

CS 367 - Introduction to Data Structures

Tuesday, May 3, 2016

Final Exam

- Sunday, May 8th, 2:45 to 4:45 pm
- Lec 1: room 272 of [Bascom Hall](#)
- Lec 2: room 2650 of [Mosse Humanities Building](#) (note new room)
- Lec 3: room 1351 of [Chemistry Building](#) (note new room)
- UW ID required
- See posted exam information

Program 5 due 10 pm **Friday**, May 6th

Homework 10 due 10 pm **Tomorrow**, May 4th

Last Time

- Tree Map vs. Hash Map
- Sorting Intro
- Basic Sorts
 - bubble sort
 - insertion sort
 - selection sort

Today

- Better Sorts
 - heap sort
 - merge sort
 - quick sort
- Stable Sorts
- Sorting in Java

(Last!) Next Time

- Read:** finish *Sorting*
- Radix Sort
- Sorting out Sorting
- Course Overview Sheets
- Final Exam Info
- Evaluations (**please bring a pencil**)

Heap Sort

Idea

Analysis

Merge Sort

Idea

Analysis

Quick Sort

Idea

Analysis

Quick Sort (cont.)

Choosing a Good Pivot

Quick Sorting the Array with Partitioning

6 1 5 9 3 5 4 3 7 6 2 8 2

Stable Sorts

→ What do you notice about the sorting of the following three lists of names?

UNSORTED!

Jane Jetson
Elroy Jetson
Homer Simpson
Marge Simpson
Stewie Griffin
Judy Jetson
George Jetson
Barney Rubble

Barney Rubble
Elroy Jetson
George Jetson
Homer Simpson
Jane Jetson
Judy Jetson
Marge Simpson
Stewie Griffin

Stewie Griffin
Elroy Jetson
George Jetson
Jane Jetson
Judy Jetson
Barney Rubble
Homer Simpson
Marge Simpson

Sorting in Java

In `java.util`

```
Collections.sort(List)
```

```
Arrays.sort(array_to_sort)
```