Analysis Design of Algorithm

- Implement Longest Common Subsequence

Program:

```
import java.util.Scanner;

public class LongestCommonSubsequence

{

 int lcs( char[] X, char[] Y, int m, int n )

 {

  if (m == 0 || n == 0)

    return 0;

  if (X[m-1] == Y[n-1]) {

    return 1 + lcs(X, Y, m-1, n-1);

  }

       else{

    return max(lcs(X, Y, m, n-1), lcs(X, Y, m-1, n));

  }

 }

 int max(int a, int b)
```

```
 {
   return (a > b)? a : b;
 }
 public static void main(String[] args)
 {
   LongestCommonSubsequence Lcs = new
LongestCommonSubsequence();
        Scanner num = new Scanner(System.in);
        System.out.println("\nGive the First string:\t");
        String s1 = num.nextLine();
        System.out.println("\nGive the Secound string:\t");
        String s2 = num.nextLine();
   char[] X=s1.toCharArray();
   char[] Y=s2.toCharArray();
   int m = X.length;
   int n = Y.length;
   System.out.println("\nLength of LCS is" + " "+
                        Lcs.lcs( X, Y, m, n ));
 }
}
```

Input/Output: