Date	19 / 11 / 2022
Team ID	PNT2022TMID06211
*	Efficient Water Quality Analysis and Prediction Using Machine Learning
Maximum Marks	8 Marks

# SPRINT-4

#### MAIN CODE

#### **Home.html**

```
<!DOCTYPE html>
<html lang="en">
<head>
 <meta charset="UTF-8">
 <meta http-equiv="X-UA-Compatible" content="IE=edge">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<link rel="stylesheet" href="style.css">
 <title>Product Landing Page</title>
</head>
<body>
<nav>
 <div class="logo">Brand</div>
 <!-- toggle menu button -->
 <span class="menubtn" onclick="openNav()">&#9776;</span>
 <div class="navLinks">
  ul>
    <a href="#">Home</a>
```

```
<a href="#">Services</a>
    <a href="#">Contact</a>
    <button type="button">Login</button>
  </div>
</nav>
 <!-- responsive side navbar -->
 <div class="sideNav" id="sidenav">
  <a href="#" class="closeBtn" onclick="closeNav()"> &#10006;</a>
  <a href="#">Home</a>
  <a href="#">Services</a>
  <a href="#">Contact</a>
  <a href="#"><button type="button">Login</button> </a>
 </div>
 <!-- javascript to make side menu appear -->
<script> function openNav() {         document.getElementById("sidenav").style.width
= "50%";
 function closeNav() {
document.getElementById("sidenav").style.width = "0%";
 }
</script>
</body>
</html>
```

### Login.html

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
```

```
<meta http-equiv="X-UA-Compatible" content="IE=edge">
 <meta name="viewport" content="width=device-width, initial-scale=1.0">
 <link rel="stylesheet" href="style.css">
<title>Product Landing Page</title>
</head>
<body>
<nav>
 <div class="logo">Brand</div>
 <!-- toggle menu button -->
 <span class="menubtn" onclick="openNav()">&#9776;</span>
 <div class="navLinks">
  ul>
   <a href="#">Home</a>
   <a href="#">About</a>
   <a href="#">Services</a>
   <a href="#">Contact</a>
   <button type="button">Login</button>
  </div>
</nav>
 <!-- responsive side navbar -->
 <div class="sideNav" id="sidenav">
  <a href="#" class="closeBtn" onclick="closeNav()"> &#10006;</a>
  <a href="#">Home</a>
  <a href="#">About</a>
  <a href="#">Services</a>
  <a href="#">Contact</a>
  <a href="#"><button type="button">Login</button> </a>
 </div>
```

```
<!-- Header content with banner image -->
 <div class="row">
  <div class="column1">
    <h1>Responsive Design</h1>
    Contact us for responsive web design to grow your business!
    <button>PURCHASE</button>
  </div>
  <div class="column2">
    <img src="https://www.hmablogs.com/wp-content/uploads/2022/06/banner-img.png"</pre>
alt="banner" width="500px">
  </div>
 </div>
 <!-- javascript to make side menu appear -->
          function openNav() {
<script>
document.getElementById("sidenav").style.width = "50%";
}
 function closeNav() {
document.getElementById("sidenav").style.width = "0%";
 }
</script>
</body>
</html>
```

## **Register.html**

```
<!DOCTYPE html>
<html lang="zxx">
<head>
```

```
<title>Water Quality Prediction</title>
  <!-- Meta tag Keywords -->
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <meta charset="UTF-8" />
                               <meta
name="keywords"
content="Login Form" />
  link
href="//fonts.googleapis.com/css2?family=Poppins:wght@300;400;500;600&display=swap"
rel="stylesheet">
  <script src="https://kit.fontawesome.com/af562a2a63.js"</pre>
crossorigin="anonymous"></script>
   k type="text/css" rel="stylesheet" href="{{ url_for('static', filename='css/style1.css')}
}}"/>
</head>
<body>
  <!-- form section start -->
  <section class="w3l-mockup-form">
     <div class="container">
       <!-- /form -->
       <div class="workinghny-form-grid">
         <div class="main-mockup">
            <div class="alert-close">
              <span class="fa fa-close"></span>
            </div>
            <div class="w3l_form align-self">
              <div class="left_grid_info">
                 <img src="{{ url_for('static', filename='images/img.jpg') }}" alt="">
              </div>
            </div>
            <div class="content-wthree">
```

```
<h2>Register Now</h2>
              <form action="/add_user" method="post">
                <input type="text" class="name" name="name" required</pre>
placeholder="Name">
                <input type="email" class="email" name="email" required</pre>
placeholder="Email">
                <input type="password" class="password" name="password" required
placeholder="Password">
                <button name="submit" class="btn" type="submit">Register</button>
              </form>
              <div class="social-icons">
                Have an account! <a href="/login">Login</a>.
              </div>
           </div>
         </div>
       </div>
       <!-- //form -->
    </div>
  </section>
  <!-- //form section start -->
  <script>
    $(document).ready(function (c) {
      $('.alert-close').on('click', function (c) {
         $('.main-mockup').fadeOut('slow', function (c) {
           $('.main-mockup').remove();
         });
       });
    });
```

```
</script>
</body>
</html>
Index.html
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <!-- The above 3 meta tags *must* come first in the head; any other head content must
come *after* these tags -->
  <title>Water Quality Prediction</title>
  link
          href="https://fonts.googleapis.com/css?family=Lato:400,700"
                                                                         rel="stylesheet">
             type="text/css"
                                    rel="stylesheet"
                                                                            url_for('static',
link
                                                           href="{ {
filename='css/bootstrap.min.css') }}" />
  k type="text/css" rel="stylesheet" href="{{ url_for('static', filename='css/style.css') }}"
/>
  <style>
  #booking
  {
       font-family: 'Lato', sans-serif;
background: url(../static/background.jpg);
background-size: cover;
                             backgroundposition:
```

color: #2c3b40;

center;

}

```
</style>
  <!--<img src="{{url_for('static', filename='background.png')}}" />-->
  <!-- HTML5 shim and Respond.js for IE8 support of HTML5 elements and media queries -
>
  <!-- WARNING: Respond.js doesn't work if you view the page via file:// --> <!-[if
lt IE 9]>
                <script
src="https://oss.maxcdn.com/html5shiv/3.7.3/html5shiv.min.js"></script>
               <script src="https://oss.maxcdn.com/respond/1.4.2/respond.min.js"></script>
               <script src="https://unpkg.com/aos@2.3.1/dist/aos.js"></script>
      <!-- ==== GSAP CDN ==== -->
      <script src="https://cdnjs.cloudflare.com/ajax/libs/gsap/3.8.0/gsap.min.js"></script>
      <!-- ==== SCRIPT.JS ==== -->
      <script src="{{url_for('static', filename='script.js')}}" defer></script>
</head>
<body style="background-color:#00ccff">
<div id="booking" class="section">
     <div class="section-center">
       <div class="container">
          <div class="row">
            <div class="col-md-4">
              <div class="booking-cta">
                 <h1>Water Quality Prediction</h1>
                 Let's Find the potability of the water
              </div>
            </div>
```

```
<div class="col-md-7 col-md-offset-1">
              <div class="booking-form">
                <form action={{ url_for("predict") }} method="post">
                   <div class="row">
                     <div class="col-md-4">
                        <div class="form-group">
                          <span class="form-label">ph:</span>
                             <input type="text" class="form-control" name="ph"</pre>
placeholder="Enter value" required="true">
                          <span class="select-arrow"></span>
                        </div>
                     </div>
                     <!Year>
                        <div class="col-md-4">
                          <div class="form-group">
                             <span class="form-label">Hardness: </span>
                             <input type="text" class="form-control" name="Hardness"</pre>
placeholder="Enter value" required="true">
                             <span class="select-arrow"></span>
                          </div>
                        </div>
                        <!Month>
                          <div class="col-md-4">
                             <div class="form-group">
                               <span class="form-label">Solids:</span>
                             <input type="text" class="form-control" name="Solids"</pre>
placeholder="Enter value" required="true">
                               <span class="select-arrow"></span>
```

```
</div>
                          </div>
                          <! Date>
                   </div>
                   <div class="row">
                     <div class="col-md-4">
                        <div class="form-group">
                          <span class="form-label">Chloramines:</span>
                             <input type="text" class="form-control" name="Chloramines"</pre>
placeholder="Enter value" required="true">
                          <span class="select-arrow"></span>
                        </div>
                     </div>
                     <!Year>
                        <div class="col-md-4">
                          <div class="form-group">
                             <span class="form-label">Sulfate:</span>
                             <input type="text" class="form-control" name="Sulfate"</pre>
placeholder="Enter value" required="true">
                             <span class="select-arrow"></span>
                          </div>
                        </div>
                        <!Month>
                          <div class="col-md-4">
                             <div class="form-group">
                               <span class="form-label">Conductivity:</span>
                             <input type="text" class="form-control" name="Conductivity"</pre>
placeholder="Enter value" required="true">
                               <span class="select-arrow"></span>
                             </div>
                          </div>
```

```
<! Date>
                   </div>
                   <div class="row">
                     <div class="col-md-4">
                        <div class="form-group">
                          <span class="form-label">Organic_carbon:</span>
                             <input type="text" class="form-control"</pre>
name="Organic_carbon" placeholder="Enter value" required="true">
                          <span class="select-arrow"></span>
                        </div>
                     </div>
                     <!Year>
                        <div class="col-md-4">
                          <div class="form-group">
                             <span class="form-label">Trihalomethanes:</span>
                             <input type="text" class="form-control"</pre>
name="Trihalomethanes" placeholder="Enter value" required="true">
                             <span class="select-arrow"></span>
                          </div>
                        </div>
                        <!Month>
                          <div class="col-md-4">
                             <div class="form-group">
                               <span class="form-label">Turbidity:</span>
                             <input type="text" class="form-control" name="Turbidity"</pre>
placeholder="Enter value" required="true">
                               <span class="select-arrow"></span>
                             </div>
                          </div>
                          <! Date>
                   </div>
```

```
<div class="row">
                     <div class="col-md-4">
                        <div class="form-group">
                          <span class="form-label">nph:</span>
                            <input type="text" class="form-control" name="nph"</pre>
placeholder="Enter value" required="true">
                          <span class="select-arrow"></span>
                        </div>
                     </div>
                     <!Year>
                        <div class="col-md-4">
                          <div class="form-group">
                            <span class="form-label">nHardness:</span>
                            <input type="text" class="form-control" name="nHardness"</pre>
placeholder="Enter value" required="true">
                            <span class="select-arrow"></span>
                          </div>
                        </div>
                        <!Month>
                          <div class="col-md-4">
                            <div class="form-group">
                               <span class="form-label">wph:</span>
                            <input type="text" class="form-control" name="wph"</pre>
placeholder="Enter value" required="true">
                               <span class="select-arrow"></span>
                            </div>
                          </div>
                          <! Date>
                   </div>
                   <div class="row">
```

```
<div class="col-md-4">
                        <div class="form-group">
                          <span class="form-label">wHardness:</span>
                            <input type="text" class="form-control" name="wHardness"</pre>
placeholder="Enter value" required="true">
                          <span class="select-arrow"></span>
                        </div>
                     </div>
                     <!Year>
                        <div class="col-md-4">
                          <div class="form-group">
                            <span class="form-label">wSolids:</span>
                            <input type="text" class="form-control" name="wSolids"</pre>
placeholder="Enter value" required="true">
                            <span class="select-arrow"></span>
                          </div>
                        </div>
                        <!Month>
                          <div class="col-md-4">
                            <div class="form-group">
                               <span class="form-label">wqi:</span>
                            <input type="text" class="form-control" name="wqi"</pre>
placeholder="Enter value" required="true">
                               <span class="select-arrow"></span>
                            </div>
                          </div>
                          <! Date>
                   </div>
                   <!--Year,Month,Date end-->
                   <div class="form-btn">
```

```
<button class="submit-btn">Predict</button>
                  </div>
                  <!Button>
                   {% if prediction_text == 0 %}
                   <h2>" Not Potable, the water can't be drink "</h2>
                   {% elif prediction_text == 1 %}
                   <h2>" Potable, the water can be drink "</h2>
                   {% endif %}
                   </center>
                </form>
                <!--Form end-->
              </div>
              <!Booking form>
           </div>
         </div>
       </div>
    </div>
  </div>
  </body>
</html>
```

#### App.py

```
from flask import Flask, render_template, request
import requests import requests
# NOTE: you must manually set API_KEY below using information retrieved from your
IBM Cloud account. But we are facing some issues with IBM account creation, so we unable
to set it.
import requests
API_KEY = ""
token_response = requests.post('https://iam.cloud.ibm.com/identity/token', data={"apikey":
API_KEY, "grant_type": 'urn:ibm:params:oauth:grant-type:apikey'}) mltoken =
token_response.json()["access_token"]
header = {'Content-Type': 'application/json', 'Authorization': 'Bearer' + mltoken}
app = Flask(__name__)
@app.route('/') def index():
  return render_template('index.html')
@app.route('/predict', methods = ['POST']) def
predict():
  ph = request.form['ph']
  Hardness = request.form['Hardness']
  Solids = request.form['Solids']
  Chloramines = request.form['Chloramines']
  Sulfate = request.form['Sulfate']
  Conductivity = request.form['Conductivity']
  Organic_carbon = request.form['Organic_carbon']
```

```
Trihalomethanes = request.form['Trihalomethanes']
Turbidity = request.form['Turbidity']
                                                                                                      nph =
request.form['nph']
                                                      nHardness =
request.form['nHardness']
                                                                       wph = request.form['wph']
wHardness = request.form['wHardness'] wSolids =
request.form['wSolids'] wqi = request.form['wqi']
              t
[[float(ph),float(Hardness),int(Solids),float(Chloramines),float(Sulfate),float(Conductivity),fl
oat(Organic_carbon),float(Trihalomethanes),float(Turbidity),int(nph),int(nHardness),float(w
ph),float(wHardness),float(wSolids),float(wqi)]]
      payload_scoring = {"input_data": [{"fields":
[["f0","f1","f2","f3","f4","f5","f6","f7","f8","f9","f10","f11","f12","f13","f14"]], "values":t10","f11","f12","f12","f13","f14"]], "values":t10","f11","f12","f12","f13","f14"]], "values":t10","f11","f12","f12","f13","f14"]], "values":t10","f11","f12","f12","f13","f14"]], "values":t10","f11","f12","f12","f13","f14"]], "values":t10","f11","f12","f13","f14"]], "values":t10","f11","f12","f13","f14"]], "values":t10","f11","f12","f13","f14"]], "values":t10","f11","f12","f13","f14"]], "values":t10","f11","f12","f13","f14"]], "values":t10","f11","f12","f13","f14"]], "values":t10","f11","f12","f13","f14"]], "values":t10","f11","f12","f13","f14"]], "values":t10","f11","f12","f13","f14"]], "values":t10","f13","f14"]], "values":t10","f13","f14"]], "values":t10","f13","f14"]], "values":t10","f14","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15","f15",
}]}
      response scoring = requests.post('https://us-
south.ml.cloud.ibm.com/ml/v4/deployments/94d69d4c-4e12-4662-
aba9fe193faa3d90/predictions?version=2022-11-07', json=payload_scoring,
headers={'Authorization': 'Bearer ' + mltoken})
      print("Scoring response")
payload_scoring = {"input_data": [{"fields":
[["f0","f1","f2","f3","f4","f5","f6","f7","f8","f9","f10","f11","f12","f13","f14"]], "values":t
}]}
      pred= response_scoring.json()
output=pred['predictions'][0]['values'][0][0]
print(output)
      return render_template("index.html", prediction_text = output)
```

```
if __name__ =='__main__':
    app.run(debug = False)
```