Phase 4:Smart water fountain

Some of specific requirements for a smart water fountain project Here are some key elements to consider:

Features:
1. On/Off Control:Users should be able to turn the water fountain on and off remotely.
2. Water Flow Adjustment: Allow users to control the water flow rate, enabling them to set the fountain's water height or intensity.
3. Scheduled Operation:Implement a scheduling feature to allow users to set specific times for the fountain to operate automatically.
4. Motion Activation:Include a motion sensor to trigger the fountain when someone approaches, adding an interactive element.
5.Water Quality Monitoring: Integrate sensors to monitor water quality parameters, such as pH or turbidity, and alert users if water quality falls below a certain threshold.
6. Temperature Control:Provide the option to control the water temperature, which can be particularly useful for decorative fountains.
7. LED Lighting: Add LED lighting with customizable colors and patterns to enhance the visual appeal, especially at night.

Sensors:
1. Water Level Sensor:To monitor the water level in the fountain and prevent it from running dry.
2. Motion Sensor: To detect nearby people or animals and trigger the fountain accordingly.
3. Temperature Sensor:For monitoring and controlling water temperature.
4. Water Quality Sensors:To measure parameters like pH, turbidity, or conductivity.
5. Humidity Sensor:Useful for detecting rain or humidity changes to turn off the fountain.
6. Light Sensor: For adjusting LED lighting based on ambient light conditions.

=>HTML

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport"
content="width=device-width,
initial-scale=1.0">
  <title>Smart Water Fountain</title>
  <link rel="stylesheet" href="styles.css">
<!-- Add your CSS file for styling -->
  <script src="script.js"></script> <!-- Add
your JavaScript file for interactivity -->
</head>
<body>
  <header>
    <h1>Smart Water Fountain</h1>
  </header>

  <main>
    <section id="status">
      <h2>Current Status</h2>
      <p id="status-text">Fetching data...</
p>
    </section>

    <section id="controls">
      <h2>Controls</h2>
      <button id="start-button">Start
Fountain</button>
      <button id="stop-button">Stop
Fountain</button>
    </section>
  </main>

  <footer>
    <p>&copy; 2023 Your Company</p>
  </footer>
</body>
</html>
```

2023-10-26

=>JavaScript

```
// Assuming you have a button with id
"startButton" and a div with id "status"

document.addEventListener('DOMContentL
oaded', function() {
  const startButton =
document.getElementById('startButton');
  const statusDiv =
document.getElementById('status');

  startButton.addEventListener('click',
function() {
    // Assuming you're using an API to
control the water fountain
    // You would replace this URL with your
actual API endpoint
    const apiUrl =
'https://your-api-endpoint.com/start
_fountain';

    fetch(apiUrl, {
      method: 'POST',
      headers: {
        'Content-Type': 'application/json',
      },
      body: JSON.stringify({ action:
'start' }), // Send relevant action to your API
    })
    .then(response => response.json())
    .then(data => {
      statusDiv.innerText = data.message;
    })
    .catch(error => {
      console.error('Error:', error);
      statusDiv.innerText = 'Error starting
fountain';
    });
  });
});
```

2023-10-26

=>CSS

```
/* styles.css */

/* Resetting default margin and padding */
body, h1, h2, h3, p {
    margin: 0;
    padding: 0;
}

/* Setting a background color and font */
body {
    background-color: #f8f8f8;
    font-family: Arial, sans-serif;
}

/* Header styles */
header {
    background-color: #333;
    color: #fff;
    text-align: center;
    padding: 1rem;
}

header h1 {
    font-size: 2rem;
}

/* Main content styles */
main {
    max-width: 800px;
    margin: 0 auto;
    padding: 2rem;
}

/* Section styles */
section {
    margin-bottom: 2rem;
}

/* Status section styles */
#status {
    background-color: #fff;
    padding: 1rem;
    border-radius: 8px;
    box-shadow: 0 2px 4px rgba(0, 0, 0, 0.1);
}

#status h2 {
    font-size: 1.5rem;
    margin-bottom: 1rem;
}

#status-text {
    font-size: 1.2rem;
}

/* Controls section styles */
#controls {
    background-color: #fff;
    padding: 1rem;
    border-radius: 8px;
    box-shadow: 0 2px 4px rgba(0, 0, 0, 0.1);
}

#controls h2 {
    font-size: 1.5rem;
    margin-bottom: 1rem;
}

button {
    font-size: 1.2rem;
    padding: 0.5rem 1rem;
    margin: 0.5rem;
    border: none;
    border-radius: 4px;
    cursor: pointer;
}

button#start-button {
    background-color: #28a745;
    color: #fff;
}

button#stop-button {
    background-color: #dc3545;
    color: #fff;
}

/* Footer styles */
footer {
    background-color: #333;
    color: #fff;
    text-align: center;
    padding: 1rem;
    position: fixed;
    bottom: 0;
    width: 100%;
}
```