VX compiler

Goal ::= Declaration*

MethodDeclaration ::= Type Identifier ‘(‘ Argument* ‘)’ Block

VariableDeclaration ::= Type Identifier Initializer? ‘;’

ConstantDeclaration ::= ‘const’ Type Identifier Initializer ‘;’

PortDeclaration ::= ‘port Type Identifier Port ‘;’

Declaration ::= MethodDeclaration | VariableDeclaration | ConstantDeclaration | PortDeclaration

Type ::= ’void’ | ‘usingle’ | ‘ssingle’ | ‘udouble’ | ‘sdouble’ | ‘uquad’ | ‘squad’ | ‘float’ | ‘string’ | ‘bool’

Digit ::= [‘0’..’9’]

NonZeroDigit ::= [‘1’..’9’]

Letter ::= [‘a’..’z’] | [‘A’..’Z’] | ‘-‘

DecimalNumber ::= ‘0’ | NonZeroDigit Digit*

IntegerLiteral ::= DecimalNumber

FloatLiteral ::= DecimalNumber ‘.’ DecimalNumber

StringLiteral ::= ‘”’ (Letter | DecimalNumber)* ‘”’

BoolLiteral ::= ‘true’ | ‘false’

Literal ::= IntegerLiteral | FloatLiteral | StringLiteral | BoolLiteral | ‘-‘ IntegerLiteral

Argument ::= Type Identifier

Initializer ::= ‘=’ Literal

Identifier ::= Letter*

Port ::= ‘@’ IntegerLiteral

Block ::= ‘{‘ Statement* ‘}’

Statement ::= IfThenStatement | IfThenElseStatement | WhileStatement

Expression ::= Primary | BinaryExpression

Assignment ::= Identifier ‘=’ Expressoin

BinaryExpression ::= Primary BinaryOperator Primary

Primary ::= Identifier | Literal

BinaryOperator ::= ‘+’, ‘-‘, ‘*’, ‘/’, ‘<’, ‘>’, ‘&&’, ‘||’, ‘&’, ‘|’

ReturnNoValueStatement ::= ‘return’ ‘;’

ReturnValueStatement ::= ‘return’ Expression ‘;’

UnaryOperator ::= ‘!’, ‘~’