

4th Practical Series

Exercise 1

Let $R = (a|b)(a^*|ba^*|b^*)^*$ be a regular expression, build the corresponding NFA:

- Manually using Thompson's algorithm, (leave it to students),
- Automatically using JFLAP.
- Check the results.

Exercise 2

Let G be a grammar has the following rewriting rules: $P = (S \rightarrow abS|abcA; A \rightarrow \varepsilon)$

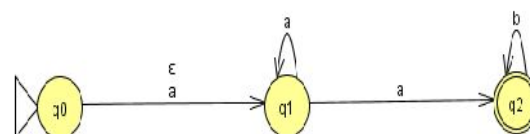
Give the correspondent NFA:

- Manually using the transformation algorithm (leave it to students)
- Automatically using JFLAP.
- Check the results.

Exercise 3

We consider the following automaton A represented by its transition diagram:

- Build the automaton A , using JFLAP.
- Convert the automaton to the correspondent Regular expression.
- Check if the following two words may be accepted by the above automaton (**aaaab**, **abba**)
- Check it with another given words.
- Does A is an NFA? Why? If yes build the corresponding DFA.



Exercise4

We consider the following finite automaton

- What is the type of this FA?
- Minimize it
- Transform the resulting automaton to a regular grammar

