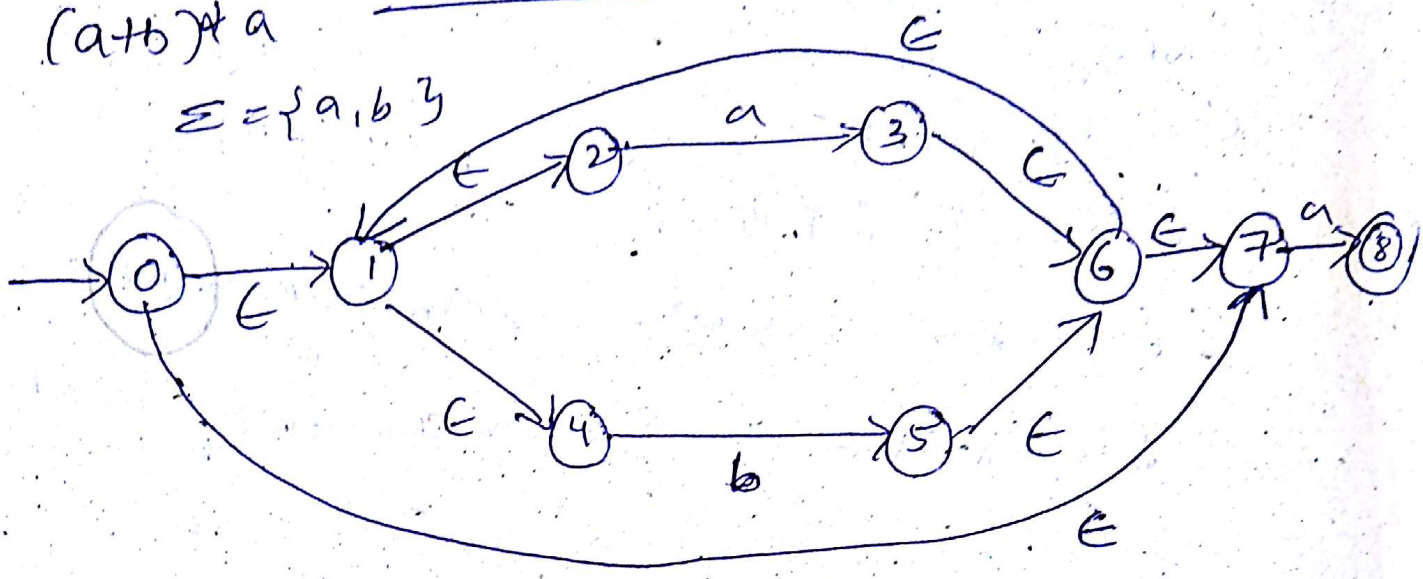
∈ NFA to DFA

(a+b)*a

$\Sigma = \{a, b\}$



$A = \in\text{-closure}(0) = \{0, 1, 2, 4, 7\} = A$

$\delta(A, a) = \in\text{closure}(\delta(\{0,1,2,4,7\}, a))$

$= \in\text{-closure}(\delta(0,a) \cup \delta(1,a) \cup \delta(2,a) \cup \delta(4,a) \cup \delta(7,a))$

$= \in\text{-closure}(3, 8)$

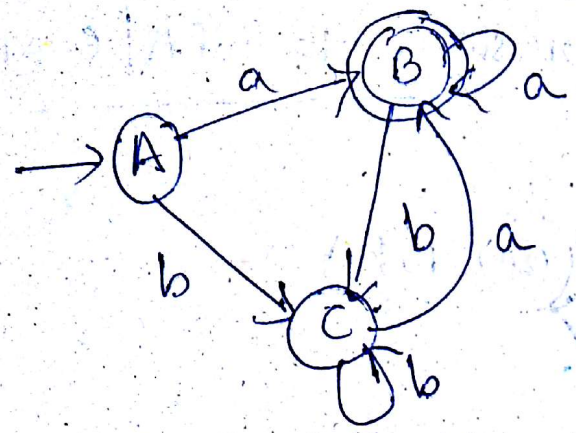
$= \{3, 6, 1, 7, 2, 4, 8\} = B$

$\delta(A, b) = \in\text{-closure}(\delta(\{0,1,2,4,7\}, b))$

$= \in\text{-closure}(\delta(0,b) \cup \delta(1,b) \cup \delta(2,b) \cup \delta(4,b) \cup \delta(7,b))$

$= \in\text{-closure}(5)$

$= \{5, 6, 1, 7, 2, 4\} = C$



$\delta(B,a) = \epsilon\text{-closure}(\delta(\{3,6,1,7,2,4,8\}, a))$

$= \epsilon\text{-closure}(3,8)$

$= \{3,6,1,7,2,4,8\} = B$

$\delta(B,b) = \epsilon\text{-closure}(\delta(\{3,6,1,7,2,4,8\}, b))$

$= \epsilon\text{-closure}(5)$

$= \{5,6,1,7,2,4\} = C$

$\delta(C,a) = \epsilon\text{-closure}(\delta(\{5,6,1,7,2,4\}, a))$

$= \epsilon\text{-closure}(3,8)$

$= \{3,6,1,7,2,4,8\} = B$

$\delta(C,b) = \epsilon\text{-closure}(\delta(\{5,6,1,7,2,4\}, b))$

$= \epsilon\text{-closure}(5)$

$= \{5,6,1,7,2,4\} = C$