



sketch.ino diagram.json libraries.txt Library Manager ▼

```
1  /*
2  TinkerCAD Circuit Design Contest - 2022
3  -----
4
5  Project Name : Home Automation Using IOT
6
7  Components Used : Esp32, DHT22, Relay Module, IR sensor, LCD I2C, PIR, LED, Breadboards.
8
9  -----
10
11  =====
12
13  | Blynk IoT platform
14
15  Blynk Credentials : (to access the dashboard)
16
17  | Mail Id : karthidon521@gmail.com
18  | Password: *****
19  |
20  =====
21  */
22  #define BLYNK_TEMPLATE_ID "TMPLgCeV0y1b"
23  #define BLYNK_DEVICE_NAME "Home"
24  #define BLYNK_AUTH_TOKEN "93h-1b23ewIQoodTd82y2COGacFYkdb0"
25
26  #include <LiquidCrystal_I2C.h>
27  LiquidCrystal_I2C lcd(0x27, 20, 4);
28
29  #define BLYNK_PRINT Serial
30
31  #include <WiFi.h>
32  #include <WiFiClient.h>
33  #include <BlynkSimpleEsp32.h>
34  #include "DHTesp.h"
35
```

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```
34 #include "DHTesp.h"
35
36
37 BlynkTimer timer;
38
39
40 char auth[] = BLYNK_AUTH_TOKEN;
41
42 char ssid[] = "Wokwi-GUEST";
43 char pass[] = "";
44 int val = 0, va1,va2,va3,va4,va5,ge, t =15 ;
45 float tmp,hum = 0;
46
47 int ledPin = 33;
48 int inputPin = 27;
49 int pirState,k;
50 int v = 0;
51
52
53 //temp symbol
54 byte t1[8]={B00000, B00001, B00010, B00100, B00100, B00100, B00100, B00111,};
55 byte t2[8]={B00111, B00111, B00111, B01111,B11111, B11111, B01111, B00011,};
56 byte t3[8]={B00000, B10000, B01011, B00100, B00111, B00100, B00111, B11100,};
57 byte t4[8]={B11111, B11100, B11100, B11110,B11111, B11111, B11110, B11000,};
58
59 //humidity symbol
60 byte hum1[8]={B00000, B00001, B00011, B00011,B00111, B01111, B01111, B11111,};
61 byte hum2[8]={B11111, B11111, B11111, B01111,B00011, B00000, B00000, B00000,};
62 byte hum3[8]={B00000, B10000, B11000, B11000, B11100, B11110, B11110, B11111,};
63 byte hum4[8]={B11111, B11111, B11111, B11110, B11100, B00000, B00000, B00000,};
64
65 //Home Symbol
66 byte house1[8]={B00000, B00001, B00011, B00011, B00111, B01111, B01111, B11111,};
67 byte house2[8]={B11111, B11111, B11100, B11100, B11100, B11100, B11100, B11100,};
68 byte house3[8]={B00000, B10010, B11010, B11010, B11110, B11110, B11110, B11111,};
```

34°C
Mostly cloudy



```
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67  byte house2[8]={B11111, B11111, B11100, B11100, B11100, B11100, B11100, B11100,};
68  byte house3[8]={B00000, B10010, B11010, B11010, B11110, B11110, B11110, B11111,};
69  byte house4[8]={B11111, B11111, B11111, B10001, B10001, B10001, B11111, B11111,};
70
71  byte d[8] = { 0b00011,0b00011,0b00000,0b00000,0b00000,0b00000,0b00000,0b00000 };
72
73  byte Lck[] = { B01110, B10001, B10001, B11111, B11011, B11011, B11111, B00000 };
74
75
76
77  DHTesp temps;
78
79  BLYNK_WRITE(V0){
80    va1 = param.asInt();
81    digitalWrite(5, va1);
82  }
83
84  BLYNK_WRITE(V1){
85    va2 = param.asInt();
86    digitalWrite(18, va2);
87  }
88
89  BLYNK_WRITE(V2){
90    va3 = param.asInt();
91    digitalWrite(19, va3);
92  }
93  BLYNK_WRITE(V3){
94    va4 = param.asInt();
95    digitalWrite(4, va4);
96  }
97
98  BLYNK_WRITE(V4){
99    va5 = param.asInt();
100    digitalWrite(2, va5);
101  }
```

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```

100  digitalWrite(2, val);
101  }
102
103  BLYNK_WRITE(V7) {
104      pirState = param.asInt();
105      if(pirState == 0){
106          digitalWrite(ledPin, LOW);
107          k = 1;
108          ge = 0;
109      }
110      else {
111          digitalWrite(ledPin, HIGH);
112          k = 0;
113          ge = 1;
114      }
115  }
116
117  void myTimer()
118  {
119      Blynk.virtualWrite(V5,tmp);
120      Blynk.virtualWrite(V6,hum);
121  }
122
123
124  void setup()
125  {
126
127      Serial.begin(115200);
128      Blynk.begin(auth, ssid, pass);
129
130      pinMode(5, OUTPUT);
131      pinMode(18, OUTPUT);
132      pinMode(19, OUTPUT);
133      pinMode(4, OUTPUT);
134      pinMode(23, INPUT);
135      pinMode(2, OUTPUT);

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```
134 pinMode(23, INPUT);
135 pinMode(2, OUTPUT);
136 temps.setup(t, DHTesp::DHT22);
137 pinMode(ledPin, OUTPUT);
138 pinMode(inputPin, INPUT_PULLUP);
139
140 lcd.init();
141 lcd.backlight();
142
143 digitalWrite(5, LOW);
144 digitalWrite(18, LOW);
145 digitalWrite(19, LOW);
146 digitalWrite(21, LOW);
147
148
149 lcd.setCursor(0,0);
150 lcd.print("CircuitDesignContest");
151 lcd.setCursor(8,1);
152 lcd.print("2022");
153 lcd.setCursor(0,2);
154 lcd.print("-----");
155 lcd.setCursor(9,3);
156 lcd.print("- eDiYLaBs");
157 delay(3000);
158 lcd.clear();
159 lcd.createChar(6, Lck);
160 lcd.createChar(1, house1);
161 lcd.createChar(2, house2);
162 lcd.createChar(3, house3);
163 lcd.createChar(4, house4);
164 lcd.setCursor(1,2);
165 lcd.write(1);
166 lcd.setCursor(1,3);
167 lcd.write(2);
168 lcd.setCursor(2,3);
```

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```
200 {
201   Blynk.run();
202   timer.run();
203   val = digitalRead(23);
204   if(val == 1)
205   {
206     digitalWrite(2,va5);
207   }
208
209   else{
210     digitalWrite(2,LOW);
211   }
212
213   TempAndHumidity x = temps.getTempAndHumidity();
214   tmp = x.temperature ;
215   hum = x.humidity ;
216
217   v = digitalRead(inputPin);
218   if (v == HIGH) {
219     if (k == 1) {
220       digitalWrite(ledPin, LOW);
221       k = 0 ;
222       ge = 0;
223     }
224     else if (k == 0) {
225       digitalWrite(ledPin, HIGH);
226       k = 1;
227       ge = 1;
228     }
229   }
230
231
232   if (val == 1){
233     lcd.clear();
234     lcd.setCursor(19,0);
```

```
266 else{
267
268     lcd.setCursor(0, 2);
269     lcd.print("SW_3= ");
270     lcd.print("OFF");
271 }
272 if (va4 == 1){
273
274     lcd.setCursor(11, 2);
275     lcd.print("SW_4= ");
276     lcd.print("ON ");
277 }
278 else{
279
280     lcd.setCursor(11, 2);
281     lcd.print("SW_4= ");
282     lcd.print("OFF");
283 }
284 if (va5 == 1){
285
286     lcd.setCursor(0, 3);
287     lcd.print("OD_L= ");
288     lcd.print("ON ");
289 }
290 else{
291
292     lcd.setCursor(0, 3);
293     lcd.print("OD_L= ");
294     lcd.print("OFF");
295 }
296 if (ge == 1){
297
298     lcd.setCursor(11, 3);
299     lcd.print("WR_L= ");
300     lcd.print("ON ");
```


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```
332 lcd.setCursor(11,2);  
333 lcd.write(5);  
334 lcd.setCursor(12,2);  
335 lcd.print("C");  
336  
337 delay(750);  
338 lcd.clear();  
339  
340 lcd.createChar(1,hum1);  
341 lcd.createChar(2,hum2);  
342 lcd.createChar(3,hum3);  
343 lcd.createChar(4,hum4);  
344  
345 lcd.setCursor(19,0);  
346 lcd.write(6);  
347 lcd.setCursor(3,1);  
348 lcd.write(1);  
349 lcd.setCursor(3,2);  
350 lcd.write(2);  
351 lcd.setCursor(4,1);  
352 lcd.write(3);  
353 lcd.setCursor(4,2);  
354 lcd.write(4);  
355 lcd.setCursor(6,1);  
356 lcd.print("Humidity :");  
357 lcd.setCursor(7,2);  
358 lcd.print(hum);  
359 lcd.setCursor(12,2);  
360 lcd.print("%");  
361 delay(750);  
362  
363  
364 }  
365  
366
```

```

299 lcd.print("WR_L= ");
300 lcd.print("ON ");
301 }
302 else{
303
304     lcd.setCursor(11, 3);
305     lcd.print("WR_L= ");
306     lcd.print("OFF");
307 }
308 delay(1500);
309
310 lcd.clear();
311 lcd.createChar(1,t1);
312 lcd.createChar(2,t2);
313 lcd.createChar(3,t3);
314 lcd.createChar(4,t4);
315 lcd.createChar(5, d);
316 lcd.createChar(6, Lck);
317
318 lcd.setCursor(19,0);
319 lcd.write(6);
320 lcd.setCursor(1,1);
321 lcd.write(1);
322 lcd.setCursor(1,2);
323 lcd.write(2);
324 lcd.setCursor(2,1);
325 lcd.write(3);
326 lcd.setCursor(2,2);
327 lcd.write(4);
328 lcd.setCursor(4,1);
329 lcd.print("Temperature :");
330 lcd.setCursor(7,2);
331 lcd.print(tmp);
332 lcd.setCursor(11,2);
333 lcd.write(5);
334 lcd.setCursor(13,3);

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```
233   lcd.clear();
234   lcd.setCursor(19,0);
235   lcd.write(6);
236   lcd.setCursor(0, 1);
237   lcd.print("SW_1= ");
238   lcd.print("ON ");
239   }
240   else{
241       lcd.clear();
242       lcd.setCursor(19,0);
243       lcd.write(6);
244       lcd.setCursor(0, 1);
245       lcd.print("SW_1= ");
246       lcd.print("OFF");
247   }
248   if (va2 == 1){
249
250
251       lcd.setCursor(11, 1);
252       lcd.print("SW_2= ");
253       lcd.print("ON ");
254   }
255   else{
256       lcd.setCursor(11, 1);
257       lcd.print("SW_2= ");
258       lcd.print("OFF");
259   }
260   if (va3 == 1){
261
262       lcd.setCursor(0, 2);
263       lcd.print("SW_3= ");
264       lcd.print("ON ");
265   }
266   else{
267
```

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```
167 lcd.write(2);
168 lcd.setCursor(2,2);
169 lcd.write(3);
170 lcd.setCursor(2,3);
171 lcd.write(4);
172
173 lcd.setCursor(17,2);
174 lcd.write(1);
175 lcd.setCursor(17,3);
176 lcd.write(2);
177 lcd.setCursor(18,2);
178 lcd.write(3);
179 lcd.setCursor(18,3);
180 lcd.write(4);
181
182
183 lcd.setCursor(19,0);
184 lcd.write(6);
185 lcd.setCursor(9,0);
186 lcd.print("connected-");
187 lcd.setCursor(2,1);
188 lcd.print("HOME AUTOMATION");
189 lcd.setCursor(6,2);
190 lcd.print("USING IOT");
191 delay(3000);
192
193 Blynk.virtualWrite(V7, pirState);
194 timer.setInterval(1000L, myTimer);
195
196 }
197
198
199 void loop()
200 {
201   Blynk.run();
```