

## ASSIGNMENT- 4

### DISTANCE DETECTION USING ULTRASONIC SENSOR

Date	25 October 2022
Team ID	PNT2022TMID11066
Name	PALANIYAPPAN A
Student Roll Number	811519106098
Maximum Marks	2 Marks

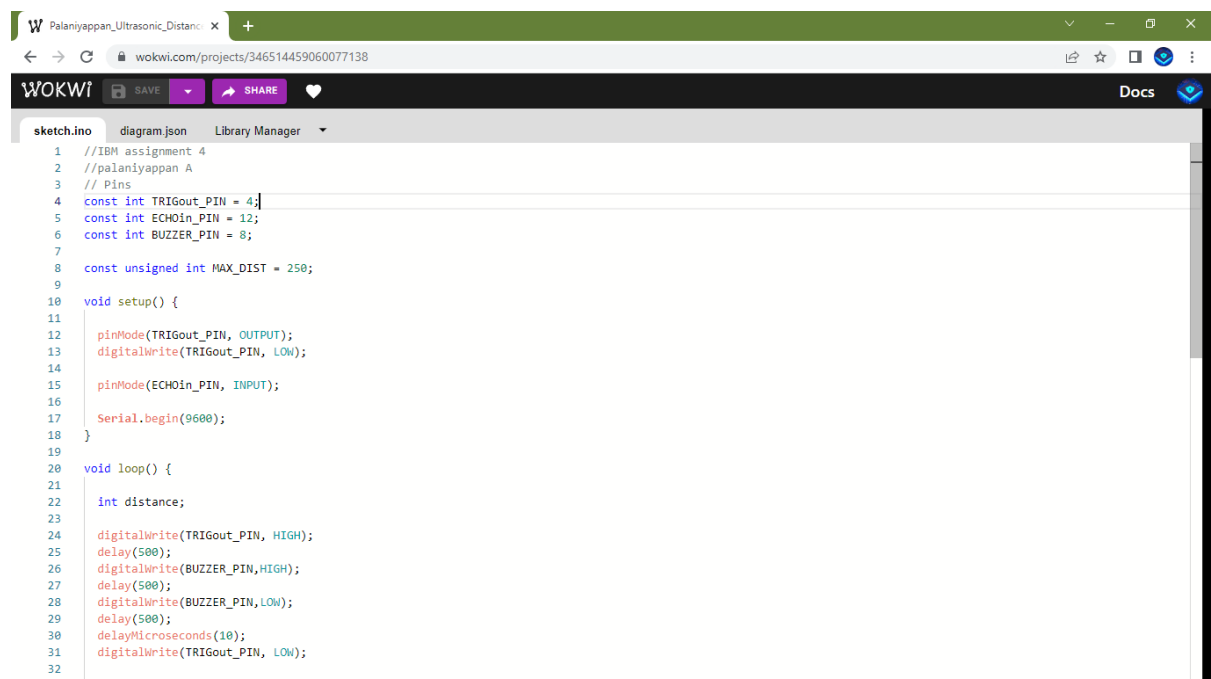
#### Question1:

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.

#### WOKWI LINK:

<https://wokwi.com/projects/346514459060077138>

#### CODE:



```
1 //IBM assignment 4
2 //palaniyappan A
3 // Pins
4 const int TRIGout_PIN = 4;
5 const int ECHOin_PIN = 12;
6 const int BUZZER_PIN = 8;
7
8 const unsigned int MAX_DIST = 250;
9
10 void setup() {
11
12   pinMode(TRIGout_PIN, OUTPUT);
13   digitalWrite(TRIGout_PIN, LOW);
14
15   pinMode(ECHOin_PIN, INPUT);
16
17   Serial.begin(9600);
18 }
19
20 void loop() {
21   int distance;
22
23   digitalWrite(TRIGout_PIN, HIGH);
24   delay(500);
25   digitalWrite(BUZZER_PIN, HIGH);
26   delay(500);
27   digitalWrite(BUZZER_PIN, LOW);
28   delay(500);
29   delayMicroseconds(10);
30   digitalWrite(TRIGout_PIN, LOW);
```

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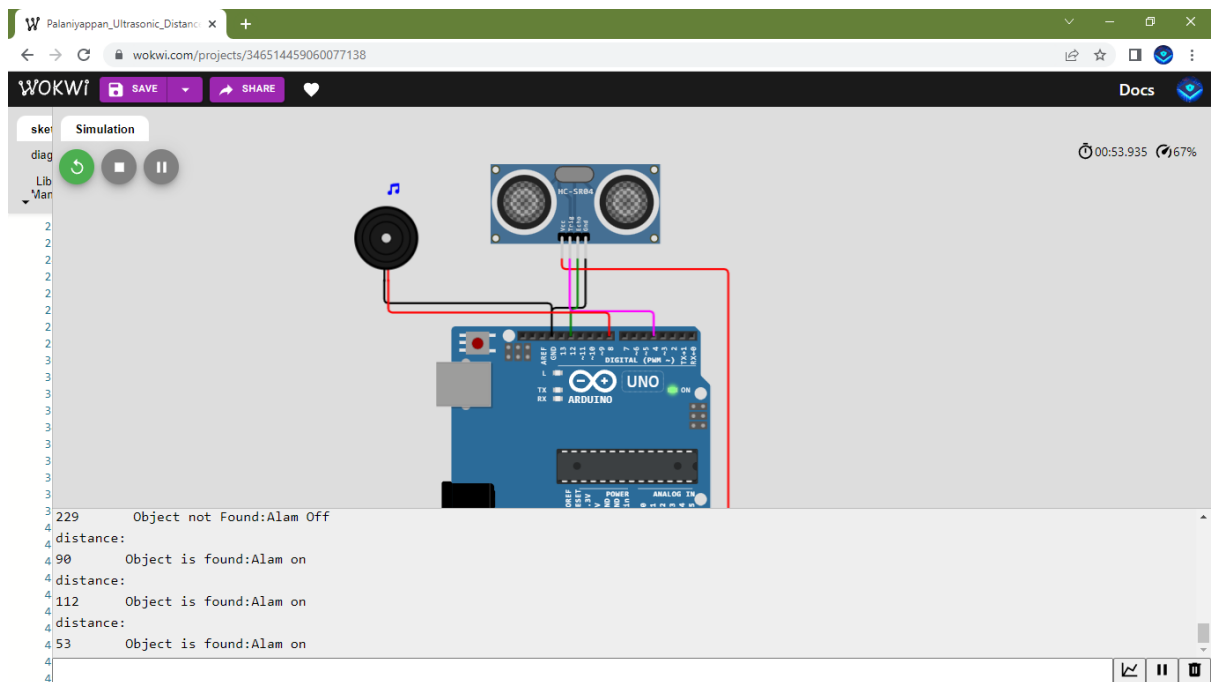
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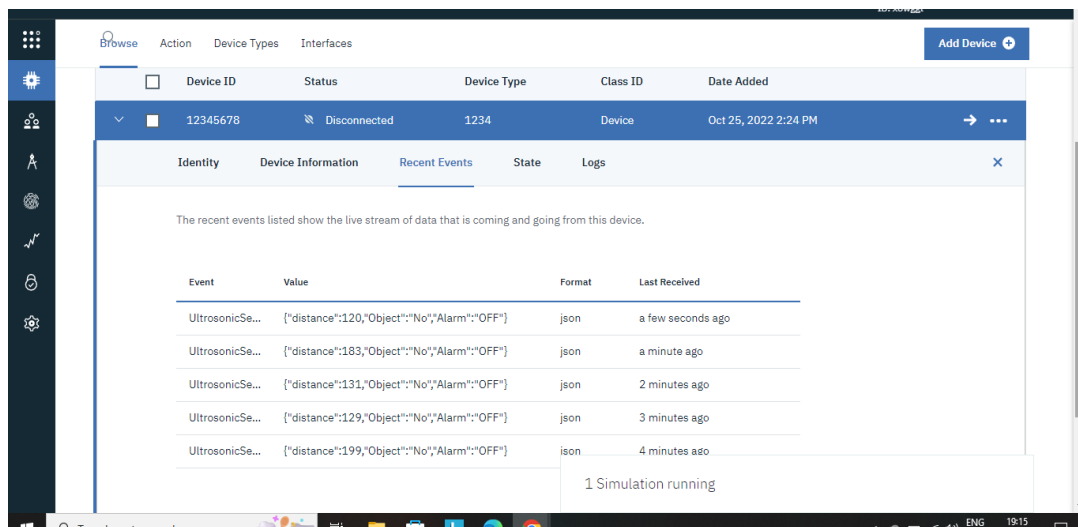
```
22 int distance;
23
24 digitalWrite(TRIGout_PIN, HIGH);
25 delay(500);
26 digitalWrite(BUZZER_PIN,HIGH);
27 delay(500);
28 digitalWrite(BUZZER_PIN,LOW);
29 delay(500);
30 delayMicroseconds(10);
31 digitalWrite(TRIGout_PIN, LOW);
32
33 while ( digitalRead(ECHOin_PIN) == 1);
34 distance = random(0,250);
35 if ( distance <130 )
36 {
37   Serial.println("distance: ");
38   Serial.print(distance);
39   Serial.println("\t Object is found:Alam on");
40 }
41 else
42 {
43   Serial.println("distance: ");
44   Serial.print(distance);
45   Serial.println("\t Object not Found:Alam Off");
46 }
47
48 delay(1000);
49 }
50 }
```



## Output:

### IBM Cloud Event:

Whenever distance is less than 130 cm send “alert” to IBM Cloud Event

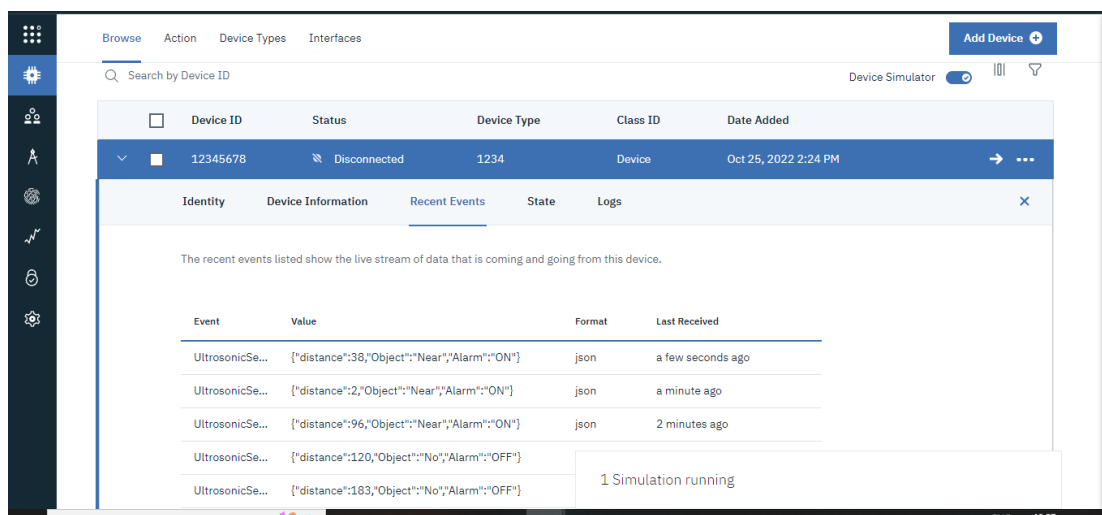


Device ID	Status	Device Type	Class ID	Date Added
12345678	Disconnected	1234	Device	Oct 25, 2022 2:24 PM

Event	Value	Format	Last Received
UltrasonicSe...	{"distance":120,"Object":"","No","Alarm":"OFF"}	json	a few seconds ago
UltrasonicSe...	{"distance":183,"Object":"","No","Alarm":"OFF"}	json	a minute ago
UltrasonicSe...	{"distance":131,"Object":"","No","Alarm":"OFF"}	json	2 minutes ago
UltrasonicSe...	{"distance":129,"Object":"","No","Alarm":"OFF"}	json	3 minutes ago
UltrasonicSe...	{"distance":199,"Object":"","No","Alarm":"OFF"}	json	4 minutes ago

### Data sent to the IBM Cloud Device When the Object is found



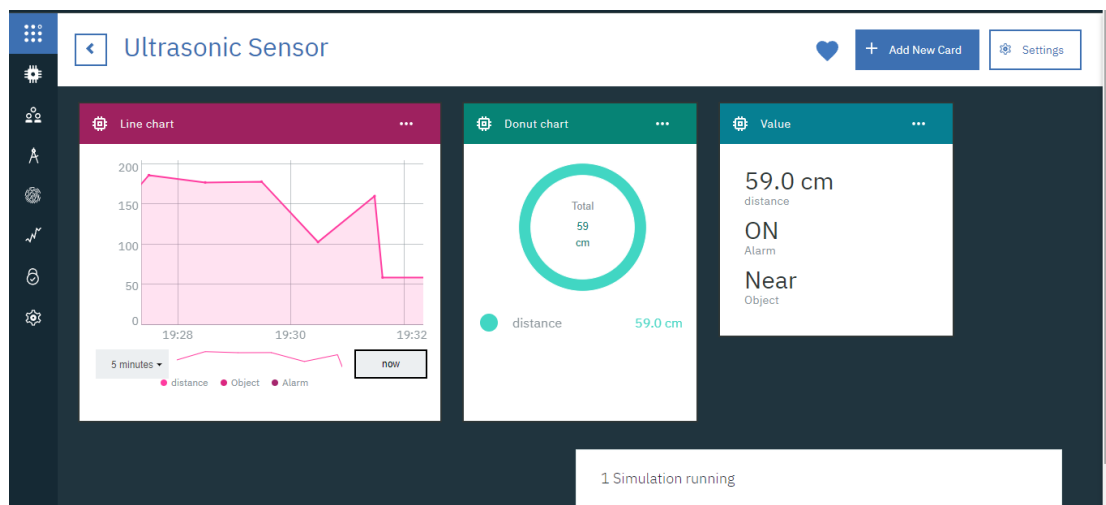
Device ID	Status	Device Type	Class ID	Date Added
12345678	Disconnected	1234	Device	Oct 25, 2022 2:24 PM

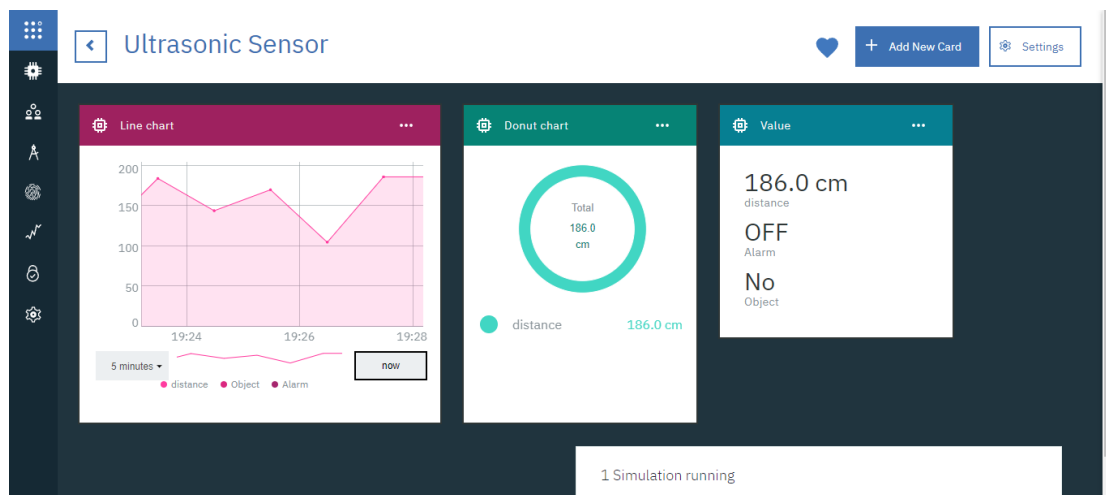
Event	Value	Format	Last Received
UltrasonicSe...	{"distance":38,"Object":"","Near","Alarm":"ON"}	json	a few seconds ago
UltrasonicSe...	{"distance":2,"Object":"","Near","Alarm":"ON"}	json	a minute ago
UltrasonicSe...	{"distance":96,"Object":"","Near","Alarm":"ON"}	json	2 minutes ago
UltrasonicSe...	{"distance":120,"Object":"","No","Alarm":"OFF"}		
UltrasonicSe...	{"distance":183,"Object":"","No","Alarm":"OFF"}		

## IBM CLOUD EVENT BOARD OUTPUT:

### Data sent to the IBM Cloud Device When the Object is found



### Data sent to the IBM Cloud Device When the Object is Not found



WOKWI LINK:

<https://wokwi.com/projects/346514459060077138>