#include <IRremote.h>

#include <U8glib.h>

#include <Wire.h>

#include <ESP8266.h>

#include <I2Cdev.h>

#include <Microduino\_SHT2x.h>

#include <SoftwareSerial.h>

#define SSID "vivo Y7s" //改为你的热点名称, 不要有中文

#define PASSWORD "abcdefgh"//改为你的WiFi密码Wi-Fi密码

#define DEVICEID "576960151" //OneNet上的设备ID

String apiKey = "akWK2L9aCWt4znaTMEU8Z=peeWg=";//与你的设备绑定的APIKey

#define INTERVAL\_LCD 20 //定义OLED刷新时间间隔

unsigned long lcd\_time = millis(); //OLED刷新时间计时器

U8GLIB\_SSD1306\_128X64 u8g(U8G\_I2C\_OPT\_NONE); //设置OLED型号

#define setFont\_L u8g.setFont(u8g\_font\_7x13) //字体设置

#define setFont\_M u8g.setFont(u8g\_font\_fixed\_v0r)

#define setFont\_S u8g.setFont(u8g\_font\_fixed\_v0r)

#define setFont\_SS u8g.setFont(u8g\_font\_fub25n)

#define HOST\_NAME "api.heclouds.com"

#define HOST\_PORT (80)

#define INTERVAL\_SENSOR 5000 //定义传感器采样时间间隔 597000

#define INTERVAL\_NET 5000 //定义发送时间

#define IDLE\_TIMEOUT\_MS 3000

#define INTERVAL\_sensor 2000

#define INTERVAL\_OLED 1000

#define EspSerial mySerial

#define UARTSPEED 9600

#define hum 50 //定义预设湿度值为50%

int RECV\_PIN = 10;

int lightPin = A0;

unsigned long sensorlastTime = millis();

unsigned long net\_time1 = millis(); //数据上传服务器时间

unsigned long sensor\_time = millis(); //传感器采样时间计时器

char buf[10];

String mCottenData;

String jsonToSend;

String postString; //用于存储发送数据的字符串

float sensor\_tem, sensor\_hum, sensor\_lux; //传感器温度、湿度、光照

float tempOLED, humiOLED, lightnessOLED;

char sensor\_tem\_c[7], sensor\_hum\_c[7], sensor\_lux\_c[7] ; //换成char数组传输

SoftwareSerial mySerial(2, 3); // RX:D3, TX:D2

ESP8266 wifi(&EspSerial);

Tem\_Hum\_S2 TempMonitor;

IRrecv irrecv(RECV\_PIN);

decode\_results results;

const unsigned char PROGMEM bupt[] = {

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x04,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x0E,0x00,0x00,0x0C,0x00,0x00,0x00,0x00,0x03,0x00,

0x00,0x00,0x00,0x00,0xE0,0x00,0x1E,0x00,0x00,0x1E,0x00,0x00,0x00,0x00,0x03,0x80,

0x00,0x00,0x00,0x00,0xF0,0x00,0x1E,0x00,0x00,0x1E,0x00,0x00,0x00,0x00,0x03,0xC0,

0x00,0x06,0x00,0x00,0xF8,0x00,0x1E,0x00,0x00,0x1E,0x00,0x00,0x00,0x00,0x03,0x80,

0x00,0x0F,0x00,0x00,0xF8,0x00,0x3C,0x00,0x00,0x1E,0x00,0x00,0xC0,0x00,0x33,0x00,

0x00,0x0F,0x00,0x00,0xF0,0x80,0x3F,0x00,0x00,0x3C,0x00,0x01,0xC0,0x00,0xF7,0x00,

0x00,0x07,0x00,0x01,0xE7,0xE0,0x7F,0x00,0x00,0x60,0x40,0x01,0xC0,0x00,0xFB,0xC0,

0x03,0x87,0x00,0x01,0x1F,0xE0,0x5F,0x0F,0x00,0x47,0xF0,0x01,0xC0,0x01,0xF7,0xC0,

0x03,0xC7,0x00,0x00,0x7F,0xE0,0x1E,0x1F,0x00,0x8F,0xF0,0x01,0xC0,0x01,0xFF,0x80,

0x03,0xC7,0x00,0x00,0xFF,0xC0,0x3E,0x3F,0x01,0x9F,0xF8,0x01,0xC0,0x03,0xFF,0x00,

0x03,0xC7,0x00,0x03,0xFE,0x00,0x7F,0x7F,0x01,0xBE,0x38,0x01,0xF0,0x03,0xFF,0x80,

0x03,0xC7,0x00,0x07,0xF8,0x00,0x7F,0xF7,0x03,0x7E,0x38,0x01,0xF8,0x03,0xFB,0x80,

0x03,0xC7,0x00,0x1F,0xE0,0x00,0x7F,0xAE,0x07,0xEF,0x70,0x03,0xF8,0x03,0xF9,0xC0,

0x03,0xC7,0x00,0x3F,0x98,0x00,0x7F,0xEE,0x07,0xEF,0xE0,0x07,0xF8,0x01,0xF1,0x80,

0x03,0xC7,0xF0,0xFE,0x78,0x00,0xFF,0xFE,0x07,0xFF,0xE0,0x0F,0xC0,0x01,0xF3,0xE0,

0x0F,0x87,0xF0,0xFC,0xFC,0x01,0xFF,0x7E,0x07,0xFF,0x00,0x07,0x80,0x01,0x87,0xF0,

0x1F,0x87,0xF0,0xF1,0xFC,0x01,0xFE,0x76,0x07,0x7F,0x00,0x03,0x80,0x00,0x0F,0xF0,

0x1F,0x8F,0xC0,0xE1,0xD8,0x01,0xFF,0xF6,0x07,0x5F,0x00,0x03,0xC0,0x00,0x7F,0xF0,

0x0F,0x8F,0x80,0xC1,0xD8,0x01,0xFF,0xF6,0x06,0xDE,0x00,0x07,0xC0,0x02,0xFC,0x70,

0x03,0x9F,0x00,0x01,0xF8,0x01,0xFF,0xF6,0x02,0xFE,0x00,0x07,0xE0,0x03,0xF6,0x40,

0x03,0x3F,0x00,0x03,0xF0,0x00,0x3F,0x76,0x00,0xFF,0x80,0x06,0x70,0x07,0xCF,0x00,

0x03,0xFE,0x00,0x03,0xE0,0x00,0x7C,0x66,0x00,0xFF,0x80,0x06,0x70,0x07,0x1F,0x00,

0x03,0xFE,0x00,0x03,0xE0,0x00,0xFE,0x7E,0x00,0x7F,0x80,0x0E,0x38,0x07,0x1F,0x00,

0x03,0xEF,0x00,0x03,0xE0,0x00,0xFE,0x7C,0x00,0xFF,0x80,0x1C,0x3C,0x0F,0x0E,0x00,

0x03,0xCF,0xC0,0x01,0xF0,0x00,0x1E,0x78,0x00,0xFD,0x80,0x18,0x3E,0x0E,0x0E,0x00,

0x0F,0x87,0xC0,0x00,0x7C,0x00,0x3E,0x70,0x00,0xDF,0x80,0x38,0x1F,0x0E,0x0F,0xC0,

0x3F,0x03,0xC0,0x00,0x7E,0x00,0x3C,0x60,0x01,0xDF,0x00,0x70,0x0F,0x84,0x3F,0xC0,

0x3E,0x03,0xC0,0x00,0x7E,0x00,0x00,0x60,0x01,0xFE,0x00,0x60,0x07,0xC0,0xFF,0xC0,

0x3C,0x07,0xC0,0x06,0x6E,0x00,0x00,0x60,0x00,0xFE,0x00,0x00,0x03,0x00,0xFE,0x00,

0x00,0x0F,0x80,0x0E,0xEE,0x00,0x00,0x60,0x00,0xFC,0x00,0x00,0x00,0x00,0xFE,0x00,

0x00,0x04,0x00,0x0E,0xE6,0x00,0x00,0x60,0x00,0x0C,0x00,0x00,0x00,0x00,0xCE,0x00,

0x00,0x00,0x00,0x0E,0x60,0x00,0x00,0x60,0x00,0x0F,0xC0,0x00,0x00,0x00,0x0E,0x00,

0x00,0x00,0x00,0x0E,0x60,0x00,0x00,0x60,0x00,0x07,0xE0,0x00,0x00,0x00,0x3C,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x60,0x00,0x07,0xE0,0x00,0x00,0x00,0x3C,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x60,0x00,0x00,0x00,0x00,0x00,0x00,0x1C,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x60,0x00,0x00,0x00,0x00,0x00,0x00,0x1C,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x60,0x00,0x00,0x00,0x00,0x00,0x00,0x08,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x60,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x60,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x60,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x60,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x60,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,

0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00

};

void setup(void) { //系统准备工作

irrecv.enableIRIn(); // 启动红外解码

Wire.begin();

Serial.begin(115200);//等待串口就绪

while (!Serial);

delay(100);

pinMode(lightPin, INPUT);

pinMode(A6,OUTPUT);

WifiInit(EspSerial, UARTSPEED);//初始化wifi

Serial.print(F("FW Version:"));

Serial.println(wifi.getVersion().c\_str()); //获取FW Version值

if (!wifi.setOprToStationSoftAP()) {

Serial.print(F("在setOprToStation这一步出错\r\n"));

}

if (wifi.joinAP(SSID, PASSWORD)) {

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

Serial.println( wifi.getLocalIP().c\_str());

} else {

Serial.print(F("Join AP failure\r\n"));

}

if (!wifi.disableMUX()){

Serial.print(F("single err\r\n"));

} else{

Serial.print(F("一切就绪\r\n"));

}

if(wifi.createTCP(HOST\_NAME, HOST\_PORT))

{Serial.println("createTCP ok");}

}

void loop(void)

{ if(sensor\_hum<=hum)

{digitalWrite(A6,HIGH);//接通工作电路，让加湿器开始工作

}

if (irrecv.decode(&results)) {

Serial.println(results.value, HEX);//串口打印接收的红外信息

if(results.value == 0x1FE48B7){

u8g.firstPage();

do {

setFont\_M;

u8g.drawBitmapP(0, 0, 16, 64, bupt);

}while (u8g.nextPage());

delay(5000);

u8g.firstPage();

do {

setFont\_M;

u8g.setPrintPos(0,10);

u8g.print("Welcome to the intell");

u8g.setPrintPos(0,25);

u8g.print("-igent car designed by");

u8g.setPrintPos(0,40);

u8g.print("dormitory 433 of BUPT");

}while (u8g.nextPage());

}

irrecv.resume(); // 接收下一个值

}

if (sensor\_time > millis()) sensor\_time = millis();

if(millis() - sensor\_time > INTERVAL\_SENSOR) //传感器采样时间间隔

{

getSensorData(); //读串口中的传感器数据

sensor\_time = millis();

}

if (net\_time1 > millis()) net\_time1 = millis();

if (millis() - net\_time1 > INTERVAL\_NET) //发送数据时间间隔

{

updateSensorData(); //将数据上传到服务器的函数

net\_time1 = millis();

}

}

void getSensorData(){

sensor\_tem = TempMonitor.getTemperature();

sensor\_hum = TempMonitor.getHumidity();

sensor\_lux = analogRead(lightPin);

dtostrf(sensor\_tem, 2, 1, sensor\_tem\_c);

dtostrf(sensor\_hum, 2, 1, sensor\_hum\_c);

dtostrf(sensor\_lux, 3, 1, sensor\_lux\_c);

}

void updateSensorData() {

Serial.print("可以发送数据\r\n");

jsonToSend="{\"Temperature\":";//待发送内容

dtostrf(sensor\_tem,1,2,buf);

jsonToSend+="\""+String(buf)+"\"";

jsonToSend+=",\"Humidity\":";

dtostrf(sensor\_hum,1,2,buf);

jsonToSend+="\""+String(buf)+"\"";

jsonToSend+=",\"Light\":";

dtostrf(sensor\_lux,1,2,buf);

jsonToSend+="\""+String(buf)+"\"";

jsonToSend+="}";

postString="POST /devices/";

postString+=DEVICEID;

postString+="/datapoints?type=3 HTTP/1.1";

postString+="\r\n";

postString+="api-key:";

postString+=apiKey;

postString+="\r\n";

postString+="Host:api.heclouds.com\r\n";

postString+="Connection:close\r\n";

postString+="Content-Length:";

postString+=jsonToSend.length();

postString+="\r\n";

postString+="\r\n";

postString+=jsonToSend;

postString+="\r\n";

postString+="\r\n";

postString+="\r\n";

const char \*postArray = postString.c\_str(); //将str转化为char数组

wifi.send((const uint8\_t\*)postArray, strlen(postArray)); //send发送命令，参数必须是这两种格式，尤其是(const uint8\_t\*)

Serial.println(postArray);

Serial.println("send success");

postArray = NULL; //清空数组，等待下次传输数据

}