

Assignment -4

Assignment Date	29 October 2022
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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 = “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);
}

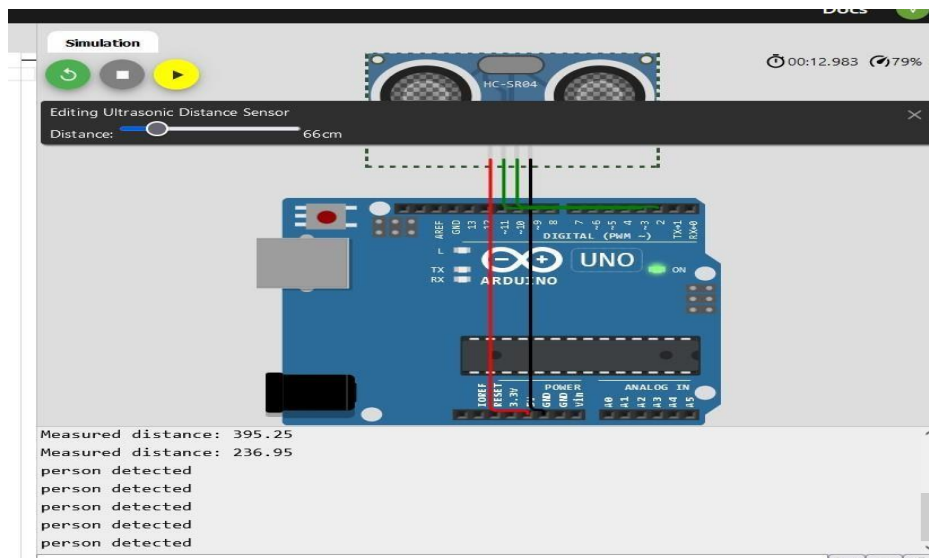
float readDistanceCM() {
digitalWrite(TRIG_PIN, LOW);
delayMicroseconds(2);
digitalWrite(TRIG_PIN, HIGH);
delayMicroseconds(10);
digitalWrite(TRIG_PIN, LOW); int
```

```

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("Measured distance: ");
Serial.println(readDistanceCM());
}
delay(1000);
}

```



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

IBM Cloud

Device Recent Events

The screenshot shows the IBM Watson IoT Platform interface. 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 table with columns: Device ID, Status, Device Type, Class ID, Date Added, Descriptive Location, and Added By. The first row shows device ID 1200, status 'Disconnected', and device type 'Arduino'. Below the table, a detailed view for device 1200 is shown, including fields for Device ID, Device Type, Date Added, Added By, and Connection Status. The connection status is 'Disconnected'. The bottom of the screen shows a Windows taskbar with various application icons and system information like '33°C Cloudy' and '1:08 PM 10/26/2022'.

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location	Added By
1200	Disconnected	Arduino	Device	Oct 26, 2022 1:10 PM		820419205065@smartinternz.com

Device ID	Device Type	Date Added	Added By	Connection Status
1200	Arduino	Oct 26, 2022 1:10 PM	820419205065@smartinternz.com	Disconnected

This screenshot shows the 'Recent Events' tab for device ID 1200. It displays a table of events with columns: Event, Value, Format, and Last Received. The events are all of type 'PersonDetected' and occurred 'a few seconds ago'. A notification at the bottom right indicates '1 Simulation running'. The bottom of the screen shows a Windows taskbar with various application icons and system information like '33°C Cloudy' and '2:04 PM 10/26/2022'.

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

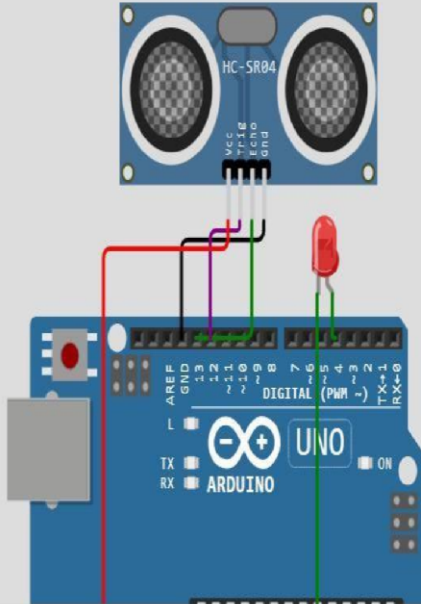
WOWKI EXECUTION PART WITH ANOTHER CODE:

WOKWI SAVE SHARE ♥

hc-sr04-Ultrasonic-Simulation.ino • diagram.json Ultrasonic.h Ultrasonic.cpp Library Manager

```
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.read(CM);
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 }
```

Simulation



Distance in CM: 50
alert!!!!
Distance in CM: 50
alert!!!!
Distance in CM: 50
alert!!!!