University of Central Lancashire UCLan **Department of Computer Science**	**UCLan Coursework Assessment Brief**	2022-2023
	Module Title: Games Development 2	
	Module Code: CO3301	Level 6
	Discrete Gameplay Mechanics	This assessment is worth 50% of the overall module mark

THE BRIEF / INSTRUCTIONS

Using the Unreal Engine template project provided you are to create a low fidelity (primitive shapes or Mannequin for characters, and a block out for the environment) game demo that showcases some of the discrete gameplay mechanics covered by the lecture topics on the module.

You are free to use the template contents as a starting point and modify them as you like. You should implement a core gameplay loop, then model, balance and showcase an internal economy around it within the demo. The demo should implement a number of discrete gameplay mechanics that manipulate the games internal economy, such as:

- Source Mechanics (that bring resources into the economy)
- Drain Mechanics (that govern the removal of resources permanently from the economy)
- Converter Mechanics (that convert two or more resources into another resource)
- Trader Mechanics (the govern the exchange of resources within the economy)

The demo should make use of feedback loops (positive and negative) to control the games internal economy and the flow of resources around it.

The type of resources you model in your economy is flexible and will depend entirely on the type of demo you make, but some possible options could include (but are in no way limited to):

- Health/Lives
- Energy
- Currency/Gold
- Mana
- Skill Points
- XP/Levels
- Creatures/Enemies

A good demo will contain enough resources and associated mechanics so that the games probability space is broad enough to support a range of player strategies within the gameplay loop, but simple enough that the rules are easy to learn and understand. Before implementing the demo you should model the internal economy using the Machinations modelling tool (https://machinations.io/).

ASSIGNMENT DELIVERABLES:

- Your Unreal Engine project
  - Implementation should be no bigger than 2GB in size after removal of regeneratable folders
  - Remove unused assets from your project before submission (Make a backup before doing this)
  - Do not use excessively sized marketplace assets in your project.
- A narrated demo video of between 5 and 15 minutes showcasing how you have attempted to meet the assessment criteria listed below. The video should include footage of your Machinations model running, demonstrating the movement of resources and any feedback loops implemented. The video should be narrated.
- A brief executive summary (2 pages) containing an annotated image(s) of your machinations model, clearly highlighting the feedback loops you have implemented (draw on the image to highlight the loops).
  - Summary should outline the core gameplay mechanics implemented and provide justifications for key decisions made.
  - Where appropriate, you should make reference to the relevant gameplay design patterns covered in the lectures and evaluate the effect they could have on your demo's economy.

LEARNING OUTCOMES ASSESSED

1.	Critically evaluate approaches to games development from design to implementation
2.	Analyse and evaluate game-specific algorithms in terms of their theoretical underpinnings
4.	Implement and evaluate design patterns related to gameplay mechanics
5.	Implement, evaluate and balance gameplay mechanics

ASSESSMENT CRITERIA

for 40%

1. Playable demo produced showcasing a core gameplay loop and internal economy
2. Economy/Model comprises of at least 3 different resources
3. Economy demonstrates 2 of the 4 types of gameplay mechanics that control an economy (Sources, Drains, Converters, Traders)
4. Economy contains at least 1 feedback loop.
5. Machinations model is reconstructed to a reasonable standard in the implementation (may have some inaccuracies)
6. Executive Summary includes a reasonable machinations diagram with some effort to justify/evaluate gameplay mechanics.

for 50%

7. Economy/Model comprises of at least 4 different resources
8. Economy demonstrates 3 of the 4 types of gameplay mechanics that control an economy (Sources, Drains, Converters, Traders)
9. Economy contains at least 2 feedback loops.
10. Gameplay shows evidence of balancing
11. Machinations model reconstructed to a good standard in the implementation (minor inaccuracies)
12. Summary contains mostly accurate annotations outlining feedback loops. Sensible justification/evaluation of gameplay mechanics

for 60%

13. Demo/model implements at least one gameplay design pattern covered in the lecture materials (excluding static engine / static drain)
14. Economy contains at least 3 feedback loops.
15. Economy contains both positive and negative feedback loops
16. Gameplay is mostly well balanced
17. Machinations model reconstructed accurately in the implementation
18. Executive Summary contains accurate annotations outlining feedback loops with good justification/evaluation of gameplay mechanics produced.

for 70%

19. Demo/model implements at least two gameplay design patterns covered in the lecture materials (excluding static engine / static drain)
20. Economy demonstrates 4 of the 4 types of gameplay mechanics that control an economy (Sources, Drains, Converters, Traders)
21. Machinations model accounts for player skill (e.g. through use of registers)
22. Gameplay is well balanced
23. Gameplay loop displays a good amount of replayability
24. Contains evidence of emergent gameplay
25. Executive Summary is comprehensive and accurate. Well annotated diagrams. Very good justification/evaluation of gameplay mechanics produced.

For 85%+

26. For a high first class mark we will be looking to see you build on the topics covered in the lectures, demonstrate self directed study and implement functionality that is related to, but extends beyond the the lecture material. Some possible examples are:
    - Appropriate use of randomness E.g. to counter dominant strategies
    - Excellent implementation of feedback loops
    - Strong Emergent Gameplay
    - Gameplay has no balancing issues
    - Excellent, Clear Executive Summary. Excellent justification/evaluation of gameplay mechanics produced.

Note*:* *If you are unable to complete a lower level criteria but are able to complete a higher level criteria in its 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 30/01/2023
Assessment deadline date and time: **Friday 28/04/2023**

Please note that this is the final time you can submit – not the time to submit!
Your feedback and mark for this assessment will be provided on **Friday 19/05/2023.**

SUBMISSION DETAILS

IMPLEMENTATION SUBMISSION:

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 and self-assessment into your project folder

4. Submit a .zip file of your project folder and submit via the 'CW2 Implementation Submission' link on Blackboard.

NARRATED DEMO VIDEO SUBMISSION:
The video should be submitted via the 'CW2 Demo Video Submission' link on Blackboard. An unlisted YouTube link or Google Drive / OneDrive link is fine if the video file size is too large.

EXECUTIVE SUMMARY SUBMISSION:
Executive summary must be in Microsoft Word .docx format and submitted via the 'CW2 Executive Summary Submission' link on Blackboard.

HELP AND SUPPORT

- Support will be provided via Microsoft Teams and email. You will also have the opportunity to ask questions during lectures / labs. You may request a one to one meeting with a tutor during their office hours (as published on Starfish).
- For support with using library resources, please contact our subject librarian 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 let us know. The Inclusive Support team will then contact you 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 Student 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 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.

Version: 2
Updated 01/09/2022