Assignment -2

Python code to generate

Temperature and Humidity value

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CODE:

#include <WiFi.h>

#include "Adafruit\_MQTT.h"

#include "Adafruit\_MQTT\_Client.h"

#include "DHT.h"

#define DHTPIN 13

#define DHTTYPE DHT11

DHT dht(DHTPIN, DHTTYPE);

/\*\*\*\* WiFi Access Point \*\*\*\*\*\*/#define WLAN\_SSID "Thiru"

#define WLAN\_PASS "thiru123"

/\*\*\*\*\* Adafruit.io Setup \*\*\*\*\*\*/

#define AIO\_SERVER "io.adafruit.com"

#define AIO\_SERVERPORT 1883 // use 8883 for SSL

#define AIO\_USERNAME "Dr\_Thiru"

#define AIO\_KEY "aio\_dQCc05qOAeIu2XO31VIu3wHbmpNv"

/\*\*\*\* Global State\*\*\*\*\*\*\*/

/\* Create an WiFiClient class to connect to the MQTT server.\*/

WiFiClient client;

/\* Setup the MQTT client class by passing in the WiFi client and

MQTT server and login details.\*/

Adafruit\_ MQTT\_Client mqtt(&client, AIO\_SERVER,

AIO\_SERVERPORT,AIO\_USERNAME,AIO\_KEY);

Adafruit\_MQTT\_Publish dht\_temp =Adafruit\_MQTT\_Publish

(&mqtt,AIO\_USERNAME “/feeds/DHT\_Temp”);

Adafruit\_MQTT\_Publish dht\_humidity+Adafruit\_MQTT\_Publish

(&mqtt,AIO\_USERNAME”/feeds/DHT\_Humidity”);

void MQTT\_connect();

void setup() { Serial.begin(9600);

delay(10);

Serial.println(F("DHTxx test!"));

dht.begin();

Serial.println(F("Adafruit MQTT demo"));

// Connect to WiFi access point.

Serial.println();

Serial.print("Connecting to ");

Serial.println(WLAN\_SSID);

WiFi.begin(WLAN\_SSID, WLAN\_PASS);

while (WiFi.status() != WL\_CONNECTED) {

delay(500);

Serial.print(".");

}

Serial.println();

Serial.println("WiFi connected");

Serial.println("IP address: ");

Serial.println(WiFi.localIP());

}

void loop() {

/\* Ensure the connection to the MQTT server is alive (this will

Make the first connection and automatically reconnect when

Disconnected).

See the MQTT\_connect function definition further below.\*/

MQTT\_connect();

float h = dht.readHumidity();

float t = dht.readTemperature();

float f = dht.readTemperature(true);

Serial.print("Humidity(%): ");

Serial.print(h);

Serial.print(" Temperature (°C): ");

Serial.print(t);

Serial.print(" Temperature(F): ");

Serial.println(f);//Mqtt Publish data

if (! dht\_temp.publish(t)) {

Serial.println(F("Failed"));

} else {

Serial.println(F("OK!"));

}

delay(10000);

if (! dht\_humidity.publish(h)) {

Serial.println(F("Failed"));

} else {

Serial.println(F("OK!"));

}

delay(1000);

}

/\* Function to connect and reconnect as necessary to the MQTT

Serve.Should be called in the loop function and it will take care if

Connecting.\*/

void MQTT\_connect() {

int8\_t ret;

// Stop if already connected.

if (mqtt.connected()) {

return;

}

Serial.print("Connecting to MQTT... ");

uint8\_t retries = 1;

while ((ret = mqtt.connect()) != 0) {

// connect will return 0 for connected

Serial.println(mqtt.connectErrorString(ret));

Serial.println("Retrying MQTT connection in 5 seconds...");

mqtt.disconnect();

delay(3000);

retries--;

if (retries == 0) {// basically die and wait for reset

while (1);

}

}

Serial.println("MQTT Connected!");

}