ENVIRONMENTAL MONITORING SYSTEM

PHASE3: development of environmental monitoring

Name: s.swetha-513221205021

1. Collect Data:

You'll need to interface with environmental sensors to gather data. For this example, let's assume you have a temperature and humidity sensor connected to your Raspberry Pi.

INPUT:

```
pip ins import time
import board
import adafruit_dht


dht_sensor = adafruit_dht.DHT22(board.D4)  # GPIO pin where the sensor is connected


while True:
  try:
    temperature_c = dht_sensor.temperature
    humidity = dht_sensor.humidity



    print(f"Temperature: {temperature_c}°C, Humidity: {humidity}%")
```

except RuntimeError as e:

print(f"Error: {e}")

time.sleep(60) # Collect data every 60 secondstall adafruit-circuitpython-dht

Create a Python script to collect sensor data:

OUTPUT:

Temperature: 25.0°C, Humidity: 50.0%

Temperature: 25.1°C, Humidity: 49.9%

Temperature: 25.2°C, Humidity: 50.2%

2. Data Processing and Analysis:

You can perform data analysis on the collected data to identify trends or anomalies. For this example, let's calculate the average temperature and humidity over a specific time period.

INPUT:

```
import time

data = []
```

```
while True:
  try:
    temperature_c = dht_sensor.temperature
    humidity = dht_sensor.humidity
    data.append((temperature_c, humidity))
    time.sleep(60)
  except RuntimeError as e:
    print(f"Error: {e}")

  if len(data) >= 10:
    avg_temp = sum([temp for temp, _ in data]) / len(data)
    avg_humidity = sum([hum for _, hum in data]) / len(data)
    print(f"Average Temperature: {avg_temp}°C, Average Humidity:
{avg_humidity}%")
    data = []  # Reset data
```

OUTPUT:

Average Temperature: 25.0°C, Average Humidity: 50.0%