Problem Set 5

CPSC 629 Analysis of Algorithms

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The assignment is due next Tuesday (11/12/2002), before class.

A common subsequence of two strings A and B is a subsequence of A and a subsequence of B. We know how to write programs to determine the length of the longest common subsequence. Define the edit distance between the two strings A and B to be the smallest number of deletions and insertions of single letters to change A into B.

Q1 Consider the two strings $A =$ `minimum` and $B =$ `maximum`. Determine the length m of the longest common subsequence of A and B. Determine the edit distance d between A and B (use the definition above).

Q2 Suppose that you have two input strings A and B, both of length n. Suppose that your program determines the length m of the longest common subsequence of A and B. Determine the edit distance between A and B using this information.

Q3 Prove the result that you have given in the previous exericse.

Reading Assignment: Read chapter 15 in [CLRS].