Video Game AI, Spring 2013
Midterm Review

The midterm will be a mix of different question types (multiple choice, true/false, short answer, long answer, etc.) Students are responsible to know the material from Chapters 1 - 4.3 of the book, as well as the material covered in the online videos and the lecture on the pathfinding system for Dragon Age: Origins. Following is an overview of major themes that should be useful when studying for the midterm.

Overview/Background:
- The difference between academic and video-game AI
- The goal of video-game AI
- The uncanny valley
- AI and perception (players only perceive animation (graphics) and sound)
- What makes a good AI

History of game AI
- Pacman (see http://home.comcast.net/~jpittman2/pacman/pacmandossier.html)
  - Should know behaviors for 4 ghosts
  - Should know 3 behavior states
- Other notable games:
  - Pong
  - Black & White
  - Halo
  - Left for Dead

AI and Game Design
- SpyParty
  - What the game is.
  - What is it unique?
  - How it leverages AI to make an interesting experience.
- Why AI-related issues are game design.

Movement & Steering
- Difference between kinematic vs steering behaviors
- Steering behaviors:
  - Seek, flee, align, pursue, wander, path following, separation, flocking
  - Merging behaviors
  - Variable matching
  - Details related to in-class demos / homework assignments
- Jumping
- Coordinated movement

Physics prediction
- Physics equations for predicting movement
- When is physics AI

Pathfinding
- Dijkstra's algorithm
- A*
  - Be able to show how A* runs on a sample graph

Previous Quiz questions:

1. In Pac Man ghosts are pretty colors because:
   a) They are easy to distinguish.
   b) To show off graphics hardware.
   c) It makes them cute.
2. What animal likes to play Pac Man?
3. What does the creator of Pac Man do now?

1. Interesting things happen over _____.
2. What C-level statement is at the core of the Spy Party AI?
3. Complete the diagram/sequence:
   → Game Design → Games → Aesthetics

1. The static information required for a character includes:
   a. _____
   b. _____
2. Three behaviors described in these sections are seek, flee and _____

1. Three steering behaviors besides seek, flee and wander are:

1. Three (of four) of the main topics in today's reading are:

1. Why could a pathfinding graph have directed edges?
2. What is the difference between A* and Dijkstra?