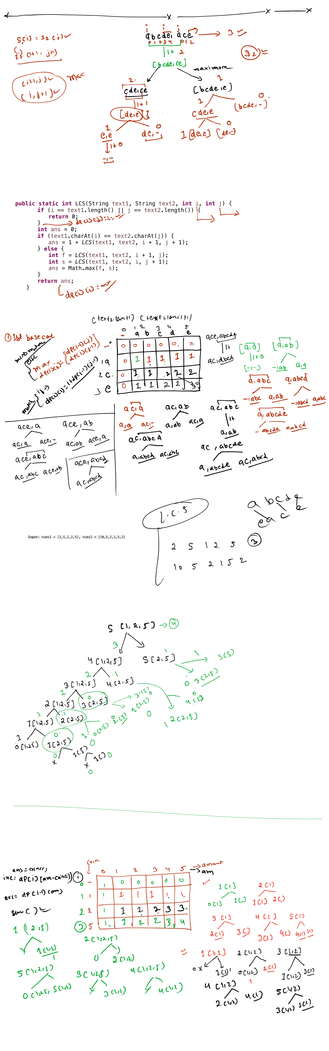
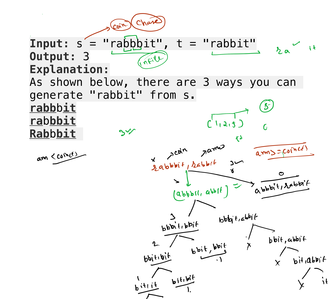
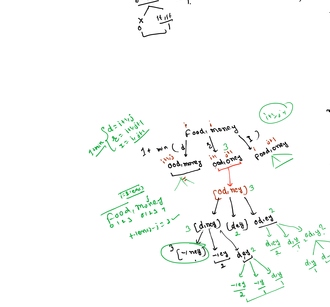
Lec-40

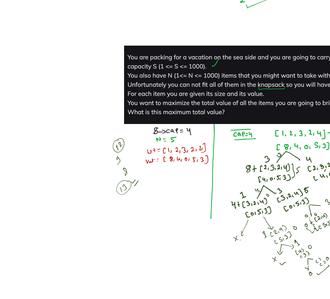


```
public static int LCS(String text1, String text2, int i, int j) {
    if (i == text1.length() || j == text2.length()) {
        return 0;
    }
    int ans = 0;
    if (text1.charAt(i) == text2.charAt(j)) {
        ans = 1 + LCS(text1, text2, i + 1, j + 1);
    } else {
        int f = LCS(text1, text2, i + 1, j);
        int s = LCS(text1, text2, i, j + 1);
        ans = Math.max(f, s);
    }
    return ans;
}
```

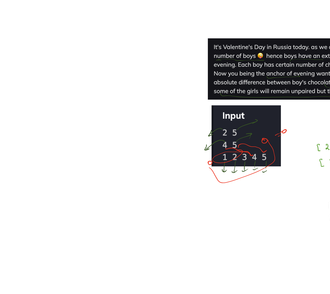

Input: num1 = [3,4,5,2,6], num2 = [3,8,5,2,6,3]

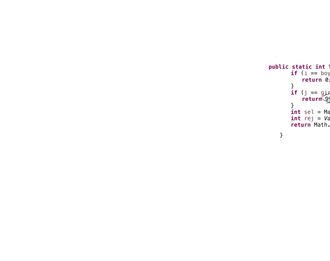




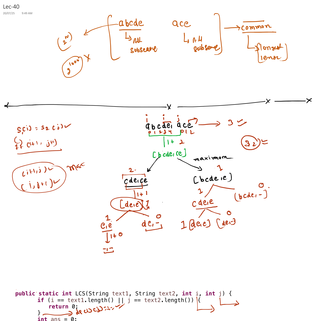


Input: s = "rabbbit", t = "rabbit"
Output: 3
Explanation:
As shown below, there are 3 ways you can generate "rabbit" from s.
rabbbit
rabbbit
rabbbit





You are packing for a vacation on the sea side and you are going to carry only one bag with capacity S (1 <= S <= 1000).
You also have N (1<= N <= 1000) items that you might want to take with you to the sea side.
Unfortunately you can not fit all of them in the knapsack so you will have to choose.
For each item you are given its size and its value.
You want to maximize the total value of all the items you are going to bring.
What is this maximum total value?



It's Valentine's Day in Russia today, as we all know number of girls in Russia is more than number of boys 😭 hence boys have an extra advantage while choosing girl for the valentine evening. Each boy has certain number of chocolates and each girl has certain number of candies. Now you being the anchor of evening wants to pair all the boys with girls such that the sum of absolute difference between boy's chocolate and girl's candy in a pair is minimized. Oh!course some of the girls will remain unpaired but that's okay as we are in Russia 😉

Input
2 5
4 5
1 2 3 4 5


```
public static int Valentine(int[] boys, int[] girls, int i, int j) {
    if (i == boys.length) {
        return 0;
    }
    if (j == girls.length) {
        return 999999999;
    }
    int sel = Math.abs(boys[i] - girls[j]) + Valentine(boys, girls, i + 1, j + 1);
    int rej = Valentine(boys, girls, i, j + 1);
    return Math.min(sel, rej);
}
```