

L&T Project

Problem statement: To develop a prototype system which can generate and evacuate the workers under fire accident

Scope of the Solution:

Design and implement a Industrial fire safety system.

Develop a microcontroller-based system to process sensor data and trigger alerts.

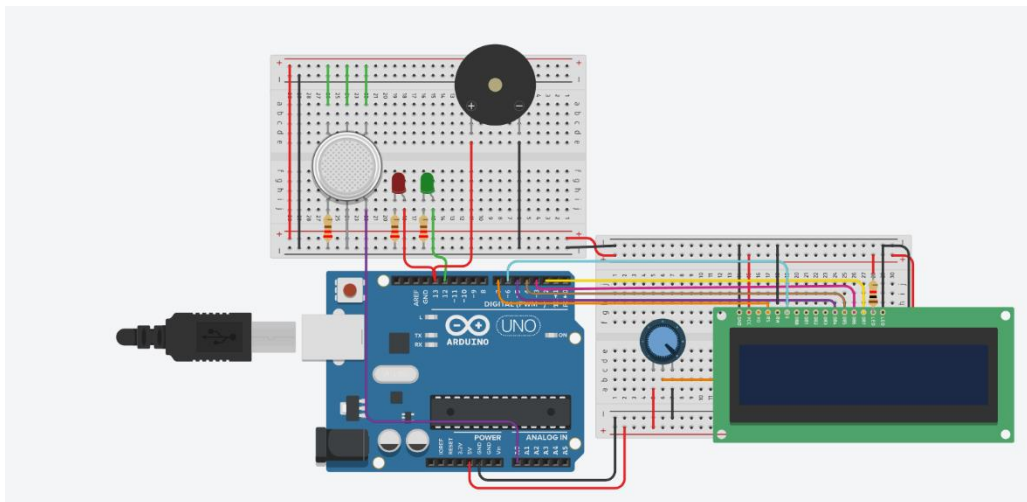
Create a user interface for gas sensors and managing alerts .

Ensure the system is robust, reliable, and cost-effective.

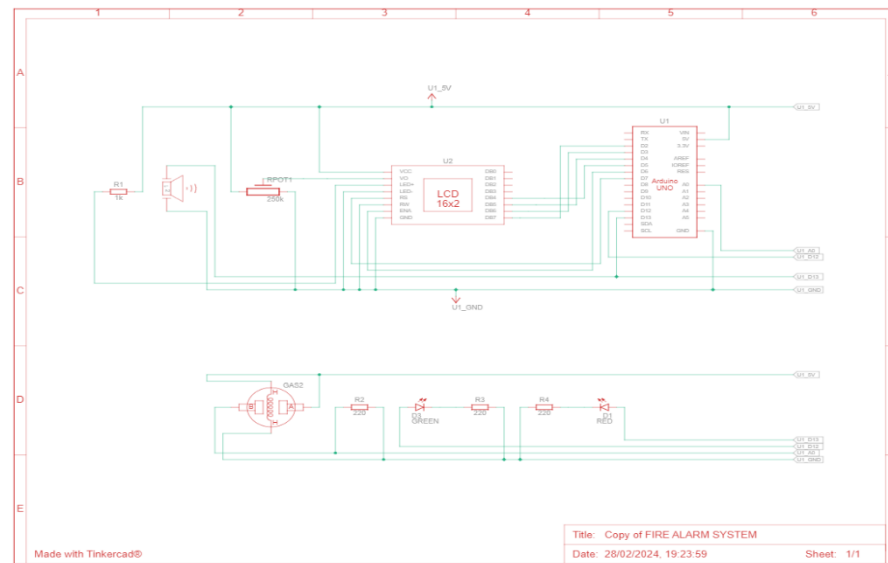
Required components:

- Arduino UNO
- Bread boards
- Potentiometer
- Lcd display
- Gas sensor
- LED's
- Piezo electric buzzer
- Zipper wires for connections

Circuit diagram



Gerber file



code for the execution:

```
#include<LiquidCrystal.h>

LiquidCrystal lcd(7, 6, 5, 4, 3, 2);

int Smoke = 0;

int r =0;

void setup()

{

    pinMode(A0, INPUT);

    Serial.begin(9600);

    lcd.begin(16, 2);

    pinMode(13, OUTPUT);

    pinMode(12, OUTPUT);

    pinMode(13, OUTPUT);

}

void loop()

{

    Smoke = analogRead(A0);

    Serial.println(analogRead(A0));
```

```

if (Smoke >=25)
{
    digitalWrite(13, HIGH);
    digitalWrite(12, LOW);
    tone(13, 523); // play tone 60 (C5 = 523 Hz)
    lcd.setCursor(0,0);
        lcd.print("Emergency exit is right to the elevator");
        delay(100);
        lcd.setCursor(0,1);
        lcd.print("Fire and Rescue Dial 101 immediately");
        lcd.setCursor(1,0);
        for(r=0;r<36;r++)
        {
            lcd.scrollDisplayLeft();
            delay(100);
        }
    }
else
{
    digitalWrite(13, LOW);
    digitalWrite(12, HIGH);
    lcd.clear();
    noTone(13);
    lcd.setCursor(6,0);
    lcd.print("GOOD");
    lcd.setCursor(6,1);
    lcd.print("DAY:");
    delay(1000);
        }
    delay(10); // Delay a little bit to improve simulation performance
}

```

Github link