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//libraries

#include <dht11.h>

#include <LiquidCrystal.h>

#define DHT11PIN 8

#define DHTTYPE DHT11

dht11 DHT11;

LiquidCrystal lcd(12, 11, 5, 4, 3, 2);

//pin assignments

int motorPin = 7;

int redPin = 6;

int greenPin = 10;

int bluePin = 9;

int count = 0;

//threshold operation values

int thresh\_T = 20;

int thresh\_H = 10;

void setup() {

//set motor

pinMode(motorPin, OUTPUT);

Serial.begin(9600);

//set LCD display

lcd.begin(16, 2);

lcd.setCursor(7,1);

lcd.print("---");

lcd.setCursor(0,0);

lcd.print("Temp:");

lcd.setCursor(0,1);

lcd.print("Humid:");

delay(1500);

}

void loop() {

//get values from data pin on DHT11

int chk = DHT11.read(DHT11PIN);

//set LCD Display

lcd.setCursor(0, 0);

lcd.print("Temp : ");

lcd.print((float)DHT11.temperature, 2);

lcd.print(" C");

lcd.setCursor(0, 1);

lcd.print("Humid: ");

lcd.print((float)DHT11.humidity, 2);

lcd.print(" %");

delay(2000);

////

//speed calculation

int speed = DHT11.temperature - thresh\_T;

Serial.println(speed);//display speed to serial monitor

//conditional to control fan

if(DHT11.temperature>thresh\_T || DHT11.humidity > thresh\_H){ //if either humidity or temp don't hit threshold stop

delay(500); //wait1/2sec

digitalWrite(motorPin, speed);

Serial.println(speed); //debug println disp fan speed in serial monitor

delay(500); //wait1/2sec

count++; //increment counter

Serial.println(count);//debug println disp count # in serial monitor

//state conditionals

if(count < 3){

//set led

digitalWrite(redPin,LOW);

digitalWrite(greenPin,LOW); //output blue

digitalWrite(bluePin,HIGH);

}

if (count > 3 && count < 9){

//set led

digitalWrite(redPin,LOW);

digitalWrite(greenPin,HIGH); //output green

digitalWrite(bluePin,LOW);

}

if (count > 9){

//turn off motor

speed = 0;

digitalWrite(motorPin, speed);

//set led

digitalWrite(redPin,HIGH);

digitalWrite(greenPin,LOW); //output red

digitalWrite(bluePin,LOW);

//reset count

count = 0;

}

}

}

//author notes

//states loop key

//1--> waiting (count = 3)[blue]

//2 --> running (count = 4 ->8)[green]

//3 --> end (count>9) [red]