Lecture 4:
Game Engines
and Game Content
What is a game engine and why?

Early games had no concept of a game engine.

- “Old-time” game writers would directly code graphics etc., into their programs.
- These games were simple and maximum performance essential on slow hardware.

In a modern context this would be an inefficient way to work.

- Every game would require starting from scratch – no reuse.
- But different games have many features in common.
- Also games are now built also by non-programmers.
- A game engine is basically part of the game implementation that is designed to be reused for many different games.

- Game content is everything else, which is specific to a particular game.
Based on the handout “Designing a PC Game Engine”.

- Solid outlines: essential to the story, game specific, content
- Dotted outlines: “extras”, presentation of the story, engine
Engine components

- A game engine typically performs a number of different roles.
- It is generally structured as a number of sub-systems.
- Examples:
  - 3D rendering engine
  - Physics engine
  - Sound
  - Input
  - User interface framework
  - Map framework
  - Entity framework
  - Networking
Game Content

- Game content generally includes:
  - 3D models
  - 2D textures
  - Animation data
  - Physics of particular bodies
  - Sounds
  - Video files
  - Map/level data
  - UI: particular menus, etc.
  - Sometimes: scripts describing game logic and AI (depends a little on your point of view).