Seneca

GAM537 – Game Development Fundamentals		
Professor: George Kougioumtzoglou	FINAL PROJECT	Total Weight: 20%

Notes for the Student: This Project is the second 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, Animations, Blend Spaces, UI, Collectibles and AI.

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:**

"Each student should be aware of the College's policy regarding Cheating and Plagiarism. Seneca's Academic Policy will be strictly enforced. To support academic honesty at Seneca College, all work submitted by students may be reviewed for authenticity and originality, utilizing software tools and third-party services. Please visit the Academic Honesty site on http://library.senecacollege.ca for further information regarding cheating and plagiarism policies and procedures. ." ***Thus, ensure that your code or any part of it is not duplicated by another student(s). This will result in a percentage of zero (0%) assigned to all parties involved.***

Technical Requirements

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

Detailed App Specification

You are still 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 second round.

The game should be completed in 2 Projects; Midterm and Final (1st and 2nd Release). Simply… continue from the Midterm Project. 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.
    - Collisions.
    - Fully animated.

- o Apply transitions and Blend Spaces 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).
- At least 10 different Enemy or NPC types, with different behaviors and settings with:
  - o AISensing.
  - o Behavior Trees.
  - o Blackboards.
  - o AIControllers.
- 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 advanced and dynamic User Interface that displays information about the level and the character (e.g. level name, number of lives etc). The count should not be reset when the player opens a new map or level.
- Every level should include a landscape, fully populating vegetation or multiple objects that create the impression of a real world. The levels should be sculpted to create a realistic output.

Submission

A. The project should be presented the 12th Week (last week of the semester in two groups of teams).
A. The project should be presented the 12th Week (last week of the semester in two groups of teams).
B. The project should be uploaded to Github (https://www.youtube.com/watch?v=DGtOACUU4BY), add me to the owners of the project and notify me (the submission should include a GitHub link), or Mega (https://www.youtube.com/watch?v=okkoMMnqd18) and include the link at the submission.

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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. • Pickable.	Not included	Included but not functionally or visually acceptable.	Included. Visually and functionally acceptable.
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.	Not included	Included but not visually acceptable.	Included. Visually acceptable.

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	Poor	Average	Exceeds
• Sizable to fit the levels.			
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