

Assignment -4

Assignment Date	27 October-2022
Student Name	K. SAI VINAY
Student Roll Number	721419106017
Maximum Marks	2 Marks

QUESTION-1:

Write code and connections in wokwi for ultrasonic sensor. Whenever distance is less than 100cms send "alert" to ibm cloud and display in device recent events.

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;
```

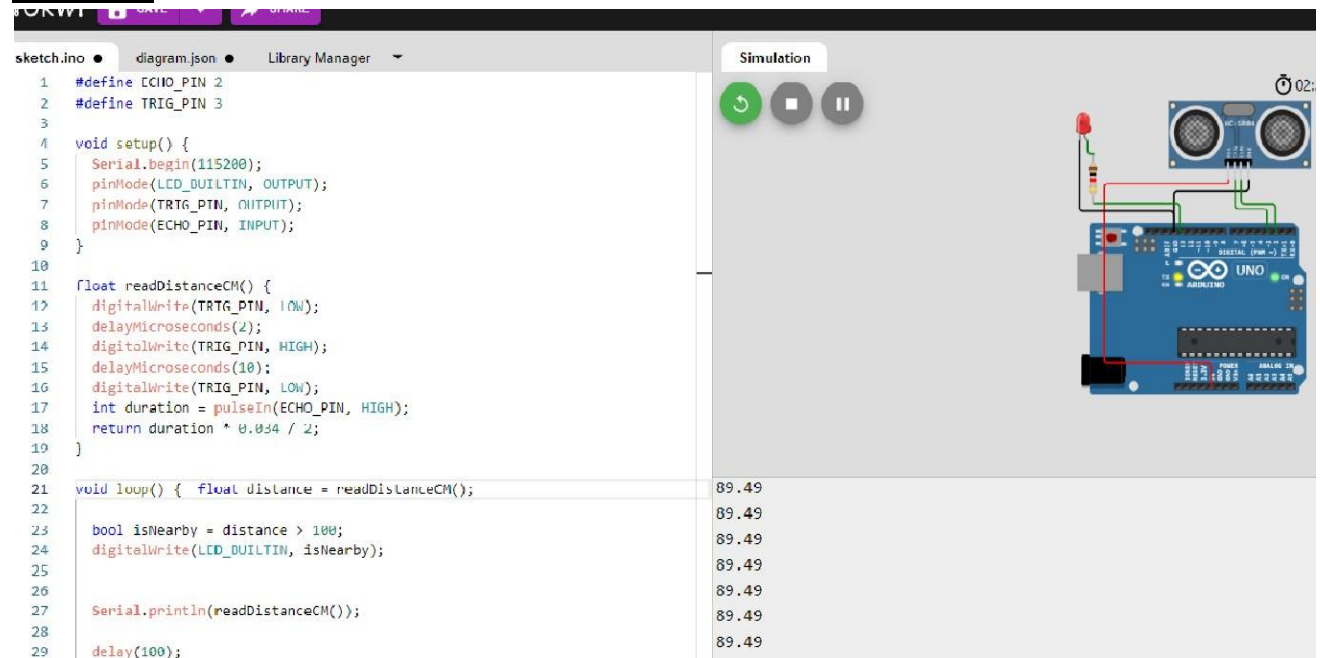
```
digitalWrite(LED_BUILTIN, isNearby);
```

```
Serial.println(readDistanceCM());
```

```
delay(100);
```

```
}
```

OUTPUT:



The screenshot displays the Arduino IDE interface. On the left, the 'sketch.ino' file contains the following code:

```
1  #define CCINO_PIN 2
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() { float distance = readDistanceCM();
22
23     bool isNearby = distance > 100;
24     digitalWrite(LED_BUILTIN, isNearby);
25
26     Serial.println(readDistanceCM());
27
28     delay(100);
29 }
```

On the right, the 'Simulation' window shows a visual representation of the Arduino Uno board connected to an HC-SR04 ultrasonic sensor. Below the simulation, the serial monitor displays the output of the code, showing the distance reading '89.49' repeated six times.

OKW

SAVE

SHARE

Docs

ketch.ino

diagram.json

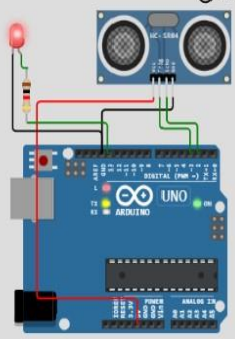
Library Manager

```
1  #define ECHO_PIN 2
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() { float distance = readDistanceCM();
22
23     bool isNearby = distance > 100;
24     digitalWrite(LED_BUILTIN, isNearby);
25
26     Serial.println(readDistanceCM());
27
28     delay(100);
29 }
30 }
```

Simulation

04:15.010

71%



132.29
132.29
132.29
132.28
132.29
132.29
132.29

REFERENCE LINK:

<https://wokwi.com/projects/new/arduino-uno>