

## ASSIGNMENT - 4

|              |                  |
|--------------|------------------|
| DATE         | 28 October 2022  |
| TEAM ID      | PNT2022TMID09994 |
| Maximum mark | 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

### WOKWI CODE AND IMPLEMENTATION LINK:

<https://wokwi.com/projects/346506498129527380>

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103     else (
104         serial.println("Publish failed"),

Yes void mqtt connect () {
1e9     kf- ( !c Lient. connected()) {
me         serial.point ("Reconnecting client to ");
iii         serial.print In (server),
112         *diile ( !11 client. connect( client Id, autfrHethod, token) ) (

IIS         del ay(506)j

116

118         sar:rat. println(

122
123 void wificonuect () //function defination for wificounect

125     serlnl.println(),
y+     serial . print("connecting to");

128     Nil"i.begin ("uokvl—GUE 5T", "", 6); //passing the wifi c redeal sa! s to establ i sh the connect ion
L29     h3J+e (NiFi . status () I • NL_C0flt/ECTED) {
138         del ay(50s);
13i         Ariel.println (".");

133     serial.println (""),
i34     certuI . println ("airi connected");
its     snrial . pcintln ("ie addre ss : ");
its     Serisl . println (airi . localrP());

```



sketch.ino diagram.json libraries.txt Library Manager

```

i3s void initmanagedDevice () {

iai     ii tñ ie°t. subscribe(subscribetopic) ) (
142     SerlaL . print Tñ ( (subscribetopic));
law     Se*ia\ . pr nt \ n "subscri be to cml ox");

ias     else (
in         serizi .print In ("subscribe to curl fñiLEn");

156 void callback(char" subscribetoplc, byte" payL oad, unsigned int payloadLengtfi)

ISO     Mr ml . on nt ( "callback invoked for topic : ");
isa     seri*4. pri ntln(subsc nibetopic);

155     /*/*" * " "( char) payload[J] :
156     // data3 +- (char)oay load [i] ;

159     // Serial . println( "data: "+ data3);
160     //i {data3=='ligiton"}

162     //Serial.println (data3);
isa     digi t* lorii* (Len,men);

166

169     //SeriaT . pr z nt In (da I a 3 );
170     digitalwrite (LED, LCM) ;

```

## OUTPUT:

When the distance is less than 100 cms, send an “alert” message to IBM Watson IoT Platform.

The screenshot shows a Wokwi simulation of an ESP32 microcontroller connected to an Ultrasonic Distance Sensor. The sensor's distance is 42.33 cm. The code in the sketch.ino file is configured to send an alert message to the IBM Watson IoT Platform when the distance is less than 100 cm. The alert message is: {"distance":42.33,"object":"ALERT! object is near"}. The IBM Watson IoT Platform dashboard shows the device 'weather\_device' is connected and displays the recent events log.

**Recent Events Log:**

| Event | Value   | Format | Last Received     |
|-------|---|--------|-------------------|
| Data1 | {"distance":42.34,"object":"ALERT! object is near"} | json   | a few seconds ago |
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| Data1 | {"distance":42.34,"object":"ALERT! object is near"} | json   | a few seconds ago |

When the object is far( greater than 100 cms) , send “ no object found” to the IBM Watson IOT Platform.



Identity Device information **Recent Events** State Logs

| Event | Value  | Format | Last Received            |
|-------|--|--------|--------------------------|
| Data1 | {"distance":142.19,"object":"No object found"} | json   | a few <i>seconds</i> ago |
| Data5 | ("distance":142.19,"object":"No object found") | json   | a few <i>seconds</i> ago |
| Data1 | {"distance":142.2,"object":"No object found"}  | json   | a few <i>seconds</i> ago |

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