Interpreter Assignment #1: Expressions and Assignments

Issued: Wednesday, September 18
Due: Wednesday, October 2

Purpose

This assignment asks you to extend a small interpreter.

Source Code and Grammar

A Java implementation of the interpreter is at:

```
~buff/classes/354/pub/ia1
```

The interpreter employs an ad-hoc scanner and a recursive-descent parser. The parser builds a strongly typed parse tree, which is then traversed and evaluated. A grammar for the source language is:

```
stmt  : assn ';'
assn  : id '=' expr
expr  : term addop expr
        | term
term  : fact mulop term
        | fact
fact  : id
        | num
        | '(' expr ')'
addop : '+'
        | '-'
mulop : '*'
        | '/'
```

Assignment

There are several parts:

- Document the provided source code.

- Extend the scanner to support comments. Design you own form of comment.

- Add a prefix unary minus operator. This is a grammatical change; simply allowing negative numbers is insufficient.

- The interpreter currently supports only integer values. Change it to instead support double values.

- Test your solution thoroughly. Add tests to my rudimentary test suite. The quality of your suite will influence your grade.