Administrivia

- One purpose of the syllabus is to spell out policies, especially about:

    - Course requirements and grading.

    - Late work.

    - Academic integrity.

- Most other information will be on the Web, either on my home page (here, office hours) or the course Web page (here).

    A request: If you spot something wrong with course material on the Web, please let me know!

- Part of my job is to answer your questions outside class. E-mail usually works well if office hours don't.

Slide 1

Why Are Design Skills Important?

- Large (i.e., "interesting"?) programming projects more or less require good design to have much hope of succeeding.

- Even if you don't plan to program for a living, the ability to analyze a problem and think about how it could be solved using computer systems is a valuable skill. We think this kind of analysis and design work is relatively difficult to "outsource".

- Hence this course. You'll be divided into groups of four to five students (group assignments to be posted later this week), and each group will design a solution to a semi-real-world problem . . .

Slide 2

Slide 3

Design Project — Introduction

- A perennial problem for our department is scheduling classes in available rooms, because there are lots of constraints to satisfy:

  - Obvious ones — two courses can't meet in the same room at the same time, one person can't teach two (different) courses at the same time.

  - Less obvious ones — don't want to schedule two courses likely to have overlapping enrollments at the same time, some courses may need equipment/software only available in one room. Might even want to consider instructor's scheduling preferences (e.g., Dr. Pitts wants T/R classes only).

- Your mission for this course is to design a system to help with this problem. (Ideally, it will generalize to other similar problems.)

Slide 4

Design Project — Requirements and Constraints

- You have some flexibility in deciding exactly what functionality to provide — that's part of the design problem. Real-world problems usually have a "customer", and part of the design problem is figuring out what he/she wants. I'll play that role in this project.

- You also have the following constraints:

  - Your solution should be as cross-platform and portable as possible — i.e., users should not be constrained to a particular platform.

  - Your solution should not require spending money — e.g., if you use existing products/programs, they must be public-domain / free.

Design Project — Major Phases

- First you need to think through what functionality your solution needs to provide, ultimately producing a UML use-case analysis.

- You will then design an implementation of this functionality and code a prototype. The prototype should focus on showing how your environment would look to a user; you can "fake" parts that are hidden if you have to (though the more real functionality you provide, the better your grade will be).

Slide 5

Minute Essay

- What are your goals for this course?

- Tell me about your coursework in CS so far — list courses taken, courses this semester.

Slide 6