

ASSIGNMENT NO-1

Project Name: **REAL-TIME WATER QUALITY
MONITORING AND CONTROL SYSTEM**

Assignment Topic: smart home automation using
sensor leds and buzzer

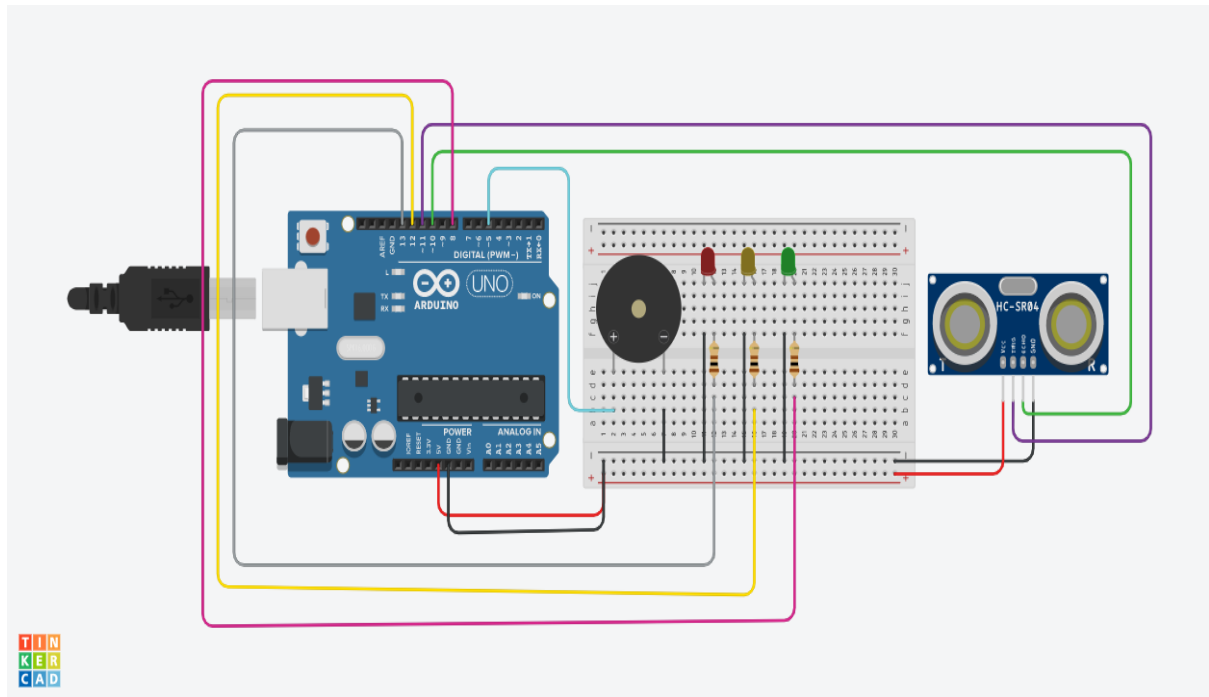
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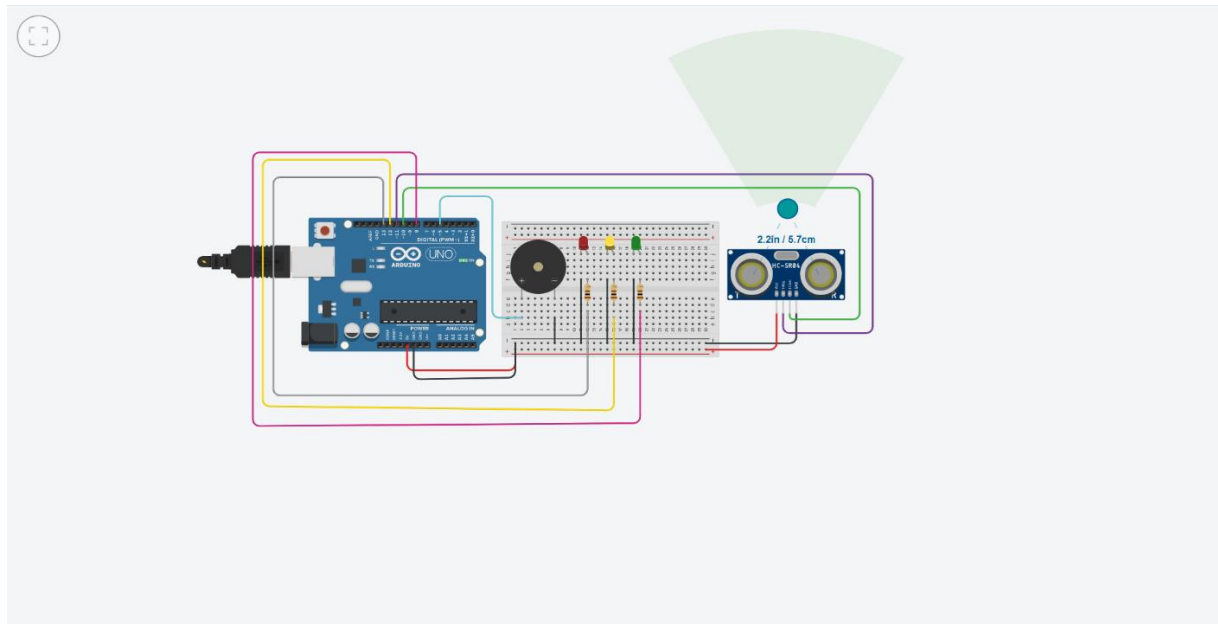
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Before Simulation



After Simulation



Code:

```
1 // C++ code
2 //
3 int distancia = 0;
4
5 int i = 0;
6
7 long readUltrasonicDistance(int triggerPin, int echoPin)
8 {
9     pinMode(triggerPin, OUTPUT); // Clear the trigger
10    digitalWrite(triggerPin, LOW);
11    delayMicroseconds(2);
12    // Sets the trigger pin to HIGH state for 10 microseconds
13    digitalWrite(triggerPin, HIGH);
14    delayMicroseconds(10);
15    digitalWrite(triggerPin, LOW);
16    pinMode(echoPin, INPUT);
17    // Reads the echo pin, and returns the sound wave travel time i
18    return pulseIn(echoPin, HIGH);
19 }
20
21 void setup()
22 {
23     pinMode(8, OUTPUT);
24     pinMode(12, OUTPUT);
25     pinMode(13, OUTPUT);
26     pinMode(5, OUTPUT);
```

```

25 pinMode(10, OUTPUT);
26 pinMode(5, OUTPUT);
27 }
28
29 void loop()
30 {
31     distancia = 0.01723 * readUltrasonicDistance(11, 10);
32     if (distancia > 10) {
33         digitalWrite(8, HIGH);
34         digitalWrite(12, LOW);
35         digitalWrite(13, LOW);
36         digitalWrite(5, LOW);
37         delay(200); // Wait for 200 millisecond(s)
38         digitalWrite(5, LOW);
39         delay(200); // Wait for 200 millisecond(s)
40     } else {
41         digitalWrite(8, LOW);
42         digitalWrite(5, LOW);
43     }
44
45     distancia = 0.01723 * readUltrasonicDistance(11, 10);
46     if (distancia <= 10) {
47         digitalWrite(8, LOW);
48         digitalWrite(12, HIGH);
49         digitalWrite(13, LOW);
50         digitalWrite(5, HIGH);
51         delay(200); // Wait for 200 millisecond(s)
52

```

```

51     delay(200); // Wait for 200 millisecond(s)
52     digitalWrite(5, LOW);
53     delay(200); // Wait for 200 millisecond(s)
54 } else {
55     digitalWrite(12, LOW);
56     digitalWrite(5, LOW);
57 }
58
59 distancia = 0.01723 * readUltrasonicDistance(11, 10);
60 if (distancia <= 5) {
61     digitalWrite(8, LOW);
62     digitalWrite(12, LOW);
63     digitalWrite(13, HIGH);
64     digitalWrite(5, HIGH);
65     delay(100); // Wait for 100 millisecond(s)
66     digitalWrite(5, LOW);
67     delay(100); // Wait for 100 millisecond(s)
68 } else {
69     digitalWrite(13, LOW);
70     digitalWrite(5, LOW);
71 }
72 }

```