

Gramática Livre de Contexto

$S = \text{DeclaId } S$
 $S = \text{FunDecla } S$
 $S = \text{ProcDecla } S$
 $S = \text{epsilon}$

$\text{DeclaId} = \text{Type LId } ';'$
 $\text{DeclaId} = 'const' \text{ Type LId } ';'$

$\text{Type} = 'int' \mid 'float' \mid 'bool' \mid 'char' \mid 'string'$

$\text{LId} = \text{LId } ',' 'id' '=' \text{Ec}$
 $\text{LId} = \text{LId } ',' 'id'$
 $\text{Lid} = \text{Lid } ',' \text{Id}$
 $\text{LId} = 'id' '=' \text{Ec}$
 $\text{LId} = \text{Id}$
 $\text{LId} = 'id'$

$\text{Id} = 'id' '[' \text{Ea } ']'$
 $\text{Id} = 'id'$

$\text{Param} = \text{Param } ',' \text{Ec}$
 $\text{Param} = \text{Ec}$
 $\text{Param} = \text{epsilon}$

$\text{FunDecla} = 'fun' \text{ Type FunName } '(' \text{ ParamDecla } ')' \text{ Body}$
 $\text{FunName} = 'id' \mid 'main'$

$\text{ParamDecla} = \text{ParamDecla } ',' \text{Type Id}$
 $\text{ParamDecla} = \text{Type Id}$
 $\text{ParamDecla} = \text{Type } 'id'$
 $\text{ParamDecla} = \text{epsilon}$

$\text{IdOrFun} = \text{Id}$
 $\text{IdOrFun} = 'id' '(' \text{Param } ')'$
 $\text{IdOrFun} = 'id'$

ProcDecla = 'proc' FunName '(' ParamDecla ')' Body

Body = '{' BodyPart '}'

BodyPart = DeclaId BodyPart

BodyPart = Command BodyPart

BodyPart = 'id' '(' Param ')' ';' BodyPart

BodyPart = 'return' Return ';' BodyPart

BodyPart = IdAtr ';' BodyPart

BodyPart = epsilon

IdAtr = IdAtr ',' '=' Ec

IdAtr = IdAtr ',' 'id' '[' Ea ']' '=' Ec

IdAtr = 'id' '=' Ec

IdAtr = 'id' '[' Ea ']' '=' Ec

Return = Ec // quando for funcao

Return = epsilon// quando for procedimento

Command = 'print' '(' 'CT_STRING' PrintParam ')' ';' Body

Command = 'println' '(' 'CT_STRING' PrintParam ')' ';' Body

Command = 'read' '(' ReadLParam ')' ';' Body

Command = 'while' '(' Eb ')' Body

Command = 'for' '(' 'RW_INT' 'id' ':' Ea ',' Ea ',' Ea ')' Body

Command = 'if' '(' Eb ')' Body

Command = 'if' '(' Eb ')' Body 'else' Body

PrintParam = ',' Eb PrintParam

PrintParam = epsilon

ReadParam = ReadParam ',' Id

ReadParam = Id

Expressões:

Ec = Ec 'OP_CONC' Eb

Ec = Eb

$E_b = E_b \text{ 'OP_OR' } T_b$

$E_b = T_b$

$T_b = T_b \text{ 'OP_AND' } F_b$

$T_b = F_b$

$F_b = F_b \text{ OpRel } R_a$

$F_b = \text{'OP_NOT' } F_b$

$F_b = R_a$

$R_a = R_a \text{ OpRel } E_a$

$R_a = E_a$

$E_a = E_a \text{ 'OP_AD' } T_a$

$E_a = E_a \text{ 'OP_SUB' } T_a$

$E_a = T_a$

$T_a = T_a \text{ 'OP_MULT' } P_a$

$T_a = T_a \text{ 'OP_DIV' } P_a$

$T_a = P_a$

$P_a = P_a \text{ 'OP_MOD' } F_a$

$P_a = F_a$

$F_a = \text{'(' } E_c \text{ ')}$

$F_a = \text{'OP_SUB' } F_a$

$F_a = \text{IdOrFun} \mid \text{'CT_INT'} \mid \text{'CT_FLOAT'} \mid \text{'CT_STRING'} \mid \text{'CT_CHAR'}$

$\text{OpRel} = \text{'OP_GREATER'} \mid \text{'OP_LESS'} \mid \text{'OP_GREATEREQ'} \mid \text{'OP_LESSEQ'} \mid$
 $\text{'OP_REL'} \mid \text{'OP_RELNOT'}$