

3/25 (Thu) R.E & FA

Symbol (문자) & string (문자열) over V (vocabulary, ^(alphabet))

$\forall a \in V, |a|=1$. If $a, b \in V, a \neq b$ ~~$a \neq b$~~ $\rightarrow (V^*, \epsilon)$

$V^* \stackrel{\text{def}}{=} V^0 \cup V^1 \cup V^2 \cup \dots$

free monoid.

Example $V = \{0, 1\}$

$V^* = \{\epsilon\} \cup \{0, 1\} \cup \{00, 01, 10, 11\} \cup \{000, 001, 010, \dots, 111\} \cup \dots$

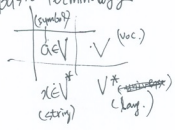
$\forall x \in V^*$ is a string over $\{0, 1\}$

$0 \neq 00$ but
 $\text{value}(0) = \text{value}(00)$

RE is a string over $V \cup \{\epsilon, \phi, \cup, \cdot, *, \langle, \rangle\}$

$0 \cup \epsilon \neq 0 \cup \epsilon$ - is not R.E.
 $|0 \cup \epsilon| = 3 \quad |0 \cup \epsilon| = |0 \cup \epsilon| = 2$

Basic Terminology



$\epsilon \notin V!!!$ For any $V, V^0 = \{\epsilon, \phi\}$

$\forall x \in V^*: x\epsilon = \epsilon x = x$ ϵ is an identity for the concatenation (\cdot)

$\forall L \subseteq V^*$
 $L \cup \phi = \phi \cup L = L$
 ϕ is a id. on V

$\text{sem}(a) \neq \text{sem}(\phi)$

$\text{sem}(\{a\}) \neq \text{sem}(\phi)$
 $\{a\} \neq \{ \}$

- language
1. syntax
 2. semantics
 3. pragmatics

Project # 1 over V

RE를 이용하여 minimum state DFA를 generate 하는 프로그램은 쓰시오.

lex와 yacc 등은 ~~유사~~ 유사 제품들

그러나 LL parsing은 안됨

반드시 LR (혹은 bottom up) parsing

RE $\xrightarrow[\text{yacc}]{\text{lex}}$ AST \rightarrow E-NFA \rightarrow DFA \rightarrow mDFA

Due 4/28 (밤 12시 까지), 4/29 (나) 강의 시간에 5분 x 16회 = 80분
반드시