CS 273: Intro to Theory of Computation, Spring 2008
Problem Set 5 (due Monday, February 18th, 4pm)

This homework contains only one problem, intended to help you study for the first midterm. As usual, please turn in your homework at Elaine Wilson's office (3229 Siebel).

Problem 1: DFA/NFA TO REGEX.

In lecture 8 (Sipser pp. 69–76), we saw a procedure for converting a DFA to a regular expression. This algorithm also works even if the input is an NFA.

For the following NFA, use this procedure to compute an equivalent regular expression. So that everyone does the same thing (and we don't create a grading nightmare), you should do this by:

– Adding new start and end states, and then

– removing states A, B, C **in that order**.

Provide detailed drawing of the GNFA after each step in this process.
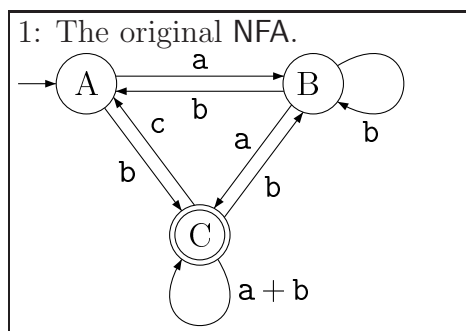
Note, that in this problem you will get interesting self-loops. For example, one can travel to from B to A and then back B. This creates a self-loop at B when A is removed.