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Time Complexity:

AVL<*int*> BuildAVLTree(*const* string\* fileName);

For every single node: O(n)

Insert into the tree O(logn)

Overall: O(nlogn) – where n is the number of nodes

*void* printAVL(AVL<*int*>& tree);

O(n) – inorder traversal

O(n) – preorder traversal

Overall 🡪 O(n)

*void* InsertNodeAVL(AVL<*int*>\* tree, *int* node);

1. Search for an appropriate spot to insert O(logn)

2. Insert the node O(1)

3. Rotations - if it’s needed O(1)

Overall 🡪 O(logn)

*void* DeleteNodeAVL(AVL<*int*>\* tree, *int* node);

1. Search for the target node in the tree O(logn)

2. Delete the node O(1)

3. Rotations - if it’s needed O(1)

Overall 🡪 O(logn)

*void* DeleteAVLTree(AVL<*int*>\* tree);

Use preorder traversal to delete all the nodes in the tree

Overall 🡪 O(n)