

**THE UNIVERSITY OF WESTERN ONTARIO
LONDON CANADA**

**COMPUTER SCIENCE 437b/641b
MIDTERM EXAMINATION
FEBRUARY 11, 2006
2 HOURS**

NAME: _____

STUDENT NUMBER: _____

Question

1-25. _____

26. _____

27. _____

28. _____

29. _____

30. _____

31. _____

32. _____

33. _____

TOTAL _____

(Out of 140 marks)

There are no cheat sheets, books, or other reference materials allowed for this exam. No calculators or other electronic devices are permitted either.

Part I -- Multiple Choice, True/False -- Choose the best answer from the choices given. Circle your answer on the paper, and fill in the answer on the Scantron form. [50 marks total, 2 marks each]

1. Which of the following is not a fundamental characteristic of any game:
 - a. Representation.
 - b. Interaction.
 - c. Conflict.
 - d. Safety.
 - e. All of the above are, in fact, fundamental characteristics.

2. A game should strive to represent what portion of reality:
 - a. All of reality.
 - b. A subset of reality.
 - c. None of reality—it should be pure fantasy.
 - d. Any of the above can make a successful game.

3. Despite popular belief, video games can be a form of exercise.
 - a. True.
 - b. False.

4. Which of the following is not a factor considered to be part of psychographics:
 - a. A person's way of thinking.
 - b. A person's attitudes.
 - c. A person's perceptions.
 - d. A person's country of origin.
 - e. All of the above are, in fact, part of psychographics.

5. The XEODesign report "Why We Play Games" detailed a study identifying four pathways or keys to more emotion in games without story, as discussed in class. Which of the following was not one of the keys?
 - a. Hard fun.
 - b. Easy fun.
 - c. The people factor.
 - d. Physical seclusion.
 - e. All of the above were, in fact, keys discussed in that study.

6. How many Myers-Briggs personality types are there according to the Myers-Briggs Type Indicator (MBTI) discussed in class?
 - a. 4.
 - b. 8.
 - c. 16.
 - d. 32.
 - e. None of the above.

7. All games with action elements are less cerebral than adventure games.
- a. True.
 - b. False.
8. The end result of concept development in the game development process is:
- a. A game idea.
 - b. A game proposal.
 - c. A game design document.
 - d. A game prototype.
 - e. None of the above.
9. Good gameplay is independent of time or budget availability.
- a. True.
 - b. False.
10. As development costs rise, more and more games are being developed as cross-platform projects.
- a. True.
 - b. False.
11. Which of the following is not an application area for serious games:
- a. Medical applications.
 - b. Educational applications.
 - c. Social and public policy applications.
 - d. Military applications.
 - e. All of the above are, in fact, application areas for serious games.
12. All the best games are:
- a. Easy to learn and easy to master.
 - b. Easy to learn and difficult to master.
 - c. Difficult to learn and easy to master.
 - d. Difficult to learn and difficult to master.
 - e. None of the above.
13. At any point in time, to keep the player grounded, the player should have:
- a. An immediate goal.
 - b. A medium-range goal.
 - c. A long-term goal.
 - d. All of the above.
 - e. None of the above.
14. Writing is important to every game, since every game uses words somewhere.
- a. True.
 - b. False.

15. Frustrating the player should always be avoided in all forms.
- a. True.
 - b. False.
16. Even though impediments to play tend to show up only during implementation, proper design can help eliminate them or reduce their effects.
- a. True.
 - b. False.
17. While bugs enter code during the implementation phase, proper game design can help reduce or eliminate bugs before they occur.
- a. True.
 - b. False.
18. Which of the following is more important to game interface design:
- a. Elegance and look of the game interface.
 - b. Ease of use of the game interface.
 - c. Increased functionality in the game.
 - d. All of the above are equally important.
 - e. None of the above are important.
19. When a tutorial or practice mode is made available within a game, it is usually safe to assume that the player has made use of it.
- a. True.
 - b. False.
20. In theory, a player should be able to successfully complete a game on the first attempt, without dying.
- a. True.
 - b. False.
21. Which of the following is a potential sign of imbalance in a strategy game:
- a. A player always chooses the same team to play.
 - b. A player always adopts the same strategy in the game.
 - c. A player always uses a select set of units in playing the game.
 - d. All players ignore a particular unit in the game.
 - e. All of the above.
22. Which game genre does this design principle apply most to: “You must design a compelling activity that is fun for the player, without forcing a lot of direction on them, if any at all”?
- a. Adventure games.
 - b. Role playing games.
 - c. Educational games.
 - d. Sports games.
 - e. ~~Serious games~~. None of the above.

23. In which game genre is the player interface not an important issue:
- a. Educational games.
 - b. Casual games.
 - c. Simulations.
 - d. Adventure games.
 - e. None of the above.
24. Which of the following is an assumption to avoid when designing a serious game:
- a. The latest and greatest hardware is available to all players.
 - b. Players have prior gameplay experience.
 - c. The bigger the game, the better.
 - d. Short-cuts should be provided to access fun easily.
 - e. All of the above are assumptions to avoid for serious games.
25. Issues of network latency and lag are more important to:
- a. Turn-based games.
 - b. Real-time games.
 - c. These issues are equally important to both types of games.
 - d. These issues are not important at all to either type of game.

26. The following question parts deal with concept development. [12 marks total]
- a. Why is a competitive analysis important to concept development? What questions and issues should be addressed by such a competitive analysis? [4 marks]

A competitive analysis is important to concept development as it provides an examination of competition to the game, both in the present and in the future. It is important to have a clear analysis of your competitors for several reasons, including to help guide your own concept formulation to keep your game unique while taking advantages of proven strengths and exploiting weaknesses of others products. It also demonstrates to publishers that you understand the market and the industry. Issues to address include: What games are out in this genre? How did they do? Why will this be better? When the game is ultimately released, what will competition be like then? How will the game compare, and succeed? Why will this game earn precious shelf space in the retail market? Will new games and technology make the game obsolete as soon as it is released?

- b. Why is a risk analysis important to concept development? What information from a risk analysis should be included in the game proposal generated during this stage of development? [4 marks]

It is important to identify risks and formulate plans for minimizing or eliminating risks, both for your own sake so the project can be managed appropriately, but also to demonstrate to your publisher or funding source that you know what you are doing. In your risk analysis, you should provide a summary of identified risks, describe why these are risks to the project, and then outline your plans of minimizing and eliminating these risks.

- c. Why is it important to have a strong team assembled when writing up a game proposal during concept development? [4 marks]

Publishers invest in people, not just ideas. Ideas can be cheap and plentiful, but it takes good people with talent and experience to turn ideas into reality. More often than not the team ultimately determines success or failure.

27. In class, we discussed fifteen factors used for classifying players as hard-core or casual and measuring their “gamer dedication” in the most recent work of Barry Ip and Ernest Adams. Identify four of these factors and explain why they are relevant to making such an assessment. [8 marks]

The factors in question were: being technologically savvy; having the latest high-end computers/consoles; willingness to pay; preference to violent/action games; preference to games that have depth and complexity; playing games over many long sessions; hunger for gaming-related information; discussing games with friends/bulletin boards; playing for the exhilaration of defeating (or completing) the game; being much more tolerant of frustration; tending to be engaged in competition with him or herself, the game, and other players; age at which first started playing games; comparative knowledge of the industry indications of early adoption behaviour; and a desire to modify or extend games in a creative way. Relevance, of course, would depend on which of the factors were selected

28. In class, we have discussed Csikszentmihalyi’s concept of a “flow channel” on many occasions. What must be balanced properly in a game in order for a player to reach the flow channel to obtain an optimal experience in the game? Discuss two reasons why achieving this balance within a game can be difficult. [8 marks]

For a player to reach the flow channel, it is important to balance the degree of challenge imposed by the game against the degree of skill that the player is bringing to the table. Too much more challenge than skill leads to frustration and anxiety, while too much more skill than challenge leads to boredom and dissatisfaction. This is difficult because each player brings a different level of skill, experience, background and tolerance to frustration, making it difficult to target the level of challenge for each different player. Furthermore, as players play the game, their skill increases and challenge must be increased as well. This on its own is difficult, but is even more of an issue when each player advanced in skill at different rates, making it a tough adjustment to make.

29. The following question parts deal with terms from game design. [12 marks total]

- a. What is meant by the term “player empathy”? How is this player empathy important to game designers? [4 marks]

Player empathy refers to the ability to understand what is going on in the player’s head and being able to anticipate their needs and expectations in order to deliver appropriate gameplay and reactions to the player. Player empathy is important in that it helps to deliver better gameplay, as it tends to be more in line with expectations. Player empathy can also reduce production time and cost as gameplay issues can be resolved during preproduction, as opposed to during production, when fixes require re-coding and re-testing of the game as well.

- b. What is meant by the term “immersion” with respect to video games? Why is immersion important to a game? [4 marks]

Immersion refers to the effect of video games in which the player is drawn into the game world, leaving the real world behind to disappear. The player is so engrossed in the experience, that they are only barely aware of what is going on around them. This is important because immersing a player means that they have been created with an incredibly compelling experience, which is good for a game to have. Achieving immersion in a game typically means that the player has reached (or has the potential to reach) the flow channel (from our discussion of flow and optimal experience), which means that the player is having a very enjoyable experience.

- c. When a game provides information to its players in a “just in time” fashion, what do we mean? Why is providing information in this kind of “just in time” fashion important? [4 marks]

Just in time information delivery refers to providing the player with information in the game on an as-needed or on-demand fashion. That is, information is given when and where it can be used and applied, just as the player realizes they need it. This is important because humans are terrible at learning when given lots and lots of information ahead of time and out of any context where it can be applied.

30. The following question parts deal with realism in games. [12 marks total]
- a. Explain the trade-off of realism versus fun in the context of an entertainment game. Which should usually win out? Why? [6 marks]

In an entertainment game, sufficient realism should be provided to support the immersion of the player. When adding realism starts to make the game more tedious or less fun, then it is not likely worth it. Consequently, in a trade-off between realism and fun, fun should typically win out in the context of entertainment games. Otherwise, with the game being tedious or less fun, it is going to be much less appealing to players seeking an enjoyable experience. They will be more apt to get frustrated with the game, and abandon it for something else. A fun and, in effect, “entertaining” experience is typically the goal for most entertainment products.

- b. Now consider the genre of serious games. Explain the trade-off of realism versus fun in the context of a serious game instead. Which should usually win out in this case? Why? [6 marks]

In a serious game, the trade-off usually works the other way with realism more important than fun. In this case, fun should be added to the experience as much as possible to the point where adding more fun requires sacrificing realism. If making the game more fun requires abandoning some element of realism, then it isn't likely worth it. This is important because precise, real-world effects might be of overwhelming importance in serious games, particularly in military, health, and emergency response applications where lives are at stake.

31. The following questions deal with issues in game design. [14 marks total]
- a. Why might a game designer want to restrict the player's ability to save? What are the advantages of allowing a player to save a game whenever they want? [6 marks]

A designer might want to restrict the ability to save to heighten the tension or feeling of anxiety or panic within a game, and to prevent the use of saves to break the pacing of the game. (In both cases to establish mood and tone.) Sometimes saves have been disallowed simply to make the game harder. Letting the player save when they want gives them more control over their experience, which is typically a good thing. It also lets people avoid repetition of parts of the game, which can be a disincentive to continue playing.

- b. Why is it important to include both seasoned veterans and novices on the testing team for a game? [4 marks]

Seasoned veterans are experienced, thereby knowing appropriate testing methods and being able to find and make suggestions for correcting issues in gameplay and functionality of the game in general. Novices will not be as good at this, but will provide fresh insight and, in some cases, and almost newbie-like attitude to the game, which can help in tuning and adjusting the game towards relative new comers or casual players, in addition to the hard core.

- c. What are the differences between symmetrical and asymmetrical balancing in a game? What are the advantages and disadvantages of each method? [4 marks]

In symmetrical balancing, every entity in the game (unit, weapon, and so on) has an exact duplicate that the opposing side has access to. Any differences are only superficial (graphically, in terms of sound, and so on). In asymmetrical balancing, the characteristics of each game entity are unique, and there aren't duplicate entities available to each side in the game. Symmetrical balancing is nice in that balancing the game is simple (as every side has access to exactly the same thing), but the gameplay might not be as interesting as a result (as every side plays exactly the same, and differences are only skin deep). Asymmetrical balancing can provide more unique gameplay as the sides in the game do play differently and these differences can be interesting; balancing the game, however, is much more difficult and can require extensive play testing.

32. The following questions deal with issues in linearity in games. [12 marks total]
- a. What are the trade-offs encountered between linearity and non-linearity in the design of the story for a game? [6 marks]

A nonlinear game is nice to provide to the player in that it provides players choice and freedom to do what they want to in the game. This gives the player a feeling of control over their experience and a sense that what they do actually matters to the game world and its inhabitants. Too much nonlinearity, however can make the player feel lost as there is not enough direction to the game. Linearity provides this structure and direction to the player, making it more difficult to be lost. On the other hand, too much linearity removes meaningful choice and freedom from the player, which can reduce the player's motivation to play. It no longer appears that what they do matters, as the game will progress the same one way or the other. Too much of one or the other tends to lead to a dissatisfying player experience, so some balance of linearity and nonlinearity is likely required for most successful games.

- b. How can one strike a good balance between the conflicting ideas of linearity and non-linearity in role-playing games? How can one do so in the context of adventure games instead? [6 marks]

In a role-playing game, a good approach is to give the player small clusters of quests or missions to choose from at any given point in time, thereby providing choice without overwhelming the player. These clusters can be linearly connected together so that the overall story and long term objective of the game can be completed through the successful completion of the appropriate story-centric questions or missions in the games. In adventure games, a good solution is to design a linear series of open environments. In each open area, the player has many activities that can be pursued in any order as the player deems appropriate. When done, the designer closes off the area, does some storytelling, and moves to the next area. This provides choice and freedom, as well as direction in the game.

33. The following questions deal with background research in game design. [12 marks].

- a. Why do simulation games require a considerable amount of background research before development? [4 marks]

Simulations typically require a great deal of depth and detail to realistically and accurately capture and recreate the simulated experience. Providing this depth and detail does not happen by chance; a great deal of research is required to uncover all of the necessary information required to create the realistic experience. Simulations tend to focus on one activity or one piece of equipment and then mine that experience for all that it is worth; if this is not captured well, the simulation is in trouble. Capturing it well, however, requires considerable research.

- b. Why do educational games require a considerable amount of background research before development? [4 marks]

The goal of an educational game is to teach a specific body of knowledge to the player. Consequently, background work is required to become suitably acquainted with the material in order to be able to teach it. In addition to the material, background research is required into the students using the software. What background preparation do they have? What level of maturity will they have? What will they know coming into the game, and what should they be expected to know coming out? Consequently, background research into educational theory, curriculum documentation, and other relevant educational materials is required before making this kind of game.

- c. Why do serious games require a considerable amount of background research before development? [4 marks]

Serious games, like the phrase suggests, are used for serious purposes. Consequently, they tend to be used to simulate some real world process or organization, and frequently are used for training or educational purposes. Consequently, serious games can inherit the reasoning behind parts a) and b). Because serious games are used for serious applications, and can have dire real world consequences, this does place an even heavier burden of meticulous research on the developer, as the situations represented in the game must be accurate and realistic. Furthermore, the developer must also have a keen grasp of what must be included in the experience, and what can be safely whittled away without sacrificing the quality of the experience, which is no easy task. The serious game cannot possibly capture all of reality, but cutting out the wrong aspects of reality could have serious negative consequences. Thus, background research can be greatly important.