CSE 2100 – Data Structures & Analysis of Algorithms

Lab #4 – Trees

Labs are evaluated along axes of correctness, design, and style, with scores ordinarily computed as 3 × correctness + 2 × design + 1 × style.

Getting Started

Navigate to https://bitbucket.org/ChrisIsKing/cse2100/src/ and pull the starter code located inside of the folder named *Lab 4 (Trees)*.

Located in this folder contains 3 files (main.c, Tree.c, Tree.h).

You will be operating mostly in **Tree.c** but feel free to inspect all files.

If unfamiliar with concepts of Trees review the powerpoint documents located in the Lab 4 Directory.

Tasks

Using your knowledge of Trees taught in class you are required to:

- Implement the functions `bool insert(node* root, int val)` in tree.c that recursively inserts a node into the tree following the principals of a binary tree.
- Implement the functions `bool search(node* root, int val)` in tree.c that recursively searches your binary looking for the inputted value.

BONUS

- Implement a recursive function called void *inorder_traversal(node* root)* that recursively carries out the inorder traversal (Left, Print, Right) on a binary tree.
- Implement a recursive function called void *preorder_traversal(node* root)* that recursively carries out the preorder traversal (Print, Left, Right) on a binary tree.
- Implement a recursive function called void *postorder_traversal(node* root)* that recursively carries out the postorder traversal (Left, Right, Print) on a binary tree.