

## ASSIGNMENT-4

Assignment Date	27 october 2022
Student Name	K.BRINDHA DEVI
Student Roll Number	711619106701
Maximum Marks	2 Marks

### QUESTION:

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.

### SOLUTION:

#### SIMULATION SCREENSHOTS:

The screenshot displays the IBM Watson IoT Platform dashboard. The browser tabs include 'sketchino - Wokwi Arduino and', 'IBM Watson IoT Platform', and 'Node-RED'. The URL bar shows 'kvnnui.internetofthings.ibmcloud.com/dashboard/devices/browse'. The dashboard header includes the IBM Watson IoT Platform logo and a user profile for '711619106701@smartinternz.com'. The main section is titled 'Browse Devices' and features a table of devices. The table has columns for Device ID, Status, Device Type, Class ID, Date Added, Descriptive Location, and Added By. A single device is listed with ID 'DCBA', status 'Connected', and type 'ABCD'. The bottom of the dashboard shows '0 Simulations running'.

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location	Added By
DCBA	Connected	ABCD	Device	Oct 27, 2022 7:08 AM		711619106701@smartinternz.com

Wokwi - Wokwi Arduino and IBM Watson IoT Platform - Node-RED

wokwi.com/projects/346573737482519122

WOKWI

SAVE SHARE

Docs

sketch.ino diagram.json libraries.txt Library Manager

```

1 #include <WiFi.h>
2 #include <PubSubClient.h>
3 WiFiClient wificlient;
4 String data3;
5
6 #define DEVICE_TYPE "ABCD"
7 #define DEVICE_ID "DCBA"
8 #define TOKEN "987654321"
9 #define speed 0.034
10 #define led 14
11 #define ORG "kvnnoi"
12 char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
13 char publishTopic[] = "iot-2/evt/status/fmt/json";
14 char topic[] = "iot-2/cmd/home/fmt/String";
15 char authMethod[] = "use-token-auth";
16 char token[] = TOKEN;
17 char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;
18 PubSubClient client(server, 1883, wificlient);
19 void publishData();
20
21
22 const int trigpin=5;
23 const int echopin=18;
24 String command;
25 String data="";
26
27 long duration;
28 float dist;
29
30
31

```

Simulation

00:32.225 62%

kvnnoi.messaging.internetofthings.ibmcloud.com  
IBM subscribe to cmd OK

Reconnecting MQTT client to  
kvnnoi.messaging.internetofthings.ibmcloud.com  
IBM subscribe to cmd OK

Satisfactory air ENG 07:09

Wokwi - Wokwi Arduino and IBM Watson IoT Platform

wokwi.com/projects/346573737482519122

WOKWI

SAVE SHARE

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```

Simulation

01:37.927 85%

Sending payload: {"Alert distance":107.97}  
Warning crosses 110cm -- it automatically of the loop

26°C Haze ENG 07:39

Wokwi IoT Platform interface showing a simulation of an ESP32 connected to an Ultrasonic Distance Sensor. The sketch code is as follows:

```

1 #include <WiFi.h>
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24 String command;
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28 float dist;
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```

The simulation shows the sensor reading 97cm. The console output indicates successful publishing of the payload: {"Normal Distance":96.93}.

Wokwi IoT Platform interface showing a simulation of an ESP32 connected to an Ultrasonic Distance Sensor. The sketch code is as follows:

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4 String data3;
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24 String command;
25 String data="";
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```

The simulation shows the sensor reading 108cm. The console output indicates a warning crossing 110cm and successful publishing of the payload: {"Alert distance":107.97}.

sketch.ino - Wokwi Arduino and x IBM Watson IoT Platform x +

kvnnui.internetofthings.ibmcloud.com/dashboard/devices/browse

IBM Watson IoT Platform

711619106701@smartinternz.com  
ID: kvnnui

Browse Action Device Types Interfaces

All Devices Diagnose

This table shows a summary of all devices that have been added. It can be filtered, organized, and searched on using different criteria. To get started, you can add devices by using the Add Device button, or by using API.

Search by Device ID

Device Simulator

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location	Added By
DCBA	Connected	ABCD	Device	Oct 27, 2022 7:08 AM		711619106701@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
status	{"Alert distance":107.97}	json	a few seconds ago
status	{"Alert distance":107.97}	json	a few seconds ago
status	{"Alert distance":107.97}	json	a few seconds ago
status	{"Alert distance":107.97}	json	a few seconds ago
status	{"Alert distance":107.97}	json	a few seconds ago

0 Simulations running

WOKWI LINK:

<https://wokwi.com/projects/346573737482519122>