#include "DHT.h"

#define DPIN 4 // pin to connect DHT sensor

#define DTYPE DHT22 // define DHT22 sensor type

DHT dht(DPIN, DTYPE);

unsigned long startTime;

int startHour = 22; // Set this to the current hour when starting the Arduino

int startMinute = 11; // Set this to the current minute when starting the Arduino

int startSecond = 0; // Set this typically to zero

void setup() {

Serial.begin(9600);

dht.begin();

startTime = millis();

}

void loop() {

delay(2000);

unsigned long currentTime = millis();

unsigned long elapsedTime = (currentTime - startTime) / 1000; // in seconds

int hours = (elapsedTime / 3600 + startHour) % 24;

int minutes = ((elapsedTime % 3600) / 60 + startMinute) % 60;

int seconds = (elapsedTime % 60 + startSecond) % 60;

float tc = dht.readTemperature(false); // Read temperature in C

float tf = dht.readTemperature(true); // Read temperature in F

float hu = dht.readHumidity(); // Read Humidity

Serial.print("Time: ");

Serial.print(hours);

Serial.print(":");

Serial.print(minutes);

Serial.print(":");

Serial.print(seconds);

Serial.print(" Temp: ");

Serial.print(tc);

Serial.print(" C, ");

Serial.print(tf);

Serial.print(" F, Hum: ");

Serial.print(hu);

Serial.println("%");

}

#include <ESP8266WiFi.h>

#include <PubSubClient.h>

#include <DHT.h>

#define DHTPIN D2 // Change the pin accordingly

#define DHTTYPE DHT22 // DHT 22

// WiFi credentials

const char\* ssid = "FRITZ!BoxWifi"; // Replace with your SSID

const char\* password = "74781318"; // Replace with your WiFi password

// MQTT Broker

const char\* mqtt\_server = "broker.hivemq.com";

WiFiClient espClient;

PubSubClient client(espClient);

DHT dht(DHTPIN, DHTTYPE);

void setup() {

Serial.begin(115200);

setup\_wifi();

client.setServer(mqtt\_server, 1883);

dht.begin();

}

void setup\_wifi() {

delay(10);

// Connecting to a WiFi network

Serial.println();

Serial.print("Connecting to ");

Serial.println(ssid);

WiFi.begin(ssid, password);

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

delay(500);

Serial.print(".");

}

Serial.println("");

Serial.print("WiFi connected - IP address: ");

Serial.println(WiFi.localIP());

}

void loop() {

if (!client.connected()) {

reconnect();

}

client.loop();

// Read data from DHT22

float humidity = dht.readHumidity();

float temperature = dht.readTemperature();

// Check if any reads failed

if (isnan(humidity) || isnan(temperature)) {

Serial.println("Failed to read from DHT sensor!");

return;

}

String temp = "Temperature: " + String(temperature);

String hum = "Humidity: " + String(humidity);

// Publish data

client.publish("home/temperature", temp.c\_str());

client.publish("home/humidity", hum.c\_str());

}

// Function to reconnect to MQTT

void reconnect() {

while (!client.connected()) {

Serial.print("Attempting MQTT connection...");

// Attempt to connect

if (client.connect("ESP8266Client")) {

Serial.println("connected");

// Once connected, publish an announcement...

client.publish("outTopic", "hello world");

// ... and resubscribe

client.subscribe("inTopic");

} else {

Serial.print("failed, rc=");

Serial.print(client.state());

Serial.println(" try again in 5 seconds");

// Wait 5 seconds before retrying

delay(5000);

}

}

}