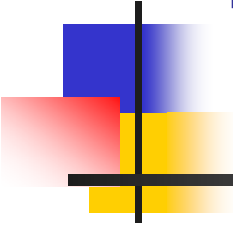


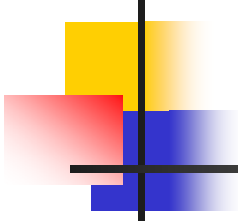
COMP4317: XML & Database

Tutorial 9: Xpath & DFA

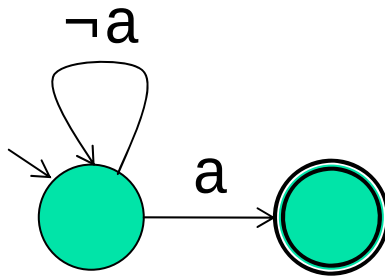


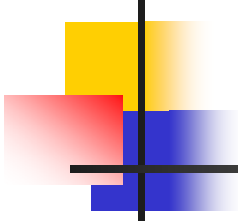
Week 10

Thang Bui @ CSE.UNSW

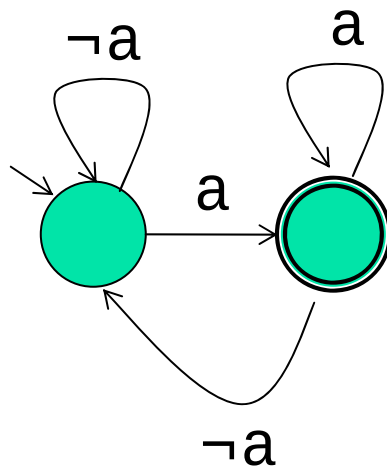


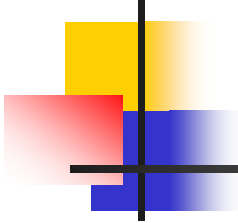
Ex1: //a



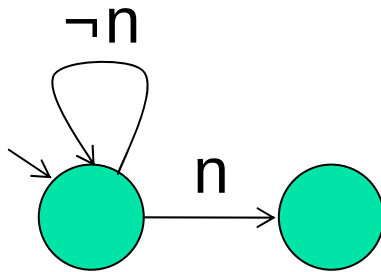


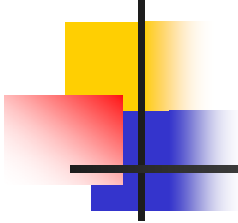
Ex1: //a



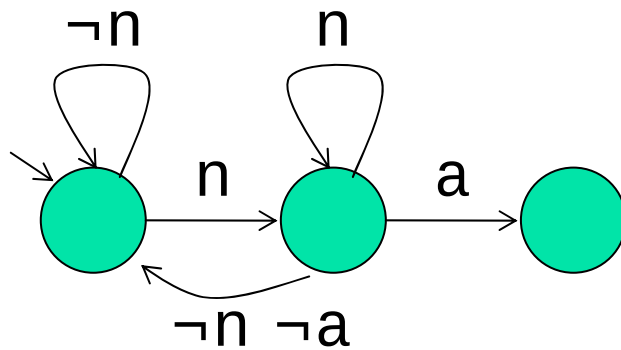


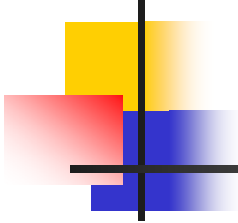
Ex2: //n/a/n/o



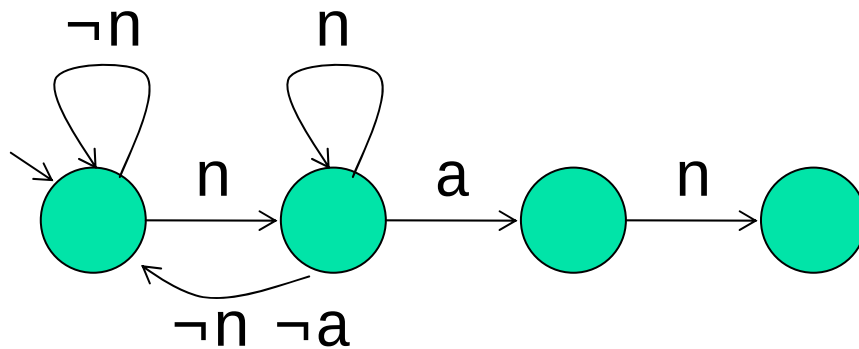


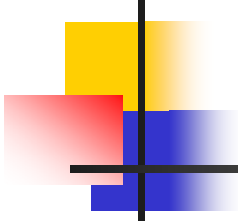
Ex2: //n/a/n/o



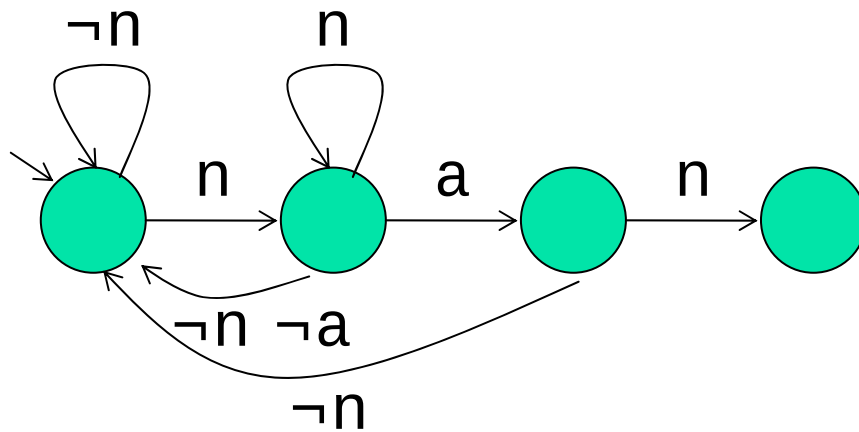


Ex2: //n/a/n/o

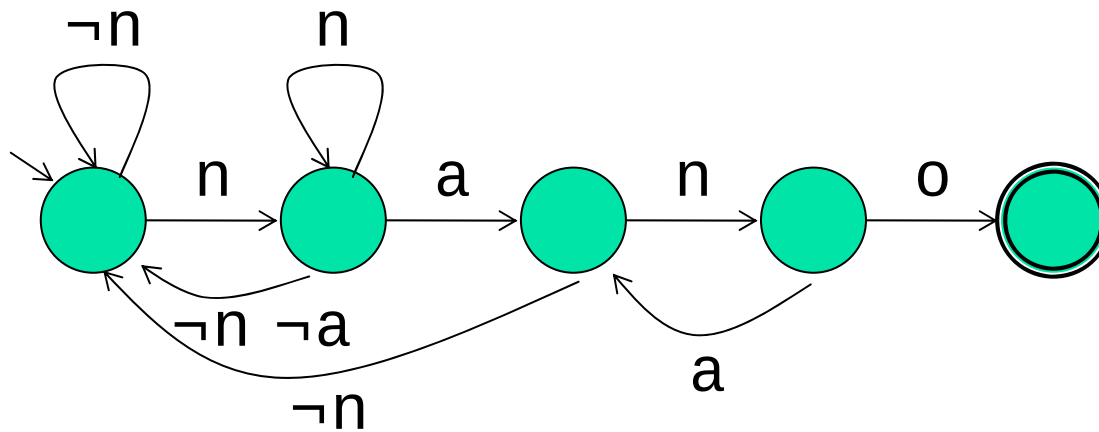




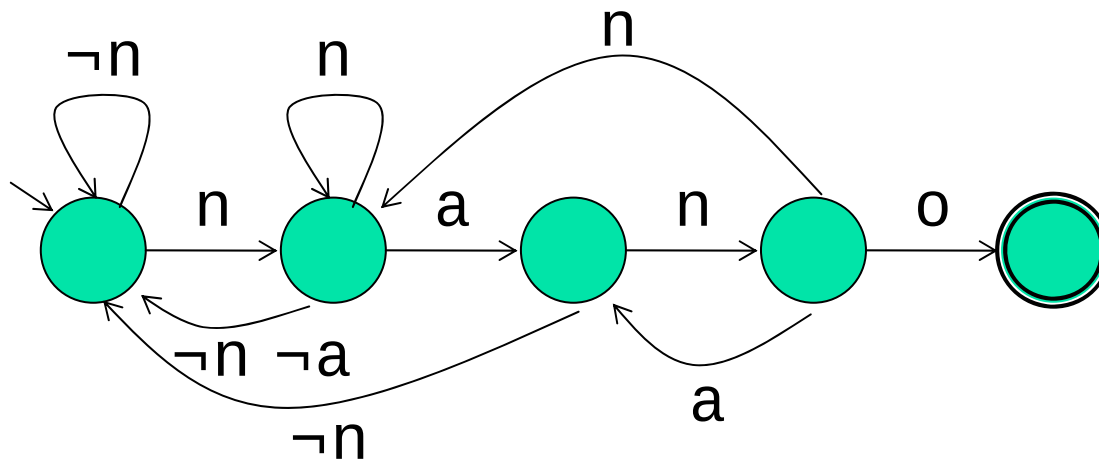
Ex2: //n/a/n/o



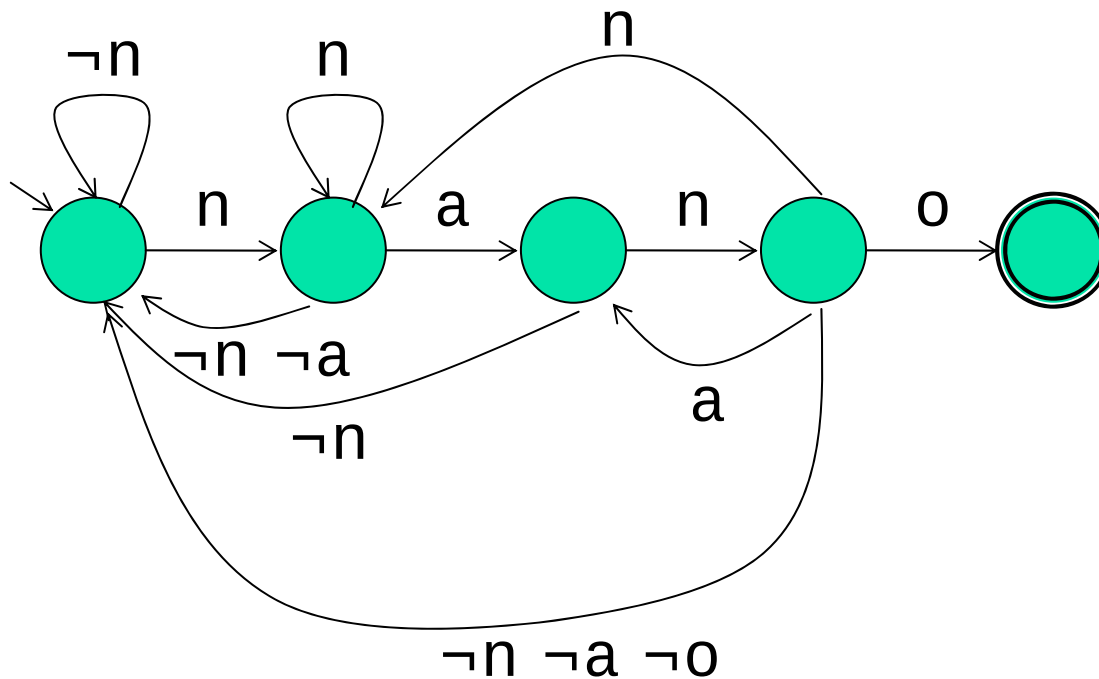
Ex2: //n/a/n/o



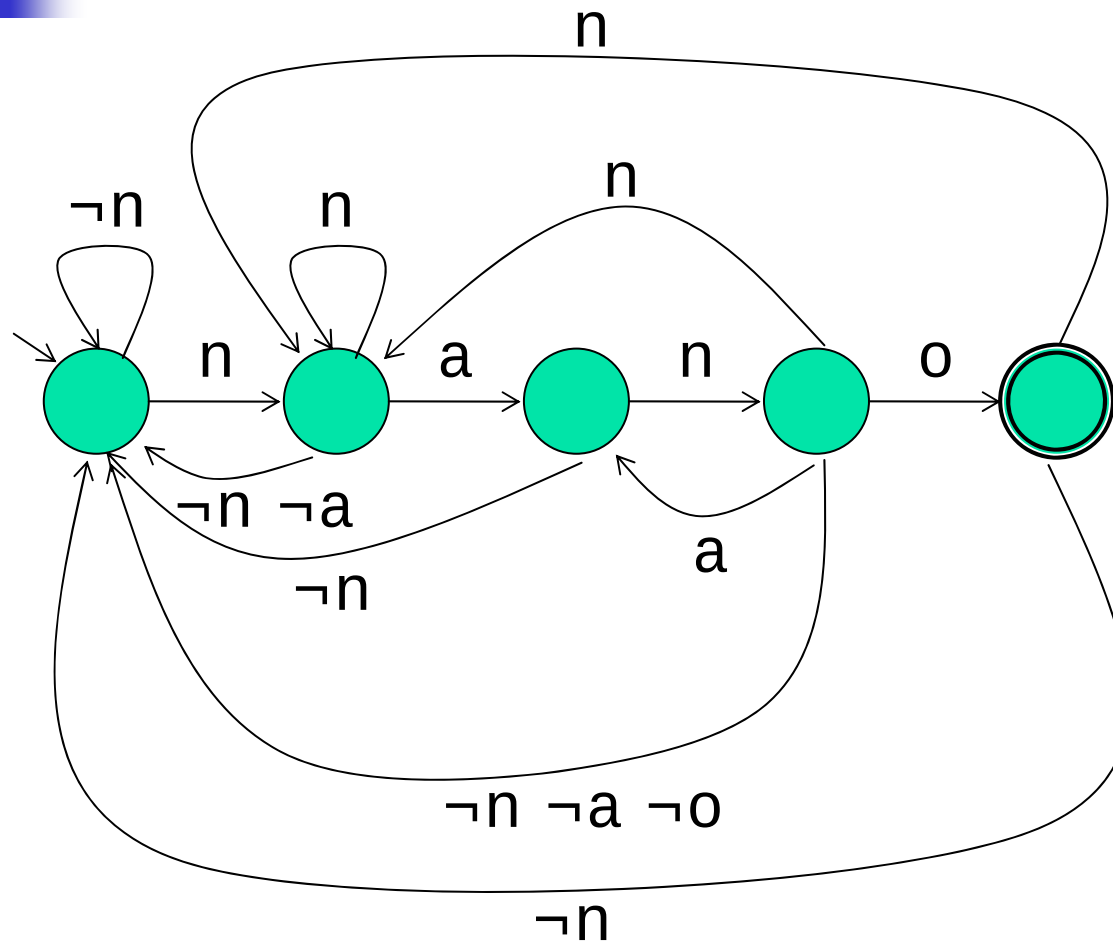
Ex2: //n/a/n/o

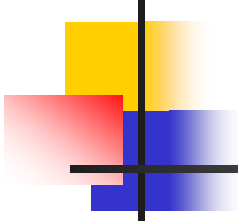


Ex2: //n/a/n/o

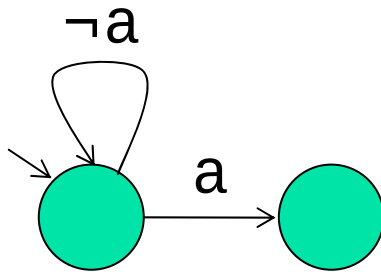


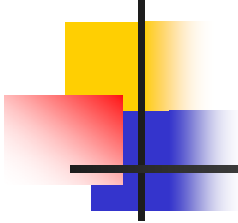
Ex2: //n/a/n/o



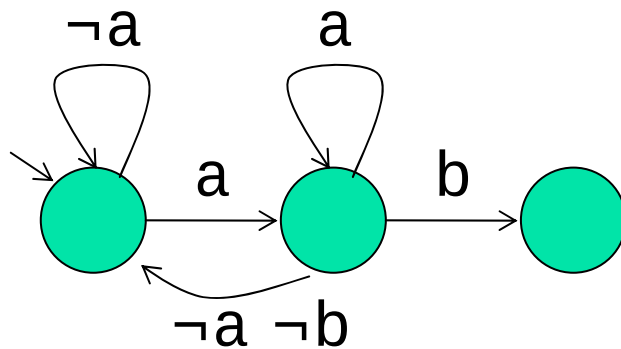


Ex3: //a/b/a/a//a/a/a

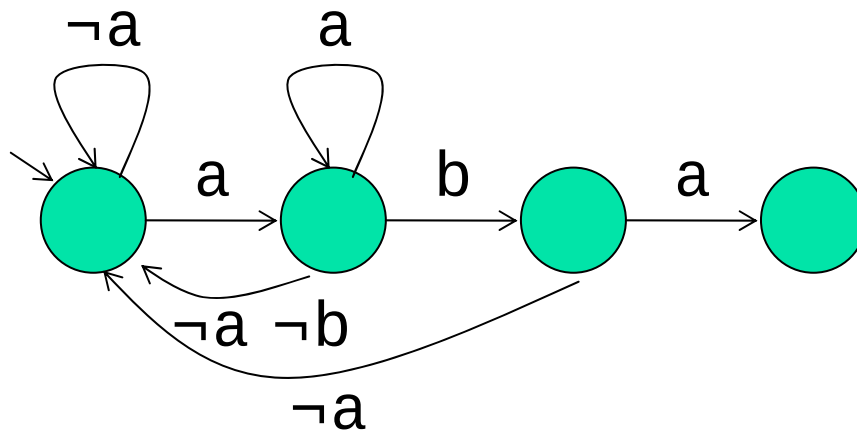




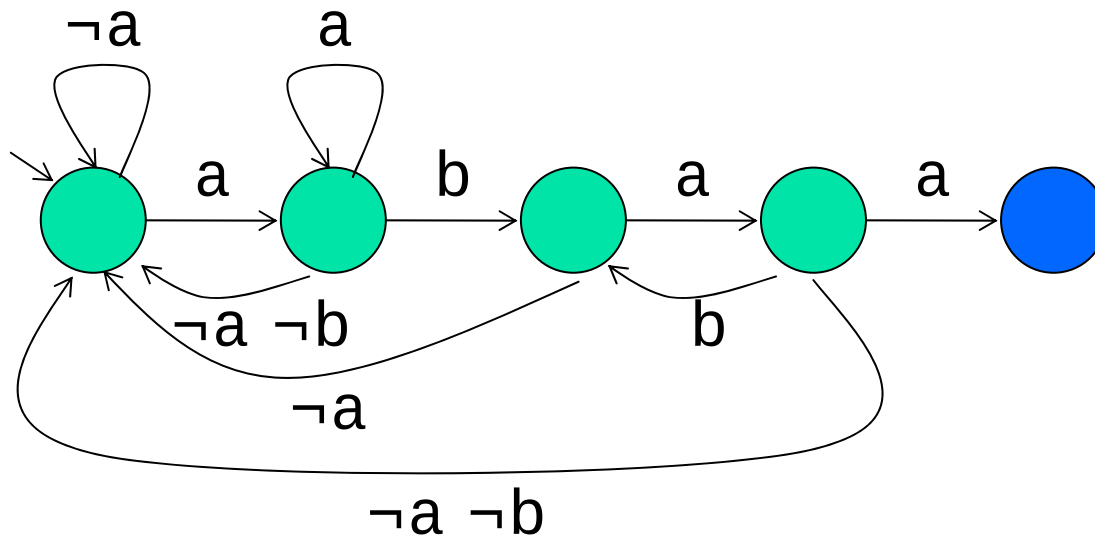
Ex3: //a/b/a/a//a/a/a



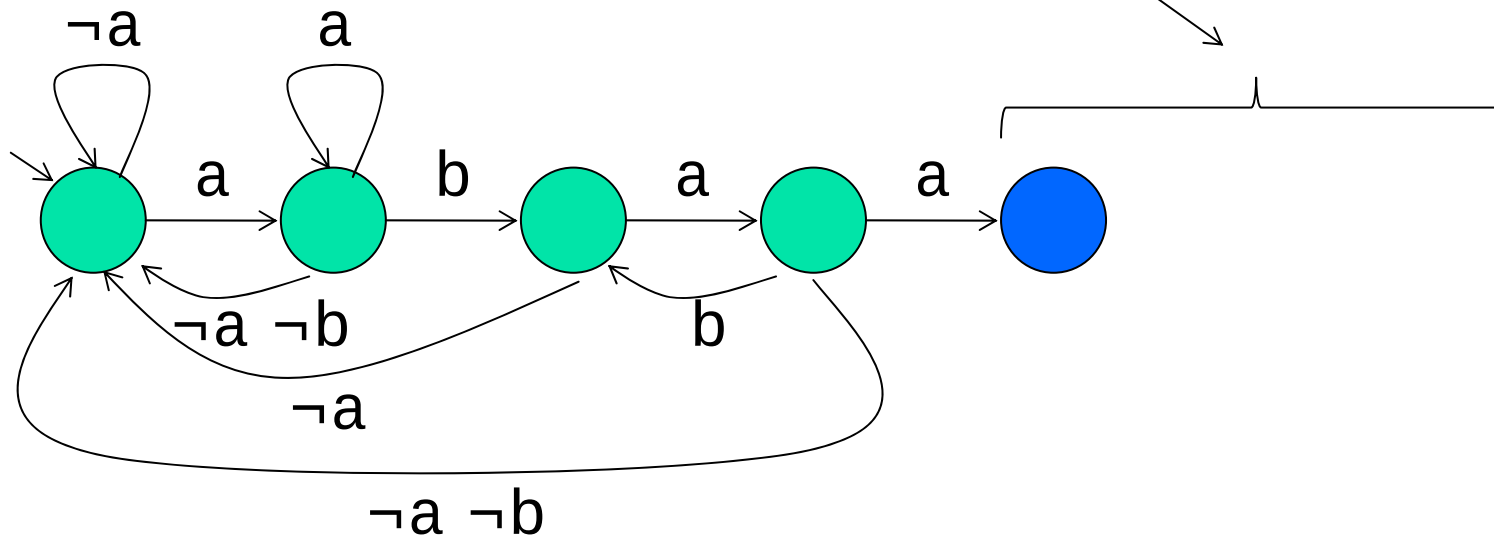
Ex3: //a/b/a/a//a/a/a



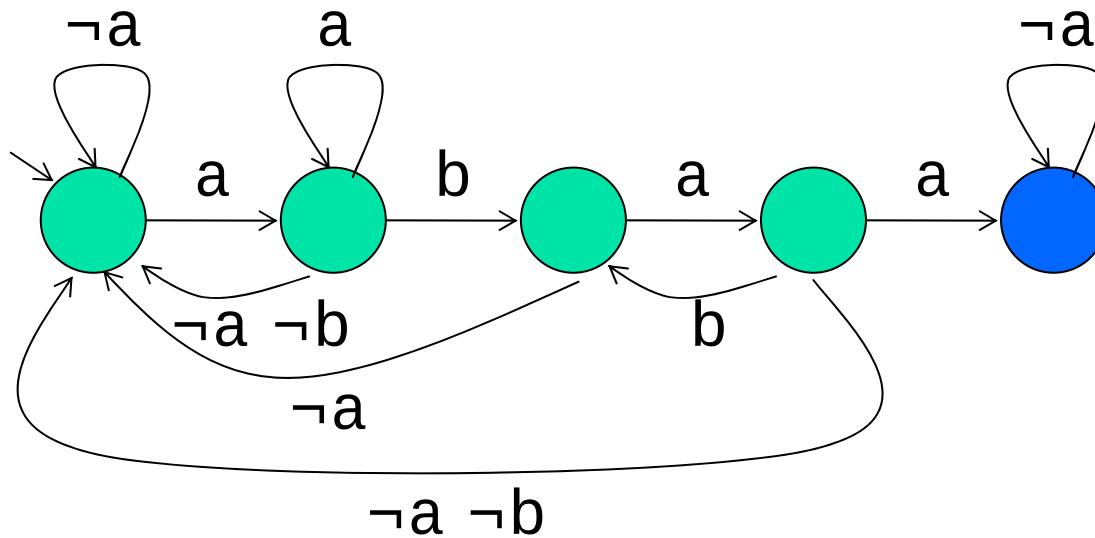
Ex3: $//a/b/a/a//a/a/a$



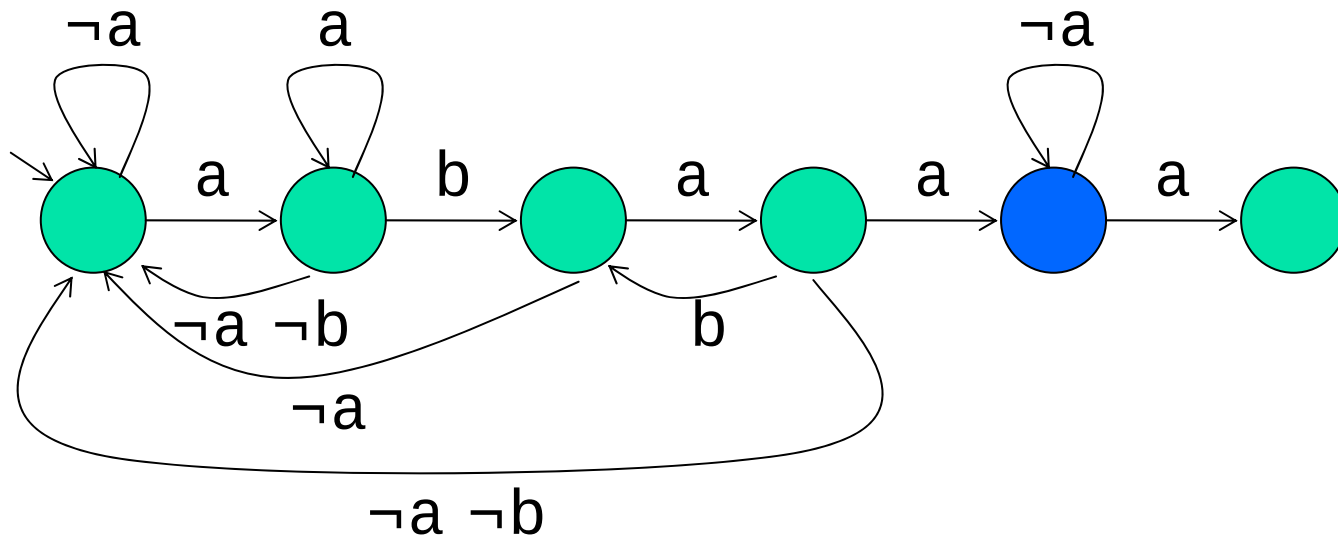
Ex3: //a/b/a/a//a/a/a



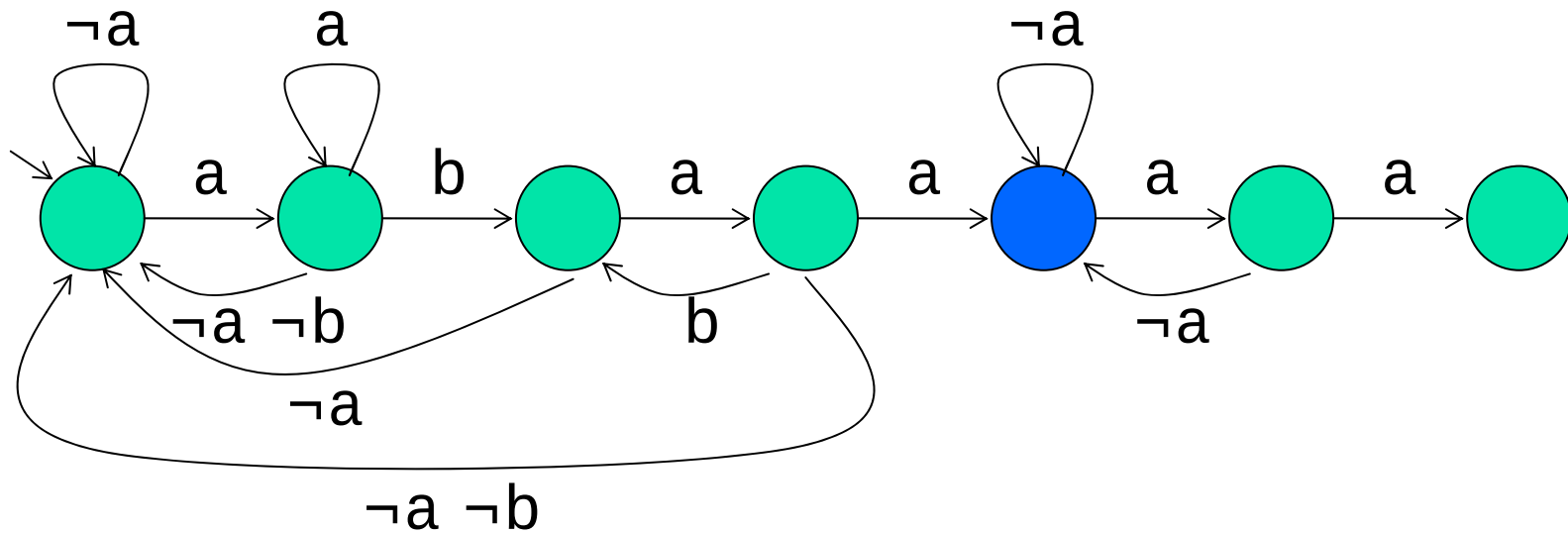
Ex3: //a/b/a/a//a/a/a



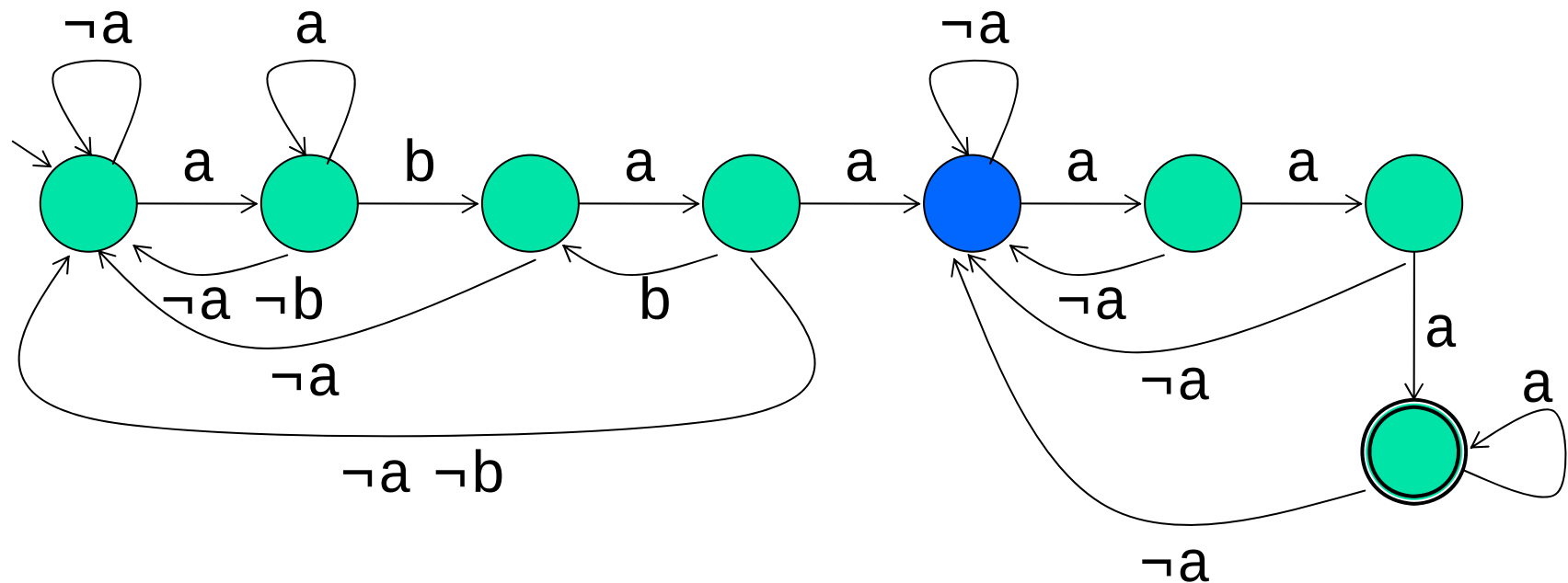
Ex3: //a/b/a/a//a/a/a

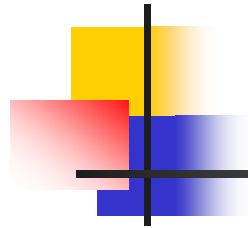


Ex3: $//a/b/a/a//a/a/a$

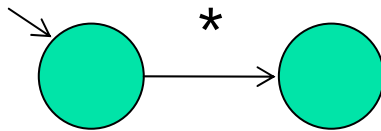


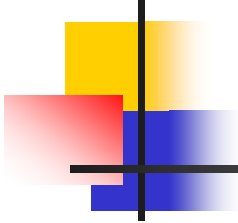
Ex3: //a/b/a/a//a/a/a



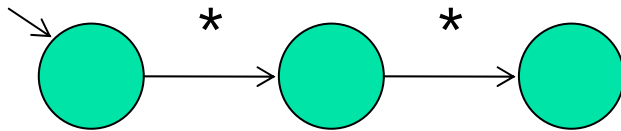


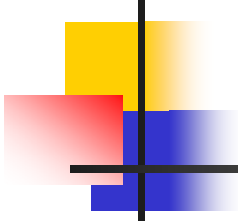
Ex4: $//^*/^*/^*$



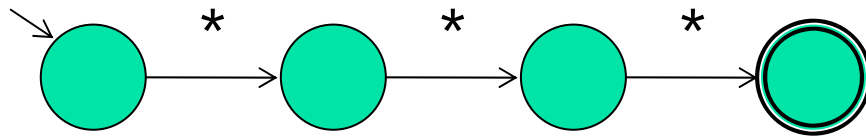


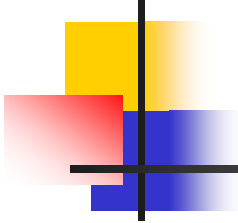
Ex4: $//^*/^*/^*$



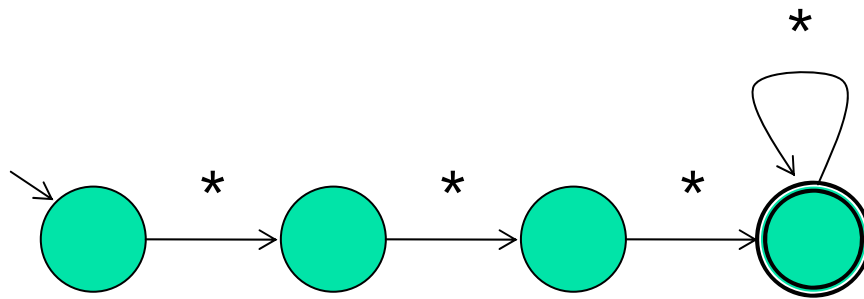


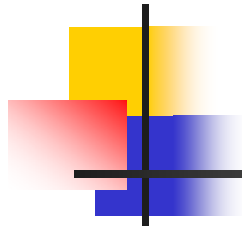
Ex4: $//^*/^*/^*$





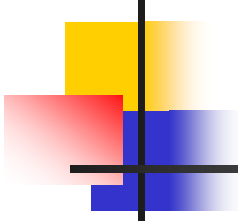
Ex4: $//^*/^*/^*$



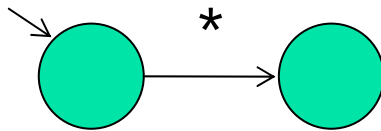


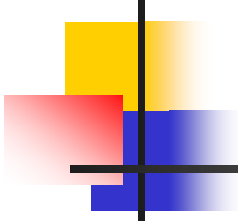
A transition: where to go?

- Star-transition:
 - For each letter x before the star
 - Add a new state with a transition “ $* = x$ ”
- Determine the transitions:
 - Find the longest postfix of the current run (the prefix at the current position)
 - Run the automaton constructed so far.

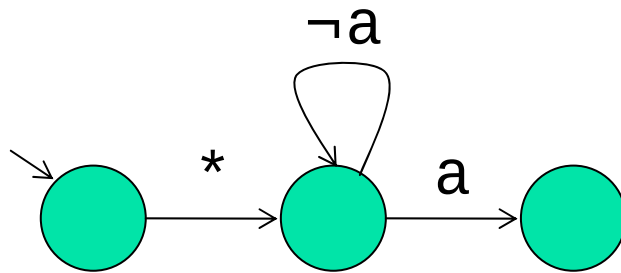


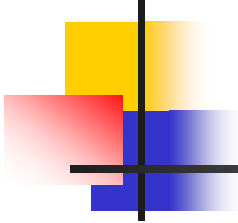
Ex5: $//^*/a/^*$



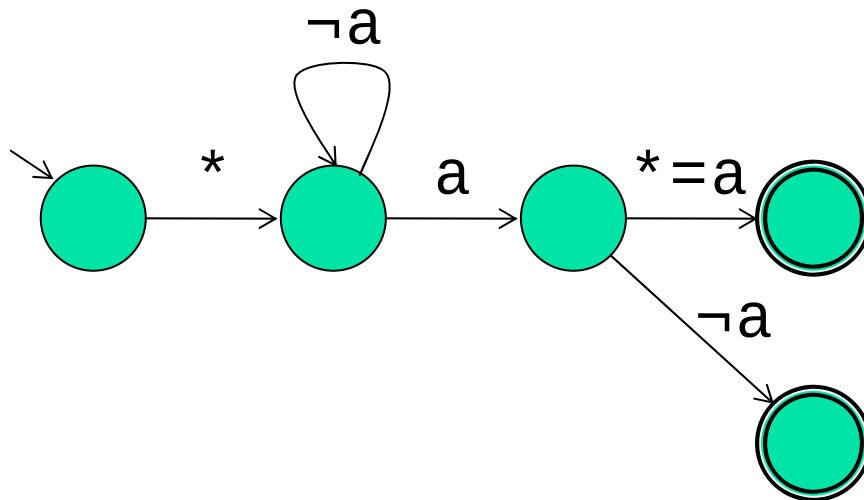


Ex5: $//^*/a/^*$

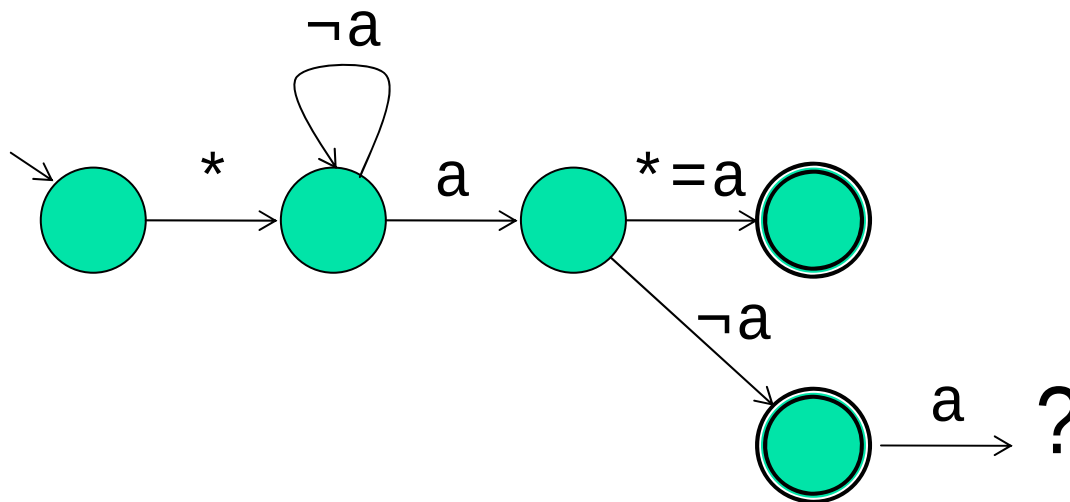




Ex5: $//^*/a/^*$



Ex5: $//^*/a/^*$



Ex5: $//^*/a/^*$

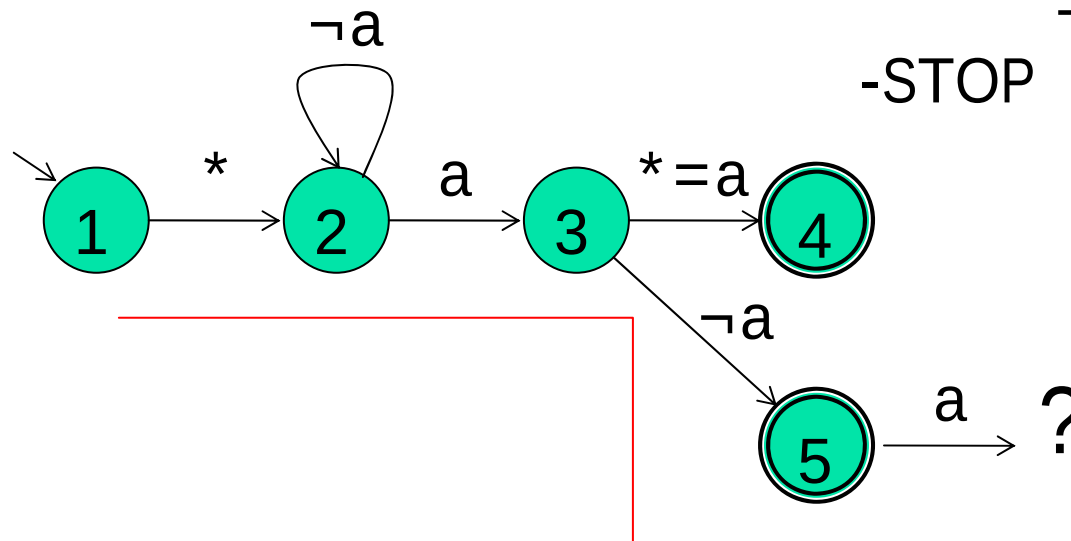
Consider: $* a \neg a a$

-Prefix of length 1: a
 $\Rightarrow$ state 2

-Prefix of length 2: $\neg a a$
 $\Rightarrow$ state 3

-Prefix of length 3: $a \neg a a$
 $\Rightarrow$ NOT a prefix

-STOP



Ex5: $//^*/a/^*$

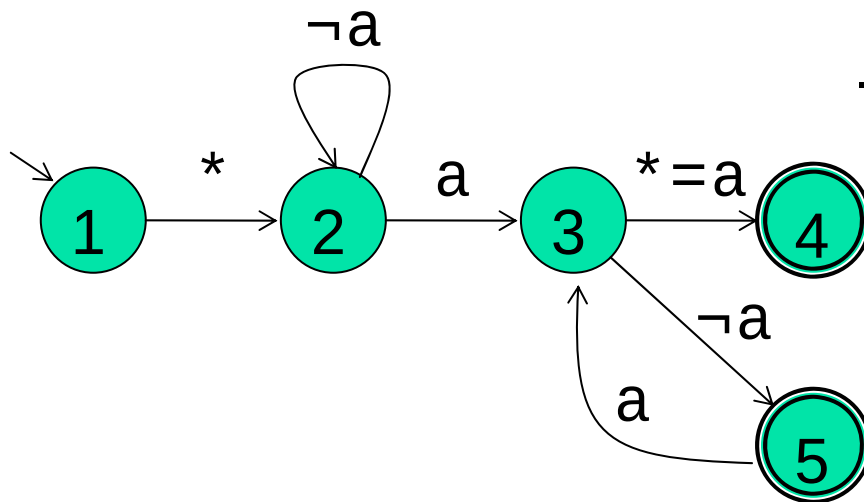
Consider: $* a \neg a a$

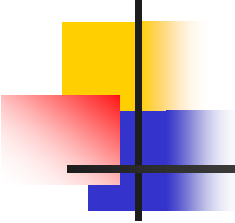
-Prefix of length 1: a
 $\Rightarrow$ state 2

-Prefix of length 2: $\neg a a$
 $\Rightarrow$ **state 3**

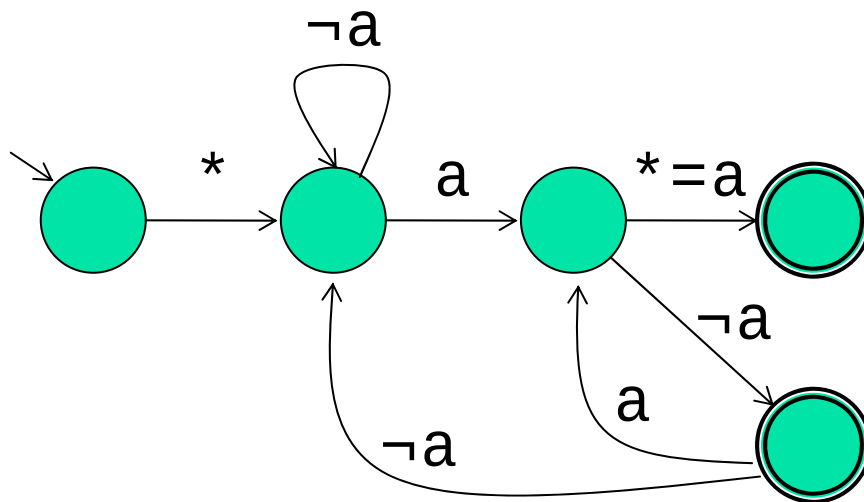
-Prefix of length 3: $a \neg a a$
 $\Rightarrow$ NOT a prefix

-STOP

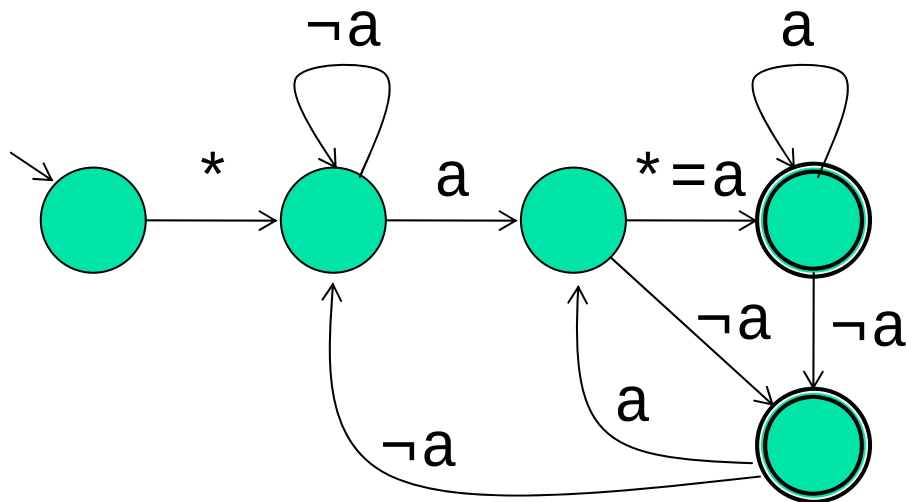


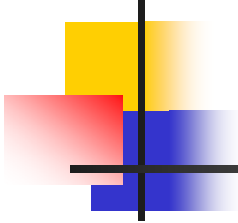


Ex5: $//^*/a/^*$

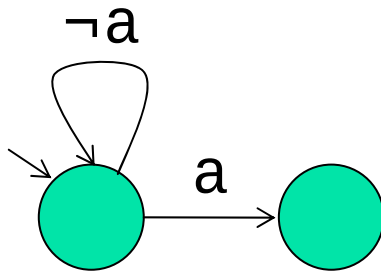


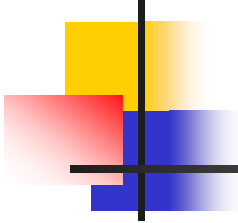
Ex5: $//^*/a/^*$



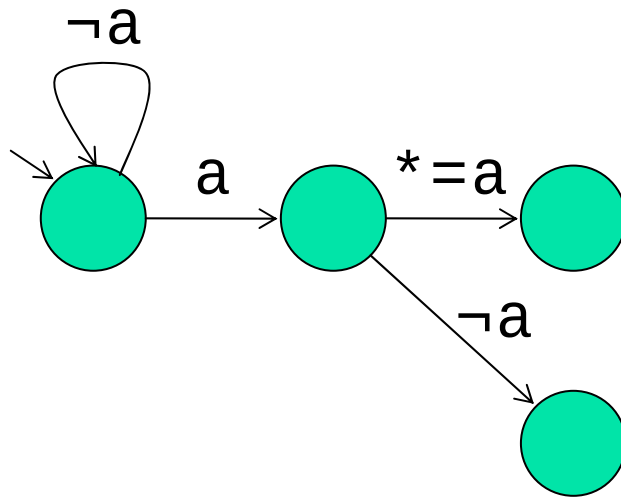


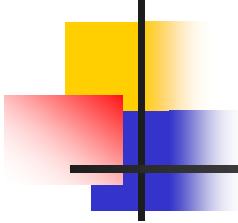
Ex6: $//a/^*/b$



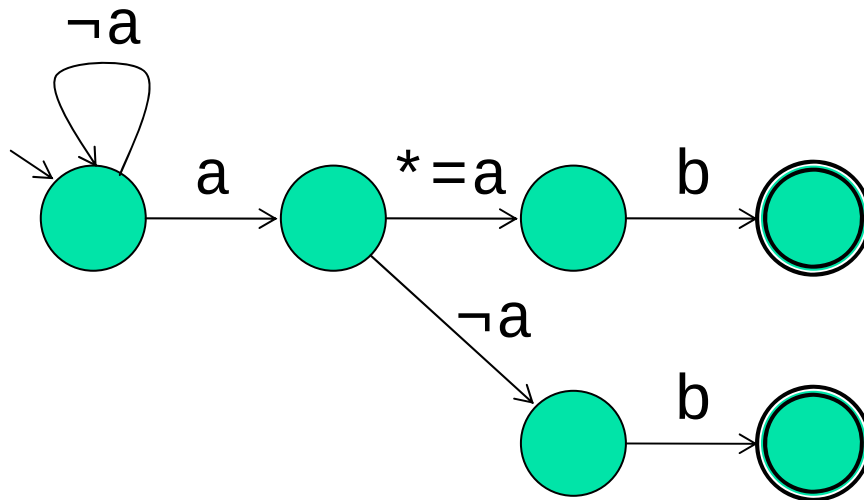


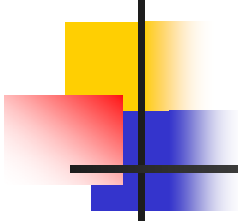
Ex6: $//a/^*/b$



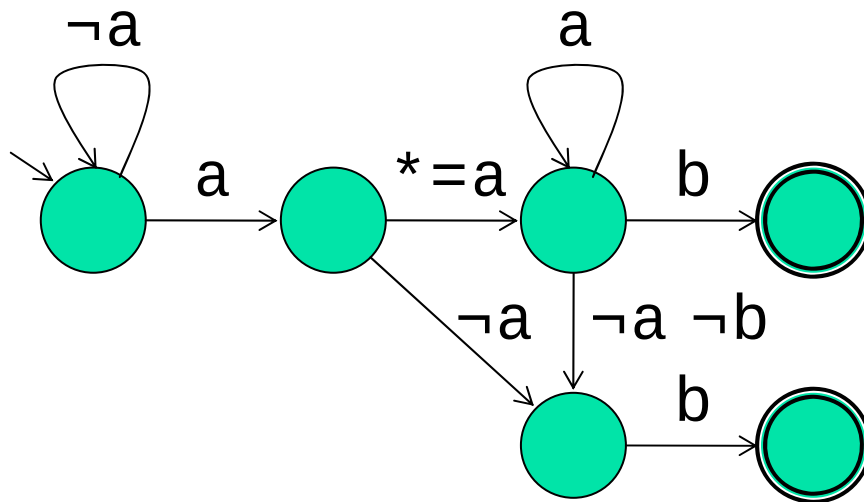


Ex6: $//a/^*/b$

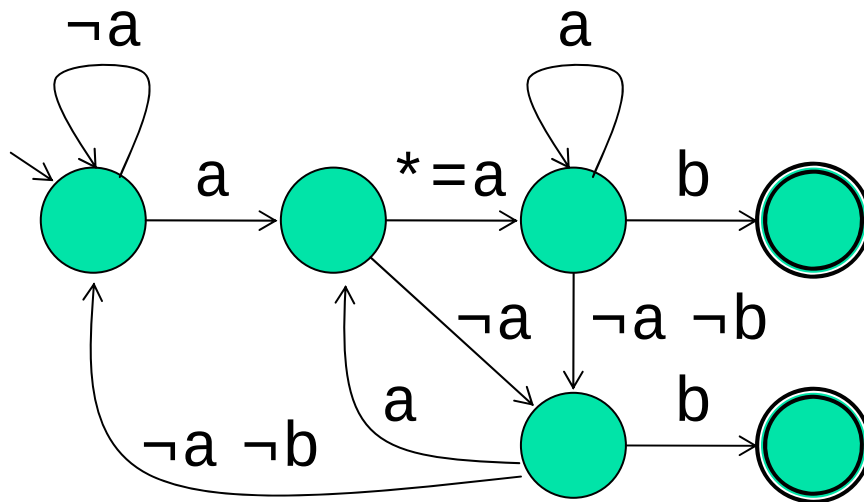




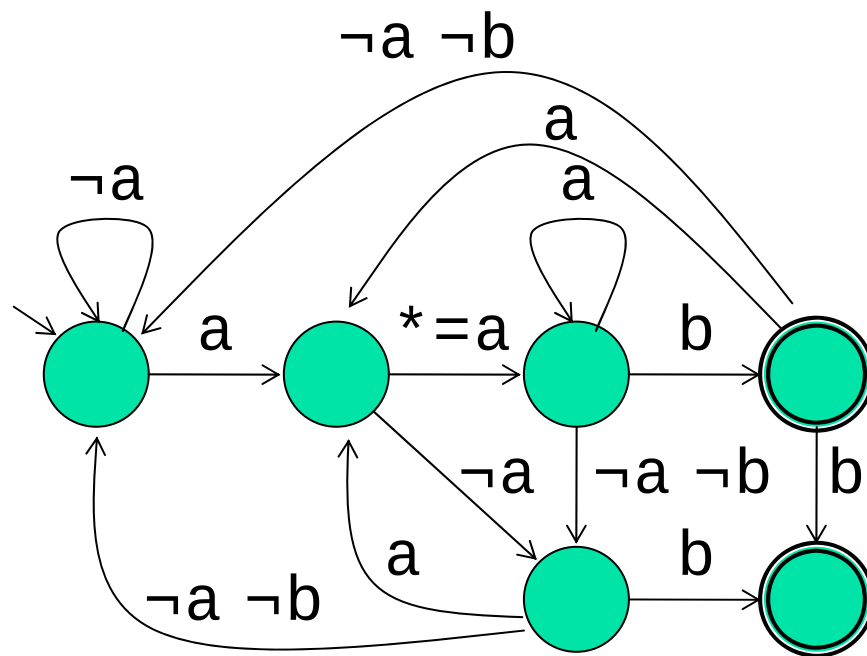
Ex6: $//a/^*/b$



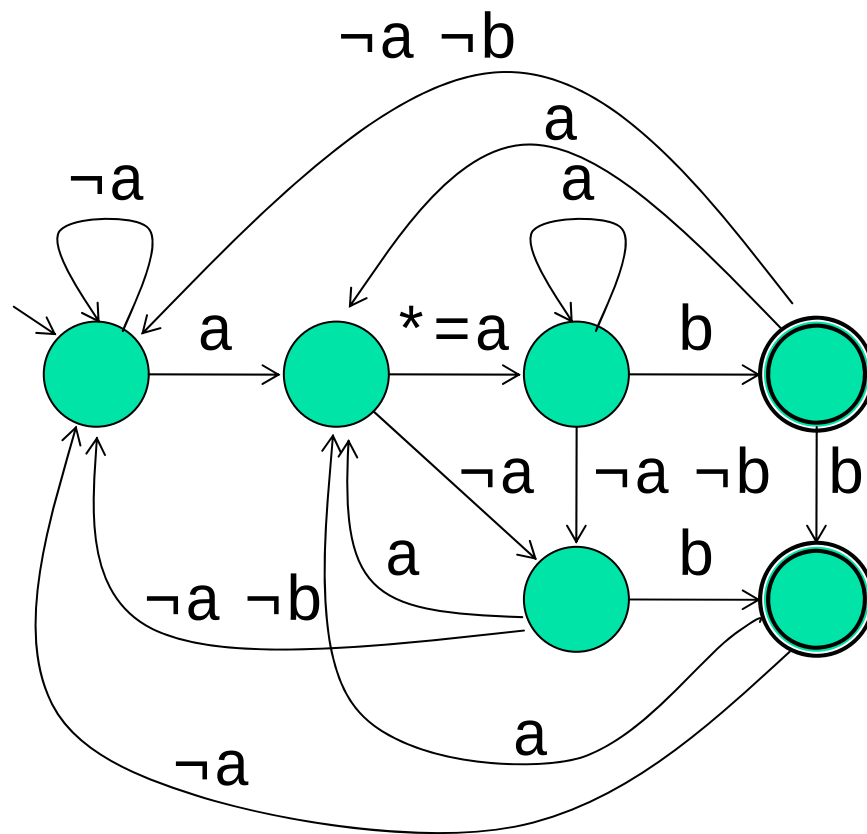
Ex6: $//a/^*/b$

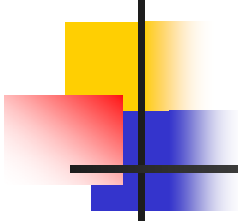


Ex6: $//a/^*/b$

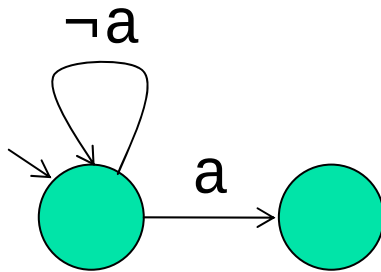


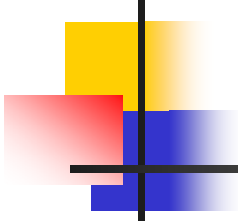
Ex6: $//a/^*/b$



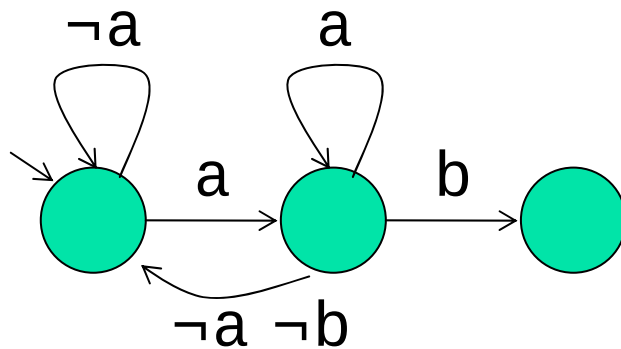


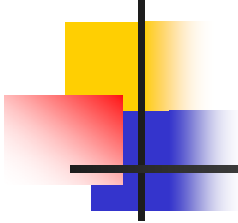
Ex7: $//a/b/^*/a/b$



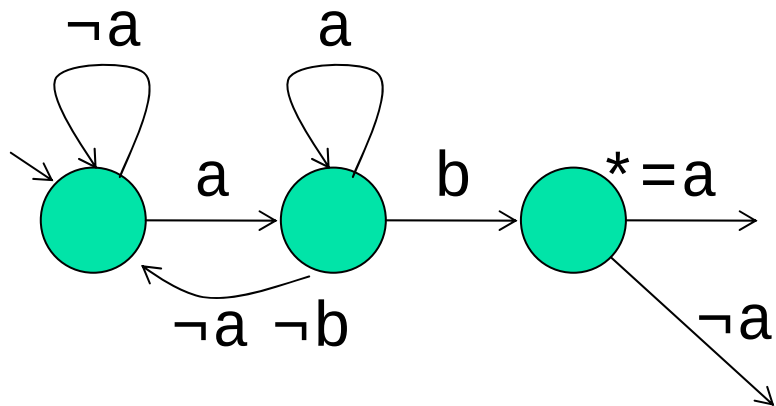


Ex7: $//a/b/^*/a/b$



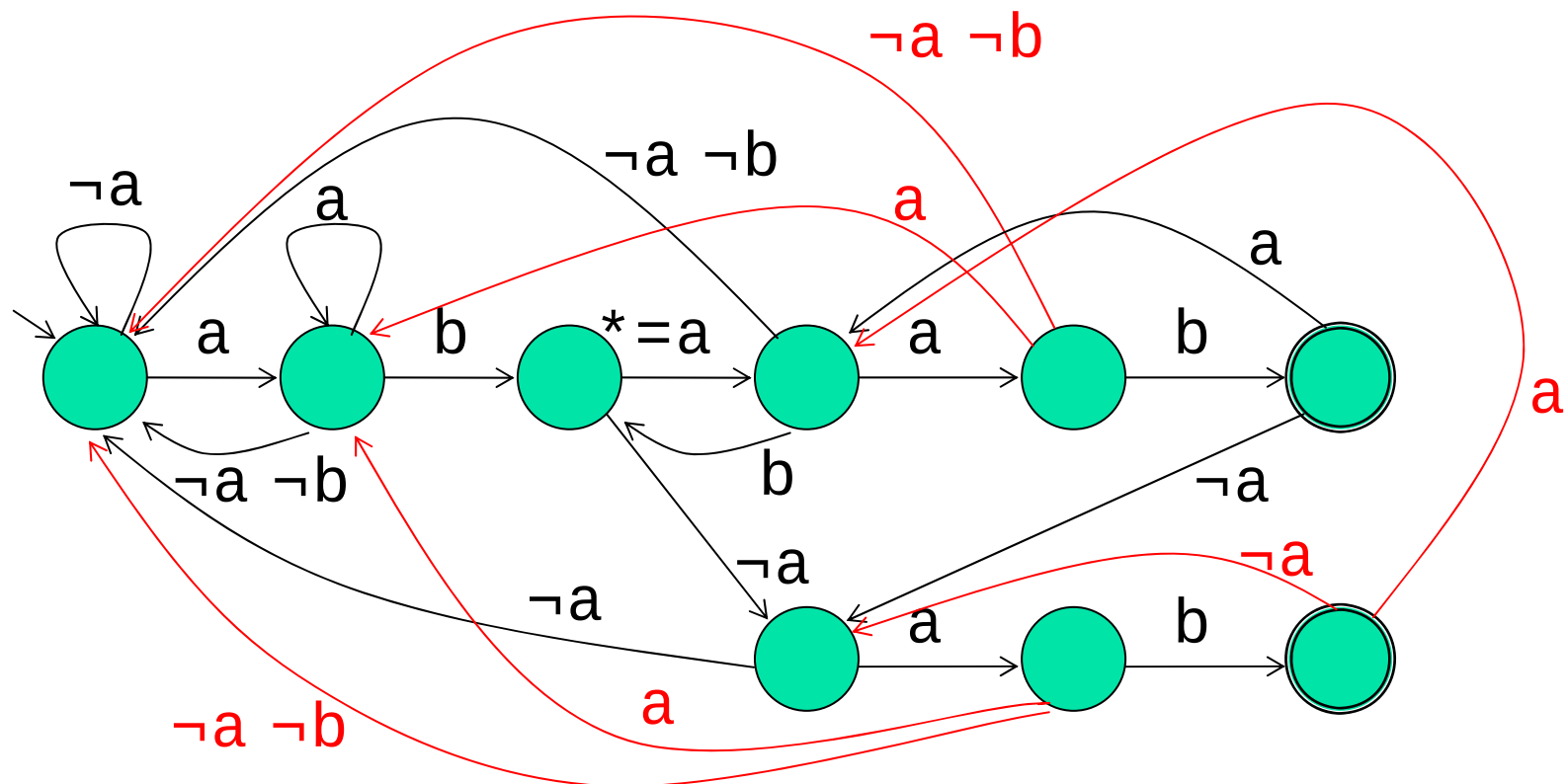


Ex7: $//a/b/^*/a/b$

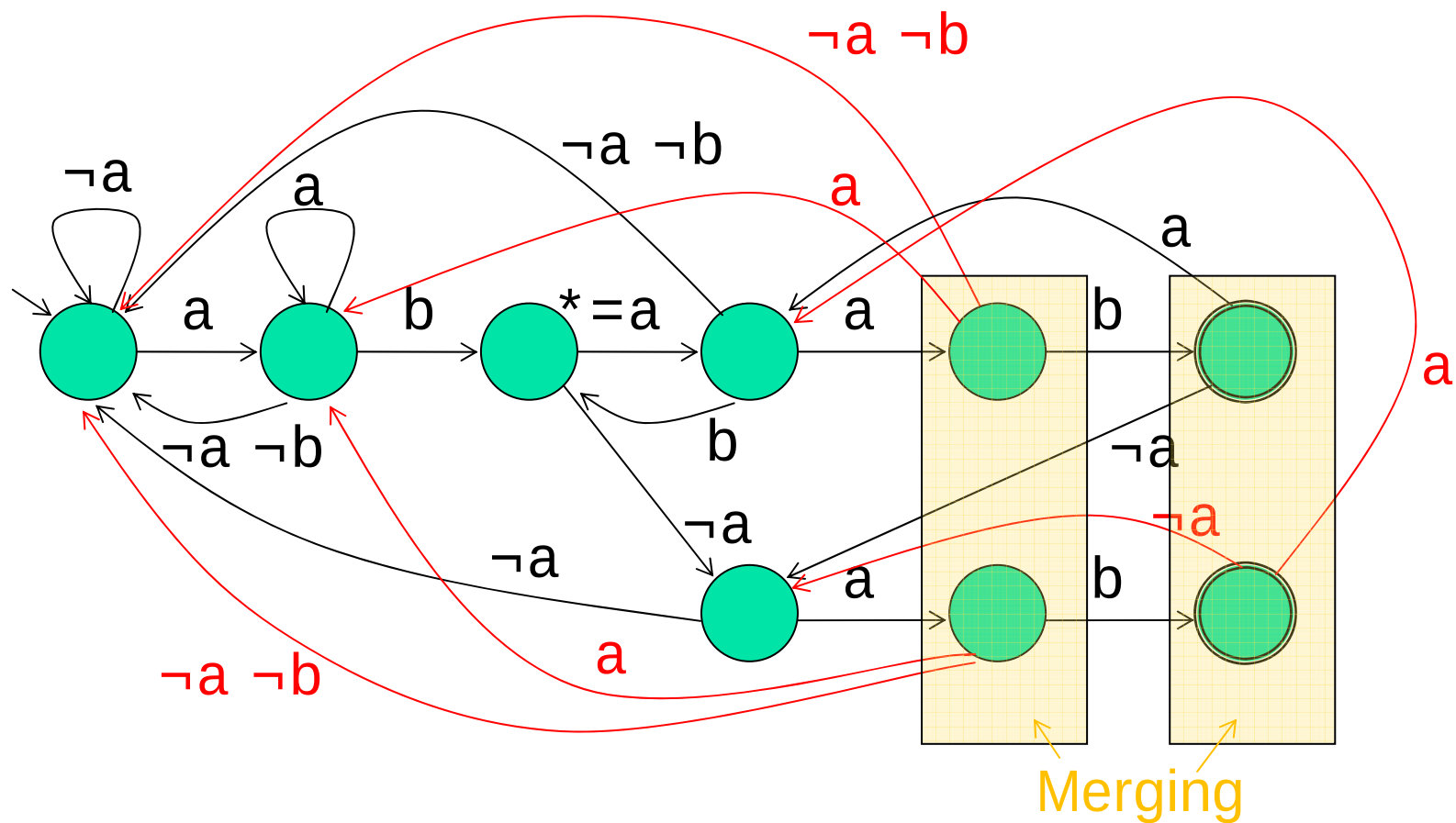


?

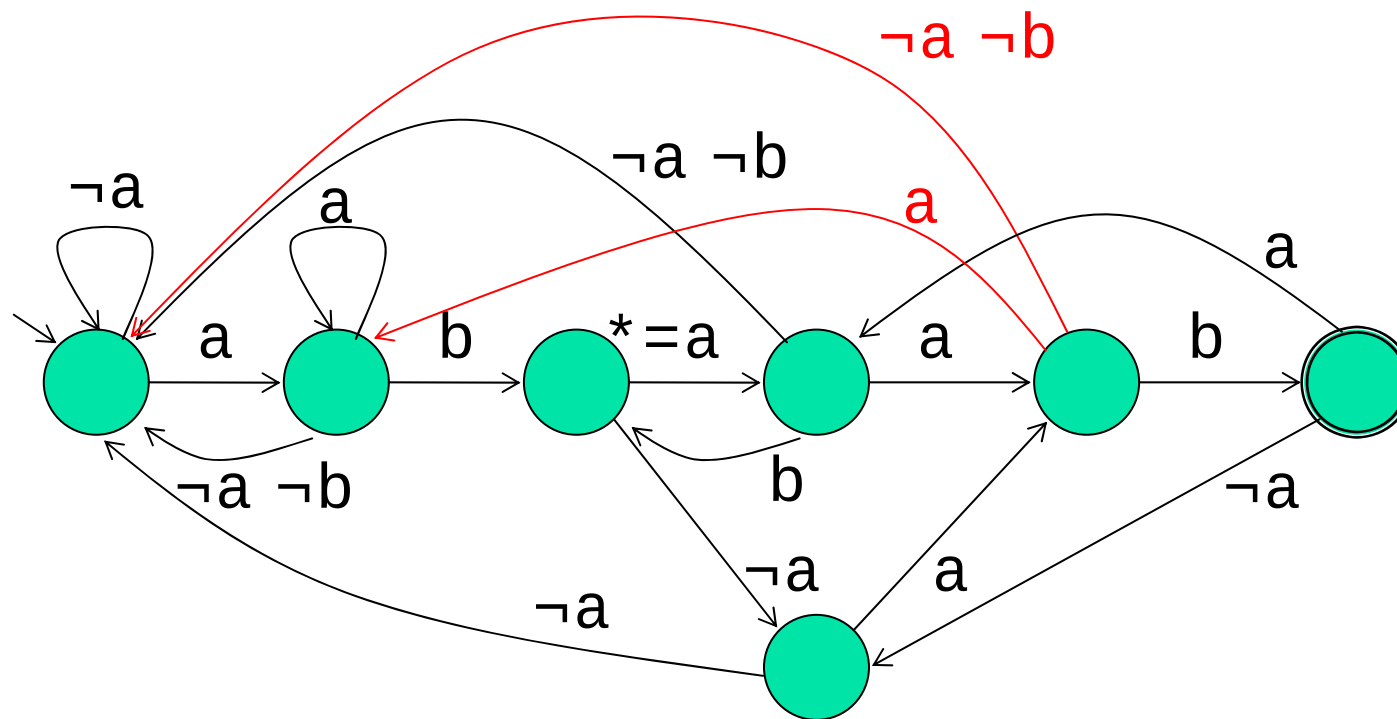
Ex7: $//a/b/^*/a/b$

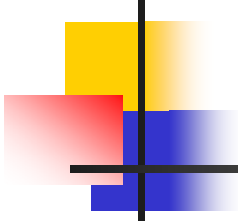


Ex7: $//a/b/^*/a/b$

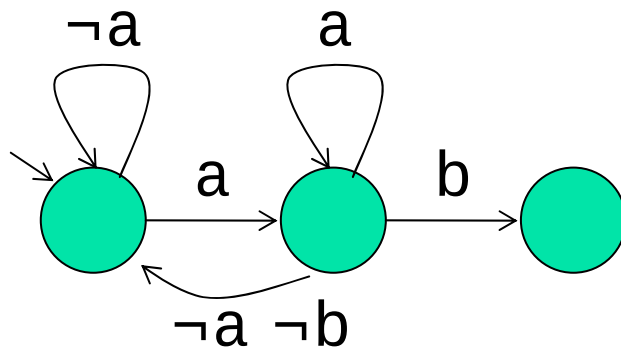


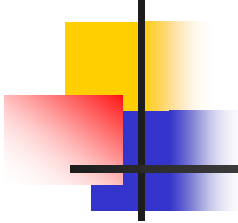
Ex7: $//a/b/^*/a/b$



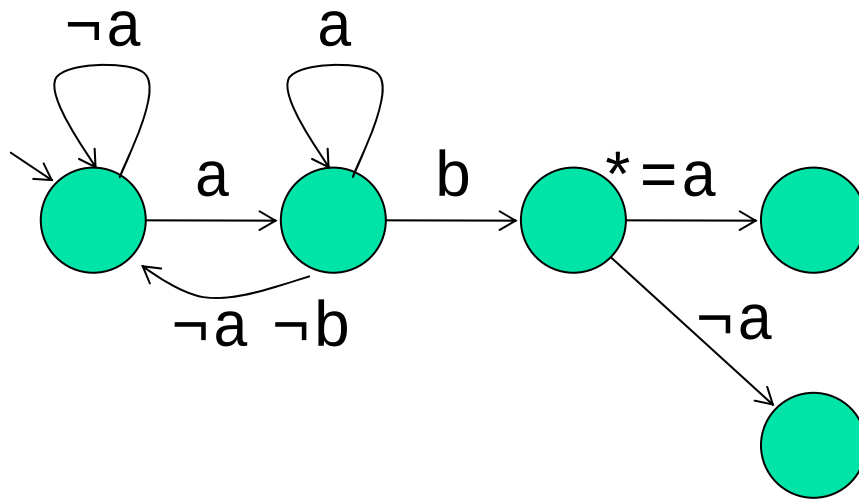


Ex8: $//a/b/^*/^*/^*/c$

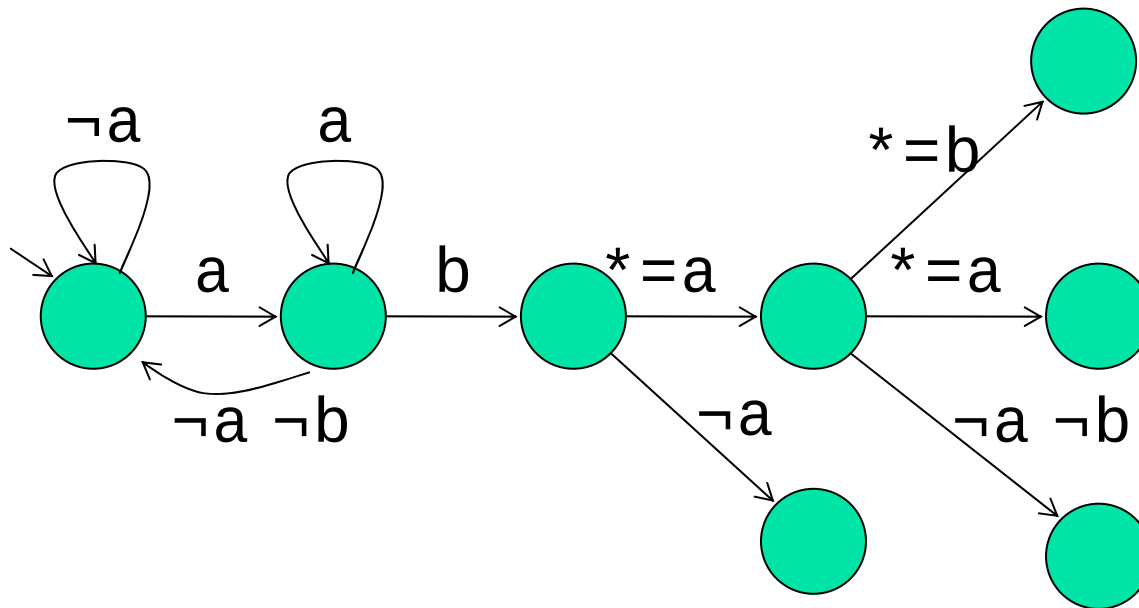




Ex8: $//a/b/^*/^*/^*/c$



Ex8: $//a/b/*/*/* /c$



?

Ex8: //a/b/*/*/*/*c

