

**CSE 125**  
**Software System Design and  
Implementation**

**Spring 2017**

**Lecture 1: Introduction**

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# CSE 125: Spring 2017

- Course page: <http://cse125.ucsd.edu/2017>
- Instructor
  - ◆ Geoff Voelker (voelker@cs.ucsd.edu)
  - ◆ Hours: Mon 3-4pm in CSE 3108
    - » By email, also drop by
- TA
  - ◆ Ruiqing Qiu (rqiu@ucsd.edu)
  - ◆ 2015 veteran (Triton One: Battle Blocks)
  - ◆ 2016 TA





# History

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- This course is modeled after a UW course
  - ◆ Created by John Zahorjan (UW prof) and Dennis Cannady (MS program manager of VisualBasic at the time)
  - ◆ Dennis was the original inspiration for the goal & style of the course, John chose games
  - ◆ I was the TA for the first two classes ('97, '98)
    - » (>20 (!) years already...sigh)
- UCSD
  - ◆ Have taught a version at UCSD since 2001
  - ◆ Projects are on the Web (for those hosted here at UCSD)
  - ◆ You are the 17<sup>th</sup> class!

# Software System Design and Implementation

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- Why isn't this course titled, "Game Design ..."?
  - ◆ 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:
  - ◆ Distributed, has performance constraints, has real-time constraints, has actual users other than the developers, etc.
  - ◆ The game provides great motivation
- Another perspective: **This course is an opportunity to apply everything you've learned in the major**

# Class Format

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- Lectures
  - ◆ First week: 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
  - ◆ From local games companies during lecture slots

# Class Sketch

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- 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”

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- 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 totally awesome cool hackers
  - ◆ But it’s also “for real” → **everyone will be watching!**
    - » (Last thing you want is a blue screen of death...)
- Friday afternoon of last week of class
  - ◆ Afternoon of **Friday, June 9 (4–5:30pm)**
    - » **Reserve this date now!**
  - ◆ Invite your family and friends!
- Written project report due at end of finals week
  - ◆ Low key, hard part is already over with

# Atkinson Hall Auditorium





# Facilities and Platforms

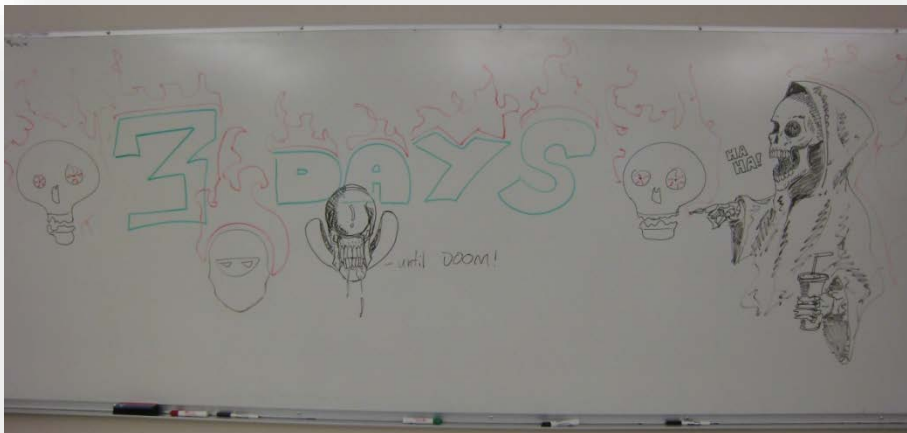
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- Class lab: CSE B220
  - ◆ P4 3.2 GHz w/ 2 GB RAM – aging, but workable
  - ◆ All ~~have had~~ GeForce 8600GT 512MB video cards
    - » Now have GTX 960s
    - » We'll demo on i7 quad-core @ 1600x1200
    - » Available last 2-3 weeks for development
  - ◆ Windows 7, Visual Studio, svn
    - » C++ by default, but can use any language by group agreement
  - ◆ Maya, 3D Studio Max, MilkShape3D
  - ◆ DirectX June 2010 (Win7)
  - ◆ OpenGL
- You should be able to work from home, too
  - ◆ Win7/8.1/10, Visual Studio

# Lab Use

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- Consider the lab your home
  - ◆ But don't move out of your apartment (yes, it's happened...)
- Lab is dedicated for CSE 125
  - ◆ Front door locked (but fire door in back is not)
  - ◆ Only CSE 125 accounts active on machines
- Locked cabinet, only accessible by folks in the class
  - ◆ Store books, controllers, etc.
  - ◆ Please lock up



# Books and Controllers

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- Many books in the lab locker
  - ◆ List is on course Web site
- Hardware
  - ◆ Xbox360 controllers (force feedback)
  - ◆ Portable speakers
    - » But expect to use headphones much of the time
  - ◆ Microphone
- I can always buy more
  - ◆ Let me know if there are some we should get

# Art

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- You already have skillz, or ...
- 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
- Find an artistic friend
  - ◆ Seriously...has happened successfully in the past



# Speaking of Art...



# Intellectual Property

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- 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

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- Each group will maintain Web pages
  - ◆ 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

# 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?
  - ◆ Piazza
  - ◆ In the lab – the lab is there for your exclusive use
- Use the lab!
  - ◆ **Repeat: Use the lab!**



# Grading

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- A non-goal of the course is to worry about grades
  - ◆ Everyone *can* get an A in the class...
  - ◆ ...as long as you **contribute *and* collaborate**
- 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 your 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**

# Going Forward...

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- Outside of class
  - ◆ Meet with your groups
  - ◆ Start discussing what you want your project to be
  - ◆ Look at the projects that have been done in the past
  - ◆ More details online
- Signup on Piazza
- **Thu:** Ruiqing's survival lecture
- **Fri:** Project architecture (11am?)
- **Tue:** Discuss games in group mtgs
- And the countdown begins...



# Questions

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- Any questions?