

#### Assignment -4

Assignment Date	26 October 2022
Team ID	PNT2022TMID18102
Project Name	Hazardous Area Monitoring for Industrial Plant powered by IoT
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 = "1112"

#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{

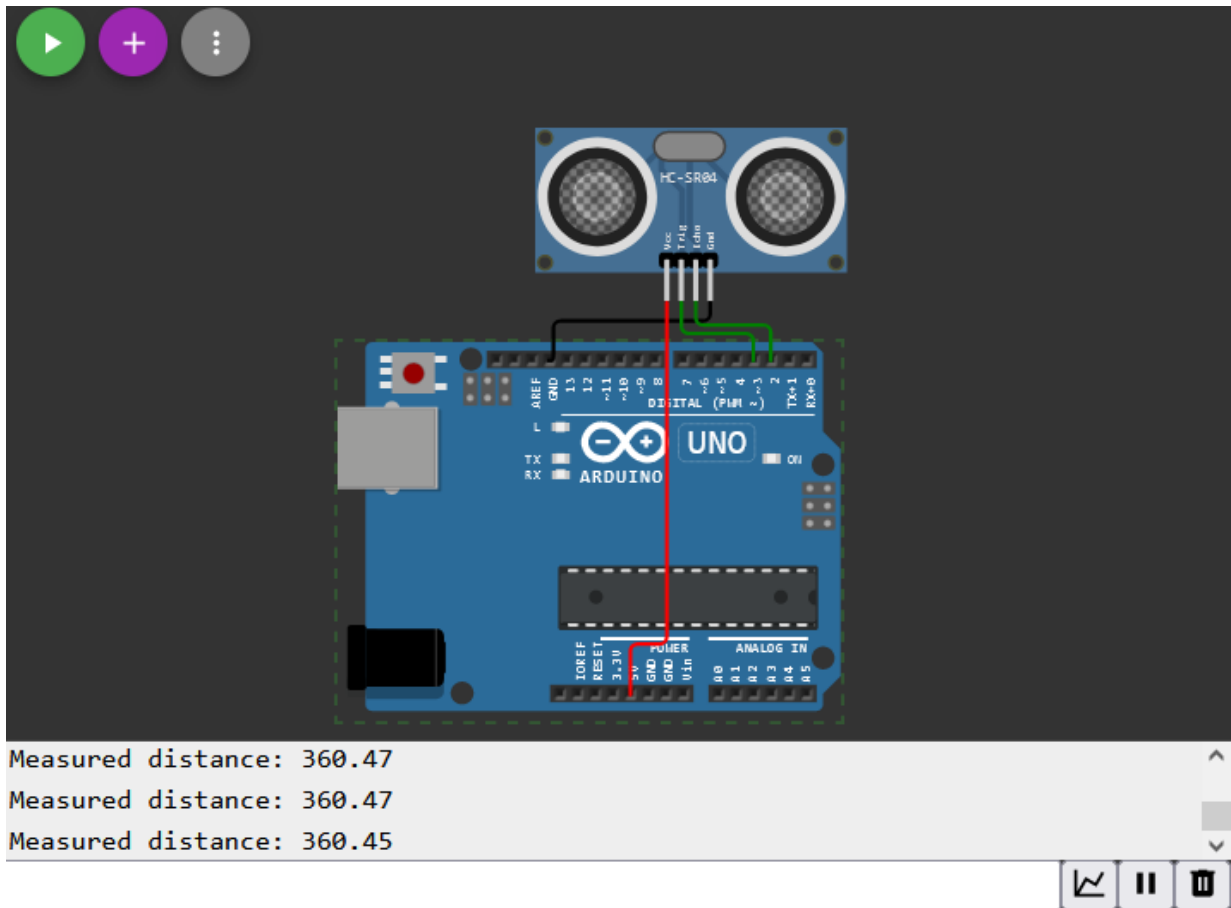
        Serial.print("Measured distance: ");

        Serial.println(readDistanceCM());

    }

    delay(100);

}
```



Wokwi Link: <https://wokwi.com/projects/346593406770741842>

## IBM Cloud

### Device Recent Events

IBM Cloud IoT Platform interface showing the 'Recent Events' tab for a device named 'Ultrasonic\_1'.

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	{"status":"Person Detected"}	json	a few seconds ago
event_1	{"status":"Person Detected"}	json	a few seconds ago
event_1	{"status":"Person Detected"}	json	a few seconds ago
event_1	{"status":"Person Detected"}	json	a few seconds ago

1 Simulation running