

CSE211  
DATA STRUCTURES  
FALL 2021  
ASSIGNMENT 2

**Aim:** To advance your skills using linked lists, further understand the stack data structure's uses and to improve your understanding of working within constraints (i.e. being have to use the asked function types, learning from the comments...)

**Q1 (70pts):** Write a **stack** class implementation for **string** type inputs named codeStack with the prototypes given in the source files **codeStack.h** and **codeStack.cpp**. The functions you are asked to build are:

***void pushToStack(const char\* s)***

***string popFromStack()***

***void printStack()***

***void printReverseStack()***

**Important:** Your work should compile & run along with the example main file provided to you. You can compile multiple cpp files using:

```
g++ main.cpp codeStack.cpp
```

Also, make no changes to the given codeStack class except corresponding areas for your functions. You can use existing header file **codeStack.h** which is totally complete.

**Q2 (30pts):** One of the primary uses of stacks are the word processors. You do something, change your mind, undo it. What lets us to undo things is the stack data structure. Here, your stack will be used for a word processor, but the undo would be something simple. The only thing that undo stack would be used for is the deletion. If we delete something, we need to be able to undo it. If we delete ten items, we need to be able to recover ten items (unless some other operation interrupts).

You will see that there are two empty if statements in **main.cpp** for undo and delete files. Your second task is to implement these cases.

You can check the previous labwork's IntSLLList code and get inspiration (it can help quite a lot). Also, do not forget about corner-cases and memory leaks.

**You may also want to use comments efficiently, especially if your assignment isn't 100% done for helping us to understand your studies better.**

So, here is an execution snippet for helping you to visualize:

```
Please enter text below.
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Tooltip:

Use 'Enter' to commit,
Use the command '/delete' to delete,
Use the command '/undo' to undo the deletion,
Use the command '/print' to view the document,
Use the command 'reversePrint' to view the document in-order,
Use the command '/exit' to exit.
-----
Input: as

Input: df

Input: 5

Input: /print
5dfas
Input: /reversePrint
asdf5
Input: /delete

Input: /delete

Input: /reversePrint
as
Input: /undo

Input: /reversePrint
asdf
Input: /undo

Input: /reversePrint
asdf5
Input: /undo
Error: Nothing to delete.

Input: /exit

The last state of the document is:
-----
asdf5
```

Good luck with your assignment!