Course Goals

To make you a better programmer

- Deconstruct relevant programming problems
- Solve them in an object-oriented style, focusing on
  - Reusability
  - Maintainability (clarity)

Style

- Interaction
  - This is your course: what do you want to learn?
- Discussion
  - Not just professor/TA to student, but student to student, with regard to ideas, techniques, and solutions
- Learn by doing
  - If you don’t put effort into the programming projects, you will learn very little

Approach

- Methods and styles of (sequential) object-oriented (OO) programming.
  - abstraction, particularly in the use of interfaces and
  - design patterns to improve reusability and reliability
  - will use the Java programming language exclusively
  - homework projects will build on each other
- Principles and practice of concurrent OO programming.
  Will cover the two main forms of concurrency:
  - shared-memory multi-threading (Java Thread class), and
  - distributed message passing (Java Remote Method Invocation)

Topics

- Java (end of next week)
- Programming techniques and tools
- Object-oriented design for sequential programs
  - OO principles
  - design patterns
- Concurrency
  - concurrent programming in Java
  - design patterns
- Distributed programming
  - distributed programming in Java
  - design patterns

Textbooks

- Primary Texts
  - Bruce Eckel, Thinking in Java (2nd Edition), Prentice Hall, 2000
  - Java primer
  - A complete copy of the book can be downloaded for free
  - Doug Lea, Concurrent Programming in Java (2nd Edition), Addison Wesley, 2000
- Secondary Texts
- All on reserve in the CS library
- See web page for more useful resources
Class Accounts

- We will have accounts on CSIC machines
  - Linux cluster; RedHat 7.3-based
  - Lab is in room 3107 CSIC
- Class accounts will be emailed
  - to the email account registered with UMEG
  - so make sure you check or forward that account!
  - if you don’t receive an account by Tuesday, talk to TA

Software

- Will be using Java 1.4
  - http://java.sun.com/j2se/1.4/docs/api/index.html
- May wish to use the Dr Java IDE
  - Installed on all CSIC machines
  - http://drjava.sourceforge.net/
- Will make use of JUnit testing package
  - Starting with hw #2, will include unit tests

Projects

- Focus on server applications
  - Encourages modular, abstract design
  - Admits natural use of concurrency and distribution
  - Relevant in our connected society
- Start small and build up
  - Develop a sophisticated family of software by course’s end

Project Submission

- Projects due at 6pm on due date
  - by Unix time of day
  - you must submit a good-faith effort
  - you can be failed for the course if you do not
- Use online submission procedure
  - Submit early and often
  - Can provide recovery from previous submit
  - Details provided later

Project Commentary

- After the projects are graded, you will be emailed two other (anonymized) submissions
  - respond with commentary on each with regard to the goals and techniques we are teaching
  - you will be graded on the usefulness of your commentary

Tentative Grading Plan

<table>
<thead>
<tr>
<th>#</th>
<th>% each</th>
<th>% total</th>
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</thead>
<tbody>
<tr>
<td>Projects</td>
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<tr>
<td>Mid-terms</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>Final</td>
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Discussion and Questions

- Read the newsgroup – csd.csmc433
  - Only visible from inside UMD
  - For class discussion
    - TA’s will read regularly, but may or may not respond. Do not expect real-time responses. This is not a substitute for coming to office hours.
    - NB: As in the rest of life, don’t believe everything you read!
  - Don’t cross the line
    - know the academic integrity procedure and follow it
      (see web page for more)

Office hours

- Professor Michael Hicks (mwh@cs.umd.edu)
  - TuWTh 10:30-11:30am
  - Or by appointment
- TA: TBD
- Always posted on class webpage:
- Come prepared to provide 2 plausible answers to your question

The Waitlist (if any)

- I am unlikely to accept anyone from the waitlist
- But if I do, I expect to take in only:
  - CS undergraduate majors with GPA = 3.25 and 330 grade of B or higher
  - CS graduate students
- Send me a note
  - after the first two weeks of class
  - with GPA, grade in CMSC 330, other info

Stay up to date

http://www.cs.umd.edu/class/fall2002/cmsc433-0201

Contains:
- Lecture notes
- Project assignments
- Resources
- And more!