

ASSIGNMENT-4

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Qn: 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

LINK:

<https://wokwi.com/projects/new/arduino-uno>

CODE:

```
long int echoPin=7;
```

```
long int trigPin=5;
```

```
void setup()
```

```
    Serial.begin(9600);
```

```
    pinMode(7,OUTPUT);
```

```
    pinMode(5,INPUT);
```

```
void loop()
```

```
    int duration, distance;
```

```
    digitalWrite(3,LOW);
```

```
    delayMicroseconds(2);
```

```
    digitalWrite(3,HIGH);
```

```
    delayMicroseconds(10);
```

```
    digitalWrite(3,LOW);
```

```
    duration=pulseIn(7,HIGH);
```

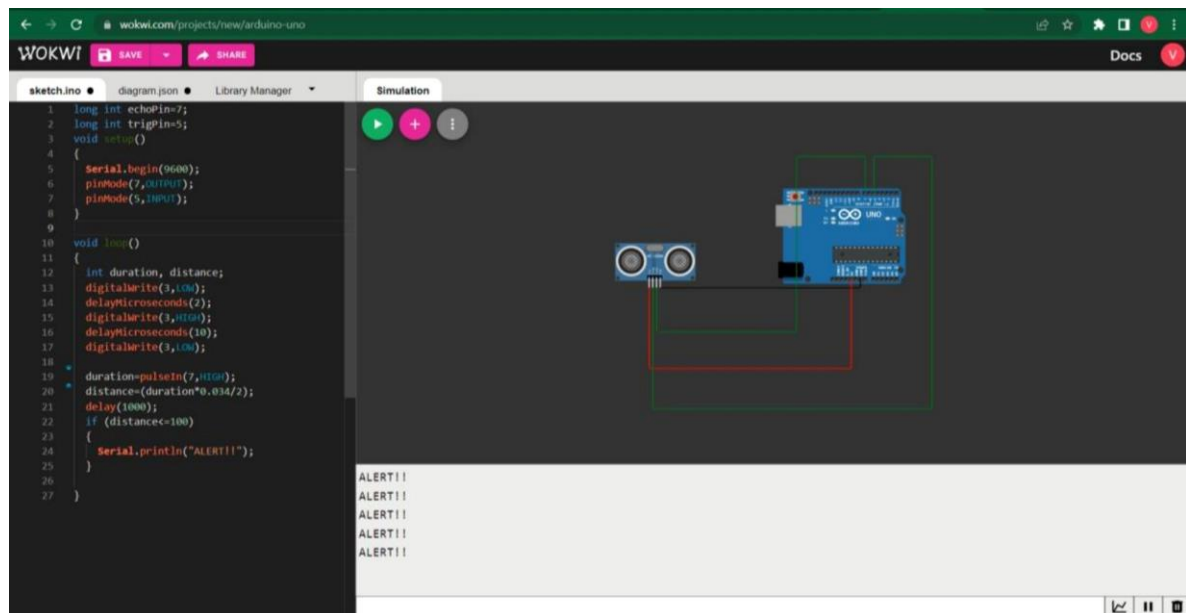
```
    distance=(duration*0.034/2);
```

```
    delay(1000);
```

```
    if (distance<=100)
```

```
        Serial.println("ALERT!!");
```

SIMULATIONS:



Test_python_3.7.4

```
1 pH = random.r
2 turbidity = random.randint(1,
3 temperature = random.randint(0,
4
5 data = {'pH': pH, 'turbid': tur
6
7
8
9
10 # print(data)
11 def myOnPublishCallback():
12 while True
```

Run: Test_python_3.7.4

```
Published pH= 10 Turbidity: 242 Temperature: 71
Published pH= 12 Turbidity: 564 Temperature: 54
Published pH= 2 Turbidity: 571 Temperature: 98
Published pH= 7 Turbidity: 677 Temperature: 65
Published pH= 8 Turbidity: 352 Temperature: 13
Published pH= 5 Turbidity: 862 Temperature: 88
Published pH= 3 Turbidity: 834 Temperature: 7
Published pH= 9 Turbidity: 213 Temperature: 89
Published pH= 14 Turbidity: 677 Temperature: 22
Published pH= 11 Turbidity: 292 Temperature: 160
Published pH= 2 Turbidity: 53 Temperature: 21
Published pH= 6 Turbidity: 499 Temperature: 69
Published pH= 11 Turbidity: 238 Temperature: 26
Published pH= 2 Turbidity: 443 Temperature: 43
Published pH= 6 Turbidity: 986 Temperature: 91
Published pH= 5 Turbidity: 593 Temperature: 85
Published pH= 14 Turbidity: 308 Temperature: 86
Published pH= 4 Turbidity: 532 Temperature: 8
Published pH= 3 Turbidity: 54 Temperature: 8
```

IBM Watson IoT Platform

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

Event	Value
demo	{"pH":12,"turbid":93,"temp":87}
demo	{"pH":7,"turbid":873,"temp":94}
demo	{"pH":3,"turbid":204,"temp":19}
demo	{"pH":11,"turbid":304,"temp":77}
demo	{"pH":13,"turbid":16,"temp":50}

00003 Disconnected Micro_controller_2 Dev

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[illegible]