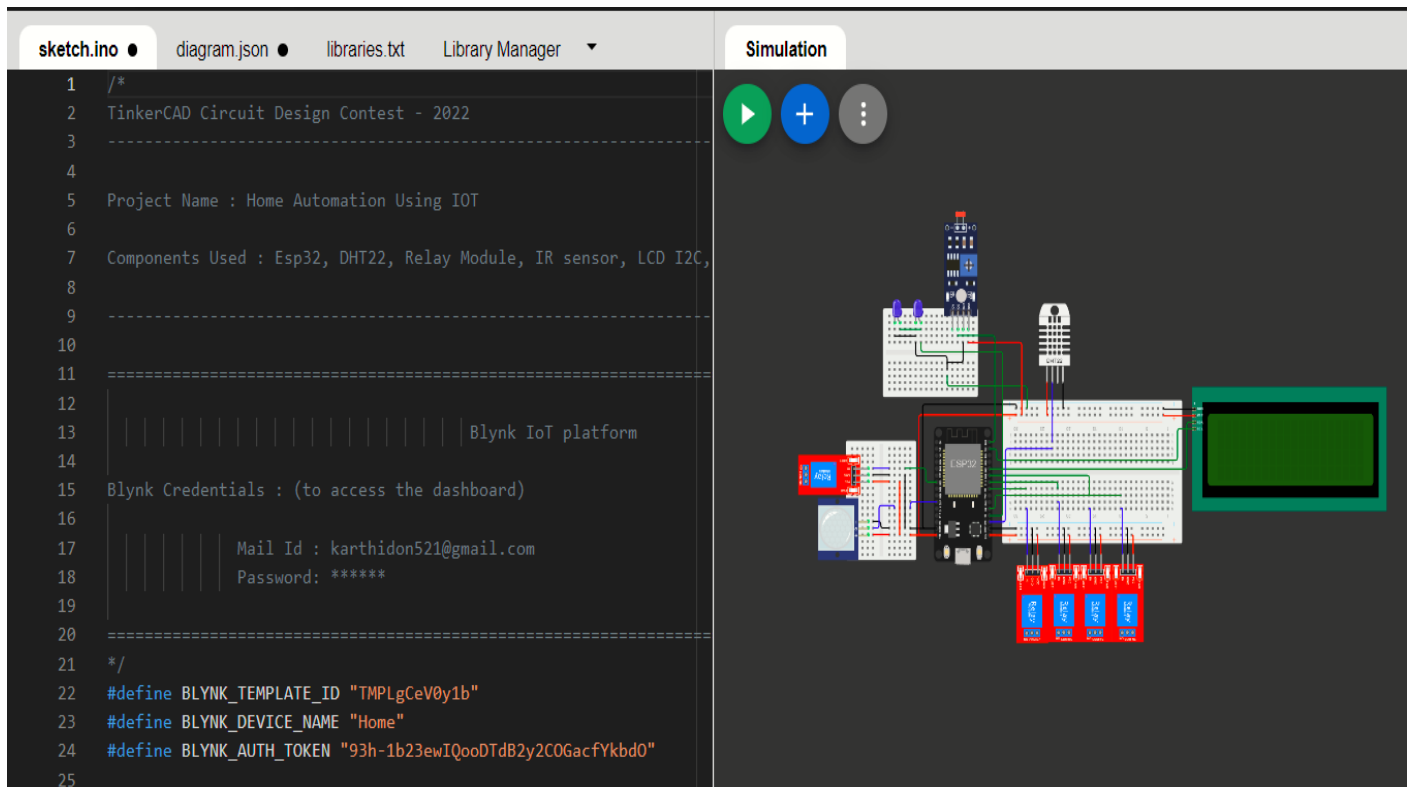


ASSIGNMENT 1

<https://wokwi.com/projects/363087062941591553>



```
#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("project");
  lcd.setCursor(8,1);
  lcd.print("2023");
  lcd.setCursor(0,2);
  lcd.print("-----");
  lcd.setCursor(9,3);
  lcd.print("naan muthalvan");

```

```
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);
```

```
}
```

```

{
  "version": 1,
  "author": "S.Pricilla disi",
  "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" ] ]  
]  
}
```