#include <Servo.h>

#include <LiquidCrystal.h>

const int rs = 42, en = 33, d4 = 35, d5 = 41, d6 = 37, d7 = 39;

LiquidCrystal lcd(rs, en, d4, d5, d6, d7);

int fan = 26;

int reelSwitch = 2; // magnetic senso rpin

int switchState; // variable to store reel switch value

const int sensePin = A0; //This is the Arduino Pin that will read the sensor output

int sensorInput=1; //The variable we will use to store the sensor input

float temp,voltage;

const int pResistor = A2;

int servopin = 6;

int potentpin = A1;

int angle = 0;

Servo servo1;

int ledinside = 8;

#define redPin 9

#define greenPin 10

#define bluePin 11

const int buzzer = 12;

int buttonpin = 4;

int val;

int value;

long last;

void setup() {

// put your setup code here, to run once:

Serial.begin(9600); //Start the Serial Port at 9600 baud (default)

pinMode(redPin,OUTPUT);

pinMode (reelSwitch, INPUT);

pinMode(greenPin,OUTPUT);

pinMode(fan,OUTPUT);

pinMode(bluePin,OUTPUT);

pinMode(pResistor, INPUT);

pinMode(buzzer,OUTPUT);

pinMode(buttonpin, INPUT);

pinMode(ledinside,OUTPUT);

pinMode(servopin, OUTPUT);

pinMode(potentpin, INPUT);

servo1.attach(servopin);

last=millis();

// set up the LCD's number of columns and rows:

lcd.begin(20, 2);

}

void loop() {

// set the cursor to column 0, line 1

// (note: line 1 is the second row, since counting begins with 0):

// put your main code here, to run repeatedly:

//if(last+5000<millis()){

//last=millis();

sensorInput = analogRead(sensePin); //read the analog sensor and store it

voltage = (sensorInput/1024.0) \* 5.0; //find percentage of input reading

temp = (voltage - .5) \* 100;

delay(1000);

//}

switchState = digitalRead(reelSwitch); // read the value of digital interface 2 and assign it to switchState

if (switchState == HIGH) // when the magnetic sensor detect a signal, LED is flashing

{

tone(buzzer, 1440);

delay(1000);

}

else

{

digitalWrite(buzzer, LOW);

}

angle = analogRead(potentpin);

angle = map(angle, 0, 1023, 0, 160);

servo1.write(angle);

delay(15);

value = analogRead(pResistor);

if (value > 400){

digitalWrite(ledinside, HIGH);

lcd.setCursor(0, 1);

lcd.print("Outside is dark ");

}

else{

digitalWrite(ledinside, LOW);

lcd.setCursor(0, 1);

lcd.print("Outside is light ");

}

//tone(buzzer, 200); // Send 1KHz sound signal...

val = digitalRead(buttonpin);

if (val == LOW) {

tone(buzzer, 660);

delay(400);

tone(buzzer, 550);

delay(500);

tone(buzzer, 440);

delay(600);

noTone(buzzer);

}

else {

noTone(buzzer);

}

if(temp < 25 && temp > 18)

{

digitalWrite(greenPin, HIGH);

digitalWrite(bluePin, LOW);

digitalWrite(redPin, LOW);

digitalWrite(fan, LOW);

}

else if (temp > 25)

{

digitalWrite(fan, HIGH);

digitalWrite(redPin, HIGH);

digitalWrite(greenPin, LOW);

digitalWrite(bluePin, LOW);

}

else if (temp < 18)

{

digitalWrite(bluePin, HIGH);

digitalWrite(redPin, LOW);

digitalWrite(greenPin, LOW);

digitalWrite(fan, LOW);

}

lcd.setCursor(0, 0);

lcd.print("Current temp: ");

lcd.print(temp);

//Convert to degrees

Serial.print("Current Temperature: ");

Serial.println(temp);

Serial.print("Current pResistor: ");

Serial.println(pResistor);

Serial.print("Current angle : ");

Serial.println(angle);

Serial.print("Current sen : ");

Serial.println(reelSwitch);

}