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
  - For better grasping the importance of ideas and techniques
- 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 programming
  - event processing (Java NIO and Swing),
  - shared-memory multi-threading (Java Thread class), and
  - distributed message passing (Java Remote Method Invocation)

Topics

- Java (end of the week)
- Programming techniques and tools
- Object-oriented design for sequential programs
  - OO principles
- Design patterns
- Concurrency
  - concurrent programming in Java (events and threads)
  - Multi-threading design patterns
  - Java RMI
- Special Topics

Textbooks

- Primary Texts
  - Program Development in Java, Liskov and Guttag
  - Thinking in Java (3rd Edition), Bruce Eckel
    - Java primer
- Supplementary Texts
  - Thinking in Patterns in Java, Bruce Eckel
  - Concurrent Programming in Java, Doug Lea
- See web page for more useful resources
  - The Eckel books can be downloaded for free
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 Thursday, talk to TA

Software

- Will be using Java 1.4
  - [http://java.sun.com/j2se/1.4docs/api/index.html](http://java.sun.com/j2se/1.4docs/api/index.html)
- Will make use of JUnit testing package
  - Starting with hw #2, will include unit tests
  - [http://junit.sourceforge.net/doc/testinfected/testing.htm](http://junit.sourceforge.net/doc/testinfected/testing.htm)
- May wish to use a Java IDE
  - Dr. Java (installed on all CSIC machines)
  - Eclipse
  - Emacs (?)

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
  - Late submissions permitted until 9am the next day
- 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

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<td>Final</td>
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Discussion and Questions

- The Professor is the ultimate authority
  - Not other students, not the TA
  - Absorb his wisdom in office hours
    - unlikely to answer e-mails immediately
- Read and post to the newsgroup – csd.cmsc433
  - Only visible from inside UMD
  - For class discussion
    - TAs 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.
- Don’t cross the line
  - Follow the academic integrity procedure (see web page for more)

Office hours

- Professor Michael Hicks mwh@cs.umd.edu
  - M 1:30-2:30pm, TuTh 1-2pm
  - Or by appointment
- TA: Brian Krznarich
- Always posted on class webpage:
- Can check with Professor or TA for other section
  - short questions only

Stay up to date

http://www.cs.umd.edu/class/fall2003/cmsc433
Contains:
- Lecture notes (after class)
- Project assignments (and corrections)
- Resources
- And more!

And now …

- On to the quiz!