

Program -> Func

Func -> Function Func | empty

Function -> "function" "identifier" "," "beginparams" Dec "endparams"  
"beginlocals" Dec "endlocals" "beginbody" Statement "endbody"

Dec -> Declaration "," Dec | empty

Declaration -> D1 | D2 | D3

D1 -> "identifier" Comma ":" "enum" "(" "identifier" Comma ")"

D2 -> "identifier" Comma ":" "array" "[" "number" "]" "of" "integer"

D3 -> "identifier" Comma ":" "integer"

Comma -> "," identifier Comma | empty

Statement -> A | B | C | D | E | F | G | H

A -> Var ":=" Expression

B -> "if" Bool-Exp "then" Statement "endif" | "if" Bool-Exp "then"

Statement "else" Statement "endif"

C -> "while" Bool-Expr "beginloop" Statement "endloop"

D -> "do" "beginloop" Statement "endloop" "while" Bool-Expr

E -> "read" Var E'

E' -> "," Var E' | Empty

F -> "write Var E'

G -> "continue"

H -> "return" Expression

Bool-Expr  $\rightarrow$  Relation-And-Expr OR  
OR  $\rightarrow$  "or" Relation-And-Expr OR | empty

Relation-And-Expr  $\rightarrow$  Relation-Expr AND  
AND  $\rightarrow$  "and" Relation-Expr AND | empty

Relation-Expr  $\rightarrow$  RExpr | "not" RExpr  
RExp  $\rightarrow$  E1 | E2 | E3 | E4  
E1  $\rightarrow$  Expression Comp Expression  
E2  $\rightarrow$  "true"  
E3  $\rightarrow$  "false"  
E4  $\rightarrow$  "(" Bool-Expr ")"

Comp  $\rightarrow$  "==" | "<>" | "<" | ">" | "<=" | ">="

Expression  $\rightarrow$  Multiplicative-Expr Expr  
Expr  $\rightarrow$  "+" Multiplicative-Expr Expr | "-" Multiplicative-Expr Expr |  
empty

Multiplicative-Expr  $\rightarrow$  Term MExpr  
MExpr  $\rightarrow$  "\*" Term MExpr | "/" Term MExpr | "%" Term MExpr |  
empty

Term  $\rightarrow$  T1 | T2

T1  $\rightarrow$  “-” T1\_1 | T1\_1

T1\_1  $\rightarrow$  Var | “number” | “(” Expression “)”

T2  $\rightarrow$  “identifier” “(” T2\_1 “)” | “identifier” “(” “)”

T2\_1  $\rightarrow$  Expression “,” T2\_1 | Expression

Var  $\rightarrow$  “identifier” | “identifier” “[” Expression “]”