

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>