Dynamic Programming

Longest Common Subsequence

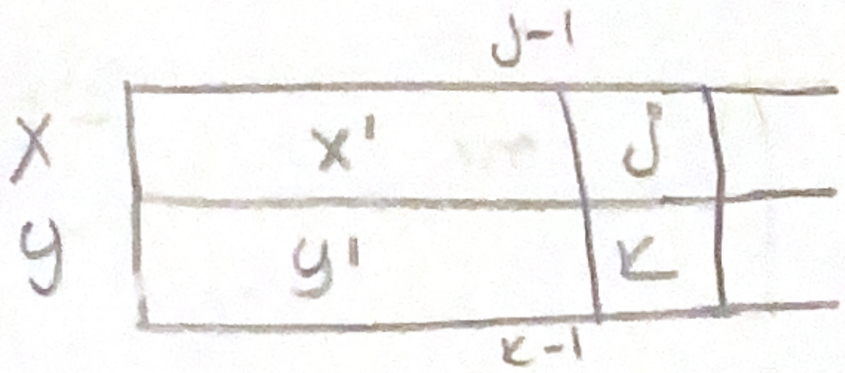
String → A B C D E F G H I J K

Subsequence → A C E G I J K
D F G H I K

Not subsequence → D A G H

Brute force → 2^n

örn $a\ \underline{b\ b}\ \underline{c}\ d\ c$ $\quad$ $|LCS| = 3$
$d\ \underline{b\ b}\ a\ \underline{c}$



önceki karakterler de aynıysa 1 arttır.

1) $X[j] = Y[k] \rightarrow LCS\{j,k\} = 1 + LCS[j-1, k-1]$

If they don't match:

2) $X[j] \neq Y[k]$

Check $LCS[j, k-1]$ or $LCS[j-1, k]$

örn

$X = \overbrace{A\ C\ D\ B\ A\ C}^{X'}\ \bar{A}$ $\quad$ if same, check earlier

$Y = \underbrace{A\ B\ C\ A\ D\ D\ F}_{Y'}\ \bar{A}$