

CODE FOR THE SOLUTION

```
// Pin definitions
const int flamePin = 15;    // Flame sensor DO pin
const int smokePin = 26;    // Smoke sensor AO pin
const int buzzer = 5;      // Buzzer pin

void setup() {
  Serial.begin(115200);

  pinMode(flamePin, INPUT); // Flame sensor is digital
  pinMode(buzzer, OUTPUT); // Buzzer
}

void loop() {

  int flameValue = digitalRead(flamePin); // 1 = flame detected
  int smokeValue = analogRead(smokePin); // Higher value = more smoke

  bool flameDetected = (flameValue == 1);
  bool smokeDetected = (smokeValue > 800); // Threshold for smoke

  // PRINT STATUS
  Serial.print("Flame: ");
  Serial.print(flameDetected ? "DETECTED" : "NO FLAME");

  Serial.print(" | Smoke: ");
  Serial.print(smokeDetected ? "DETECTED" : "NO SMOKE");

  Serial.print(" | Smoke Value: ");
  Serial.println(smokeValue);

  // ALERT LOGIC
  if (flameDetected && smokeDetected) {
    Serial.println(" WARNING: FIRE + SMOKE DETECTED!");
    digitalWrite(buzzer,LOW);
  }
  else if (flameDetected) {
    Serial.println(" ALERT: FLAME DETECTED!");
    digitalWrite(buzzer,LOW);
  }
  else if (smokeDetected) {
    Serial.println(" ALERT: SMOKE DETECTED!");
    digitalWrite(buzzer, LOW);
  }
  else {
    Serial.println("System Normal!!!.");
    digitalWrite(buzzer, HIGH);
  }

  Serial.println("-----");
  delay(500);
}
```