Gramática LL(1)

S = DeclaID S
S = FunDecla S
S = ProcDecla S
S = ε

DeclaID = Type LId ‘;’
DeclaID = ‘const’ Type LId ‘;’

Type = ‘int’ | ‘float’ | ‘bool’ | ‘char’ | ‘string’

LId = Id AtriOpt LIdr
LIdr = ‘,’ AtriOpt LIdr
LIdr = ε

Id = ‘ID’ ArrayOpt

ArrayOpt = ‘[‘ Ea ‘]’
ArrayOpt = ε

AtriOpt = ‘=’ Ec
AtriOpt = ε

FunDecla = ‘fun’ Type FunName ‘(‘ ParamDecla ‘)’ Body
FunName = ‘id’ | ‘main’

Param = Ec Paramr
Param = ε
Paramr = ‘,’ Ec Paramr
Paramr = ε

ParamDecla = Type 'id' ArrayOpt ParamDeclar
ParamDecla = &
ParamDeclar = ‘,’ Type ‘id’ ArrayOpt ParamDeclar
ParamDeclar = &

ProcDecla = ‘proc’ FunName ‘(‘ ParamDecla ‘)’ Body

Body = ‘{‘ BodyPart ‘}’

BodyPart = DeclaId BodyPart
BodyPart = Command BodyPart
BodyPart = BodyPartr ‘;’ BodyPart
BodyPart = ‘return’ Return ‘;’
BodyPart = ε
BodyPartr = ‘id’ ParamAtr
ParamAtr = ‘(‘ Param ‘)’
ParamAtr = ‘[‘ Ea ‘]’ ‘=’ Ec Atr
ParamAtr = ‘=’ Ec Atr
Atr = ‘,’ Id ‘=’ Ec Atr
Atr = ε

Return = Ec// quando for funcao
Return = ε // quando for procedimento

Command = ‘print’ ‘(‘’ CT_STRING’ PrintParam ‘)’ ‘;’
Command = ‘println’ ‘(‘’ CT_STRING’ PrintParam ‘)’ ‘;’
Command = ‘read’ ‘(‘ ReadParam ‘)’ ‘;’
Command = ‘while’ ‘(‘ Eb ‘)’ Body
Command = ‘for’ ForParam
Command = ‘if’ ‘(‘ Eb ‘)’ Body Ifr

PrintParam = ‘,’ Ec PrintParam
PrintParam = ε

ReadParam = ‘id’ ArrayOpt ReadParamr
ReadParamr = ‘,’ ‘id’ ArrayOpt ReadParamr
ReadParamr = ε

ForParams = ‘(‘ ‘RW_INT’ ‘ID’ ‘:’ Ea ‘,’ Ea ForStep ‘)’ Body
ForStep = ‘,’ Ea
ForStep = ε

Ifr = ‘else’ Body
Ifr = ε

Ec = Eb Ecr
Ecr = ‘OP_CONC’ Eb Ecr
Ecr = ε
Eb = Tb Ebr
Ebr = ‘OP_OR’ Tb Ebr
Ebr = ε
Tb = Fb Tbr
Tbr = ‘OP_AND’ Fb Tbr
Tbr = ε
Fb = ‘OP_NOT’ Fb
Fb = Ra Fbr
Fbr = ‘OP_GREATER’ Ra Fbr
Fbr = ‘OP_LESS’ Ra Fbr
Fbr = ‘OP_GRTEREQ’ Ra Fbr
Fbr = ‘OP_LESSEQ’ Ra Fbr
Fbr = ε
Ra = Ea Rar
Rar = ‘OP_REAL’ Ea Rar
Rar = ‘OP_REALNOT’ Ea Rar
Rar = ε
Ea = Ta Ear
Ear = ‘OP_AD’ Ta Ear
Ear = ‘OP_SUB’ Ta Ear
Ear = ε
Ta = Pa Tar
Tar = ‘OP_MULT’ Pa Tar
Tar = ‘OP_DIV’ Pa Tar
Tar = ε
Pa = Fa Par
Par = ‘OP_MOD’ Fa Par
Par = ε
Fa = ‘(‘ Ec ‘)’
Fa = ‘OP_SUB’ Fa

Fa = IdOrFun | ‘CT_INT’ | ‘CT_FLOAT’ | ‘CT_BOOL’ | ‘CT_STRING’ | ‘CT_CHAR’
IdOrFun = 'id' IdOrFunr
IdOrFunr = '(' Param ')' IdOrFunr = '[' Ea ']'