//FIRE AND SMOKE DETECTION SYSTEM

#include <Wire.h>

#include <LiquidCrystal\_I2C.h>

// LCD address: 0x27 or 0x3F

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

const int smokeSensorPin = A0;

const int buzzerPin = 8;

void setup() {

lcd.begin();

lcd.backlight();

lcd.setCursor(0, 0);

lcd.print(" Smoke & Fire ");

lcd.setCursor(0, 1);

lcd.print(" System Ready ");

delay(1500); // Short welcome delay

lcd.clear();

pinMode(smokeSensorPin, INPUT);

pinMode(buzzerPin, OUTPUT);

}

void loop() {

int sensorValue = analogRead(smokeSensorPin); // Fast reading

// Display Smoke Level

lcd.setCursor(0, 0);

lcd.print("Smoke: ");

if (sensorValue < 300) {

lcd.print("LOW ");

} else if (sensorValue < 600) {

lcd.print("MEDIUM ");

} else {

lcd.print("HIGH ");

}

// Fire Detection and Buzzer Control

lcd.setCursor(0, 1);

if (sensorValue >= 700) {

lcd.print("FIRE DETECTED! ");

digitalWrite(buzzerPin, HIGH);

} else {

lcd.print("No Fire ");

digitalWrite(buzzerPin, LOW);

}

delay(500); // 0.5-second delay for fast but stable output

}