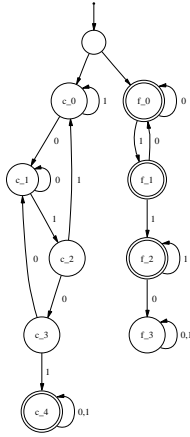


Memo: Tutorial 2

February 26, 2004

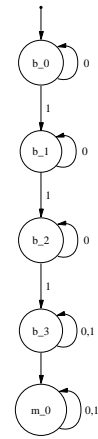
ARROWS WITHOUT LABELS ARE USED FOR ARROWS WITH THE ε LABEL!

Question 1: Exercise 1.6b:



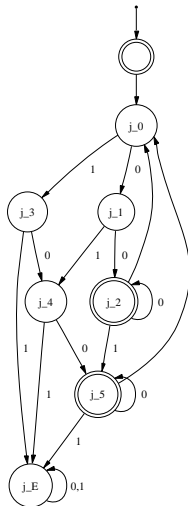
1

Question 2: Exercise 1.7b:



2

Question 3: Exercise 1.8b:



Question 4: Regular Expression for all strings with at most two consecutive a's and at least a pair of consecutive b's:

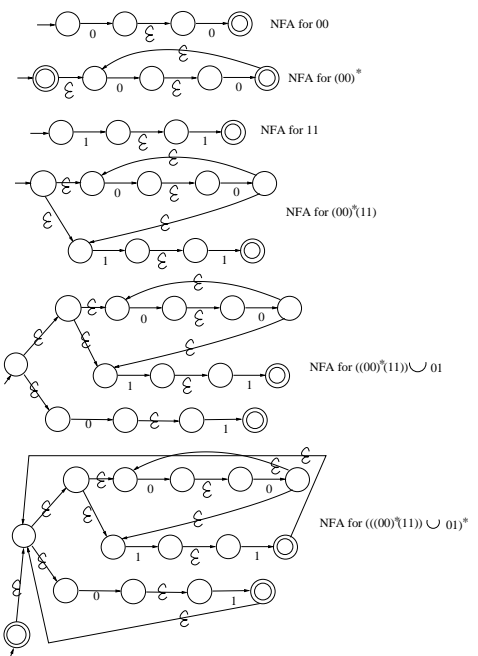
$$((aab \cup ab \cup b)^*(\varepsilon \cup a \cup aa))bb((aab \cup ab \cup b)^*(\varepsilon \cup a \cup aa))$$

Question 5: Regular Expression for all strings where a 0 is followed directly by at least two 1's:

$$(011 \cup 1)^*$$

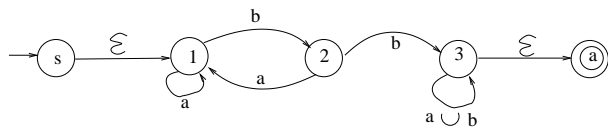
3

Question 6: Exercise 1.14b:

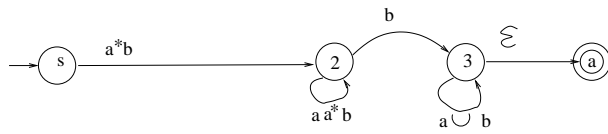


4

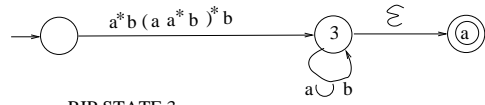
Question 7: Regular Language from DFA:



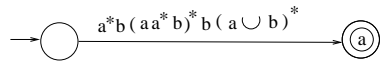
RIP STATE 1



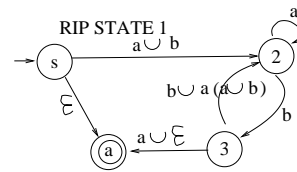
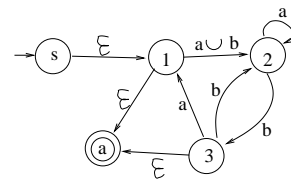
RIP STATE 2



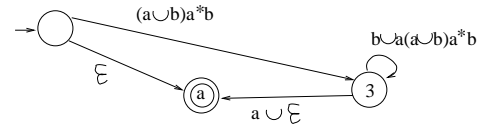
RIP STATE 3



Question 8: Exercise 1.16:



RIP STATE 2



RIP STATE 3

