#include <SoftwareSerial.h>

#include <dht11.h>

#define RX 2

#define TX 3

#define dht\_apin A2 // Analog Pin sensor is connected to

dht11 dhtObject;

String AP = "UR"; // AP NAME

String PASS = "ravi2001"; // AP PASSWORD

String API = "CK7VI3KOS2KD2RMX"; // Write API KEY

String HOST = "api.thingspeak.com";

String PORT = "80";

int countTrueCommand;

int countTimeCommand;

int msensor = A1;

int msvalue = 0;

boolean found = false;

int valSensor = 1;

int sensorvalue;

SoftwareSerial esp8266(RX, TX);

void setup() {

Serial.begin(9600);

esp8266.begin(115200);

sendCommand("AT", 5, "OK");

sendCommand("AT+CWMODE=1", 5, "OK");

sendCommand("AT+CWJAP=\"" + AP + "\",\"" + PASS + "\"", 20, "OK");

}

void loop() {

String getData = "GET /update?api\_key=" + API + "&field1=" + getTemperatureValue() + "&field2=" + getHumidityValue()+"&field3=" + getsoilmoisturevalue()+"&field4=" + getuvradiationvalue();

sendCommand("AT+CIPMUX=1", 5, "OK");

sendCommand("AT+CIPSTART=0,\"TCP\",\"" + HOST + "\"," + PORT, 15, "OK");

sendCommand("AT+CIPSEND=0," + String(getData.length() + 4), 4, ">");

esp8266.println(getData); delay(1500); countTrueCommand++;

sendCommand("AT+CIPCLOSE=0", 5, "OK");

}

String getTemperatureValue() {

dhtObject.read(dht\_apin);

Serial.print(" Temperature(C)= ");

int temp = dhtObject.temperature;

Serial.println(temp);

delay(50);

return String(temp);

}

String getHumidityValue() {

dhtObject.read(dht\_apin);

Serial.print(" Humidity in %= ");

int humidity = dhtObject.humidity;

Serial.println(humidity);

delay(50);

return String(humidity);

}

int getsoilmoisturevalue() {

msvalue = analogRead(msensor);

Serial.println(msvalue);

delay(1000);

return int(msvalue);

}

int getuvradiationvalue(){

sensorvalue=analogRead(36);

Serial.println(sensorvalue);

delay(1000);

return int(sensorvalue);

}

void sendCommand(String command, int maxTime, char readReplay[]) {

Serial.print(countTrueCommand);

Serial.print(". at command => ");

Serial.print(command);

Serial.print(" ");

while (countTimeCommand < (maxTime \* 1))

{

esp8266.println(command);//at+cipsend

if (esp8266.find(readReplay)) //ok

{

found = true;

break;

}

countTimeCommand++;

}

if (found == true)

{

Serial.println("Ok");

countTrueCommand++;

countTimeCommand = 0;

}

if (found == false)

{

Serial.println("Fail");

countTrueCommand = 0;

countTimeCommand = 0;

}

found = false;

}