the gamedesigninitiative at cornell university

Lecture 1

Course Overview

CS/INFO 4152: Advanced Topics

- Sequel to CS/INFO 3152
  - Prereq **unless** you a non-Cornell Meng (or exempt)
  - Similar format and structure as Intro Game Design
  - Covers topics not touched in Intro Game Design
- Single semester long game project
  - At least 55% of your final grade
  - Interdisciplinary teams of 4-6 people
- Also design documents, but no labs

CS/INFO 4152: Advanced Topics

- Uses familiar the **milestone** schedule
  - Deliverables every two weeks (after week 3)
  - One extra prototype beyond 3152 schedule
  - Details on course website:

    http://www.cs.cornell.edu/courses/cs4152
- Games demonstrated at **Showcase**
  - Like BOOM, open to the public
  - Public reaction is part of your grade
  - Submissions posted on the GDIAC website

Course Structure

- Most of the course happens during lecture section
  - Meets three days a week (M,W,F) 11:15-12:05
  - Mixture of lectures, presentation, and discussions
  - Want course to be more interactive than CS/INFO 3152
- **Lectures**: Common in first half of course
  - Advanced game development topics unique to course (this is not going to replace a graphics course)
  - **Design Focus**: mechanics, user interfaces and testing
  - **Technical Focus**: mobile platforms, memory management

Course Structure

- **Presentations:** Every two weeks
  - In-class critique of your game by your peers
  - Part of your participation grade comes from this
  - Because of class size, held over two sessions
- **Playtesting**: Follows every single deliverable
  - Handled just as in the introductory class
  - Will expect user-test scripts for alpha and onward
- **Other Discussions**: As appropriate
  - **Example**: Code walkthroughs of architecture

The Discussion Sections

- Discussion time was biggest request last year
  - Like communication lab from CS/INFO 3152
  - Time to work on Assignments already assigned
- We have contacted your team about times
  - Groups 1-4 meet Thursday 9:05-9:55 in **TBA**
  - Groups 5-9 meet Thursday 3:35-4:25 in **TBA**
- **Catch**: You must enroll in ENGRC 4152
  - Extra credit hour for work you are already doing
  - This is ***required***; it is not optional

Game Requirements

- Must be **mobile game** on iOS or Android
  - Develop cross-platform, but graded only on one
  - Have tried 3D games in past, but never work well
- Some form of **innovative gameplay**
  - Interface innovation for mobile
  - 3D game should leverage camera control
- Target **public distribution**
  - Mobile apps should try to get on either App Store

Mobile Game Development

- Will use our custom **C++ game engine**
  - Slight modification of Cocos2d-x 3.9
  - Made to solve many problems from last year
- We do **not** provide any hardware
  - New devices are about $200; used are cheaper
  - Just need one device for your whole group
- Either 2D or 3D is acceptable
  - Will need OpenGL ES in either case

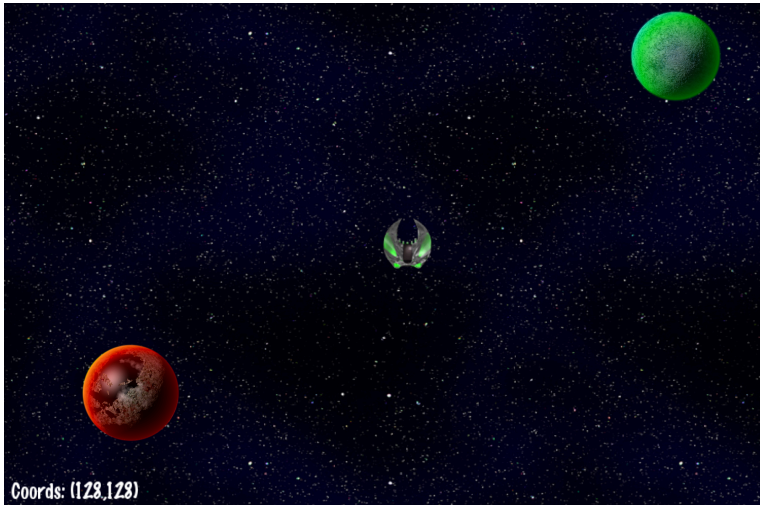
Choosing a Platform

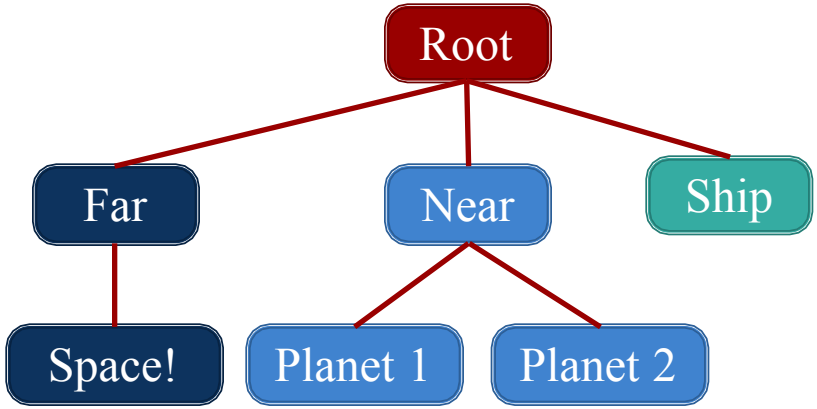
- You **must** develop iOS apps on a Macintosh
  - Only XCode can load the app on to a device
  - No longer need Apple Developer membership
  - But need membership ($100) if want multiplayer
- ***Suggest*** you develop Android on Windows
  - XCode cannot support Android at all
  - Visual Studio can import Android projects
  - Can also target Cocos2d-x on Windows for testing

Working in C++

- Best option for cross-platform development
  - **iOS**: Obj-C and **C++**; **Android**: Java and **C++**
  - Game developers should learn it anyway
  - Will have several lectures if it is new to you
- You should use a **professional IDE**
  - This means XCode or Visual Studio
  - Tools for analyzing memory performance
  - Eclipse is ***not*** a professional C++ IDE

Warning About Cocos2D





- Start of the scene graph fad
  - To make design "easier"
  - Adopted heavily by Unity
- Scene Graphs are nice
  - Organize sprites as groups
  - Aids animation design
  - Parallax, transitions easy
- But Scene graph != model
  - This is the Unity mistake
  - I will fail your Arch Spec!

Intellectual Property

- Your **group** retains all ownership
  - You can commercialize it later
  - You can make derivative works
  - Individual ownership is your responsibility
- But Cornell gets a non-exclusive license
  - Non-commercial use of final version submitted
  - We can post this version on our website
  - We claim no other rights to your game

Semester Schedule

Week 1	Form Groups	1/30
Week 2	Group Charter	2/6
Week 3	Concept Document (**Project Kickoff**)	2/13
Week 4	**Nondigital Prototype**	2/17
Week 5	Gameplay Specification Milestone Proposals	2/27
Week 6	**Gameplay Prototype** Content Repository	2/29
Week 7	Architecture Specification	3/12
Week 8	**Technical Prototype**	3/14
Week 9	Document Revisions	3/26

Pre-Production

Development

Semester Schedule

	Spring Break	
Week 10	**Alpha Release**	4/4
Week 10	Code Walkthroughs Level Design	4/16
Week 11	**Closed Beta Release (Feature Complete)**	4/18
Week 12	App Store Proposal	4/30
Week 13	**Open Beta Release (Open Playtesting)**	5/2
Week 14	Final Portfolio Postmortems	5/9
Week 15	GDIAC Showcase	5/20

Development

Release

Group Management

- Every group has a **project leader**
  - Final say in all *design decisions*
  - Coordinates designers and programmers
  - Responsible for milestone reports
- Every group has a **lead programmer**
  - Responsible for the *code architecture*
  - Responsible for maintaining code base
  - Delegates coding tasks to others

Help Outside of Class

- Must meet as a group for 1/hour a week
  - Pick a regular time and place
  - Submit as part of your **group charter**
- Will serve as a form of "office hours"
  - The instructor will come if invited
  - Use for "just-in-time" instruction
  - Algorithms/techniques unique to your group
- Will also be using Piazza this semester

Grading Policy

- Mixture of **group** and **individual** grades
- Group grades are same for all group members
  - Group Game Grade (25%)
  - Course Documents (30%)
  - Class presentations (5%)
- Individual grades distinguish group members
  - Individual Game Grade (30%)
  - Participation and Reports (10%)

Game Grade

- Group grade reflects the game quality

Grade	Criteria
A	Bug-free, Fun-to-play
B	Complete and playable
C	Complete but unplayable
D/F	Serious delinquencies

- Individual grade represents contribution

Grade	Criteria
> Group	Visionary, group MVP
= Group	Good attitude, hard worker
< Group	Produce negative work
D/F	Abandon the group

ENGRC Grading

- ENGRC section also has a grade
  - New requirement by school of engineering
- All grades except the game grade
  - Course Documents (70%)
  - Class presentations (15%)
  - Participation and Reports (15%)
- Typically higher than course grade

Using CATME for Reports

CATME
SMARTER Teamwork

Help
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Report

View Comments | View Raw Data | Return to Main Page

Class	Term	Format	Prof	School
am Review ME 316	Fall 2015	Lecture	Leachman	Washington State University

☑ Enable pop-up texts ☐ Show raw "Adjustment Factor" Re-Display

Search:

✉	Team ID	Contrib. to Team	Interact w/ Team	Keeping on Track	Expect Quality	Adj Factor (w/ Self)	Adj Factor (w/o Self)	Note
✉	01	4.2	4.4	4.0	4.2	1.05	1.05	Under
✉	01	3.6	4.2	4.0	3.4	1.00	1.00	
✉	01	3.8	4.0	3.6	3.8	1.00	1.01	
✉	01	3.0	4.2	3.6	3.4	0.91	0.87	
✉	01	3.8	4.2	4.2	4.0	1.04	1.04	
✉	02	3.8	4.2	3.8	4.0	1.00	1.00	
✉	02	3.8	4.2	3.8	4.0	1.00	1.00	
✉	02	4.5	4.2	3.8	4.2	1.04	1.02	
✉	02	4.2	4.2	3.8	4.0	1.01	1.01	

http://www.catme.org

This Week

- Set up your **Cocos2D-X** build environment
  - Download SDK and set it up for your IDE
  - Download demos from the course website
  - Use Piazza if you are having problems
- Lectures on **game mechanics**
  - Reviewing what you forgot from CS/INFO 3152
  - Augmented with advanced topics next week
  - Getting you ready for the Concept Document

Next Week

- **Pitch Session** next Wednesday, Friday
  - 5-10 minute "elevator pitch" for your game
  - Practice with short, concise description
  - Practice, feedback for Concept Document
- **Group Charter** due at end of the week
  - We are going to be a bit more involved about this
  - Want rules of how you interact with each other
- **Concept Document** due in two weeks
  - Slightly different format from Intro course