COP 4531, Spring 2007
Complexity and Analysis of Data Structures and Algorithms

Assignment 3: Due Apr 9

Note: Show the important steps in your answers; you may lose points if you don't!

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1. (10 points) Use dynamic programming to find an optimal parenthesization of a matrix-chain product whose sequence of dimensions is *<10, 5, 20, 10, 5, 15>*.

2. (10 points) Text, exercise 15.4-1.

3. (10 points) Determine an optimal solution to the activity selection problem using the greedy algorithm discussed in class, for the following problem instance. Each triple is of the form *(task #, start-time, end-time)*. Problem instance: *{(1, 1, 5), (2, 3, 6), (3, 2, 5), (4, 5, 8), (5, 8, 9)}*.

4. (10 points) What is the optimal Huffman code for the following set of frequencies: *a:7, b:5, c:3, d:4, e:8, f:3, g:31*?

5. (5 points) Text, exercise 16.2-5.

6. (5 points) Text, problem 16-1 d (page 402).