input -> epsilon | input program

program -> epsilon | functions

functions -> epsilon | function functions

Function -> FUNCTION ident SEMICOLON BEGIN_PARAMS END_PARAMS BEGIN_LOCALS END_LOCALS BEGIN_BODY statement SEMICOLON END_BODY
| FUNCTION ident SEMICOLON BEGIN_PARAMS declaration SEMICOLON END_PARAMS BEGIN_LOCALS END_LOCALS BEGIN_BODY statement SEMICOLON END_BODY
| FUNCTION ident SEMICOLON BEGIN_PARAMS declaration SEMICOLON END_PARAMS BEGIN_LOCALS END_LOCALS BEGIN_BODY statement SEMICOLON another-statement END_BODY
| FUNCTION ident SEMICOLON BEGIN_PARAMS declaration SEMICOLON another-declaration END_PARAMS BEGIN_LOCALS END_LOCALS BEGIN_BODY statement SEMICOLON another-statement END_BODY
| FUNCTION ident SEMICOLON BEGIN_PARAMS declaration SEMICOLON another-declaration END_PARAMS BEGIN_LOCALS END_LOCALS BEGIN_BODY statement SEMICOLON END_BODY
| FUNCTION ident SEMICOLON BEGIN_PARAMS END_PARAMS BEGIN_LOCALS declaration SEMICOLON END_LOCALS BEGIN_BODY statement SEMICOLON another-statement END_BODY
| FUNCTION ident SEMICOLON BEGIN_PARAMS END_PARAMS BEGIN_LOCALS declaration SEMICOLON END_LOCALS BEGIN_BODY statement SEMICOLON END_BODY | FUNCTION ident SEMICOLON BEGIN_PARAMS END_PARAMS BEGIN_LOCALS declaration SEMICOLON another-declaration END_LOCALS BEGIN_BODY statement SEMICOLON END_BODY
| FUNCTION ident SEMICOLON BEGIN_PARAMS END_PARAMS BEGIN_LOCALS declaration SEMICOLON another-declaration END_LOCALS BEGIN_BODY statement SEMICOLON another-statement END_BODY
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| FUNCTION ident SEMICOLON BEGIN_PARAMS declaration SEMICOLON END_PARAMS BEGIN_LOCALS declaration SEMICOLON another-declaration END_LOCALS BEGIN_BODY statement SEMICOLON END_BODY
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 | FUNCTION ident SEMICOLON BEGIN_PARAMS declaration SEMICOLON another-declaration END_PARAMS BEGIN_LOCALS declaration SEMICOLON another-declaration END_LOCALS BEGIN_BODY statement SEMICOLON another-statement END_BODY

declaration -> ident COLON INTEGER | ident another-ident COLON INTEGER | ident COLON ARRAY L_SQUARE_BRACKET NUMBER R_SQUARE_BRACKET OF INTEGER | ident COLON ENUM L_PAREN ident R_PAREN | ident COLON ENUM L_PAREN ident another-ident R_PAREN | ident another-ident COLON ARRAY L_SQUARE_BRACKET NUMBER R_SQUARE_BRACKET OF INTEGER | ident another-ident COLON ENUM L_PAREN ident R_PAREN | ident another-ident COLON ENUM L_PAREN ident another-ident R_PAREN

another-ident -> epsilon | COMMA ident another-ident

another-declaration -> epsilon | declaration SEMICOLON another-declaration

statement -> var ASSIGN expression | IF bool-expr THEN statement SEMICOLON ENDIF

| IF bool-expr THEN statement SEMICOLON another-if-statement ENDIF

| IF bool-expr THEN statement SEMICOLON ELSE statement SEMICOLON ENDIF

| IF bool-expr THEN statement SEMICOLON another-if-statement ELSE statement SEMICOLON ENDIF

| IF bool-expr THEN statement SEMICOLON another-if-statement ELSE statement SEMICOLON
another-else-statement ENDIF

| WHILE bool-expr BEGINLOOP statement SEMICOLON ENDLOOP

| WHILE bool-expr BEGINLOOP statement SEMICOLON another-statement ENDLOOP

| DO BEGINLOOP statement SEMICOLON ENDLOOP WHILE bool-expr

| DO BEGINLOOP statement SEMICOLON another-statement ENDLOOP WHILE bool-expr

| READ var

| READ var COMMA another-var

| WRITE var

| WRITE var COMMA another-var

| CONTINUE

| RETURN expression

another-var -> var | var COMMA another-var

another-statement -> epsilon | statement SEMICOLON another-statement

another-if-statement -> epsilon | statement SEMICOLON another-if-statement

another-else-statement -> epsilon | statement SEMICOLON another-else-statement

bool-expr -> relation-and-expr | relation-and-expr OR bool-expr

relation-and-expr -> relation-expr |relation-expr AND relation-and-expr

relation-expr -> expression comp expression | TRUE | FALSE | L_PAREN bool-expr R_PAREN | NOT
expression comp expression | NOT TRUE | NOT FALSE | NOT L_PAREN bool-expr R_PAREN

comp -> EQ |NEQ| LT | GT | LTE | GTE

term -> SUB var | SUB NUMBER | SUB L_PAREN expression R_PAREN | var | NUMBER | L_PAREN
expression R_PAREN | ident L_PAREN R_PAREN | ident L_PAREN expression R_PAREN | ident L_PAREN
expression another-expression R_PAREN

another-expression -> epsilon | COMMA expression another-expression

expression -> multipicative-expr | multipicative-expr ADD expression | multipicative-expr SUB expression

multipicative-expr -> term | term MULT multipicative-expr | term DIV multipicative-expr | term MOD multipicative-expr

var -> ident | ident L_SQUARE_BRACKET expression R_SQUARE_BRACKET

ident -> IDENT