CSC 212 Tutorial #9
Binary Search Tree

30/11/2014

Important: This tutorial has an online part, which you should complete on the LMS.

Problem 1
Write the recursive method *maxKey* member of the class BST that returns the maximum key value in the tree. Assume that the tree is not empty.
Method: *public int maxKey()*

Problem 2
Write the recursive method *sumKeys* member of the class BST that returns the sum of all the keys
Method: *public int sumKeys()*

Problem 3
Write the method *range* member of the class BST that returns the range of the binary search tree. The rage is defined as the difference between the maximum key and the minimum key. Assume that the tree is not empty.
Method: *public int range()*

Problem 4
Write an efficient method *inRange*, member of the class BST, that takes as input a key k and returns true if the binary search tree contains at least two keys k1 and k2 such that k1 ≤ k ≤ k2, false otherwise. Try to minimize the number of visited nodes.
Method: *public boolean inRange(int k)*

Problem 5
   a) Insert the following keys into an empty binary search tree: 21, 13, 7, 20, 34, 19, 90, 8, 13.
   b) Remove the following keys from the final tree in part a: 20, 34, 21.
   c) If we wish to print the keys in increasing order, then which traversal method should we use?