

## Grammar

Implemented: (sort of)

$$\begin{aligned}
 [prog] &\rightarrow [stmt]^* \\
 [scope] &\rightarrow \{[stmt]^*\} \\
 [stmt] &\rightarrow \begin{cases} [type] \langle ident \rangle = [expr]; & \text{variable assignment} \\ \langle ident \rangle = [expr]; & \text{variable reassignment} \\ ret [expr]; & \text{exit/return} \\ [scope] \end{cases} \\
 [expr] &\rightarrow \begin{cases} [term] \\ [binexpr] \end{cases} \\
 [binexpr] &\rightarrow \begin{cases} [expr] + [expr] & prec = 0 \\ [expr] - [expr] & prec = 0 \\ [expr] * [expr] & prec = 1 \\ [expr] / [expr] & prec = 1 \end{cases} \\
 [term] &\rightarrow \begin{cases} \langle int\_lit \rangle \\ \langle ident \rangle \\ -[term] & \text{negative expression (underscore)} \\ ([expr]) \end{cases} \\
 [type] &\rightarrow \{int
 \end{aligned}$$

**Todo:**

$$\begin{aligned} [prog] &\rightarrow [stmt]^* \\ [stmt] &\rightarrow \begin{cases} ret\ [expr]; \\ [type]\ ident = [expr]; \\ if([expr])[stmt] \\ [scope] \end{cases} \\ [scope] &\rightarrow \{[stmt]^*\} \\ [expr] &\rightarrow \begin{cases} [binexpr] \\ [term] \end{cases} \\ [binexpr] &\rightarrow \begin{cases} [expr] * [expr] & prec = 1 \\ [expr] / [expr] & prec = 1 \\ [expr] + [expr] & prec = 0 \\ [expr] - [expr] & prec = 0 \end{cases} \\ [term] &\rightarrow \begin{cases} int\_lit \\ ident \\ ([Expr]) \\ TRUE \\ FALSE \\ 'c' \end{cases} \\ [type] &\rightarrow \begin{cases} int \\ bool \\ char \\ float \end{cases} \end{aligned}$$