CSC2200 Computer Science II
Programming Project
Winter 2013

Instructor: D. Grosu

Assigned on: Tuesday March 5, 2013.

Due on: Tuesday April 16, 2013 (5:30 pm).

Problem: Implement a program for evaluating infix expressions. The program should read an infix expression from a text file, check if the parentheses in the input expression are balanced, convert the infix expression into a postfix expression, and then evaluate the postfix expression.

Description: The following public methods must be implemented:

> `bool isBalanced(const string& expression)` - returns true if the parentheses in the given expression are balanced. This method should implement the algorithm described in Section 3.6.3 of the textbook (page 96).
>
> `string infix_to_postfix(const string& expression)` - converts the infix expression into a postfix expression. This method should implement the algorithm described in Section 3.6.3 of the textbook (pages 99-102).
>
> `double evaluate(const string& expression)` - evaluates the expression given in postfix form. This method should implement the algorithm described in Section 3.6.3 of the textbook (pages 97-99).

Testing: You may want to test your code in steps to make sure your code is working.

Submitting your project: The project should be submitted using the Blackboard Drop Box. The following items must be submitted:

1. all the files containing the code;
2. a test plan showing how you tested (show the steps of your testing procedure) the program and why you believe is correct;
3. the input file used to test the program;
4. a short description of the design plan and general comments.

Important: Your code must be appropriately commented, if we don't understand it with reasonable effort you get no credit.

You must work individually, this is not a group project. Similar projects will share the grade.

No late submissions will be accepted.