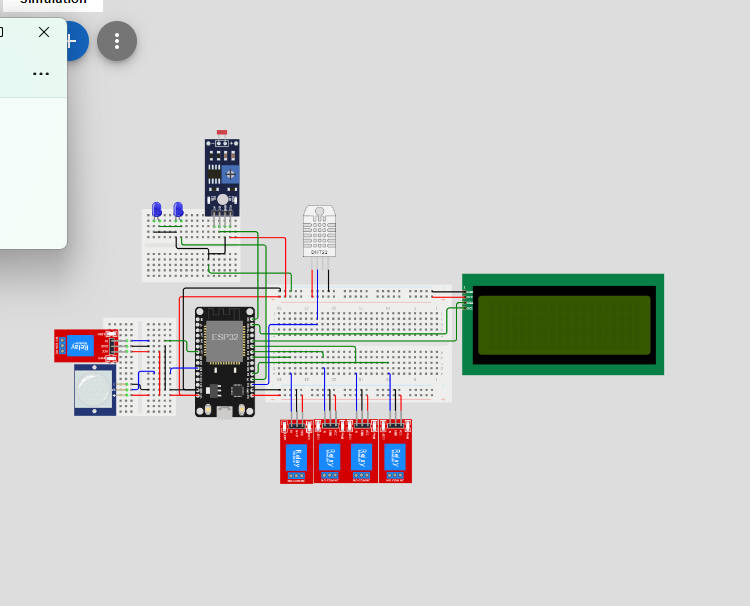
HOME AUTOMATION ASSIGNMENT



CODE;

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TinkerCAD Circuit Design Contest - 2022

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Project Name : Home Automation Using IOT

Components Used : Esp32, DHT22, Relay Module, IR sensor, LCD I2C, PIR, LED, Breadboards.

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==========================================================================================================

                                       Blynk IoT platform

Blynk Credentials : (to access the dashboard)

              Mail Id : karthidon521@gmail.com

              Password: \*\*\*\*\*\*

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#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("2022");

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);

}