#include <Servo.h>

// Define pin numbers

const int buzzer = 8; // Positive pin of the buzzer

const int smokeA0 = A5; // Analog pin connected to MQ5 sensor

const int relayPin = 7; // Pin connected to relay module to control gas supply

const int fanControlPin = 10; // Pin connected to MOSFET to control fan

const int safeLevel = 135;

const int servoPin = 9; // Pin connected to servo motor

Servo servoMotor;

void setup() {

// Initialize pin modes

pinMode(buzzer, OUTPUT);

pinMode(relayPin, OUTPUT);

pinMode(fanControlPin, OUTPUT);

pinMode(smokeA0, INPUT);

servoMotor.attach(servoPin);

// Start serial communication

Serial.begin(9600);

Serial.println("Setup complete.");

}

void loop() {

// Read sensor value

int currentVal = analogRead(smokeA0);

Serial.print("Pin A5: ");

Serial.println(currentVal);

// Check if smoke level exceeds safe level

if (currentVal > safeLevel) {

// Smoke detected, perform all functions

digitalWrite(buzzer, HIGH); // Turn on buzzer

digitalWrite(relayPin, LOW); // Cut off gas supply

digitalWrite(fanControlPin, HIGH); // Switch on fan

servoMotor.write(0); // Rotate servo motor to shut off position

Serial.println("Smoke detected. All functions activated.");

} else {

// No smoke detected, do nothing

digitalWrite(buzzer, LOW); // Turn off buzzer

digitalWrite(relayPin, HIGH); // Allow gas supply

digitalWrite(fanControlPin, LOW); // Turn off fan

delay(500); // Delay before opening servo motor

servoMotor.write(120); // Rotate servo motor to open position

Serial.println("No smoke detected. All functions deactivated.");

}

delay(1000); // Delay for stability

}