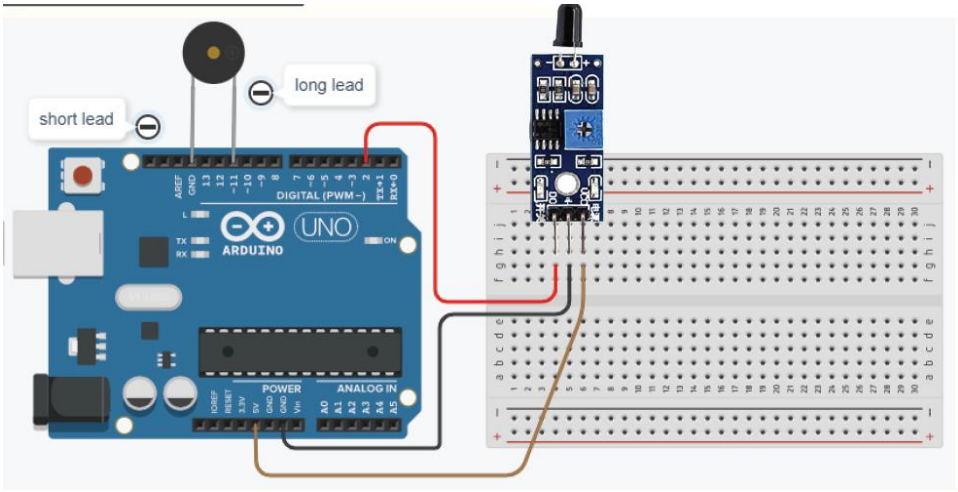
Fire Alarm

Aim: - The aim of this project is to make our own fire alarm at home.

Component Requirements

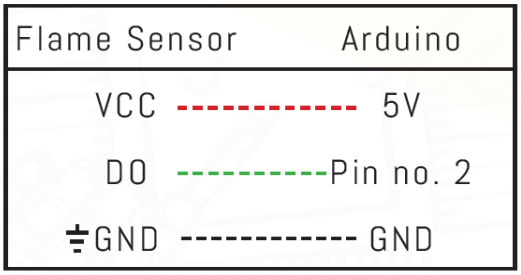
Sl. No	Items	Quantity
1	Arduino Uno	1
2	Cable	1
3	IR Sensor	1
4	Jumper Wire M	4
5	Breadboard	1
6	Battery 9 Volt	1
7	Battery Cap	1

Circuit Diagram



Circuit connections procedure

- Take 1 Arduino board, 1 breadboard and place it side by side.
- Mount flame sensor on breadboard.
- Connect 3 male to male wires on the breadboard in front of each pin of the sensor.
- Now connect the other ends of those 3 wires to the arduino board as per given details.



- Connect the long lead/leg of buzzer to pin 11 of the arduino board.
- Connect the short lead/leg of the buzzer to the GND pin of the arduino board.

Procedure to upload the code

- Once you complete the circuit connections connect the arduino board to your laptop/computer system using arduino cable.
- Open arduino IDE.
- Go to **File->Open>Download>Select fire_alarm**.
- Click on the upload option.

Program

```
#define buzzer 11
#define sensor 2
int sound=250; // set buzzer sound
void setup(){ // put your setup code here, to run once:

pinMode(buzzer,OUTPUT);

pinMode(sensor,INPUT);
Serial.begin(9600);
}
void loop() { // put your main code here, to run repeatedly: int sensorin =

digitalRead(sensor);

if(sensorin == LOW){
Serial.println("Flame");
tone(buzzer,sound);
}
else{
Serial.println("No flame");
noTone(buzzer);
}
}
```

Output

1. Put matchbox / lighter in front of sensor led, buzzer will sound.

2. When there is no fire in front of the sensor led, the buzzer will not sound.

9V Battery connection:

1. You are powering the arduino through your laptop. You can also power the arduino through a 9v battery.

2. Disconnect the arduino cable and connect the 9v battery to the arduino board using the power jack connector. Now you can see the circuit is working.

Note: Do not connect the battery all the time to the arduino board. It will drain the battery.

Troubleshoot

Issue	Solution
I am facing issues with flame sensors. **Case 1:** Sensor not detecting any flame near to it.	Make sure that your sensor is powered. The power LED will turn ON that sensor if it's getting power properly.
Case 2: Power LED is glowing on that sensor but not detecting flame near to the sensor.	Try to vary the blue pot on the sensor using a screwdriver, try to put a matchbox/ lighter flame near to the sensor led and vary the pot and check whether the 2nd led is glowing or not. The second LED will only glow when it detects flame near to it.