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Grammars for Mini_L Language

program -> functions

functions -> ε | function functions

function -> FUNCTION IDENTIFIER SEMICOLON BEGIN_PARAMS declarations END_PARAMS BEGIN_LOCALS declarations END_LOCALS BEGIN_BODY statements END_BODY

declarations -> ε | declaration SEMICOLON declarations

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

identifiers -> IDENTIFIER | IDENTIFIER COMMA identifiers

statements -> statement SEMICOLON | statement SEMICOLON statements

statement -> ε | var ASSIGN expressions | IF bool_expr THEN statements ENDIF | IF bool_expr THEN statements ELSE statements ENDIF | WHILE bool_expr BEGINLOOP statements ENDLOOP | DO BEGINLOOP statements ENDLOOP WHILE bool_expr | READ vars | WRITE vars | CONTINUE | RETURN expressions

vars -> ε | var | var COMMA vars

var -> IDENTIFIER | IDENTIFIER L_SQUARE_BRACKET expression R_SQUARE_BRACKET

bool_expr -> relation_and_expr | relation_and_expr OR relation_and_expr

relation_and_expr -> relation_exprs | relation_exprs AND relation_and_expr

relation_exprs -> relation_exprs | NOT relation_exprs

relations_expr -> expressions comp expressions | TRUE | FALSE | L_PAREN bool_expr R_PAREN

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

expressions -> ε | expression | expression COMMA expressions

expression -> multiplicative_expr | multiplicative_expr ADD expression | multiplicative_expr SUB expression

multiplicative_expr -> term | term MULT multiplicative_expr | term DIV multiplicative_expr| term MOD multiplicative_expr

terms -> var | NUMBER | L_PAREN expression R_PAREN

term -> terms | SUB terms | IDENTIFIER L_PAREN expressions R_PAREN