WSOA3003A: Retrospective Project Plan

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1. Project Introduction

The overall intent of this project is for the designer to produce a vertical-slice that has a primary focus on developing a turn-based combat mechanical system using the agile design methodology. The project will be developed using the Unity engine and will be built to run on PC platforms. The agile design methodology was chosen to be used in this project's design as it focuses on breaking down main project goals into small increments that can be created and iterated upon during each of the project's major weekly iterations. Each weekly iteration will build-upon and adapt to playtesting data and feedback from the previous week. Each weekly iteration will focus on effectively and efficiently developing one of the project's four primary goals. The four goals are: data design, communication feedback, level design and feedback loop features. In addition to the four goals, the designer intends to keep the project's design in-scope and maintain effective and efficient scheduling when developing each major iteration of the project. The overall project will be worked upon from 22nd March 2021 to 22nd April 2021 with a major iteration of the project being built and submitted for playtesting and feedback weekly.

2. Feature List

Each weekly iteration of the project will focus on developing one of four primary features. Each feature will be designed and developed to fulfill the requirement of that iteration.

The table below outlines each feature:

Feature:	Description of Feature:	Tasks Associated with Feature:
Data Design	Developing the game's core mechanics and systems through means of prototyping and playtesting.	Player Controller Actions/Player Health/ Enemy AI Actions/Enemy Health/Turn-based mechanics/Win and Lose Condition
Communication Feedback	How the game communicates information to the player through layered communication. It creates moment-to-moment gameplay.	UI (User-interface) & Art, Animation & Sound
Level Design	Creating spaces and challenges for the player to engage with the game's mechanics and systems.	Tutorialization & Micro-level design & Macro-level design
Feedback Loops	How the game reacts to player input and adjusts the game state and loop accordingly.	Positive & Negative Feedback Loops

3. Task Breakdown

Tasks:	What needs to be done in each task and want to achieve:
Player Controller Actions	Creating what actions the player can do in their turn: Picking a card from a set/Attack/Heal/Shield/Reroll Cards
	The designer wants to ensure these mechanics are complex and can function effectively in relation to the enemy and player's health system and potentially wants to include other mechanics such as a point system i.e. it costs the player "x" points to perform an action.
Player Health	Creating the player's health system that can be affected by player's and enemy's actions. This includes developing good communication feedback for the health system ie. Health bar/sound/animation
	The designer wants to ensure the player's health system can be affected by the player's and enemy's actions.
Enemy AI Actions	Creating what actions the enemy can do in their turn: Picking a card from a set/Attack/Heal/Shield/Reroll Cards
	The designer wants to ensure these mechanics are complex can function effectively in relation to the enemy and player's health system and potentially wants to include other mechanics such as a point system i.e. it costs the enemy "x" points to perform an action.
Enemy Health	Creating the enemy's health system that can be affected by player's and enemy's actions. This includes developing good communication feedback for the health system ie. Health bar/sound/animation
	The designer wants to ensure the enemy's health system can be affected by the player's and enemy's actions.
Turn-based mechanics	Creating a system that let's both the player and the enemy take turns to perform an action.
	The designer wants to ensure that the turn-based mechanic is engaging for the player and creates interesting dynamics between the player and the enemy's interactions with each other.
Win and Lose Condition	Creating a win and a lose condition in the game ie. When the enemy's health reaches 0 the player wins and when the player's health reaches 0 the player loses.
	The designer wants to ensure that in a game, when the player wins or loses it feels fair and justified. Potentially, the designer wants to create a round system in which the player must wi best two-out-of-three rounds to win the game.
UI (User-interface) & Art, Animation & Sound	Creating elements such as health bars/animation/text displays/ sound outputs etc.
	The designer wants to ensure that these elements provide the player with layered feedback communication and supports moment-to-moment gameplay and creating a good user-experience for the player.
Tutorialization & micro-level design & macro-level design	Tutorialization: Creating a space that teaches the player the game's mechanics and systems. Potentially, the designer wants to develop one level that teaches the player the game's mechanics and systems through gameplay.
	Micro-level design: Creating a level that allows the player to fully engage with the game's mechanics and systems.
	Macro-level design: Potentially, the designer wants to create multiple levels in the game that add mechanics and increase difficulty as the player goes through each level to give the player a sense of challenge and progression.
Positive & negative feedback loops	Creating and iterating on the game's mechanics to promote positive and negative feedback loops. The designer wants to ensure the loops are effective at balancing and managing the game state by playtesting and iterating on the game's core mechanics.

4. Assigning Tasks

As this project is a solo-designed project all tasks will be assigned to the designer. The table below outlines the estimated time it'll take the designer to complete each task in addition to playtesting:

Task:	Time Estimate (in hours) :
Player Controller Actions	15 hrs.
Player Health	2 hrs.
Enemy AI Actions	7 hrs.
Enemy Health	2 hrs.
Turn-based mechanics	15 hrs.
Win and Lose Condition	3 hrs.
UI (User-interface) & Art, Animation & Sound	5 hrs.
Tutorialization & micro-level design & macro-level design	10 hrs.
Positive & negative feedback loops	10 hrs.
Playtesting	10 hrs.
Total:	79 hrs.

NOTE: The given time estimates are estimates for the entirety of the project, not for each major iteration.

5. Dependencies

Many of the tasks the designer must complete are interrelated and dependent on the completion of other tasks. The table below outlines which task is dependent on other tasks:

Task:	Dependent on the development of:
Player Controller Actions	N/A
Player Health	Player Controller Actions/Enemy AI Actions
Enemy AI Actions	Player Controller Actions
Enemy Health	Player Controller Actions/Enemy AI Actions
Turn-based mechanics	Player Controller Actions/Enemy AI Actions
Win and Lose Condition	Turn-based mechanics/Player Health/ Enemy Health
UI (User-interface) & Art, Animation & Sound	Player Controller Actions/ Player Health/ Enemy AI Actions/ Turn-based mechanics/ Win and Lose Condition
Tutorialization & micro-level design & macro-level design	Player Controller Actions/ Player Health/ Enemy AI Actions/ Turn-based mechanics/ Win and Lose Condition
Positive & negative feedback loops	Turn-based mechanics/Player Controller Actions/Enemy AI Actions

6. Scheduling

Each feature and its related tasks must be completed as a major iteration or micro-project that focuses on developing that key feature. The due dates are necessary for the project to ensure all features are built on time and ready to be published as a vertical slice. Each iteration or microproject will create new features while iterating and developing previous features. These key

dates have been chosen in relation to factoring in time estimates for completing tasks. The key dates for each feature to be developed by is illustrated in the table below:

Major Iteration:	Due Date:
Data Design	25th March 2021
Communication Design	1st April 2021
Level Design	8th April 2021
Feedback Loops	15th April 2021
Vertical Slice	22nd April 2021

7. Risks

The major risks the designer feels that they will encounter during the project is over-scoping in relation to time pressure. In regards to over-scoping the designer feels that they may not be able to include all aspects of the project that they want to include. This is a particular concern in relation to some game mechanics, tutorialization and macro level design. The designer feels that they should focus on developing the games main mechanics (i.e. card picking, attack, heal and shield) before or instead of trying to add additional mechanics. This is because one of the designer's primary goals with this project is to ensure that the game mechanics are complex instead of complicated – adding too many mechanics would revert from this goal and would require significant amount of playtesting to ensure that these complicated mechanics are viable and would result in the designer going over the designated time facilitated for playtesting, In regards to tutorialization and macro-level design, the designer feels that they may have over-scoped in wanting the game to have a tutorial section and multiple levels as creating both would require a significant amount of time to achieve that probably is not viable given the time needed to finish the project and as previously stated, would require significant amounts of playtesting and would result in the designer going over the designated time facilitated for playtesting. Lastly, due to the designer's limited coding skills and knowledge the designer will most likely encounter many glitches, problems and errors when designing the project and thus will need a significant amount of time to fix these issues to be factored into the tasks' designated time. This may result in a risk of the designer going over the time estimates for required tasks while working on the project and may result in the toll of their mental well-being, thus risking their motivation to complete tasks on time.

8. Milestones

The key milestones in this project are the completion of key features and the submission of microprojects/major iterations for feedback and playtesting. These key features must be developed and iterated upon while also keeping in mind the submission dates mentioned in "Scheduling".

WSOA3003A: Microproject 4 Analysis

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1. Demonstration of Intent

The overall goal of this final micrproject was to demonstrate effective feedback loops, both positive and negative loops, through a turn-based combat system. To achieve this, the microproject's turn-based combat system was reworked significantly in order to ensure the game's mechanics promoted positive and negative feedback loops. The focus of this microproject was to polish the game's various elements such as data design, communication feedback and level design based on feedback from the previous iteration while developing feedback loops.

2. Demonstration of Process

Feedback from the previous iteration

In a previous iteration of the microproject, feedback was given to the designer that made them decide to rework the turn-based mechanics of the game. It was noted that when the player picks a card to determine the stat value of an action (ie. Picking a card with a value of 5 means that the player can attack/heal/damage by 5), the player will always choose the highest card value as the higher the card value, the more powerful the action. Since the player would always pick the highest card, the gameplay dynamic became stagnate as there was little strategy in the game in terms of card picking besides picking the highest card. In addition to this, it was noted that the player has first turn advantage in the game. In order to mitigate both problems, a new turn-based combat system was implemented.

Reworking the Turn-based Mechanic in relation to Feedback Loops

In the previous iteration of the game, the turn-based mechanic worked as follows:

Player turn -> Enemy Turn -> Player Turn etc. until the enemy/player health reaches 0.

Figure 1 illustrates how the new turn-based mechanic works in the new iteration of the game. A coin toss mechanics was added in order to mitigate the player from constantly having first-turn advantage as now the enemy has the chance to go first if the coin lands on tails.

 In order to deter the player from constantly picking the highest card the new mechanic was implemented in that if the player picks a higher card than the enemy, the enemy would get another turn, and if the next card the enemy picked was still lower than the card the player picked, they would go again. In order to stop the enemy from performing an infinite number of chained actions, when the enemy performs a "shield" action" the game state goes back to the player's turn. This was done so that the enemy does not infinitely keep doing multiple actions which would stop the player getting back to their turn.

This mechanic of determining turn order and number of turns through card value deters the player from constantly picking the highest card as by doing so the enemy could potentially do

multiple actions such as multiple attacks in succession. The game now has an interesting dynamic of strategy when a player picks a card. In addition, if the player picks a lower levelled card than the enemy, they can potentially chain multiple actions such as multiple attacks. In order to stop the player from performing an infinite number of chained actions, the player can only perform up to 5 actions consecutively. This element was put in place so that that the player does not infinitely keep doing multiple actions which would stop the enemy getting back to their turn. The mechanic of letting the player and the enemy chain multiple actions provides the game with an example of a positive feedback loop. This is because by chaining multiple actions the game state destabilizes as the game rapidly shifts its state from either the player or the enemy's favor. This mechanic is an example of a positive feedback loop as it puts emphasis on the early game and may result in the game ending faster. This is because what card the player picks in the first round determines how the game state is affected at a later stage. For example, if the player chooses a lower card than the enemy, they are able to perform up to four consecutive attacks later on and may deplete the enemy's health to 0 faster as a result of their consecutive attacks.

In contrast, by letting the player and the enemy only chain up to a certain number of actions, the game also facilitates a negative loop. The elements that stop the player or the enemy from doing multiple actions balances the relationship between the player and the enemy as it prevents one from having too much power over the other and controls how much of an advantage either has on each other. For example, without the facilitation of a negative feedback loop in the form of limit the number of actions the player can chain an infinite number of actions, thus making the game extremely unfair to the enemy and unchallenging to the player. Because the enemy can chain a greater number of actions tan the player, the game creates a sense of challenge to the player as the enemy has an advantage over them. To balance this, the enemy has less total health than the player so that the player has a better chance of winning against the enemy who can do more consecutive actions than the player.

3. **Demonstration of Reflection**

The final version of this microproject successfully created interesting dynamics within the game by reworking the turn-based combat mechanics to support interesting strategies to emerge from the player's interaction with the game when picking a card and performing an action. This reworked turn-based combat system also facilitated both a positive feedback loop in the game through allowing the player and enemy to chain multiple actions, but also vacillated negative feedback loops by stopping both from chaining too many actions. In addition, the designer made minor changes such as reworking the enemy's AI and changing their maximum health in order to ensure data design, communication design and level design were all effectively present and functional in the final iteration of the project.
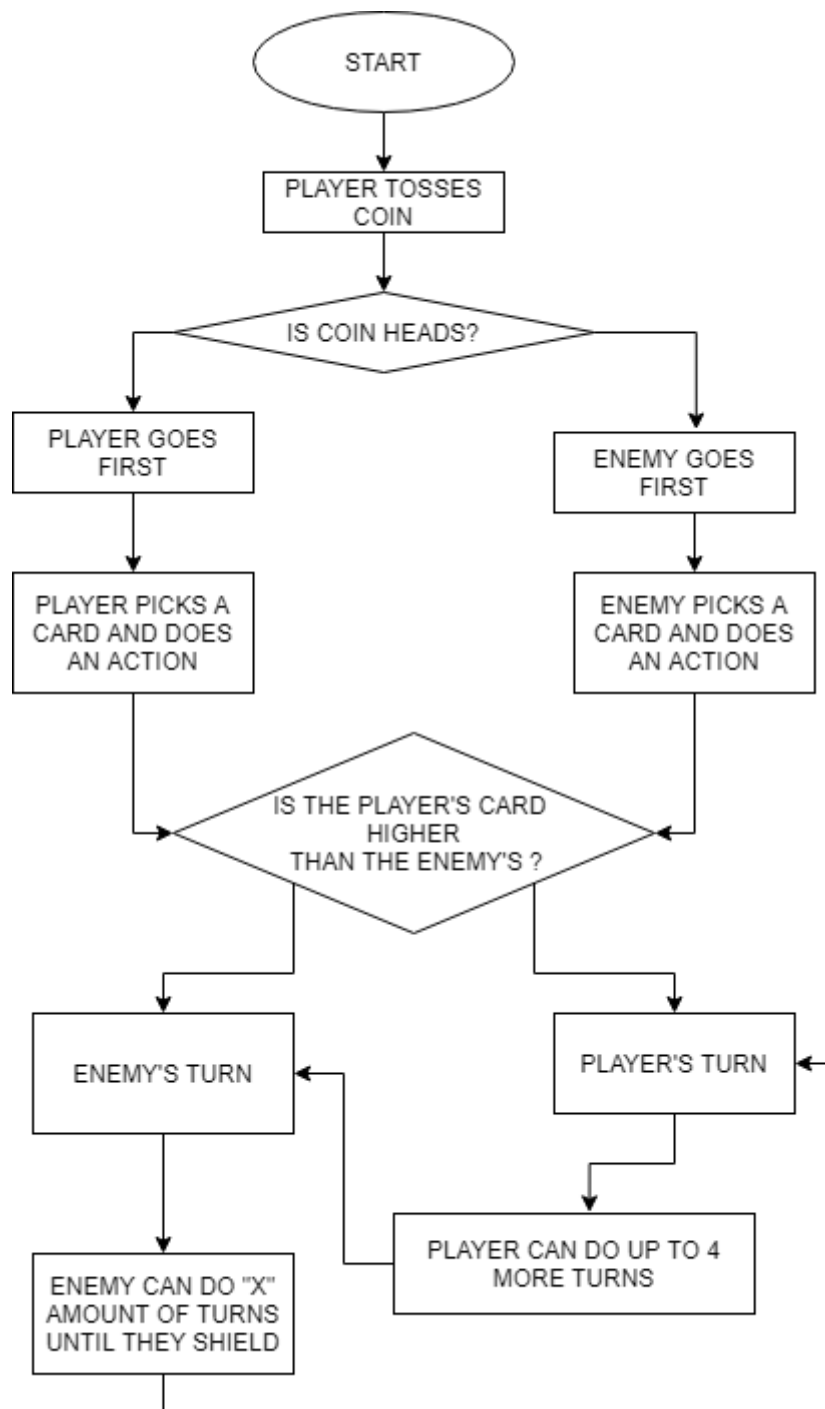
Appendix

Figure 1: A flowchart illustrating the new turn-based combat system/turn-order system in the final iteration of the project.