11/24 제22강 SLL(k) & LR(k) Parsers & Turing Machine.

SLL(k) Parser for $G=(N, T, P, S)$

i) $(x, A) \to (x, \alpha)$ $\forall A \to \alpha \in P$ guess A as α

where $x \in First_k(\alpha) \oplus_k Follow(A)$

ii) $(a, a) \to (\varepsilon, \varepsilon)$ $\forall a \in T$.

LR(0) Parser.

C_0: Collection of set of LR(0) items

(= LR(0) state)

i) shift a $a \in T$

$(a, [\alpha^R \delta^R]) \to (\varepsilon, [a\alpha^R \delta^R])$

where $[A \to \alpha . a\beta] \in [\alpha^R \delta^R]$

$[A \to \alpha a . \beta] \in [a\alpha^R \delta^R]$

ii) reduce α to A $A \to \alpha \in P$ $\alpha = X_1 X_2 \cdots X_n$

$(\varepsilon, [X_n X_{n-1} \cdots X_1 \delta^R][X_{n-1} \cdots X_1 \delta^R] \cdots [X_1 \delta^R][\delta^R])$

$\to (\varepsilon, [A\delta^R][\delta^R])$.

in Right parser

i) $(a, \varepsilon) \to (\varepsilon, a)$ shift $a \in T$

ii) $(\varepsilon, \alpha) \to (\varepsilon, A)$ reduce α to A $A \to \alpha \in P$

SLL(k) Parser

$(x, [X_n \cdots X_1 \delta^R] \cdots [X_1 \delta^R][\delta^R]) \to (x, [A\delta^R][\delta^R])$

$x \in Follow_k(A)$.

LR(k) parser : C_k

Turing-Church's Thesis

Turing's thesis: TM is computable

Church's thesis. μ-recursive partial function is computable

Turing-Church's Thesis

proof: Turing's Thesis $\equiv$ Church's Thesis!