ASSIGNMENT - 4

Submitted by

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- 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

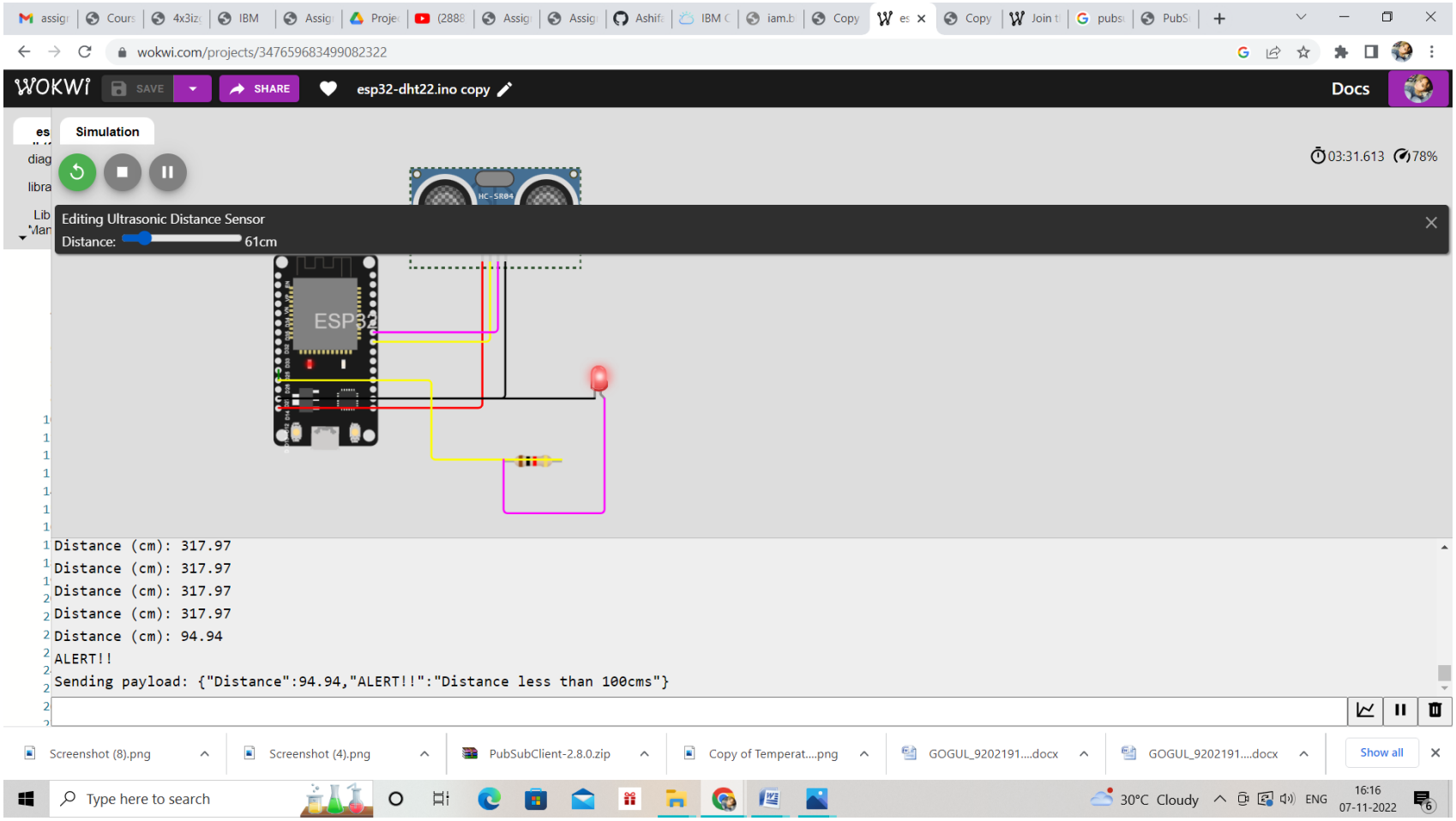
CODE:

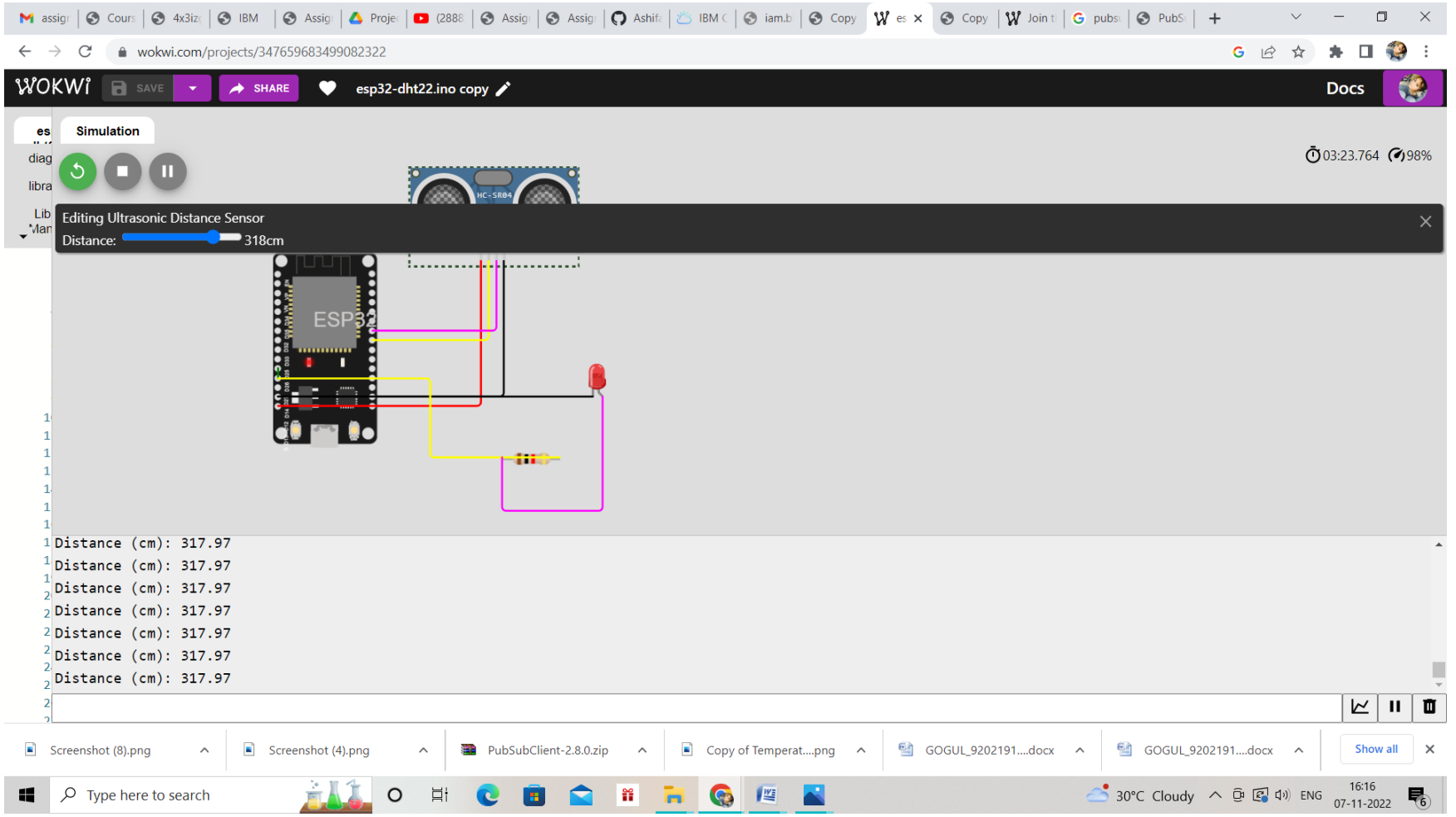
```
#include <WiFi.h>
//#include <PubSubClient.h>
void callback(char* subscribetopic, byte* payload, unsigned int payloadLength);
#define ORG "46d2e1"//IBM ORGANITION ID
#define DEVICE_TYPE "87654321"//Device type mentioned in ibm watson IOT
#define DEVICE_ID "12345678"//Device ID mentioned in ibm watson 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.com/projects/347659683499082322
WOKWI
SAVE
SHARE
esp32-dht22.ino copy
Docs
Simulation
03:31.613
78%
Editing Ultrasonic Distance Sensor
Distance:
61cm
HC-SR04
ESP32
Distance (cm): 317.97
Distance (cm): 317.97
Distance (cm): 317.97
Distance (cm): 317.97
Distance (cm): 94.94
ALERT!!
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
ENG
16:16
07-11-2022


wokwi.com/projects/347659683499082322
WOKWI
SAVE
SHARE
esp32-dht22.ino copy
Docs
Simulation
03:23.764
98%
Editing Ultrasonic Distance Sensor
Distance:
318cm
HC-SR04
ESP32
Distance (cm): 317.97
Distance (cm): 317.97
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GOGUL_9202191....docx
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Show all
Type here to search
30°C Cloudy
ENG
16:16
07-11-2022

wokwi link:

https://wokwi.com/projects/347659683499082322