

COP4530 Recitation Fall 2012

Week 8

Objective

1. Binary Search Tree

Definition

A. Binary Search Tree

A binary tree is called a Binary Search Tree iff:

- There is an order relation \leq defined for the vertices of B
- For any vertex v , and any descendant u in the subtree $v.left$, $u \leq v$
- For any vertex v , and any descendent w in the subtree $v.right$, $v < w$

Implementation

A. Basic Methods

- Constructor
 - Create an empty binary search tree
- Destructor
 - Deallocate memory
- Insert
 - Create a new node in the binary search tree
- Delete
 - Remove a node from the binary search tree; rotate if necessary
- Search
 - Search the binary search tree for a node, and return its value
- Find max
 - Return largest value in the binary search tree
- Find min
 - Return smallest value in the binary search tree

How can we simplify the public interface by using the private interface?

B. Traversal

1. Inorder Traversal
2. Preorder Traversal
3. Postorder Traversal

What is important about these traversal methods?