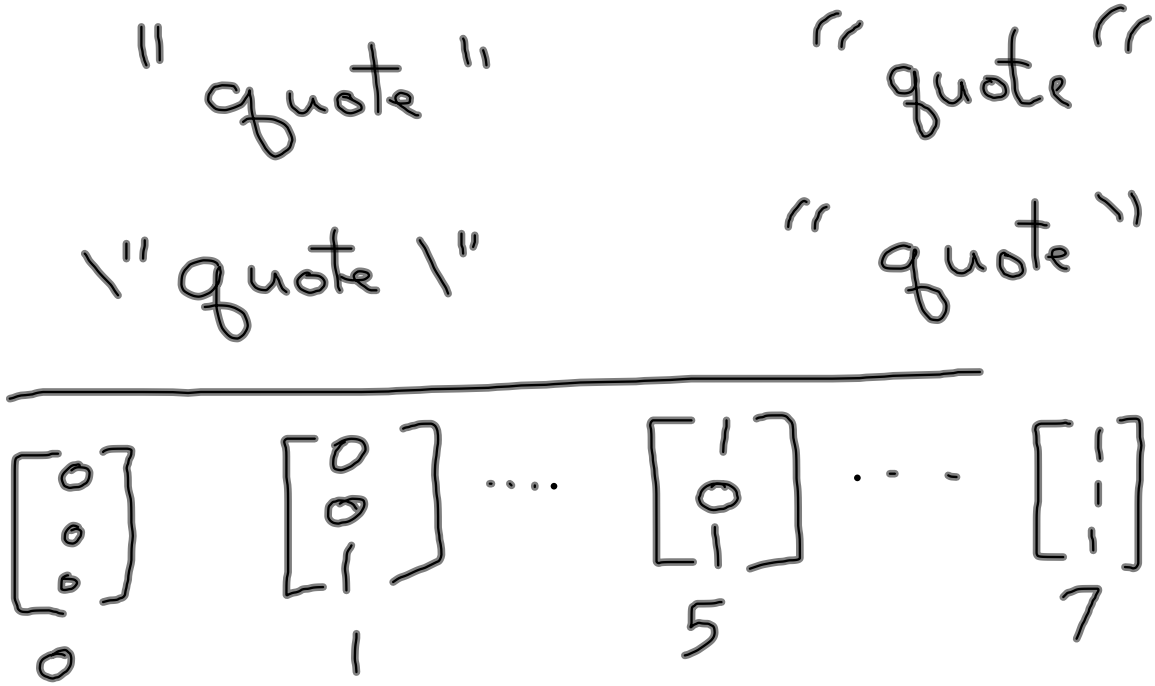
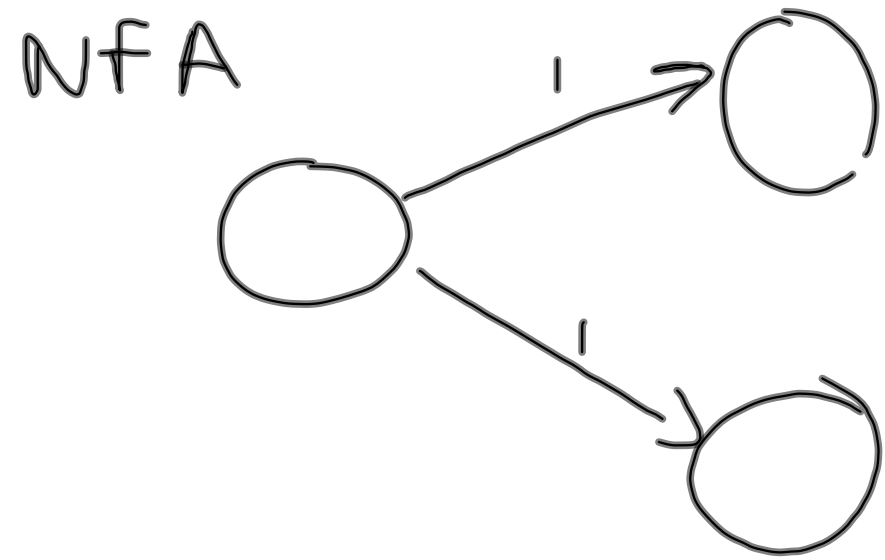
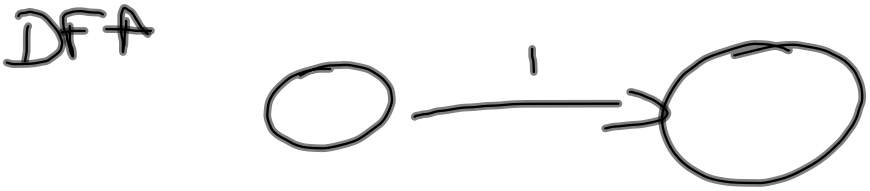

" quote "
" quote "
\" quote \"
" quote \"
0
1
5
7


NfA
1
1


DFA
1

Let $N = (Q, \Sigma, \delta, q_0, F)$ be an NFA recognizing a language A. Construct a DFA $M = (Q', \Sigma, \delta', q_0', F')$ that recognizes A.

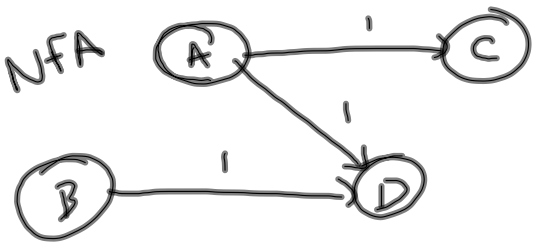
$$Q' = \mathcal{P}(Q)$$

First consider N w/o ε-transition

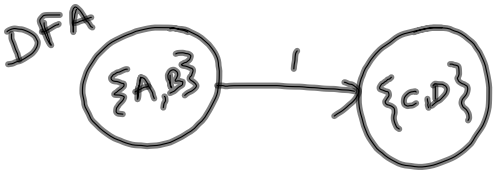
δ' for $R \in Q'$ and $a \in \Sigma$

$$\delta'(R, a) = \{ q \in Q \mid q = \delta(r, a) \text{ for some } r \in R \}$$

e.g.



$$\delta'(\{A, B\}, 1) = \{C, D\}$$



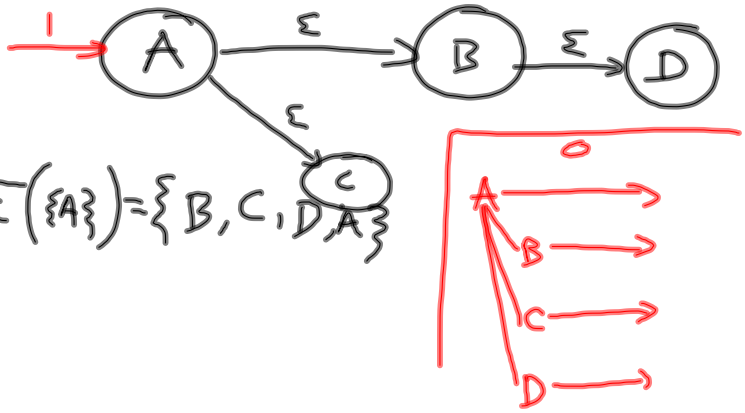
$$q_0' = \{q_0\}$$

$$F' = \{ R \in Q' \mid R \text{ contains an accepting state from } F \}$$

ε-transitions

$E(R) = \{q \mid q$ can be reached from R by traveling along 0 or more ε transitions$\}$

for $R \in Q'$



$E(\{A\}) = \{B, C, D, A\}$

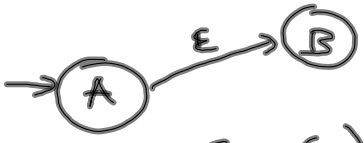
$\delta'(R, a) = \{q \in Q \mid q \in E(\delta(r, a))$ for some $r \in R\}$

NFA

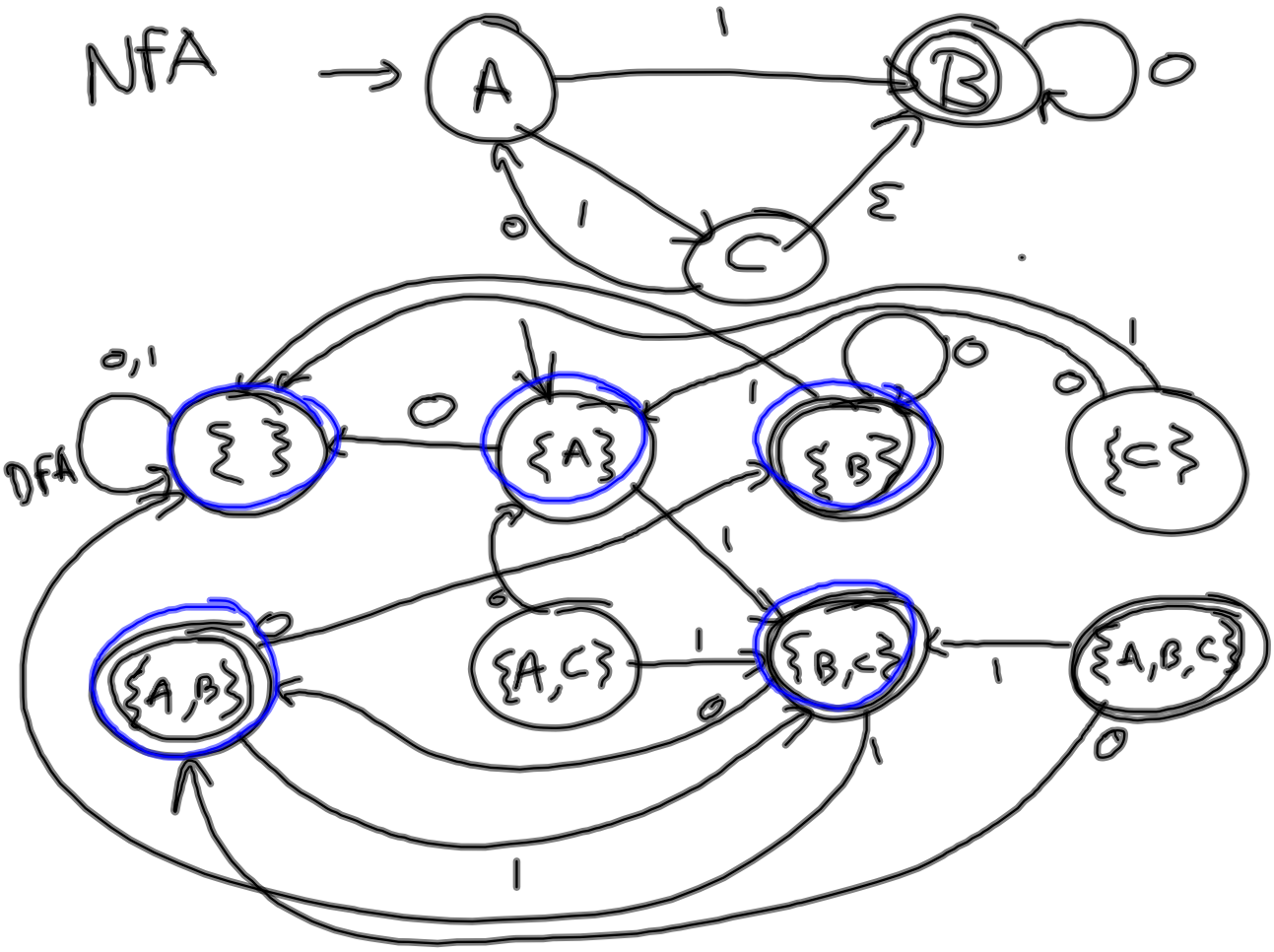
$\delta(A, 1) = B$

$\delta(B, \varepsilon) = C$

$\delta'(\{A\}, 1) = \{B, C\}$



$q_0' = \{E(q_0)\}$


NFA
A
B
C
1
0
1
ε
DFA
0,1
{ }
{A}
{B}
{C}
{A,B}
{A,C}
{B,C}
{A,B,C}