ENVIRONMENTAL MONITORING SYSTEM

Coding:

import network

import time

from machine import Pin,ADC

import dht

import ujson

from umqtt.simple import MQTTClient

# MQTT Server Parameters

MQTT\_CLIENT\_ID = "micropython-weather-demo"

MQTT\_BROKER    = "broker.mqttdashboard.com"

MQTT\_USER      = ""

MQTT\_PASSWORD  = ""

MQTT\_TOPIC     = "wokwi-weather"

sensor = dht.DHT22(Pin(15))

MQ7=ADC(Pin(35))

MQ8=ADC(Pin(32))

button=Pin(34,Pin.IN)

led=Pin(33,Pin.OUT)

min\_rate=0

max\_rate=4095

print("Connecting to WiFi", end="")

sta\_if = network.WLAN(network.STA\_IF)

sta\_if.active(True)

whilenot sta\_if.isconnected():

  print(".", end sta\_if.connect('Wokwi-GU

EST', '')

="")

  time.sleep(0.1)

print(" Connected!")

print("Connecting to MQTT server... ", end="")

client = MQTTClient(MQTT\_CLIENT\_ID, MQTT\_BROKER, user=MQTT\_USER, password=MQTT\_PASSWORD)

client.connect()

print("Connected!")

prev\_weather = ""

whileTrue:

  CO\_sensor=(MQ7.read())\*100/(max\_rate)

  print("CO Sensor value: " + "%.2f" % CO\_sensor +"%")

  Hydrogen\_sensor=(MQ8.read())\*100/(max\_rate)

  print("Soil Sensor value: " + "%.2f" % Hydrogen\_sensor +"%")

  button\_value=button.value()

  if button\_value == True:

    led.value(000)

    print("It's Raining")

  else:

    led.value(0)

  print("Measuring weather conditions... ", end="")

  sensor.measure()

  message = ujson.dumps({

    "temp": sensor.temperature(),

    "humidity": sensor.humidity(),

  })

  if message != prev\_weather:

    print("Updated!")

    print("Reporting to MQTT topic {}: {}".format(MQTT\_TOPIC, message))

    client.publish(MQTT\_TOPIC, message)

    prev\_weather = message

  else:

    print("No change")

  time.sleep(1)

RESULT:

