Entertainment Computing (071012-1) Spring 2019 Final Exam (6/18/2019)

Instructor: Kyoung Shin Park, Applied Computer Engineering, Dankook University

The final exam will be a take-home exam, handed out on Tuesday June 18th in class, and **due by Sunday June 23rd by 23:59 PM**. Please, turn-in your file (MS Word doc or Adobe Acrobat pdf) via e-learning. Please put your name and student ID on the exam you turn in.

This is an individual exam, to be completed without the aid of other students in the classroom. All of your answers should be in your own words using complete sentences, NOT just spitting back quotes from publications, books, lecture notes, or web pages. Answers that are direct copies of sentences from the book will NOT receive full credit. In answering the exam questions, it is crucial that you use citations of readings and outside publications that are relevant to your arguments (except the lecture notes from this class).

The question 1-6 will require short written responses (more than 1 page per question). The question 7 to 9 will require little longer (more than 2 pages per question) written responses. The question 10 to 11 will require much longer (more than 3~5 pages per question) written responses. The questions will ask you to go into detail on a particular topic, and also to make some argument or new application of your knowledge.

1. What is Simulator Sickness and Seizure? Explain the causes and treatments, and explain the graphical elements to consider when designing the game.
2. Describe Finite State Machines (FSM) which is an important element in game design. Explain your game FSM in detail.
3. Compare and Contrast the characteristics of sensory memory, short-term memory, and long-term memory, which are the three stages of conceptual model of human memory. Describe the interface design principles in game design considering human cognitive ability.
4. Discuss the importance of Csikszentmihalyi's theory of Flow in game and discuss the principles of game design to maintain the player's flow. Refer to the original text **http://mprcenter.org/blog/2012/08/the-positive-side-of-video-games-part-iii/**
5. Describe in detail the relationship between visual psychology and cognition in game design. Refer to the original text. "It's All in Your Mind: Visual Psychology and Perception in Game Design" http://www.gamasutra.com/view/feature/131506/its_all_in_your_mind_visual_.php
6. What is the theory of natural funativity? What are the essential elements of a great game? Refer to the original text. "Natural Funativity (by Noah Falstein)" https://www.gamasutra.com/view/feature/130573/natural_funativity.php

7. Read this article, “How Video Games are Changing the World” (https://tfetimes.com/video-games-changing-world/) and discuss the principles of effective game design.
8. Watch the video “Subnautica Postmortem” (https://www.gdcvault.com/play/1025691/-Subnautica) and explain lessons learned from this talk.
9. Watch the video “How Virtual Reality facilitates language learning and improves student outcomes” (https://www.youtube.com/watch?v=l9Q5d_SmWqU) and find out the tips for learning a language and how to apply these tips to your game design.
10. Watch the video “Development of Log-based Game AI using Deep Learning” https://www.youtube.com/watch?v=IDhaMrR6R8k and summarize the talk and describes your thoughts in detail.
11. Design your game using AI speaker. You may choose any existing game and re-write it to accommodate AI speaker interaction. Consider the game concept, game rules and game elements, interface, scenario and level design. Refer to this article, “25 fun games you can play with Alexa” https://www.cnet.com/how-to/amazon-echo-fun-games-you-can-play/