

Grammar

Program:

Program -> Functions
| ϵ

Functions -> Functions Function
| Function

Function:

Function -> **FUNCTION Identifier SEMI BEGINPARAMS** Declarations
ENDPARAMS BEGINLOCALS Declarations **ENDLOCALS BEGINBODY** Statements
ENDBODY

Declarations -> Declarations Declaration **SEMI**
| Declaration **SEMI**

Declaration:

Declaration -> IdentifierList : **INTEGER**
| IdentifierList : **ARRAY LBRACKET NUMBER RBRACKET OF**
INTEGER

IdentifierList -> **Identifier**
| IdentifierList , **Identifier**

Statement:

Statement -> Var := Expression
| **IF** BoolExpr **THEN** Statements **ENDIF**
| **IF** BoolExpr **THEN** Statements **ELSE** Statements **ENDIF**
| **WHILE** BoolExpr **THEN** Statements **ELSE** Statements **ENDIF**
| **DO BEGINLOOP** Statements **ENDLOOP WHILE** BoolExpr
| **READ** Vars
| **WRITE** Vars
| **CONTINUE**
| **RETURN** Expression

Statements -> Statement **SEMI**
| Statements Statement **SEMI**

Boolean Expression:

BoolExpr -> BoolExpr **OR** RelationAndExpr
| RelationAndExpr

RelationAndExpr -> RelationAndExpr **AND** RelationExpr
| RelationExpr

Relation Expression:

RelationExpr -> RelationComponent
| **NOT** RelationComponent

RelationComponent -> Expression Comp Expression
| **TRUE**
| **FALSE**
| **LPAREN** BoolExpr **RPAREN**

Comp:

Comp -> **EQUALTO**
| **NOTEQUAL**
| **LESSTHAN**
| **GREATERTHAN**
| **LESSTHANQ**
| **GREATERTHANQ**

Expression:

Expression -> Expression **PLUS** MultiplicativeExpr
| Expression **MINUS** MultiplicativeExpr
| MultiplicativeExpr

Expressions -> Expressions **COMMA** Expression
| Expression
| **ε**

Multiplicative Expression:

MultiplicativeExpr -> MultiplicativeExpr **MULT** Term
| MultiplicativeExpr -> **DIV** Term

| MultiplicativeExpr -> **MOD** Term
| Term

Term:

Term -> TermTop
| **MINUS** TermTop
| Identifier **LPAREN** Expression **RPAREN**

TermTop -> Var
| **NUMBER**
| **LPAREN** Expression **RPAREN**

Var:

Var -> **Identifier**
| **Identifier LBRACKET** Expression **RBRACKET**

Vars -> Var
| Var **COMMA** Vars