Rules

- Variable *shadowing* is **not** allowed. Having a variable with the same name in an inner scope is invalid, unless the variable is first declared in the inner scope.

- You must terminate a statement with a semicolon, *unless* that statement **ends** with a scope.

- Single line comments are denoted by '//' and Multi-line comments are denoted with '/* */'

Notation

$$* = 0 \text{ or more}$$

Producers

$$[Prog] \rightarrow [\text{Statement}]^*$$

$$[Statement] \rightarrow \begin{cases} \text{EXIT}([\text{Expr}]); \\ \text{set ID} = [\text{Expr}] \\ \text{if}([\text{Expr}])[\text{Scope}] \\ [\text{Scope}] \end{cases}$$

$$[\text{Scope}] \rightarrow \{[\text{Stmt}]^*\}$$

$$[\text{Expr}] \rightarrow \begin{cases} [\text{Term}] \\ [\text{BinaryExpr}] \end{cases}$$

$$[\text{BinaryExpr}] \rightarrow \begin{cases} [\text{Expr}] \times [\text{Expr}] & precedence = 1 \\ [\text{Expr}] \div [\text{Expr}] & precedence = 1 \\ [\text{Expr}] \, \% \, [\text{Expr}] & precedence = 1 \\ [\text{Expr}] + [\text{Expr}] & precedence = 0 \\ [\text{Expr}] - [\text{Expr}] & precedence = 0 \end{cases}$$

$$[\text{Term}] \rightarrow \begin{cases} \text{int\_lit} \\ \text{ID} \\ ([\text{Expr}]) \end{cases}$$