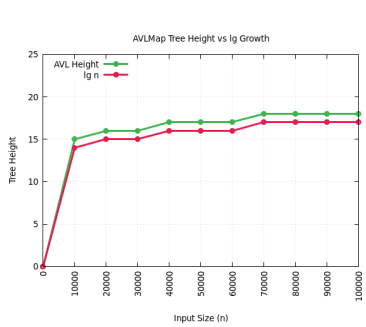
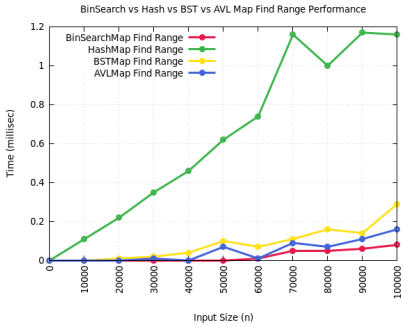
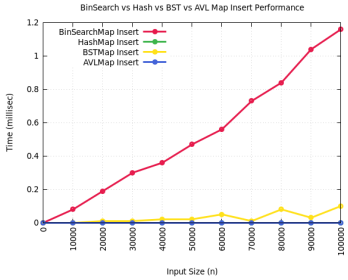
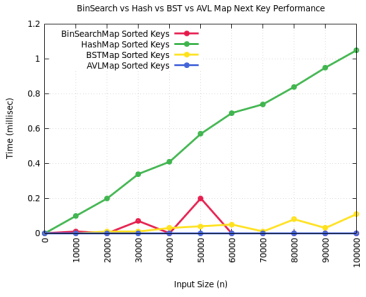
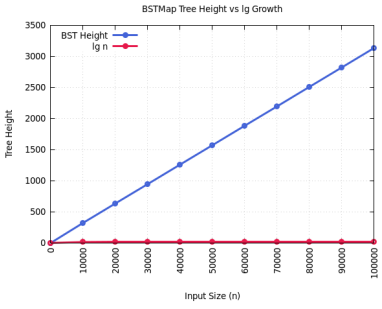
Connor Goldschmidt
Hw9-writeup
4/19/22

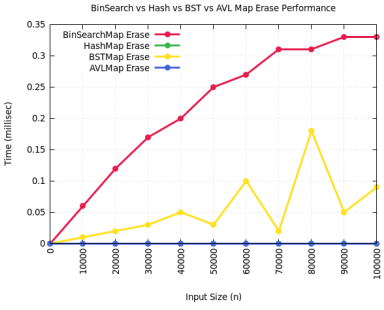


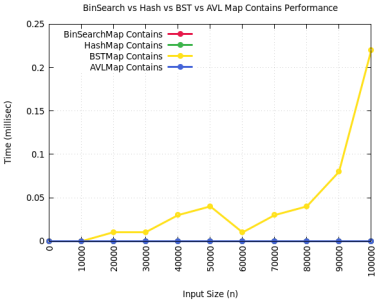


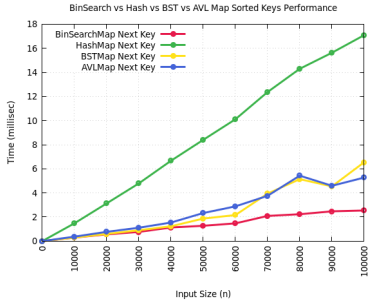












As noted by the performance graphs, the AVL Tree is consistently the best performing data structure. While both the BST Tree and AVL Tree have a O(logn) root to leaf performance, the degenerate structure of the BST means that it can essentially turn into a lined list. While the rebalance function has to be consistently called, the constant time performance of this function means the overall implementation maintains an O(logn) performance and avoids the degenerate cases.

While implementing this assignment by biggest struggle was with maintaining the height values after the rotation. I was initially having trouble maintaining the heights in the individual left and right rotation functions. To combat this, I calculated the values in the main rotation function.