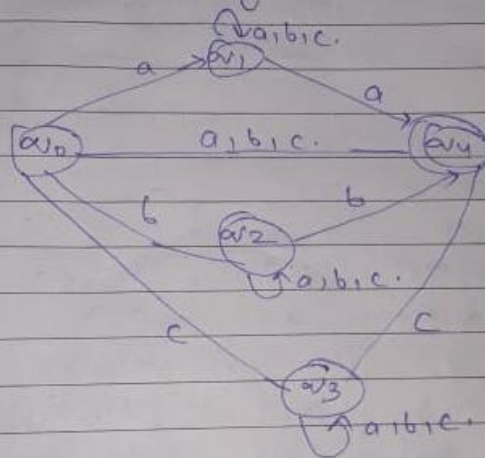


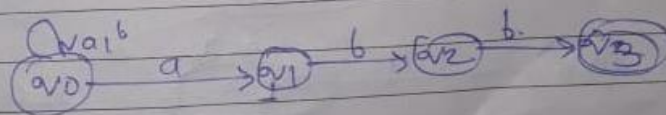
Tutorial - 2 Tap 1

Ques-1 Construct NFA for the following language.

- (i) The Set of String over alphabet $\{a, b, c\}$ such that the last Symbol in the String is same as first.



- (ii) The Set of String over alphabet $\{a, b\}$ ending with abb.



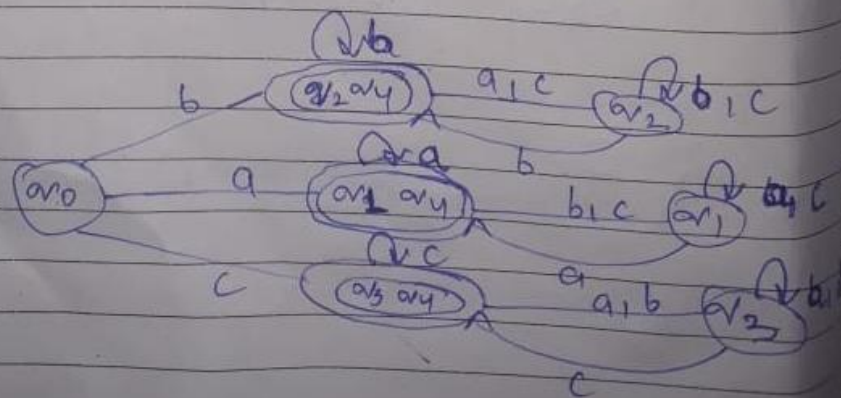
② Convert the NFA of Q.1 to equivalent DFA

NFA

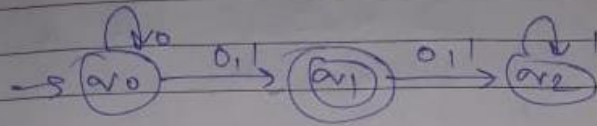
δ	a	b	c
q_0	(q_1, q_4)	(q_2, q_4)	(q_3, q_4)
q_1	(q_1, q_4)	(q_1)	(q_1)
q_2	(q_2)	(q_2, q_4)	(q_2)
q_3	(q_3)	(q_3)	(q_3, q_4)
q_4	—	—	—

DFA

δ	a	b	c
(q_0)	(q_1, q_4)	(q_2, q_4)	(q_3, q_4)
(q_1, q_4)	(q_1, q_4)	(q_1)	(q_1)
(q_2, q_4)	(q_2)	(q_2, q_4)	(q_2, q_3, q_4)
(q_3, q_4)	(q_3)	(q_3)	(q_3, q_4)
(q_1)	(q_1, q_4)	(q_1)	(q_1)
(q_2)	(q_2)	(q_2, q_4)	(q_2)
(q_3)	(q_3)	(q_3)	(q_3, q_4)



9 Convert the following NFA To DFA.



NFA:

δ	0	1
q_0	(q_0, q_1)	(q_1)
q_1	(q_2)	(q_2)
q_2	-	q_2

DFA

δ	0	1
q_0	(q_0, q_1)	(q_1)
(q_0, q_1)	(q_0, q_1, q_2)	(q_1, q_2)
(q_1)	(q_2)	(q_2)
(q_2)	-	(q_2)
(q_1, q_2)	(q_2)	(q_2)
(q_0, q_1, q_2)	(q_0, q_1, q_2)	(q_1, q_2)