[program] -> [moduleDeclarations] [otherModules] [driverModule] [otherModules]
[moduleDeclarations] -> [moduleDeclaration] [moduleDeclarations]
[moduleDeclarations] -> [EPSILON]
[moduleDeclaration] -> [DECLARE] [MODULE] [ID] [SEMICOL]
[otherModules] -> [module] [otherModules]
[otherModules] -> [EPSILON]
[driverModule] -> [DRIVERDEF] [DRIVER] [PROGRAM] [DRIVERENDDEF] [moduleDef]
[module] -> [DEF] [MODULE] [ID] [ENDDEF] [TAKES] [INPUT] [SQBO] [input_plist] [SQBC]
[SEMICOL] [ret] [moduleDef]
[ret] -> [RETURNS] [SQBO] [output_plist] [SQBC] [SEMICOL]
[ret] -> [EPSILON]
[input_plist] -> [ID] [COLON] [dataType] [n1]
[n1] -> [COMMA] [ID] [COLON] [dataType] [n1]
[n1] -> [EPSILON]
[output_plist] -> [ID] [COLON] [type_] [n2]
[n2] -> [COMMA] [ID] [COLON] [type_] [n2]
[n2] -> [EPSILON]
[dataType] -> [ARRAY] [SQBO] [range_arrays] [SQBC] [OF] [type_]
[dataType] -> [INTEGER]
[dataType] -> [REAL]
[dataType] -> [BOOLEAN]
[range_arrays] -> [index_arr] [RANGEOP] [index_arr]
[index_arr] -> [sign] [new_index]
[sign] -> [PLUS]
[sign] -> [MINUS]
[sign] -> [EPSILON]
[new_index] -> [NUM]
[new_index] -> [ID]
[type_] -> [INTEGER]
[type_] -> [REAL]
[type_] -> [BOOLEAN]
[moduleDef] -> [START] [statements] [END]
[statements] -> [statement] [statements]
[statements] -> [EPSILON]
[statement] -> [ioStmt]
[statement] -> [simpleStmt]
[statement] -> [declareStmt]
[statement] -> [condionalStmt]
[statement] -> [iterativeStmt]
[ioStmt] -> [GET_VALUE] [BO] [ID] [BC] [SEMICOL]
[ioStmt] -> [PRINT] [BO] [var_print] [BC] [SEMICOL]
[boolConstt] -> [TRUE]
[boolConstt] -> [FALSE]
[var_print] -> [ID] [p1]

[var_print] -> [NUM]
[var_print] -> [RNUM]
[var_print] -> [boolConstt]
[p1] -> [SQBO] [index_arr] [SQBC]
[p1] -> [EPSILON]
[simpleStmt] -> [assignmentStmt]
[simpleStmt] -> [moduleReuseStmt]
[assignmentStmt] -> [ID] [whichStmt]
[whichStmt] -> [lvalueIDStmt]
[whichStmt] -> [lvalueARRStmt]
[lvalueIDStmt] -> [ASSIGNOP] [expression] [SEMICOL]
[lvalueARRStmt] -> [SQBO] [element_index_with_expressions] [SQBC] [ASSIGNOP]
[expression] [SEMICOL]
[moduleReuseStmt] -> [optional] [USE] [MODULE] [ID] [WITH] [PARAMETERS]
[actual_para_list] [SEMICOL]
[optional] -> [SQBO] [idList] [SQBC] [ASSIGNOP]
[optional] -> [EPSILON]
[actual_para_list] -> [sign] [par_print] [n_12]
[n_12] -> [COMMA] [sign] [par_print] [n_12]
[n_12] -> [EPSILON]
[par_print] -> [ID] [n_11]
[par_print] -> [NUM]
[par_print] -> [RNUM]
[par_print] -> [boolConstt]
[idList] -> [ID] [n3]
[n3] -> [COMMA] [ID] [n3]
[n3] -> [EPSILON]
[expression] -> [arithmeticOrBooleanExpr]
[expression] -> [u]
[u] -> [unary_op] [new_NT]
[new_NT] -> [BO] [arithmeticExpr] [BC]
[new_NT] -> [var_id_num]
[var_id_num] -> [ID]
[var_id_num] -> [NUM]
[var_id_num] -> [RNUM]
[unary_op] -> [PLUS]
[unary_op] -> [MINUS]
[arithmeticOrBooleanExpr] -> [anyTerm] [n7]
[n7] -> [logicalOp] [anyTerm] [n7]
[n7] -> [EPSILON]
[anyTerm] -> [arithmeticExpr] [n8]
[n8] -> [relationalOp] [arithmeticExpr]
[n8] -> [EPSILON]
[arithmeticExpr] -> [term] [n4]

[n4] -> [op1] [term] [n4]
[n4] -> [EPSILON]
[term] -> [factor] [n5]
[n5] -> [op2] [factor] [n5]
[n5] -> [EPSILON]
[factor] -> [BO] [arithmeticOrBooleanExpr] [BC]
[factor] -> [NUM]
[factor] -> [RNUM]
[factor] -> [boolConstt]
[factor] -> [ID] [n_11]
[n_11] -> [SQBO] [element_index_with_expressions] [SQBC]
[n_11] -> [EPSILON]
[element_index_with_expressions] -> [arrExpr]
[element_index_with_expressions] -> [uarr]
[uarr] -> [unary_op] [new_NT_arr]
[new_NT_arr] -> [BO] [arrExpr] [BC]
[new_NT_arr] -> [var_id_num]
[arrExpr] -> [arrTerm] [arr_N4]
[arr_N4] -> [op1] [arrTerm] [arr_N4]
[arr_N4] -> [EPSILON]
[arrTerm] -> [arrFactor] [arr_N5]
[arr_N5] -> [op2] [arrFactor] [arr_N5]
[arr_N5] -> [EPSILON]
[arrFactor] -> [ID]
[arrFactor] -> [NUM]
[arrFactor] -> [boolConstt]
[arrFactor] -> [BO] [arrExpr] [BC]
[op1] -> [PLUS]
[op1] -> [MINUS]
[op2] -> [MUL]
[op2] -> [DIV]
[logicalOp] -> [AND]
[logicalOp] -> [OR]
[relationalOp] -> [LT]
[relationalOp] -> [LE]
[relationalOp] -> [GT]
[relationalOp] -> [GE]
[relationalOp] -> [EQ]
[relationalOp] -> [NE]
[declareStmt] -> [DECLARE] [idList] [COLON] [dataType] [SEMICOL]
[condionalStmt] -> [SWITCH] [BO] [ID] [BC] [START] [caseStmts] [default_] [END]
[caseStmts] -> [CASE] [value] [COLON] [statements] [BREAK] [SEMICOL] [n9]
[n9] -> [CASE] [value] [COLON] [statements] [BREAK] [SEMICOL] [n9]
[n9] -> [EPSILON]

[default_] -> [DEFAULT] [COLON] [statements] [BREAK] [SEMICOL]
[default_] -> [EPSILON]
[value] -> [NUM]
[value] -> [TRUE]
[value] -> [FALSE]
[iterativeStmt] -> [FOR] [BO] [ID] [IN] [range_for_loop] [BC] [START] [statements] [END]
[iterativeStmt] -> [WHILE] [BO] [arithmeticOrBooleanExpr] [BC] [START] [statements] [END]
[range_for_loop] -> [index_for_loop] [RANGEOP] [index_for_loop]
[index_for_loop] -> [sign] [new_index_for_loop]
[new_index_for_loop] -> [NUM]