

Grammatik (läsbar)

$\text{START} \rightarrow \text{FUNCDEF START'}$

$\text{START'} \rightarrow \text{START} \mid \varepsilon$

$\text{FUNCDEF} \rightarrow \text{TYPE id (PARS) BLOCK}$

$\text{TYPE} \rightarrow \text{int} \mid \text{void}$

$\text{PARS} \rightarrow \text{int id PARS'} \mid \text{void} \mid \varepsilon$

$\text{PARS'} \rightarrow , \text{int id PARS'} \mid \varepsilon$

$\text{BLOCK} \rightarrow \{ \text{BLOCK'} \}$

$\text{BLOCK'} \rightarrow \text{STMT BLOCK'} \mid \varepsilon$

$\text{STMT} \rightarrow \text{IDENT ;} \mid \text{IFSTMT ;} \mid \text{WHILESTMT ;} \mid \text{read (id) ;} \mid \text{write EXPR ;} \mid \text{VARDEC ;} \mid \text{return EXPR ;}$

$\text{IDENT} \rightarrow \text{id IDENT'}$

$\text{IDENT'} \rightarrow \text{ASSIGN} \mid \text{FUNCCALL}$

$\text{ASSIGN} \rightarrow = \text{EXPR}$

$\text{FUNCCALL} \rightarrow (\text{ARGS})$

$\text{IFSTMT} \rightarrow \text{if (EXPR) BLOCK IFSTMT'}$

$\text{IFSTMT'} \rightarrow \text{else IFSTMT''} \mid \varepsilon$

$\text{IFSTMT''} \rightarrow \text{BLOCK} \mid \text{IFSTMT}$

$\text{WHILESTMT} \rightarrow \text{while (EXPR) BLOCK}$

$\text{VARDEC} \rightarrow \text{int id VARDEC'}$

$\text{VARDEC'} \rightarrow = \text{EXPR} \mid , \text{id VARDEC'} \mid \varepsilon$

$\text{ARGS} \rightarrow \text{EXPR ARGS'} \mid \varepsilon$

$\text{ARGS'} \rightarrow , \text{EXPR ARGS'} \mid \varepsilon$

$\text{EXPR} \rightarrow \text{SUM EXPR'}$

$\text{EXPR'} \rightarrow = \text{EXPR} \mid < \text{EXPR} \mid \leq \text{EXPR} \mid > \text{EXPR} \mid \geq \text{EXPR} \mid \varepsilon$

$\text{SUM} \rightarrow \text{TERM SUM'}$

$\text{SUM'} \rightarrow + \text{SUM} \mid - \text{SUM} \mid \varepsilon$

$\text{TERM} \rightarrow \text{num TERM'} \mid \text{id TERM''} \mid (\text{EXPR}) \mid ! \text{TERM}$

$\text{TERM'} \rightarrow * \text{TERM} \mid / \text{TERM} \mid \varepsilon$

$\text{TERM''} \rightarrow \text{FUNCCALL} \mid \text{TERM'}$

Grammatik (implementierbar)

$START \rightarrow \text{int id (PARS) BLOCK START' } \mid \text{void id (PARS) BLOCK START'}$
 $START' \rightarrow \varepsilon \mid START$

$PARS \rightarrow \text{int id PARS' } \mid \text{void}$
 $PARS' \rightarrow , \text{int id PARS'' } \mid \varepsilon$

$BLOCK \rightarrow \{ BLOCK'$
 $BLOCK' \rightarrow \text{STMT BLOCK' } \mid \}$

$STMT \rightarrow \text{id IDENT ; } \mid \text{if (EXPR) BLOCK IFSTMT } \mid \text{while (EXPR) BLOCK } \mid \text{read id ; } \mid \text{write}$
 $\text{EXPR ; } \mid \text{int id VARDEC ; } \mid \text{return EXPR ;}$

$IDENT \rightarrow = \text{EXPR } \mid (\text{ARGS})$

$IFSTMT \rightarrow \text{else IFSTMT' } \mid \varepsilon$
 $IFSTMT' \rightarrow \text{if (EXPR) BLOCK IFSTMT } \mid \text{BLOCK}$

$VARDEC \rightarrow = \text{EXPR VARDEC } \mid , \text{id VARDEC } \mid \varepsilon$

$ARGS \rightarrow \text{EXPR ARGS'}$
 $ARGS' \rightarrow , \text{EXPR ARGS' } \mid \varepsilon$

$\text{EXPR} \rightarrow \text{SUM EXPR'}$
 $\text{EXPR'} \rightarrow = \text{EXPR } \mid < \text{EXPR } \mid \leq \text{EXPR } \mid > \text{EXPR } \mid \geq \text{EXPR } \mid \varepsilon$

$\text{SUM} \rightarrow \text{TERM SUM'}$
 $\text{SUM'} \rightarrow + \text{SUM } \mid - \text{SUM } \mid \varepsilon$

$\text{TERM} \rightarrow \text{num TERM' } \mid \text{id TERM'' } \mid (\text{EXPR}) \mid !\text{TERM}$
 $\text{TERM'} \rightarrow * \text{TERM } \mid / \text{TERM } \mid \varepsilon$
 $\text{TERM''} \rightarrow (\text{ARGS}) \mid \text{TERM'}$