**IOT\_PHASE 3**

**ENVIRONMENTAL MONITORING**

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Deploying IoT devices like temperature and humidity sensors in public parks is a great idea to monitor environmental conditions. Here are some steps to get started:

1. **Device Selection:**

Choose appropriate IoT sensors capable of measuring temperature and humidity. Ensure they are durable and weather-resistant.

2. **Location Planning:**

Identify strategic locations within the parks to place the sensors. Consider factors like shade, proximity to vegetation, and areas with public interest.

3. **Power Supply:**

Ensure a stable power source for the sensors. Options include batteries, solar panels, or nearby electrical outlets.

4. **Data Connectivity:**

Set up a reliable data connectivity method, such as Wi-Fi, LoRaWAN, or cellular, to transmit sensor data to a central server.

5. **Data Storage and Analysis:**

Establish a database or cloud platform to store the collected data. Implement data analytics to extract meaningful insights.

6. **Data Visualization:**

Create user-friendly dashboards or mobile apps for park visitors and administrators to access and interpret the data.

7. **Security:**

Implement security measures to protect the data and devices from potential threats.

8. **Maintenance:**

Regularly maintain and calibrate the sensors to ensure accurate data collection.

8.**Community Engagement:**

Engage with park visitors and local communities to explain the project’s purpose and benefits.

9. **Compliance:**

Ensure compliance with privacy and data protection regulations, especially if personal data is collected.

10. **Continuous Improvement:**

Gather feedback and use the data to make improvements in the park based on environmental insights.

By following these steps, you can effectively deploy IoT devices to monitor environmental conditions in public parks, benefiting both park management and the community.

**Python Script:**

```python

Import time

Import requests

Import json

From sense\_hat import SenseHat # Use the appropriate library for your sensors

# Initialize the sensor

Sense = SenseHat()

# Define the monitoring platform URL

Platform\_url = ‘https://your-monitoring-platform.com/api/data’

While True:

# Read sensor data

Temperature = sense.get\_temperature()

Humidity = sense.get\_humidity()

Pressure = sense.get\_pressure()

# Create a JSON payload with the data

Data = {

‘temperature’: temperature,

‘humidity’: humidity,

‘pressure’: pressure

}

# Send data to the monitoring platform

Try:

Response = requests.post(platform\_url, json=data)

If response.status\_code == 200:

Print(“Data sent successfully”)

Else:

Print(“Failed to send data:”, response.status\_code)

Except Exception as e:

Print(“Error:”, str€)

# Send data at a specified interval (e.g., every 5 minutes)

Time.sleep(300)

```

Remember that the specific libraries and APIs you use may vary depending on your hardware and monitoring platform. This is a basic example to get you started, and you should adapt it to your specific requirements.