

Tree – Study Questions

- What is (as defined in lecture) the height of a tree?
- What is a binary tree?
- How is a BST different from a binary tree?
- What is a leaf?
- What is the root of a tree?
- What is a subtree?
- What are two applications of binary trees?
- Draw all possible binary trees with 4 nodes. Label each tree with its height, the number of leaves and label the tree as either full, complete, balanced or unbalanced.
- What is the minimum height of a full tree with n nodes?
- Write pseudocode for a recursive inorder traversal.
- Write pseudocode for a recursive preorder traversal.
- Write pseudocode for a recursive postorder traversal.
- Write pseudocode for the add() method of a BST.
- Does a BST make any guarantees for the height of the tree in relation to the number of nodes? In other words, does the BST property determine the structure of the tree?
- What are the three cases to be considered when deleting a node in a BST?
- Write a C++ implementation for getNumberOfNodes() and its helper function, based on the linked implementation discussed in lecture.