CSE 332
Data Abstractions
Winter 2015

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Course Web Page: http://www.cs.washington.edu/332/

Description: Covers abstract data types and structures including dictionaries, balanced trees, hash tables, priority queues, and graphs; sorting; asymptotic analysis; fundamental graph algorithms including graph search, shortest path, and minimum spanning trees; NP-completeness; concurrency and synchronization; and parallelism. **Prerequisites:** CSE 311

Course Text: *Data Structures and Algorithm Analysis in Java* 3rd Ed., Mark Allen Weiss, Addison Wesley: 2012, ISBN-10: 0132576279. (We will also try to support the 2nd edition: Addison Wesley: 2007, ISBN: 0-321-37013-9.) Readings (and occasionally homework problems) will be assigned from the textbook. As lecture does not provide enough time to cover all material in detail, you will be expected to read the textbook to clarify topics and find more examples as well as to examine Java implementations of the data structures and algorithms discussed during lecture. Copies will also be on reserve at the Engineering library. We also recommend a Java reference book of your choice, one is: Core Java(TM), Volume I--Fundamentals, Cay S. Horstmann and Gary Cornell, Prentice Hall.) We will use a set of free on-line notes for the material on parallelism and concurrency.

Computing Resources: We will use Java (7 has been tested, 8 will also probably work fine) for programming assignments. We recommend although will not require that you use the Eclipse development environment. Links for downloading and installing Java and Eclipse can be found on our course web page.

Communications: The course GoPost message board should be your first stop for questions about course content and assignments. Before emailing the staff, first check that your question has not already been answered on the GoPost, and if not, ask it there. If it is not possible to ask your question on the GoPost without revealing details of your solution, please send email to cse332-staff at cs.washington.edu, which will go to the instructor and TAs. In general we prefer that you send questions to the cse332-staff list instead of to an individual staff member so that you will get a faster response time and the entire staff can remain aware of questions and issues. You will be automatically subscribed to the course email list if you are registered for the course and will be held responsible for anything posted there (only course staff will post to the course email list).

Assignments: Assignments will be a mix of written/typed exercises (eight) and programming projects (three). Exact dates and deadlines will be specified on each assignment.

Exams: We will have one midterm exam during lecture (date TBA) and a joint final exam for students in both lecture A and B at 12:30-2:20pm Wednesday March 18, 2014, location TBA. **NOTE: This final exam time is different from the official assigned university time. Contact the instructor immediately if you have a conflict with the final exam time listed above.** Makeup

exams will only be offered under extraordinary circumstances; you should plan to attend the exams when they are given. Exams will normally be closed-book, closed-notes, and calculators will not be allowed.

Late Policy: Each student will be given a total of three "late days" to use should the need arise. Each late day will buy an extra 24 hours from the original time the assignment was due. A late day is always used in its entirety – you may not use "half of a late day" etc. *The weekend counts as two days.* If you have used up your late days, a penalty of 10% off per 24-hours late will be assessed.

If unusual circumstances truly beyond your control prevent you from submitting an assignment or attending an exam on time, you should discuss this with the instructor, preferably in advance. (Even if you're sick in bed at home, you should still be able to make a phone call or send an email.)

Grading and Evaluation: Grades will be computed *approximately* as follows (weights may be modified):

- 25% - Written Homework Assignments
- 25% - Programming Projects
- 20% - Midterm Exam
- 30% - Final Exam

Academic Integrity: Unless otherwise specified, you are to complete assignments individually. You may discuss the assignment in general terms (see description of Gilligan's Island rule on the course web page), but the code and solutions you write must be your own. You are encouraged to discuss ideas, approaches, concepts, bugs, etc., in English, but you may not show or give your code or assignment to anyone except this course's TAs and instructor. You are not allowed to write code with another student or to show another student your solution to an assignment. Referring to solutions found on the web or solutions from this or other courses from previous quarters is also considered cheating. We plan on running similarity-detection software over all submitted student assignments, including assignments from past quarters.

CS 332 – First Day Assignments

0) **Review Java and explore Eclipse** – Instructions for installing on your home machine are on our course web page. Now would be a good time to review material from CSE 143!

1) **Project #1** – Your first programming project will be posted by **soon**. Look for an email announcing its arrival to verify you are on the course mailing list!

2) **Preliminary Survey**: Please fill out the preliminary survey posted on our course web page by the evening of **Tuesday Jan 6th.**

3) **Reading** in *Data Structures and Algorithm Analysis in Java*, by Weiss (Reading is the same in both 2nd Edition and 3rd Edition)
   - For this week:
     › (Today) Weiss 3.1-3.7 –Lists, Stacks, & Queues (Topic for Project #1)
     › (Wed) Weiss 1.1-1.6 –Mathematics Review and Java
     › (Fri) Weiss 2.1-2.4 –Algorithm Analysis