

CSE 125 Software System Design and Implementation

Spring 2005

Lecture 1: Introduction

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Today

- Introduction
- Overview and Administrivia
- Form groups

CSE 125: Spring 2005

- Instructor
 - ◆ Geoff Voelker (voelker@cs.ucsd.edu)
 - ◆ AP&M 5131
 - ◆ Hours: M 3-4pm, W 4-5pm
 - » Email, can also drop by
- TA
 - ◆ Karen Hom (khom@ucsd.edu)
 - ◆ Allen Ding (alding@gmail.com)
- Special Thanks
 - ◆ Sam Stokes (MSR)
 - ◆ Donated books & software



Kampus Kombat

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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 local 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

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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

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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
 - ♦ Steve Rotenberg next Tue

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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 3
- Written project report due at end of finals week

Facilities and Platforms

- Class lab: AP&M 3313 (status)
 - ◆ P4 1.9 GHz w/ 512 MB memory
 - ◆ GeForce3 Ti500 64 MB video (showing age, but ok)
 - ◆ Windows XP, DevStudio.NET, WinCVS
 - ◆ DirectX 9.0c (February 2005 Update)
 - » Jan Kautz, precomputed radiance transfer (PRTs)
- You should be able to work from home, too
 - ◆ WinXP from MS preferable
 - » Win2K should be sufficient
 - » 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, books for personal use, NOT for resale**

Books

- From Microsoft
 - ◆ MS books – use them as reference
 - » MS said that they are sending the books originally requested
 - ◆ No great DirectX book that I've found
 - ◆ "Game Programming Gems" (1—5)
 - » Copies in the lab
- Recommended
 - ◆ "3D Game Engine Design" by David Eberly
 - ◆ "Real-Time Rendering" by Thoman Moller and Eric Haines

Source of Inspiration



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Art

- Two approaches this quarter
 - ◆ Few ICAM students who will focus on content
 - ◆ Creative approaches to obtaining 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
 - ◆ Karen and Allen can provide some tips, too
- Find an artistic friend

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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 you 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

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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

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Groups

- Form groups of 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
- Karen and Allen will lecture on strategy and tips
- Travel
 - ◆ I have a reputation for traveling during the quarter (inevitable)
 - ◆ Trend continues...will be in Shanghai next week
 - » ACM Programming Contest World Finals (UCSD team qualified)
 - ◆ Bad timing, but we'll make it work
- And the countdown begins...



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