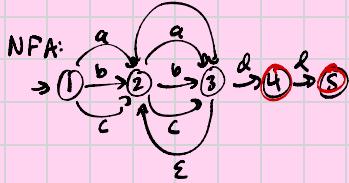


CMSC330 Discussion 6

More Regex \rightarrow NFA \rightarrow DFA:

a) $[a-c] + \delta \Sigma^*$

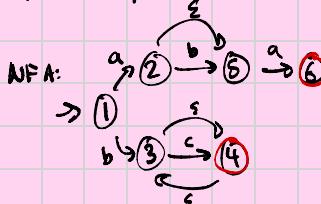


NFA
 \rightarrow DFA:

states	a	b	c	δ
[1]	[2,3]	[2,3]	[2,3]	\emptyset
[2,3]	[2,3]	[2,3]	[2,3]	[4]
[4]	\emptyset	\emptyset	\emptyset	[5]
[5]	\emptyset	\emptyset	\emptyset	\emptyset

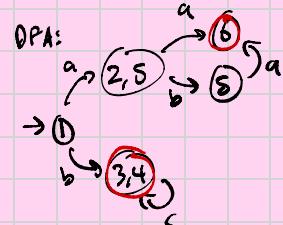


b) $ab? a|bc^*$

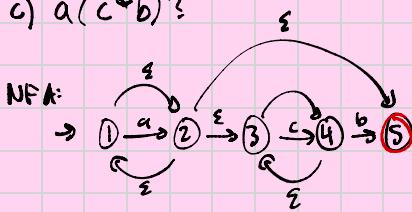


NFA
 \rightarrow DFA:

states	a	b	c	δ
[1]	[2,5]	[3,4]	\emptyset	
[2,5]	[6]	[5]	\emptyset	
[3,4]	\emptyset	\emptyset	[3,4]	
[5]	[6]	\emptyset	\emptyset	
[6]	\emptyset	\emptyset	\emptyset	

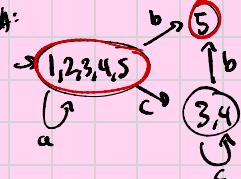


c) $a^*(c^*b)^*$

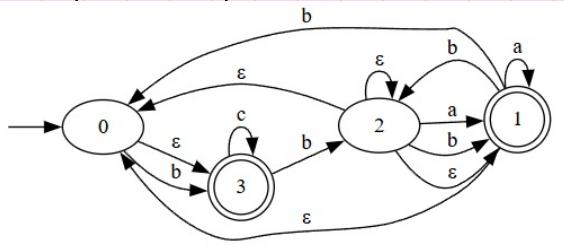


NFA
 \rightarrow DFA:

states	a	b	c	δ
[1,2,3,4,5]	[1,2,3,4,5]	[5]	[3,4]	
[5]	\emptyset	\emptyset	\emptyset	
[3,4]	\emptyset	[5]	[3,4]	



More NFA \rightarrow DFA Practice



states	a	b	c
[0,3]	\emptyset	[0,1,2,3]	[3]
[0,1,2,3]	[0,1,3]	[0,1,2,3]	[3]
[0,1,3]	[0,1,3]	[0,1,2,3]	[3]
[3]	\emptyset	[0,1,2,3]	[3]

