

TEAM ID:

PNT2022TMID27908

PROJECT NAME:

INDUSTRY-SPECIFIC INTELLIGENT FIRE
MANAGEMENT SYSTEM

ASSIGNMENT:

4

Wokwi Link: <https://wokwi.com/projects/347118572579848787>

Distance when less than 100cm-alert sent to IBM CLOUD

```
1 #include <WiFi.h> //library for wifi
2 #include <PubSubClient.h> //library for MQTT
3 #define EchoPIN 4 // what pin we're connected to
4 #define TrigPIN 2
5 #define LED 5
6 //DHT dht (DHTPIN, DHTTYPE); // creating the instance by passing pin and type of dht connected
7
8 void callback(char* topic, byte* payload, unsigned int payloadLength);
9
10 //-----credentials of IBM Accounts-----
11
12 #define ORG "mrrw9" //IBM ORGANIZATION ID
13 #define DEVICE_TYPE "abcdef" //Device type mentioned in IBM Watson IoT Platform
14 #define DEVICE_ID "123456" //Device ID mentioned in IBM Watson IoT Platform
15 #define TOKEN "12345678" //Token
16 String data;
17
18 //----- Customise the above values -----
19
20 char server[] = ORG ".messaging.internetofthings.ibmcloud.com"; // Server Name
21 char publishTopic[] = "iot-2/evt/Data/fmt/json"; // topic name and type of event perform and format
22 char subscribeTopic[] = "iot-2/cmd/command/fmt/string"; // cmd REPRESENT command type AND COMMAND IS
23 char authMethod[] = "use-token-auth"; // authentication method
24 char token[] = TOKEN;
25 char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID; //client id
26 float dist,dur;
27 String data;
28
29 //-----
30 WiFiClient wifiClient; // creating the instance for wifiClient
31 PubSubClient client(server, 1883, callback, wifiClient); //calling the predefined client id by passing
32
33
34 void setup() // configuring the ESP32
35 {
36   Serial.begin(115200);
37   pinMode(TrigPIN, OUTPUT);
38   digitalWrite(TrigPIN, LOW);
39   pinMode(EchoPIN, INPUT);
40   pinMode(LED, OUTPUT);
41   pinMode(A0, INPUT);
42 }
```

Simulation

Editing Ultrasonic Distance Sensor
Distance: 23cm

Sending payload: {"distance":23.02,"msg":"alert"}
Publish ok
Sending payload: {"distance":22.95,"msg":"alert"}
Publish ok
Sending payload: {"distance":22.95,"msg":"alert"}
Publish ok

IBM Watson IoT Platform

311519106053@smartinternz.com
ID: mrrw9

1234 Disconnected abcd Device Oct 28, 2022 8:00 PM 311519106053@smartinternz.com

123456 Disconnected abcdef Device Nov 1, 2022 9:01 PM 311519106053@smartinternz.com

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	Last Received
Data	{"distance":22.95,"msg":"alert"}	json	a few seconds ago
Data	{"distance":22.95,"msg":"alert"}	json	a few seconds ago
Data	{"distance":23.02,"msg":"alert"}	json	a few seconds ago
Data	{"distance":22.95,"msg":"alert"}	json	a minute ago
Data	{"distance":22.95,"msg":"alert"}	json	a minute ago

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0 Simulations running

Distance when greater than 100cm-no alert sent to IBM CLOUD

WOKWI

sketch.ino

```
1 #include <WiFi.h> //library for wifi
2 #include <PubSubClient.h> //library for MQTT
3 #define EchoPIN 4 // what pin we're connected to
4 #define TrigPIN 2
5 #define LED 5
6 //DHT dht (DHTPIN, DHTTYPE); // creating the instance by passing pin and type of dht connected
7
8 void callback(char* topic, byte* payload, unsigned int payloadLength);
9
10 //-----credentials of IBM Accounts-----
11
12 #define ORG "mriw9" //IBM ORGANIZATION ID
13 #define DEVICE_TYPE "abcdef" //Device type mentioned in ibm watson IOT Platform
14 #define DEVICE_ID "123456" //Device ID mentioned in ibm watson IOT Platform
15 #define TOKEN "12345678" //Token
16 String data;
17
18
19
20 //----- Customise the above values -----
21 char server[] = ORG ".messaging.internetofthings.ibmcloud.com"; // Server Name
22 char publishTopic[] = "iot-2/evt/data/fmt/json"; // topic name and type of event perform and format
23 char subscribeTopic[] = "iot-2/cmd/command/fmt/String"; // cmd REPRESENT command type AND COMMAND IS
24 char authMethod[] = "use-token-auth"; // authentication method
25 char token[] = TOKEN;
26 char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID"; //client id
27 float dist,dur;
28 String data;
29
30 //-----
31 WiFiClient wifiClient; // creating the instance for wifiClient
32 PubSubClient client(server, 1883, callback, wifiClient); //calling the predefined client id by pass
33
34 void setup() // configuring the ESP32
35 {
36   Serial.begin(115200);
37   pinMode(TrigPIN, OUTPUT);
38   digitalWrite(TrigPIN, LOW);
39   pinMode(EchoPIN, INPUT);
40   pinMode(LED, OUTPUT);
41 }
```

Simulation

Editing Ultrasonic Distance Sensor

Distance: 296cm

Publish ok
Sending payload: {"distance":296.02,"msg":"safe"}
Publish ok
Sending payload: {"distance":296.02,"msg":"safe"}
Publish ok
Sending payload: {"distance":296.02,"msg":"safe"}
Publish ok

IBM Watson IoT Platform

311519106053@smartinternz.com
ID: mriw9

Browse Action Device Types Interfaces

Add Device

	Identity	Device Information	Recent Events	State	Logs
>	1234	Disconnected	abod	Device	Oct 28, 2022 8:00 PM
▼	123456	Connected	abcdef	Device	Nov 1, 2022 9:01 PM

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":296,"msg":"safe"}	json	a few seconds ago
Data	{"distance":296.02,"msg":"safe"}	json	a few seconds ago
Data	{"distance":296.02,"msg":"safe"}	json	a few seconds ago
Data	{"distance":296.02,"msg":"safe"}	json	a few seconds ago
Data	{"distance":296.02,"msg":"safe"}	json	a few seconds ago

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0 Simulations running