Assignment # 4.1 Key

Convert the following NFA to an equivalent DFA.
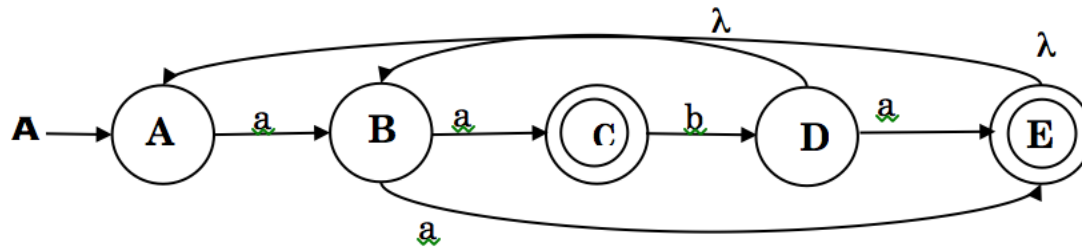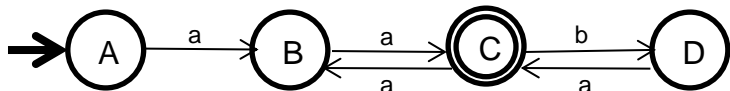

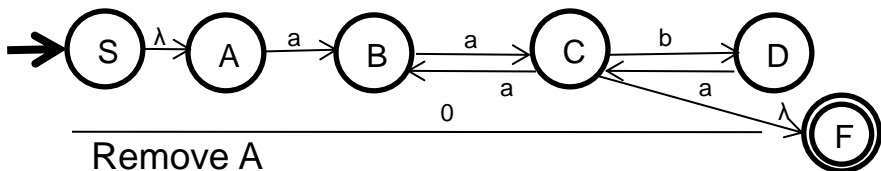| State	A	B	C	D	E
λ-closure	{ A }	{ B }	{ C }	{ B, D }	{ A, E }
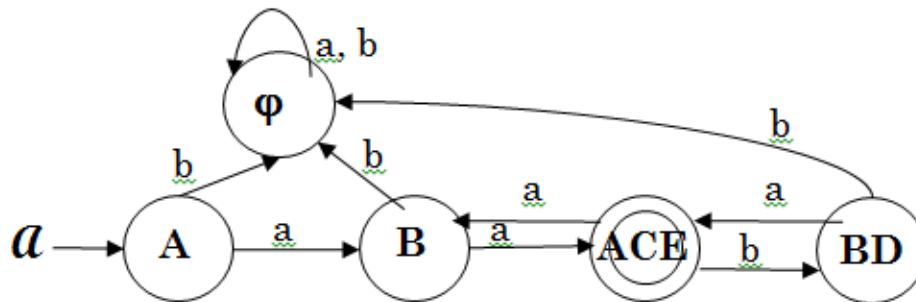
Assignment # 4.2 Key

State Ripping

Simplify

A --a--> B --a--> C --b--> D   (C↔B with a, D↔C with a)

Add S,F

S --λ--> A --a--> B --a--> C --b--> D, 0, λ --> F

Remove A
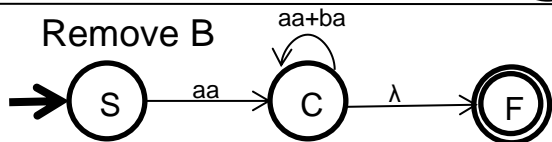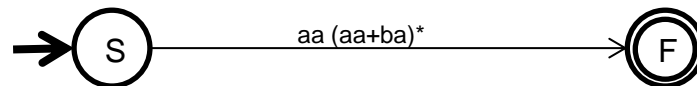
S --a--> B --a--> C --b--> D, λ --> F

Remove B

S --aa--> C (self loop aa) --b--> D --a-->, λ --> F

Remove B

S --aa--> C (self loop aa+ba) --λ--> F
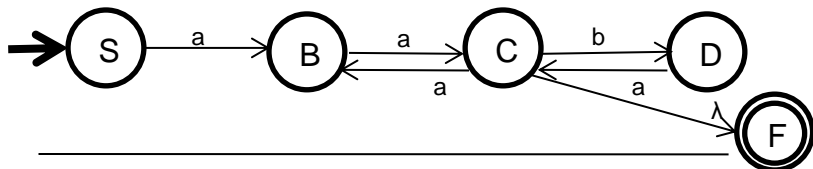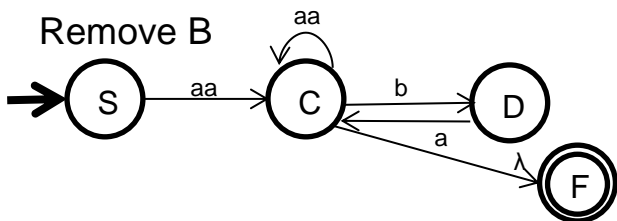
Remove C

S --aa (aa+ba)*--> F

Final RegEx: 0⁺1(0 + 10⁺1)*

A = λ
B = Aa + Ca
C = Ba + Da
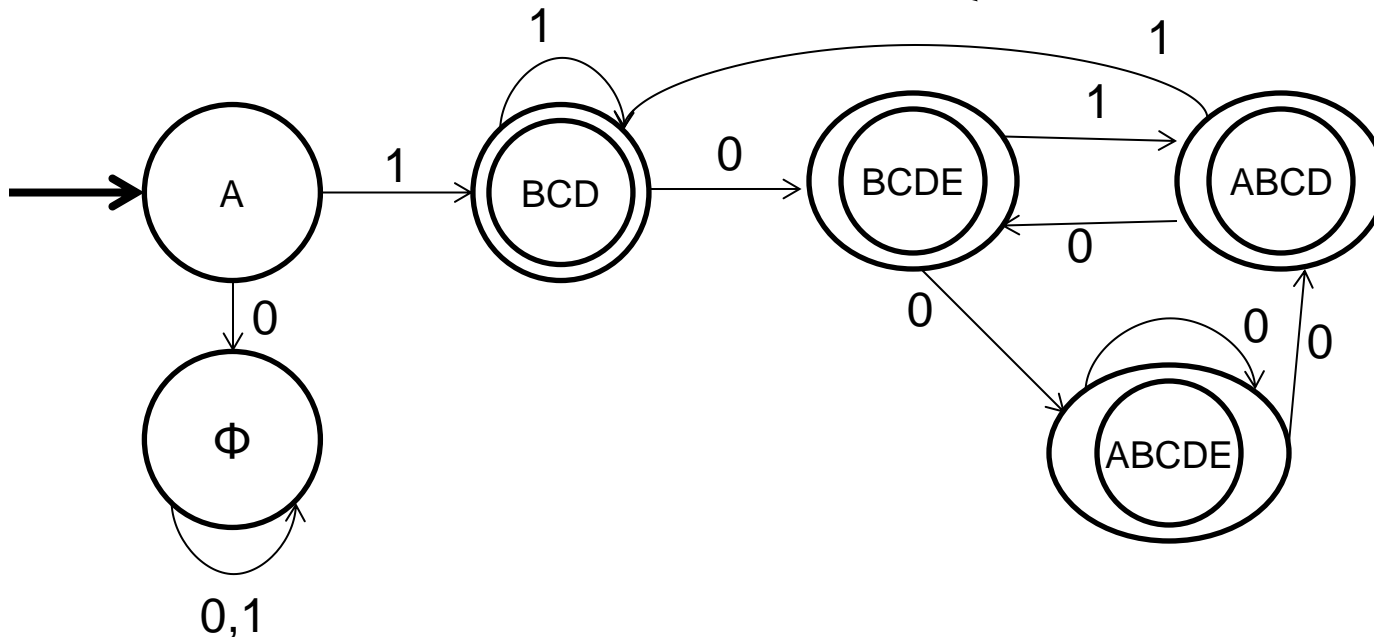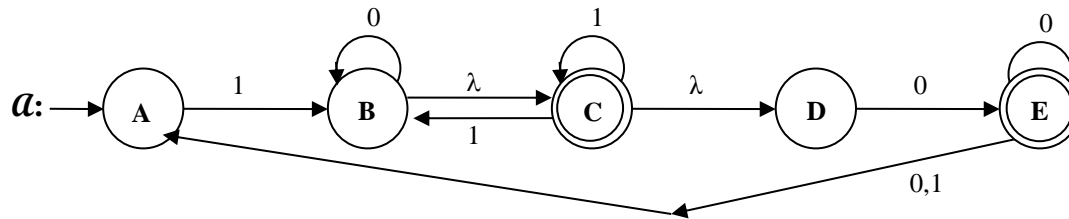**D = Cb**
B = a + Ca
C = (a + Ca)a + Cba
C = aa + C(aa + ba)
C = aa (aa + ba)*

2. Convert the DFA you developed in #1 to a regular expression, first by using either the GNFA (or state ripping) or Rij(k) approach, and then by using regular equations. You must show all steps in each part of this assignment.

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Assignment # 4.2

Convert the following NFA to an equivalent DFA.

Assignment # 4.2 Answer