

Date	18 November 2022
TeamID	PNT2022TMID14930
ProjectName	Efficient Water Quality Analysis and Prediction Using Machine Learning
MaximumMarks	8Marks

## SPRINT-4

### SOURCE CODE

#### HOME:

```

<!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="menu.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>

        <li><a href="#">Home</a></li>

        <li><a href="#">About</a></li>

```

```

        <li><a href="#">Services</a></li>

        <li><a href="#">Contact</a></li>

        <button type="button">Login</button>

    </ul>

</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>

        <p>Contact us for responsive web design to grow your business!</p>

        <button>PURCHASE</button>

    </div>

    <div class="column2">

        

    </div>

</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:

```
<!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="menu.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>

                <li><a href="#">Home</a></li>
```

```

        <li><a href="#">About</a></li>
        <li><a href="#">Services</a></li>
        <li><a href="#">Contact</a></li>
        <button type="button">Login</button>
    </ul>
</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>
        <p>Contact us for responsive web design to grow your business!</p>
        <button>PURCHASE</button>
    </div>
    <div class="column2">
        
    </div>
</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>
```

## REGISTER:

```
<!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"
crossorigin="anonymous"></script>
    <link 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">



</div>

</div>

<div class="content-wthree">

<h2>Register Now</h2>

<p></p>

<form action="/add\_user" method="post">

<input type="text" class="name" name="name" required  
placeholder="Name">

<input type="email" class="email" name="email" required  
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">

<p>Have an account! <a href="/login">Login</a>.</p>

```
        </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:

```
<!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">

<link type="text/css" rel="stylesheet" href="{ { url\_for('static',  
filename='css/bootstrap.min.css') } }" />

<link 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;

background-position: center;

color: #2c3b40;

}

</style>

<!---->

<!-- 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>
```

```
<p>Let's Find the potability of the water</p>
```

```
</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"
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"
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"
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"
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"
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"
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"
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"
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"
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"  
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"  
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"  
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"
placeholder="Enter value" required="true">
            <span class="select-arrow"></span>
        </div>
    </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"
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"
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>

</p>

</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.

import requests

# NOTE: you must manually set API_KEY below using information retrieved from your
IBM Cloud account.

API_KEY = "nFFWACn7pVNTQWlnb7pusoXVa63g0vFEq_8Y2x2pxZSE"

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":t
}]}
```

```
    response_scoring = requests.post('https://us-
south.ml.cloud.ibm.com/ml/v4/deployments/94d69d4c-4e12-4662-aba9-
fe193faa3d90/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)
```