Gramática LM - Sem Restrições

MODULE = FUNCTIONS MAIN

FUNCTIONS = 'ID' '(' ')' RETURNTYPE ESCOPE ';' FUNCTIONS
           | 'ID' '(' LISTPARAMS ')' RETURNTYPE ESCOPE ';' FUNCTIONS
           | ε

MAIN = 'main' '(' ')' 'void' ESCOPE ';'

RETURNTYPE = 'void'
           | TYPE '[' ']'
           | TYPE

ESCOPE = '{' COMMANDS '}'

LISTPARAMS = TYPE NAME ',' LISTPARAMS
           | TYPE NAME

TYPE = 'int'
      | 'bool'
      | 'char'
      | 'string'
      | 'float'

NAME = 'ID' '[' EA ']'
      | 'ID'

COMMANDS = CMD ';' COMMANDS
           | ε

CMD = DECLARATION
      | 'ID' ATTRIBUTION
      | 'ID' FUNCTIONCALL
      | PRINT
      | READ
      | IFELSE
      | WHEN
      | REPEATER
      | RETURN

DECLARATION = TYPE NAME

ATTRIBUTION = '[' EA ']' '=' VALUE

| '=' VALUE

VALUE = ARRAY
  | EA

ARRAY = '[' ELEMENTS ']'
  | '[' ']'

ELEMENTS = EB ',' ELEMENTS
  | EB

FUNCTIONCALL = '(' LISTPARAMSCALL ')'
  | '(' ')'

LISTPARAMSCALL = PARAMITEM ',' LISTPARAMSCALL
  | PARAMITEM

PARAMITEM = EB
  | NAME

PRINT = 'print' '(' MESSAGE PRINTEXT ')'

PRINTEXT = ',' NAME PRINTEXT
  | ε

MESSAGE = 'CTESTRING'
  | 'CTESTRING' '++' MESSAGE
  | NAME
  | NAME '++' MESSAGE

READ = 'read' '(' READEXT ')'

READEXT = NAME ',' READEXT
  | NAME

IFELSE = IF ELIF ELSE

IF = 'if' '(' EB ')' ESCOPE

ELIF = 'elif' '(' EB ')' ESCOPE ELIF
  | ε

ELSE = 'else' ESCOPE
  | ε

WHEN = 'when' '(' EB ')' ESCOPE

REPEATER = 'repeater' '(' 'ID' ATTRIBUTION ';' PARAMITEM ';' PARAMITEM ')' ESCOPE

RETURN = 'return' EB
        | 'return' NAME

EB = EB 'or' TB
        | TB

TB = TB 'and' FB
        | FB

FB = 'not' FB
        | EA 'ORC' EA
        | EA 'ORE' EA
        | EA

EA = EA 'OPA' TA
        | TA

TA = TA 'OPM' PA
        | PA

PA = FA 'OPE' PA
        | FA

FA = 'OPU' FA
        | '(' EB ')'
        | CONSTANT
        | ID

ID = 'ID'
    | 'ID' '[' EA ']'
    | 'ID' FUNCTIONCALL

CONSTANT = 'CTEINT'
            | 'CTEFLOAT'
            | 'CTEBOOL'
            | 'CTECHAR'
            | 'CTESTRING'