QUESTION #15

LONGEST COMMON SUBSEQUENCE
To find the longest common subsequence from the
two given strings, occuring in the same order in both
the strings.

DYNAMIC
PROGRAMMING

Solution

Let x, y be two strings for which LCS is to be found.
Let m = length(x) and n = length(y)
1. Declare a 2D matrix L[m+1][n+1].
2. For i=0 to m:
    For j=0 to n:
        2.1. if (i=0 or j=0),
            L[i][j]=0
        2.2. Else if(X[i-1]=Y[j-1]),
            L[i][j] = L[i - 1][j - 1] + 1
    2.3. Else,
        L[i][j] = max(L[i - 1][j], L[i][j - 1])
3. length of LCS= L[m][n]

Nerving Into
Data Structures