

Lab 2 Grammar

"...": means that it is a terminal

program -> functions

functions -> function functions | epsilon

function -> "function" ident ";" "beginparams" declarations "endparams" "beginlocals"

declarations "endlocals" "beginbody" statements "endbody"

declarations -> declaration ";" declarations | epsilon

declaration -> identifiers ":" "integer"
| identifiers ":" "enum" "(" identifiers ")"
| identifiers ":" "array" "[" "number" "]" "of" "integer"

identifiers -> ident | ident "," identifiers

statements -> statement ";" statements | epsilon

statement -> "var" ":"=" expression
| "if" bool-exp "then" statements "endif"
| "if" bool-exp "then" statements "else" statements "endif"
| "while" bool-exp "beginloop" statements "endloop"
| "do" "beginloop" statements "endloop" "while" bool-exp
| "read" vars
| "write" vars
| "continue"
| "return" expression

vars -> var "," vars | var

bool-exp -> relation-and-exp
| relation-and-exp "or" bool-exp

relation-and-exp -> relation-exp
| relation-exp "and" relation-and-exp

relation-exp -> "not" expression comp expression
| "not" "true"
| "not" "false"
| "not" "(" bool-exp ")"

- | expression comp expression
- | "true"
- | "false"
- | "(" bool_exp ")"

comp -> "==" | "<>" | "<" | ">" | "<=" | ">="

expression -> multiplicative-expression
| multiplicative-expression "+" expression
| multiplicative-expression "-" expression

multiplicative_expression -> term
| term "*" multiplicative_expression
| term "/" multiplicative_expression
| term "%" multiplicative_expression

term -> "-" var
| "-" "number"
| "-" "(" expression ")"
| var
| "number"
| "-" "(" expression ")"
| ident "(" expressions ")"

expressions -> expression | expression "," expressions

var -> ident | ident "[" expression "]"

ident -> IDENT