KINGS ENGINEERING COLLEGE

PROJECT TITTLE: ENVIRONMENTAL MONITORING

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Building a comprehensive environmental monitoring information platform and a mobile app for IoT-based environmental monitoring involves creating a system that receives, processes, and presents collected temperature, humidity datas in park system from sensors. Here are the steps to continue building this project:

 Let's continue building your project with a focus on the unique aspects of monitoring a park environment:

SITE SURVEY AND SENSOR PLACEMENT: Conduct a thorough site survey of the park to determine the optimal locations for sensors. Consider factors such as park layout, vegetation, and areas of interest for environmental monitoring.

SELECT OUTDOOR-RATED SENSORS: Choose sensors that are suitable for outdoor environments and can withstand varying weather conditions. Ensure the sensors are capable of accurately measuring temperature and humidity in open spaces.

COMMUNICATION INFRASTRUCTURE: Establish a robust communication infrastructure to connect sensors to the IoT platform. Consider wireless communication protocols suitable for outdoor deployment.

PARK-SPECIFIC PARAMETERS: Identify and integrate sensors for parameters specific to a park environment, such as soil moisture, light intensity, or air quality.

MOBILE APP FEATURES: Develop mobile app features tailored to a park setting, such as providing information about plant and animal species, guided tours based on environmental conditions, or alerts for special events.

PUBLIC INFORMATION DISPLAYS: Implement information displays within the park to showcase real-time environmental data, fostering environmental awareness among park visitors.

INTEGRATION WITH PARK FACILITIES: Integrate the monitoring system with existing park facilities, such as irrigation systems, to optimize resource usage based on environmental conditions.

EMERGENCY RESPONSE PLANNING: Implement features for emergency response, such as alerts for extreme weather conditions or other emergencies affecting park visitors.

GREEN ENERGY SOLUTIONS: Consider using green energy sources for powering the monitoring system, such as solar panels, to align with sustainability goals.

ACCESSIBILITY: Ensure that the mobile app and information displays are accessible to a diverse audience, including individuals with disabilities.

PARK RANGER TOOLS: Develop tools within the system specifically for park rangers, allowing them to monitor and manage the environmental data efficiently.

EDUCATIONAL OUTREACH: Incorporate educational elements into the mobile app, providing information about the park's ecosystem and the importance of environmental conservation.

Web development technologies (ex: html, Css, JavaScript) to create a platform that displays real time environmental data:

Here, we have an example program to implement this,

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Park Environmental Monitoring</title>
  <style>
    body {
      font-family: Arial, sans-serif;
      margin: 20px;
      background-color: #f4f4f4;
    }

    header {
      text-align: center;
      margin-bottom: 20px;
    }
```

```
    #sensor-data {

      display: flex;

      justify-content: space-around;

      flex-wrap: wrap;

    }


    .sensor {

      width: 200px;

      padding: 20px;

      margin: 10px;

      background-color: #fff;

      border: 1px solid #ddd;

      border-radius: 5px;

      box-shadow: 0 2px 5px rgba(0, 0, 0, 0.1);

      text-align: center;

    }
  </style>
</head>
<body>
  <header>
    <h1>Park Environmental Monitoring Platform</h1>
  </header>


  <div id="sensor-data"></div>


  <script>
    // Simulated real-time data
    setInterval(function() {
      updateSensorData('Sensor 1', getRandomValue(), getRandomValue());
```

```javascript
        updateSensorData('Sensor 2', getRandomValue(), getRandomValue());

        // Add more sensors as needed
    }, 3000); // Update every 3 seconds


    function getRandomValue() {
        return Math.floor(Math.random() * 30) + 20; // Simulating temperature/humidity values
    }


    function updateSensorData(sensorName, temperature, humidity) {
        const sensorContainer = document.getElementById(sensorName.toLowerCase().replace(' ', '-'));


        if (!sensorContainer) {
            // Create a new sensor container if it doesn't exist
            const newSensor = document.createElement('div');
            newSensor.className = 'sensor';
            newSensor.id = sensorName.toLowerCase().replace(' ', '-');
            document.getElementById('sensor-data').appendChild(newSensor);
        }


        // Update sensor data
        document.getElementById(sensorName.toLowerCase().replace(' ', '-') + '-
temperature').textContent = `${temperature}°C`;

        document.getElementById(sensorName.toLowerCase().replace(' ', '-') + '-humidity').textContent =
`${humidity}%`;
    }
</script>
</body>
</html
```

Sample output of environmental monitoring in park system using mobile application: