

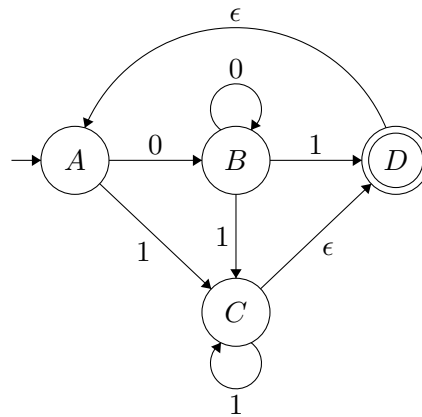
CS301 :: Homework 2

Ryan Magdaleno

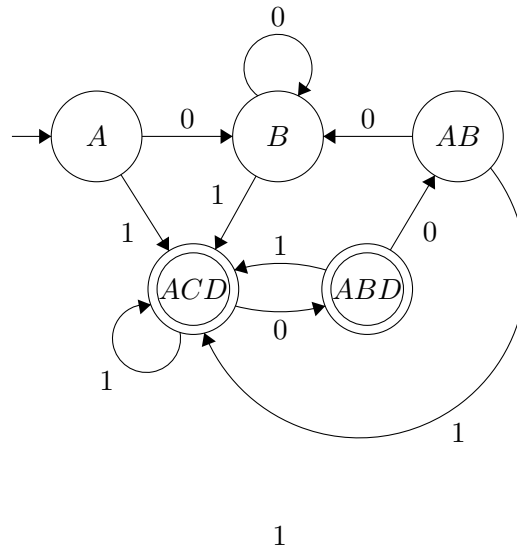
September 20, 2023

Problem 1. NFA to DFA

Prove the state diagram for a DFA that accepts the same language as the NFA M below. You do **not** need to provide the 5-tuple.



Solution ::



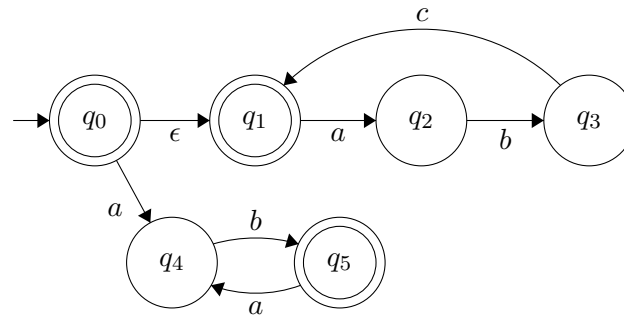
Problem 2. Regular Expression to NFA

Produce the state diagram for a NFA which decides the following languages.

$\Sigma = \{a, b, c\}$ You do not need to produce the 5-tuple.

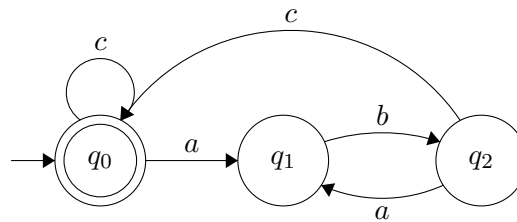
a) $L_a = (abc)^* \cup (ab)^*$

Solution ::



b) $L_b = ((ab)^*c)^*$

Solution ::

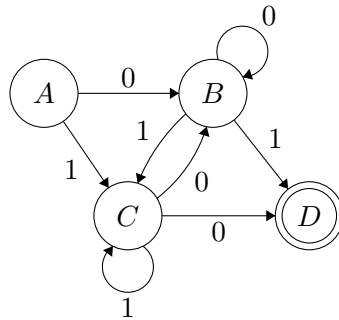


Problem 3. NFA to Regular Expressions

Give a regular expression for the language decided by the following NFA M .

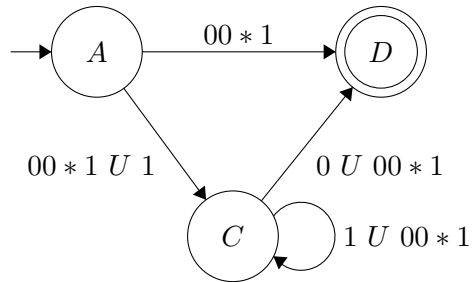
Let $\Sigma = \{0, 1\}$

Show the intermediate GNFA's after removing each state.



Solution ::

Removing State B ::



Removing state C ::

