1 Introduction

For the grammar that follows here are the types of the various elements by type font or symbol:

- **Keywords are in this type font.**
- **TOKEN CLASSES ARE IN THIS TYPE FONT.**
- **Nonterminals are in this type font.**
- The symbol $\epsilon$ means the empty string in a CS grammar sense.

1.1 Some Token Definitions

- letter = a | . . . | z
- digit = 0 | . . . | 9
- ID = letter
- NUMCONST = digit$^+$
- White space (a sequence of blanks and tabs) is ignored.
- Comments are ignored by the scanner. Comments begin with // and run to the end of the line.

2 The Grammar

1. $\text{statementList} \rightarrow \text{statementList statement } | \text{statement}$
2. $\text{statement} \rightarrow \text{\n } | \text{expression \n } | \text{quit \n}$
3. $\text{expression} \rightarrow \text{ID = expression } | \text{sumexp}$
4. $\text{sumexp} \rightarrow \text{sumexp + mulexp } | \text{sumexp - mulexp } | \text{mulexp}$
5. $\text{mulexp} \rightarrow \text{mulexp * unary } | \text{mulexp / unary } | \text{unary}$
6. $\text{unary} \rightarrow - \text{unary } | \text{factor}$
7. $\text{factor} \rightarrow \text{ID } | \text{( expression ) } | \text{NUMCONST}$