

K.Karpagam 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 ="ryup3j"
#define deviceType=" arduino"
#define deviceId ="12345"
#define authMethod ="use-token-auth"
#define authToken ="84893404"

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 Enrollment successful x sketchino - Wokwi Arduino and x

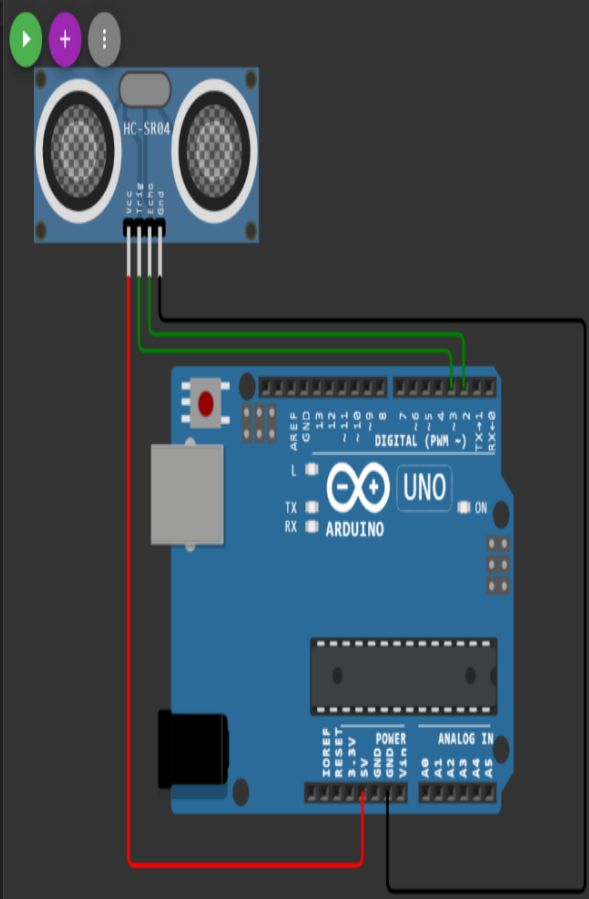
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sketchino diagram.json Library Manager

```
1 #define ECHO_PIN 2
2 #define TRIG_PIN 3
3 #define organization = "ryup3j"
4 #define deviceType = "arduino"
5 #define deviceId = "12345"
6 #define authMethod = "use-token-auth"
7 #define authToken = "84893404"
8
9 void setup() {
10   // put your setup code here, to run once:
11   Serial.begin(9600);
12   pinMode(TRIG_PIN, OUTPUT);
13   pinMode(ECHO_PIN, INPUT);
14 }
15 float readDistanceCM() {
16   digitalWrite(TRIG_PIN, LOW);
17   delayMicroseconds(2);
18   digitalWrite(TRIG_PIN, HIGH);
19   delayMicroseconds(10);
20   digitalWrite(TRIG_PIN, LOW);
21   int duration = pulseIn(ECHO_PIN, HIGH);
22   return duration * 0.034 / 2;
23 }
24
25 void loop() {
26   // put your main code here, to run repeatedly:
27   float distance = readDistanceCM();
28   if(distance <= 100)
29   {
30     Serial.println("person detected");
31   }
32   else{
33     Serial.print("Measured distance: ");
34   }
35 }
```

Simulation



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Search

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Output:

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sketchino diagram.json Library Manager

```
1 #define ECHO_PIN 2
2 #define TRIG_PIN 3
3 #define organization ="ryup3j"
4 #define deviceType=" arduino"
5 #define deviceId ="12345"
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7 #define authToken ="84893404"
8
9 void setup() {
10   // put your setup code here, to run once:
11   Serial.begin(9600);
12   pinMode(TRIG_PIN,OUTPUT);
13   pinMode(ECHO_PIN, INPUT);
14 }
15 float readDistanceCM() {
16   digitalWrite(TRIG_PIN, LOW);
17   delayMicroseconds(2);
18   digitalWrite(TRIG_PIN, HIGH);
19   delayMicroseconds(10);
20   digitalWrite(TRIG_PIN, LOW);
21   int duration = pulseIn(ECHO_PIN, HIGH);
22   return duration * 0.034 / 2;
23 }
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25 }
26
27 void loop() {
28   // put your main code here, to run repeatedly:
29   float distance = readDistanceCM();
30   if(distance <= 100)
31   {
32     Serial.println("person detected ");
33   }
34   else{
35     Serial.print("Measured distance: ");
```

Simulation

Restart the simulation

HC-SR04

Arduino Uno

Measured distance: 395.27
Measured distance: 395.25
Measured distance: 395.27
Measured distance: 395.25
Measured distance: 395.25
Measured distance: 395.25
Measured distance: 395.25

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Wokwi Link: <https://wokwi.com/projects/347286397940400724>

IBM CLOUD

Device Recent Events

