Variant 12

$Q = \{q_0, q_1, q_2, q_3\}$
$\Sigma = \{a, b, c\}$
$F = \{q_2\}$
$\delta(q_0, b) = q_0$
$\delta(q_0, a) = q_1$
$\delta(q_1, c) = q_1$
$\delta(q_1, a) = q_2$
$\delta(q_3, a) = q_1$
$\delta(q_3, a) = q_3$
$\delta(q_2, a) = q_3$

Conversion FA to grammar

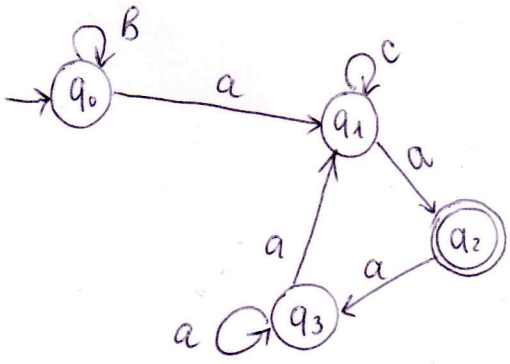
1. $V_T = \Sigma = \{a, b, c\}$
2. $V_N = Q = \{q_0, q_1, q_2, q_3\}$
3. $P = \{ q_0 \to bq_0 \mid aq_1$
   $q_1 \to cq_1 \mid aq_2$
   $q_3 \to aq_1 \mid aq_3$
   $q_2 \to aq_3 \}$
4. $S \to q_0$

Conversion NFA to DFA

δ	a	b	c
$\to q_0$	q_1	q_0	$\varnothing$
q_1	q_2	$\varnothing$	q_1
$* q_2$	q_3	$\varnothing$	$\varnothing$
q_3	$\{q_1, q_3\}$	$\varnothing$	$\varnothing$

δ'	a	b	c
$\to q_0$	$\{q_1\}$	$\{q_0\}$	$\varnothing$
q_1	$\{q_2\}$	$\varnothing$	$\{q_1\}$
$* q_2$	$\{q_3\}$	$\varnothing$	$\varnothing$
q_3	$\{q_1, q_3\}$	$\varnothing$	$\varnothing$
$\{q_1, q_3\}$	$\{q_1, q_3\}$ (q_2)	$\varnothing$	$\{q_1\}$
$* \{q_1, q_2, q_3\}$	$\{q_1, q_2, q_3\}$	$\varnothing$	$\{q_1\}$

NFA



DFA