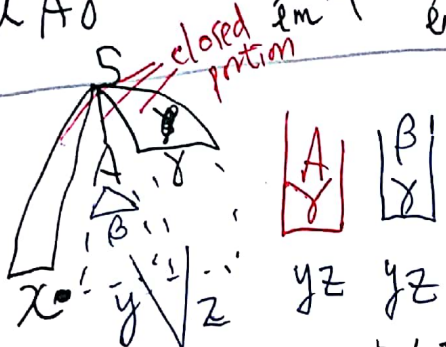
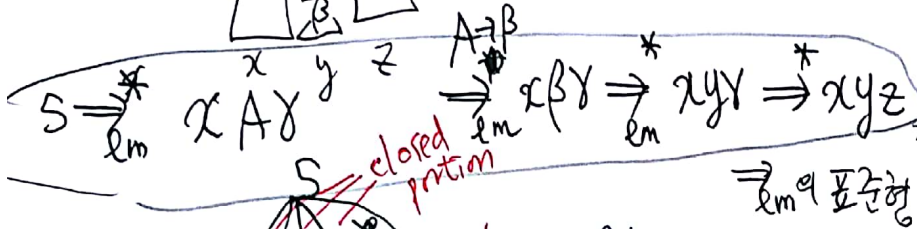


7/1/15 75 A/26 (*) SLL(k) Parsing

$S \xRightarrow{*} \alpha A \gamma \xRightarrow{A \rightarrow \beta} \alpha \beta \gamma \xRightarrow{*} xyz$ where $\alpha, \gamma \in (N \cup \Sigma)^*$, $xyz \in \Sigma^*$, $A \rightarrow \beta \in B$



Strong LL(k) parsing

Deterministic version of Left Parser

Left Parser

$A \mid \overset{k:xyz}{\alpha} \rightarrow \beta \mid \overset{k:xyz}{\gamma}$

$a \mid a \rightarrow \mid$

$A \rightarrow \beta \in P$ where $\alpha = k:xyz$

$a \in \Sigma$

terminal symbols in guessing action!

$E \rightarrow E + T \mid T * F \mid a \mid (E)$
 $T \rightarrow T * F \mid a \mid (E)$
 $F \rightarrow a \mid (E)$

Fact: G is not LL(k) for any $k \in \mathbb{N}$, if G is left recursive!

Def: G is left recursive nonterminal $A \in N$ if $A \Rightarrow \alpha A \beta$ and $\alpha \Rightarrow^* \epsilon$.

Ex: $A \rightarrow A \alpha \mid \beta$ A is left recursive

$(A \Rightarrow^* A \alpha^* \Rightarrow \beta \alpha^*)$ $First_k(A \alpha) \supseteq First_k(A)$

$\supseteq First_k(\beta)$

$\therefore (First_k(A \alpha) \cap First_k(\beta)) \supseteq First_k(\beta) \neq \emptyset$

$A \rightarrow \beta A'$
 $A' \rightarrow \alpha A' \mid \epsilon$

Left recursion / right recursion

1) Exp. 이 대한 cfg 이 a t a t a 이 대한 parse tree (with stack, remained input string) 의 10번의 변화 과정은 모두 쓰시오

2) Due to / (k) ...

3) ...

4) ...

5) ...

6) ...

7) ...

8) ...

9) ...