CS 111 Lab 14

Generic Binary Search Tree

In this assignment you will implement a GENERIC binary search tree.

[Y**ou will need to write tests to ensure that your tree is correct]**

Each node in your tree will contain a single value of any built-in or user defined ADT. Your tree must provide the following operations (NAMES GIVEN):

1. Add - this method receives a value which is inserted into the binary search tree
2. TraverseInorder : Prints out the contents of the tree using the inOrder traversal algorithm. for each object in the tree it calls the toString() method. (all wrapper classes in Java implements toString()).
3. TraversePreorder: Prints out the contents of the tree using the preOrder traversal algorithm
4. TraversePostOrder: Prints out the contents of the tree using the postOrder traversal algorithm
5. Find: Given an object of the type searches the tree for the object, and returns true if the value is found and false other wise
6. MakeEmpty: empties the tree, setting the root to null.
7. Height: calculates and returns the height of the binary tree as an integer
8. isFull: returns true if the tree is "full"
9. isComplete: returns true if the tree is complete
10. isBalanced: Returns true if the binary tree is balanced, and false otherwise

Your binary tree class will be implemented as a GENERIC class.