

컴파일러개론 2015. quiz#1 (10/7)

다음 문법에 대해

- FIRST를 구하여 지금 시험시간에 제출하고
- FOLLOW를 구하여, 반드시 손으로 풀어서, 10/8(목) 17:59:59까지 공5502호로 제출하시오.
(FIRST에 대한 답은 금일 1시에 e-learn 사이트에 공지되니 참고할 것)

$S \rightarrow \epsilon$	$X \rightarrow \{ S \}$
$S \rightarrow XS$	$X \rightarrow \text{word}$
$B \rightarrow \backslash \text{begin} \{ \text{word} \}$	$X \rightarrow \text{begin}$
$E \rightarrow \backslash \text{end} \{ \text{word} \}$	$X \rightarrow \text{end}$
$X \rightarrow B S E$	$X \rightarrow \backslash \text{word}$

단, S, B, E, X 가 non terminal이고,

\backslash , begin, word, end, {, }가 token (terminal symbol) 이다.

$$\text{First}(S) = \{\varepsilon\}$$

$$\text{First}(B) = \{\backslash\}$$

$$\text{First}(E) = \{\backslash\}$$

$$\text{First}(X) = \{\{, \text{word}, \text{begin}, \text{end}, \backslash\}$$

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식

$$\text{First}(S) = \text{First}(S) \cup \text{First}(X) \oplus \text{First}(S)$$

$$\text{First}(X) = \text{First}(X) \cup \text{First}(B) \oplus \text{First}(S) \oplus \text{First}(E)$$

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(1)

$$\text{First}(S) = \{\varepsilon\} \cup \{\{, \text{word}, \text{begin}, \text{end}, \backslash\} = \{\varepsilon, \{, \text{word}, \text{begin}, \text{end}, \backslash\}$$

$$\text{First}(X) = \{\{, \text{word}, \text{begin}, \text{end}, \backslash\} \cup \{\backslash\} \oplus \text{First}(S) \oplus \text{First}(E) = \{\{, \text{word}, \text{begin}, \text{end}, \backslash\}$$

(2)

$$\text{First}(S) = \{\varepsilon, \{, \text{word}, \text{begin}, \text{end}, \backslash\} \cup \{\{, \text{word}, \text{begin}, \text{end}, \backslash\} = \{\varepsilon, \{, \text{word}, \text{begin}, \text{end}, \backslash\}$$

$$\text{First}(X) = \{\{, \text{word}, \text{begin}, \text{end}, \backslash\} \cup \{\backslash\} \oplus \text{First}(S) \oplus \text{First}(E) = \{\{, \text{word}, \text{begin}, \text{end}, \backslash\} // (1)과 동일$$

따라서

$$\text{First}(S) = \{\varepsilon, \{, \text{word}, \text{begin}, \text{end}, \backslash\}$$

$$\text{First}(B) = \{\backslash\}$$

$$\text{First}(E) = \{\backslash\}$$

$$\text{First}(X) = \{\{, \text{word}, \text{begin}, \text{end}, \backslash\}$$