Announcements

- No CS100M sections this week
- No TA office hours this week
- DIS's office: 1-2:30 today, 5137 Upson Hall... regular hours, appt times TBA
- CS100M/CIS121/EAS121:
  - http://www.cs.cornell.edu/cs100m/2004sp
- Partner list for assignments

Why Are You Here?

- Requirement to take intro programming?
- Deciding between M or J or CS211?
- CIS121/EAS121?
- Self improvement? Intellectual curiosity?

Why am I here?

- Teach you to program using MATLAB and Java
  - Problem decomposition and solving
  - Structured code and language elements
  - Basic data structures
  - Testing and debugging strategies
- Demonstrate applications in computational science
- Motivate you to develop skills and appreciation
Course Description

- CS100: Introduction to Computer Programming
  - CS100M: ½ MATLAB, ½ Java
  - CS100J: 6/7 Java, 1/7 MATLAB
  - no experience assumed!
- CIS/EAS 121:
  - Just the MATLAB ½ of CS100M

Choosing J or M?

- Content?
  - J: discrete, e.g., number guess
  - M: continuous, e.g., find root
- Direction?
  - engineering
  - CS
- Style?
  - MATLAB and Java
  - the class

CIS/EAS 121

- Learn to program only with MATLAB
- Take followup course:
  - CIS122/EAS150: Application of FORTRAN in the Earth & Environmental Sciences
  - others in development?
- Administration:
  - Be part of CS100M! (same homework, exams, labs)
  - Some separation (partners, final exam)

CS211

- Are you experienced?
- How experienced?
  - C++?
- CS211 can replace CS100!
  - take another engineering distribution course later
  - make up 1 technical credit
CS99

- Introduction to the introduction of programming
- Problem solving, algorithms, pseudocode
- Language elements, arrays, strings, characters
- Control structures, functions, & methods
- Basic searching and sorting algorithms
- OOP: encapsulation, inheritance, polymorphism
- Program development
- Assumptions: trepidation or desire for "pre-experience"
- Doesn't satisfy any requirements

CS100: Topics

- Problem solving, algorithms, pseudocode
- Language elements, arrays, strings, characters
- Control structures, functions, & methods
- Basic searching and sorting algorithms
- OOP: encapsulation, inheritance, polymorphism
- Program development

AEW

- Academic Excellence Workshop
- Staff: people, places, offices, contact info
- Classes: lecture and section
- Classwork: exercises, assignments, prelims, final exam, Code of Academic Integrity
- Software: CMS, MATLAB, Dr. Java, labs
- Reading material: books, notes on website
- See Section 6.3 on Syllabus
- Staff: people, places, offices, contact info
- Classes: lecture and section
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- Software: CMS, MATLAB, Dr. Java, labs
- Reading material: books, notes on website
- See Section 6.3 on Syllabus
Course Staff

- Instructor (me): David I. Schwartz, dis@cs.cornell.edu, 5137 Upson
- Course administrator: Kelly Patwell, patwell@cs.cornell.edu, 5147 Upson
- Lots of teaching assistants
- Lots of consultants: B101 Carpenter
- Where are we? Office hours? See Staff link!

Classes

- Lecture:
  - pick one lecture on Tue and one on Thu
  - identical content!
- Section:
  - every week, mandatory!
  - run in computer lab (ACCEL, Blue Room in Carpenter)
  - weekly exercise

Classwork: Homework

- Exercises
  - in-class: weekly lab, sometimes lecture
  - occasionally home
  - binary grading
- Assignments
  - 6, large portion of course grade
  - grading: 5 for correctness, 5 for style
  - partners!

Code Of Academic Integrity

- Three levels: course, CS dept, Cornell
- See links on website!
- The gist for assignments:
  - don’t share code
  - don’t work with more than the allowed number
  - rules for partners? See Section 8.2 in Syllabus
Course Grades

- **Breakdown:**
  - Exercises (E) = 5% (all exercises)
  - Assignments (P) = 25%
  - Prelim 1 (T1) = 10%, Prelim 2 (T2) = 20%, Prelim 3 (T3) = 20%
  - Final (F) = 30%
  - drop lowest 10% of an exam

- **Cutoffs (see CS10J):**
  - 92: at least A-
  - 80: guarantees at least a B-
  - 65: guarantees at least a C-
  - 50: guarantees that you will not receive an F.

Classwork: Exams

- **Prelims**
  - 3 prelims: 2/26 (ML), 3/18 (ML), 4/20 (JV)
  - Prelim 2 (+ a little bit) if CIS/EAS 121 final
  - dates, info, review online
  - conflicts? See link to registrar online

- **Final Exam**
  - May 18
  - about 1/3 MATLAB, 2/3 Java

Software

- **MATLAB**
  - [www.mathworks.com](http://www.mathworks.com)
  - bookstore, labs

- **Java**
  - DrJava
  - J2EE SDK 1.4.2 (the JDK)
  - [www.drjava.org](http://www.drjava.org)

- More info? See website

Books

- **CS100M/CIS121/EAS121:**
  - MATLAB Programming for Engineers, Chapman

- **CS100M:**
  - An Introduction to Computer Science and Programming, Savitch

- Optional books?

- Posting of readings? See lecture notes online!
What is programming?

• Definition: *automating problem solving*
• Problems?
  – “build application that solves…”
  – “build application that does…”
• Tools for solutions?
  – thought
  – pencil and paper
  – computers!

Process

• Steps:
  – Problem stated
  – Problem written
  – Design conceived
  – Code written
  – Code tested
• Iteration!

Example

• Write a program that says *Hello, World!*
• Thought process:
  – Start program
  – Output message
  – End program

Solutions

• MATLAB:
  ```
  disp('Hello, world!')
  ```
• Java
  ```
  public class Hello {
    public static void main(String[] args) {
      System.out.println("Hello, world!");
    }
  }
  ```