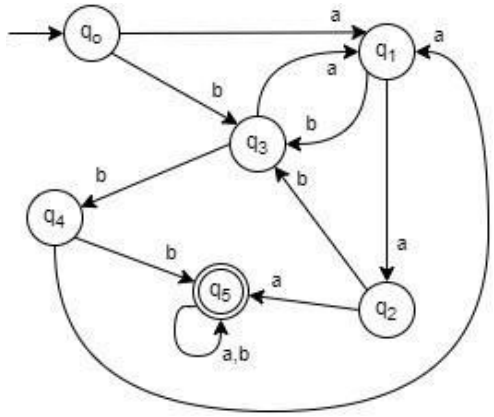
CS281: Introduction to Automata Theory
Finite Automata Seatwork 2

Part 1A: Transform transition graph to transition table



State	Input (a)	Input (b)
q0	q1	q3
q1	q2	q3
q2	q5	q3
q3	q1	q4
q4	q1	q5
q5	q5	q5

B. test whether the following strings is a word accepted by the FA.

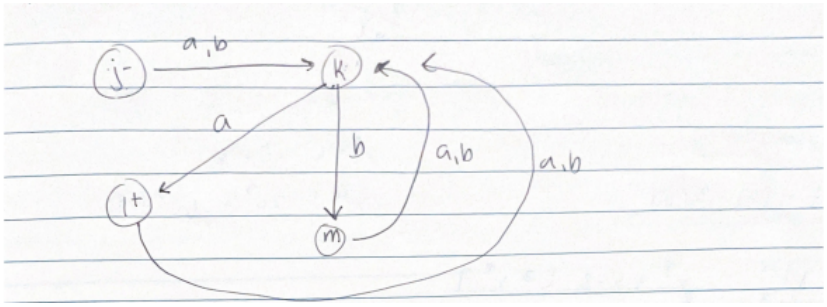
a) abbabbaaa
   - The string is “accepted”.
   - q0 -> q1 -> q3 -> q4 -> q1 -> q3 -> q4 -> q1 -> q2 -> q5

b) bbaabbbaab
   - The string is “accepted”.
   - q0 -> q3 -> q4 -> q1 -> q2 -> q3 -> q4 -> q5 -> q5 -> q5 -> q5

c) ababaaabbab
   - The string is “accepted”.
   - q0 -> q1 -> q3 -> q1 -> q3 -> q1 -> q2 -> q5 -> q5 -> q5 -> q5 -> q5

Part 2A: Transform transition table to transition graph. (- start state, + end state)

	input	
	a	b
j -	k	k
K	l	m
l +	k	k
m	k	k



B. Convert the transition graph to RE

- (a+b)[b(a+b]*a

C. Test whether the following strings is a word or accepted by the transition graph or RE.

a) abbabab
   - The string is not accepted because it supposed to end with an ‘a’ string and the ending is a ‘b’
b) abaaabab
   - The string is not accepted because it does not meet the requirements of the graph. Which means it does not end with an a.
c) aabbabba
   - The string is accepted because it meets the requirements of the graph.