

```

#include <iostream>
using namespace std;

int GCDCounters[8] = {0};

int GCD(int a, int b) {
    int temp;
    GCDCounters[2] += 1; /*line: 1*/
    while ((GCDCounters[2] += 1) && b != 0) { /*line: 2*/
        // 因為 && 的優先級較 += 高，所以要加括號
        temp = a % b;
        GCDCounters[3] += 1; /*line: 3*/
        a = b;
        GCDCounters[4] += 1; /*line: 4*/
        b = temp;
        GCDCounters[5] += 1; /*line: 5*/
        GCDCounters[6] += 1;
    } /*line: 6*/

    GCDCounters[7] += 1;
    return a; /*line: 7*/
}

int ProfileGCD() {
    int ans = 0;
    ans += GCDCounters[1] * 1; // Allocate static variable
    ans += GCDCounters[2] * 2; // Compare and Branch
    ans += GCDCounters[3] * 2; // Modulo and assign value
    ans += GCDCounters[4] * 1; // Assign value
    ans += GCDCounters[5] * 1; // Assign value
    ans += GCDCounters[6] * 1; // Jump back to loop begin
    ans += GCDCounters[7] * 1; // Return value
    return ans;
}

int Classify(int a) {
    // Check a>1 first:
    if (a > 1)
        return 3;
    else if (a == 0)
        return 1;
    else
        return 2; // covers the case a == 1
}

int main() {
    int a, b;
    // a = 3;
    // b = 24;
    // cin >> a >> b;
    cout << "Classify = " << Classify(GCD(a, b)) << endl;
    cout << "ProfileGCD = " << ProfileGCD() << endl;
    return 0;
}

```