**Homework (11/30/2014)**

1. **Finish coding for class problem, knapsack**
2. **Finish coding for class problem, shortest path**
3. **Finding LCS (Longest Common Subsequence) of two strings**

**Description**

Given two sequences, find the length of longest subsequence present in both of them. A subsequence is a sequence that appears in the same relative order, but not necessarily contiguous. For example, “abc”, “abg”, “bdf”, “aeg”, ‘”acefg”, .. etc are subsequences of “abcdefg”. So a string of length n has 2^n different possible subsequences.

**Examples:**  
LCS for input Sequences “ABCDGH” and “AEDFHR” is “ADH” of length 3.  
LCS for input Sequences “AGGTAB” and “GXTXAYB” is “GTAB” of length 4.

**Input:** 2 lines of string

ABCBDAB

BDCABA

**Output:** 1st line is the LCS length integer. 2nd line the LCS string

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BCBA

**Reference:**

**Please look at following links to understand dynamic programming more.**

<http://videolectures.net/mit6046jf05_leiserson_lec15/>

<http://www.ics.uci.edu/~eppstein/161/960229.html>