CSE 125
Software System Design and Implementation

Spring 2006

Lecture 1: Introduction

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Today

- Introduction
- Overview and Administrivia
- Form groups

CSE 125: Spring 2006

- Instructor
  - Geoff Voelker (voelker@cs.ucsd.edu)
  - EBU3B 3108
  - Hours: M 3-4pm, W 4-5pm
    - » Email, can also drop by
- TA
  - Joey Hammer (joeyhammer@hotmail.com)
- Special Thanks
  - Mark Hayes (MSR)
  - Donated software

Superschule-Mädchen-Stadt Deathmatch Zwei

History

- This course is modeled after a UW course
  - Created by John Zahorjan (UW prof) and Dennis Cannady (MS program manager (VisualBasic))
  - Dennis was the original inspiration for the style of the course, John chose games
  - I was the TA for the first two classes (’97, ’98)
- UCSD
  - Have taught a version at UCSD since 2001
  - Projects are on the web (for those hosted here at UCSD)
  - Some promos on web site, too:
    - » UCSD TV segment, FoxNews, short promo

Software System Design and Implementation

- Why isn't this course titled, "Game Design and Implementation"?
  - There are many other factors to game design that we will not touch on (e.g., AI, playability, etc.)
    - » More on this later
- By the end of the course, you'll hopefully realize that what you learned in doing the project will apply to any large software project that:
  - Is distributed, has performance constraints, has real-time constraints, has actual users other than the developers, etc.
  - The game is motivation :-)
- Another perspective: This course is an opportunity to apply everything you've learned in the major

Class Format

- Lectures
  - First week or so: Intro + tips and techniques
- Group meetings
  - Once a week meetings (30 mins) with us in lab
  - Groups *and* individuals will submit progress reports
  - We will discuss progress, problems, plans, changes
  - We can fit schedules
    - » Try to use class periods
    - » Try to be contiguous across groups
    - » We'll organize by email
- Guest lectures
  - John Rapp (DirectX group at Microsoft, UCSD student who was in the first class) + others

Class Sketch

- Specification, schedule, milestones: 1.5 weeks (1-2)
- Preliminary development: 2 weeks (3-4)
- Project development: 4 weeks (4-8)
- Spec freeze, alpha testing: 1 week (9)
- Beta testing: 1 week (10)
  - Ship at end of beta testing
  - Demo at seminar
- Review document: 1 week (11)
  - Due during Finals week
- Guest lectures sprinkled in

Your "Final"

- We will have a seminar, open to the public, where each team will demo their game
  - Four players drawn from the group and the crowd
  - Makes you look like awesome hackers
  - But it's also "for real" → everyone will be watching!
- Friday afternoon of last week of class
  - Afternoon of Friday, June 9
- Written project report due at end of finals week

Atkinson Hall Auditorium

- We’re going to do the demos in the Atkinson Hall (Calit2) auditorium
  - high-res projector (higher resolution than our video cards)
  - 24 channel surround sound

Facilities and Platforms

- Class lab: EBU3B B220
  - P4 3.2 GHz w/ 2 GB memory
  - ATI x300 128 MB video cards
  - Windows XP, DevStudio.NET, WinCVS
  - DirectX 9.0c (currently 2004, need Dec 2005)
- You should be able to work from home, too
  - WinXP
    - » Win2K should be sufficient, but surprised if anyone has it
    - » NT4.0 won't work (DirectX 9.0 does not run on NT4.0)
  - DevStudio.NET from MS
  - WinCVS from http://www.wincvs.org/
  - Note: MS software for personal use, NOT for resale

Lab Use

- We used to have an exclusive lab for the class
- The new labs cannot be physically secured (fire doors)
- Problem…
  - Previously did not have to worry about items walking away
- Consequences
  - We'll have to lock up books, accessories
  - No Xbox :-(

Books

- From Microsoft
  - No great DirectX book that I've found
  - "Game Programming Gems" (1—5)
    - » Copies in the lab
- Recommended (from Steve Rotenberg)
  - "3D Game Engine Design" by David Eberly
  - "Real-Time Rendering" by Thoman Moller and Eric Haines
- Recommended (from Joey)
  - See the course web site (under syllabus)
- I can always buy more books for the lab

Art

- Obtaining art
  - Troll the Web
  - There is artwork for many games out there
  - Usually in some kind of “standard” format
    - » Produced from modeling software
  - Can usually load directly into game using DirectX functions
  - If not, look at the code in the game editors to help figure out how to manipulate
  - Joey can provide some tips, too
- Find an artistic friend
  - Seriously…has happened successfully in the past

Speaking of Art...

Intellectual Property

- Speaking of trolling the Web…
- Many things are posted as “use freely”
- But if it isn’t
  - Ask before using…just takes an email, and people are usually flattered to have their stuff used
- Also, note that *you* own the copyright on the code that you write – *not* UCSD
  - Because you pay for your education
  - Not the same for grad students, staff, or faculty
- You can do whatever you want with your project

Group Web Pages

- Each group will maintain web pages for their project
  - Schedule, milestones, comments, pictures, blatherings, etc.
- Think of your group Web page as a living design document for your project
- More to come
  - Once we get the groups established, we'll get the pages up

Collaboration and Competition

- Everyone is in this together
- I want you to help each other out, even among groups
  - Especially solving bugs
  - Share code tips
    - » E.g., this is how I created a frame buffer with these properties…
  - But not classes, modules, or files
    - » Each group has to develop
- How?
  - Email (there will be a class list)
  - In the lab

Grading

- A non-goal of the course is to worry about grades
  - Everyone can get an A in the class…
  - …as long as you contribute
- We will be meeting with each group weekly
  - We will be able to determine whether you are a functioning and contributing group member
- Marital problems
  - Come to me if the group is having “issues”
    - » The earlier, the better
  - We will solve these problems as a group
  - Working to support a group, engaging, and compromising are all part of your grade – do not compartmentalize

Groups

- Form groups of 5-6
  - Choose team members
    - » Primary constraint: Need graphics people on each group
  - Choose a team name
  - Choose a team representative
- Working in pairs very worthwhile

Questions

- Any questions?

For Next Time...

- Meet with your groups
- Start discussing what you want your project to be
  - Look at the projects that have been done in the past
- Joey will lecture on strategy and tips
- Travel
  - I have a reputation for traveling during the quarter (inevitable)
  - Trend continues…will be at Google this Thu
    - » Wireless research
  - Bad timing, but we'll make it work
- And the countdown begins…