

Calculator Program (file I/O, OOP, exceptions)

Develop a simple calculator program that runs commands from a text file to manipulate the values of a set of variables. The name of the file is passed as a command-line argument. Each line in the text file is of the form

```
VAR = VAL_OR_VAR OP VAL_OR_VAR
```

VAR is a variable name consisting of a single, lower-case letter; VAL_OR_VAR is either a double literal (like 3.7) or a variable name consisting of a single, lower-case letter; OP is one of the following mathematical operators: +-*/%.

The calculator maintains a list of 26 double variables, corresponding to the 26 letters of the alphabet. The lines from the file are executed in order, each one computing a value from its right-hand side and storing that value in the variable denoted by the left-hand side. Once all lines from the file have been read and executed, the program prints out the values of all 26 variables.

If the program encounters a line in the file that is not properly formatted, it should print out a message including the line number and then skip the line and continue processing the file.

Enhancements

Use inheritance to move common logic from VarStore and OpStore to a common superclass.

Add additional command-line arguments to set initial values. Use a format like this:

```
a=10 b=0.123
```

Add additional command-line arguments to specify which variables should be printed out in the end. Use a format like this:

```
x? y?
```

Add the ability to have lines in the file of the form:

```
VAR = VAL_OR_VAR
```

In this case, no mathematical operation is performed; just a simple assignment to a variable.