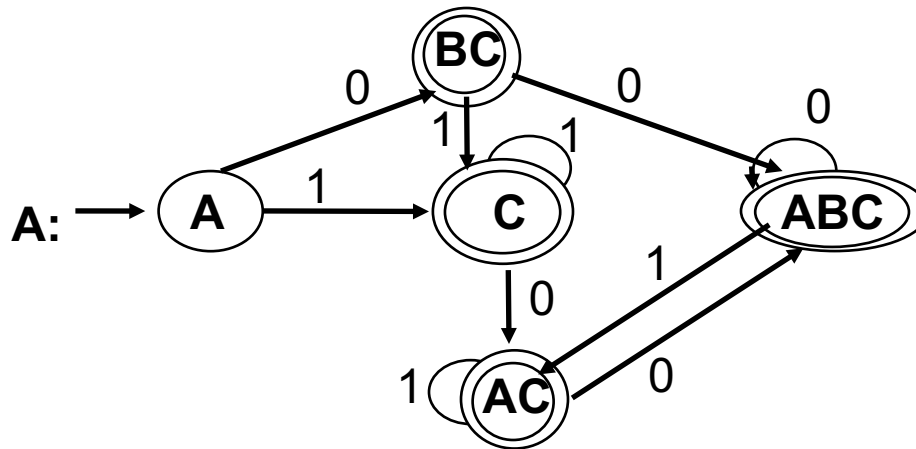
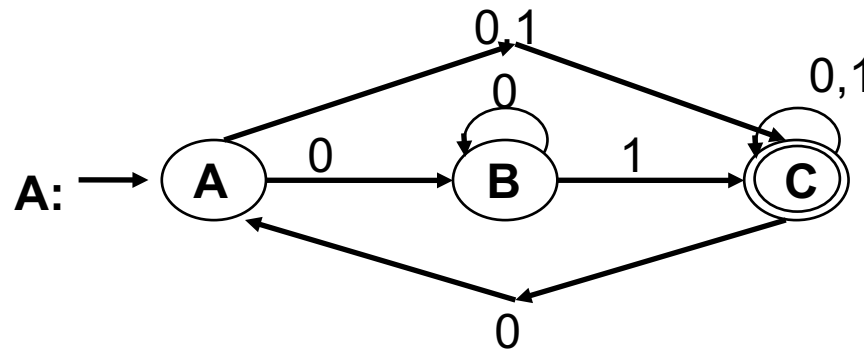


Assignment # 4.1 Key

Convert the following NFA to an equivalent DFA.



Yes, we know this can be reduced to 2 states.

Assignment # 4.2 Key (partial)

$$A = \lambda$$

$$C = A1 + BC1 + C1$$

$$BC = A0$$

$$AC = C0 + AC1$$

$$ABC = BC0 + AC0 + ABC(0+1)$$

$$BC = 0$$

$$C = 1+01+C1 = (1+01)1^*$$

$$AC = (1+01)1^*0+AC1=(1+01)1^*01^*$$

$$ABC = 00+(1+01)1^*01^*0+ABC(0+1) = (00+(1+01)1^*01^*0)(0+1)^*$$

$$L=0+(1+01)1^*+(1+01)1^*01^*+(00+(1+01)1^*01^*0)(0+1)^*$$

$$=0+(1+01)(1^*+1^*01^*)(\lambda+1)(0+1)^*+00(0+1)^*$$

$$=0+(1+01)(0+1)^*+00(0+1)^*$$

$$=(0+1)^+$$

Assignment # 4.3

3. a.) Minimize the number of states in the following DFA, showing the determination of incompatible states (table on right).

	a	b	c						
>1	4	6	2	2	4,5 X' 2,6 X'				
2	5	2	1	3	2,4	4,5 X' 2,6 X' 1,4 X''			
3	4	6	4	4	4,5 X' 4,6 X' 2,3	1,3	4,5 X' 4,6 X'		
4	5	4	3	<u>5</u>	X	X	X	X	
<u>5</u>	3	6	1	<u>6</u>	X	X	X	X	3,5 X 1,3
<u>6</u>	5	6	3		>1	2	3	4	<u>5</u>

- b.) States are: <1,3>, <2,4>, <5>, <6> (Can show DFA in Help Session)