WESTERN UNIVERSITY
FACULTY OF ENGINEERING
DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

SE2250b – Software Construction

Project: Role Playing Game

Objective

This project provides hands-on experience on various aspects of software construction including practical experience with software implementation and testing. It will give you an opportunity to improve your software development practices and to try the iterative model of the software development life cycle through three phases of the project.

Role Playing Game

In this project, you will work in groups of 4 to create a role-playing game (RPG) of your choice. A role-playing game is a video game genre where the player controls the actions of a character(s) immersed in some well-defined world. Many role-playing video games have origins in tabletop role-playing games, including Dungeons & Dragons. In an RPG, players control a central game character, or multiple game characters and attain victory by completing a series of quests or reaching the conclusion of a storyline. Players explore a game world while solving puzzles and engaging in combat.

The RPG is a very diverse genre of video games allowing you a lot of flexibility in your project. At the same time, this a genre difficult to define and often not clearly distinguished from other genres such as action or adventure games. For the purpose of this project, RPG characteristics include the following:

Story and setting: The game world is set in a fantasy universe, which allows players to do things they cannot do in real life. The story is a narrative within a video game determined by the player and/or by the developer. The plot can advance when the player defeats an enemy or completes a level. RPGs often progress the story based on the player's decision or arrival in an area. For example, a player may make the decision to join a guild, thus triggering a progression in the storyline that is usually irreversible.

Combat: Your game can generate random encounters, persistent wandering monsters that move independently of the player, stationary monsters in key positions, and similar. Although you can have shooting or fighting style combat, you can also have a player skill/knowledge-based one such as asking the player to answer knowledge-based questions.

Exploration: The player(s) moves through the fictional world exploring it and doing things such as picking objects, avoiding traps, or interacting with non-player characters.

Character customization and progression: Character customization can be cosmetic, but it can also include things such as character classes with different abilities such as different levels of strength or ability to heal. Throughout the game, the characters progress. The progression can be through experience when the character collects the points by caring out actions, and accumulating

a certain number of points cases the character to level up (unlock spells, increase strength and similar)

The project will be delivered in three phases:

- Phase 1: 10%
- Phase 2: 10%
- Phase 3: 35%

Phase 1:

Deadlines:

Section 002: 10:30 am, Tuesday, February 11th, 2020
Section 003: 10:30 am, Monday, February 10th, 2020

Requirements:

Specific requirements for your game include:

- The fantasy world in which the player moves. It is up to you if you want to develop 2D or 3D game.
- Story. This could for example include your character trying to reach specific location, collect things, or gain super powers.
- Progress measure. This could, for example, be points the player accumulates when completing tasks, combats, and similar. Points should reflect the difficulty of the task and there should be at least three different activities resulting in three different point gains.
- Levels. There must be at least two levels including different features. The new features cannot be simple extensions of the previous layer such as an enemy moving faster. Examples of the new features include new types of enemies, new tasks or quests.
- Character customization. There must be some way to customize the player.
- Character progression. The character needs to evolve/change throughout the game. Examples include the character getting more resilient with experience or the character getting a boost when not performing well.

NOTE: The project will be marked focusing on the software engineering part and not on the artistic look. The game world(s) must provide a reasonable environment to fulfill other requirements but can be visually simple. The complexity of game logic, features, and the implemented system will be considered in marking. Features described in this phase can be changes in phases 2 and 3, but the main idea should remain the same.

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PART A (14 points)

Write a short requirement specification for your project. This document serves the purpose of introducing the reader (TA) to the game you intend to develop. It must contain enough details to convey the overall vision of the game and to enable checking that you vision will meet the requirements of the project.

The document should contain the flowing sections:

1. Introduction. This section will introduce high level overview of the game. For example, this section may specify that you will develop 2D game in which the player moves throughout dungeon rooms encountering and combating monsters. The levels maybe represent different layouts with new types of combat.
2. Product functions. This section will provide specifics for different functions. Here you must ensure that you have functions to fulfill each game requirement. In this part you can use a visual representation of your world(s) or even use the implemented prototype from part B of this phase.

PART B (6 points)

Implement the prototype of your RPG world(s) and the player. In this phase, the player does not need to move yet and the prototype can include only a single level. However, the world must be complex enough to allow the player to explore the world as well as accommodate encounters or any other features described in part A. In the lab, during you demo time, you need to convey to TA that your world/environment and your planned functionality will enable you to fulfill the project requirements.

Deliverables for Stage 1:

- Functionality demonstrated to a TA during the lab (see part B). All group members must be present for the demo.
- A document describing your RPG game submitted in owl as pdf file. The file must be named: RPG-GameIdea.pdf
- All game files uploaded to OWL. This should contain all the files needed to run your game from UNITY.
- Only one group member should submit the project. Names of all group members should be included with the OWL submission.
- Code submitted to GIT. Your GIT repository name and structure must follow instructions from the Git tutorial.
- In OWL submission provide a reference to the GIT submission:
  Project, Phase 1: git submission xyz

For no demo, 50% of the available mark will be deducted. Each group member must be present during the demo. Not being present for the demo without justifiable reason (providing documentation to Undergraduate Office or self-reported absence) will result in a deduction of 50% of the available mark for that student.