**Source Code:**

#include "DHT.h"

#include <LiquidCrystal.h>

#include <Servo.h>

int pos = 0;

Servo myservo;

LiquidCrystal lcd(13, 12, 11, 10, 9, 8);

// Temp/Humidity Sensor

#define DHTPIN 17 // what pin we're connected to

#define DHTTYPE DHT11 // DHT 22 (AM2302)

// Initialize DHT sensor for normal 16mhz Arduino

DHT dht(DHTPIN, DHTTYPE);

// Relay

#define BULB 18

#define FAN 19

void setup() {

Serial.begin(9600);

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

lcd.begin(16, 2);

lcd.setCursor(0,0);

lcd.print("Smart Incubator");

delay(1000);

myservo.attach(7);

dht.begin();

// Setup relay

pinMode(BULB, OUTPUT);

pinMode(FAN, OUTPUT);

}

void loop() {

// Wait a few seconds between measurements.

delay(2000);

// Reading temperature or humidity takes about 250 milliseconds!

// Sensor readings may also be up to 2 seconds 'old' (its a very slow sensor)

float humidity = dht.readHumidity();

// Read temperature as Fahrenheit

float temp = dht.readTemperature(true);

// Check if any reads failed and exit early (to try again).

if (isnan(humidity) || isnan(temp)) {

Serial.println("Failed to read from DHT sensor!");

return;

}

lcd.setCursor(0,0);

lcd.print("Humi: ");

lcd.print(humidity);

lcd.print(" % ");

lcd.setCursor(0,1);

lcd.print("Temp: ");

lcd.print(temp);

lcd.print(" F ");

if ((temp < 99) || (humidity>60))

{

digitalWrite(BULB, LOW);

digitalWrite(FAN, HIGH);

{

for (pos = 0; pos <= 180; pos += 1) { // goes from 0 degrees to 180 degrees

// in steps of 1 degree

myservo.write(pos); // tell servo to go to position in variable 'pos'

delay(15); // waits 15ms for the servo to reach the position

}

for (pos = 180; pos >= 0; pos -= 1) { // goes from 180 degrees to 0 degrees

myservo.write(pos); // tell servo to go to position in variable 'pos'

delay(15); // waits 15ms for the servo to reach the position

}

}

}

else if ((temp > 102)|| (humidity<50))

{

digitalWrite(BULB, HIGH);

digitalWrite(FAN, LOW);

{

for (pos = 0; pos <= 180; pos += 1) { // goes from 0 degrees to 180 degrees

// in steps of 1 degree

myservo.write(pos); // tell servo to go to position in variable 'pos'

delay(15); // waits 15ms for the servo to reach the position

}

for (pos = 180; pos >= 0; pos -= 1) { // goes from 180 degrees to 0 degrees

myservo.write(pos); // tell servo to go to position in variable 'pos'

delay(15); // waits 15ms for the servo to reach the position

}

}

}

}