

Assignment - 4

| | |
|---------------|--|
| Team ID | PNT2022TMID38886 |
| Project Name | IoT Based Safety Gadget For Child Safety Monitoring & Notification |
| Maximum Marks | 4 Marks |

Program code:

/*

HC-SR04 Ultrasonic Sensor Example.

Turn the LED on when an object is within 100cm range.

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*/

#define ECHO_PIN 2

#define TRIG_PIN 3

#define organization ="ig6yme"

#define device type ="Child1"

#define deviceId="75"

#define authmethod="token"

```
#define authToken="12345678"
```

```
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();
```

```
  if(distance<=100)
```

```
  {
```

```
    Serial.println("person detected");
```

```
  }
```

```
  else
```

```
  {
```

```
    Serial.print("Measured distance:");
```

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

```
  }
```

```
  delay(1000);
```

```
}
```

IBM CLOUD :

The screenshot displays the IBM Watson IoT Platform interface. On the left, a sidebar contains navigation icons. The main panel shows a table of devices with columns for Device ID, Status, and Device Type. A device with ID 12345 and status 'Disconnected' is selected. To the right, a configuration window for 'Device Type: Raspberri' is open. It includes an 'Events' section with a 'New event type' button, a 'Send' button, and a 'Schedule' dropdown set to 'Every Minute'. The 'Payload' section contains a JSON template:

```
{ 0: { 1: "randomNumber": random(0, 100), 2: "distance": random(50, 200) 3: } 4: }
```

. Below the payload is an 'Upload a CSV file' button. The bottom of the screen shows a Windows taskbar with various application icons and a search bar.

| Device ID | Status | Device Type |
|-----------|--------------|-------------|
| 12345 | Disconnected | Child1 |

Items per page: 50 | 1-1 of 1 item

This screenshot shows the 'Recent Events' tab for the same device. It displays a table of recent events with columns for Event, Value, Format, and Last Received. The events are generated by a simulation running on the device. Below the table, a status bar indicates '1 Simulation running'. The bottom of the screen shows a Windows taskbar with various application icons and a search bar.

| Event | Value | Format | Last Received |
|---------|---------------------|--------|-------------------|
| event_1 | {*randomNumber*:19} | json | a few seconds ago |
| event_1 | {*randomNumber*:45} | json | a few seconds ago |
| event_1 | {*randomNumber*:36} | json | a few seconds ago |
| event_1 | {*randomNumber*:27} | json | a few seconds ago |
| event_1 | {*randomNumber*:56} | json | a few seconds ago |

Items per page: 50 | 1-1 of 1 item

1 Simulation running

WOKWI SAVE SHARE sketch.ino Docs

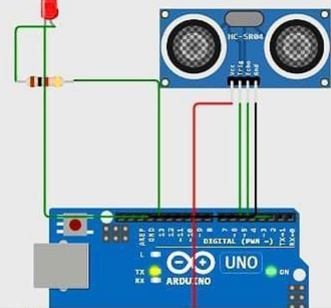
sketch.ino diagram.json Library Manager

```
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() {
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

00:01.516 97%

Restart the simulation



Measured distance: 395.91
Measured distance: 395.91
Measured distance: 395.91
Measured distance: 395.91
Measured distance: 395.91
Measured distance: 395.91
Measured distance: 395.91

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Type here to search

29°C Partly sunny 5:31 PM 11/15/2022

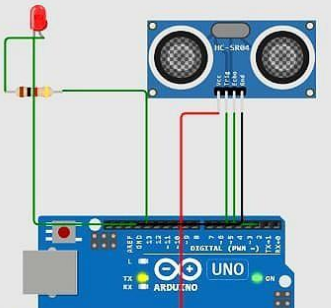
WOKWI SAVE SHARE sketch.ino Docs

sketch.ino diagram.json Library Manager

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18   return duration * 0.034 / 2;
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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

00:02.765 99%



Measured distance: 395.91
Measured distance: 395.91
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Measured distance: 395.91
Measured distance: 395.91
Measured distance: 395.91

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Type here to search

Slow traffic on SH11... 6:38 PM 11/15/2022

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