

Assignment -4

Assignment Date	25 October 2022
Student Name	Deepika.K
Team ID	PNT2022TMID45868
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.

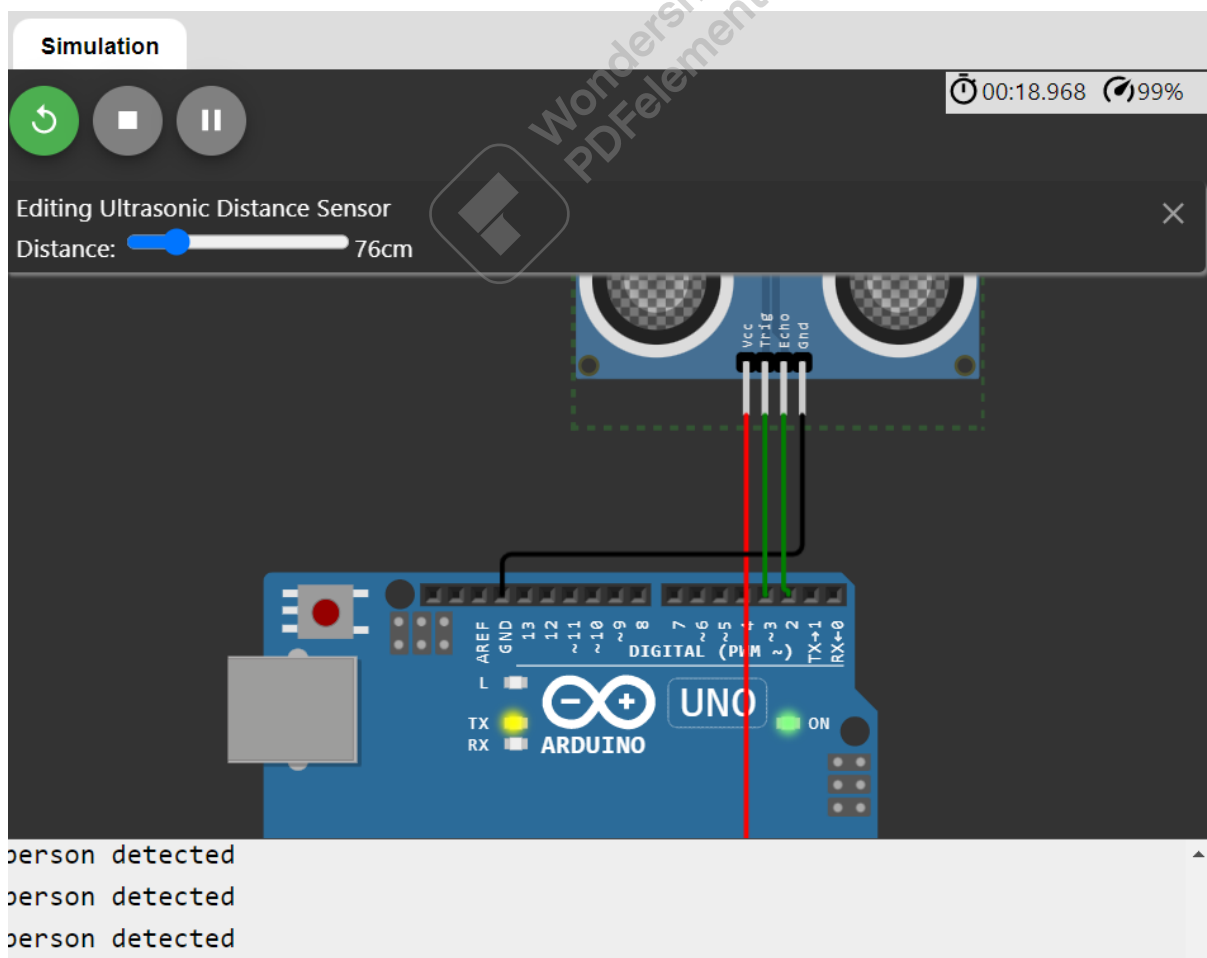
Solution:

```
#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

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

- 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

The screenshot shows the 'Recent Events' tab for the device 'Ultrasonic_1'. The device status is 'Connected'. The recent events listed show a live stream of data that is coming and going from this device. The events are as follows:

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

At the bottom of the dashboard, there is a status bar indicating '1 Simulation running'.