#include <LiquidCrystal\_I2C.h>

const int green = 10;

const int yellow = 11;

const int red = 12;

const int buzzerPin = 13;

LiquidCrystal\_I2C lcd(0x27, 16, 2);

void display(int sensorValue) {

  lcd.setCursor(0, 0);

  lcd.print("Gas level:");

  lcd.setCursor(10, 0);

  lcd.print(sensorValue);

  delay(1000);

}

void warningBuzz() {

  digitalWrite(green, LOW);

  digitalWrite(yellow, HIGH);

  digitalWrite(red, LOW);

  tone(buzzerPin, 1000);

  delay(500);

  noTone(buzzerPin);

}

void dangerBuzz() {

  digitalWrite(green, LOW);

  digitalWrite(yellow, LOW);

  digitalWrite(red, HIGH);

  tone(buzzerPin, 2000);

  delay(500);

  noTone(buzzerPin);

}

void warn() {

  delay(500);

  lcd.setCursor(1, 3);

  lcd.print("Warning!");

  warningBuzz();

}

void danger() {

  delay(500);

  lcd.setCursor(1, 3);

  lcd.print("High Gas Level!");

  dangerBuzz();

}

void normal() {

  delay(500);

  lcd.setCursor(1, 3);

  lcd.print("Normal");

  digitalWrite(green, HIGH);

  digitalWrite(yellow, LOW);

  digitalWrite(red, LOW);

}

void setup() {

  Serial.begin(9600);

  lcd.init();

  lcd.backlight();

  pinMode(green, OUTPUT);

  pinMode(yellow, OUTPUT);

  pinMode(red, OUTPUT);

}

void loop() {

  int sensorValue = analogRead(A0);

  Serial.print("Gas:");

  Serial.println(sensorValue);

  lcd.clear();

  display(sensorValue);

if (sensorValue >= 100 && sensorValue <= 149) {warn();}

else if (sensorValue >= 150) {danger();} else {normal();}

}