Homework – Lesson –10 (Binary Search Trees)

Problem1: Practice the following unimplemented methods.

1. Implement the following methods in the demo code folder `MyBST`.java

   a. **public void** preOrder(){
   preOrder(root);
   }
   private void preOrder(BinaryNode t){//implement}

   b. **public void** postOrder(){
   preOrder(root);
   }
   private void postOrder(BinaryNode t){ //implement }

   c. **public boolean** contains(**Integer** key){ //implement }

   d. **public** Integer getRoot(){//implement }

   e. **public Integer leafNodes(){**
   return leafNodes(root)
   }
   private int leafNodes(BinaryNode t){// Implement}

   f. **public int size(){**//implement **}**

   g. **public boolean isEmpty(){**//implement **} // check the tree is empty or not**

   h. **public Integer findMin(){**
   return findMin(root);
   }
   private Integer findMin(){//implement **}**

   i. **public Integer findMax(){**
   return findMax(root);
   }
   public Integer findMax(){// implement }

2. Practice manually the following operations using the given link. No need to Submit on Sakai.
   https://yongdanielliang.github.io/animation/web/BST.html

   a. Construct Binary Search Tree with the initial set of values.
   b. Insert some nodes in your tree.
   c. Delete some nodes from the tree
   d. Perform in-order, pre-order, post-order traversal

3. Need to practice the following predefined classes and its methods for the wrapper type as well as for user defined type such as Employee, Sales etc.
   For the user defined class type need to implement Comparable/Comparator to maintain the sorted list. No need to Submit on Sakai.

   a. TreeSet
   b. TreeMap