

IBM ASSIGNMENT 4

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| Team ID | PNT2022TMID32813 |
| Project Name | Project - INDUSTRY-SPECIFIC INTELLIGENCE FIRE MANAGEMENT SYSTEM |

SKETCH.INO:

```
#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);
}
```

DIAGRAM.JSON:

```
{
  "version": 1,
  "author": "Sudhakar",
  "editor": "wokwi",
  "parts": [
    { "type": "wokwi-arduino-uno",
      "id": "uno",
      "top": 0.6,
      "left": -0.6,
      "attrs": {}
    },
    {
      "type": "wokwi-resistor",
      "id": "r1",
      "top": -57.8,
      "left": 93.8,
      "rotate": 90,
      "attrs": { "value": "220" }
    },
    { "type": "wokwi-led",
      "id": "led1",
      "top": -138,
      "left": 99.8,
      "attrs": { "color": "red" }
    },
    {
      "type": "wokwi-hc-sr04",
      "id": "ultrasonic1",
      "top": -142.5,
      "left": 149.02,
      "attrs": { "distance": "180" }
    }
  ],
  "connections": [
    [ "r1:2", "uno:13", "red", [ "h0" ] ],
    [ "led1:A", "r1:1", "red", [ "v0" ] ],
    [ "led1:C", "uno:GND.1", "black", [ "v0" ] ],
    [ "ultrasonic1:ECHO", "uno:2", "green", [ "v0" ] ],
    [ "ultrasonic1:TRIG", "uno:3", "purple", [ "v0" ] ],
    [ "ultrasonic1:VCC", "uno:5V", "red", [ "v0", "h-163.2", "v268.8", "h19.2" ] ],
    [ "ultrasonic1:GND", "uno:GND.1", "black", [ "v38.4", "h-129.27" ] ]
  ]
}
```

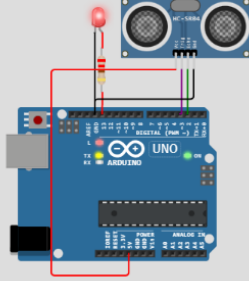
WOKWI SAVE SHARE Assignment-4 Docs

sketch.ino diagram.json Library Manager

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

Simulation

01:43.313 51%



Measured distance: 63.87
Measured distance: 63.87
Measured distance: 63.97
Measured distance: 63.87
Measured distance: 63.87
Measured distance: 63.97
Measured distance: 63.87

LINK: <https://wokwi.com/projects/348474381608944210>