SWE20004 -Technical Software Development

Assignment 3-Extra Credit Question

(This assignment is worth 5% of the subject's total assessment marks)

Due Date: Tuesday 28th May 2019 at 11:59 pm

Requirements to attempt this extra credit question – Need tutor's approval

You have to complete assignment 3 and **must demonstrate** your task to your tutor on or before Friday 17 May either during the lab session or during the helpdesk hours. If your tutor is satisfied with the quality of your assignment 3 you will get the approval to attempt *assignment 3 – Extra Credit Question*. This extra credit question will not be marked if you submit it without the approval from your tutor. This is an extra credit question and therefore no extension will be granted on any circumstances.

Extra marks can help you to improve your final grade. However, your aggregated final mark cannot exceed 100.

Submission instructions

Submit a soft copy of required documents through 'Assignment 3-Extra Credit' link available in Assignments in Canvas.

Please note:
This extra credit question should be submitted separately in Canvas (Not with the assignment 3)

Qn 1. A gaming company consists of many kind of games and each customer orders online to buy a game. The gaming company will search for the specific game upon customers request in the order of first come first served basis. The gaming company has the following requirements.

1. There are many kinds of games available (at least ten). They may have more than one game for each genre.
2. The customers list is organised in a Queue as a first come first served basis
3. The gaming company should be able to retrieve the data of the last sold games.

Your program should consist of a linked list with the following features

a.) Insertion at the head
b.) Insertion at the tail
c.) Deletion from the head
d.) Deletion form the tail

e.) Deleting specific element from the list

The next part should be implementing a Stack based on the above linked list with the following features

a.) Pop
b.) Push
c.) Top

The next part should be implementing a Queue based on the above linked list with the following features

a.) Enqueue
b.) Dequeue
c.) Top

The program flow is as follows:

The games should be saved in a linked list. The list of games ordered by customers should be saved in a queue. You should take the order from the beginning of the queue and search for it in the linked list then delete it from queue and put this game's name in a stack to be able to retrieve in the last sold game.

Rubric

Requirement	Marks
A linked list of games with all the five required features	20
The list of games ordered by customers are implemented in Queue with all the three functions	20
Stack implementation(take the order from the top of the queue and search for it, then delete it and insert the game) with all the three functions	20
Program flow is as suggested in the question, well-structured program with appropriate comments	10
Sufficient number of appropriate test cases performed and corresponding screen shots provided as evidence	5
Total mark	**75**
Contribution to unit (extra credit)	**5**

ESP submission:

Submissions through **Canvas** must be made on or before the due date/time.
Submission should be in the form of single ***.zip*** file containing:
1. The actual program (.**cpp** source code) with comments.
   - The name of your **.cpp** file must be **your student number.cpp (eg**. 386123.cpp) for the assignment question.

2. A file (***.doc/docx, .pdf*** or ***.rtf*** format) containing:
    - Pasted **screen shots** of the working program resulting from the testing of the program
- **Submissions larger than 4MB will not be accepted**.