

CS3113 – Intro to Game Programming Overview

What we will cover

- History
- Game organization
- Our tools: C# and XNA
- Game engines and api's
- Sprites: creating and displaying
- Input from keyboard / mouse
- Basic physics: hitting things and bouncing off
- Sound
- Sprite-based animation and time
- Heavier physics: gravity, thrust, etc.
- Finer collision detection
- Rotations
- Searching (AI)
- NPC movement (More AI)
- Concurrency
- Networking
- 3D
 - Linear algebra
 - Trigonometry
 - Talking to the GPU

The Work

- Weekly programming assignments
- Semester project (can be done in pairs)
- Final exam
- Grading: 1/3 each.
- Optional: give a talk on something we are not covering

Assignments

- Weekly for the first “half” (or so) of the semester.
- Will reflect the material we learned that week.
- Typical exercises are to write
 - Conway's Game of Life (basic game, sprites and input)
 - Breakout (simple physics)
 - a platformer (more physics)
 - Asteroids (fine collision detections)
 - A demo for a search algorithm (AI)
 - ...
- Be prepared to demo your submission in class!

Project

- *All* work to be done by the team
 - Including graphics. You can be “inspired” by a graphic found elsewhere, but *make* it yourself.
 - Ok, sound files can be “borrowed” from elsewhere. (Up to you to keep it legal.)
- Deliverables:
 - Project plan: who / what / why
 - Half-way deliverable
 - ~10-minute in-class presentation during last week of class
 - Write-up, similar to project plan, but tell more...
 - Project
- This is a major project. Shouldn't look like you could do it in a week or two.
- Good *readable* code!

Final Exam

- Please provide me with good questions (or at least good question ideas) throughout the semester.
- Topics will include algorithms, math, physics, AI, etc.

Resources

- See course website for links to various resources, e.g.
 - XNA download
 - Dreamspark
 - C# Tutorial
 - History of video games
 - Content development tools
 - Gimp
 - Blender
 - AI notes