NAAN MUDHALVAN – PROFESSIONAL READINESS FOR INNOVATION, EMPLOYMENT AND ENTERPRENEURSHIP

ASSIGNMENT – 1

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QUESTION:

Build a smart home in wokwi with minimum 2 sensors, Led, buzzer.

➔ Example: pir sensor for home security, servo motor for door lock system.

➔ Hint: replicate tinkercad code and connections in wokwi and integrate both codes to a single code.

LINK:

https://wokwi.com/projects/364541213597388801

CODE:

```
#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);
```

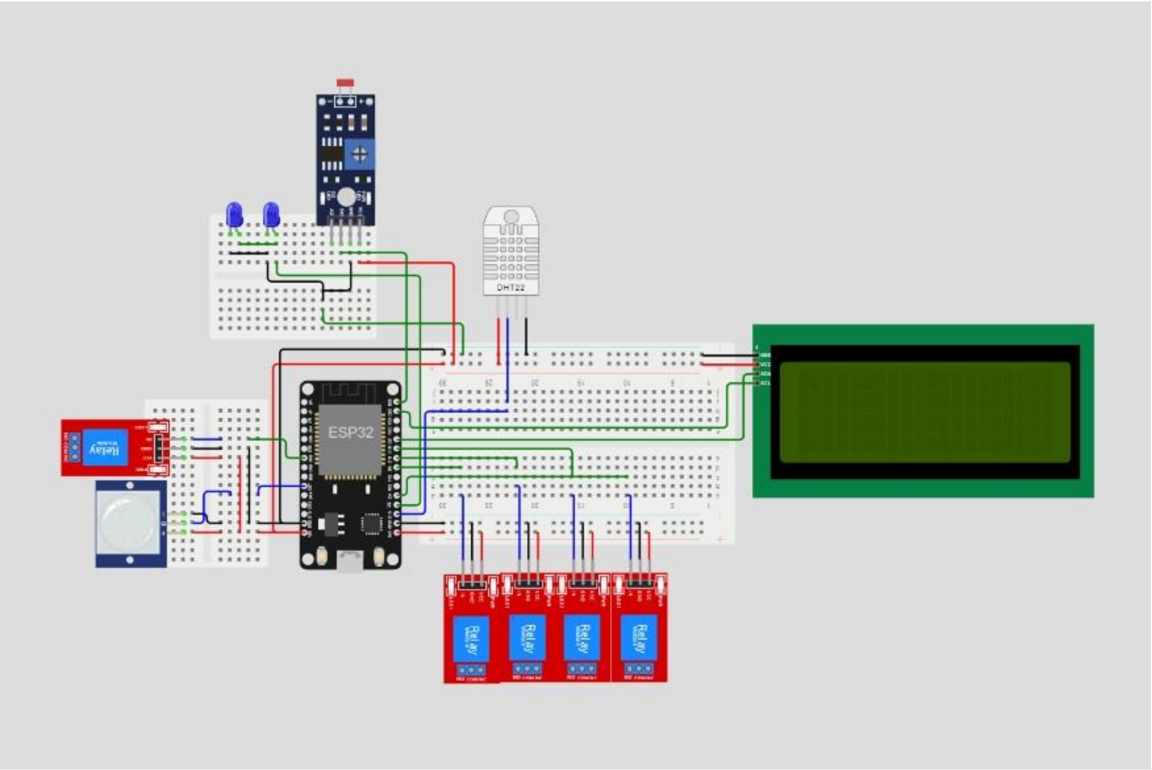
```
}
BLYNK_WRITE(V1){  va2 =
param.asInt();
digitalWrite(18, va2);
}

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);

}
```

CIRCUIT DIAGRAM:


DHT22
ESP32
Relay
Relay
Relay
Relay
Relay