

```
1 // file: gcd-re.c
2 //
3 // Euclidean algorithm:
4 // gcd(a, b) = gcd(b, a % b)
5 //
6 // Visualization (gcd(64, 48) for illustration):
7 // https://pythontutor.com/visualize.html#code=%23include%20%3Cstdio.h%3E%0A%0Aint%20GCD%28int%20a,%20int%20b%29%3B%0A%0Aint%20main%28%29%20%7B%0A%20%20int%20a%20%3D%2064%3B%0A%20%20int%20b%20%3D%2048%3B%0A%0A%20%20printf%28%22gcd%28%25d,%20%25d%29%20%3D%20%25d%5Cn%22,%20a,%20b,%20GCD%28a,%20b%29%29%3B%0A%0A%20%20return%200%3B%0A%7D%0A%0A%20gcd%28130,%20124%29%20%3D%202%0A%20gcd%28662,%20414%29%20%3D%202%0Aint%20GCD%28int%20a,%20int%20b%29%20%7B%0A%20%20if%20%28b%20%3D%3D%200%29%20%7B%0A%20%20%20return%20a%3B%0A%20%20%7D%0A%0A%20%20return%20GCD%28b,%20a%20%25%20b%29%3B%0A%7D&cumulative=true&heapPrimitives=nevernest&mode=edit&origin=opt-frontend.js&py=c\_gcc9.3.0&rawInputLstJSON=%5B%5D&textReferences=false
8 //
9 // Created by hfwei on 2023/11/9.
10 //
11
12 #include <stdio.h>
13
14 int GCD(int a, int b);
15
16 int main() {
17     int a = 0;
18     int b = 0;
19     scanf("%d %d", &a, &b);
20
21     printf("GCD(%d, %d) = %d\n", a, b, GCD(a, b));
22
23     return 0;
24 }
25
26 // gcd(130, 124) = 2
27 // gcd(414, 662) = 2
28 int GCD(int a, int b) {
29     if (b == 0) {
30         return a;
31     }
32
33     return GCD(b, a % b);
34 }
```