**CS311 Yoshii - Homework 1 Part 1 Getting Started (based on Notes-2A)**

**Topics: Stack application Where you type is always in black!!!!!**

**Due: Week 2 Sat before 11:55pm to cougar courses**

**Total: 18 points. Your score is:**

**Your Name: Vinh Pham**

**Date Submitted: 2/2/2019 (Note that where you type is always in black)**

**For all HW for CS311 [2pts]\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Your score is:**

1. **YOU MUST test your program on empress with g++.**
2. **KEEP all files for each HW within the corresponding forHW directory.**
3. **Always read @@read-me first and use the corresponding Visualizer before you begin.**
4. **TEST RESULTS MUST (.txt file) include the lines for compiling your files or 0 points for the program. (Even if it does not compile!)**
5. **YOU MUST answer the State of the Program questions honestly or you will lose the points.**

**Q0) [2pts] Do you understand the above requirements?**

**Yes I do understand the requirments above.**

**Program: Write a stack application program to evaluate post-fix expressions.**

**[4+12=16pts] Your score is:**

**Header:**

**Implementation:**

**Client:**

**Test results:**

**Total 12 points:**

**Qs 4 points:**

**Q1) Preparation Qs[2pts]:**

* **What data structure do you plan to use – integer stack or character stack? <answer>**
* **I was planning to use the integer for stack.**
* **Why? Be specific. <answer>**
* **The reason I use integer for the stack because of the data type of the array we will be using to store each of the stack.**

**Q2) State of the Program Statement [2pts]: Must always answer!!!**

* **Does your program compile without errors? If not, describe. <answer>**
* **Yes my program compile without any area.**
* **List any run-time bugs you are aware of, or state “No bugs”: <answer>**
* **My program is “Free no bugs ”.**
* **Make sure you have already used** [**the Stack Visualizer**](http://cgi.csusm.edu/ryoshii/MyVisualizers/stack.html)**. (link)**
* **Complete my stack.h and stack.cpp.**
* **Compile the stack class first and test it with my stacktest.cpp (unchaged) thoroughly.**

**Required Test Cases (MUST TEST IN THIS ORDER): 🡺 Test1.txt**

**1. display the stack**

**2. push 1,2,3,4**

**3. display the top element**

**4. pop**

**3. display the top element**

**5. display the stack**

**6. clear the stack**

**7. display the stack**

* **Then, run my solution program first to study the correct output from the client.**
* **Complete client1.cpp : The user will enter a post-fix expression of the form:**

**34+ which means 3+4**

**345+\* which means 3\*(4+5)**

**722+- which means 7-(2+2)**

**as a string. Operators are +, -, and \*. Single digit numbers only. No blanks.**

* **You may assume that no expression will be longer than 12 characters.**
* **Since each element of the string is a character, you will need to convert it to an integer to perform arithmetic operations.**

**Your program will display the evaluated result (a number) and/or an error message describing what is wrong. Make the user interface nice!**

**Required Test Cases (MUST TEST IN THIS ORDER): 🡺 Test2.txt**

1. **34+ which means 3+4**
2. **345+\* which means 3\*(4+5)**
3. **722+- which means 7-(2+2)**
4. **34+56++ which means (3+4)+(5+6)**
5. **12+34\*45+-+ which means (1+2) + ((3\*4) - (4+5))**
6. **1234567891234 expression too long**
7. **+ too few operands**
8. **3+ too few operands**
9. **3# invalid element**
10. **2345+ incomplete expression**

**NOTE: Do you think I have listed all possible cases? Always ask yourself if there are other cases you should test to make sure your program is bug free.**

**SUBMIT THESE 6 FILES TO COUGAR COURSES:**

**Always make sure the files you submit can be opened on a PC and be edited**

1. **This file with your answers inserted (docx, doc, or rtf)**
2. **Program** 
   * **Stack.h Header file with good comments.**
   * **Stack.cpp Implementation file with good comments.**
   * **Client1.cpp Client program with good comments.**
   * **Test1.txt Script result of compiling & executing your program on empress.csusm.edu for the required test cases.**
   * **Test2.txt Script result of compiling & executing your program on empress.csusm.edu for the required test cases. (Submit even if it does not compile).**

**CHECK LIST before you submit:**

* **Did you check your comments and style against CS311 How To Comment.doc?? You must have completed all \*\* comments.**
* **I did check the comments nad style against CS311. I completed all the comments that is required in tis program of stack.**
* **Did you answer all the questions on this sheet?**
* **Yes I answered all the questions on this sheet.**