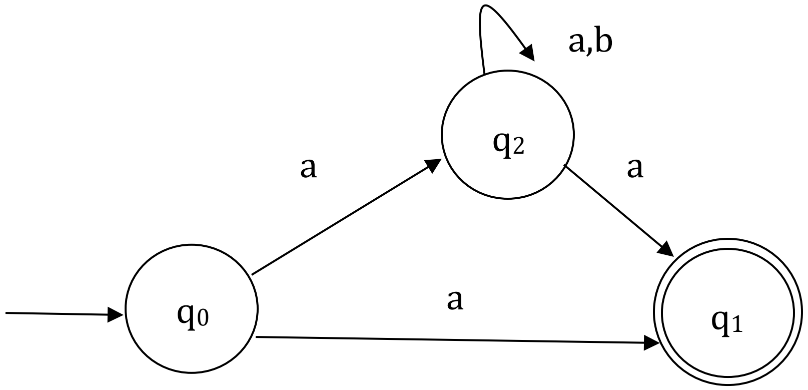
SCS 2212 : Automata Theory

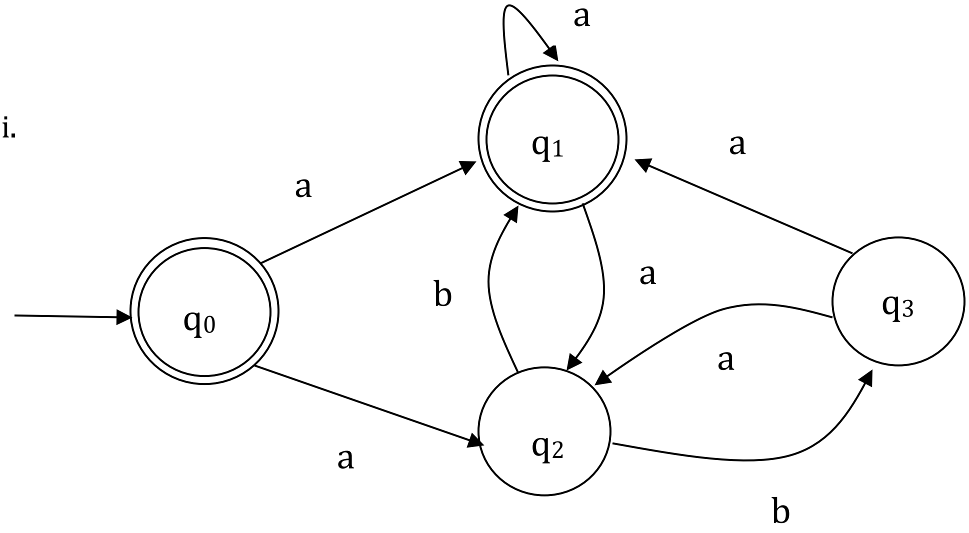
Tutorial 4 : NFA to DFA and minimizing FA

1. Consider the following NFA's (i and ii) shown below.

i.



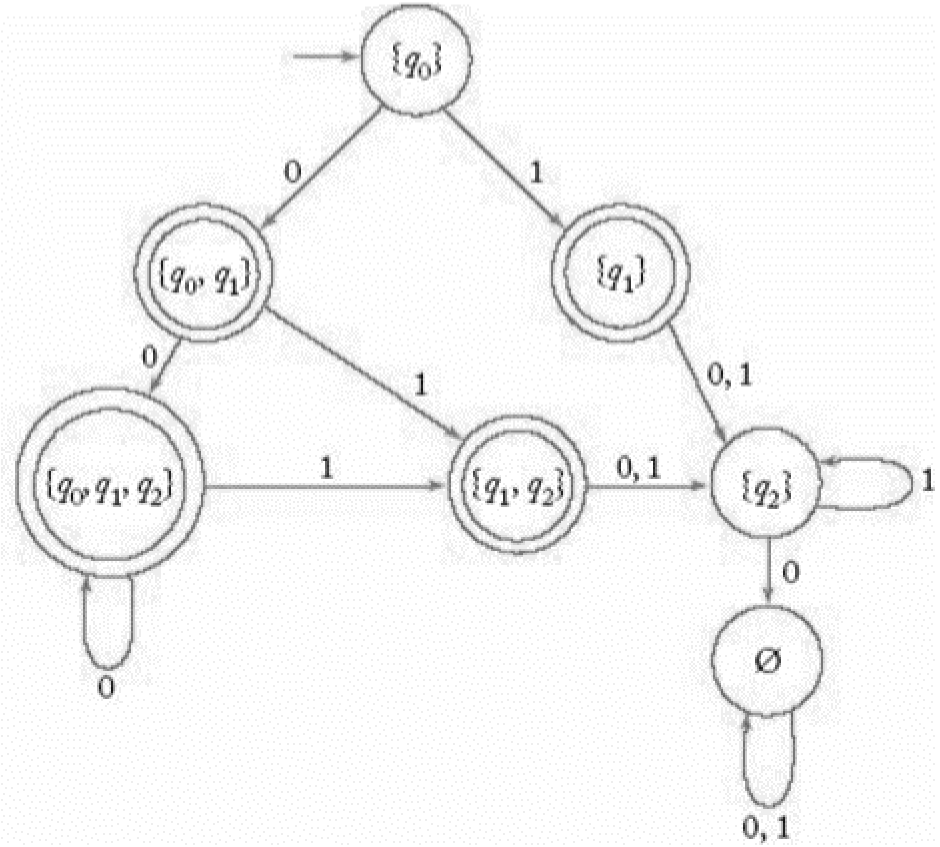
ii.



For each NFA listed above, answer the following questions.

a. Draw a transition table for the above automaton.
b. Convert the following NFA to DFA
c. What is the language accepted by the above automaton?
d. Draw a minimize DFA for the obtained DFA in part c

2. Minimize the following DFA.



3. Find minimal DFA's for the following listed languages. In each case prove that your obtained minimized DFA is minimal.
    a. $L = \{a^n b^m > : n \geq 2, m \geq 1\}$
    b. $L = \{a^n b : n \geq 0\} \cup \{b^n a : n \geq 1\}$
    c. $L = \{a^n : n \geq 0, n \neq 3\}$.
4. Minimize the state of the below depicted DFA.