1/ 9/20(수) 제15강 Finite State Automata - DFA

DFA $D=(Q,\Sigma,\delta,q_0,F)$ ... five tuples.

Q : a (finite) set of states(symbols) ... stat vacabulary

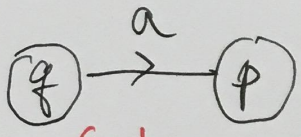
Σ : a set of input symbols ... input symbol vocabulary.

δ : a set of state transitim functim

$\delta: Q\times\Sigma \to Q$ $\quad q,p\in Q,\ a\in\Sigma\quad \delta(q,a)=p$.

$q_0\in Q$ ... an initial state

$F\subseteq Q$ .. a set of final states.



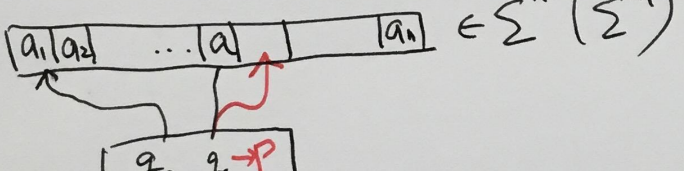
Goto

" Assignment statement Considered Harmful"

최광무 E. Dijkstra

↓

functional P.L.



$\hat\delta: Q\times\Sigma^* \to Q$

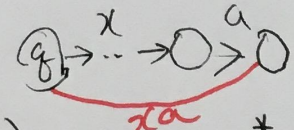
$\hat\delta(q,\varepsilon)=_B q$

$\hat\delta(q,xa)=_R \delta(\hat\delta(q,x),a)$ $\quad q\in Q,\ x\in\Sigma^*,\ a\in\Sigma$

$\hat\delta(q,\varepsilon)$: $\varepsilon\in\Sigma^*$

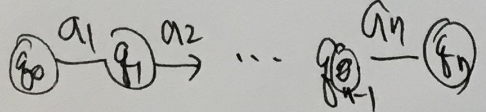
$\hat\delta(q,xa)$: $xa\in\Sigma^+$

$\{\varepsilon\}\cap\Sigma^+=\emptyset$



$\delta(\hat\delta(q,x),a)$: $\hat\delta(q,x)\in Q$, $a\in\Sigma$

Ex $a_1a_2\cdots a_n\in\Sigma^n(\Sigma^*)$



$q_0q_1\cdots q_n\in Q^{n+1}(Q^*)$

star ML, LISP

$\Sigma^* = \bigcup_{i\in\mathbb{N}_0}\Sigma^i$

$\Sigma^+ = \bigcup_{i\in\mathbb{N}_1}\Sigma^i$ $\quad \Sigma^0=\{\varepsilon\}$

dagger

$\Sigma^*=\Sigma^+\cup\{\varepsilon\}$

$\Sigma^*-\{\varepsilon\}=\Sigma^+$

$\varepsilon\in\Sigma^*,\ a\notin\Sigma^+$

How about $L\subseteq\Sigma^*$

$\varepsilon\in L^*$ $\quad \varepsilon\in L^+$