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#include <LiquidCrystal.h>

LiquidCrystal lcd(6, 7, 8, 9, 10,
11); float gasPin1 = A0; float
gasLevel; int ledPin1 = 2; int
buttonPin1 = 3; int buzzPin1 = 4;
int buttonState1; int fan1 = 5;

void setup(){
  pinMode(ledPin1, OUTPUT);
  pinMode(buttonPin1,
  INPUT);
  pinMode(gasPin1,INPUT);
  pinMode(fan1,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(gasPin1); buttonState
  = digitalRead(buttonPin1);

  // call the function for gas detection and button work
  gasDetected(gasLevel);
  buzzer(gasLevel);
  exhaustFanOn(buttonState1);
}

// Gas Leakage Detection & Automatic Alarm and Fan ON
void gasDetected(float gasLevel){ if(gasLevel >= 300){
  digitalWrite(buzzPin1,HIGH);
  digitalWrite(ledPin1,HIGH);
  digitalWrite(fan1,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(ledPin1,LOW);
  digitalWrite(buzzPin1,LOW)
  ; digitalWrite(fan1,LOW);
  lcd.setCursor(0,0);
  lcd.print("GAS:");
  lcd.print(gasLevel);
  lcd.setCursor(0,2); lcd.print("FAN
  OFF"); delay(1000); lcd.clear();
}
}

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    }
}
//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 buttonState1){
if(buttonState1 == HIGH){
digitalWrite(fan1,HIGH);
lcd.setCursor(0,0);
lcd.print("Button State:");
lcd.print(buttonState1);
lcd.setCursor(0,2);
lcd.print("FAN ON");
delay(10000);
lcd.clear();
}
}

```