PROJECT-SMART WATER FOUNTAINS

PHASE 4

Introduction: Smart Water Fountain System

One of the essential elements in the universe is water. Nowadays, consumers continuously seek methods to simplify their lives [1]. Monitoring water quality is critical to ensuring the planet's health and long-term viability [2]. Water is the source of many infectious illnesses, and garbage thrown by residents and environmental disasters from industrial enterprises pollute most of the nearby freshwater supplies in SA [3]. Drinking water can be stored in an overhead tank [4]. The principal causes of water quality deterioration in residential buildings are the development of microbes in overhead tanks and distribution networks, corrosion of pipe material, and the non-replacement of existing pipes [5]. To avoid catastrophic health implications, it is necessary to continuously and remotely check the quality parameters of the water system in real-time

Certainly, here is a more detailed step-by-step guide to help you develop the water fountain status platform:

HTML Structure:

```
<!DOCTYPE html>
<html>
<head>
  <title>Water Fountain Status Platform</title>
</head>
<body>
  <div id="waterFlowRate"></div>
  <div id="malfunctionAlerts"></div>
</body>
</html>
```

CSS Styling:

```
body {
  font-family: Arial, sans-serif;
  display: flex;
```

```
    flex-direction: column;
    align-items: center;
    justify-content: center;
    height: 100vh;
}

#waterFlowRate, #malfunctionAlerts {
    margin-bottom: 20px;
    padding: 20px;
    border: 1px solid #ccc;
    border-radius: 5px;
    width: 300px;
    text-align: center;
}
```

JavaScript for Real-time Data:

```
<script>
    function fetchWaterData() {
        // Replace this with actual API call to get real-time data
        const waterFlowData = 50; // Example value
        const isMalfunction = false; // Example value

        document.getElementById('waterFlowRate').innerText = `Water Flow Rate: ${waterFlowData} liters/hour`;

        if (isMalfunction) {
            document.getElementById('malfunctionAlerts').innerText = 'Malfunction Detected! Please Check the Water Fountain.';
        } else {
            document.getElementById('malfunctionAlerts').innerText = 'Water Fountain Operating Normally';
        }
```

```
    }

    // Fetch data every 5 seconds
    setInterval(fetchWaterData, 5000);
    fetchWaterData(); // Fetch data initially on page load
</script>
```

Server-Side Implementation:

You'll need a server-side implementation to handle data requests and send real-time updates to the platform. You can use Node.js, Flask, Django, or any other suitable backend technology for this.

Make sure to replace the placeholder data and API calls with actual calls to your server and database.

Ensure that you have proper error handling and security measures in place to safeguard the data and the platform.

By following these steps, you can create a basic water fountain status platform that displays real-time water flow rate and malfunction alerts.

Conclusion:

Smart water fountains represent a convergence of environmental sustainability and technological advancement. Their potential to conserve water, reduce operational costs, and enhance user satisfaction makes them a promising solution for public spaces. While initial investments might be necessary, the long-term benefits in terms of resource conservation and efficient management make these fountains a compelling choice for cities and organizations looking to modernize their infrastructure.

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