

Report on analysis of inserting 50000 integers in AVLTree and BSTree

AVLTree	Insert time	Access time	Delete time
Increasing order	19 ms	6 ms	10 ms
Decreasing order		7ms	9 ms
Random order	33 ms	13 ms	35 ms

Table 1: overview of inserting 50000 integers in AVLTree

BSTree	Insert time	Access time	Delete time
Increasing order	10982 ms	9544 ms	1 ms
Decreasing order		11088 ms	13710 ms
Random order	21 ms	21 ms	22 ms

Table 2: overview of insert 50000 integers in BSTree

From the tables above, we can see that AVLTree performs better in almost all operations except deleting integers in increasing order, inserting integers in random order, and deleting integers in random order.

AVLTree rotates when the tree is not balanced so it is not sensitive to the order of the integers that are passed in. It can perform inserting, accessing, and deleting n integers in time $O(n \log n)$.

BSTree is not balanced so the time of the operations to it depends a lot on the order of the integers that are passed in. It can perform inserting, accessing, and deleting n integers in time $O(n \log n)$ to $O(n^2)$.