

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)

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

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

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

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

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

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

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

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

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

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

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