Lab Assignment 02

Marks

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1. Implement a template based Queue using a dynamic array which supports the enqueue, dequeue and front operations. **15**

2. Implement Template based Stack using a singly linked-list. **15**

3. Write a program to convert an infix expression to a postfix expression. The expression will contain the following characters [a-z , + , - , * , / , (,)]. **15**

Sample Input	Sample Output
a+(b+c)*d-e	abc+d*+e-
(a+b)*(c+d)	ab+cd+*

4. Evaluate it using stack. All the numbers are single digit numbers in the input so you don't have to worry about multi digit numbers. **15**

Sample Input	Sample Output
4+(5+6)*8-1	91
(2+4)*(5+6)	66

Congratulations you just built a mini calculator if you solved it correctly.

5. Implement Template based Deque using a doubly linked-list which supports push_front, push_back, pop_back, pop_front, front, back operations. **15**

6. Given a string, check if it's a palindrome using a Deque. **15**

Sample Input	Sample Output
abcba	Yes
abcca	No

Hint: Check the first and last character. If they are equal then pop them and continue this process until the string becomes empty.

7. Write a function **void deleteValue(list<int> & l , int value)'** -> This function will delete the first occurrence of the element that is equal to the input **value** from the stl list. **10**
   Sample Input: STL list containing [7, 3, 8, 4, 5, 4], value : 4
   Sample Output: STL list containing [7, 3, 8, 5, 4]