PES UNIVERSITY, Bangalore

(Established under Karnataka Act No. 16 of 2013)

Department of Computer Science & Engineering

Automata Formal Languages & Logic

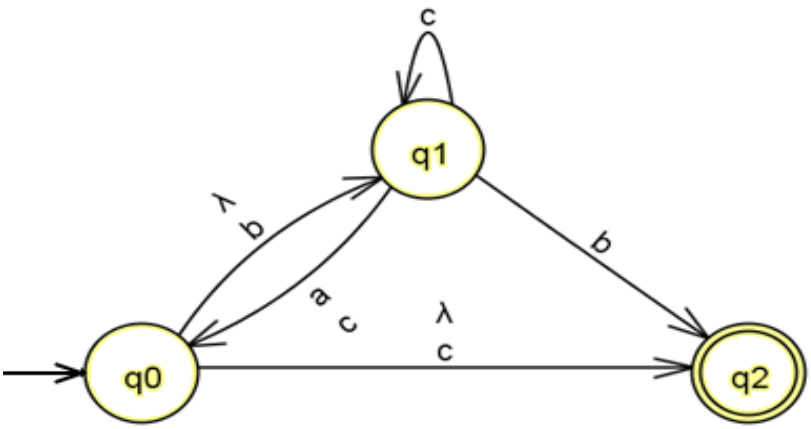
Question Bank – Equivalence of RG & FA

Questions from the Prescribed Textbook

Topic	Exercise No.	Question No's
Finite automata to regular grammar	3.3	Q2-Q7, Q10-Q13, Q16
Regular grammar to finite automata	3.3	Q1
Regular Expression to regular grammar	3.3	Q2-Q7, Q10-Q13, Q16

Extra Questions

1. Convert the finite automata to regular grammar.



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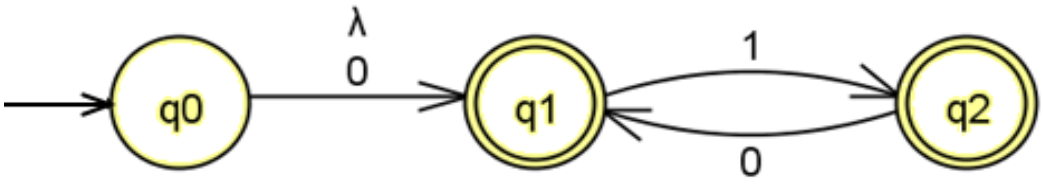
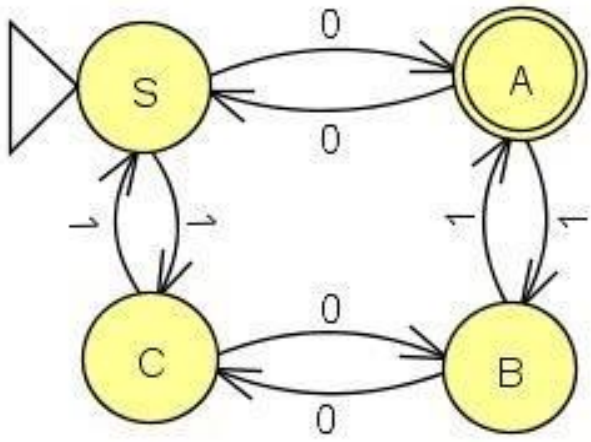
Department of Computer Science & Engineering **Automata Formal Languages & Logic**		

2. Convert the finite automata to regular grammar.



3. Convert the automata to regular grammar.



4. Convert the regular grammar to finite automata.
   S->aaaS|aA|aaB|C
   A->bbC
   B->bC
   C->bbbC|λ

5. Convert the regular grammar to finite automata.
   S->0A|1S|λ
   A->0A|1B|λ
   B->1S|0C|λ
   C->0C|1C

6. Convert the regular grammar to finite automata.
   S->1S|0A|λ
   A->0A|1B|λ
   B->1S|0C|λ
   C->0C|1C

7. Match the Regular expression with regular grammar.

Regular Expression	**Regular Grammar**
(0+10*10*)*	S->0S|1A| λ A->1S|0B B->0A|1B
(1+0)*10(1+0)*	S->0A A->10A0|B B->1
(0+1(01*0)*1)*	S->0S|A|λ A->1B B->0A|1A|0|1
0*(1(0+1))*	S->1A|0S| λ A->1S|0A

0*(10)*1(0)*	S->0S|1A A->1A|0B B->1A|0B| λ

8. Convert the regular expression b*ab*(ab*ab*)* to right linear grammar .

9. Convert the regular expression $((aa)^*(bb)^*b + (aa)^*a(bb)^*)(cc)^*$ to regular grammar.

10. Convert the regular expression $(b + \lambda)(a\ (a + \lambda)^*(b + \lambda))^*(a + \lambda)^*$ to regular grammar.