

ASSESSMENT-4

ASSESSMENT DATE	05 November 2022
NAME	VAISHNAVI K
REGISTER NUMBER	621319106097
MARKS	2 Marks

CODE:

```
#define ECHO_PIN 2
#define TRIG_PIN 3

void setup() {
    Serial.begin(115200);
    pinMode(LED_BUILTIN, OUTPUT);
    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();

    bool isNearby = distance < 100;
    digitalWrite(LED_BUILTIN, isNearby);

    Serial.print("Measured distance: ");
    Serial.println(readDistanceCM());

    delay(100);
}
```

SIMULATION:

```
2 #define TRIG_PIN 3
3
4 void setup() {
5   Serial.begin(115200);
6   pinMode(LED_BUILTIN, OUTPUT);
7   pinMode(TRIG_PIN, OUTPUT);
8   pinMode(ECHO_PIN, INPUT);
9 }
10
11 float readDistanceCM() {
12   digitalWrite(TRIG_PIN, LOW);
13   delayMicroseconds(2);
14   digitalWrite(TRIG_PIN, HIGH);
15   delayMicroseconds(10);
16   digitalWrite(TRIG_PIN, LOW);
17   int duration = pulseIn(ECHO_PIN, HIGH);
18   return duration * 0.034 / 2;
19 }
20
21 void loop() {
22   float distance = readDistanceCM();
23
24   bool isNearby = distance < 100;
25   digitalWrite(LED_BUILTIN, isNearby);
26
27   Serial.print("Measured distance: ");
28   Serial.println(readDistanceCM());
29
30   delay(100);
31 }
32
```

Simulation output:

```
Measured distance: 73.87
Measured distance: 73.78
Measured distance: 73.87
Measured distance: 73.78
Measured distance: 73.87
Measured distance: 73.78
Measured distance: 73.88
```

Link: <https://wokwi.com/projects/347476376324932179>

When object distance is >100:

Event	Value	Format	Last Received
event_1	{"Distance":367,"object":"no"}	json	a few seconds ago
event_1	{"Distance":275,"object":"no"}	json	a few seconds ago
event_1	{"Distance":271,"object":"no"}	json	a few seconds ago
event_1	{"Distance":372,"object":"no"}	json	a few seconds ago
event_1	{"Distance":155,"object":"no"}	json	a few seconds ago

1 Simulation running

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	Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
▼	12345	Disconnected	NodeMCU	Device	Oct 25, 2022 5:18 PM	→ ...

Identity	Device Information	Recent Events	State	Logs
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	{"Alert Distance":57,"object":"near"}	json	a few seconds ago	
event_1	{"Alert Distance":45,"object":"near"}	json	a few seconds ago	
event_1	{"Alert Distance":19,"object":"near"}	json	a few seconds ago	
event_1	{"Alert Distance":93,"object":"near"}	json	a few seconds ago	
event_1	{"Alert Distance":63,"object":"near"}	json	a few seconds ago	

1 Simulation running