CS111: Intro to Computer Science

- Redesigned last semester to use Java, an object-oriented programming language
- CS111 is expected to be difficult and challenging
- Grades last semester (of students who took the final exam):
  - 13% A, 21% B, 30% C, 18% D, 18% F
- Moral: keep current with coursework; pay attention to deadlines!
CS111: Introduction to Computer Science

• Required Work: 3 exams, 6 programming assignments, recitation quizzes
• Course to use the computer for communication and instruction as much as possible - *paperless course*
• Use of the Web as an instructional tool
• Special permission, limited availability, not before Friday, Jan 23rd. Signup in class and send email explanation to ryder@cs
Class Webpage

• Webpage: http://remus/cs111
  – All assignments
  – Syllabus
  – Email to instructors
  – Tutorials on Unix
  – Recitation notes
  – Lecture notes
  – Calendar of important course dates
  – Pointers to useful websites
Requirements

• Strong background in high school mathematics and science courses
• Co-requisite of Calculus I (can take concurrently)
• Determination to work hard and keep up-to-date on coursework
Requirements

• On-time submission of assignments
  – Lateness policy: 1/3 off every 24 hour period

• Active participation in class by asking questions in lecture, in office hours, or on the newsgroup, especially when problems arise (so we can fix them)

• Take responsibility for doing your own work
Allowed Collaboration

• Discussion of assignments by a small group of students is allowed
• Each student must write his or her own Java code
• Copying code is cheating
• If identified, cheating will be severely punished
• Exams *always* have *several* questions based on the assignments
CS111: Facts

• **Instructor: Professor Barbara Ryder**
  – office: CoRE 311 (Busch Campus), 445-3699
  – email: ryder@cs.rutgers.edu

• **Sections 1-6, Lectures MW, 8:10am-9:30am in Scott-123 (CAC)**

• **Recitations during first two weeks in Satellite or Records Hall (CAC)**
CS111: Facts

- TA’s:
  - Ruchika Agrawal (sects 2,6) ruchikaa@remus
  - Florin Isaila (sects1,3) isaila@remus
  - Steve Schirripa (sects 4,5) stevers@remus

- Office hours - weekly, to be posted on webpage

- All class announcements posted on webpage - read it each time you logon
First Two Recitations

- Meet in computer lab
- Create an account using the Macs; can use subsequently on Macs, X-terms and PCs
- Learn to use netscape for email
- Learn simple Unix file commands to do Assignment 1 (create a personal webpage)
- Learn emacs editor by running teach-emacs
Set Password

• Pick something easy to remember but not easy to guess
• Use numbers and letters in combination
• Try phrases like “we hold these truths self-evident” which yields the password whttse76 from the 1st letter of each word plus 1776

DON’T USE THIS PASSWORD
Set Password

• Try using a combination of name and date that no one will know (e.g., your parents’ anniversary, your grandmother’s birthday and middle name, etc.)

• Have several example passwords to try in case your first choice is rejected
Assignment 1

- Due by 1:00am on February 2nd
- Copy our default webpage
- Edit in your information
- Save your changes
- Make webpage readable by everyone
- Email the URL to your TA
111 Incantation

- Standard “safe” Unix setup for your protection
- Must use at first; can change later
- Type this at start of your session -

```
source /usr/local/class/cs111/bin/setEnvironment
```
Normal Setup - Five Windows

- Unix window for typing commands
- Netscape window for reading Java docs and Web surfing
- Netscape window for email
- Emacs window for creating Java files
- Application window for communicating with your running Java program
When you are stuck

• Help
  – Send email to help@remus
  – Call 445-2443 when all else fails

• Logout
  – Select from menu
Tools we’re using

- Java - an object-oriented programming language
- Netscape - a browser program, much like a web-based filing system
- Unix - an operating system
  - DOS, MacOS
  - Files, directories, on-line help
- Emacs - an editor
What is Java-based CS111?

• Not a course in Java
  – Not going to program GUI’s, applets or threads
• Not a course in how to make webpages or program on the World Wide Web
• Not a course on Unix
• Not a course on programming
What is Java-based CS111?

- Problem solving
  - Defining the problem
  - Designing a solution
  - Implementing a solution
  - Testing your solution and debugging it
  - How to decide your solution “works”
- How to do this in an object-oriented style?
Airport Simulation

• Objects - airplanes, crew members, food trucks, baggage trams, etc.

• Actions
  – removeBaggage for baggage trams
  – takeOff for planes
  – loadMeals for food trucks

• Need to create a set of these interacting objects and test organizational strategies by testing them using defined actions
What is Java-based CS111?

• Introduction to object-oriented programming using Java

• Gaining familiarity with CS basics
  – Primitive operations common to all programming languages
  – Representations for information in the computer
How it all works?

Type in program with Emacs

fix errors

not ok

Compilation errors

ok byte code

Results

javac
Java compiler

compile

Java Virtual Machine

run

ok output

not ok

program logic needs correction

cf: Bishop, p10
How it all works?

- **Java**: platform independent
- **Compiler**
  - Validates code and translates into machine-understandable form
- **Errors**
  - Compilation
- **Interpreter**: a line-by-line compiler
- **Editor**: for creating text in the machine
How it all works?

Your Java Program

Java Compiler/Interpreter

Java Virtual Machine

UNIX

Machine Hardware