Quiz 2 from Fall 2021

STUDENT NAME

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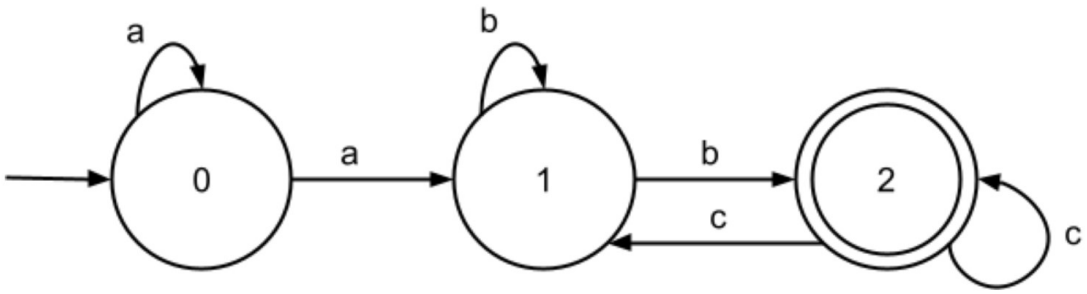
Q1 NFA to DFA

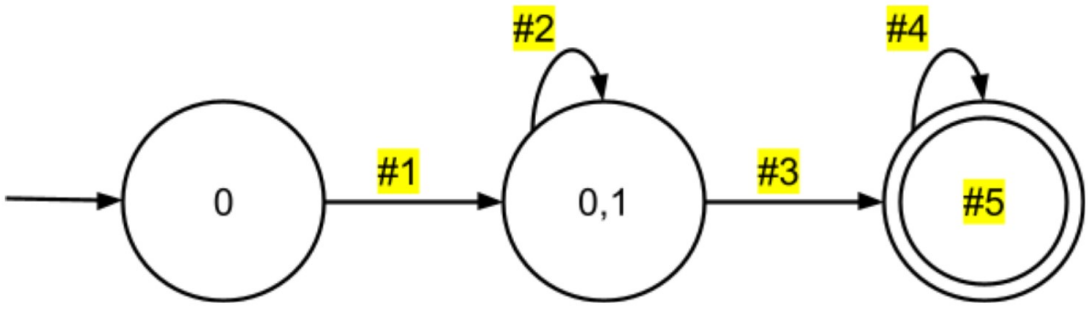
8 Points

Consider the following NFA and DFA:

NFA:



DFA:



Use subset construction - the NFA to DFA algorithm covered in class - to fill in the blanks on the DFA so that the given NFA and DFA are equivalent.

Note: Use commas to separate if a blank corresponds to a set of states or a set of possible transitions

Blank #1

Enter your answer here

Blank #2

Enter your answer here

Blank #3

Enter your answer here

Blank #4

Enter your answer here

Blank #5

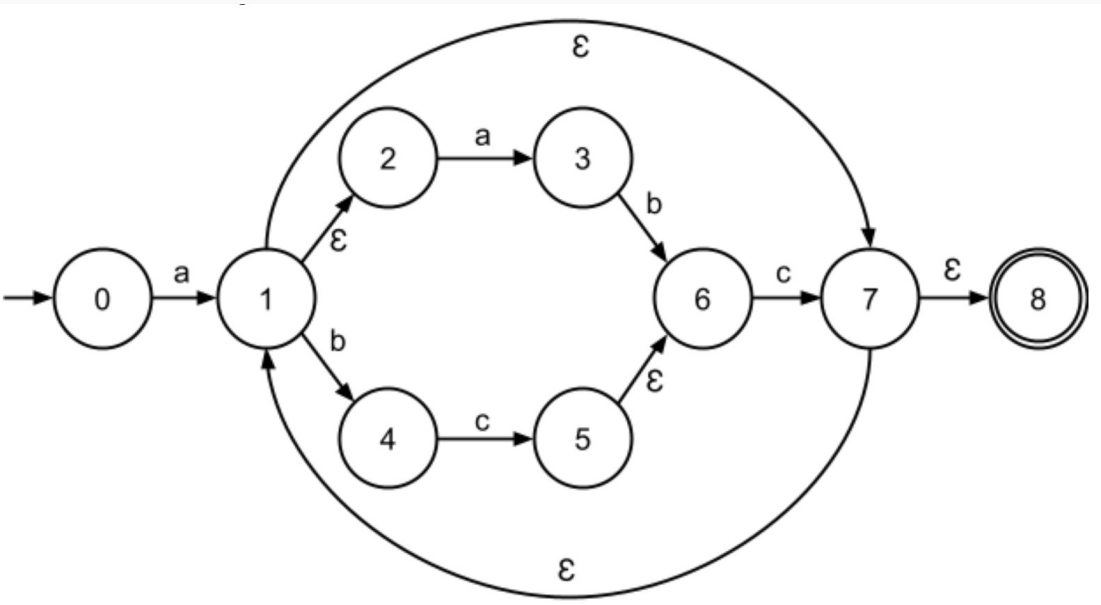
Enter your answer here

Save Answer

Q2 NFA to Regular Expression

6 Points

Consider the following NFA:



Note: You can open this image in a new tab to make it easier to reference

Q2.1 Regular Expression

3 Points

Write down the regular expression for the language accepted by the NFA.

Enter your answer here

Save Answer

Q2.2 Accept

3 Points

Which of the following strings are accepted by the NFA? Select all that are accepted.

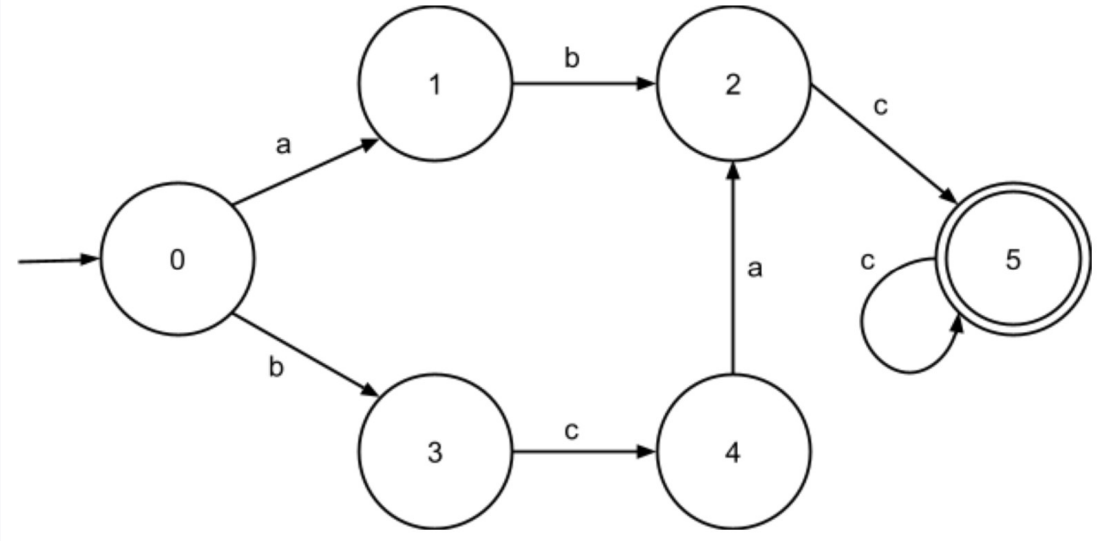
- [ ] abc
- [ ] aabcbcc
- [ ] a
- [ ] abca
- [ ] aabcabc

Save Answer

Q3 NFA Modification

6 Points

Consider the following NFA:



Q3.1

3 Points

What single transition could be added to modify the NFA to accept the input “bcacacac”?

Note: Use the notation `(0, a, 1)` to denote a transition from state 0 to state 1 on input `a`. You can use `(0, e, 1)` to denote an epsilon transition from state 0 to state 1.

Enter your answer here

Save Answer

Q3.2

3 Points

Is the original NFA also a DFA? Explain why or why not.

Enter your answer here

Save Answer

Save All Answers

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