Tutorial 3

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1. Design a DFA over $\{a, b\}$ that accepts only those words that do not end with ba.

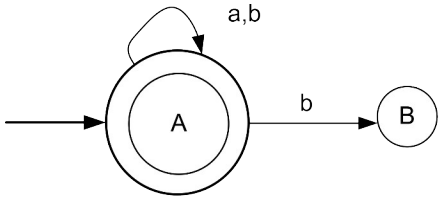
2. Design a DFA over $\{0,1\}$ that accept all strings not containing substring 00 .

3. Design a DFA over $\{0,1\}$ that accepts all strings not containing even number of letters.

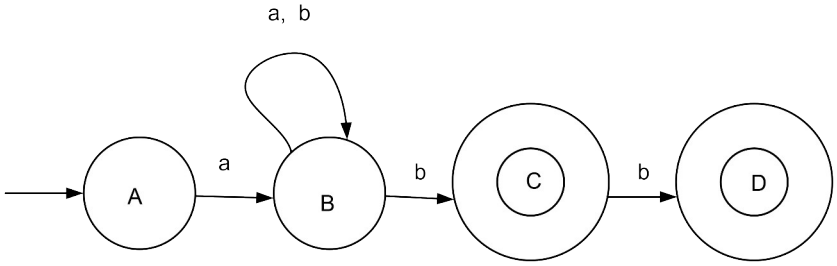
4. Design a DFA that accepts only those words that begin or end with a double letter.

5. Convert each of the following NFA's in to DFA's.

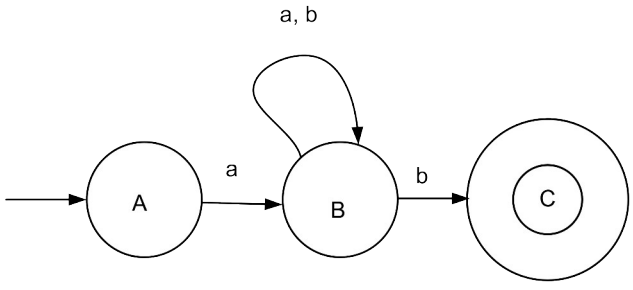
(a)



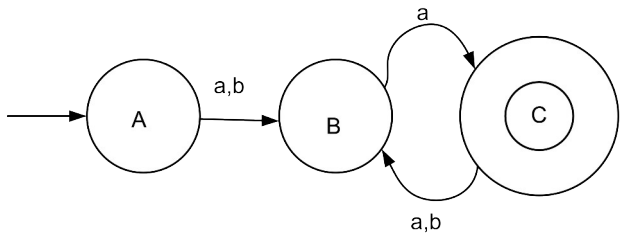
(b)



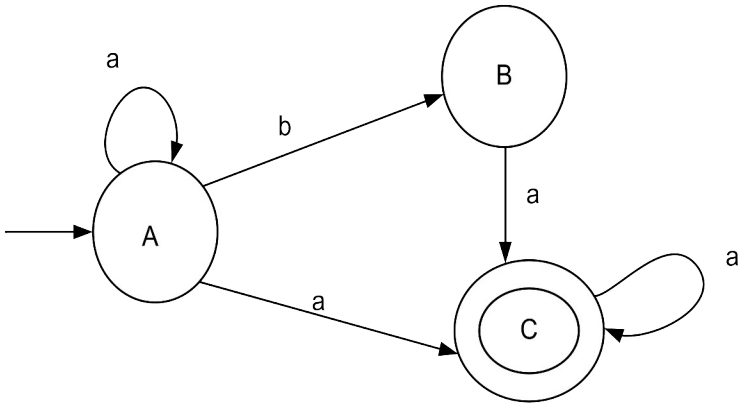
(c)



(d)



(e)



6. Find a string of minimum length in $\{0,1\}^*$ not in the language corresponding to the given regular expression.

a. $1^*(01)^*0^*$

b. $1^*(0+10)^*1^*$

c. $(0^*+1^*)(0^*+1^*)(0^*+1^*)$

7. For each of the following regular expressions, draw an FA recognizing the corresponding language.

(a) $(0+1)^*(1+00)(0+1)^*$

(b) $(11+10)^*$

(c) $(0+1)^*0$