CS:3980:0002 (22C:096:002)
Topics in Computer Science 1: Computer Game Design.
University of Iowa Dept. of Computer Science Spring 2015

Midterm Exam

1. This is a take home exam. This exam will be distributed in class on Wednesday, March 11, 2015. It is to be turned in on Wednesday, March 25, 2015 in class. If you are unable to attend class on either of these dates the exam will be emailed to you and/or you can submit your completed exam via email to the instructor: david-sidran@uiowa.edu.

2. Use a word processor to answer these questions and submit your answers as hard copy. If you are unable to submit your completed exam as hard copy you may submit your exam in PDF format via email. This is only for students that will be out of town on Wednesday, March 25, 2015. Either way use 14 pt. type, a legible font (Times Roman or Arial are good) and double-space your answers.

3. This exam is worth 20% of your total grade. Think about your answers. Answer all questions completely. This test is designed to assess your understanding of the concepts and principles of computer game design that we have studied this semester. This test is not about regurgitation of phrases or definitions.

4. Any form of plagiarism or cheating will be severely punished.

Question 1 (25 pts)

Consider Chris Crawford's statement:

> "Videogames are carefully designed to provide the player with a steady stream of learning successes; it's called the *learning curve* of the game. At each point in the game, the player has only to make a small improvement in his performance to earn an explicit and often dramatic reward." – Chris Crawford, *On Game Design*

Also consider Ian Fischer and Bruce Shelley's bullet point in *Concepts of Good Game Design* that *Items that make a game play well* include

> "[An] upside down decision pyramid (few decisions at start, number increasing as game continues).

Imagine that you are tasked with creating the 'spell system' for a new game called *Advanced Spellcasting*. It doesn't matter if the game is an RPG, MMORPG, FPS, platform game, scroller or whatever. What interests us here is the spellcasting system that you create.

To answer this question create a spellcasting system for *Advanced Spellcasting* that adheres to Crawford's statement about the *learning curve* of the game and Fischer and Shelley's statement that an *upside down decision pyramid* makes a game play well. Explain how the spellcasting system works in detail. Name every spell, how the spells interact, the rewards that the player receives and how a spell builds upon previous knowledge or achievements. Your answer should include the details for at least ten (10) spells.

Note: Both Chris Crawford's *On Game Design* and Fischer and Shelley's *Concepts of Good Game Design* are available on the class ICON web site.

Question 2 (25 pts)

Crawford states (*On Game Design*, p. 107, 1st edition) that the, "only good reason," "to equip a game with good graphics and sound," is, "[t]o further the gameplay by making the player's situation and options as clear as possible."

Agree or disagree with Crawford's above statement but cite five (5) games in support of your well-reasoned and researched argument. Include proper citations for all references. This is a 25 point question so thoroughly describe how each game supports your argument.

Question 3 (5 pts)

Dan Horn famously said, "Gameplay trumps everything." Why does gameplay trump everything? Agree or disagree but construct a well-reasoned and researched argument with proper citation methods for all references.

Question 4 (10 pts)

All God Games are resource management simulations. Give a God Game title and list 10 resources that the user manages in the game.

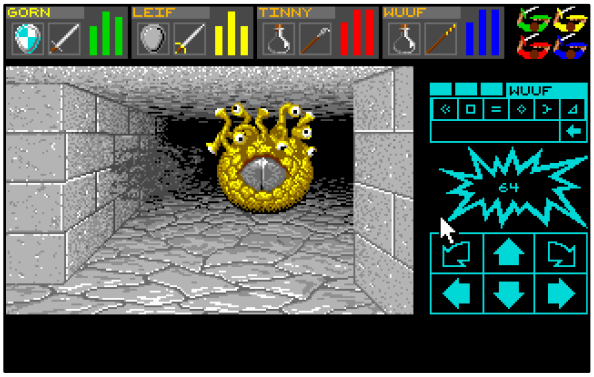
Question 5 (10 pts)

A game that can be divided into discrete sections or activities is a 'phased game'. 'Real-time', in the context of a computer game or simulation, refers to continuous play without stoppage for phases. Real-time does not imply that 'game time' is synchronous to real time; i.e. 15 minutes of game time does not necessarily equal 15 minutes of elapsed real time.

List five (5) phased games and five (5) real-time games (for 1 point each).

Question 6 (10 pts)

Consider the two screen captures, below, from *Dungeon Master* (Atari ST 1987) (left) and *Castle Wolfenstein 3D* (MS DOS 1992) (right).



List 5 things that are similar or different about the two games (for 1 point each or a total of 5 points). Explain the reasons (including design and programming decisions) for the similarities or differences (for 1 point each or a total of 5 points).

Question 7 (15 pts)

Dani Bunten was especially interested in multiplayer games and had a vision of, "the family gathered around the computer," playing games together. Create a multiplayer family game and write a three or four paragraph 'pitch document' that describes your new multiplayer family game. It is especially important to describe the gameplay and why and how it would appeal to family members of different ages.

Dani Bunten once invented a four-person game controller for one of her multiplayer games. Feel free to invent any sort of a device that the users would need to simultaneously interact with the game (modified joy sticks, controllers, etc.).