Lab 3 ex 3 b)

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

$Q' = 2^{|Q|} = 2^3 = 8$

$Q' = \{\phi, [q_0], [q_1], [q_2], [q_0, q_1], [q_0, q_2], [q_1, q_2], [q_0, q_1, q_2]\}$

$\Sigma = \{0, 1, 2\}$

$F' = \{[q_2], [q_0, q_2], [q_1, q_2], [q_0, q_1, q_2]\}$

Metoda 1

1. $\delta'([q_0], 0) = \delta(\{q_0\}, 0) = \{q_0, q_1, q_2\} = [q_0, q_1, q_2]$

$\delta'([q_0], 1) = \delta(\{q_0\}, 1) = [q_1, q_2]$

$\delta'([q_0], 2) = [q_2]$

2. $\delta'([q_1], 0) = \phi$

$\delta'([q_1], 1) = \delta(\{q_1\}, 1) = [q_1, q_2]$

$\delta'([q_1], 2) = [q_2]$

3. $\delta'([q_2], 0) = \phi$

$\delta'([q_2], 1) = \phi$

$\delta'([q_2], 2) = [q_2]$

4. $\delta'([q_0,q_1],0) = \delta(\{q_0,q_1\},0) = \delta(q_0,0) \cup \delta(q_1,0)$

$= [q_0,q_1,q_2]$

$\delta'([q_0,q_1],1) = [q_1,q_2] \cup [q_1,q_2] = \{q_1,q_2\}$

$= [q_1,q_2]$

$\delta'([q_0,q_1],2) = [q_2]$

5. $\delta'([q_0,q_2],0) = \{q_0,q_1,q_2\}$

$\delta'([q_0,q_2],1) = [q_1,q_2]$

$\delta'([q_0,q_2],2) = \{q_2\} \cup \{q_2\} = [q_2]$

$q_1,q_2]$

6. $\delta'([q_1,q_2],0) = \phi$

$\delta'([q_1,q_2],1) = [q_1,q_2]$

$\delta'([q_1,q_2],2) = [q_2]$

7. $\delta([q_0,q_1,q_2],0) = \delta(\{q_0,q_1,q_2\},0)$

$= \delta(q_0,0) \cup \delta(q_1,0), \delta(q_2,0$

$= [q_0,q_1,q_2\} \cup \{q_1,q_2] \cup \{q_2\}$

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

$\delta'([q_0,q_1,q_2],1) = [q_1,q_2]$

$\delta'([q_0,q_1,q_2],2) = [q_2]$

8. $\delta'(\phi,a) = \phi$

Metoda 2

1. $\delta'([q_0], 0) = \{q_0, q_1, q_2\}$ new

$\delta'([q_0], 1) = [q_1, q_2]$ new

$\delta'([q_0], 2) = [q_2]$ new

2. (new 1)

$\delta'([q_0, q_1, q_2], 0) = [q_0, q_1, q_2]$

$\delta'([q_0, q_1, q_2], 1) = [q_1, q_2]$

$\delta'[[q_0, q_1, q_2], 2) = [q_2]$

3. (new 2)

$\delta'([q_1, q_2], 0) = \{q_1, q_2\}$ $\emptyset$

$\delta'([q_1, q_2), 1 = [q_1, q_2]$

$\delta'[[q_1, q_2), 2) = [q_2]$

4. (new 3)

$\delta'([q_2], 0) = [q_2)$ $\emptyset$

$\delta'([q_2], 1) = [q_2$ $\emptyset$

$\delta'([q_2], 2) = [q_2]$

5. $\delta(\emptyset, 0) = \emptyset$

$\delta(\emptyset, 1) = \emptyset$

$\delta(\emptyset, 2) = \emptyset$