CPSC 2430 Data Structures

Homework Assignments #4

Assigned: The lab was assigned on 10/21/2016

Due by 9:20AM, 10/28/2016, Friday

1. Problem

This assignment is Lab 4 Implementing a Binary Search Tree that you started on Friday 10/21/2016. You need to complete and submit it as HW #4. Please see Lab 4 for details.

2. Provided Files

You are provided with two files to facilitate your code testing.

client.cpp: This is a driver program to test if your BST works properly. You **should not** touch anything on the code for submission. When you execute the executable client, you need provide an argument that has the data file for your testing, e.g., ./client data.in

Initially, **you can develop and use your own client.cpp** to debug and test your BST. If it works fine, then you can use the provided client.cpp to run a comprehensive test on your BST before submission. Note that you **must submit the provided client.cpp** in hw4.tar.

data.in: This is a sample data file for your testing. It is a text file. You can use your own text file for further testing. The first line is an integer that specifies the number of test cases *n* followed by *n* lines of integers. Each line corresponds to a test case, beginning with an integer *m* and continuing with a list of *m* integers that will be inserted into a BST.

3. Submission

You need to submit the following files:

- bst.h: the header file for BST class. **Do not change data members and public member functions!** You can add your own private member functions for some purpose. For instance, you need to add a helper function for RecurSearch().
- bst.cpp: the implementation file for BST class.
- client.cpp: the **provided client program** to test your BST.
- Makefile

Before submission, you should ensure your program has been compiled and tested on the provided client.cpp. Your assignment receives zero if your code cannot be compiled and executed.

You can submit your program multiple times before the deadline. The last submission will be used for grading.

To submit your assignment, you should follow two steps below (assuming your files are on cs1.seattleu.edu):

1). Wrap all your files into a package, named ***hw4.tar***

tar -cvf hw4.tar bst.h bst.cpp client.cpp Makefile

2). Submit your newly generated package ***hw4.tar*** as the fourth programming assignment ***p4***

/home/fac/zhuy/class/CPSC2430/submit p4 hw4.tar

4. Grading Criteria

Label	Notes
1a. Submission (1 pt)	All required files are submitted.
1b. Compilability (1 pts)	Your Makefile can compile the code and generate the executable file.
1c. Format & Style (1 pt)	Clean, well-commented code. No messy output/debugging messages. For C++ comments, please refer to https://google.github.io/styleguide/cppguide.html#Comments for more details.
1d. Functionality (7 pts)	The BST class should behave as specified. All operations are implemented and tested.
1e. Overriding policy	If the code cannot be compiled or executed (segmentation faults, for instance), it results in zero point.