

Assignment 4

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|-----------------|---|
| Assignment Date | 10 November 2022 |
| Student Name | Archana S |
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| Team ID | PNT2022TMID33687 |
| Project Name | Project – Gas Leakage Monitoring and Alerting System for Industries |
| Maximum Marks | 2 Marks |

Question-1:

Write code and connections in wokwi for ultrasonic. Whenever distance is less than 100 cms send “alert” to ibm cloud and display in device recent events.

Solution:

```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization = "mmbh4c"
#define deviceType = "Ultrasonic"
#define deviceId = "pga460_sensor"
#define authMethod = "use-token-auth"
#define authToken = "123456789"

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{
```

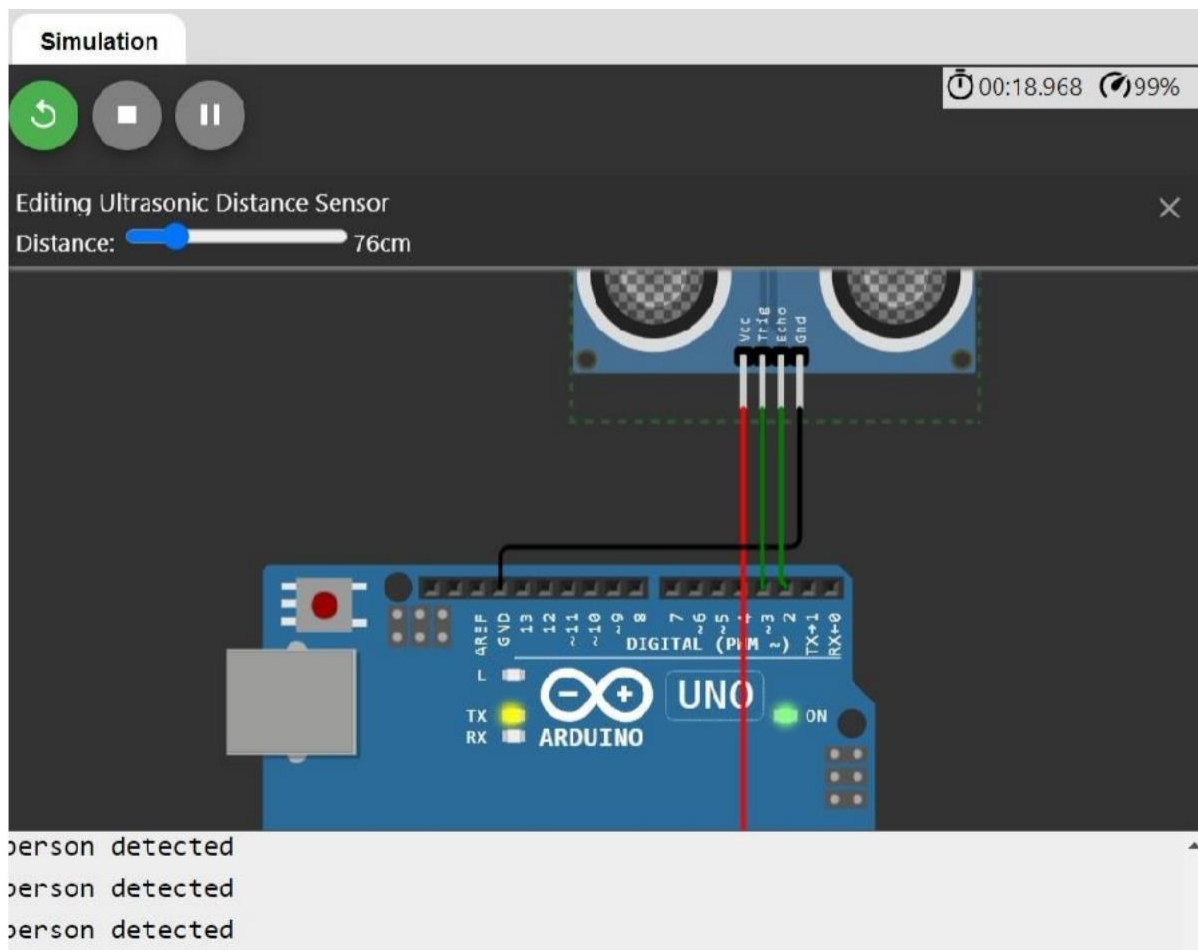
```
        Serial.print("Measured distance: ");
```

```
        Serial.println(readDistanceCM());
```

```
    }
```

```
    delay(1000);
```

```
}
```



Wokwi Link: <https://wokwi.com/projects/346094692918624851>

IBM Cloud

Device Recent Events

The screenshot shows the IBM Watson IoT Platform interface. The top navigation bar includes 'Browse', 'Actions', 'Device Types', and 'Interfaces'. A search bar is present with the text 'Search by Device ID'. The main content area displays a table of devices. The device 'Ultrasonic_1' is selected, and its details are shown in a modal window. The details include:

| Identity | Device Information | Recent Events | State | Logs |
|-------------------|--------------------------------------|---------------|-------|------|
| Device ID | Ultrasonic_1 | | | |
| Device Type | Ultrasonic | | | |
| Date Added | Oct 25, 2022 4:05 PM | | | |
| Added By | IBM Watson IoT Platform | | | |
| Connection Status | Disconnected | | | |
| | Last Connected: Oct 25, 2022 4:28 PM | | | |
| | Client Address: 42.169.148.176 | | | |
| | Duration: 2 minutes | | | |
| | Data Transfered: 2.2 KB | | | |

The screenshot shows the 'Recent Events' tab for the device 'Ultrasonic_1'. The device status is 'Connected'. The recent events are listed in a table:

| Event | Value | Format | Last Received |
|---------|-------------------------|--------|-------------------|
| event_1 | [{"PersonDetected": 1}] | json | a few seconds ago |
| event_1 | [{"PersonDetected": 1}] | json | a few seconds ago |
| event_1 | [{"PersonDetected": 1}] | json | a few seconds ago |
| event_1 | [{"PersonDetected": 1}] | json | a few seconds ago |
| event_1 | [{"PersonDetected": 1}] | json | a few seconds ago |

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1 Simulation running