University of Central Lancashire UCLan **School of Psychology and Computer Science**	**UCLan Coursework Assessment Brief**	2021/2022
	Module Title: Games Development 1 Module Code: CO2301	Level 5
	Unreal Game Development	This assessment is worth 50% of the overall module mark

THE BRIEF/INSTRUCTIONS

You are to create a third person shooter style mini game prototype using C++ and the Unreal Engine. The exact nature of the core gameplay/mechanics you choose to implement is flexible, but there is an expectation that your game should contain the following requirements:

40% Requirements:

1. At least 3 Screens E.g. Title/Win/Lose/Gameplay Screen
2. A C++ Pawn class that the player is able to move around the level
3. A C++ Actor class that the player is able to shoot / interact with
4. Implemented Collision handling between actors (OnActorHit or OnComponentHit)
5. Implemented Basic Enemy AI E.g. enemy movement.
6. A C++ GameMode class that implements Basic Game Rules E.g. Increasing Challenge, score keeping, Win/Lose Conditions, etc.
7. Implemented in-game Sound
8. Gameplay implements a 3rd person view using Camera and SpringArm components created in C++

50% Requirements:

9. Appropriate use of Property and Function Specifiers for use in Blueprint Subclasses
10. Implemented a basic heads up display (HUD) E.g. displaying health and/or ammunition
11. A C++ PlayerController class (E.g. to Initialize the HUD)
12. Use of the UGameplayStatics::ApplyDamage method to deal damage to an actor
13. Use of the UProjectileComponent to launch projectile actors (that will deal damage to an opponent)
14. Implemented an in-game timer(s) in C++
15. Game responds to Trigger Events (Eg. OnActorBeginOverlap or OnComponentBeginOverlap)

60% Requirements:

16. Assignment uses Source Control and is integrated into your Unreal Project E.g. Github
17. Included destructible mesh actors in your level that can be damaged/destroyed by the player
18. Implements Appropriate use of Physics Forces (E.g. Impulse, Radial Impulse, Force)
19. a C++ AIPlayerController class
20. Implemented Pathfinding (E.g. Using Navmesh Bounds Volume)
21. Implemented a basic Behavior Tree / Blackboard system E.g. to move between waypoints on a level

70% Requirements:

22. Behavior tree allows enemies to chase players
23. Behavior tree allows enemies to attack players from range
24. Implemented Raycasting (Line Tracing)
25. Custom Written (in C++) Behavior Tree Services and Behavior Tree Tasks
26. Mini Map using SceneCaptureComponent/RenderTarget

LEARNING OUTCOMES ASSESSED

1.	Apply the theoretical underpinnings of algorithms and techniques specific to computer games development.
2.	Implement artificial intelligence algorithms.
3.	Apply a systematic approach to games development from specification to implementation.
4.	Develop software using game-specific tools and environments

Note: LO1 Evidenced through Code Comments/Demo

ASSESSMENT CRITERIA

for 40% you must Implement:
All of the 40% Criteria
Code is reasonably commented

for 50% you must implement (in addition to the above):
At least 6 50% Requirements
Appropriate Coding style/naming conventions

for 60% you must implement (in addition to the above):
At least 5 60% Requirements
Well considered gameplay mechanics
Mini game is generally bug free

for 70% you must implement (in addition to the above):
At least 4 70%+ Requirements
Mini game is bug free

For 85%+ you must implement (in addition to the above):
ALL 40,50,60% and 70% Requirements
Mini game is well polished

Note*: If you are unable to complete a lower level requirement, but are able to complete a higher level requirement in it's place, you are recommended to do so, as we may be able to take this into account when marking your work.*

PREPARATION FOR THE ASSESSMENT
Before completing the assessment you should ensure you are up to date with all of the practical lab exercises on Blackboard. These exercises are designed to give you experience working with the tools and techniques required to complete the assignment.

RELEASE DATES AND HAND IN DEADLINE
Assessment Release date: **Monday 10/11/2021** Assessment Deadline Date and time: **Friday 11/02/2022**
DEADLINE EXTENSION OFFERED TO ALL STUDENTS TO 25/02/2022

Please note that this is the latest time you can submit – not the time to submit!
Your feedback/feed forward and mark for this assessment will be provided on **Friday 18/03/2022**

SUBMISSION DETAILS

A video guide to assignment submission can be found under the 'Assignemnts' section of the module space on Blackboard.

1. Before submission make sure you have made a backup of your project.

2. Delete the following folders from your project (These can all be recreated by UE4 and Visual Studio):
   - Intermediate
   - Saved
   - .vs
   - Binaries

3. Add the completed assignment coversheet into your project folder

4. Zip the remaining files in your project into a single .zip file and submit via the 'Project Files' link on Blackboard

5. You must record a **video demo** of your game of between 5 and 10 minutes in length showcasing how it has met the requirements you have implemented. This should be submitted via the 'submit video demo' link on Blackboard. An unlisted youtube link is acceptable if the video file size is too large.

HELP AND SUPPORT

- Academic Support for this module can be gained by posting to the 'Assignment Queries' channel on the modules Microsoft Teams Space. You may also email your tutors for support, or to request a teams meeting, but it is likely you will get a quicker response through the MS Teams channel.
- For support with using library resources, please contact Bob Frost, RSFrost@uclan.ac.uk or SubjectLibrarians@uclan.ac.uk. You will find links to lots of useful resources in the My Library tab on Blackboard.
- If you have not yet made the university aware of any disability, specific learning difficulty, long-term health or mental health condition, please complete a Disclosure Form. The Inclusive Support team will then contact to discuss reasonable adjustments and support relating to any disability. For more information, visit the Inclusive Support site.
- To access mental health and wellbeing support, please complete our online referral form. Alternatively, you can email wellbeing@uclan.ac.uk, call 01772 893020 or visit our UCLan Wellbeing Service pages for more information.
- If you have any other query or require further support you can contact The <i>, The Student Information and Support Centre. Speak with us for advice on accessing all the University services as well as the Library services. Whatever your query, our expert staff will be able to help and support you. For more information , how to contact us and our opening hours visit Student Information and Support Centre.
- If you have any valid mitigating circumstances that mean you cannot meet an assessment submission deadline and you wish to request an extension, you will need to apply online prior to the deadline.

Disclaimer: The information provided in this assessment brief is correct at time of publication. In the unlikely event that any changes are deemed necessary, they will be communicated clearly via e-mail and a new version of this assessment brief will be circulated.	Version: 2