CODE:

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// GAS SENSOR (MQ2)
#define GAS_SENSOR_PIN A0
#define BUZZER_PIN 8
#define GAS_LED_PIN 0
const int GAS_THRESHOLD = 400;
// TEMPERATURE SENSOR (LM35)
#define LM35_PIN A5
#define MOTOR_PIN 5
const int TEMP_THRESHOLD = 38;

// LDR SENSOR
#define LDR_PIN A0
#define LDR_LED_PIN 7

// ULTRASONIC SENSOR
#define TRIG_PIN 12
#define ECHO_PIN 11

void setup() {
  Serial.begin(9600);

  pinMode(BUZZER_PIN, OUTPUT);
  pinMode(GAS_LED_PIN, OUTPUT);
  pinMode(MOTOR_PIN, OUTPUT);
  pinMode(LDR_LED_PIN, OUTPUT);

  pinMode(TRIG_PIN, OUTPUT);
  pinMode(ECHO_PIN, INPUT);
```

```
}

void loop() {
  // GAS SENSOR
  int gasValue = analogRead(GAS_SENSOR_PIN);
  Serial.print("Gas Level: ");
  Serial.println(gasValue);

  if (gasValue > GAS_THRESHOLD) {
    Serial.println(" 🚨 High Gas Level!");
    digitalWrite(GAS_LED_PIN, HIGH);
    digitalWrite(BUZZER_PIN, HIGH);
    delay(2000);
    digitalWrite(BUZZER_PIN, LOW);
  } else {
    digitalWrite(GAS_LED_PIN, LOW);
    digitalWrite(BUZZER_PIN, LOW);
  }

  // TEMPERATURE SENSOR
  int tempValue = analogRead(LM35_PIN);
  float temperature = (tempValue * 5.0 * 100.0) / 1024.0;

  Serial.print("Temperature: ");
  Serial.print(temperature);
  Serial.println("°C");

  if (temperature > TEMP_THRESHOLD) {
    Serial.println(" 🔥 High Temp! Fan ON");
    analogWrite(MOTOR_PIN, 255);
  } else {
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  Serial.println(" ✅ Normal Temp. Fan OFF");
  analogWrite(MOTOR_PIN, 0);
}

// LDR SENSOR
int lightValue = analogRead(LDR_PIN);
Serial.print("Light Intensity: ");
Serial.println(lightValue);

if (lightValue < 150) {
  Serial.println(" 🌙 Dark - LED ON");
  digitalWrite(LDR_LED_PIN, HIGH);
} else {
  Serial.println("☀ Bright - LED OFF");
  digitalWrite(LDR_LED_PIN, LOW);
}

// ULTRASONIC SENSOR
digitalWrite(TRIG_PIN, LOW);
delayMicroseconds(2);
digitalWrite(TRIG_PIN, HIGH);
delayMicroseconds(10);
digitalWrite(TRIG_PIN, LOW);

long duration = pulseIn(ECHO_PIN, HIGH);
float distance = (duration * 0.0343) / 2;

Serial.print("Distance: ");
Serial.print(distance);
Serial.println(" cm");
```

```
  // 🔹 Increased delay (5 seconds)
  delay(5000);
}
```