Seneca

GAM537 – Game Development Fundamentals		
Professor: George Kougioumtzoglou	**Assignment 3 of 3**	**Total Weight: 15%**

Notes for the Student: This Assignment is the third out of three, that are designed to give you practical experience in building Games using the Unreal 4 Game Engine. This Assignment is a continuation of Assignment#1 and Assignment#2 and you should submit an improved version of the previous Assignment.

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, Blueprints, Lighting, Landscape, Colliders, Animations and Game Characters.

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 two or individually (continue with the same group from Assignment#1).**
- **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 Unreal Editor.
- All the assets can be designed or imported from any source.

Detailed App Specification

You have been hired as a Game Developer and you are tasked to continue the development of a game with basic 2D or 3D graphics using only Blueprints. The project will be developed in rounds (iterations) and this assignment is part of the second round.

The game should be completed in 3 Assignments (Iterations). For this assignment you should focus only on the specified requirements.

Specifically, you are **ONLY** required to implement the following for this Assignment, continuing from Assignment#2:

Features

- Fully animate the character with at least 10 complicated animations with:
    - Transitions.
    - Blend Spaces.
- Fully animate the Enemies and the NPCs with at least 5 complicated animations with:
    - Transitions.
    - Blend Spaces.
    - Equipped with Melee or Ranged weapons (50% Melee - 50% Ranged).
    - The weapons should be able to be used for attacking the player character, using AI rules, as described below.
    - Shooting with the Ranged weapons should be implemented with Raytracing.
- Add AI logic to the Enemies/NPC implementing behaviors such as:
    - Patrol/Chase/Melee Attack.
    - Patrol/Chase/Ranger Attack.
    - Random patrol/Chase/Melee Attack.
    - Any other complicated behavior.

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- o When a target is shot by the AI, the target should die (play animation) and removed from the game after 5 seconds)
- All AI should be implemented via Behavior Trees, Blackboards, Tasks, Decorators, Services, AI Sensing.
- Save and Load functionalities (check the Login Screen also).
- Intro Login Screen:
  - o Buttons: Play New Game, Load A Game, Exit.
  - o When the player has created a saved point, you should be able to access it through a menu, via the Login Screen. Otherwise the button should be inactive.
  - o When the user clicks on the Play button, a new menu with the available levels/maps should open. The player should have access to only those that has opened in the game.
  - o When the user clicks on the Exit button, the game should exit.

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.
Game Character (15%) • Fully animated. • Blend Spaces. • Transitions.	Not included	Included but not functionally or visually workables. Cuts, irregularities or not proper animation control and transition.	Included. Visually and functionally acceptable.

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NPC and Enemies AI (25%) • Well-designed. • Functional. • AI. • BT, BB.	Not included	Included but not functionally or visually acceptable. The AI does not execute the expected tasks.	Included. Visually and functionally acceptable. All the tasks executed.
NPC and Enemies Weapons and Shooting 20%) • Well-placed. • Attached to Socket. • Shooting properly. • Destroys Target. • Target Death Animation.	Not included	Included but not functionally or visually acceptable.	Included. Visually and functionally acceptable.
Save and Load (10%) • Save. • Load.	Not included	Included but not functionally or visually acceptable.	Included. Visually and functionally acceptable.
User Interface (10%) • Buttons. • Save and Load (and functional). • Exit.	Not included	Included but not functionally or visually acceptable. Some buttons do not work.	Included. Visually and functionally acceptable. All the buttons work.
Overall look and feel (10%) • Overall game level is polished • AI Movement smooth.	Poor	Average	Exceeds

Total : 100 MARKS

THE END