Lecture 1

Course Overview
CS/INFO 4152: Advanced Topics

- Sequel to CS/INFO 3152
  - Prereq unless you are a non-Cornell MEng
  - Similar format and structure as Intro Game Design
  - Covers topics not touched in Intro Game Design

- Single semester long game project
  - At least 70% 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

• Like *Intro to Game Design* without labs
  • Meets three days a week (M, W, F) 11:15-12:05
  • Time is a known conflict with CS 5152
    • Unavoidable without conflicting with *Rapid Prototyping*

• **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 alpha, and both betas
  • Handled just as in the introductory class
  • Will expect user-test scripts for all of these

• **Design Discussions:** Every Friday in 2\textsuperscript{nd} half
  • Talk about games of all kinds
  • What are they doing that we can learn?
Game Requirements

- Must either be **3D** (on PC) or **mobile**
  - In particular, this means no XNA
  - See web page for game engines and resources
- 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 App Store
3D Games (on the PC)

- Must have team member from **CS 5625**
  - Want technology leveraged from that class
  - Do **not** waste your time on rendering, physics
  - No content means guaranteed **C grade**

- Need artist who can do **3D models**
  - Or get models from public domain source
  - “Outsourcing” is an acceptable option
  - 2D artists should do the other option
Mobile Games

- Preferred platforms are **iOS** or **Android**
  - Primary gaming devices right now
  - Does anyone have a Window’s phone?

- We do **not** provide any hardware
  - New devices are about $230; used are cheaper
  - Just need one device for your whole group
  - Consider it a textbook cost

- Either 2D or 3D is acceptable
  - Will need **OpenGL ES** in either case
iOS Game Development

• The preferred engine is **Cocos2D**
  • Everything else is iffy or expensive
  • Limited to 2D games, but there is a **Cocos3D**

• Requires that you learn **Objective-C**
  • App store does not allow interpreted code
  • Cross-platform tools require $$$ compilers

• Need a Mac and XCode for development
  • There are four Macs in the new Gates G33 lab
Android Game Development

- The preferred engine is **LibGDX**
  - New engine that everyone used last year
  - Active development with great support
  - As easy as working with XNA

- Requires that you work in **Java**
  - Performance will be a serious problem
  - May need to include native code with JNI

- Needs to work on major Android platforms
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

<table>
<thead>
<tr>
<th>Week</th>
<th>Activity</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Form Groups</td>
<td>1/24</td>
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<tr>
<td>Week 2</td>
<td>Group Charter</td>
<td>1/29</td>
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<tr>
<td>Week 3</td>
<td>Concept Document (Project Kickoff)</td>
<td>2/5</td>
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<tr>
<td>Week 4</td>
<td>Nondigital Prototype</td>
<td>2/12</td>
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<tr>
<td></td>
<td>Gameplay Specification</td>
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<tr>
<td>Week 5</td>
<td>Milestone Proposals</td>
<td>2/22</td>
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<td></td>
<td>Content Repository</td>
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<tr>
<td>Week 6</td>
<td>Gameplay Prototype</td>
<td>2/26</td>
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<tr>
<td>Week 7</td>
<td>Architecture Specification</td>
<td>3/8</td>
</tr>
<tr>
<td>Week 8</td>
<td>Technical Prototype</td>
<td>3/12</td>
</tr>
<tr>
<td>Week 9</td>
<td>Level Design</td>
<td>3/19</td>
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Pre-Production

Development
# Semester Schedule

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<thead>
<tr>
<th>Week</th>
<th>Event</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>Week 10</td>
<td>Alpha Release (Code Complete)</td>
<td>3/27</td>
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<tr>
<td></td>
<td><em>Spring Break</em></td>
<td></td>
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<tr>
<td>Week 10</td>
<td>Code Walkthroughs</td>
<td>4/9</td>
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<tr>
<td>Week 11</td>
<td>Closed Beta Release (Feature Complete)</td>
<td>4/14</td>
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<tr>
<td>Week 12</td>
<td>Game Manual</td>
<td>4/23</td>
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<tr>
<td>Week 13</td>
<td>Open Beta Release (Open Playtesting)</td>
<td>4/28</td>
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<tr>
<td>Week 14</td>
<td>Final Portfolio Postmortems</td>
<td>5/5</td>
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<tr>
<td>Week 15</td>
<td>GDIAC Showcase</td>
<td>5/16</td>
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Development

Release
• 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 (35%)
  • Course Documents (20%)
  • Class presentations (5%)

• Individual grades distinguish group members
  • Individual Game Grade (35%)
  • Participation (5%)
Game Grade

• **Group grade reflects the game quality**

<table>
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<th>Criteria</th>
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<td>A</td>
<td>Bug-free, Fun-to-play</td>
</tr>
<tr>
<td>B</td>
<td>Complete and playable</td>
</tr>
<tr>
<td>C</td>
<td>Complete but unplayable</td>
</tr>
<tr>
<td>D/F</td>
<td>Serious delinquencies</td>
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• **Individual grade represents contribution**

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<tr>
<td>&gt; Group</td>
<td>Visionary, group MVP</td>
</tr>
<tr>
<td>= Group</td>
<td>Good attitude, hard worker</td>
</tr>
<tr>
<td>&lt; Group</td>
<td>Produce negative work</td>
</tr>
<tr>
<td>D/F</td>
<td>Abandon the group</td>
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This Week

- Complete Assignment 0
  - Info needed to assign your groups
  - Want groups by Friday
  - Will give you time at end of class to meet

- 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 minute “elevator pitch” for your game
  - Practice with short, concise description
  - Practice, feedback for Concept Document

- **Group Charter** due at end of the week
  - Decide on your target platform
  - Indicate everyone’s role on the project

- **Concept Document** due in two weeks
  - Slightly different format from Intro course
  - See website for more information