

```
#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("PNT2022TMID51246");
```

```
    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 >= 200){  
        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(100);  
        lcd.clear();
```

```
    }
```

```

}

//BUZZER

void buzzer(float gasLevel){
if(gasLevel>=200)
{
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();
}
}

```