

January 24, 2008

Homework 2

(Due on January 31, 2008)

1. Please find a solution to implement a stack using two queues.
2. Convert to postfix the expression
 $(5 * ((9 * 8) + (7 * (4 + 6))))$
3. In bioinformatics, there are two approaches for aligning two sequences. One approach is called global alignments, and the other is called local alignments. Global alignments attempt to align every residue on two sequences, while the local alignments try to match similar regions in two sequences. In general, global and local alignments can be achieved by using Dynamic Programming (DP).

Given two sequences:

- a. FTFTALILLAVAV
- b. FTALLLA AV

Please give your algorithms to align the two sequences with Dynamic Programming globally and locally, and give your sequence alignment results.