

Topics for CSCI 151 Exam 2 Friday, May 6

Here are the structures we have looked at since the first exam:

- Iterators
- Single- and doubly-linked lists
- Trees in general
- Binary Search Trees
- AVL trees
- Maps
- Hash Tables, and Hash Maps
- Priority Queues

We have also talked about one $O(n \log n)$ sorting algorithm:

- MergeSort

For each data structure you should know how it is implemented, how it works, what it is good for, and a Big-O estimate of running times for its algorithms. I will expect you to know details about how the structures work. For example, I could give you a specific AVL tree and ask you to find the AVL tree that would result from adding a particular value to this tree. You should know all of the structures and algorithms we have covered in this level of detail. The algorithms include:

- Preorder, Inorder, and Postorder traversals of a binary tree
- Searching a Binary Search Tree
- Inserting and removing from a Binary Search Tree
- Adjusting an AVL tree after an insert
- Searching a HashMap
- Inserting into a HashMap
- Insert (offer) and remove the smallest element (poll) of a Priority Queue