Homework Assignment 4

This assignment is due by Thursday March 17 (in class). Assignments should be handed in before the class begins.

**Problem 1**: Solve exercises 16.2-3 (page 427), 16.3-3, 16.3-5 (page 436), 23.1-2, 23.1-3 (page 629), 23.2-8 (page 637), 24.3-2, 24.3-10 (page 663), and 35.3-1 (page 1122) in the textbook.

**Problem 2**: Given two strings (sequences of letters) $x = x_1x_2\ldots x_n$ and $y = y_1y_2\ldots y_m$ we say that $x$ is a subsequence of $y$ if the letters in $x$ appear in $y$ in the same order, although not necessarily consecutively. For example $abc$ is a subsequence of $adbfcefb$ as well as of $aabc$. But $abc$ is not a subsequence of $bbacdcba$.

Develop an $O(n + m)$ (greedy) algorithm to decide whether $x$ is a subsequence of $y$. Prove your algorithm correctness and analyze its run time.

**Problem 3**: [extra credit; 20 points] Solve exercise 35.3-3 (page 1122) in the textbook.