



# 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

|   |   |   |   |                       |  |
|---|---|---|---|-----------------------|--|
| <p>Applications:<br/>(course = 10% of 230 + 10,000)</p> |   |   |   |                       |  |
| ADT:<br>(course = 10%)                                  | List  | Stack   | Queue   | Set / Map (key/value) |  |
|   |   |   | 25%   |                       |  |
| Implementation Choices                                  | (heap) (hash) (circular) Array<br>(course = 20%)                      | (skip) linked list<br>(tree = 10%)                                    | Tree<br>(45%)                                     | Graph<br>(5%)         |  |
| Diagram   |   |   |   |                       |  |
| Why use?<br>(course = 20%)                              | Access by index:<br>Search:<br>Insert/remove at ends or from between: | Access by index:<br>Search:<br>Insert/remove at ends or from between: | Access by index:<br>Search: *<br>Insert/remove: * | (CSSE473)             |  |
| Other notes:  | Can sort!<br>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://jethais.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
  - Graph implementations
  - Recurrence relations
  - Sorting algorithms and analysis
    - Algorithm analysis ( $O$ ,  $\theta$ ,  $\omega$ ) in general
  - OO programming, using various data structures (lists, stacks, queues, sets, maps, priority queues)
    - +/- with ADT implementation options (like we did for PQ – be specific with answers)

## What's left?

- ▶ Finish sorting races by 11:00 PM today (using a late day is OK).
- ▶ Since some students will not finish SortingRaces until late Saturday evening, it is possible that it will not be graded before the exam.
- ▶ If there are issues with grades on old assignments, we should get them resolved before you leave campus.
- ▶ Final Exam Monday 1:00 PM
- ▶ Study, including taking the practice exam