

S. Shiva Shalini Assignment -4

Question-1: Write code and connections in wokwi for ultrasonic sensor.
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 ="hqvmd9"

#define deviceType=" Arduino"

#define deviceId ="63748"

#define authMethod ="use-token-auth"

#define authToken ="637488767"

void setup() {

    // put your setup code here, to run once:
    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() {
```

```
// put your main code here, to run repeatedly:  
  
float distance = readDistanceCM();  
if(distance <= 100)  
{  
    Serial.println("person detected ");  
}  
else{  
    Serial.print("Measured distance: ");  
    Serial.println(readDistanceCM());  
}  
delay(1000);  
  
}
```

Service Details - IBM Cloud x IBM Watson IoT Platform x IBM Watson IoT Platform x IBMid - error x New Arduino Uno Project - Wokwi

wokwi.com/projects/new/arduino-uno

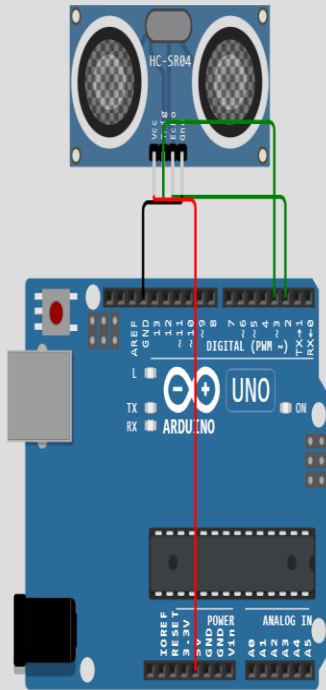
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WOKWI SAVE SHARE Docs

sketch.ino diagram.json Library Manager

```
1 #define ECHO_PIN 2
2 #define TRIG_PIN 3
3 #define organization = "hqvmd9"
4 #define deviceType = "Arduino"
5 #define deviceId = "63748"
6 #define authMethod = "use-token-auth"
7 #define authToken = "637488767"
8 void setup() {
9   // put your setup code here, to run once:
10  Serial.begin(9600);
11  pinMode(TRIG_PIN, OUTPUT);
12  pinMode(ECHO_PIN, INPUT);
13 }
14 float readDistanceCM() {
15  digitalWrite(TRIG_PIN, LOW);
16  delayMicroseconds(2);
17  digitalWrite(TRIG_PIN, HIGH);
18  delayMicroseconds(10);
19  digitalWrite(TRIG_PIN, LOW);
20  int duration = pulseIn(ECHO_PIN, HIGH);
21  return duration * 0.034 / 2;
22 }
23
24 void loop() {
25   // put your main code here, to run repeatedly:
26   float distance = readDistanceCM();
27   if(distance <= 100)
28   {
29     Serial.println("person detected");
30   }
31   else{
32     Serial.print("Measured distance: ");
33     Serial.println(readDistanceCM());
34   }
```

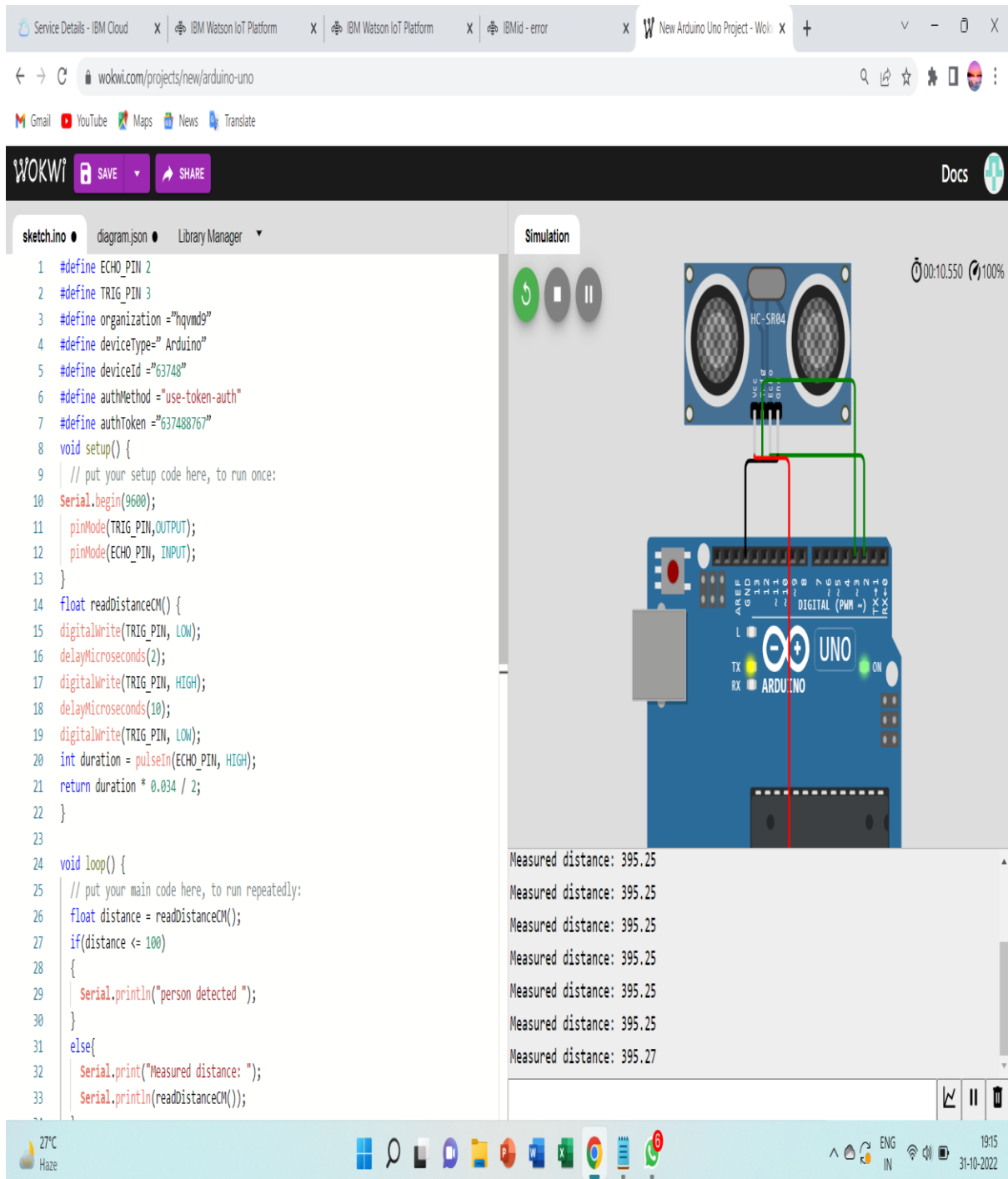
Simulation



27°C Haze

31-10-2022 19:14

Output:



Wokwi Link: <https://wokwi.com/projects/347042075326284371>

IBM CLOUD

Device Recent Events

The screenshot displays the IBM Watson IoT Platform interface. The top navigation bar includes tabs for 'Service Details - IBM Cloud', 'IBM Watson IoT Platform', and 'sketchUp - Wokwi Arduino and'. The main content area shows a list of devices with columns for Device ID, Status, Device Type, Class ID, Date Added, and Descriptive Location. A device with ID 63748 is highlighted, showing a status of 'Disconnected' and a type of 'arduino'. Below the list, a detailed view of the selected device is shown, including its identity, device information, recent events, state, and logs. The device information section lists the following details:

Identity	Device Information	Recent Events	State	Logs
Device ID	63748			
Device Type	arduino			
Date Added	Oct 31, 2022 6:55 PM			
Added By	shalinisantham330@gmail.com			
Connection Status	Disconnected			

At the bottom of the dashboard, a status bar indicates '1 Simulation running'. The system tray at the very bottom shows the date and time as 19:25 on 31-10-2022, along with weather information (28°C Haze) and various application icons.

	Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
▼	63748	Disconnected	arduino	Device	Oct 31, 2022 6:55 PM	→ ...

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	{"version":1,"author":"Anonymous maker","edito...	json	a few seconds ago
event_1	{"version":1,"author":"Anonymous maker","edito...	json	a few seconds ago
event_1	{"version":1,"author":"Anonymous maker","edito...	json	a few seconds ago
event_1	{"version":1,"author":"Anonymous maker","edito...	json	a few seconds ago
event_1	{"version":1,"author":"Anonymous maker","edito...	json	a few seconds ago

1 Simulation running