Binary Search Tree - Lookup performance

29th September 2019

We plot the average time required to find a key in our implementation of a binary search tree of a given size (i.e. a given number of nodes) when the tree is unbalanced (red curve) and balanced (blue curve). We also added the same test done on the STL map (orange curve).

The size is taken in logarithmic scale as it is known that the time complexity for the lookup should be at worse a logarithmic function of the size of the tree when the latter is balanced.

Our balanced binary tree has the best lookup performance since the implementation of the standard library map is much richer and complex than ours.