Internet of Things Assignment

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.

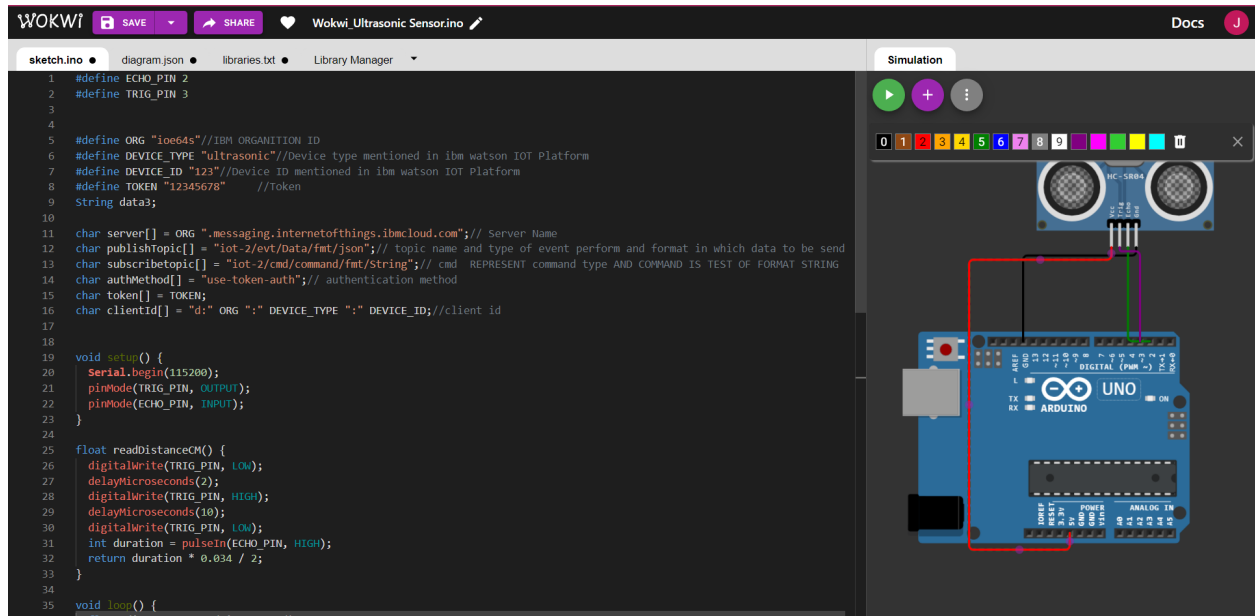Upload document with wokwi share link and images of IBM cloud

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Link for Project Repository:

https://wokwi.com/projects/348599390542234196

Snapshots:

sketch.ino · diagram.json · libraries.txt · Library Manager · Simulation

```
14  char authMethod[] = "use-token-auth";// authentication method
15  char token[] = TOKEN;
16  char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;//client id
17
18
19  void setup() {
20    Serial.begin(115200);
21    pinMode(TRIG_PIN, OUTPUT);
22    pinMode(ECHO_PIN, INPUT);
23  }
24
25  float readDistanceCM() {
26    digitalWrite(TRIG_PIN, LOW);
27    delayMicroseconds(2);
28    digitalWrite(TRIG_PIN, HIGH);
29    delayMicroseconds(10);
30    digitalWrite(TRIG_PIN, LOW);
31    int duration = pulseIn(ECHO_PIN, HIGH);
32    return duration * 0.034 / 2;
33  }
34
35  void loop() {
36    float distance = readDistanceCM();
37
38
39    if (distance<100)
40      Serial.print("alert");
41    else
42      Serial.print("Measured distance: ");
43    Serial.println(readDistanceCM());
44
45    delay(100);
46  }
```

sketch.ino · diagram.json · libraries.txt · Library Manager · Simulation · 00:54.177 · 100%

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```

```
Measured distance: 158.36
Measured distance: 158.25
Measured distance: 158.36
Measured distance: 158.36
Measured distance: 158.25
Measured distance: 158.36
Measured distance: 229.84
Measured distance: 299.54
Measured distance: 305.42
Measured distance: 305.42
Measured distance: 305.42
Measured distance: 305.44
Measured distance: 305.42
```

IBM Watson IoT Platform

Browse   Action   Device Types   Interfaces

⌄	▢	ultrasonic_1	🚫 Disconnected	ultrasonic

Identity	Device Information	Recent Events	State

The recent events listed show the live stream of data that is coming and going

Event	Value
event_1	{"randomNumber":93,"distance":39}
event_1	{"randomNumber":84,"distance":18}
event_1	{"randomNumber":93,"distance":13}
event_1	{"randomNumber":54,"distance":46}
event_1	{"randomNumber":58,"distance":85}

Simulations   Import/Export simulation   ⌄

⌄ Device Type   🔧 1 Event ◉ 🗑
   ultrasonic

   1 Device

   ⊕ ultrasonic_1   ⋮

   | 1 × | Create Simulated Device | Use Registered Device |

111 events sent   4.4 KB sent ›