LFA

28.02.2024

Seminar 1

① $L_1 = \{aa, ab\}$ $L_2 = \{bc, ddd\}$ limbaje

$L_1 \cdot L_2 = \{aabc, aaddd, abbc, abddd\}$ concatenare

$a^* = \{a^m \mid m \geq 0\} = \{a^0 = \lambda, a, aa, a^3, \dots\}$

$w^* = \{\lambda, w, w.w, \dots\}$

$L^* = \lambda \cup L \cup L^2 \cup L^3 \cup \dots$

② $L = \{a, bc, d\}$;

$L^* = \{\lambda, a, bc, d, aa, abc, ad, bca, bcbc, bcd, da, dbc, dd, \dots\}$

$a^+ = \{a^m \mid m \geq 1\}$

③ $L = \{ab, cd\}$

$L^+ = \{ab, cd, abab, abcd, cdab, cdcd \dots\}$

$L^* = L^+ \cup \{\lambda\}$

$DFA = (Q, \Sigma, \delta, q_0, F) \Rightarrow$

Q = mult. stări finită $\neq \emptyset$

Σ = alfabetul = mult simboluri finită

q_0 = starea inițială, unică $\in Q$ (2)

F = mult. stări finale $\subseteq Q$ (2)

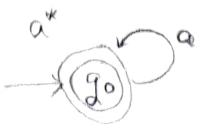
δ = funcție de tranziție, $\delta: Q \times \Sigma \to Q$

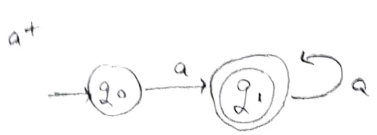
④ $a^* = \{\lambda, a, aa, \dots\}$

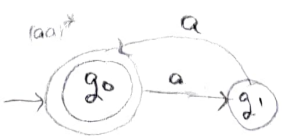
$a^+ = \{a, aa, \dots\}$

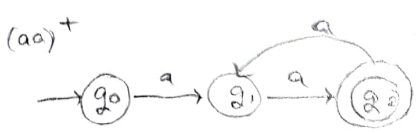
$\{a^{2m} \mid m \geq 0\} = (aa)^*$

$\{a^{2m} \mid m \geq 1\} = (aa)^+$

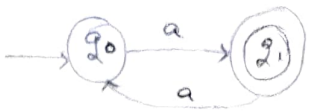




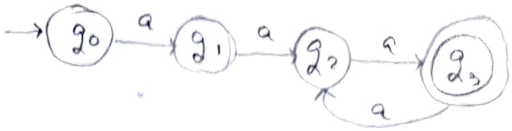




$\{a^{2m+1} \mid m \geq 0\} = \{a, aaa, aaaaa \ldots\}$



$\{a^{2m+1} \mid m \geq 1\} = \{aaa, aaaaa, \ldots\}$



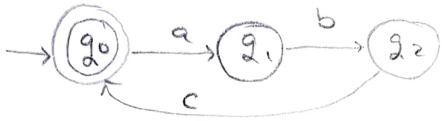
⑤ $L_1 = \{a,b,c\}^* = \{\lambda, a, b, c, aa, ab, ac, ba, bb, bc, ca, cb, cc, \ldots\}$

$L_2 = (abc)^* = \{\lambda, abc, abcabc, \ldots\}$

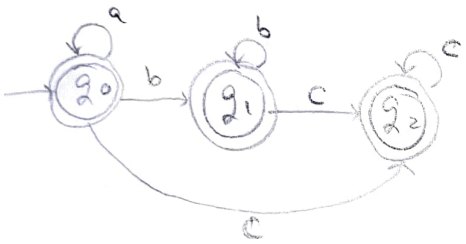
$L_3 = \{a^m b^k c^p \mid m \geq 0, k \geq 0, p \geq 0\} = \{\lambda, a, b, c, ab, ac, abc, aab, aac, aabc, \ldots$

L_1

L_2

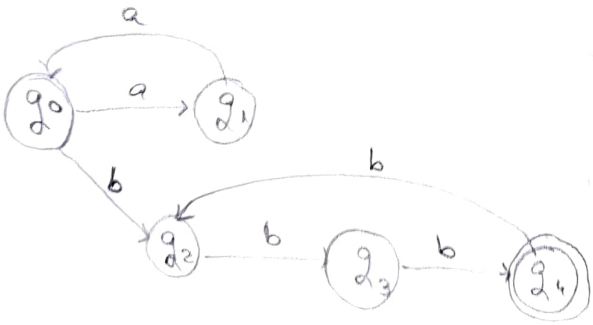


L_3



⑥ $L = \{a^{2m} b^{3k} \mid m \geq 0, k \geq 1\} = \{bbb, bbbbbb, \ldots, a^2b^3, a^4b^3, \ldots\}$

L



L_1 $m \geq 1$ & $k \geq 1$