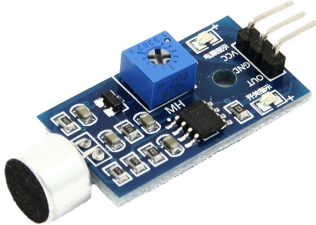


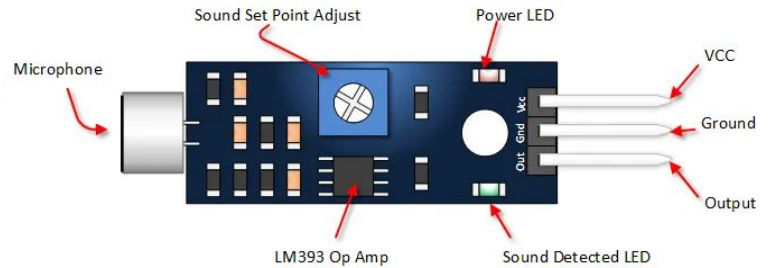
Sound Detector

(Technical Note)

Sound Detector



The sound level detector is a sensor module that alarms when the sound pressure is above a limit. It uses a microphone to sense the sound level which is amplified and this signal is compared to a threshold reference to generate the output signal. The trigger threshold may be adjusted with a potentiometer. The output is a 5V logic signal.



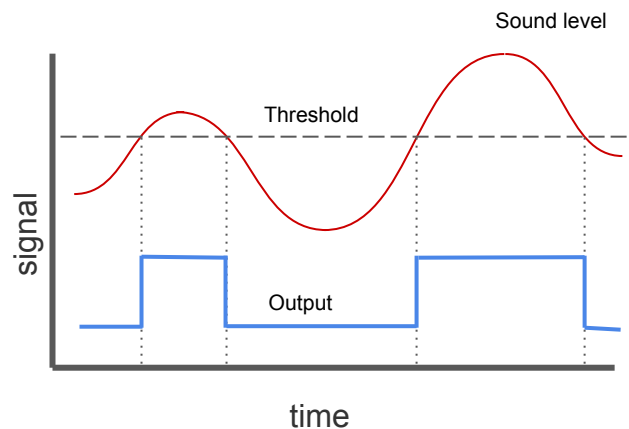
Applications

Clap Switch:

It is a device which acts as a switch which responds upon the detection of sound of a particular amplitude for example the sound of clapping or any other sound whose amplitude corresponds to the sound of clap will. The clapper device is used to turn on or off lights.

Hospitals:

Sound sensor based alarm detectors can be used in hospitals where the people are advised to maintain silence. The sound sensor can be set to respond to a particular amplitude of the sound and once that amplitude is exceeded, an indication will be produced to inform the people in the hospital to maintain silence.



Sound Detector

(Application Note)

Project

To check the presence of sound going over a threshold amplitude using sound sensor.

Procedure

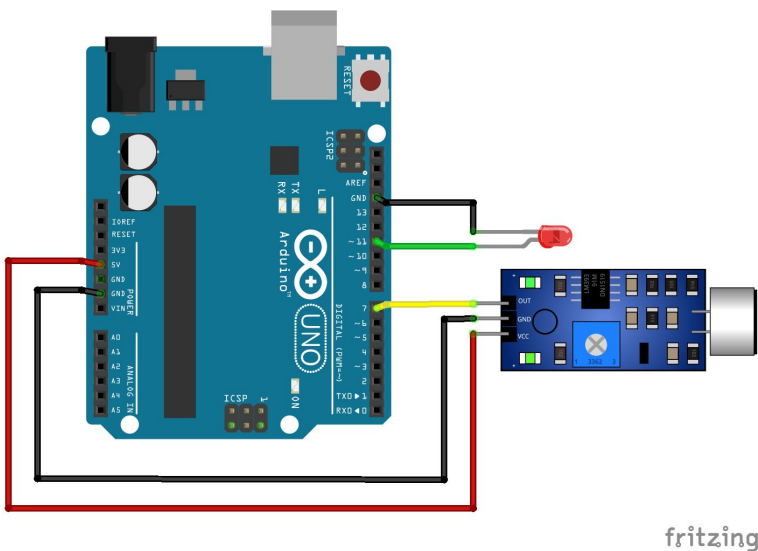
Sound Sensor Module:

- Connect **Vcc** pin of sensor to **5V** of Arduino
- Wire **GND** pin of the sensor to **GND** of the Arduino
- Connect **OUT** pin to **7th** pin of Arduino

LED:

- Connect **anode(+)** of LED to **11th** pin of Arduino
- Connect **cathode(-)** of LED to **GND** of Arduino

Schematic



fritzing

Challenge

1. Design an self-learning metronome that measures the beats of claps and generates continuous metronome of the same beat.
2. Make a secret lock that opens only to a clap pattern.
3. Create a beat learning box that generates standard beats and checks if the student keeps the same beat.

Components Required

Component	Part No.	Qty
Arduino UNO	EMX-00001-A	1
Sound Detector	EMS-00004-B	1
LED	EDD-00002-A	1

Code

```
const int led = 11; /*Attaching the LED to the 11th pin of Arduino*/
const int sound = 7; /*Attaching the Sound Sensor to 7th pin of Arduino*/

int soundVal = 0; /*Initialising a variable named soundval and giving it a 0 value*/

void setup ()
{
    pinMode(led,OUTPUT); /*Making the connected pin to LED as OUTPUT pin*/
    pinMode(sound,INPUT);
    /*Making the connected pin to Sound Sensor as INPUT pin*/
}

void loop ()
{
    soundVal = digitalRead(sound);
    /*Reading the value from the sound sensor and storing it in the variable*/
    if (sound == LOW)
    /*checking if the value read is LOW*/
    {
        digitalWrite(led,HIGH); /*if it satisfies the condition, glow the LED*/
    }
    else
    {
        digitalWrite(led,LOW);
    }
    /*otherwise, switch off the LED*/
}
```