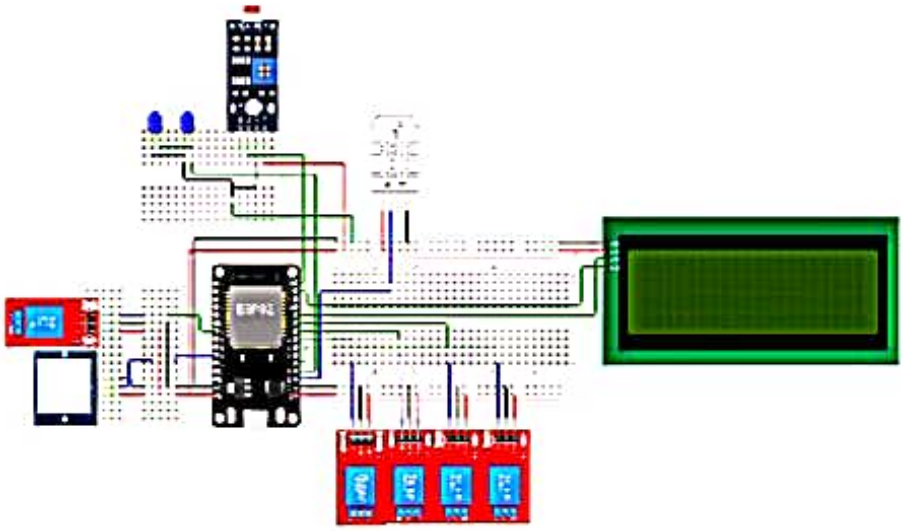
https://wokwi.com/projects/363309633676262401



CODING:

Sketch.ino

```
#define BLYNK_TEMPLATE_ID "TMPLgCeV0y1b"
#define BLYNK_DEVICE_NAME "Home"
#define BLYNK_AUTH_TOKEN "93h-1b23ewIQooDTdB2y2COGacfYkbdO"

#include <LiquidCrystal_I2C.h>
LiquidCrystal_I2C lcd(0x27, 20, 4);

#define BLYNK_PRINT Serial

#include <WiFi.h>
#include <WiFiClient.h>
#include <BlynkSimpleEsp32.h>
#include "DHTesp.h"


BlynkTimer timer;


char auth[] = BLYNK_AUTH_TOKEN;

char ssid[] = "Wokwi-GUEST";
char pass[] = "";
int val = 0, va1,va2,va3,va4,va5,ge, t =15 ;
float tmp,hum = 0;

int ledPin = 33;
int inputPin = 27;
int pirState,k;
int v = 0;


//temp symbol
byte t1[8]={B00000, B00001, B00010, B00100, B00100, B00100, B00100, B00111,};
byte t2[8]={B00111, B00111, B00111, B01111,B11111, B11111, B01111, B00011,};
byte t3[8]={B00000, B10000, B01011, B00100, B00111, B00100, B00111, B11100,};
byte t4[8]={B11111, B11100, B11100, B11110,B11111, B11111, B11110, B11000,};
```

```
//humidity symbol
byte hum1[8]={B00000, B00001, B00011, B00011,B00111, B01111, B01111, B11111,};
byte hum2[8]={B11111, B11111, B11111, B01111,B00011, B00000, B00000, B00000,};
byte hum3[8]={B00000, B10000, B11000, B11000, B11100, B11110, B11110, B11111,};
byte hum4[8]={B11111, B11111, B11111, B11110, B11100, B00000, B00000, B00000,};

//Home Symbol
byte house1[8]={B00000, B00001, B00011, B00011, B00111, B01111, B01111, B11111,};
byte house2[8]={B11111, B11111, B11100, B11100, B11100, B11100, B11100, B11100,};
byte house3[8]={B00000, B10010, B11010, B11010, B11110, B11110, B11110, B11111,};
byte house4[8]={B11111, B11111, B11111, B10001, B10001, B10001, B11111, B11111,};

byte d[8] = { 0b00011,0b00011,0b00000,0b00000,0b00000,0b00000,0b00000,0b00000 };

byte Lck[] = { B01110, B10001, B10001, B11111, B11011, B11011, B11111, B00000 };



DHTesp temps;

BLYNK_WRITE(V0){
 va1 = param.asInt();
 digitalWrite(5, va1);

}
BLYNK_WRITE(V1){
 va2 = param.asInt();
 digitalWrite(18, va2);
}

BLYNK_WRITE(V2){
 va3 = param.asInt();
 digitalWrite(19, va3);
}
BLYNK_WRITE(V3){
 va4 = param.asInt();
 digitalWrite(4, va4);
}

BLYNK_WRITE(V4){
```

```
 va5 = param.asInt();
 digitalWrite(2, va5);
}

BLYNK_WRITE(V7) {
  pirState = param.asInt();
  if(pirState == 0){
    digitalWrite(ledPin, LOW);
    k = 1;
    ge = 0;
  }
  else {
    digitalWrite(ledPin, HIGH);
    k= 0;
    ge = 1;
  }
}

void myTimer()
{
  Blynk.virtualWrite(V5,tmp);
  Blynk.virtualWrite(V6,hum);
}


void setup()
{

 Serial.begin(115200);
 Blynk.begin(auth, ssid, pass);

pinMode(5, OUTPUT);
pinMode(18, OUTPUT);
pinMode(19, OUTPUT);
pinMode(4, OUTPUT);
pinMode(23,INPUT);
pinMode(2,OUTPUT);
temps.setup(t, DHTesp::DHT22);
pinMode(ledPin, OUTPUT);
pinMode(inputPin, INPUT_PULLUP);
```

```
lcd.init();
lcd.backlight();

digitalWrite(5, LOW);
digitalWrite(18, LOW);
digitalWrite(19, LOW);
digitalWrite(21, LOW);


lcd.setCursor(0,0);
lcd.print("CircuitDesignContest");
lcd.setCursor(8,1);
lcd.print("2023");
lcd.setCursor(0,2);
lcd.print("----------------");
lcd.setCursor(9,3);
lcd.print("- eDiYLaBs");
delay(3000);
lcd.clear();
lcd.createChar(6, Lck);
lcd.createChar(1,house1);
lcd.createChar(2,house2);
lcd.createChar(3,house3);
lcd.createChar(4,house4);
lcd.setCursor(1,2);
lcd.write(1);
lcd.setCursor(1,3);
lcd.write(2);
lcd.setCursor(2,2);
lcd.write(3);
lcd.setCursor(2,3);
lcd.write(4);

lcd.setCursor(17,2);
lcd.write(1);
lcd.setCursor(17,3);
lcd.write(2);
lcd.setCursor(18,2);
lcd.write(3);
lcd.setCursor(18,3);
lcd.write(4);
```

```
lcd.setCursor(19,0);
lcd.write(6);
lcd.setCursor(9,0);
lcd.print("connected-");
lcd.setCursor(2,1);
lcd.print("HOME AUTOMATION");
lcd.setCursor(6,2);
lcd.print("USING IOT");
delay(3000);

Blynk.virtualWrite(V7, pirState);
timer.setInterval(1000L, myTimer);

}


void loop()
{
 Blynk.run();
 timer.run();
 val = digitalRead(23);
  if(val == 1)
  {
   digitalWrite(2,va5);
  }

else{
     digitalWrite(2,LOW);
}

TempAndHumidity  x = temps.getTempAndHumidity();
tmp = x.temperature ;
hum = x.humidity ;

  v = digitalRead(inputPin);
  if (v == HIGH) {
    if (k == 1)   {
        digitalWrite(ledPin, LOW);
        k = 0 ;
```

```
      ge = 0;
 }
 else if (k == 0)  {
      digitalWrite(ledPin, HIGH);
      k = 1;
      ge = 1;
 }
}


if (va1 == 1){
 lcd.clear();
  lcd.setCursor(19,0);
lcd.write(6);
lcd.setCursor(0, 1);
lcd.print("SW_1= ");
lcd.print("ON ");
}
else{
  lcd.clear();
   lcd.setCursor(19,0);
lcd.write(6);
   lcd.setCursor(0, 1);
lcd.print("SW_1= ");
lcd.print("OFF");
}
if (va2 == 1){


lcd.setCursor(11, 1);
lcd.print("SW_2= ");
lcd.print("ON ");
}
else{
   lcd.setCursor(11, 1);
lcd.print("SW_2= ");
lcd.print("OFF");
}
if (va3 == 1){

lcd.setCursor(0, 2);
```

```
lcd.print("SW_3= ");
lcd.print("ON ");
}
else{

   lcd.setCursor(0, 2);
lcd.print("SW_3= ");
lcd.print("OFF");
}
if (va4 == 1){

lcd.setCursor(11, 2);
lcd.print("SW_4= ");
lcd.print("ON ");
}
else{

   lcd.setCursor(11, 2);
lcd.print("SW_4= ");
lcd.print("OFF");
}
 if (va5 == 1){

lcd.setCursor(0, 3);
lcd.print("OD_L= ");
lcd.print("ON ");
}
else{

   lcd.setCursor(0, 3);
lcd.print("OD_L= ");
lcd.print("OFF");
}
 if (ge == 1){

lcd.setCursor(11, 3);
lcd.print("WR_L= ");
lcd.print("ON ");
}
else{
```

```
   lcd.setCursor(11, 3);
lcd.print("WR_L= ");
lcd.print("OFF");
}
delay(1500);

lcd.clear();
lcd.createChar(1,t1);
lcd.createChar(2,t2);
lcd.createChar(3,t3);
lcd.createChar(4,t4);
lcd.createChar(5, d);
lcd.createChar(6, Lck);

lcd.setCursor(19,0);
lcd.write(6);
lcd.setCursor(1,1);
lcd.write(1);
lcd.setCursor(1,2);
lcd.write(2);
lcd.setCursor(2,1);
lcd.write(3);
lcd.setCursor(2,2);
lcd.write(4);
lcd.setCursor(4,1);
lcd.print("Temperature :");
lcd.setCursor(7,2);
lcd.print(tmp);
lcd.setCursor(11,2);
lcd.write(5);
lcd.setCursor(12,2);
lcd.print("C");

delay(750);
lcd.clear();

lcd.createChar(1,hum1);
lcd.createChar(2,hum2);
lcd.createChar(3,hum3);
```

```
  lcd.createChar(4,hum4);

  lcd.setCursor(19,0);
  lcd.write(6);
  lcd.setCursor(3,1);
  lcd.write(1);
  lcd.setCursor(3,2);
  lcd.write(2);
  lcd.setCursor(4,1);
  lcd.write(3);
  lcd.setCursor(4,2);
  lcd.write(4);
  lcd.setCursor(6,1);
  lcd.print("Humidity :");
  lcd.setCursor(7,2);
  lcd.print(hum);
  lcd.setCursor(12,2);
  lcd.print("%");
  delay(750);


}
```

diagram.json

```
{
 "version": 1,
 "author": "shanthini",
 "editor": "wokwi",
 "parts": [
  {
   "type": "wokwi-breadboard-half",
   "id": "bb1",
   "top": -176.2,
   "left": -91.8,
   "rotate": 180,
   "attrs": {}
  },
```

```
{ "type": "wokwi-breadboard-mini", "id": "bb2", "top": -308.6, "left": -309.6, "attrs": {} },
{
 "type": "wokwi-breadboard-mini",
 "id": "bb3",
 "top": -95.1,
 "left": -399.7,
 "rotate": 90,
 "attrs": {}
},
{ "type": "wokwi-esp32-devkit-v1", "id": "esp", "top": -139.3, "left": -216.2, "attrs": {} },
{
 "type": "wokwi-relay-module",
 "id": "relay1",
 "top": 82.37,
 "left": -101.01,
 "rotate": 90,
 "attrs": {}
},
{
 "type": "wokwi-relay-module",
 "id": "relay2",
 "top": 81.06,
 "left": -42.41,
 "rotate": 90,
 "attrs": {}
},
{
 "type": "wokwi-relay-module",
 "id": "relay3",
 "top": 81.06,
 "left": 14.35,
 "rotate": 90,
 "attrs": {}
},
{
 "type": "wokwi-relay-module",
 "id": "relay4",
 "top": 81.06,
 "left": 73.22,
 "rotate": 90,
 "attrs": {}
},
{
 "type": "wokwi-photoresistor-sensor",
 "id": "ldr1",
```

```
      "top": -396.4,
      "left": -257.6,
      "rotate": 90,
      "attrs": {}
    },
    {
      "type": "wokwi-lcd2004",
      "id": "lcd1",
      "top": -195.2,
      "left": 255.2,
      "attrs": { "pins": "i2c" }
    },
    {
      "type": "wokwi-led",
      "id": "led1",
      "top": -330,
      "left": -303.4,
      "attrs": { "color": "blue" }
    },
    { "type": "wokwi-led", "id": "led2", "top": -330, "left": -265, "attrs": { "color": "blue" } },
    {
      "type": "wokwi-dht22",
      "id": "dht1",
      "top": -316.5,
      "left": -24.6,
      "attrs": { "temperature": "-0.4", "humidity": "65.5" }
    },
    {
      "type": "wokwi-pir-motion-sensor",
      "id": "pir1",
      "top": -38.62,
      "left": -425,
      "rotate": 270,
      "attrs": {}
    },
    {
      "type": "wokwi-relay-module",
      "id": "relay5",
      "top": -96.6,
      "left": -464,
      "rotate": 180,
      "attrs": {}
    }
  ],
  "connections": [
```

```
[ "esp:TX0", "$serialMonitor:RX", "", [] ],
[ "esp:RX0", "$serialMonitor:TX", "", [] ],
[ "esp:3V3", "bb1:tp.25", "red", [ "v0" ] ],
[ "esp:GND.1", "bb1:tn.25", "black", [ "h0" ] ],
[ "relay1:VCC", "bb1:tp.21", "red", [ "v0" ] ],
[ "relay1:GND", "bb1:tn.22", "black", [ "v0" ] ],
[ "esp:D5", "bb1:28t.d", "green", [ "h0" ] ],
[ "relay1:IN", "bb1:28t.a", "blue", [ "v0" ] ],
[ "esp:D18", "bb1:22t.d", "green", [ "h0" ] ],
[ "relay2:IN", "bb1:22t.b", "blue", [ "v0" ] ],
[ "relay2:VCC", "bb1:tp.16", "red", [ "v0" ] ],
[ "relay2:GND", "bb1:tn.17", "black", [ "v0" ] ],
[ "relay3:VCC", "bb1:tp.11", "red", [ "v0" ] ],
[ "relay3:GND", "bb1:tn.12", "black", [ "v0" ] ],
[ "esp:D19", "bb1:16t.c", "green", [ "h0" ] ],
[ "relay3:IN", "bb1:16t.a", "blue", [ "v0" ] ],
[ "relay4:VCC", "bb1:tp.6", "red", [ "v0" ] ],
[ "relay4:GND", "bb1:tn.7", "black", [ "v0" ] ],
[ "relay4:IN", "bb1:10t.a", "blue", [ "v0" ] ],
[ "esp:VIN", "bb1:bp.25", "red", [ "h-32.73", "v-11.44" ] ],
[ "esp:GND.2", "bb1:bn.25", "black", [ "h-25.72", "v-179.53", "h4.67" ] ],
[ "lcd1:GND", "bb1:bn.1", "black", [ "h0" ] ],
[ "lcd1:VCC", "bb1:bp.1", "red", [ "h0" ] ],
[ "esp:D4", "bb1:10t.c", "green", [ "h10.27", "v-16.8" ] ],
[ "lcd1:SDA", "esp:D21", "green", [ "h-14", "v51.46" ] ],
[ "lcd1:SCL", "esp:D22", "green", [ "h-31", "v45.74", "h-329.93", "v-23.93" ] ],
[ "led2:A", "bb2:7t.b", "", [ "$bb" ] ],
[ "led2:C", "bb2:6t.b", "", [ "$bb" ] ],
[ "led1:A", "bb2:3t.b", "", [ "$bb" ] ],
[ "led1:C", "bb2:2t.b", "", [ "$bb" ] ],
[ "bb2:3t.c", "bb2:7t.c", "green", [ "v0" ] ],
[ "esp:D2", "bb2:7t.e", "green", [ "h24", "v-237.12", "h-155.28" ] ],
[ "bb2:2t.d", "bb2:6t.d", "black", [ "v0" ] ],
[ "bb1:bn.23", "bb2:12b.h", "green", [ "v-31.96", "h-1.89" ] ],
[ "bb2:6t.e", "bb2:12b.g", "black", [ "v19.43", "h2.01" ] ],
[ "bb2:15t.e", "bb2:12b.f", "black", [ "v0" ] ],
[ "bb1:bp.24", "bb2:16t.e", "red", [ "v0" ] ],
[ "esp:D23", "bb2:14t.d", "green", [ "h9.67", "v-154.15", "h-19.54" ] ],
[ "ldr1:VCC", "bb2:16t.c", "", [ "$bb" ] ],
[ "ldr1:GND", "bb2:15t.c", "", [ "$bb" ] ],
[ "ldr1:DO", "bb2:14t.c", "", [ "$bb" ] ],
[ "ldr1:AO", "bb2:13t.c", "", [ "$bb" ] ],
[ "dht1:GND", "bb1:bn.17", "black", [ "v0" ] ],
[ "dht1:VCC", "bb1:bp.20", "red", [ "v0" ] ],
[ "dht1:SDA", "bb1:23b.i", "blue", [ "v0" ] ],
```

```
  [ "esp:D15", "bb1:23b.h", "blue", [ "h29.06", "v-1.34" ] ],
  [ "esp:VIN", "bb3:14t.a", "red", [ "h0" ] ],
  [ "esp:GND.2", "bb3:13t.a", "black", [ "h0" ] ],
  [ "bb3:5b.f", "bb3:5t.e", "black", [ "h0" ] ],
  [ "bb3:13t.e", "bb3:12b.f", "black", [ "h-15.22", "v-10.88" ] ],
  [ "bb3:4t.b", "esp:D33", "green", [ "h38.08", "v1.59" ] ],
  [ "bb3:14b.f", "bb3:14t.e", "red", [ "h0" ] ],
  [ "bb3:13b.f", "bb3:10t.d", "blue", [ "h10.42", "v-32.65", "h-0.66" ] ],
  [ "esp:D27", "bb3:10t.a", "blue", [ "h0" ] ],
  [ "bb3:4t.e", "bb3:4b.f", "blue", [ "h0" ] ],
  [ "bb3:6b.f", "bb3:6t.e", "red", [ "h0" ] ],
  [ "pir1:VCC", "bb3:14b.g", "", [ "$bb" ] ],
  [ "pir1:OUT", "bb3:13b.g", "", [ "$bb" ] ],
  [ "pir1:GND", "bb3:12b.g", "", [ "$bb" ] ],
  [ "relay5:VCC", "bb3:6b.g", "", [ "$bb" ] ],
  [ "relay5:GND", "bb3:5b.g", "", [ "$bb" ] ],
  [ "relay5:IN", "bb3:4b.g", "", [ "$bb" ] ],
  [ "bb3:14t.c", "bb3:6t.c", "red", [ "h0" ] ],
  [ "bb3:13t.b", "bb3:5t.b", "black", [ "h0" ] ]
 ]
}
```