

```
#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  
  
}
```