Austin Spencer Tommy Graves Lab 9 - Lab Report 04 - 3 - 2023

The worst case scenario of an unbalanced tree is O(n) while the worst case of a balanced tree is  $O(\log n)$ . The average cases of insertion, removal, and finding of both a balanced and an unbalanced tree are the same,  $O(\log n)$ . However the worst cases of an unbalanced tree of insertion, removal, and finding are O(n); while the worst cases of a balanced tree of insertion, removal, and finding are  $O(\log n)$ . Through this we can determine that balanced trees will result in better performance, but it is not that large of a performance boost. This means that a programmer should consider the extra time it takes to implement the self-balancing feature on a binary search tree.