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<u>HW9 EC Write-Up</u>

Operation	Map Implementation						
	ArrayMap	LinkedMap	BinSearchMap	HashMap	BSTMap	AVLMap	BinHeap
insert	1	n	n	1	n	log n	log n
erase	n	n^2	n	1	n	log n	log n
contains	n	n	log n	1	n	log n	N/A
find_keys	n	n^2	n	n	n	n	N/A
sorted_keys	n^2	n^2	n	n log(n)	n^2	n^2	n log(n)

In this assignment I created a min BinaryHeap, where all of a node's children must be greater value than itself. I struggled with the insert and erase helper to find the last node. And ended up making two separate functions, the erase stayed the same, but the insert function returned the node above where it needed to be inserted so I could do something such as: st_root->right = insertion. After solving this issue, the project was fairly straight forward.

The tests I created test the order of the new nodes and other basic tests we have implemented in past assignments. The insert and erase tests are pretty basic, but the copy and move tests are where we start to test more cases, like removing in a tree with one elem, and checking the root, or removing from an empty tree and expecting an error. Additionally, they test inserting when it's a full tree, or removing when there's only one node in the bottom row, etc. These tests insure the functions work in any case and keep the correct order.

(I have attached graphs and output.dat in the repository, felt like trying a perf file ☺)