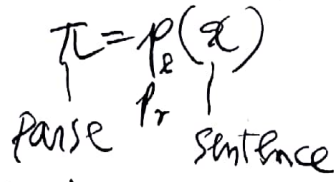
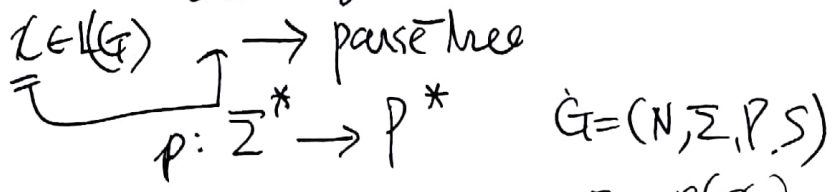


4/5 (1/7) 11/17 Chap 5 Parsing.

parser  $\leftarrow$  Test if ~~the~~ string is the sentence  $x \in L(G)$



Top-Down  $\rightarrow$  tree  $x$   
 Left to Right Scan  
 with Leftmost Derivation

parser  $\rightarrow$  Guess - verify parser  $\xrightarrow{\text{Deterministic}}$   
 (produce - shift)  
 shift - reduce parser  $\xrightarrow{\text{"}}$

LL(k) parser - chap 5

LR(k) parser - Chap 6

Left to Right Scan  
 with Rightmost Derivation  
 in Reversed Order!

Bottom-Up  $\rightarrow$  tree  $x$

5.1 Pushdown Automata  $(Q \cup \Sigma \cup \{ \$, \# \}, P)$

$\$Ys|w\$ \Rightarrow \$Y/\$ \quad Y \in \Sigma$

endmarker delimiter

$\xi \in P \quad \xi = (\alpha | xy \rightarrow \beta | y)$   
 $\alpha$ : remained stack string  
 $x$ : input string  
 $y$ : string

$\alpha, \beta \in Q^*$   
 $x, y \in \Sigma^*$   
 Top  
 Bottom

Guess-verify Parser

guess  $A$  as  $\alpha$  ( $A \rightarrow \alpha \in P$ )  
 verify  $a$  ( $a \in \Sigma$ )

$A | \rightarrow \alpha | \in P$   
 $a | a \rightarrow | \in P$

$A \xrightarrow{R} \alpha$  and  $\frac{R}{L} (A \rightarrow \alpha \in P)$   
 $a \xrightarrow{L} \frac{L}{R} (a \in \Sigma)$