Seneca

GAM537 – Game Development Fundamentals

Professor: George Kougioumtzoglou	MIDTERM PROJECT	Total Weight: 20%

Notes for the Student: This Project is one of two that are designed to give you practical experience in building Games using the Unreal 4 Game Engine.

Background: You will need to have access to the latest edition of the Unreal Editor. You will also need a thorough understanding Game Genres, Level Design, Brushes, Blueprints, Lights, Game Characters and Actors.

Assignment Submission Requirements
- An electronic copy of your work (project and a written report), should be uploaded to the Blackboard by midnight on the deadline date.
- **This Assignment WILL NOT BE ACCEPTED VIA EMAIL.**
- The written report must be in pdf format and must contain the following: -
   o A cover page.
   o A table of contents.
   o Screenshots of your game, with relevant descriptions, detailing whether the functionality was met or not met, as specified below.

Assignment Regulations
- **This assignment can be done in groups of four or less or individually.**
- **Please review Seneca's policies on Academic Integrity, specifically:**

Technical Requirements

- All back-end functionality **MUST be done on Blueprints.**
- All the Level Design should be done in Unreal Editor.
- All the assets can be designed or imported from any source (check Week 3 for details).

Detailed App Specification

You have been hired as a Game Developer and you are tasked to develop a game with 3D graphics using only Blueprints. The project will be developed in rounds (Releases) and this assignment is part of the first round.

The game should be completed in 2 Project; Midterm and Final (1st and 2nd Release). This game should be of **DIFFERENT** genre than the Assignments and the assets (actors, pickups, NPC, character etc) should be also **DIFFERENT**. For this project you should focus only on the specified requirements.

Specifically, you are **ONLY** required to implement the following:

Features

- At least 4 well-designed levels (though you can create multiple levels).
- A number of 10 objects designed in the Editor or designed in any other application or imported by any source, such as :
  - Pickups.
  - Traps.
  - Interactive lights.
  - Interactive objects.
  - Moving platforms.
- All the game objects should be Blueprints (except the Volumes) with complex colliders, physics and well-designed.
- A 3D Character (the perspective is up to you):
  - With fully working keys, key Binding,
  - Camera.
  - Collision.
  - At least 5 animations (e.g. idle, walk, run, jump, death).
  - Apply transitions to animations.

- o A score system based on the character (e.g. number of pickups count).
  - o A life system (e.g. count remaining lives).
- Fully implemented lighting that includes at least a sky dome, a directional light, and a number of other lights (a exception could be an internal – underground world, where the sky dome – directional requirements are dropped). The lights should have some kind of functionality implemented with Blueprints.
- A well-designed User Interface that displays information about the level and the character (e.g. level name, number of lives etc).
- Every level should include a terrain, with some kind of vegetation or multiple objects that create the impression of a real world, that can host a game level.

Submission

A. The project should be presented the 6th Week (the week before the Break).
B. The project should be uploaded to Github (https://www.youtube.com/watch?v=DGtOACUU4BY), then you need include me to the owners of the project (docie80) and send me an email notifying me.

Rubric

Criteria	Not Implemented 0	Partially Implemented 1	Fully Implemented 2
Level Design (10%) • Interesting Outline. • Good-looking background. • Well-designed environment.	Not included	Included but not functionally or visually acceptable.	Included. Visually and functionally acceptable.
Objects (20%) • Number of objects. • Blueprints. • Well-designed. • Functional.	Not included	Included but not functionally or visually acceptable.	Included. Visually and functionally acceptable.

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	Not included	Included but not functionally or visually acceptable.	Included. Visually and functionally acceptable.
• Pickable.			
Character (25%) • Design. • Controls. • Camera. • Animations.	Not included	Included but not functionally or visually acceptable.	Included. Visually and functionally acceptable.
UI (10%) • Well-design. • Score. • Lives. • Other counts.	Not included	Included but not functionally or visually acceptable.	Included. Visually and functionally acceptable.
Lighting (5%) • Number. • Functionality.	Not included	Included but not functionally or visually acceptable.	Included. Visually and functionally acceptable.
Map (10%) • Well designed. • Sizable to fit the levels.	Not included	Included but not visually acceptable.	Included. Visually acceptable.
Overall look and feel (20%) • Overall game level is polished • Used pleasing color palettes, materials, and imagery. • Color and layout.	**Poor**	**Average**	**Exceeds**

Total: 100 MARKS

THE END