CSE 143 Java

Welcome!

Outline for Today

- Course Overview
- Goals
- Administrative details
- Workload and grading
- Resources

This information is largely included in today's handouts, and is on the web

No need to copy down – relax and enjoy!

Staff

- Instructor: Martin Dickey
  dickey@cs.washington.edu
  Sieg 423b, office hours TBA
- TA's: Rob Drollinger, Danielle Farrar, Chris Fitzner, Sam Kim, Travis Krick, Bryan Nelson, Tapan Parikh, Dave Richards, Ian Simon, Gary Yngve
  cse143-ta@cs.washington.edu (goes to all TAs and the instructor)
- IPL Consultants: once we get their hours worked out, we'll post a schedule.
- Course administrator: Pim Lustig
  cse143-admin@cs.washington.edu
- Everyone:
  cse143-staff@cs.washington.edu reaches entire staff

Can't Get In?

- Lots of space at 8:30! Tell your friends to sign up.
- No waiting list/entry codes
- Non-matriculated students, grad students, registration problems – please see Pim Lustig (Sieg 114).

Java!

A modern approach to programming including

- Objects everywhere; classes, interfaces, polymorphism
- Exceptions
- Streams and networking support
- Garbage collection
- Specifications, design by contract support
- Rich set of standard libraries
- Documentation tools and standards, on-line library documentation

- We'll use Sun's Java SDK 1.4.0_03
  - Also OK: 1.4.0_01, 1.4.0_02
  - 1.4.1 is the latest, but may have compatibility problems
  - 1.3 will *not* do.
  - J++ (Microsoft) will *not* do
  - Please update your software!
  - Details: *Computing at Home* page

Are You Ready?

- Course is a direct continuation of CSE 142 Java
- Must have a firm grasp of Java basics
  - including classes, objects, statements, expressions, methods, parameters, arrays, etc.
    concepts and terminology as well as being able to use in programs
  - No systematic review
  - Look at old CSE 142 web pages – you should be able to handle those assignments and exams
- What if you took the C version of CSE 142? Or took 142 elsewhere?
  - Let's talk about that now
  - Not sure?
    Sit in on both for a few days
    Try the first 143 assignment
    We'll help you switch to 142 if that's your decision

Content Overview

- Classes
- Interfaces and inheritance
  - class hierarchies; overloading and overriding
- Exceptions and error handling
- Streams and files
- Data structures (arrays, lists, queues, stacks, sets, maps, trees, tables)
  - Multiple implementations
- Introduction algorithmic complexity
  - Applications to implementation tradeoffs
- Recursion
- Searching & Sorting
  - As applications of everything listed above!
- Graphics and drawing
- Graphical user interfaces & event-driven programming
- And Much Much More!

Course Objectives

- This *is* a programming course
- This is *not* a programming course

"Do I contradict myself?
Very well then, I contradict myself.
(I am large, I contain multitudes)"

-- Walt Whitman, *Song of Myself* from *Leaves of Grass*

Is it or Isn't it?

- This *is* a programming course
  - The key goal is learning to program **well**, not just getting stuff to run
    Good design, good organization, good style
    Good algorithms, meaningful efficiency
- This is *not* a programming course
  - Lots of Java features won't be covered
    See Java reference books for full descriptions of the Java language
    We cover the parts of Java that support good programming
  - Many important computer science topics
    Some related to programming, but broader than Java
    Data structures, algorithms, complexity analysis, software engineering…
- Fact:: writing programs that work perfectly isn't enough to get a perfect grade (!)

My Goals for You

- Take you to the next technical step in programming
- Challenge you with material of considerable intellectual content, and with projects of considerable complexity.
- Develop your ability to learn independently
- Develop your ability to learn cooperatively
- Develop your ability to deal with incomplete and ambiguous information
- Increase our awareness of larger issues surrounding the use of information technology in our world
- If possible, make it fun. If possible…

My Goals For Myself

- Top goals for the course:
  - Help all of you learn
  - Keep the course on track
  - Make the homework projects interesting
  - Make lecture and section events you look forward to!
- Plus some more personal goals…
  - Learn some more Java myself
  - Make better use of technology in the classroom
  - Refine some teaching techniques
  - Take lots of pictures
  - And… learn a bunch of names!

Course Organization

- 3 lectures per week (MWF)
- Quiz section twice per week (T & Th)
  - Exercises, review, discussions, etc.
  - Be sure to enroll in one of the quiz sections for this lecture (J*x*)
- Frequent quizzes
  - To keep you up with the reading and assignment instructions
  - To test mastery of current material
  - To provide TAs and me with feedback

Assignments

Typically (but not always!) due Wed. night 9pm (electronic) and/or in sections Thursday morning (written)

- Primarily fairly substantial programming projects
- Some written problems and short programming drills
- Assignments will more complex than in CSE142
  - Assignment directions, too!
- No late assignments accepted

Academic (Mis)conduct

- Goal: balance the following
  - **Learning**: each student must do the work to learn effectively
  - **Cooperation**: people learn best when they can cooperate with others
  - **Fairness** and **honesty**: Nobody should ever represent the work of someone else as their own or try to claim credit for it
- Policy
  - You must do assignments by yourself (unless explicitly stated otherwise in an assignment)
  - You may discuss general approaches and ideas with others, but
  - You **may not *ever*** give code to or receive code from others
- We check this and act when trouble is discovered
- Use your common sense and ask first if unclear

Exams & Quizzes

- Exams
  - 2 midterm exams in class; tentative dates: TBA
  - Final exam: Wednesday, March 19
- The exams will not be given on any other days. Don't make plans which would take you away!
- Format: mixture of short answer, short essay, multiple choice, programming
  - Students often describe the questions as tricky...

Grading

- Grade distribution (subject to change)
  - 29% homework assignments
  - 14% + 16% midterm exams
  - 24% final exam
  - 12% quizzes
  - 5% participation and service
- Class is curved
  - Median of final course grades is around 3.0
    - Maybe a bit higher when there are a lot of drops
  - Why?

Grading

- Assignment and quiz grading will be very coarse
- No partial points
- Typical scale:
  - 4, 3, 2, 1, 0 for assignments
    Occasionally may use 0..1 or 0..2, etc.
    Mastery || Good Job! || On the Right Track || Honest Effort, but... || Really, Now!
    Separate scores for Operation/Practice
    I.e., Yes! style matters
- Quiz question grading: usually right or wrong

Disconnect?

- The parts of the course have different goals and styles
  - May seem disconnected from one another
- Tests vs. projects
  - Each measures things that the other can't
  - Tests may seem hard even when homework doesn't!
  - Homework may require learning about topics not covered in lecture
- Lectures vs. homework
  - Lectures may cover topics not practiced in homework
  - Lectures cover concepts and examples; will rarely talk about homework
  - Lectures sometimes mathematical, homework rarely so
- Quiz sections
  - active learning, practice, and review of recent topics

"...I am large, I contain multitudes..."

Resources to Help You Succeed

- Course staff
  - Your TA is your primary contact, but please feel free to talk to any of us
    Especially: don't leave me lonely in office hours!
  - I'll try to be available right *after* class for as long as there are questions
    but *before* class, it's panic time. Please forgive me in advance if I'm grouchy then.
  - Consultants in the IPL
    A limited resource!
- Help each other! Form study groups, spend time on the bulletin board, etc.
  - Of course, within the academic conduct guidelines...
- Undergraduate advisors, for general questions about the CSE programs (Sieg 114)
- College of Engineering has some special resources for women and minorities

For Reading and Study

- Lecture slides and course notes
  - Alert! Not all lecture material is on the slides!
  - Slides used will be posted on the web
    NOT distributed in lecture
- Textbook: Next slide
- Other Material
  - Possibly handouts
  - All e-mail announcements, assignment descriptions, etc. should be considered required reading. They could even be tested on!

Textbooks

- Textbook: Niño & Hosch, *An Introduction to Programming and Object-Oriented Design using Java,* Wiley, 2002
  - Alert! We won't follow the book very closely!
  - There will be reading assignments from this book.
    If you choose not to buy it, be sure you have access to a copy
  - Covers material from both CSE142 & CSE143 – good review source
  - Will not always match our way of doing things, or our order!
- Another good recent book: Riley, *The Object of Data Abstraction and Structures Using Java*.
  - Source of additional explanations and examples
  - Slightly more up to date

Communicating Electronically

Course web site
- www.cs.washington.edu/education/courses/143/02wi-java/

- Message Board: will be linked from Web site
  - UWNetID required
  - Open discussion – please contribute!
  - Course staff monitors and contributes as needed
- Email to us
  - Addresses on the web
  - Email works better for some things than other
- E-mail from us
  - Sent directly to your UWNetID account
  - We'll try to keep the spam to a minimum, but... please read what we do send!

Computing Facilities

- Introductory Programming Lab (IPL)
  - Mary Gates Hall 334
  - CSE 143 consulting staff in IPL
    Hours posted on the web
    Goal is to provide quick help when you're stuck and have already tried to diagnose and fix the problem
- Computing at home
  - Java software and tools are freely available for download
    Java version MUST be 1.4. Install entire SDK
    You're free to use any Java development environment
    Recommended: Bluej or DrJava
    See Computing At Home page for links and details
- Even if you plan to compute at home, learn your way around the UW labs

Your First CSE143 Assignment

- Required reading:
  - syllabus, academic conduct policy page.
  - Do this before quiz section tomorrow!
  - Either buy or make sure you have access to a textbook
  - Read chapters 1-4 of the textbook
- Browse rest of web (still pretty incomplete)
  - Find the first day's slides
  - Visit the bulletin board (when linked) and find the announcements archive (two separate things!)
- Install the needed software on your home computer
  - and/or visit a campus lab and locate the software
- Start lining up project partners. It does not have to be someone you already know!
- Watch the web for more about Project 0.
- (After tomorrow) *memorize* your quiz section # and TA's name