

# 3rd Quarter Portfolio Update: A Logarithmic Random Access Tree

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## Research Paper

I added information about changes with the Red Black Tree and my transition to the Splay Tree. I also added a bibliography and an example image of a basic unbalanced random access tree.

## Poster

I did not change any of the graphics but modified all of the text slightly. The changes were mostly with regards to my work on the Red Black Tree and transition to the Splay Tree.

## Slides

Just like the previous sections pretty much - I updated some slides, particularly those dealing with Red Black Trees and added slides about Splay Trees.

## The Project Itself

I finished coding the Red Black Tree and fixed all evident errors. I began adding random access capability but was stopped short by new errors. They seemed to imply some kind of lack of conforming to the Red Black Tree

standards so I added various diagnostic functions. These functions were inconsistent imply some kind of disjointedness within the tree. Thoroughly baffled and unable to identify the problem I turned to the Splay Tree. Splay Trees are also balanced and are much simpler than Red Black Trees. Consequently they appeared a good choice to fulfill my basic goals if Red Black Trees were proving too troublesome. I coded up a Splay Tree from scratch and am currently hammering out the final bugs in the splay function.

## Fourth Quarter

I will add random access capabilities to my Splay Tree first. Given time I will fix my Red Black Tree and with any remaining time I will work on the problem of parallelizing the algorithm.