BNF for MiniJava

NON-TERMINALS

Goal ::= MainClass (ClassDeclaration)* <EOF>

MainClass ::= "class" Identifier "{" "public" "static" "void" "main" "(" "String" "[" "]" Identifier ")" "{" Statement "}" "}"

ClassDeclaration ::= "class" Identifier ("extends" Identifier)? "{" (VarDeclaration)* (MethodDeclaration)* "}"

VarDeclaration ::= Type Identifier ";"

MethodDeclaration ::= "public" Type Identifier "(" (Type Identifier ("," Type Identifier)*)? ")" "{" (VarDeclaration)* (Statement)* "return" Expression ";" "}"

Type ::= "int" "[" "]"
    | "boolean"
    | "int"
    | Identifier

Statement ::= "{" (Statement)* "}"
    | "if" "(" Expression ")" Statement "else" Statement
    | "while" "(" Expression ")" Statement
    | "System.out.println" "(" Expression ")" ";"
    | Identifier "=" Expression ";"
    | Identifier "[" Expression "]" "=" Expression ";"

Expression ::= Expression ("&&" | "<" | "+" | "-" | "*") Expression
    | Expression "[" Expression "]"
    | Expression "." "length"
    | Expression "." Identifier "(" (Expression ("," Expression)*)? ")"
    | <INTEGER_LITERAL>
    | "true"
    | "false"
    | Identifier
    | "this"
    | "new" "int" "[" Expression "]"
    | "new" Identifier "(" ")"
    | "!" Expression
    | "(" Expression ")"

Identifier ::= <IDENTIFIER>