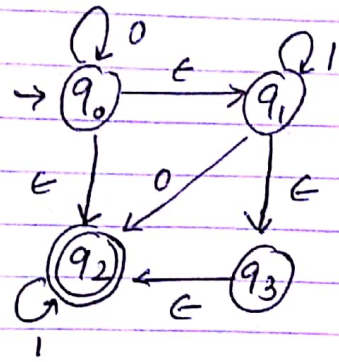
① Given NFA ② find ϵ closure of all states.
③ equivalent DFA m' $q_0' = \epsilon\text{closure}(q_0)$
④ TT of DFA ⑤ draw TD of DFA ⑥ final ans.

NFA with ϵ to DFA



Step 1 – Given NFA

$m = (Q, \Sigma, \delta, q_0, F)$

$Q = \{q_0\ q_1\ q_2\ q_3\}$ $\Sigma = \{0, 1\}$

$q_0 = q_0$ $F = \{q_2\}$

Q \ Σ	0	1	ϵ
q_0	$\{q_0\}$	–	$\{q_1, q_2\}$
q_1	$\{q_2\}$	$\{q_1\}$	$\{q_3\}$
(q_2)	–	$\{q_2\}$	–
q_3	–	–	$\{q_2\}$

Step 2 – ϵ closure method.

eg. DFA

$m' = (Q', \Sigma', \delta', q_0', F')$

$q_0' = \epsilon\text{-closure}(q_0)$

$= \{q_0, q_1, q_2, q_3\}$

$= [q_0\ q_1\ q_2\ q_3]_I$ for DFA.

Step 3 – $\epsilon\text{ closure}(q_1) = \{q_1, q_3, q_2\}$

$\epsilon\text{ closure}(q_2) = \{q_2\}$

$\epsilon\text{ closure}(q_3) = \{q_3, q_2\}$

TT for DFA

Q	Σ	0	ϵclosure(0)	1	ϵclosure(1)
			$[q_0 q_1 q_2 q_3]_I$		
→ $[q_0 q_1 q_2 q_3]$ * I		$\{q_0 q_2\}$	$[q_0 q_2]_{II}$	$\{q_1 q_2\}$	$[q_1 q_2 q_3]_{II}$
$[q_1 q_2 q_3]$ * II		$\{q_2\}$	$[q_2]_{III}$	$\{q_1 q_2\}$	$[q_1 q_2 q_3]_{II}$
$[q_2]$ * III		$\{\}$	$[]_{IV}$	$\{q_2\}$	$[q_2]_{III}$
$[]_{IV}$		–	$[]_{IV}$	–	$[]_{IV}$

$F = \{[q_0 q_1 q_2 q_3]_I, [q_1 q_2 q_3]_{II}, [q_2]_{III}\}$