TOPIC: ENVIRONMENTAL MONITORING

INDEX:

DEVELOPMENT PART 1

Python script for an IoT device that collects environmental data and sends it to the monetering platform

Python script to send environmental data to monetering platform:

import time

import random

import requests

import board

import adafruit\_dht

# Replace these with your actual monitoring platform API endpoint and authentication details

MONITORING\_PLATFORM\_API = "https://your-monitoring-platform-api.com/data"

API\_KEY = "api-key"

# Define the DHT22 sensor

dht\_pin = board.D4 # You can change this to the GPIO pin you have connected your DHT22 sensor to

dht\_sensor = adafruit\_dht.DHT22(dht\_pin)

def read\_sensor\_data():

try:

temperature = dht\_sensor.temperature

humidity = dht\_sensor.humidity

return temperature, humidity

except RuntimeError as e:

print(f"Failed to read sensor data: {e}")

return None, None

def send\_data\_to\_platform(temperature, humidity):

if temperature is not None and humidity is not None:

data = {

"temperature": temperature,

"humidity": humidity,

"timestamp": int(time.time())

}

headers = {

"Authorization": f"Bearer {API\_KEY}"

}

try:

response = requests.post(MONITORING\_PLATFORM\_API, json=data, headers=headers)

if response.status\_code == 200:

print(f"Data sent successfully: {data}")

else:

print(f"Failed to send data. Status code: {response.status\_code}")

except requests.exceptions.RequestException as e:

print(f"Error: {e}")

def main():

while True:

temperature, humidity = read\_sensor\_data()

send\_data\_to\_platform(temperature, humidity)

time.sleep(10) # Send data every 10 seconds (adjust as needed)

if \_\_name\_\_ == "\_\_main\_\_": main()

Note : This script sends data to your monitoring platform at regular intervals. Make sure you have the requests library installed (you can install it using pip install requests).

Note : use the adafruit\_dht library, which provides support for DHT sensors.

Install using command :

pip install adafruit-circuitpython-dht