

CPSC 406: ASSIGNMENT 2

DUE FEBRUARY 24, 7:00PM

Programming Assignment

Write a C, C++, or Java program that takes the specification for a NFA as input and outputs the specification for an equivalent DFA. The NFA input specification will be passed as a command line argument and be of the following form:

Line 1: A list of states, Q , separated by tabs.

Line 2: A list of the symbols in Σ , separated by tabs. The string ϵ will not be explicitly included.

Line 3: The start state, $q_0 \in Q$.

Line 4: The set of accept states, F , separated by tabs.

Line 5 to EOF: The transition function. Each line will be of the form $s, x = s'$. This is translated to mean that reading symbol x in state s causes a transition to state s' . The string EPS will be used to represent an epsilon transition.

The output should be to a text file with the extension .DFA. The output should have the same format as above. You may use the symbol EM to represent the empty state, \emptyset . If $\{1\}$ and $\{2\}$ are states in the NFA that are combined in the DFA, represent the state with the string $\{1, 2\}$.

Grading will be based on correctness and elegance of solution. Make sure to develop an OO solution. Comment your code. You should provide a Makefile as well.

Submission Instructions

Create a tgz file named *your_name_assign2.zip* which includes your source code, a Makefile, and a README. The README should contain any comments you have about the assignment, as well as the command to run your program. Submit the zip file to Blackboard by the deadline above. Remember that no late work will be accepted. Be prepared to demo in class on sample inputs provided by the instructor.