

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)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$\text{TERM}'' \rightarrow (\text{ARGS}) \mid \text{TERM}'$