EE312 Fall 2013 Exercise 8

Two Points

For this exercise, you will write separate functions to iteratively and recursively find the number of nodes in a binary search tree, as well as to iteratively and recursively find the height of a BST. You will then check to ensure that your functions are working properly.

To get you started, you have the BST example (C version) developed in class. You'll use the same Node struct and you'll have access to the same functions we wrote in class (e.g,. successor, which might come in handy). We recommend that you write the functions in this order: iterative node counting ("treeNodes"), recursive node counting ("recTreeNodes"), recursive height ("recTreeHeight"), and, if you have time, iterative height.

To test the functions, simply insert some values into a tree from the "main" function (using the "insert" method provided) and call your functions (or use "printInfo") to see if they return correct values. Maybe then remove some values (using "remove") and re-test your methods to make sure nothing breaks. Try to account for all trees (even empty ones).

Good luck!