What Do You Think Goes Into Developing Games?

- Consider a computer game you want to build (or, one you like that has been built)
- Assume you are inspired (or forced or paid) to engineer the game
- Take 3-4 minutes to write a list of the tasks required
  - Chronological or hierarchical, as you wish
  - Include your name and name of game
  - (I'll collect and read, but not grade)
- What do we have?

What to Expect

- This course is mainly about the process of successfully bringing a game from idea to delivery
  - Major “players” in the process
  - Steps in the development lifecycle
  - What makes a good (and bad!) game
- Presupposed background
  - Not much!
- Nice to have
  - Gaming experience in a few genres

Instructor Background

- Dr. Mark Claypool (Prof, “Mark”)
  - Computer Science
    - Operating Systems, Distributed Computer Systems, Multimedia, Networks
    - Director of the IMGD program
    - The Game Development Process
    - Technical Game Development
- Research interests
  - Networks, Multimedia, Network games, Performance
- Like to play
  - RTS (Battle for Middle Earth, Fat Princess, …)
  - Sports (FIFA, Madden, Strikers, …)
  - FPS (Battlefield, Doom, …)
  - Adventure (Uncharted 2, Indigo Prophecy, Fable II …)

Student Background

- Major (IMGD (Art or Tech), CS, HUA, …)
- Programming: (none) 1 to 5 (guru)
  - Java
  - C++
  - Flash
- Gamer: (casual) 1 to 5 (hard-core)
- Number of Games Built (zero is ok!)
- Other …
Syllabus Stuff
http://www.cs.wpi.edu/~imgd1001/a10/
- Office hours:
  - TBA (about 3-4 per week each)
  - See Web page
- Email:
  - (bomoriarty, claypool, pgb, wangjia) at wpi.edu
  - img1001-staff at cs.wpi.edu
  - imgd1001-all at cs.wpi.edu
- GDC Forums
  - IMGD 1001 forum: http://forums.gdc.wpi.edu/
    - For discussions, announcements ...

Course Materials
- Slides
  - On the Web (PDF)
  - Caution! Don’t rely upon the slides alone!
  - Use them as supplementary material
    - (come to class!)
- Timeline
  - Tentative planning
- Project writeups
- Resources
  - Game creation toolkits, documentation, etc.

Text Books
- Main text:
  - The Game Development Process
    - Written by lots of people, edited by Steve Rabin
    - Close to course material, required for this class
    - 1000 pages! but good reference
- Supplemental texts:
  - Game Architecture and Design - A New Edition
    - By Andrew Edings and Dave Monia
    - Heavily used for design
  - On Game Design
    - By Ernest Adams
    - Some solid game design material
  - Designing Arcade Computer Game Graphics
    - By Art Friedberg
    - Creating 2D art for games
  - Creating the Art of the Game
    - By Matthew Omernick
    - Creating 3D art for games
    - Maybe some other articles (i.e. Gamasutra) as needed ...

Course Structure
- Prerequisites
  - None!
  - Neither Programming nor Art
- Out-of-Class
  - Reading
  - Projects
- In-Class
  - Lecture
  - Discussion
  - Exercises
  - Exams
- Grading
  - Exams (40%)
  - Projects (60%)

Exams
- 2 exams
- 40% of grade
- Non-cumulative
- Closed-note
- Closed-paper
- Closed-friend

Projects (1 of 2)
- About 5 projects
  - 1st is to form a group
  - 2nd has three parts, tutorials with some “add ons”
  - After that are original, made from “scratch”
- 60% of your grade
- Except for 2nd project, done in groups (3 per group)
- Apply concepts taught in class
- Related to Game Development
- Build upon each other
  - Should have working game at end!
  - Add this to your portfolio
- 10% penalty on late projects
Projects (2 of 2)
- Project 3: Game Inception and Design
  - Inspiration of a game, design and documentation
- Project 4: Content Creation
  - Create 2-d animated sprites (or other art) and select supporting content
- Project 4: Game Logic
  - Implement game objects and game rules
- Project 5: Level Design
  - Put above components together in compelling game
- Project presentation
  - Try to get external advisors

Publish Your Game!
- Work with WorldWinner
  - Teagames
- Physics-based Flash games
  - Trending to extreme sports
- "Real" site!
  - 1.5 million visitors/month, 8 mins avg.
- Publisher/client will help guide design
- If successful, goes on site!
  - Credits for your team, of course

Course Topics
- Introduction
  - Team
  - Timeline
  - Size and Shape
- Game Design
  - The Creative Process
  - Design Documentation
- Artistic Content Creation
  - Color and Displays
  - 2D and 3D
  - Graphics
  - Animation
  - Audio
  - Music
  - Sound Effects
- Engineering
  - Game Architectures
  - Programming
- Production, etc.
  - Release
  - Postmortem

Why This Class?
- IMGD requirements (Core Course, see http://imgd.wpi.edu)
  - TA's expectations
  - IMGD Core
  - IMGD Advanced
- Introduction to steps of Game Development
  - Help decide on Technical/Artistic Area
- Fun! ("passion for games")

First Year Advice – your “Job”
- High school is different than college!
- Go to class!
  - Think of your classes as your full-time job
  - First-year grades pave way to grades in subsequent years
- Make a study schedule early
  - WPI expects 3-4 hours study for each hour of class (i.e. 17 hours per class, so ~54 hours)
  - Maybe a time management calendar

First Year Advice – the Syllabus
- Read syllabus for each class
  - Key to performing successfully!
- Some key things to note:
  - Grading policy
  - Attendance policy
  - Professor/TA name, location and office hours
  - Learning outcomes and course expectations
  - Deadlines for course requirements
First Year Advice – ask Questions
- Help is there, but you must ask
- Office hours
- Discussion forums
- Peers
- Tutoring
- Online help
- Especially important in later classes

First Year Advice – get Involved
- Involvement in campus orgs/events is an important part of your education!
- Find out what is going on campus
  - http://www.wpi.edu/Admin/SAO/Orgs/
- Balance this with your classes
- IMGD Seminars – Thursday at 11am (with food!)
- Student run Game Development Club (GDC)

First Year Advice – Resources
- Academic advising
- Counseling center
  - http://www.wpi.edu/Admin/SDCC/
- Professors, Upper-classfolks
- Tutoring services
  - Specific for major/class (i.e. ACM and GDC)
- Career development center
  - http://www.wpi.edu/Admin/CDC/

Homework
- Reading:
  - Rabin, Chapter 7.2 and 7.3
- IMGD Lab (FL222)
  - ID on lock
  - Login
- Proj1
  - Form a group
  - So, get to know some fellow class mates!
- Proj 2