



CSSE 230 Day 30

That's all folks.

Let's revisit the "Big picture", with understanding

THE BIG PICTURE CSSE 230 – DATA STRUCTURES AND ALGORITHM ANALYSIS

Applications:
(120/220 = 50% of 230 + beyond)

ADT:
(120/220 = 50%)

List Stack Queue
PQ

Set / Map (key/value)

Implementation
Choices

(heap) (hash) (circular) (skip)
Array Linked List
(120/220 = 20%) (20 = 10%)

Tree
(45%)

Graph
(5%)

Diagram

Why use?
(120/220)

Access by index:
Search:
Insert/remove
from start/middle

Access by index:
Search:
Insert/remove
at ends or from
iterator:

Access by index:
Search: *
Insert/remove: *

(CSSE473)

Other notes:

Can sort!
If sorted, search:

* $O(\log n)$ if balanced. Otherwise $O(n)$

Course Evaluations on Banner

- ▶ Numbers are nice, but written explanations are much better
- ▶ Focus:
 - Did you learn a lot?
 - Are there things you know/can do now that you didn't/couldn't at the beginning of the term?
 - What about the course/instructor enhanced your learning?
 - What about the course/instructor were barriers to your learning?
 - Be as specific as possible.

Some Final Thoughts

- ▶ Data is at the heart of software.
 - The companies you may work for agree!
 - The data is the “irreducible complexity” of the code.
- ▶ This class has been very “heads down.”
 - Getting the algorithms right.
 - Making good OO design choices.
 - There will be more course work like this (CSSE304, 473)
- ▶ You also need to be “heads up.”
 - Like the ethics assignment you did.
 - Understanding requirements means knowing the clients and users! (CSSE 371)
- ▶ Most upper-level courses require some of each in projects
- ▶ Interview tips:
 - <http://jetheis.com/blog/2011/12/08/five-less-mushy-technical-interview-tips/>

Final Exam Details

- ▶ Format same as previous exams.
- ▶ You can bring two sides of 8.5" x 11" paper.
- ▶ Comprehensive, but more focus on last 3 weeks
 - 60% paper, 40% programming (90/60 points)
- ▶ Best preparation:
 - Written problems
 - re-do programming problems you struggled with on homework/exams

Final Exam topics

- Reading, programs, in-class, written assignments.
- Foci:
 - Binary trees, including EBT, AVL, red/black, and rank
 - Traversals and iterators, numeric properties
 - PriorityQueues, Heaps and heapsort
 - Issues in Hash table implementation
 - Graphs
 - Recurrence relations
 - Sorting algorithms and analysis
 - Algorithm analysis (O , θ , ω) in general
 - OO programming, using various data structures (lists, stacks, queues, sets, maps, priority queues)
 - +/- with ADT implementation options (like we did for PQ last week - be specific with answers)

What's left?

- ▶ Do Hardy Evaluation
- ▶ Finish sorting races by 11:00 PM Friday (using late day(s) OK)
 - SortingRaces eval is OPTIONAL
- ▶ Study, including taking the practice exam
 - ▶ Extra help meetings by appointment
- ▶ Final Exam Thursday morning
 - A – J (Boutell) in O259
 - K – Z (Boutell) in O257
- ▶ We grade Hardy, 2D Trees, and sorting races.
- ▶ I finalize all “non-final exam grades”