

Assignment-4

Question-1:

Write code and connections in Wokwi for ultrasonic. Whenever distance is less than 100 cm, send "alert" to IBM Cloud and display in device recent events.

Solution:

```
#define ECHO_PIN 2

#define TRIG_PIN 3

#define organization = "fkxdqs"

#define deviceType = "Arduino"

#define deviceId = "1200"

#define authMethod = "use-token-auth" #define

authToken = "00000000" void

setup() { Serial.begin(9600);

pinMode(TRIG_PIN, OUTPUT);

pinMode(ECHO_PIN, INPUT);

}

float readDistanceCM() {

digitalWrite(TRIG_PIN, LOW);

delayMicroseconds(2);

digitalWrite(TRIG_PIN, HIGH);

delayMicroseconds(10);

digitalWrite(TRIG_PIN, LOW); int

duration = pulseIn(ECHO_PIN, HIGH);

return duration * 0.034 / 2;

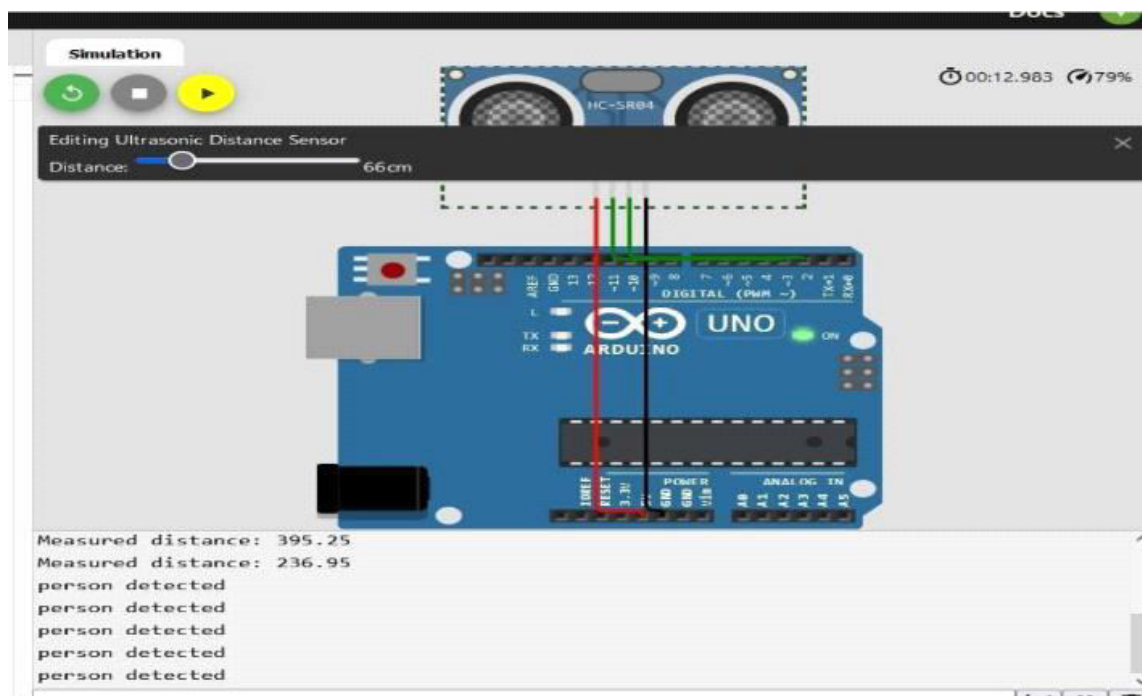
}

void loop() { float distance = readDistanceCM();
```

```

if(distance <=
100)
{
Serial.println("person detected ");
}
else{
Serial.print("Measureddistance: ");
Serial.println(readDistanceCM());
}
delay(1000);
}

```



Wokwi Link: <https://wokwi.com/projects/346567349532361298>

IBM Cloud

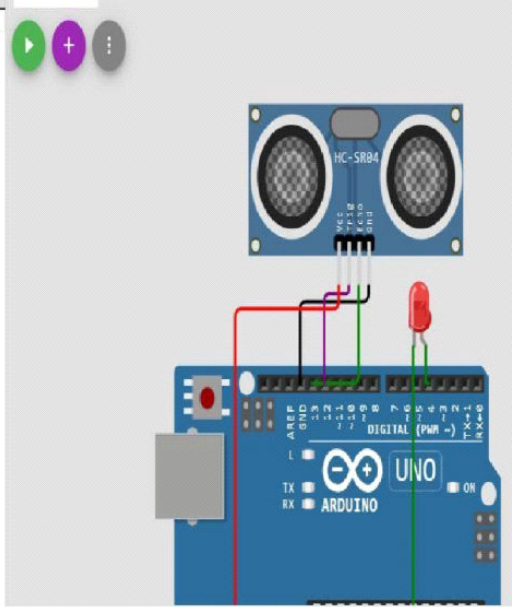
Device Recent Events

Identity	Device Information	Recent Events	State	Logs
The recent events listed show the live stream of data that is coming and going from this device.				
Event	Value	Format	Last Received	
event_1	"PersonDetected"	json	a few seconds ago	
event_1	"PersonDetected"	json	a few seconds ago	
event_1	"PersonDetected"	json	a few seconds ago	
event_1	"PersonDetected"	json	a few seconds ago	
event_1	"PersonDetected"	json	a few seconds ago	

1 Simulation running

WOWKI EXECUTIONPART WITH ANOTHER CODE:

```
1 #include "Ultrasonic.h"
2 Ultrasonic ultrasonic(12, 13);
3 int distance;
4
5 void setup() {
6   Serial.begin(9600);
7   pinMode(6, OUTPUT);
8 }
9
10 void loop() {
11   distance = ultrasonic.readCM();
12   Serial.print("Distance in CM: ");
13   Serial.println(distance);
14   if(distance <= 100)
15   {
16     Serial.println("alert!!!!");
17     digitalWrite(4, HIGH);
18   }
19
20
21   delay(1000);
22 }
```



Distance in CM: 50
alert!!!!

