

SLR parser is a type of LR parser with small parse table and a relatively small parser generator ~~of~~ algo. SLR generators accept fewer grammars than do LALR generators like yacc and Bison.

Construction of SLR parsing table

1] Construct $C = \{l_0, l_1, \dots, l_n\}$, the collections of sets of LR(0) items for 'C'.

2] If state i is constructed from l_i , the parsing action for state i are determined as follows

→ If $[A \rightarrow ? \cdot a ?]$ is in l_i and $\text{GOTO}(l_i, a) = l_j$; then set $\text{ACTION}[i, a]$ to "shift j ". Here a must be ~~terminated~~

→ If $[A \rightarrow ?]$ is in l_j , then set $\text{ACTION}[i, a]$ to 'reduce $A \rightarrow ?$ ' for all a in $\text{FOLLOW}(A)$; here A may not be S .

→ If $[S \rightarrow S]$ is in l_i , then set action $[i, \$]$ to 'accept'.
If any conflicting actions are generated by the above rules we say that grammar is not SLR.

3] The goto-rule transition for state i are constructed for all non-terminal A using the rules:
if $\text{GOTO}(l_i, A) = l_j$ then $\text{GOTO}[i, A] = j$

4] All entries not defined by rules 2 & 3 are made error