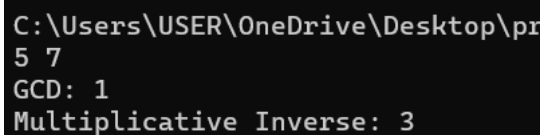# Extended Euclidean - Implementation
Code

```java
import java.util.*;
public class ExtendedEuclidean {
    static int GCD(int num1, int num2) {
        if (num2 == 0)
            return num1;
        return GCD(num2, num1 % num2);
    }
    static int multiplicativeInverse(int num1, int num2, int t1, int t2) {
        if (num2 == 0)
            return t1;
        int t = t1 - (t2 * num1 / num2);
        return multiplicativeInverse(num2, num1 % num2, t2, t);
    }
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int num1 = sc.nextInt();
        int num2 = sc.nextInt();
        int gcd = ExtendedEuclidean.GCD(num1, num2);
        System.out.println("GCD: " + gcd);
        if (gcd == 1) {
            if (num1 < num2)
                System.out.println("Multiplicative Inverse: " +
ExtendedEuclidean.multiplicativeInverse(num2, num1, 0, 1));
            else
                System.out.println("Multiplicative Inverse: " +
ExtendedEuclidean.multiplicativeInverse(num1, num2, 0, 1));
        }
    }
}
```

Output

```
C:\Users\USER\OneDrive\Desktop\pr
5 7
GCD: 1
Multiplicative Inverse: 3
```

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