

Time Complexities:

`printInorder()`, `printPostorder()`, `searchName(name)`, and `printPreorder()` all use helper functions that are $O(n)$ complexity, because we access every node in the tree, and n is the total number of nodes in the tree.

`printLevelCount()` is constant time as we just access the root node's height, which is 1-based.

`searchID(ufid)`, `insert(name, ufid)`, and `remove(ufid)` are all $O(\log n)$ complexity, because each time we traverse down the tree, the number of nodes we deal with is effectively halved, and n is the height of the tree.

`removeInorder(iterations)` is $O(n)$ complexity, where n is the integer argument passed into the function.

Reflection:

Overall, I had a fun time coding up this assignment. It was a challenge, but the tree visualization function I built helped a lot towards getting to the solution. I learned how to practically build an AVL tree, encapsulate an API, unit test code to prevent bugs and streamline development, and brushed up on managing memory efficiently. The only thing I would do differently is start earlier!