**CSCI 520.01L**

**Programming Assignment #6**

To be done in the lab

(Friday, Oct. 3, JOUR 102, 2:30-4:10pm)

Show your work to the GA during the lab session. Turn in your work in the drop box for Assignment 6 (for Week 6)

1. Complete the following **array** **implementation** of STACK in C++ to include another member function **void peekAll().** Function void peekAll() displays the entire stack content without changing the stack. **Do not call empty() and pop() functions in peekAll(). Function peekAll() displays an empty line if the stack is empty.**

**class STACK**

**{**

**private:**

**int \*s; int N;**

**public:**

**STACK(int maxN)**

**{ s = new int[maxN]; N = 0; }**

**int empty() const**

**{ return N == 0; }**

**void push(int item)**

**{ s[N++] = item; }**

**int peekAll()**

**{**

**/\* implement this part \*/**

**}**

**int pop()**

**{ return s[--N]; }**

**};**

1. Write a C++ program that creates a stack of integer numbers (for up to 100 numbers), and then it does the following on user’s input (**your program must check for conditions: e.g. no pop when the stack is empty**):

P x : pushes integer x onto the stack

R : pops off the stack top and display

E : outputs “empty” if stack is empty; otherwise “not empty”

K : outputs the entire content of the stack in last-in first-out order without changing the stack content

See below for a sample dialogue.

In this assignment, both **correctness** and **efficiency** of your programs are important.

Example Dialogue (input can be read from a specific file, or can be directed to a file):

E <ENTER>

empty

P 1

P 10

E <ENTER>

not empty

K

10 1

P 19

R

19

R

10

E <ENTER>

not empty

P 5

P 20

K

20 5 1

E <ENTER>

not empty

R

20

R

5

R

1

R

nothing to pop off; stack is empty

K

<nothing to display>

P 2

E <ENTER>

not empty

K

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