

Assignment 4

Assignment Date	04 November 2022
Student Name	Mohammad Haris C M
TEAM ID	PNT2022TMID44065
Maximum Marks	2 Marks

Question-1:

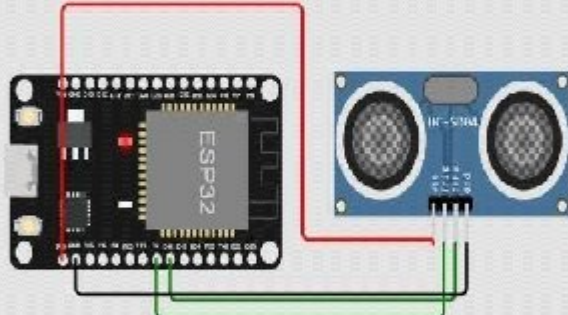
Write code and connections in Wokwi for ultrasonic sensor. Whenever distance is less than 100 cms send "alert" to IBM cloud and display in device recent events Upload document with Wokwi share link and images of IBM cloud.

```

1 #include <Arduino.h>
2 #include <WiFiClient.h>
3 #include <PubSubClient.h>
4 const int trigPin = 10;
5 const int echoPin = 11;
6 //define sound speed in cm/us
7 #define SOUND_SPEED 0.034
8 #define CM_TO_INCH 0.393701
9 long duration;
10 float distanceCm;
11 float distanceInch;
12
13
14 void callback(char* topic, byte* payload, unsigned int payloadLength);
15 //-----credentials of IBM accounts-----
16
17 #define MSG "fleg7e"//IBM ORGANIZATION ID
18 #define DEVICE_TYPE "ultrasonic"//device type mentioned in the Watson IoT Platform
19 #define DEVICE_ID "shd 2"//device ID mentioned in the Watson IoT Platform
20 #define TOKEN "CvataWfQW7sa_RMG2" //Token
21 String dataStr;
22
23
24
25 //----- Customise the above values -----
26 char server[] = "messaging.internetofthings.ibmcloud.com";// Server Name
27 char publishTopic[] = "iot-2/evt/data/evt/json";// topic name and type of event perform
28 char subscribeTopic[] = "iot-2/cmd/test/evt/string";// cmd REPRESENT command type AND DO
29 char authMethod[] = "use token auth";// authentication method
30 char token[] = TOKEN;
31 char clientId[] = "d:" MSG ":" DEVICE_TYPE ":" DEVICE_ID;//client id
32
33 WiFiClient wifiClient; // creating the instance for wifiClient
34 PubSubClient client(server, 1883, callback, wifiClient);
35

```

Simulation



```

Publish ok
Distance (cm): 216.94
Distance (inch): 85.42
Sending payload: ("Distance (cm)":216.94)
Publish ok
Reconnecting client to fleg7e.messaging.internetofthings.ibmcloud.com
..

```

