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!");
}
```