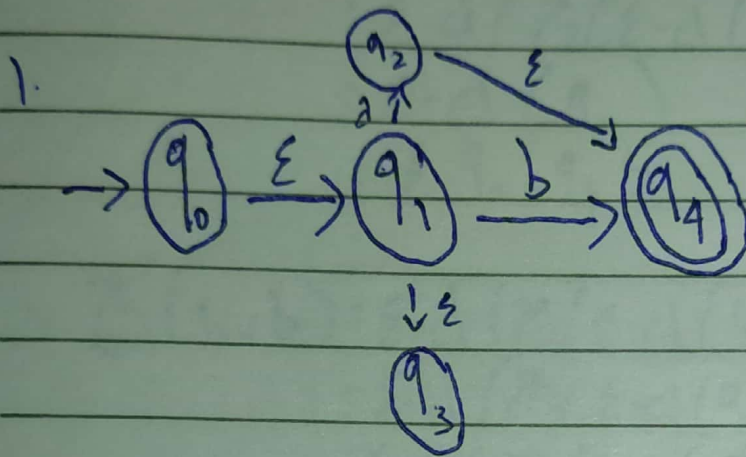


No.:

Date.:

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 NIM: 201011402080

Teori: Automata



① Tabel Transisi

δ	a	b
q_0	$\{\emptyset\}$	$\{\emptyset\}$
q_1	$\{q_2\}$	$\{q_4\}$
q_2	$\{\emptyset\}$	$\{\emptyset\}$
q_3	$\{\emptyset\}$	$\{\emptyset\}$
q_4	$\{\emptyset\}$	$\{\emptyset\}$

② ϵ -cl(q_0) = $\{q_0, q_1, q_3\}$
 ϵ -cl(q_1) = $\{q_1, q_2, q_4\}$
 ϵ -cl(q_2) = $\{q_2, q_4\}$
 ϵ -cl(q_3) = $\{q_3\}$
 ϵ -cl(q_4) = $\{q_4\}$

$$\begin{aligned}
 \textcircled{3} \quad \bar{\sigma}(q_0, a) &= \varepsilon\text{-cl}(\bar{\sigma}(\varepsilon\text{-cl}(q_0), a)) \\
 &= \varepsilon\text{-cl}(\bar{\sigma}(\varepsilon\text{-cl}(q_0, q_1, q_3), a)) \\
 &= \varepsilon\text{-cl}(\bar{\sigma}(\varepsilon\text{-cl}(\emptyset, q_2, \emptyset))) \\
 &= \varepsilon\text{-cl}(\bar{\sigma}(\varepsilon\text{-cl}(q_2))) \\
 &= \varepsilon\text{-cl}(q_2) \\
 &= \{q_2, q_4\}
 \end{aligned}$$

$$\begin{aligned}
 \bar{\sigma}(q_0, b) &= \varepsilon\text{-cl}(\bar{\sigma}(\varepsilon\text{-cl}(q_0), b)) \\
 &= \varepsilon\text{-cl}(\bar{\sigma}(\varepsilon\text{-cl}(q_0, q_1, q_3), b)) \\
 &= \varepsilon\text{-cl}(\bar{\sigma}(\varepsilon\text{-cl}(\emptyset, q_4, \emptyset))) \\
 &= \varepsilon\text{-cl}(\bar{\sigma}(\varepsilon\text{-cl}(q_4))) \\
 &= \varepsilon\text{-cl}(q_4) \\
 &= \{q_4\}
 \end{aligned}$$

$$\begin{aligned}
 \bar{\sigma}(q_1, a) &= \varepsilon\text{-cl}(\bar{\sigma}(\varepsilon\text{-cl}(q_1), a)) \\
 &= \varepsilon\text{-cl}(\bar{\sigma}(\varepsilon\text{-cl}(q_1, q_3), a)) \\
 &= \varepsilon\text{-cl}(\bar{\sigma}(\varepsilon\text{-cl}(q_2, \emptyset))) \\
 &= \varepsilon\text{-cl}(\bar{\sigma}(\varepsilon\text{-cl}(q_2))) \\
 &= \{q_2, q_4\}
 \end{aligned}$$

$$\begin{aligned}
 \delta'(q_1, b) &= \epsilon\text{-cl}(\delta(\epsilon\text{-cl}(q_1), b)) \\
 &= \epsilon\text{-cl}(\delta(\epsilon\text{-cl}(q_1, q_3), b)) \\
 &= \epsilon\text{-cl}(\delta(\epsilon\text{-cl}(q_1), b)) \\
 &= \epsilon\text{-cl}(q_4) \\
 &= \{q_4\}
 \end{aligned}$$

$$\begin{aligned}
 \delta'(q_2, a) &= \epsilon\text{-cl}(\delta(\epsilon\text{-cl}(q_2), a)) \\
 &= \epsilon\text{-cl}(\delta(\epsilon\text{-cl}(q_2, q_4), a)) \\
 &= \epsilon\text{-cl}(\delta(\epsilon\text{-cl}(\emptyset, \emptyset))) \\
 &= \epsilon\text{-cl}(\emptyset) \\
 &= \{\emptyset\}
 \end{aligned}$$

$$\begin{aligned}
 \delta'(q_2, b) &= \epsilon\text{-cl}(\delta(\epsilon\text{-cl}(q_2), b)) \\
 &= \epsilon\text{-cl}(\delta(\epsilon\text{-cl}(q_2, q_4), b)) \\
 &= \epsilon\text{-cl}(\delta(\epsilon\text{-cl}(\emptyset))) \\
 &= \epsilon\text{-cl}(\emptyset) \\
 &= \{\emptyset\}
 \end{aligned}$$

$$\begin{aligned}
 \delta'(q_3, a) &= \epsilon\text{-cl}(\delta(\epsilon\text{-cl}(q_3), a)) \\
 &= \epsilon\text{-cl}(\delta(\epsilon\text{-cl}(q_3), a)) \\
 &= \epsilon\text{-cl}(\delta(\epsilon\text{-cl}(\emptyset))) \\
 &= \epsilon\text{-cl}(\emptyset) \\
 &= \emptyset
 \end{aligned}$$

$$\begin{aligned}
 \delta'(q_3, b) &= \varepsilon\text{-cl}(\delta(\varepsilon\text{-cl}(q_3), b)) \\
 &= \varepsilon\text{-cl}(\delta(\varepsilon\text{-cl}(q_3), b)) \\
 &= \varepsilon\text{-cl}(\delta'(\varepsilon\text{-cl}(\emptyset))) \\
 &= \{\emptyset\}
 \end{aligned}$$

$$\begin{aligned}
 \delta'(q_4, a) &= \varepsilon\text{-cl}(\delta(\varepsilon\text{-cl}(q_4), a)) \\
 &= \varepsilon\text{-cl}(\delta(\varepsilon\text{-cl}(\emptyset))) \\
 &= \varepsilon\text{-cl}(\emptyset) \\
 &= \{\emptyset\}
 \end{aligned}$$

$$\begin{aligned}
 \delta'(q_4, b) &= \varepsilon\text{-cl}(\delta'(\varepsilon\text{-cl}(q_4, a))) \\
 &= \varepsilon\text{-cl}(\delta(\varepsilon\text{-cl}(q_4, a))) \\
 &= \varepsilon\text{-cl}(\delta(\varepsilon\text{-cl}(\emptyset))) \\
 &= \{\emptyset\}
 \end{aligned}$$

4. tabel transisi

δ	a	b
q_0	$\{q_2, q_4\}$	$\{q_3\}$
q_1	$\{q_4, q_3\}$	$\{q_3\}$
q_2	\emptyset	\emptyset
q_3	\emptyset	\emptyset
q_4	\emptyset	\emptyset

5.

