1 Course Overview

- Main Purpose: To learn *programming*
  - Best way to learn programming is by doing it
  - Need a language to do it in, so will learn some Java also
  - Learning how to learn a new language efficiently
  - Programming principles are language-independent

- Data structures and algorithms
  - Fundamental parts of any significant program
  - Choosing the right one to use

- Software engineering - the design and implementation of large programs
  - Emphasis on *design*
  - Impossible to implement the solution to a problem without knowing how to solve it!
  - Choosing the right language for the job

2 Course Details and Administrative Issues

- This is all in the syllabus - read it!

- Course webpage
  - Instructor/TA contact info
  - Labs, HWs, projects, etc.

- Projects
  - code early, code often
  - Know what to write before you write it
– Pencil and paper can be valuable

• Getting Help
  – Newsgroup: ucb.class.cs61b
  – Office hours - please come! We are there to help you!
  – Personal email

• Cheating and Plagiarism
  – Don’t. Will make things easier on us all.
  – Policy in the syllabus
  – Get help before you get hopelessly behind

• Enrollment
  – Go to your assigned lab, at least for this week.
  – See me after lecture sometime this week if you have a specific problem.

3 Java

Chapter 1 in the textbook is a more detailed explanation of the information from this section.

3.1 Object-oriented

So you’ve heard that Java is \textit{object-oriented}. What does this actually mean?

• This should be a review of CS61A.

• Something that we will return to and flesh out many times over the course of the semester.

• The basic idea:
  – Multiple agents, called \textit{objects}, that know how to do things (\textit{methods}), and some information about themselves (\textit{instance variables})
3.2 How Java Works
- write source code
- compile into bytecode
- run on a JVM

3.3 A small first Java program
- main is special
- printing

3.4 Looping and conditionals