

Assignment -1

Assignment Date	08 NOVEMBER 2022
Student Name	C.CHRISTEN DEVA KRIPA
Student Roll Number	111519106020
Maximum Marks	2 Marks

Assignment 4:

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.

Solution:

CODE:

```
esp32-blink.ino  diagram.json  libraries.txt  Library Manager  ▼
1  #include <WiFi.h>
2  #include <WiFiClient.h>
3  #include <PubSubClient.h>
4  const int trigPin = 5;
5  const int echoPin = 18;
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* subscribetopic, byte* payload, unsigned int payloadLength);
15 //-----credentials of IBM Accounts-----
16
17 #define ORG "f1eg7e"//IBM ORGANITION ID
18 #define DEVICE_TYPE "ultrasonic"//Device type mentioned in ibm watson IOT Platform
19 #define DEVICE_ID "shud_2"//Device ID mentioned in ibm watson IOT Platform
20 #define TOKEN "CVzAxIfQuG7sa_?WKZ" //Token
21 String data3;
22
23
24
25 //----- Customise the above values -----
26 char server[] = ORG ".messaging.internetofthings.ibmcloud.com";// Server Name
27 char publishTopic[] = "iot-2/evt/Data/fmt/json";// topic name and type of event perform a
28 char subscribetopic[] = "iot-2/cmd/test/fmt/String";// cmd REPRESENT command type AND CO
29 char authMethod[] = "use-token-auth";// authentication method
30 char token[] = TOKEN;
31 char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;//client id
32
33 WiFiClient wificlient; // creating the instance for wificlient
34 PubSubClient client(server, 1883, callback ,wificlient);
35
```

Simulation

01:37.753

99%

Publish ok

Distance (cm): 216.94

Distance (inch): 85.41

Sending payload: {"Distance (cm)":216.94}

Publish ok

Reconnecting client to fleg7e.messaging.internetofthings.ibmcloud.com

Browse

Action

Device Types

Interfaces

Add Device

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
shud_2	Disconnected	ultrasonic	Device	Oct 27, 2022 1:52 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	Last Received
Data	{"Distance (cm)":216.94}	json	a few seconds ago
Data	{"Distance (cm)":216.97}	json	a few seconds ago
Data	{"Distance (cm)":216.94}	json	a few seconds ago
Data	{"Distance (cm)":216.94}	json	a few seconds ago
Data	{"Distance (cm)":216.94}	json	a few seconds ago

