**Glove\_Box\_Code.ino TEXT**

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ECO Tech glove box code

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//Set up relay

#define RELAY1 12

#define RELAY2 13

//Set up sensors

#include "DHT.h"

#define DHTPIN 2 // what digital pin we're connected to

#define DHTTYPE DHT22

DHT dht(DHTPIN, DHTTYPE);

 // See guide for details on sensor wiring and usage:

 // https://learn.adafruit.com/dht/overview

//INPUT ALL VARIABLES HERE

 int humidity = 0; //input desired %relative humidity (0-100)

 int temp = 0; //input desired temperature in degreesC (20-70)

 int tempTol = 0; //input acceptable bilateral temperature tolerance in degrees C

 int humTol = 0; //input acceptable bilateral tolerance in %relative humidity

void setup() {

// Initialise the relay pins as output

 pinMode(RELAY1, OUTPUT);

 pinMode(RELAY2, OUTPUT);

// Test relay function

 digitalWrite(RELAY1, HIGH);

 digitalWrite(RELAY2, HIGH);

 delay(1000);

 digitalWrite(RELAY1,LOW); // Turns ON Relay 1

 delay(1000);

 digitalWrite(RELAY1,HIGH); // Turns Relay Off

 delay(1000);

 digitalWrite(RELAY2,LOW); // Turns ON Relay 2

 delay(1000);

 digitalWrite(RELAY2,HIGH); // Turns Relay Off

//Start sensor, and display sensor information

 Serial.begin(9600);

 Serial.println("Reading DHT22 data!");

 dht.begin();

}

void loop() {

 float hum2 = dht.readHumidity() +12;

 float temp2 = dht.readTemperature();

//output temperature and humidity data

 // Reading temperature or humidity takes about 250 milliseconds!

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

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

 float hum1 = dht.readHumidity();

 float temp1 = dht.readTemperature();

 if (isnan(hum1) || isnan(temp1)) {

 Serial.println("Error in reading sensor data!");

 while (isnan(hum1) || isnan(temp1)) {

 hum1 = dht.readHumidity();

 temp1 = dht.readTemperature();

 }

 }

 else {

 delay(5000); // Wait a few seconds between measurements.

 float hum2 = dht.readHumidity() +12;

 float temp2 = dht.readTemperature();

 // Display environmental data

 Serial.print("Humidity: ");

 Serial.print(hum2);

 Serial.print(" % ");

 Serial.print("Temperature: ");

 Serial.print(temp2);

 Serial.println(" \*C ");

 }

//use sensor data to control humidity

 //if humidity is outside of defined limits

 if ((hum2 < (humidity - humTol)) || (hum2 > (humidity + humTol))){

 digitalWrite(RELAY2,LOW); //Turn ON Relay 2 (air pump)

 }

 else{ // if humidity is within defined range

 digitalWrite(RELAY2,HIGH); // Turn OFF Relay 2 (air pump)

 }

//use sensor data to control temperature

 while (temp2 < (temp - tempTol)){ //when temperature is low

 while (temp2 < (temp + tempTol)){ //run until temperature is high

 digitalWrite(RELAY1,LOW); // Turn ON Relay 1 (heat gun)

 delay(5000); //Display temperature data ONLY while temperature is being adjusted

 temp2 = dht.readTemperature();

 hum2 = dht.readHumidity() +12;

 Serial.print("Humidity: ");

 Serial.print(hum2);

 Serial.print(" % ");

 Serial.print("Temperature: ");

 Serial.print(temp2);

 Serial.println(" \*C ");

 }

 }

 //turn off heat gun when goal temperature has been reached

 digitalWrite(RELAY1,HIGH); // Turn heat gun off

 }