

#### Assignment -4

Assignment Date	25 October 2022
Student Name	Ramya. R
Team ID	PNT2022TMID48581
Project Name	Project-Smart Farmer-IoT Enabled Smart Farming Application
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:

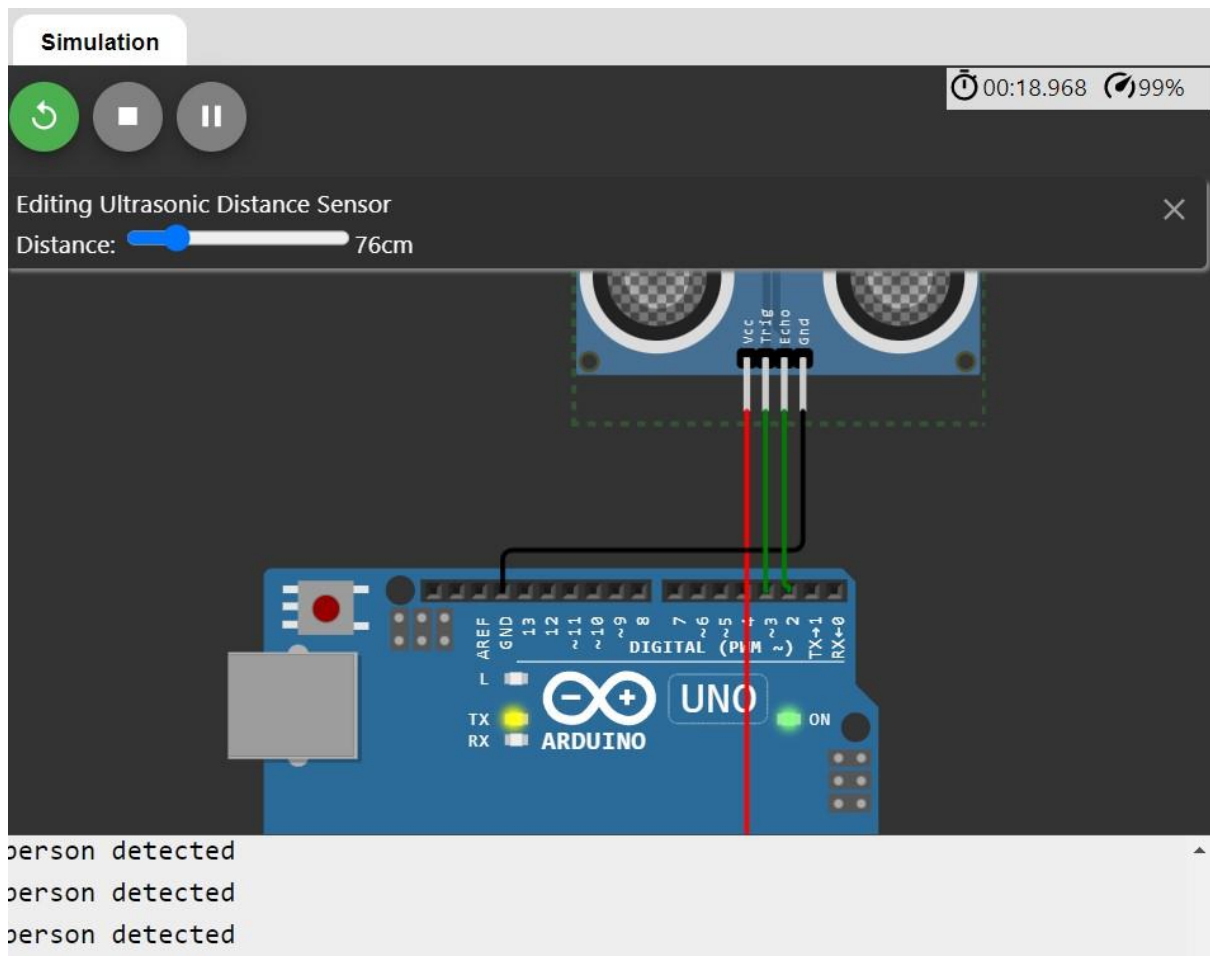
```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization = "mmbh4c"
#define deviceType = "Ultrasonic"
#define deviceId = "pga460_sensor"
#define authMethod = "use-token-auth"
#define authToken = "123456789"

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

IBM Watson IoT Platform

Browse Action Device Types Interfaces

Search by Device ID

Device Simulator

Device ID	Status	Device Type	Class ID
1234	Disconnected	SmartFarmer	Device
Ultrasonic_1	Disconnected	Ultrasonic	Device
pga460_sensor	Disconnected	Ultrasonic	Device

Identity Device Information Recent Events State Logs

Device ID: Ultrasonic\_1

Device Type: Ultrasonic

Date Added: Oct 25, 2022 4:25 PM

Added By: 820419205501@smartinternz.com

Connection Status: Disconnected

Last Connected: Oct 25, 2022 4:28 PM

Client Address: 42.109.148.176 SecureToken

Duration: 2 minutes

Data Transferred: 2.7 KB

IBM Watson IoT Platform

Browse Action Device Types Interfaces

Ultrasonic\_1 Connected Ultrasonic Device Oct 25, 2022 4:28 PM

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

pga460\_sensor Disconnected Ultrasonic Device Oct 25, 2022 1:19 PM

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1 Simulation running