BLG 233E, Data Structures and Laboratory
Assignment 4 - Stack

Due: 28.11.2014 - Friday - 23:00 [Submission via e-mail will not be accepted.]

Submission Guidelines:

1. Make sure you write your name and number to all of the files of your project.
2. Your program **should be compiled and run on Linux** environment using **g++**. Include all necessary header files to your code. Do not use precompiled header files, and header files and functions which are specific to Windows environment.
3. Use comments wherever necessary in your code to explain what you did.
4. After you make sure that everything is compiled smoothly, archive all files into a zip file. Submit this file through www.ninova.itu.edu.tr (you don't need to write a report)
5. If you have any question about the homework, contact with research assistant Neziha Akalın via email (akalinn@itu.edu.tr) or in Research Lab 1 (EEB 4307).

HOMEWORK DESCRIPTION

In this homework, you will implement a solution that uses stacks to sort student records according to GPAs in a university. You should implement your stacks with linked-lists. Student records includes student number, name, GPA and department.

Read the inputs from the given file and add records in a sorted fashion to the stack. The student record with the lowest GPA should be at the bottom of this stack, and the record with the highest GPA should be at the top. For sorting your records you will use a temporary stack, you should check the top record and pop the records from the first stack until the GPA of the top record is lower than the record to be added. You should push these popped records onto your temporary stack, and after pushing your new record to the first stack, you should restore your stack by moving the contents of the temporary stack to your stack. At the end of the stack operations (when the stack is sorted), you should pop the records from your stack and write them to the file "sortedRecords.txt."
In case of two students with same GPA, the student with lower student number should be at the bottom.

Academic dishonesty including but not limited to cheating, plagiarism and collaboration is unacceptable and subject to disciplinary actions. Any student found guilty will receive F as his/her final grade for the course.