

ASSIGNMENT - 4

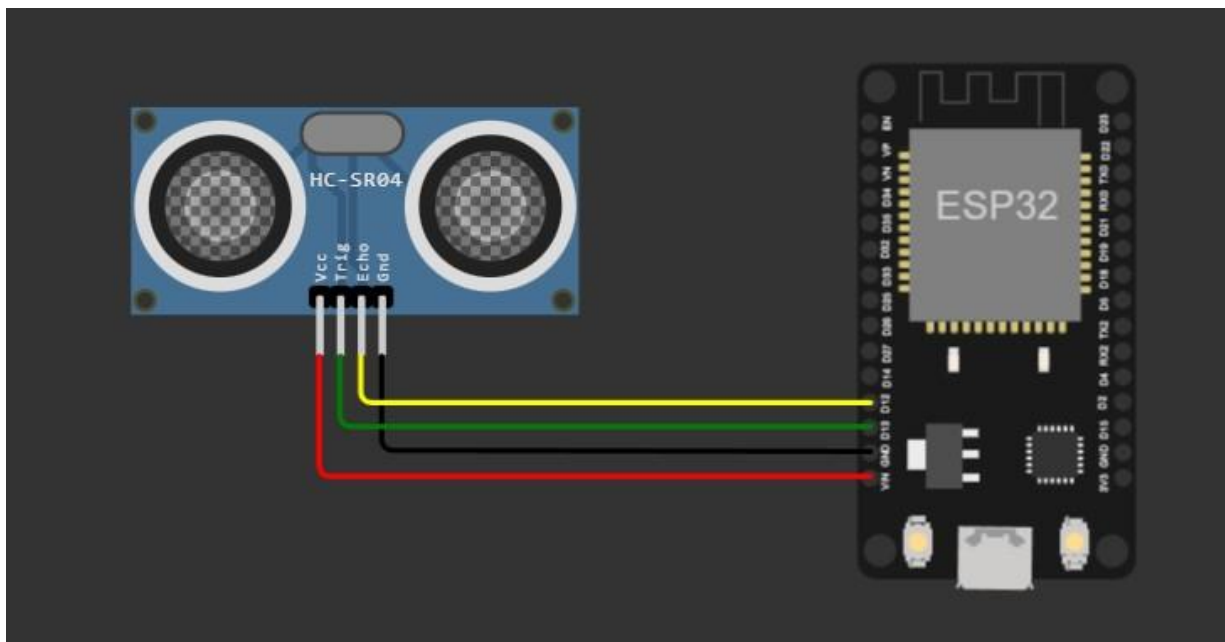
Date	6 october 2022
Team ID	PNT2022TMID54076
Project Name	Personal Assistance for Seniors Who Are Self-Reliant.
Maximum Marks	2 Marks

Objective:

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/346775166279221842>



OUTPUT:

The screenshot shows the Arduino IDE with a sketch and a simulation window. The sketch is a C++ program for an ESP32 that reads an ultrasonic sensor and publishes data to a cloud. The simulation window shows the hardware setup and the output log.

```
75 String payload = "{\"Distance\": ";
76 payload+=d;
77 payload+=" ";
78 payload+="MESSAGE\"";
79 payload+="";
80 payload+=s;
81 payload+="";
82 payload+="";
83
84
85 Serial.print("Sending payload: ");
86 Serial.println(payload);
87
88
89 if (client.publish(publishTopic, (char*) payload.c_str())) {
90   Serial.println("Publish ok");// If it successfully upload data on the cloud then it will
91 } else {
92   Serial.println("Publish failed");
93 }
94
95
96
97
98 void mqttconnect() {
99   if (!client.connected()) {
100     Serial.print("Reconnecting client to ");
101     Serial.println(server);
102     while (!client.connect(clientId, authMethod, token)) {
103       Serial.print(".");
104       delay(500);
105     }
106   }
107   initManagedDevice();
```

Simulation window output:

```
Publish ok
Sending payload: {"Distance":134.96,"MESSAGE":"SAFE"}
Publish ok
Sending payload: {"Distance":134.96,"MESSAGE":"SAFE"}
Publish ok
Sending payload: {"Distance":134.98,"MESSAGE":"SAFE"}
Publish ok
```

The screenshot shows the Arduino IDE with a sketch and a simulation window. The sketch is a C++ program for an ESP32 that reads an ultrasonic sensor and publishes data to a cloud. The simulation window shows the hardware setup and the output log.

```
75 String payload = "{\"Distance\": ";
76 payload+=d;
77 payload+=" ";
78 payload+="MESSAGE\"";
79 payload+="";
80 payload+=s;
81 payload+="";
82 payload+="";
83
84
85 Serial.print("Sending payload: ");
86 Serial.println(payload);
87
88
89 if (client.publish(publishTopic, (char*) payload.c_str())) {
90   Serial.println("Publish ok");// If it successfully upload data on the cloud then it will
91 } else {
92   Serial.println("Publish failed");
93 }
94
95
96
97
98 void mqttconnect() {
99   if (!client.connected()) {
100     Serial.print("Reconnecting client to ");
101     Serial.println(server);
102     while (!client.connect(clientId, authMethod, token)) {
103       Serial.print(".");
104       delay(500);
105     }
106   }
107   initManagedDevice();
```

Simulation window output:

```
Publish ok
Sending payload: {"Distance":98.99,"MESSAGE":"ALERT"}
Publish ok
Sending payload: {"Distance":98.97,"MESSAGE":"ALERT"}
Publish ok
Sending payload: {"Distance":98.97,"MESSAGE":"ALERT"}
Publish ok
```

The screenshot shows the IoT Cloud dashboard. The device 'abcd' is connected. The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
Data	{"Distance":126.96,"MESSAGE":"SAFE"}	json	a few seconds ago
Data	{"Distance":126.99,"MESSAGE":"SAFE"}	json	a few seconds ago
Data	{"Distance":120.99,"MESSAGE":"SAFE"}	json	a few seconds ago
Data	{"Distance":98.97,"MESSAGE":"ALERT"}	json	a few seconds ago
Data	{"Distance":98.97,"MESSAGE":"ALERT"}	json	a few seconds ago

Items per page 50 | 1-1 of 1 item

0 Simulations running