

Homework Sheet 2

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Problem 3

(1.)

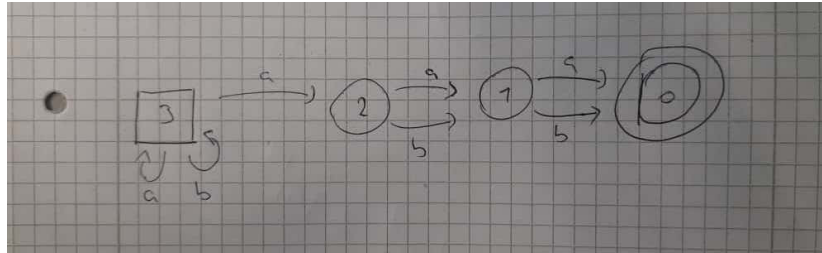


Figure 1: nfa

So in this NFA we can have arbitrarily many a's and b's before the third last a, then we have to read an a, then we can read an a or b, then we can read an a or b and then we reach the final state. I named the states as 0, 1, 2, 3. They are just dummy names. Here 3 is the starting state and 0 is the final state.

(2.)

This is the DFA version of the NFA above. The state names in DFA correspond to the NFA states they contain. The state $\{3\}$ is the starting state and the states $\{0, 3\}$, $\{0, 2, 3\}$, $\{0, 1, 3\}$, $\{0, 1, 2, 3\}$ are the final states. I constructed this DFA from the NFA above using the strategy we learned in the lecture.

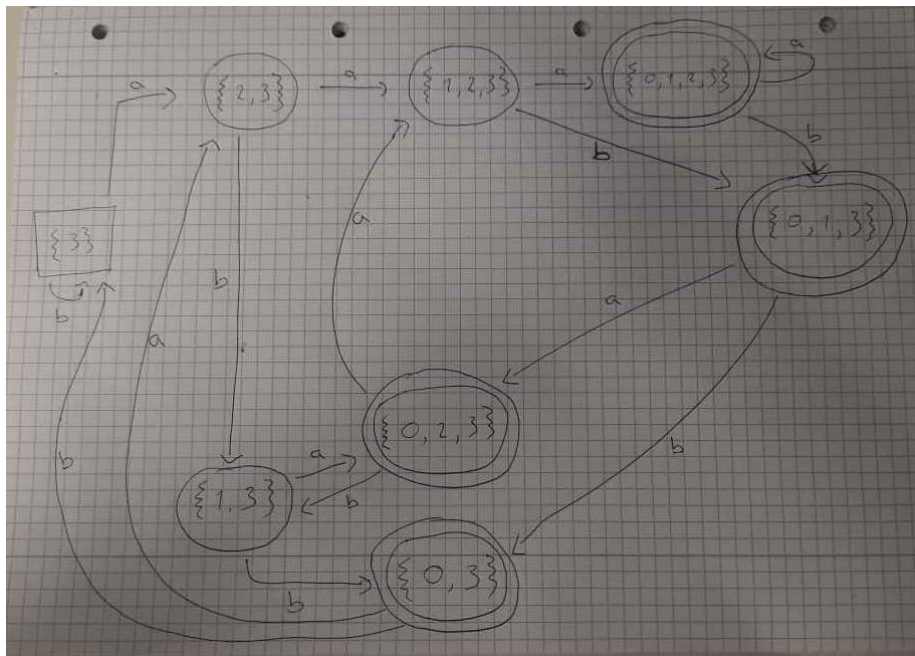


Figure 2: dfa