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Assignment-3

Automation of lights and fans in the room depending on the external light intensity and temperature.

#include “DHT.h”

#define DHTPIN 4

#define DHTTYPE DHT11

DHT dht(DHTPIN, DHTTYPE);

#include <Wire.h>

#include <Adafruit\_GFX.h>

#include <Adafruit\_SSD1306.h>

#define SCREEN\_WIDTH 128 // OLED display width, in pixels

#define SCREEN\_HEIGHT 64 // OLED display height, in pixels

// Declaration for an SSD1306 display connected to I2C (SDA, SCL pins)

Adafruit\_SSD1306 display(SCREEN\_WIDTH, SCREEN\_HEIGHT, &Wire, -1);

Void setup() {

Serial.begin(9600);

Serial.println(F(“DHTxx test!”));

Dht.begin();

Serial.begin(115200);

Delay(1000);

Serial.println(“oled testing”);

If(!display.begin(SSD1306\_SWITCHCAPVCC, 0x3C)) {

Serial.println(“SSD1306 allocation failed”);

For(;;);}

Delay(2000);

Display.clearDisplay();

Display.setTextSize(1);

Display.setTextColor(WHITE);

Display.setCursor(0, 10);

// Display static text

Display.println();

Display.display();

pinMode(2,OUTPUT);

pinMode(13,OUTPUT);

Serial.begin(9600);

}

Void loop() {

Delay(2000);

Float h = dht.readHumidity();

Float t = dht.readTemperature();

Float f = dht.readTemperature(true);

If (isnan(h) || isnan(t) || isnan(f)) {

Serial.println(F(“Failed to read from DHT sensor!”));

Return;

}

Float hif = dht.computeHeatIndex(f, h);

Float hic = dht.computeHeatIndex(t, h, false);

// fetching ldr value

Int a= analogRead(15);

Delay(2000);

Delay(2000);

Display.clearDisplay();

Display.setTextSize(1);

Display.setTextColor(WHITE);

Display.setCursor(0, 10);

// Display static text

Display.print(F(“Humidity: “));

Display.print(h);

Display.print(F(“% Temperature: “));

Display.print(t);

Display.print(F(“°C “));

Display.print(f);

Display.print(F(“°F Heat index: “));

Display.print(hic);

Display.print(F(“°C “));

Display.print(hif);

Display.println(F(“°F”));

Display.println(“the ldr value is”);

Display.println(a);

If(a<=2000){

digitalWrite(2,HIGH);

display.println(“led is on”);

}

Else{

digitalWrite(2,LOW);

display.println(“led is Off”);

}

If(f>30){

digitalWrite(13,HIGH);

display.println(“fan is on”);

}

Else{

digitalWrite(13,LOW);

display.println(“fan is Off”);

}

}