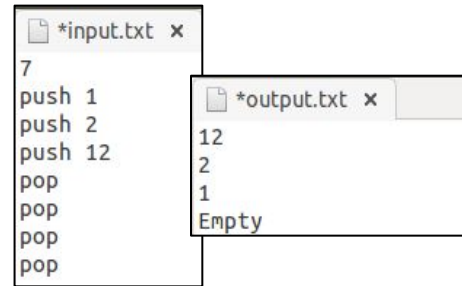


Lab 3 Stack, Queue

2019. 03. 21

lab 3-1. Stack

- You can implement Stack in any way you want (array or linked list).
- You will use only Push and Pop in this Lab (other functions may be needed for Push and Pop).
 - maximum size of stack is 100 (in case you use array).
 - push x : push element x to stack (Note that x is int value).
 - If stack is full, then **print** “Full” (in case you use array).
 - pop : pop an element from stack and print the element.
 - If stack is empty, then **print** “Empty”.
- You have to use file I/O like the previous assignment.



The image shows two overlapping text editor windows. The left window, titled '*input.txt x', contains the following text: 7, push 1, push 2, push 12, pop, pop, pop, pop, pop. The right window, titled '*output.txt x', contains the following text: 12, 2, 1, Empty.

```
*input.txt x
7
push 1
push 2
push 12
pop
pop
pop
pop
pop

*output.txt x
12
2
1
Empty
```

lab 3-1. Stack

- Submission

- Project directory name : lab3-1
- Source file name : p3-1.c
- Executable file name : p3-1.out
- You should upload in the hconnect (Gitlab) server.
- If you are not familiar with using git, please read the manual. ([GitLab 사용법.pdf](#))

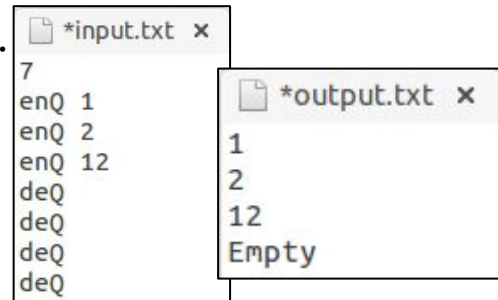
```
daewook@daewook-VirtualBox:~/2019_CSE2010_123456789/lab3-1$ gcc p3-1.c -o p3-1.out
daewook@daewook-VirtualBox:~/2019_CSE2010_123456789/lab3-1$ ./p3-1.out
daewook@daewook-VirtualBox:~/2019_CSE2010_123456789/lab3-1$ cat output.txt
12
2
1
Empty
```

The screenshot displays the GitLab web interface for a repository named '2019_CSE2010_12298 / 2019_CSE2010_1234...'. The 'Repository' tab is active, showing the file structure. The 'master' branch is selected. The repository path is '2019_CSE2010_123456789 / lab3-1'. The file list shows the following files and their commit history:

Name	Last commit
..	
input.txt	lab3-1 commit!
output.txt	lab3-1 commit!
p3-1.c	lab3-1 commit!
p3-1.out	lab3-1 commit!

Lab 3-2 Queue

- You can implement Queue in array.
- You will use only Enqueue and Dequeue in this Lab (other functions may be needed for Enqueue and Dequeue).
 - maximum size of queue is 100.
 - enQ x : Enqueue element x to queue (Note that x is int value).
 - If queue is full, then **print** "Full".
 - deQ : Dequeue an element from queue and print the element.
 - If queue is empty, then **print** "Empty".
- You have to use file I/O like the previous assignment.



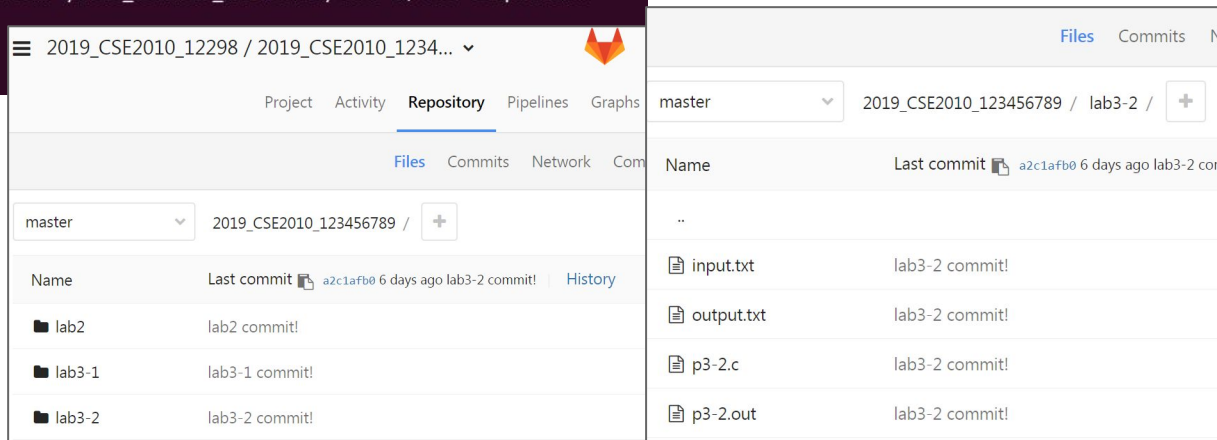
```
*input.txt x
7
enQ 1
enQ 2
enQ 12
deQ
deQ
deQ
deQ

*output.txt x
1
2
12
Empty
```

Lab 3-2 Queue

- Submission
 - Project directory name : lab3-2
 - Source file name : p3-2.c
 - Executable file name : p3-2.out
 - You should upload in the hconnect (Gitlab) server.

```
daewook@daewook-VirtualBox:~/2019_CSE2010_123456789/lab3-2$ gcc p3-2.c -o p3-2.out
daewook@daewook-VirtualBox:~/2019_CSE2010_123456789/lab3-2$ ./p3-2.out
daewook@daewook-VirtualBox:~/2019_CSE2010_123456789/lab3-2$ cat output.txt
1
2
12
Empty
```



2019_CSE2010_12298 / 2019_CSE2010_1234... ▾

Project Activity **Repository** Pipelines Graphs

Files Commits Network Com

master ▾ 2019_CSE2010_123456789 / lab3-2 / +

Name	Last commit	
..	a2c1afb0 6 days ago lab3-2 cor	
input.txt	lab3-2 commit!	
output.txt	lab3-2 commit!	
p3-2.c	lab3-2 commit!	
p3-2.out	lab3-2 commit!	



Lab 3-3 Infix to Postfix conversion & evaluation

- Obtain an infix expression from the given input file. The expression ends with #.
 - Available operators: +, -, *, /, %, (,)
 - Operands: single-digit numbers (1,2,3,4,5,6,7,8,9).
 - Conditions:
 - The expression should be no more than 100 characters.
 - You have to use Stack Data Structure you implemented in Lab 3-1 (Note that you may change Element type from int to char).

- Operator precedence:

Token	precedence
* / %	2
+ -	1

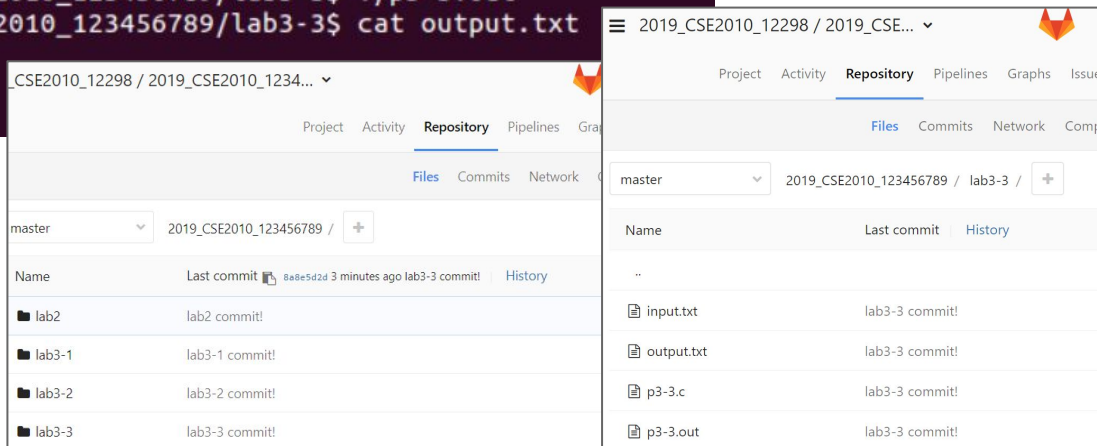
- You have to use file I/O like the previous assignment.

 *input.txt x	 *output.txt x
4*(7+3%6)-(4/2)+9-(2*3)#	Infix Form : 4*(7+3%6)-(4/2)+9-(2*3) Postfix Form : 4736%+*42/-9+23*- Evaluation Result : 41

Lab 3-3 Infix to Postfix conversion & evaluation

- Submission
 - Project directory name : lab3-3
 - Source file name : p3-3.c
 - Executable file name : p3-3.out
 - You should upload in the hconnect (Gitlab) server.

```
daewook@daewook-VirtualBox:~/2019_CSE2010_123456789/lab3-3$ gcc p3-3.c -o p3-3.out
daewook@daewook-VirtualBox:~/2019_CSE2010_123456789/lab3-3$ ./p3-3.out
daewook@daewook-VirtualBox:~/2019_CSE2010_123456789/lab3-3$ cat output.txt
Infix Form : 4*(7+3%6)-(4/2)+9-(2*3)
Postfix Form : 4736%+*42/-9+23*-
Evaluation Result : 41
```



2019_CSE2010_12298 / 2019_CSE2010_1234... ▾

Project Activity **Repository** Pipelines Graphs Issues

Files Commits Network Compare

master ▾ 2019_CSE2010_123456789 / lab3-3 / +

Name	Last commit	History
..		
input.txt	lab3-3 commit!	
output.txt	lab3-3 commit!	
p3-3.c	lab3-3 commit!	
p3-3.out	lab3-3 commit!	

DeadLine

Sunday, 31 March, 23 : 59 pm