

ASSIGNMENT-4

- Write code and connections in wokwi for the ultrasonic sensor.
- Whenever the distance is less than 100 cms send an "alert" to the IBM cloud and display in the device recent events.
- Upload document with wokwi share link and images of IBM cloud

Submitted by

MAHIMA JENIFER A

CODE

```
#include <WiFi.h>
#include <PubSubClient.h>

void callback(char* subscribetopic, byte* payload, unsigned int payloadLength);

#define ORG "46d2e1"//IBM ORGANITION ID
#define DEVICE_TYPE "87654321"//Device type mentioned in ibm watson IOT
#define DEVICE_ID "12345678"//Device ID mentioned in ibm watson IOT
#define TOKEN "123123123" //Token String data3;
char server[] = ORG ".messaging.internetofthings.ibmcloud.c om";
char publishTopic[] = "iot- 2/evt/Data/fmt/json";
char subscribetopic[] = "iot- 2/cmd/test/fmt/String";
char authMethod[] = "use-token-auth"; char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;
WiFiClient wifiClient;
//PubSubClient client(server, 1883, callback ,wifiClient);
const int trigPin = 5; const int echoPin = 18;
const int ledpin= 12;
```

```
#define SOUND_SPEED 0.034
long duration;
float distance; void setup() {
  Serial.begin(115200); pinMode(trigPin, OUTPUT);
  pinMode(ledpin, OUTPUT);
  pinMode(echoPin, INPUT);
  //wificonnect();
  //mqttconnect();
}
void loop()
{
  digitalWrite(trigPin, LOW); delayMicroseconds(2); digitalWrite(trigPin, HIGH);
    delayMicroseconds(10); digitalWrite(trigPin, LOW);
  duration = pulseIn(echoPin, HIGH);
  distance = duration * SOUND_SPEED/2;
  Serial.print("Distance (cm): "); Serial.println(distance);
  if(distance<100)
```

```
{
  digitalWrite(ledpin, HIGH);
  delay(1000);
  Serial.println("ALERT!!"); delay(1000); PublishData(distance); delay(1000);
  /*if (!client.loop()) { mqttconnect();
  }
  */}
else
{
  digitalWrite(ledpin, LOW);
  delay(1000);
}
delay(1000);
}

void PublishData(float dist) {
  //mqttconnect();
  String payload = "{\"Distance\": "; payload += dist;
  payload += ", \"ALERT!!\": \"\" \"Distance less than 100cms\" \"\"";
  payload += "}"; Serial.print("Sending payload: "); Serial.println(payload);
}
```

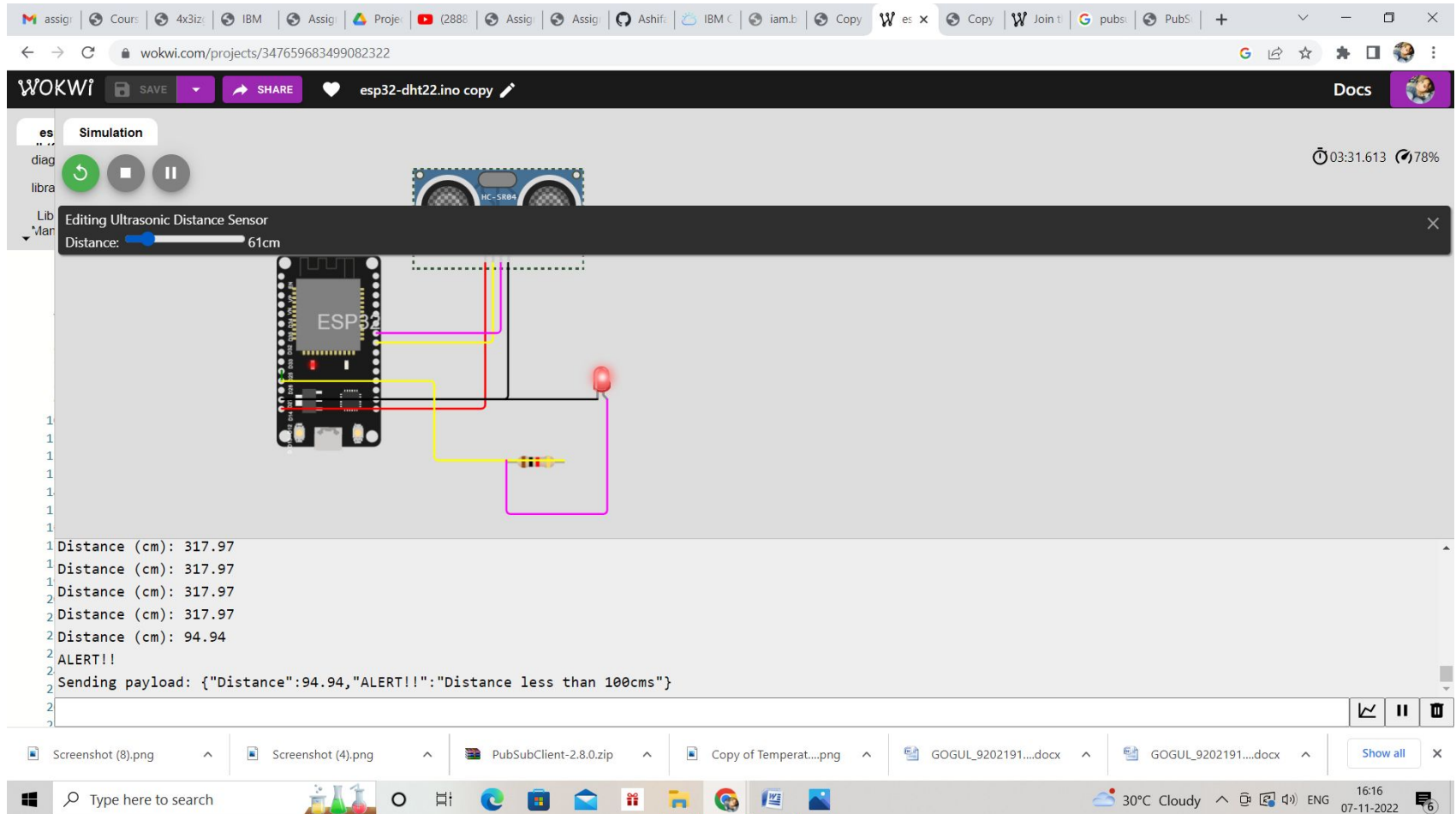
OUTPUT

•
•

WOKWI

Simulation

Distance: 61cm



```
1 Distance (cm): 317.97
1 Distance (cm): 317.97
1 Distance (cm): 317.97
2 Distance (cm): 317.97
2 Distance (cm): 94.94
2 ALERT!!
2 Sending payload: {"Distance":94.94,"ALERT!!":"Distance less than 100cms"}
```

Screenshot (8).png Screenshot (4).png PubSubClient-2.8.0.zip Copy of Temperat....png GOGUL_9202191....docx GOGUL_9202191....docx Show all

Type here to search 30°C Cloudy 16:16 07-11-2022

Simulation

03:23.764 98%

Editing Ultrasonic Distance Sensor
Distance: 318cm

```
1 Distance (cm): 317.97
1 Distance (cm): 317.97
1 Distance (cm): 317.97
2 Distance (cm): 317.97
2 Distance (cm): 317.97
2 Distance (cm): 317.97
2 Distance (cm): 317.97
2 Distance (cm): 317.97
```

wokwi

link:

<https://wokwi.com/projects/34765968349908232>

2