**Assignment 1**

**Smart Home in Wokwi with 2 sensors, LED and Buzzer**

#define BLYNK\_TEMPLATE\_ID "TMPLcsTEe6uD"

#define BLYNK\_DEVICE\_NAME "IOT SMART HOME"

#define BLYNK\_AUTH\_TOKEN "0i6ILQXN8UToKiJ\_0lSsafzKBEckxZLE"

#define BLYNK\_PRINT **Serial**

#include <LiquidCrystal\_I2C.h>

#include <WiFi.h>

#include <WiFiClient.h>

#include <BlynkSimpleEsp32.h>

char auth[] = BLYNK\_AUTH\_TOKEN;

char ssid[] = "Wokwi-GUEST";

char pass[] = "";

#define LIGHT\_SENSOR\_PIN  33

#define LED\_PIN           13

#define ANALOG\_THRESHOLD  500

#define echoPin 4

#define trigPin 19

long duration;

int distance;

LiquidCrystal\_I2C LCD = LiquidCrystal\_I2C(0x27, 16, 2);

BlynkTimer timer;

WidgetLED led3(V3);

boolean LEDState = false;

BLYNK\_CONNECTED ()

{

   Blynk.syncVirtual (V3);

}

void sendSensor()

{

  digitalWrite(trigPin, LOW);

  delayMicroseconds(2);

  digitalWrite(trigPin, HIGH);

  delayMicroseconds(10);

  digitalWrite(trigPin, LOW);

  duration = pulseIn(echoPin, HIGH);

  distance = duration \* 0.034 / 2;

  int LDRValue = analogRead(LIGHT\_SENSOR\_PIN);

  if (LDRValue < ANALOG\_THRESHOLD)

    digitalWrite(LED\_PIN, HIGH);

  else

    digitalWrite(LED\_PIN, LOW);

   LCD.setCursor(0,0);

   LCD.print("Distance: ");

   LCD.print(distance);

   LCD.println(" cm");

   LCD.setCursor(0,1);

   LCD.print("LDRValue: ");

   LCD.println(LDRValue);

**Serial**.print("Distance: ");

**Serial**.println(distance);

**Serial**.print("LDRValue: ");

**Serial**.println(LDRValue);

  delay(2000);

  Blynk.virtualWrite(V1, distance);

  Blynk.virtualWrite(V2, LDRValue);

}

void setup() {

**Serial**.begin(115200);

  pinMode(LED\_PIN, OUTPUT);

  pinMode(trigPin, OUTPUT);

  pinMode(echoPin, INPUT);

  LCD.init();

  LCD.backlight();

  LCD.setCursor(1, 0);

  LCD.print("IOT SMART HOME");

  LCD.setCursor(3, 1);

  LCD.print("MK CHANNEL");

  delay(5000);

  LCD.clear();

  Blynk.begin(auth, ssid, pass);

  timer.setInterval(1000L, sendSensor);

}

void loop() {

  Blynk.run();

  timer.run();

}