Priority Queues, Heaps, and Heapsort

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Warmup Problem

When You Enter The Classroom:

- **Program the following function:**

```
int second_largest(int* heap, int n) {
    // Assume `heap` is a max-heap.
    // Assume `n` >= 3.
    // TODO: Return the second largest element.
}
```

- **Analyze the time complexity:**
  - Assume an input of size n.
  - Give an asymptotic bound on the time complexity of your algorithm.
  - What does your bound mean, in terms of your algorithm(s) runtime?

Write your group's work on the whiteboards!

Lab Directions

Begin These Now:

- **Consider attending the review session:**
  - Midterm Review (2:00-4:00PM)
  - This Friday at 2:00-4:00PM in Engineering 040
  - Ask your group members if they are going!
- **Create a new project in your IDE for Lab 5**
  - If you aren't sure how to do this
    - Ask a group member
    - Search for documentation
    - Chat with AI
  - If you are still stuck, call over a staff member
- **Work through the lab handout**
  - Available on GitHub under labs/lab-05
  - https://github.com/URI-CSC/212-fall-2015
    - Yes, it is 2015 not 2025
  - All directions available in the lab handout