

Copilot

Certainly! Let's write C programs to find the **GCD (Greatest Common Divisor)** and **LCM (Least Common Multiple)** of two numbers.

Finding GCD (HCF) of Two Numbers

The GCD (or HCF) of two numbers is the largest positive integer that completely divides both numbers without leaving a remainder. We can calculate the GCD using different methods. Here are two approaches:

1. Using a for loop and if statement:

```
#include <stdio.h>

int gcd(int a, int b) {
    int result = (a < b) ? a : b;
    while (result > 0) {
        if (a % result == 0 && b % result == 0)
            break;
        result--;
    }
    return result;
}

int main() {
    int num1 = 98, num2 = 56;
    printf("GCD of %d and %d is %d\n", num1, num2, gcd(num1, num2));
    return 0;
}
```

Output: GCD of 98 and 56 is 14

1. Using the Euclidean algorithm:

```
#include <stdio.h>

int gcd(int a, int b) {
    if (a == 0)
        return b;
    if (b == 0)
        return a;
    if (a == b)
        return a;
    if (a > b)
```

```

        return gcd(a - b, b);
    return gcd(a, b - a);
}

int main() {
    int num1 = 98, num2 = 56;
    printf("GCD of %d and %d is %d\n", num1, num2, gcd(num1, num2));
    return 0;
}

```

Output: GCD of 98 and 56 is 14

Finding LCM of Two Numbers

The LCM of two numbers is the smallest positive number that is divisible by both of them. We can find the LCM using their GCD. Here's a C program to find the LCM of two numbers:

```

#include <stdio.h>

int main() {
    int num1, num2, lcm;
    printf("Enter two numbers: ");
    scanf("%d %d", &num1, &num2);

    int gcd = (num1 < num2) ? gcd(num1, num2) : gcd(num2, num1);
    lcm = (num1 * num2) / gcd;

    printf("LCM = %d\n", lcm);
    return 0;
}

```

Feel free to try out these programs, and let me know if you have any questions! 😊

Sources:

1. [GeeksforGeeks - GCD of Two Numbers in C](#)
2. [Know Program - GCD and LCM Program in C](#)
3. [Programiz - C Program to Find GCD of Two Numbers](#)
4. [IQCode - GCD and LCM in C](#)
5. [Grepper - GCD and LCM in C](#)

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1. [GCD of Two Numbers in C - GeeksforGeeks](#)
2. [gcd and lcd in c - IQCode](#)

3. [gcd and lcd in c - Code Examples & Solutions - Grepper: The Query ...](#)
4. [GCD and LCM Program in C - Know Program](#)
5. [C Program to Find GCD of two Numbers](#)
6. [github.com](#)
7. [github.com](#)

Copilot

Certainly! Let's start by writing C programs to find the **GCD (Greatest Common Divisor)** and **LCM (Least Common Multiple)** of two numbers.

Finding GCD (HCF) of Two Numbers

The GCD (or HCF) of two numbers is the greatest number that divides both of them exactly. Here's a simple C program to find the GCD of two numbers using a for loop:

```
#include <stdio.h>

int main() {
    int num1, num2, i, gcd;
    printf("Enter two numbers: ");
    scanf("%d %d", &num1, &num2);

    for (i = 1; i <= num1 && i <= num2; i++) {
        if (num1 % i == 0 && num2 % i == 0)
            gcd = i;
    }

    printf("GCD = %d\n", gcd);
    return 0;
}
```

Finding LCM of Two Numbers

The LCM of two numbers is the smallest positive number that is divisible by both of them. We can find the LCM using their GCD. Here's a C program to find the LCM of two numbers:

```
#include <stdio.h>

int main() {
    int num1, num2, minmultiple;
    printf("Enter two numbers: ");
    scanf("%d %d", &num1, &num2);

    // minmultiple will be equal to the smaller number
    minmultiple = (num1 < num2) ? num1 : num2;

    while (1) {
        if (minmultiple % num1 == 0 && minmultiple % num2 == 0) {
```

```

        printf("LCM = %d\n", minmultiple);
        break;
    }
    minmultiple++;
}

return 0;
}

```

Finding LCM Using GCD

We can also find the LCM of two numbers using their GCD. The formula is:

Here's a C program that finds both the GCD and LCM of two numbers:

```

#include <stdio.h>

int main() {
    int num1, num2, i, gcd, lcm;
    printf("Enter two numbers: ");
    scanf("%d %d", &num1, &num2);

    for (i = 1; i <= num1 && i <= num2; i++) {
        if (num1 % i == 0 && num2 % i == 0)
            gcd = i;
    }

    lcm = (num1 * num2) / gcd;

    printf("GCD = %d\n", gcd);
    printf("LCM = %d\n", lcm);

    return 0;
}

```

Feel free to try out these programs and let me know if you have any questions! 😊

Sources:

1. [Know Program - GCD and LCM Program in C](#)
2. [Technotip.com - C Program To Find GCD and LCM of Two Numbers](#)
3. [Programming Simplified - C program to find HCF and LCM](#)
4. [Programiz - C Program to Find LCM of two Numbers](#)

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1. [GCD and LCM Program in C - Know Program](#)
2. [C Program To Find GCD and LCM of Two Numbers - Technotip.com](#)
3. [C program to find HCF and LCM | Programming Simplified](#)
4. [C Program to Find LCM of two Numbers](#)
5. [github.com](#)
6. [github.com](#)
7. [github.com](#)
8. [github.com](#)
9. [github.com](#)
10. [github.com](#)
11. [github.com](#)