THE UNIVERSITY OF WESTERN ONTARIO
LONDON CANADA

COMPUTER SCIENCE 437b/641b
MIDTERM EXAMINATION
FEBRUARY 12, 2005
2 HOURS

NAME: _Marking Scheme_____

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. In every game that there is conflict, there is also violence.
   a. True.
   b. False.

2. Which fundamental characteristic of games are players willing to sacrifice to enhance their experience?
   a. Representation.
   b. Interaction.
   c. Conflict.
   d. Safety.
   e. None of the above.

3. The killer type of game player, according to Bartle's classification, tends to be:
   a. Player oriented, and enjoys acting on.
   b. Player oriented, and enjoys interacting with.
   c. World oriented, and enjoys acting on.
   d. World oriented, and enjoys interacting with.
   e. None of the above.

4. The socializer type of game player, according to Bartle's classification, tends to be:
   a. Player oriented, and enjoys acting on.
   b. Player oriented, and enjoys interacting with.
   c. World oriented, and enjoys acting on.
   d. World oriented, and enjoys interacting with.
   e. None of the above.

5. The achiever type of game player, according to Bartle's classification, tends to be:
   a. Player oriented, and enjoys acting on.
   b. Player oriented, and enjoys interacting with.
   c. World oriented, and enjoys acting on.
   d. World oriented, and enjoys interacting with.
   e. None of the above.

6. The explorer type of game player, according to Bartle's classification, tends to be:
   a. Player oriented, and enjoys acting on.
   b. Player oriented, and enjoys interacting with.
   c. World oriented, and enjoys acting on.
   d. World oriented, and enjoys interacting with.
   e. None of the above.

7. With the advent of relatively inexpensive computer graphics, text adventure games have been rendered obsolete, and are no longer made.
   a. True.
   b. False.

8. A sports game must strictly adhere to all of the rules of the sport for it to be entertaining.
   a. True.
   b. False.

9. Concept development is always a fully funded phase of game development.
   a. True.
   b. False.

10. 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.

11. Having good software and technical design as foundations of a game is sufficient to ensure that the game will be good.
    a. True.
    b. False.

12. Games of any genre can immerse a player.
    a. True.
    b. False.

13. To promote balance, every item in a game should have both strengths and weaknesses to ensure that it is not always superior or always inferior to other items in the game.
    a. True.
    b. False.

14. All of the knowledge that the player needs to successfully play a game should be found:
    a. Within the game manual.
    b. Within the game tutorial.
    c. Within a strategy guide for the game.
    d. Within the game itself.
    e. Within all of the above combined together.

15. Statistics tend to lie at the heart of most role playing games, whether the player gets to see them or not.
    a. True.
    b. False.

16. Adventure games are primarily defined by their:
    a. Story and puzzle elements.
    b. Strategy and action elements.
    c. Strategy and puzzle elements.
    d. Action and story elements.
    e. None of the above.

17. Good puzzles must:
    a. Be appropriate to the setting.
    b. Be fair and solvable by the player.
    c. Somehow advance the story of the game.
    d. All of the above.
    e. None of the above.

18. Licensing is only an issue in sports games.
    a. True.
    b. False.

19. 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. Action games.
    d. Sports games.
    e. God games.

20. When designing an online game, you want the game to play like:
    a. The players are all playing on the same system.
    b. The players are all in the same house.
    c. The players are all in the same neighbourhood.
    d. The players are scattered around the world.
    e. None of the above.

21. Interactivity has little or no effect on storytelling in a video game.
    a. True.
    b. False.

22. Good dialog and regular speech sound exactly alike.
    a. True.
    b. False.

23. It is important to make sure that your game design document is a stimulating and entertaining read.
    a. True.
    b. False.

24. Which part of game design documentation can be thought of as an extremely detailed first pass on the user manual for the game?
    a. Game world behaviour.
    b. Game elements.
    c. Gameplay mechanics.
    d. Game progression.
    e. None of the above.

25. Resources in a strategy game have to be balanced according to:
    a. Their amounts available.
    b. Their locations in the game world.
    c. Their rates of production and consumption.
    d. All of the above.
    e. None of the above.

26. The following question parts deal with issues in game genres. [12 marks total]

a. What is meant by the term "edutainment"? Why do these products require a considerable amount of background research before development? [4 marks]

Edutainment refers to games that educate and provide entertainment at the same time (hence edu-tainment). Background research is required to ensure that the game is targeted appropriately considering the background knowledge and maturity level of the target audience, that the interface is designing cleanly and appropriate considering the motor skills of the target audience, that the game provides the appropriate emotional responses, and so on.

b. Why does the game interface tend to be harder to design for a hard-core simulation in comparison to a casual simulation? [4 marks]

The problem ultimately stems from the fact that the more functionality and details that a game supports, the more complex the interface for the game becomes, as all of this functionality and detail must be somehow presented and made accessible to the player. A hard-core simulation tends to be more heavy in detail, functionality, and representation of the activity being simulated than a casual game. Consequently, there is more that needs to be presented in the user interface, and more care is required to provide a good interface in this case.

c. When we speak of the "meta-game" in terms of a sports game, what are we referring to? Why is this an important consideration in a sports game? [4 marks]

The meta-game refers to all of the activities that surrounds and supports the sport, not including the actual sport itself. For example, this tends to include activities from the bench or management offices, such as coaching, management, and ownership questions, issues, and decisions. This is an important consideration as it can help complete the sports experience, particularly for those deeply interested in all facets of the sport in question. Without the meta-game, and only the sport itself in the game, it may seem that only one slice of the overall experience is being delivered to the player.

27. Nolan Bushnell once said: "All the best games are easy to learn and difficult to master." Explain why this is the case. [8 marks]

    A game that is easy to learn encourages inexperienced players to play the game. A game that is not easy to learn tends to frustrate novice players and psychologically discourages them from playing the game.

    If a game turns out to be easy to master, there is no challenge, and hence no reward or accomplishment in playing. A game that is difficult to master provides a player a continuing and growing difficulty level that will keep them teetering between victory and defeat, providing just the right level of satisfaction and challenge.

    Games that do not satisfy Bushnell's statement either are too frustrating or difficult initially, or not challenging enough or too easy later on. Either way, they present a large disincentive to play the game.

28. Compare and contrast the advantages and disadvantages of licensing and using someone else's game engine, versus using one developed in-house. [8 marks]

    Building your own engine …

    - You get exactly the features and functionality you want.
    - You can also easily extend it, add more features as you go, and so on.
    - You get good internal support, and have lots of local experience in using it.
    - But, it can be expensive in terms of time and money to do this.

    Licensing an engine …

    - It can be cheaper and quicker this way.
    - But, it costs you in terms of a learning curve in getting people up to speed to use the new engine.
    - You could end up with lots of features you don't need (but pay for anyways).
    - Will you end up with a game that looks and feels like all the others built on that engine (is that a good thing or a bad thing, anyways)?

29. The following question parts deal with the game development process. [12 marks total]

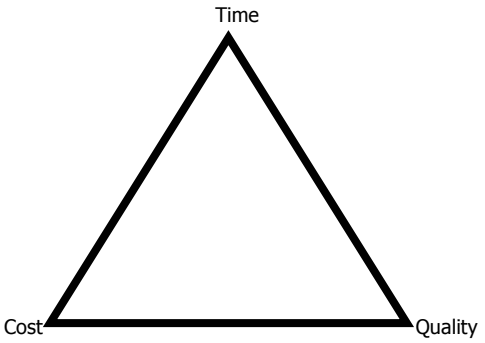
a. What are the advantages and disadvantages of a basing a video game on a completely new and original idea? [4 marks]

Having a game based on a totally new and original idea is good in that innovation and fresh ideas are important in the creation of a new game. After all, why would players want to buy what is, in essence, the same game over and over again? If the idea is good enough, players will like it, and other developers will imitate it, but you will be remembered as the first adopter. But, with something completely new and different comes a measure of uncertainly, as the ideas are unproven and untested. Variations on existing themes can sometimes be viewed as safer, and things that are totally new might scare off publishers.

b. What is meant by the "scope" of a game? What does scope effectively determine for a game? [3 marks]

The scope of a game is essentially a measure of the size of the game, in terms of code, writing, content, and game assets required in building the game. Scope effectively determines cost and schedule constraints … the bigger the scope the more costly it will take to produce the game, and the longer it will take.

c. Draw the project constraint triangle for game development. Briefly describe its significance and impact on game development. [5 marks]



Ideally, we want all games to cost nothing, be built instantly, and have infinite quality. In reality, we end up having to trade off these elements against one another. We can reduce time by increasing workers (and cost), or by reducing quality. We can increase quality by taking more time or increasing costs. We can reduce costs by using fewer workers (taking more time) or by reducing quality. However we do things, we have to balance these factors against one another accordingly.

30. The following question parts deal with player emotions in game design. [10 marks total]

a. At many points in class, we discussed how it is important for a game player to trust or have faith in the designer of the game. Why is this the case? How can this trust or faith be established? What mistakes can a designer make to destroy this trust or faith? [6 marks]

Trust and faith in the game designer is important to reducing player paranoia and providing the player an enjoyable, relaxing, and overall fun experience; if the player cannot trust that the designer will provide reasonable gameplay, where outcomes follow logically and consistently from actions, and where the player will not be unduly punished for making mistakes, the player cannot have a good game experience. Trust and faith can be established by being fair and consistent in game design, demonstrating player empathy by helping the player early on and taking care of them, and by letting the player know how they are progressing through the game in a productive fashion. Trust and faith can be destroyed by being unfair, punishing the player for seemingly inconsequential mistakes, misleading the player, introducing inconsistencies, and not taking care of them during the early stages of gameplay.

b. In class, we made the statement: "A game should be technically easy to leave, but emotionally and psychologically difficult." What is meant by this statement? [4 marks]

This statement basically means that the necessary support to exit a game must be present and readily accessible within a game, without many barriers. So, when the player decided to leave the game, it should be easy for them to access the appropriate functionality to end the game. The statement also means that while it should be easy for the player to leave when they want to, there should be sufficient immersion and emotional attachment to the gameplay and game experience that they do not want to do so, or at least do not readily want to do so.

31. The following questions deal with various game design principles. [12 marks total]

a. How much realism should be provided in any video game? How can you tell when you have too much realism? [4 marks]

Sufficient realism should be present in the game to make it internally consistent, support immersion, and make the game understandable (in that outcomes follow naturally and realistically from the appropriate actions). You can tell that there has been too much realism added because the game either becomes harder to play (because the realism and ensuing details clutters the gameplay or interface), or because the game becomes less fun to play (there are just some things that are not fun to do in reality).

b. Why is it important for a game to stay inside, but at the outer edge of the player's growing ability to play a game? [4 marks]

At this point, the player is teetering on the brink between victory and defeat. Overcoming this kind of situation can be quite satisfying. Furthermore by being in this position you are providing a sufficient level of challenge to the player: not so much that you are overwhelming or excessively frustrating the player, and not so little that they find little reward or accomplishment in playing. In essence, they are in the "sweet spot" where the game provides one of the best experiences possible.

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 storytelling in games. [14 marks total]

a. What are the advantages and disadvantages of linearity and non-linearity in telling the story of a game? How can one strike a good balance between these conflicting ideas? [8 marks]

Having linearity in a game makes it easier for a designer to prevent a player from getting lost or overwhelmed by choices present in the game. Story writing is also easier for a more linear game, as the player has less influence on how the story unfolds. It is easier to set up main plot points and so on in this case. But, a linear story does not give the player meaningful choices, or the ability to have a significant outcome on the game as a whole, and many players find this to be a less rewarding and less fun experience.

In the non-linear case, the player can make meaningful choices that do have significant outcomes on how the game turns out in the end. With too much non-linearity, it is easy for the player to get lost and not know what they should be doing next. In effect, there is too little guidance in the game. Non-linear stories are also harder to write, as the writer has less control over the outcome in the story … with too many unexpected or unanticipated player choices, the story could loose cohesion and direction.

One way of striking balance is to use a linear series of non-linear open game areas. That way, the players have freedom to play and make choices, but there is sufficient direction and control over the overall story in the game.

b. Why is it difficult to achieve the same kind of character growth from a traditional story in a video game? Does this mean that this kind of growth is impossible? Explain. [6 marks]

In a traditional story, a character can grow emotionally, mentally, socially, and in other internal fashions, allowing the storyteller to convey some very power and thought-provoking messages in their stories. In a video game, this is difficult because the player is, in effect, in the character's head, and is in control over these internal elements of growth. Characters can grow by increasing statistics or giving them new abilities, but it is hard for them to grow inside in the same way because the player is in charge of this element of the game experience.

This kind of growth is not impossible, however. Instead of focusing on growing the character directly, the player must grow as an individual instead in having to control the character in the game. Doing this, however, can be a very difficult task.

33. The following questions deal with trade offs in game design. [14 marks].

a. What is meant by the breadth, depth, and pace of a video game? Briefly define each term. [6 marks]

Breadth: The variety of actions that the player can perform in a game.
Depth: The level of detail with which an activity is portrayed in a game.
Pace: The rate at which action unfolds in a game.

b. Why is it that, at most, a game would be able to have only two of breadth, depth, and pace at any time? [4 marks]

The problem is that a broad, deep, and fast paced game will overwhelm any player. This would mean that the game would have a lot of different activities to carry out, each with a lot to do, and these activities would need to be carried out quickly in real-time. A player would simply not be able to keep up with what is required in the game, and the game would get difficult and quite frustrating quickly … there is only so much that the human brain can handle and process at any given time.

c. In class, we described how some games, such as Grand Theft Auto III, can have breadth, depth, and pace. How do they manage all that? [4 marks]

Games such as Grand Theft Auto III that package up breadth, depth, and pace do so carefully to ensure that the player is not exposed to all of it at the same time. (Or else the player would once again be overwhelmed.) Gameplay is carefully carved up so that the player deals with at most two of breadth, depth, and pace at once. For example, there could be a wide variety of activities available for breadth. While engaged in one activity, the others are locked out so that the player only needs to deal with one slide of depth and pace at a time. The player can switch between activities, but cannot do all of them at once. In this case, the breadth of the game is divided up to make playing the game possible.