COMP 550
Algorithms and Analysis
Spring 2020
Homework 7
Due Thursday, April 9, 2020

1. Find an optimal parenthesization of a matrix chain product whose sequence of array dimensions is $< 3, 8, 4, 10, 6 >$. How many multiplications are performed using this optimal parenthesization to multiply the matrices?

Optimal solution: There are four matrices. Call A, B, C, D. The optimal multiplication is ((AB)C)D. The optimal cost is 396.

2. Determine an optimal LCS of $< 1, 1, 0, 0, 1, 0, 1, 0 >$ and $< 1, 0, 1, 0, 1, 1, 0, 0 >$.

110100 OR 110110 OR 101010

For this homework you may work in groups of up to four people and groups are encouraged to turn in only one paper with everyone's names in the group on it. This will make the work of the grader easier. However, people in different groups may not collaborate.

Those who want to be part of a group and can't find others may meet in the front after class and form groups, if you desire to. You may also send email to the TA and he will assign people to groups.