

# Gas Leakage monitoring & Alerting system for Industries

## Program:

```
#include <LiquidCrystal.h>
```

```
LiquidCrystal lcd(6, 7, 8, 9, 10, 11);
```

```
float gasPin = A0;
```

```
float gasLevel;
```

```
int ledPin = 2;
```

```
int buttonPin = 3;
```

```
int buzzPin = 4;
```

```
int buttonState;
```

```
int fan = 5;
```

```
void setup(){
```

```
  pinMode(ledPin, OUTPUT);
```

```
  pinMode(buttonPin, INPUT);
```

```
pinMode(gasPin,INPUT);
pinMode(fan,OUTPUT);
Serial.begin(9600);
lcd.begin(16, 2);
lcd.setCursor(0,0);
lcd.print(" Welcome");
lcd.setCursor(0,2);
lcd.print(" Youtube");
delay(500);
lcd.clear();
}

void loop(){
    // Read the value from gas sensor and button
    gasLevel = analogRead(gasPin);
    buttonState = digitalRead(buttonPin);

    // call the function for gas detection and button work
    gasDetected(gasLevel);
    buzzer(gasLevel);
    exhaustFanOn(buttonState);
}
```

```
// Gas Leakage Detection & Automatic Alarm and Fan ON
```

```
void gasDetected(float gasLevel){
```

```
    if(gasLevel >= 300){
```

```
        digitalWrite(buzzPin,HIGH);
```

```
        digitalWrite(ledPin,HIGH);
```

```
        digitalWrite(fan,HIGH);
```

```
        lcd.setCursor(0,0);
```

```
        lcd.print("GAS:");
```

```
        lcd.print(gasLevel);
```

```
        lcd.setCursor(0,2);
```

```
        lcd.print("FAN ON");
```

```
        delay(1000);
```

```
        lcd.clear();
```

```
    }else{
```

```
        digitalWrite(ledPin,LOW);
```

```
        digitalWrite(buzzPin,LOW);
```

```
        digitalWrite(fan,LOW);
```

```
        lcd.setCursor(0,0);
```

```
        lcd.print("GAS:");
```

```
        lcd.print(gasLevel);
```

```
        lcd.setCursor(0,2);
```

```
    lcd.print("FAN OFF");  
    delay(1000);  
    lcd.clear();  
}  
}  
  
//BUZZER  
void buzzer(float gasLevel){  
    if(gasLevel>=300)  
    {  
        for(int i=0; i<=30; i=i+10)  
        {  
            tone(4,i);  
            delay(400);  
            noTone(4);  
            delay(400);  
        }  
    }  
}  
  
// Manually Exhaust FAN ON  
void exhaustFanOn(int buttonState){  
    if(buttonState == HIGH){  
        digitalWrite(fan,HIGH);
```

```
    lcd.setCursor(0,0);  
    lcd.print("Button State:");  
    lcd.print(buttonState);  
    lcd.setCursor(0,2);  
    lcd.print("FAN ON");  
    delay(10000);  
    lcd.clear();  
}  
}
```