

CS 302 Introduction to Data Structures

University of Nevada, Las Vegas

Spring 18

Assignment 5

Due: Saturday, February 24, 2018

Evaluation Postfix Expressions

In this assignment, you are to write a simple program to evaluate postfix expressions. For this you must use the stack algorithm discussed in class (see also Section 3.6.3 in the text book).

Input to the program

Input to the program is a postfix expression, where the \$ symbol is used as an end marker. (To make things simpler you may assume that the input string contains no blank characters, thus all numbers are between 0 and 9 only.)

For example, the input could be 6523+8*+3+*\$.

Reading the Input

Reading the input is a bit tricky because there are both integers and characters present. One way to do this, is read the input entirely as characters, and then convert those characters which represent numbers between 0 and 9 into int. To read characters one by one you could use something like

```
while (istream && ((istream.peek()) != '\$'))
{
    istream >> c;
    ...
}
```

Stack Implementation

You may write your own stack using a dynamic array, or you may use the list class from the book.

Output of the program

The program will write the result of the expression (in the example 288), or the string This is not a valid postfix expression (if the expression is not valid).

How to submit.

Create one file with your sort asgn5postfix.cpp. Email this as an attachments to deshmk1@unlv.nevada.edu. Subject of your email must be "Assignment5", <your name>, <your student ID number>.