ASSIGNMENT

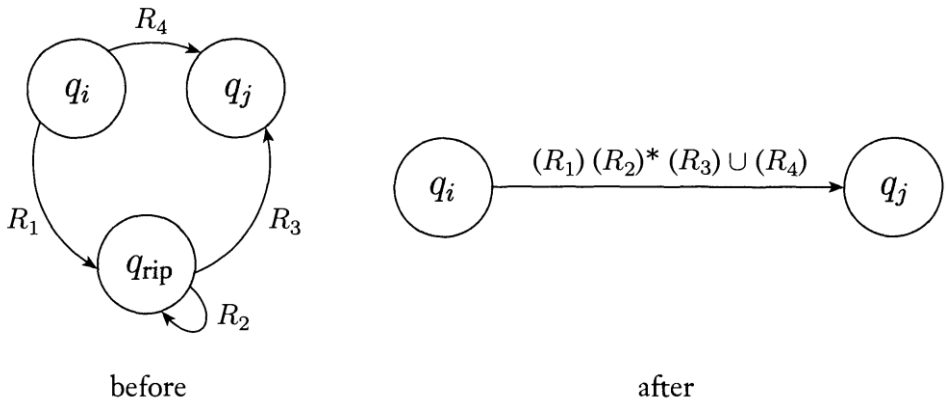
Due Date: 27.01.2021

Generalized Nondeterministic Finite Automaton

Convert given finite automata to regular expression (RE) with using Generalized Nondeterministic Finite Automaton(GNFA). Implement your solution in C# or Java. Your implementation should give regular expression.

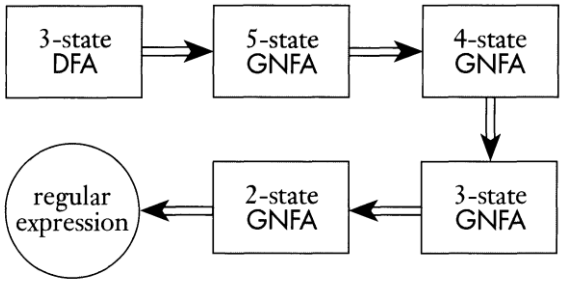
Recall

Constructing an equivalent GNFA with one fewer state (**q_{rip}:** removed state)



before after

Converting a DFA to into a GNFA in the special form



Implement your code that convert any finite automata (should be read from text file) into GNFA and get regular expression. Write all steps of converting this DFA into a GNFA (each equivalent GNFA with one fewer state) on the output screen. At the end show the regular expression on the screen to the user.

Assignment will be done as a group of 2 people

Report should include

Description

Psedeu code

Short description of your code

GNFA Shema (with all steps- draw each equivalent GNFA with one fewer state)

Sample screenshots of the program (should include all steps)

In upload folder(studentnumber1_studentnumber2)

Program code

Report

Sample DFAs files: DFA1.txt, DFA2.txt

DFA.txt

S=q1

A=q2 (if more than one accept state, each of them should be seperated with comma(,))

E=a,b (for alphabet, seperated with comma(,))

Q=q1,q2 (for states, seperated with comma(,))

q1,a=q1 (for transaction function)

q1,b=q2

q2,a=q2

q2,b=q2