CS14 – Homework 1

Description:

Implement a reverse polish notation calculator. For details about reverse polish notation, see the wikipedia article: https://en.wikipedia.org/wiki/Reverse_Polish_notation. For a working example, visit: http://www.meta-calculator.com/learning-lab/reverse-polish-notation-calculator.php

Specifications:

You are to output a single ">" follow by a space to prompt the user to enter an equation. On a separate line, output the results. Repeat as long as the input stream remains valid.

All tokens will be separated by a space. A valid token is either a number or an operator. If an invalid token is entered, output "Error: Invalid token." For example, "4+" together is an invalid token, whereas "4" and "+" separated by a space are two valid tokens. It is important to recognize that "-4" is a valid token and is very different from the two tokens "-" and "4".

If an invalid equation is entered, you must report an error saying why it is invalid. For example, the equation "3 4 5 +" is invalid because after applying the + operator, we are left with the equation "3 9" which is not a number. The error message in this case should be "Error: Not enough operators". On the other hand, the equation "3 +" is invalid because + needs two parameters to add together. The error message in this case should be: "Error: Not enough parameters".

You must support the following operators: + - * / You will get 1 pt of extra credit for supporting %. Note that if the user attempts to find the remainder of a non-integer number, you must output an error.

Example Output:

```
> 3 4 +
7
> 3 -4 +
-1
> 3 4 -
-1
> 3 4 5 +
Error: not enough operators
> 3 +
Error: not enough parameters
> 3 hotel
Error: invalid token
> 3 4 /
0.75
> 3 4 5 + *
27
> 1 2 + 3 4 - / 12 * -1 -
-35
> ^D
```

File headers: Every file you submit must begin with the following information.

```
// Course: CS 14 Spring 2013
//
// First name: <<INSERT>>
// Last name: <<INSERT>>
// Course username: <<INSERT>>
// Email address: <<INSERT>>
//
// Lecture section: <<INSERT>>
// Lab section: <<INSERT>>
// TA: <<INSERT>>
//
// Assignment: <<INSERT>>
//
// I hereby certify that the code in this file
// is ENTIRELY my own original work.
//=================================================================
```