

## **ASSIGNMENT - 4**

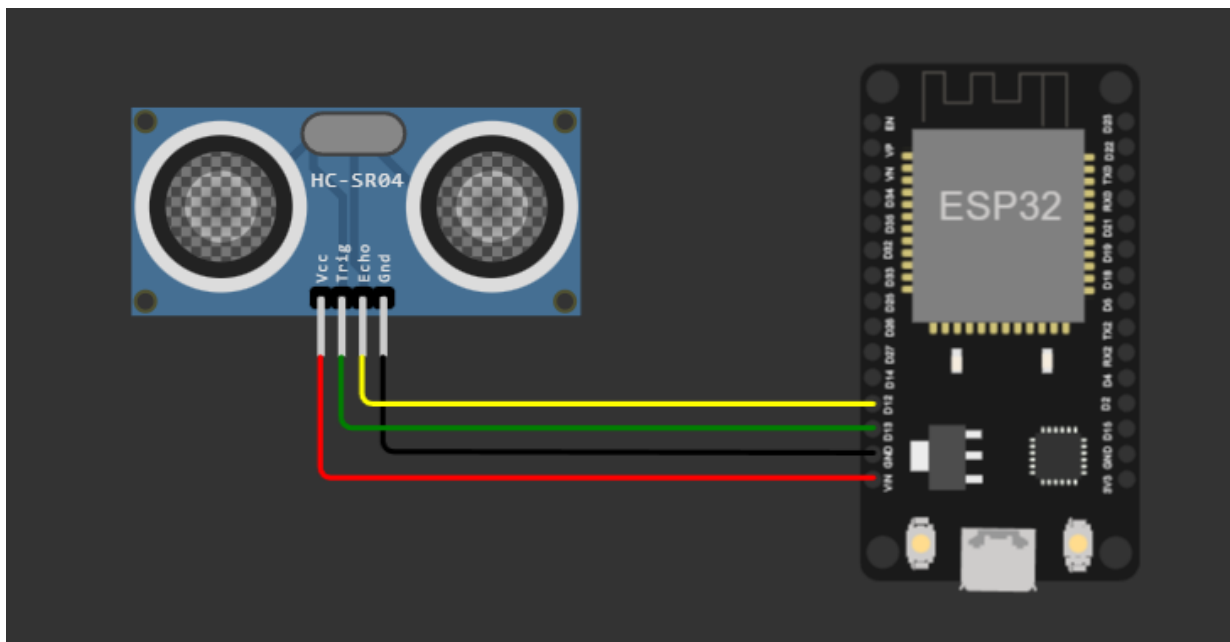
Date	19 September 2022
Team ID	PNT2022TMID21445
Project Name	Gas Leakage monitoring & Alerting system for Industries
Project TEAM members	19D114 – ARIKARASHRI. K 19D127 – NITHISH KUMAR. M 19D129 – RANJITH KUMAR. P 19D130 – RUTHRAM. M 19D135 – UDHAYAKUMAR. U

### **AIM:**

- 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.

### **CIRCUIT DIAGRAM:**

Link: <https://wokwi.com/projects/347227854809858643>



# OUTPUTS:

WOKWI

Simulation

01:01:667 100%

```
1 #include <WiFi.h> //library for wifi
2 #include <PubSubClient.h> //library for MQTT
3 #define TRIG_PIN 13
4 #define ECHO_PIN 12
5
6
7
8 void callback(char* topic, byte* payload, unsigned int payloadLength);
9
10 //-----credentials of IBM Accounts-----
11
12 #define ORG "y9hro" //IBM ORGANIZATION ID
13 #define DEVICE_TYPE "abcde" //Device type mentioned in IBM Watson IoT Platform
14 #define DEVICE_ID "13" //Device ID mentioned in IBM Watson IoT Platform
15 #define TOKEN "12345678" //Token
16
17
18 //----- Customise the above values -----
19 char server[] = ORG ".messaging.internetofthings.ibmcloud.com"; // Server Name
20 char publishTopic[] = "iot-2/evt/Data/fmt/json"; // topic name and type of event perform a
21 char subscribeTopic[] = "iot-2/cmd/command/fmt/string"; // cmd REPRESENT command type AND
22 char authMethod[] = "use-token-auth"; // authentication method
23 char token[] = TOKEN;
24 char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID; //client id
25
26
27 //-----
28
29 WiFiClient wifiClient; // creating the instance for wifiClient
30 PubSubClient client(server, 1883, callback, wifiClient); //calling the predefined client
31
32
33 void setup() // configuring the ESP32
34 {
35   Serial.begin(115200);
```

WOKWI

Simulation

01:01:449 97%

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IBM Watson IoT Platform

1 item selected Cancel

13 Connected abcde Device Nov 2, 2022 8:17 PM

Identity Device Information Recent Events State Logs

The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Received
Data	{\"Distance\":168.96,\"MESSAGE\":\"SAFE\"}	json	a few seconds ago
Data	{\"Distance\":168.96,\"MESSAGE\":\"SAFE\"}	json	a few seconds ago
Data	{\"Distance\":168.96,\"MESSAGE\":\"SAFE\"}	json	a few seconds ago
Data	{\"Distance\":41.99,\"MESSAGE\":\"ALERT\"}	json	a few seconds ago
Data	{\"Distance\":42.11,\"MESSAGE\":\"ALERT\"}	json	a few seconds ago

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