

Assignment - 4

Date	30 October 2022
Team ID	PNT2022TMID37924
Project Name	IoT Based Safety Gadget For Child Safety Monitoring & Notification
Maximum Marks	4 Marks

wokwi link:

<https://wokwi.com/projects/348394217234498131>

Program code:

```
/*
```

```
HC-SR04 Ultrasonic Sensor Example.
```

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

```
Copyright (C) 2021, Uri Shaked
```

```
*/
```

```
#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 shows the IBM Watson IoT Platform interface. On the left, a sidebar contains navigation icons. The main area displays a table of devices. One device, 'Child1' with ID '12345', is selected. To the right, a configuration window for 'event_1' is open, showing a schedule of 'Every Minute' and a JSON payload:

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

. The window includes buttons for 'Send', 'Upload a CSV file', 'Cancel', and 'Save'.

Device ID	Status	Device Type
12345	Disconnected	Child1

Identity	Device Information	Recent Events	State
Device ID	12345		
Device Type	Child1		
Date Added	Nov 15, 2022 7:44 PM		
Added By	411419104024@newprinceshribhavani.com		
Connection Status	Disconnected		

Items per page 50 | 1-1 of 1 item

The screenshot shows the 'Recent Events' tab for the selected device. It displays a table of events with columns: Event, Value, Format, and Last Received. The events are generated by the 'event_1' type and contain random numbers. A status message at the bottom indicates '1 Simulation running'.

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

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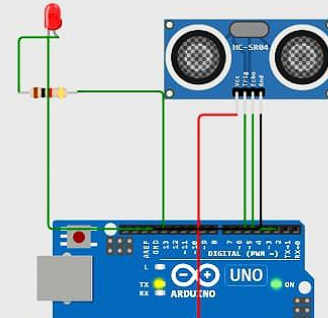
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sketch.ino diagram.json Library Manager

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1 #define ECHO_PIN 2
2 #define TRIG_PIN 3
3
4 void setup() {
5   Serial.begin(115200);
6   pinMode(LED_BUILTIN, OUTPUT);
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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

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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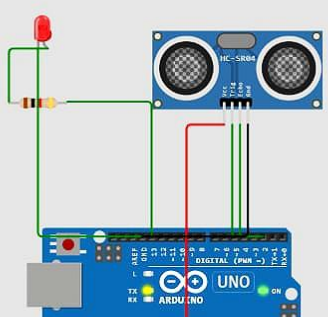
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