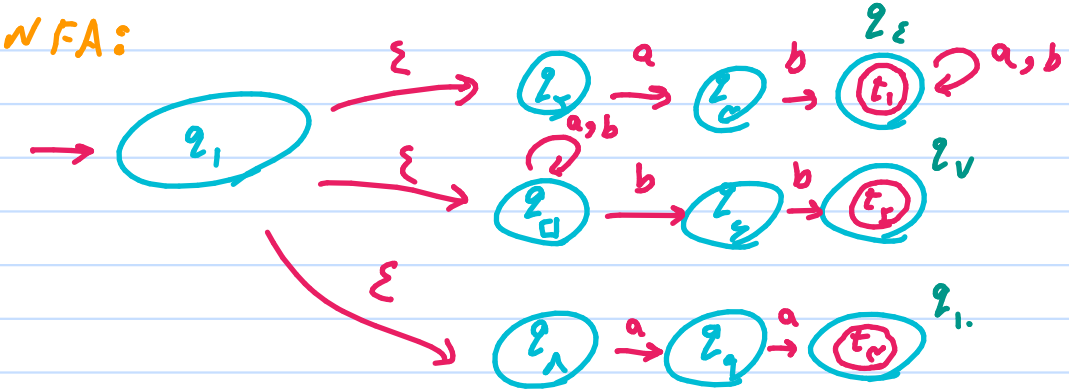
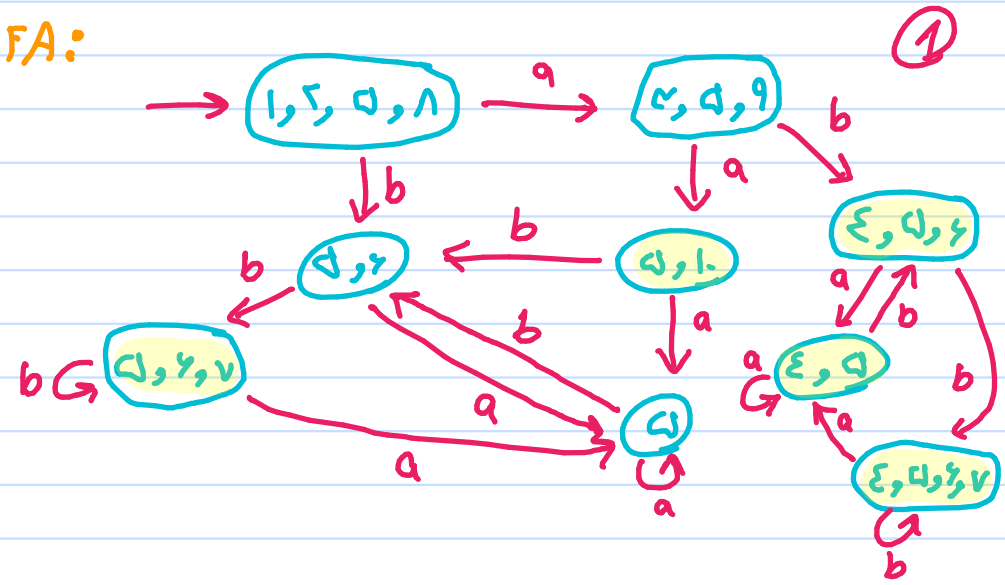
NFA:



DFA: (1)



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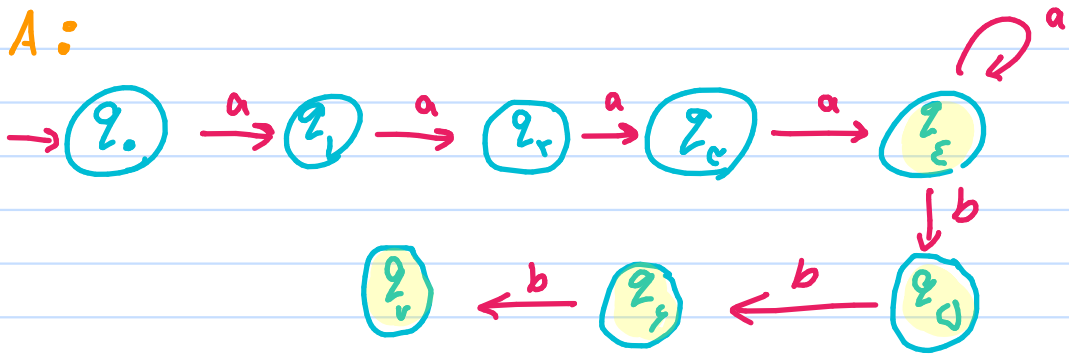
(2)

A: $\{aaaa^{+}(\varepsilon + b + bb + bbb)\}$

B: $\{aa\,(a+b)^{*}\,aa + bb\,(a+b)^{*}bb + ab\,(a+b)^{*}ab + ba\,(a+b)^{*}ba\}$

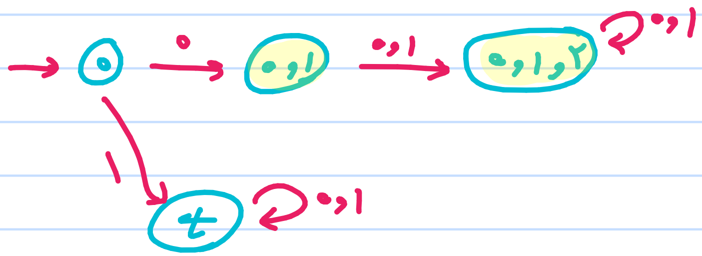
C: $\{(aa + bb + (ab+ba)\;\;(aa+bb)^{*}\;\;(ab+ba))^{*}\}$

A:

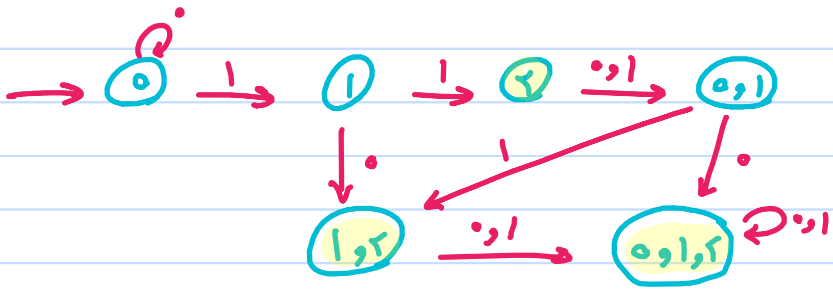


3

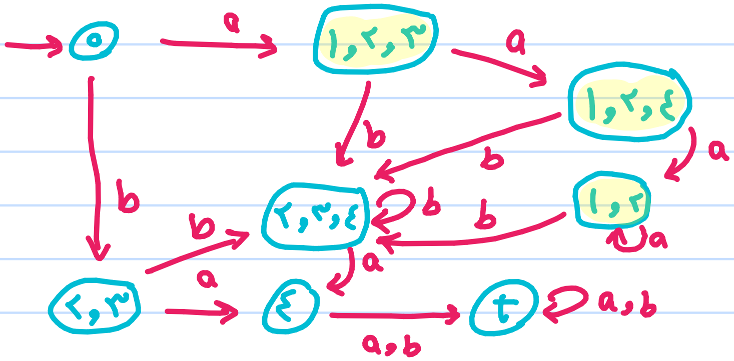
A:



B:

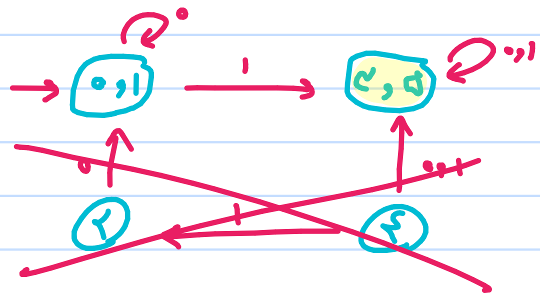


C:



4

A:



اصلا وارد نمی شویم

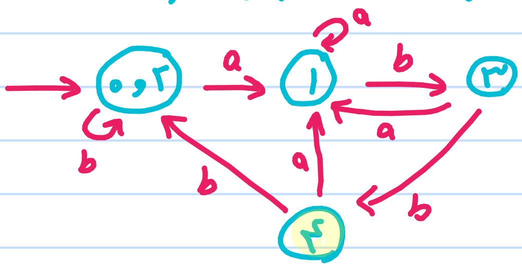
{٣,٥} {٠,١,٢,٤}

{٣,٥} {٠,١} {٢} {٤}

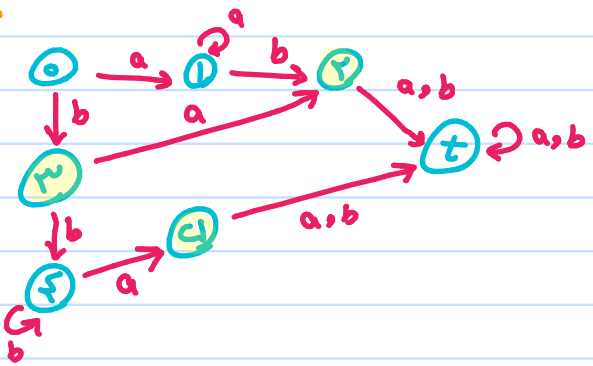
B: {٤} {٠,١,٢,٣} → {٠} {١,٢,٣} {٤}

C: {٠,١,٢,٣} {٤} → {٠,١,٢} {٣} {٤}

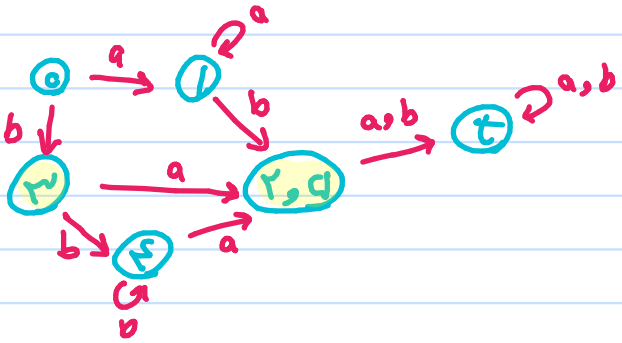
{٠,٢} {١} {٣} {٤}



DFA:



opt DFA:



(5)

A: (7)

<ID, Main> <LPAN> <RPAN> <LBRC>

<Int> <star> <ID, a> <Comma> <ID, ab> <Semicolon>

<ID, ab> <=> <1.> <Semicolon>

<ID, a> <=> <ID, ab> <+> <1> <Semicolon>

<ID, printf> <LPAN> <Literal, "%d"> <comma> <ID, a> <RPAN> <semicolon> <RBRC>

B: <ID, int> <ID, Compare> <LPAN> <ID, int> <ID, Num1> <Comma> <ID, int> <ID, num2> <RPAN>
<LBRC>
<ID, if> <LPAN> <ID, num1> <>> <ID, num2> <RPAN> <ID, return> <1> <Semicolon>
<ID, if> <LPAN> <ID num2> <<> <ID, num1> <RPAN> <ID, return> <0> <Semicolon>
<ID, return> <ID, num1> <Semicolon> <RBC>

A: $L_{(A)} = b^* a b^* a^+ b^+$ (6)

B: بله متمایز اند چراکه :

$\Delta(q_0, a) = q_1$ ✓ $\Delta(q_0, b) = q_0$ X

$\Delta(q_2, a) = q_2$ X $\Delta(q_2, b) = q_1$ ✓

✓: final X: non final