Faculty of Engineering, University of Jaffna

Department of Computer Engineering

EC4070: Data Structures and Algorithms

Lab – 09

Dynamic Programming

Date: 8th January 2021 **Duration: 3 hour**

The Longest Common Subsequence [100 Marks]

A subsequence is a sequence that can be derived from another sequence by deleting some elements without changing the order of the remaining elements. The Longest common subsequence (LCS) of two sequences is a subsequence, with maximal length, which is common to both the sequences.

Given two strings, A = $a_1a_2...a_n$ and B = $b_1b_2...b_m$, find the longest common subsequence and print it. If there are multiple common subsequences with the same maximum length, print all of them.

Input Format

Two strings A and B given in two lines.

Constraints

The characters of strings are English lowercase alphabetic letters.

0 <= length(A), length(B) <= 100

Output Format

Print the longest common subsequence on one line. In case of multiple valid answers, print all of them one subsequence per line.

Sample Input

president

providence

Sample Output

priden

Instructions:

- Implement a java program (**LCS_201x_E_xxx_L9**.java) to solve this problem using dynamic programming approach.
- Submit your Java program on/before given deadline via team.