

**Assignment -4**  
**ULTRASONIC SENSOR**

Assignment Date	29 October 2022
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Student Roll Number	<b>412519106307</b>
Maximum Marks	2 Marks

**QUESTION:**

Write code and connections in wokwi for the ultrasonic sensor.

Whenever the distance is less than 100 cms send an "alert" to the IBM cloud and display in the devicerecent events.

Upload document with wokwi share link and images of IBM cloud

**SOLUTION:**

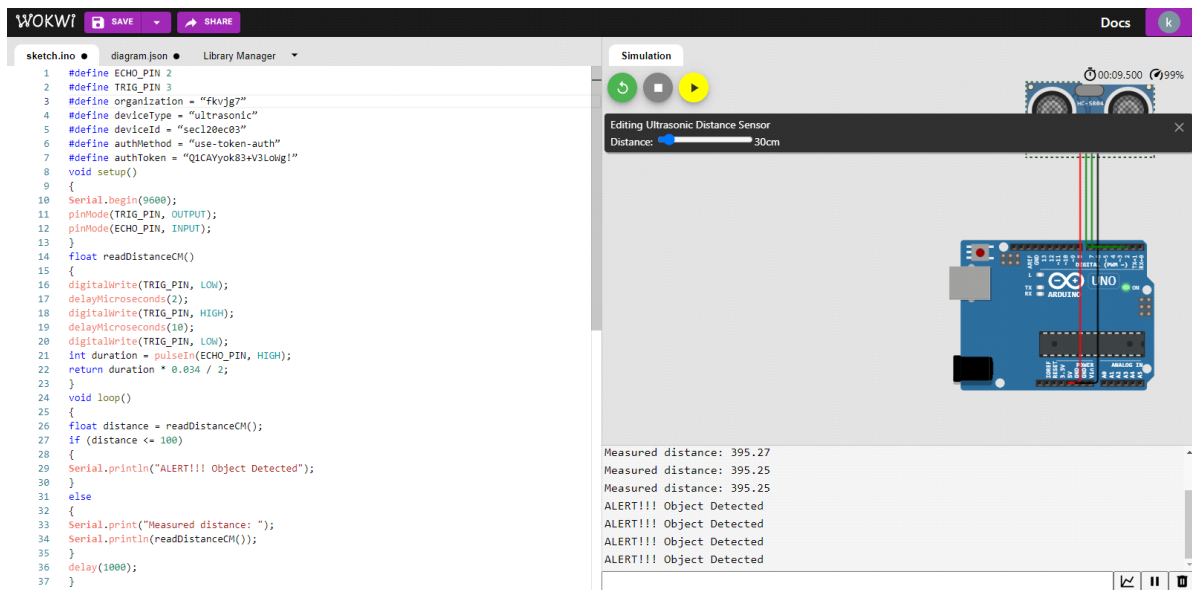
```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization = "fkvjg7"
#define deviceType = "ultrasonic"
#define deviceId = "secl20ec03"
#define authMethod = "use-token-auth"
#define authToken = "Q1CAYyok83+V3LoWg!"
void setup()
{
  Serial.begin(9600);
  pinMode(TRIG_PIN, OUTPUT);
  pinMode(ECHO_PIN, 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("ALERT!!! Object Detected");
}
else
{
Serial.print("Measured distance: ");
Serial.println(readDistanceCM());
}
delay(1000);
}

```

## SIMULATION OUTPUT :



## WOKWI SHARE LINK:

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

## IBM CLOUD DEVICE DETAILS :

IBM Watson IoT Platform

412519106307@smartinternz.com  
ID: fkvjg7

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### Device Drilldown - secl20ec03

Device Credentials

Connection Information

Recent Events

State

Device Information

Metadata

Diagnostics

Connection Logs

Device Actions

#### Device Credentials

You registered your device to the organization. Add these credentials to the device to connect it to the platform. After the device is connected, you can navigate to view connection and event details.

Organization ID	fkvjg7
Device Type	ultrasonic
Device ID	secl20ec03
Authentication Method	use-token-auth
Authentication Token	Q1CAyok83+V3LoWigJ

**!** Authentication tokens are non-recoverable. If you misplace this token, you will need to re-register the device to generate a new authentication token.

[Find out how to add these credentials to your device](#)

#### Connection Information

Basic connection information about this device.

## IBM CLOUD DEVICE RECENT EVENTS:

IBM Watson IoT Platform

412519106307@smartinternz.com  
ID: fkvjg7

Browse Action Device Types Interfaces

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location	Added By
> <input type="checkbox"/> iot_1	Disconnected	iot	Device	6 Nov 2022 21:47		412519106307@smartinternz.com → ...
▼ <input checked="" type="checkbox"/> secl20ec03	Disconnected	ultrasonic	Device	13 Nov 2022 21:28		412519106307@smartinternz.com → ...

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":36}	json	a few seconds ago
event_1	{"ALERT":75}	json	a few seconds ago
event_1	{"ALERT":57}	json	a few seconds ago
event_1	{"ALERT":0}	json	a few seconds ago
event_1	{"ALERT":48}	json	a few seconds ago

1 Simulation running

## LINE CHART OF IBM CLOUD DEVICE:

