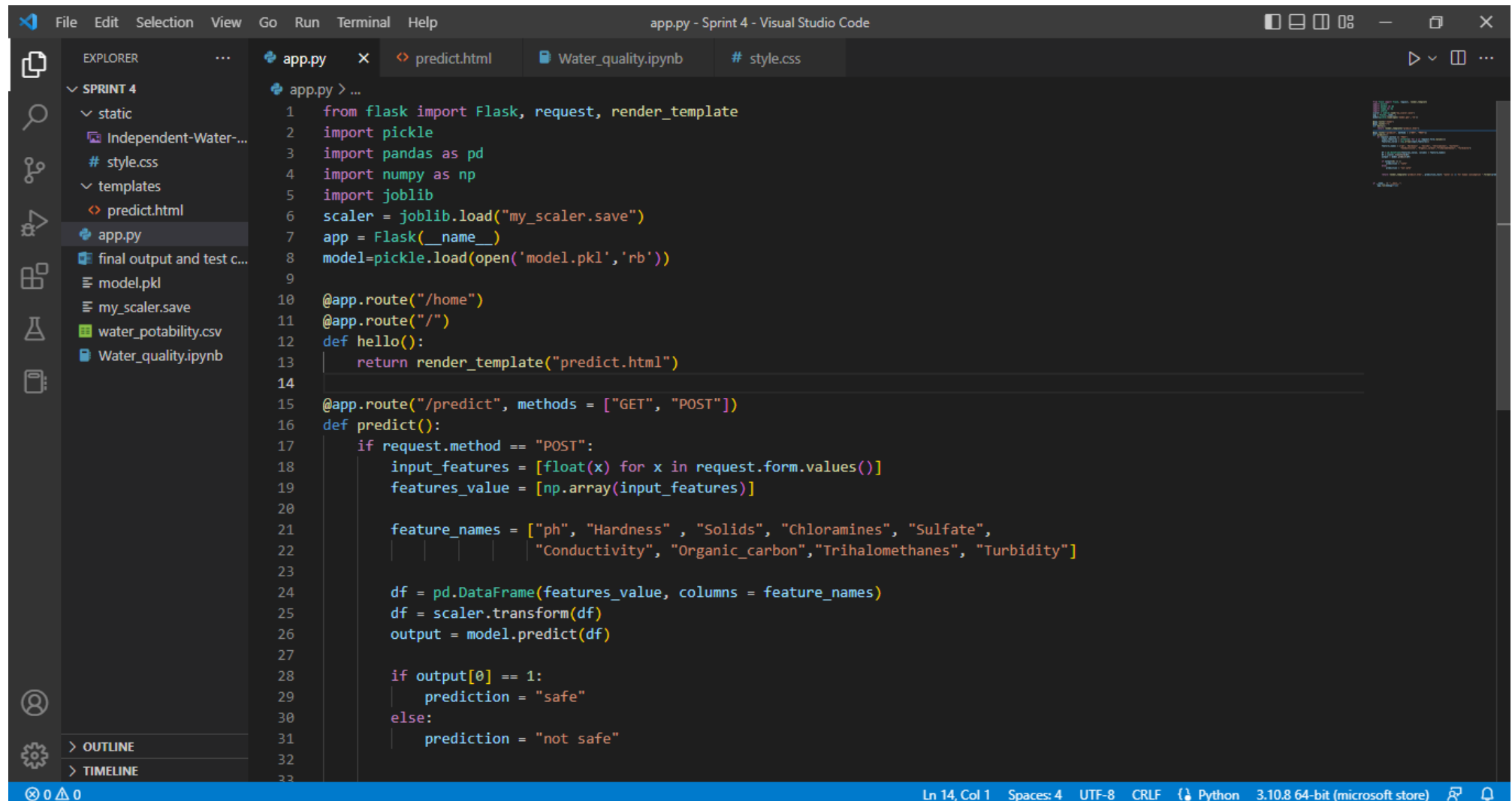


SPRINT 4

Project Deliverables (Flask Code & Deployment)

Team ID	PNT2022TMID53347
Project Name	Efficient Water Quality Analysis & Prediction using Machine Learning

App.py:



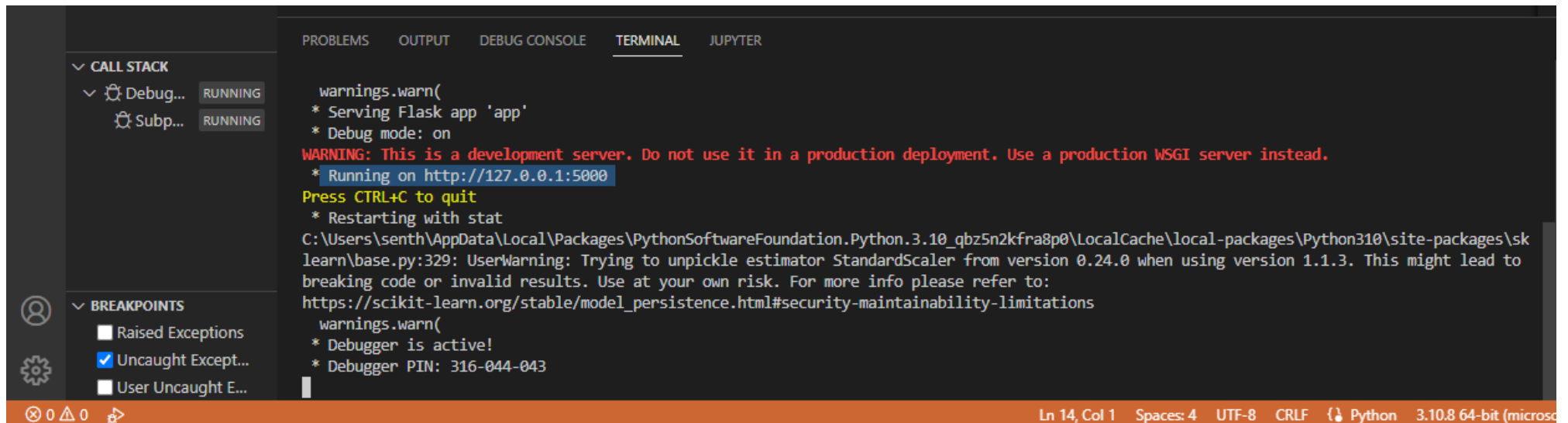
```
app.py - SPRINT 4 - Visual Studio Code

EXPLORER
  SPRINT 4
    static
    Independent-Water-...
    # style.css
    templates
    predict.html
    app.py
    final output and test c...
    model.pkl
    my_scaler.save
    water_potability.csv
    Water_quality.ipynb

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

Ln 14, Col 1 Spaces: 4 UTF-8 CRLF Python 3.10.8 64-bit (microsoft store)

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



The screenshot shows a VS Code interface with a terminal window open. The terminal displays the output of running a Flask application. The output includes a warning about using a development server, the URL `http://127.0.0.1:5000`, and a message to press CTRL+C to quit. The status bar at the bottom indicates the file is at line 14, column 1, with 4 spaces, using UTF-8 encoding and CRLF line endings, and is a Python 3.10.8 64-bit (microscopium) file.

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  JUPYTER

CALL STACK
  Debug... RUNNING
  Subp...  RUNNING

BREAKPOINTS
  Raised Exceptions
  [x] Uncaught Except...
  User Uncaught E...

warnings.warn(
* Serving Flask app 'app'
* Debug mode: on
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\senth\AppData\Local\Packages\PythonSoftwareFoundation.Python.3.10_qbz5n2kfra8p0\LocalCache\local-packages\Python310\site-packages\sk
learn\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: 316-044-043
```

In our case, it is running on <http://127.0.0.1:5000> (the default port number for flask is 5000)

OUTPUT:

← → ↻ 127.0.0.1:5000 ☆

Water Quality Prediction

Enter pH value

Enter Hardness

Enter Solids

Enter Chloramines

Enter Sulfate

Enter Conductivity

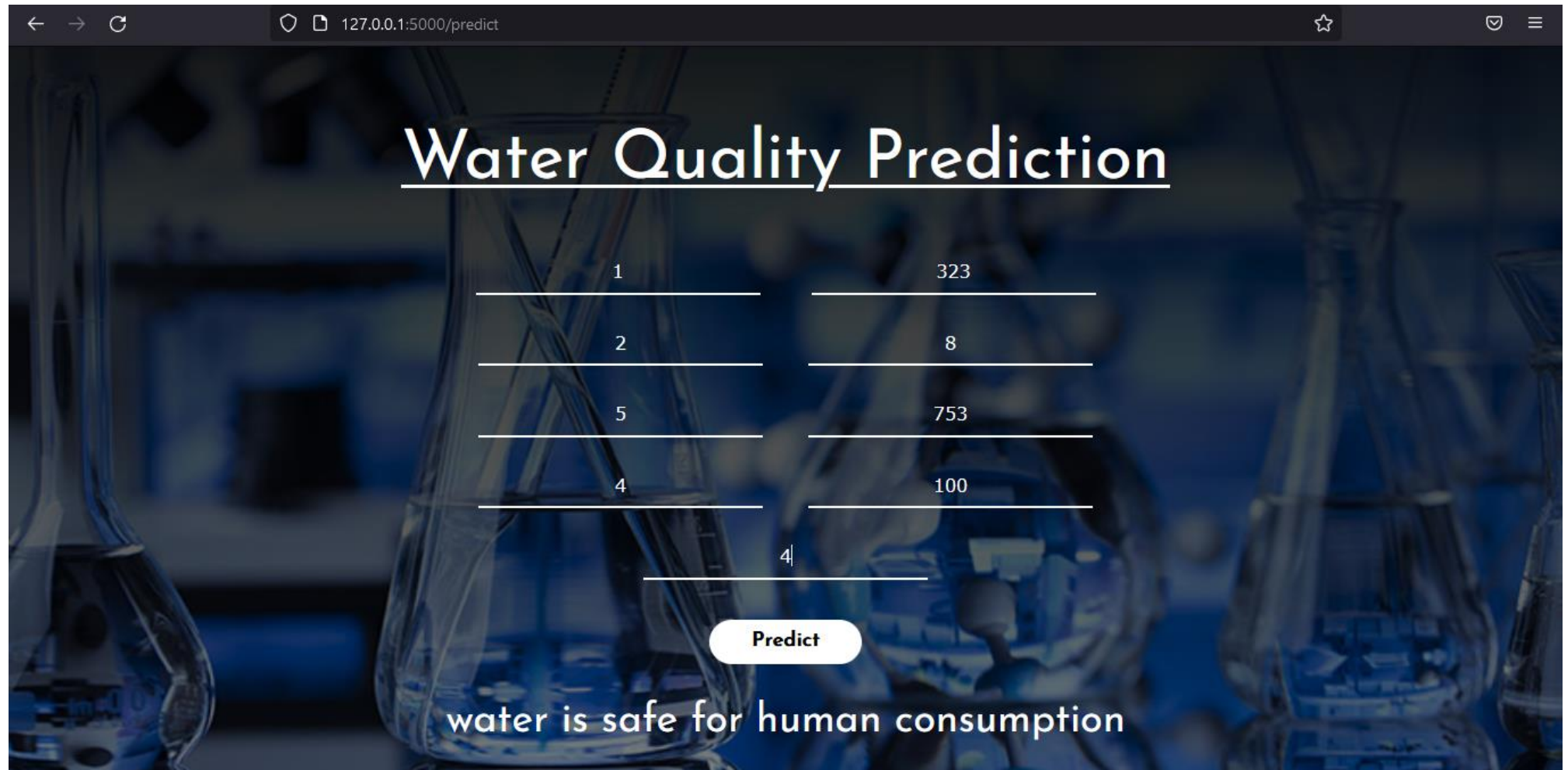
Enter Organic_carbon

Enter Trihalomethanes

Enter Turbidity

Predict

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



The image shows a web browser window displaying a "Water Quality Prediction" application. The browser's address bar shows the URL "127.0.0.1:5000/predict". The application has a dark blue background with a blurred image of laboratory glassware. The title "Water Quality Prediction" is centered at the top. Below the title, there are five input fields arranged in two columns. The first four fields contain the numbers 1, 2, 5, and 4. The fifth field, which is wider, contains the number 4. To the right of these fields, there are four corresponding output fields containing the values 323, 8, 753, and 100. Below the input fields is a white "Predict" button. At the bottom of the page, the text "water is safe for human consumption" is displayed in white.

Input	Output
1	323
2	8
5	753
4	100

Predict

water is safe for human consumption

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

← → ↻ 127.0.0.1:5000/predict ☆

Water Quality Prediction

14	290
61227	8
481	4
18	124
6	

Predict

water is not safe for human consumption