

Gramática da Linguagem GF

PROGRAM = FUNCTIONS MAINFUNC

FUNCTIONS = 'funDecl' 'id' PARAMS RETURNTYPE ESCOPE

FUNCTIONS

FUNCTIONS = ϵ

MAINFUNC = 'main' 'paramBeg' 'paramEnd' TYPE ESCOPE

PARAMS = 'paramBeg' PARAMSFAT

PARAMSFAT = 'paramEnd'

PARAMSFAT = LISTPARAMS paramEnd

LISTPARAMS = TYPE NAME LISTPARAMSFAT

LISTPARAMSFAT = 'commaSep' LISTPARAMS

LISTPARAMSFAT = ϵ

TYPE = 'typeInt'

TYPE = 'typeFloat'

TYPE = 'typeBool'

TYPE = 'typeChar'

TYPE = 'typeString'

TYPE = 'typeEmpty'

TYPE = 'typeNull'

RETURNTYPE = TYPE RETURNTYPEFAT

RETURNTYPEFAT = 'arrayBeg' 'arrayEnd'

RETURNTYPEFAT = ϵ

NAME = 'id' NAMEFAT

NAMEFAT = 'arrayBeg' EXPR 'arrayEnd'

NAMEFAT = ϵ

ESCOPE = 'scopeBeg' CMDS 'scopeEnd'

CMDS = CMD CMDS

CMDS = ϵ

CMD = DECL 'endLine'

CMD = id CMDFAT 'endLine'

CMD = PRINT 'endLine'

CMD = READ 'endLine'

CMD = IFELSE

CMD = WHILE

CMD = REPEAT

CMD = RETURN 'endLine'

CMDFAT = 'arrayBeg' EXPR 'arrayEnd' ATTR

CMDFAT = ATTR

CMDFAT = FUNCCALL

CMDFAT = ϵ

DECL = 'varDecl' TYPE NAME

ATTR = 'opAssign' VALUE

VALUE = ARRAY

VALUE = EXPR

ARRAY = 'arrayBeg' ARRAYFAT

ARRAYFAT = ELEMENTS 'arrayEnd'

ELEMENTS = EXPR ELEMENTSFAT

ELEMENTSFAT = 'commaSep' ELEMENTS

ELEMENTSFAT = ϵ

CONSTANT = 'constNumInt'

CONSTANT = 'constNumFloat'

CONSTANT = 'constBool'

CONSTANT = 'constChar'

CONSTANT = 'constString'

FUNCCALL = 'paramBeg' LISTPARAMSCALL 'paramEnd'

LISTPARAMSCALL = PARAMITEM LISTPARAMSCALLFAT
LISTPARAMSCALLFAT = 'commaSep' LISTPARAMSCALL
LISTPARAMSCALLFAT = ϵ

PARAMITEM = CONSTANT
PARAMITEM = NAME PARAMITEMFAT
PARAMITEMFAT = FUNCCALL
PARAMITEMFAT = ϵ

PRINT = 'cmdPrint' 'paramBeg' MESSAGE 'paramEnd'

MESSAGE = 'constString' MESSAGEFAT
MESSAGE = NAME MESSAGEFAT
MESSAGEFAT = 'opConcat' MESSAGE
MESSAGEFAT = ϵ

READ = 'cmdRead' 'paramBeg' NAME 'paramEnd'

IFELSE = IF ELIF ELSE

IF = 'cmdIf' 'paramBeg' EXPR 'paramEnd' ESCOPE

ELIF = 'cmdElif' 'paramBeg' EXPR 'paramEnd' ESCOPE ELIF
ELIF = ϵ

ELSE = 'cmdElse' ESCOPE
ELSE = ϵ

WHILE = 'cmdWhile' 'paramBeg' EXPR 'paramEnd' ESCOPE

REPEAT = 'cmdRepeat' REPEATPARAM 'cmdIn' 'paramBeg'
REPEATPARAM 'commaSep' REPEATPARAM 'commaSep' REPEATPARAM
'paramEnd' ESCOPE

REPEATPARAM = 'id'
REPEATPARAM = 'constNumInt'

RETURN = 'cmdReturn' RETURNFAT

RETURNFAT = CONSTANT

RETURNFAT = NAME

EXPR = EXPRASSIGN EXPR

EXPR = ϵ

EXPRASSIGN = EXPRLOGIC EXPRASSIGNFAT

EXPRASSIGN = 'opAssign' EXPRASSIGN

EXPRASSIGNFAT = 'arrayBeg' EXPR 'arrayEnd' EXPRRELFAT

EXPRASSIGNFAT = ϵ

EXPRLOGIC = EXPREQUALS EXPRLOGICFAT

EXPRLOGICFAT = 'opAnd' EXPREQUALS

EXPRLOGICFAT = 'opOr' EXPREQUALS

EXPRLOGICFAT = ϵ

EXPREQUALS = EXPRREL EXPREQUALSFAT

EXPREQUALSFAT = 'opEquals' EXPRREL

EXPREQUALSFAT = ϵ

EXPRREL = EXPRADD EXPRRELFAT

EXPRRELFAT = 'opRel' EXPRADD

EXPRRELFAT = ϵ

EXPRADD = EXPRAMULT EXPRADDFAT

EXPRADDFAT = 'opAditiv' EXPRAMULT

EXPRADDFAT = ϵ

EXPRAMULT = EXPRUN EXPRAMULTFAT

EXPRAMULTFAT = 'opMult' EXPRUN

EXPRAMULTFAT = ϵ

EXPRUN = 'opUnaryNeg' EXPRUN

EXPRUN = EXPRPARAM

EXPRPARAM = 'paramBeg' EXPRASSIGN 'paramEnd'

EXPRPARAM = EXPRVALUES

```
EXPRVALUES = 'id'  
EXPRVALUES = 'constNumInt'  
EXPRVALUES = 'constNumFloat'  
EXPRVALUES = 'constBool'  
EXPRVALUES = 'constChar'  
EXPRVALUES = 'constString'
```