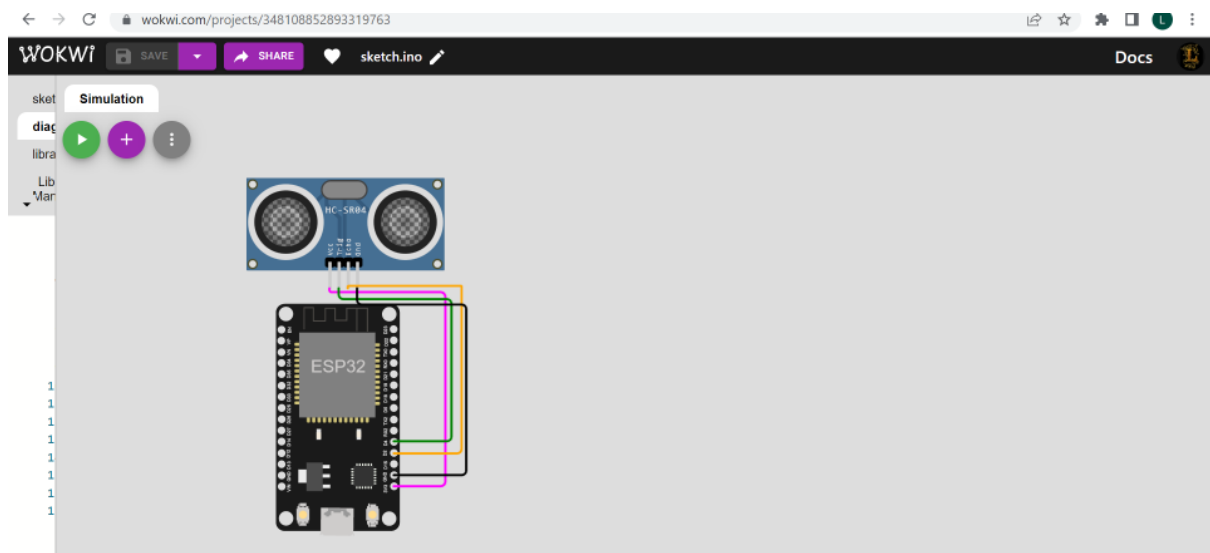


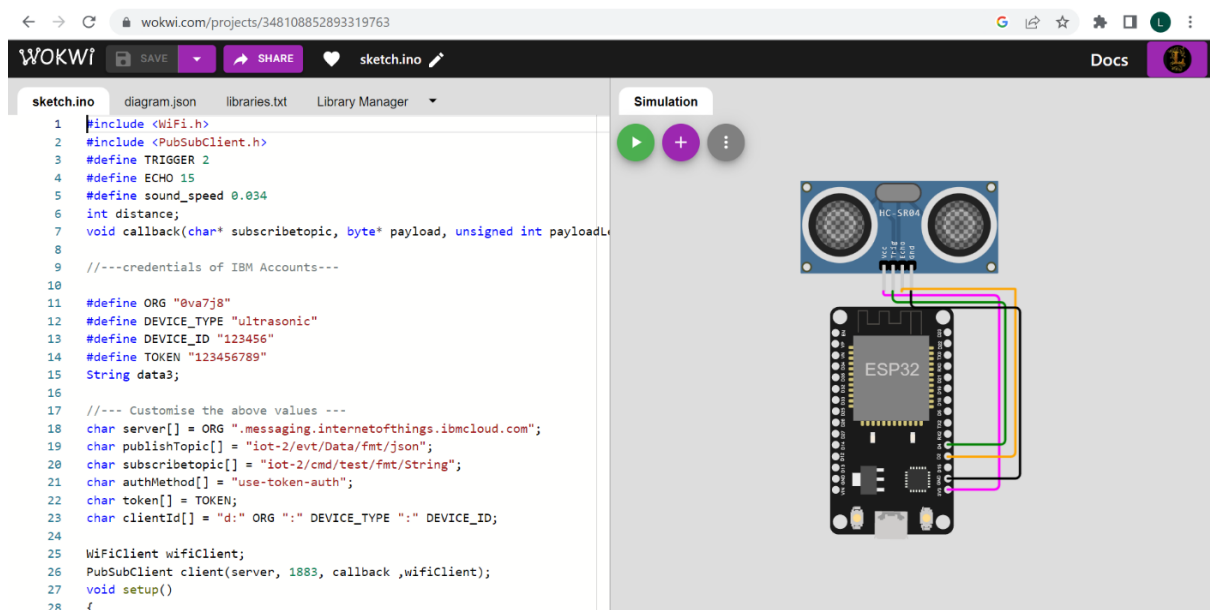
## ASSIGNMENT – 4

Write a code and connections in wokwi for the ultrasonic sensor. Whenever the distance is less than 100 cm and send an “alert” to the IBM cloud and display in the device recent events.

### CIRCUIT DIAGRAM:



### OUTPUT SCREENSHOTS AND CODE:



wokwi.com/projects/348108852893319763

WOKWI SAVE SHARE sketch.ino Docs

sketch.ino **diagram.json** libraries.txt Library Manager

```

1
2 "version": 1,
3 "author": "PNT2022TMID21245",
4 "editor": "wokwi",
5 "parts": [
6   { "type": "wokwi-esp32-devkit-v1", "id": "esp", "top": 38, "left": 100, "width": 100, "height": 100 },
7   { "type": "wokwi-hc-sr04", "id": "ultrasonic1", "top": -67.81, "left": 100, "width": 100, "height": 100 },
8 ],
9 "connections": [
10  [ "esp:TX0", "$serialMonitor:RX", "", [ ] ],
11  [ "esp:RX0", "$serialMonitor:TX", "", [ ] ],
12  [ "ultrasonic1:VCC", "esp:3V3", "magenta", [ "v3.23", "h99.55", "v13.9", "h93.88" ] ],
13  [ "ultrasonic1:TRIG", "esp:D4", "green", [ "v9.23", "h97", "v13.9", "h93.88" ] ],
14  [ "ultrasonic1:ECHO", "esp:D2", "orange", [ "v-2.1", "h96.44", "v13.9", "h93.88" ] ],
15  [ "ultrasonic1:GND", "esp:GND.1", "black", [ "v13.9", "h93.88", "v13.9", "h93.88" ] ],
16 ],
17 ]

```

Simulation

wokwi.com/projects/348108852893319763

00:04.615 70%

Connecting to ..  
 WiFi connected  
 IP address:  
 10.10.0.2  
 Reconnecting client to 0va7j8.messaging.internetofthings.ibmcloud.com  
 iot-2/cmd/test/fmt/String  
 subscribe to cmd OK

0 cms.  
 Sending payload: {"message":"alert"}  
 Publish ok

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00:15.413 47%

0 cms.  
 Sending payload: {"message":"alert"}  
 Publish ok  
 0 cms.  
 Sending payload: {"message":"alert"}  
 Publish ok  
 0 cms.  
 Sending payload: {"message":"alert"}  
 Publish ok  
 0 cms.  
 Sending payload: {"message":"alert"}  
 Publish ok  
 0 cms.  
 Sending payload: {"message":"alert"}  
 Publish ok

The screenshot displays the Wokwi IoT simulator interface. On the left is a dark sidebar with icons for various functions. The main area shows a device named '123456' with status 'Connected' and type 'ultrasonic'. Below this, the 'Recent Events' tab is active, showing a table of data events. The table has four columns: Event, Value, Format, and Last Received. It lists four identical data events, each with a JSON message value. At the bottom, a status bar indicates '0 Simulations running'.

Event	Value	Format	Last Received
Data	{"message":"alert"}	json	a few seconds ago
Data	{"message":"alert"}	json	a few seconds ago
Data	{"message":"alert"}	json	a few seconds ago
Data	{"message":"alert"}	json	a few seconds ago

**LINK:**

<https://wokwi.com/projects/348108852893319763>