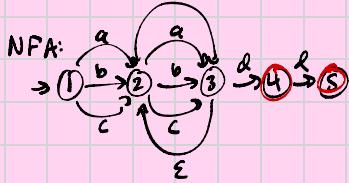


# CMSC330 Discussion 6

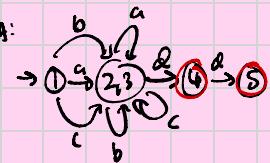
More Regex  $\rightarrow$  NFA  $\rightarrow$  DFA:

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

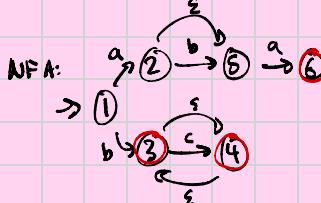


NFA  
 $\rightarrow$ DFA:

states	a	b	c	$\delta$	DFA:
[1]	[2,3]	[2,3]	[2,3]	$\emptyset$	
[2,3]	[2,3]	[2,3]	[2,3]	[4]	
[4]	$\emptyset$	$\emptyset$	$\emptyset$	[5]	
[5]	$\emptyset$	$\emptyset$	$\emptyset$	$\emptyset$	

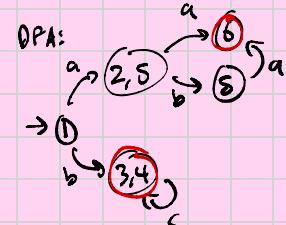


b)  $ab? a|bc^*$

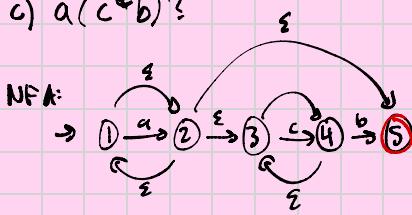


NFA  
 $\rightarrow$ DFA:

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

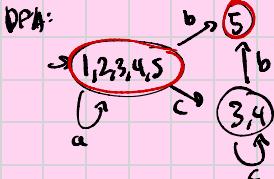


c)  $a^*(c^*b)^*$

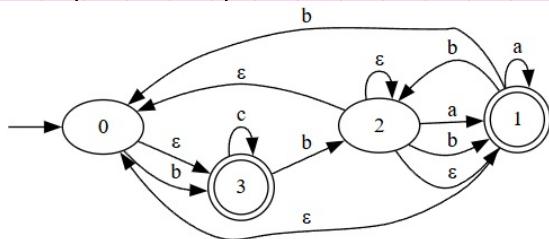


NFA  
 $\rightarrow$ DFA:

states	a	b	c
[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]

