Design Development Phase
Sprint-1

Date	16 NOVEMBER 2022
Team ID	PNT2022TMID07798
Project Name	Gas Leakage Monitoring and Alerting System

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();
 }
}
```