

## Retrospective Project Plan

### The Aether

---

Dev and Design: Rayyan Gafoor (1839637)

Sound and Visuals: Rayyan Gafoor (1839637)

---

#### Overview:

A turn-based combat game revolving around species of different elements, where players use attacks to combine different elements to defeat the opponent.

#### Budget:

No expenses are involved; therefore, the budget will revolve around time.

---

#### Timeline:

- Start date: 18 March 2021.
- End date: 22 April 2021.
- 35 days in total.

#### Work Hours and Days:

- Hrs: 207 hrs (9 hrs per day)
  - Days 23 days
  - Emergency workdays and hrs:
    - 7 emergency days
    - 5 hrs per emergency day
- 

#### Project Details

The project will undergo 4 different prototype iterations during the time given. Each prototype will be divided into specific tasks that must be completed with the allocated dates and time. During the development of each prototype, playtesting will be done to improve and record data for future improvements.

Each Prototype will be implemented on the previous one. Each prototype implementation will serve as a milestone that must be completed by the dates seen below:

Milestones	Deadlines
Data Design & Turn Based Combat System	25 MARCH 2021
Communication design	1 APRIL 2021
Level Design	8 APRIL 2021
Feedback Loop Design	15 APRIL 2021
Final Polished Prototype	22 APRIL 2021

#### Feature List and Task Breakdown:

(Priority Rating (P.R): High = H, Medium = M, Low = L)

FEATURE	TASKS	P.R	TIME	DEPENDENCIES
TURN-BASED COMBAT	Integrate State Machine	H	3 hrs	N/B
	Develop Basic Combat System	H	3hrs	N/B

DATA DESIGN				
DATA SETS	Implement character Statistics	M	3hrs	N/B
MAIN MECHANICS	Implement Attack, Heal, Stun and Special Buttons	H	3hrs	Data Sets
	Develop and test formulas using data sets	M	3hrs	Data Sets, Main Mechanics
ELEMENTS	Create Different Elements	L	1hrs	N/B
	Assign Elemental Strengths and Weaknesses	L	1hr	Data Sets, Elements
CHARACTERS	Create 2 Characters	M	1hr	Data Sets, Elements
	Apply Numerical Values to each Stat on each Character	M	1hr	Data Sets
	Balance each set of data according to the formulas and vice versa	M	2hrs	Data Sets, Main Mechanics
BASIC UI	Character stats UI	M	2hrs	Data Sets, Main Mechanics
	Mechanics UI	M	2hrs	Main Mechanics
BUFF MECHANIC	Create elemental reactions	M	2hrs	Elements, Data Sets, Main Mechanics
	Implement new formulas for Attack, Heal and Stun when Buff is applied	M	2hrs	Data Sets, Main Mechanics
	Buff UI	M	1hr	N/B
COMMUNICATION DESIGN				
SOUND	Mechanic Feedback Sound (attack, heal, etc)	L	3hrs	Main Mechanics
	Soundtrack sound (feedback loop)	L	2hr	Data Sets, Main Mechanics
	Buff activation sound	L	3hrs	Buff Mechanic, Main Mechanics
ART	Characters	L	2hrs	Elements
	Attack Orbs	L	2hrs	Elements
	Buff particles (elemental reactions)	L	2hrs	Elements
PARTICLE EFFECTS	Bufs (elemental reactions)	M	3hrs	Elements, Main Mechanics, Buff Mechanic
	Aura (feedback loop)	M	1hr	Attack Boost, Data Sets
	Damage taken	M	1hr	Main Mechanic, Data Sets
	Orb Trails	M	3hrs	Main Mechanics
COLOURS	Damage effect (feedback loop)	M	1hrs	Main Mechanic, Data Sets
SCREENSHAKE	Implement and Test ScreenShake	M	4hrs	Main Mechanics
FEEDBACK UI	Dialogue text/ Action Log	M	2hrs	Main Mechanics
	Active Buff	L	2hrs	Buff Mechanic
LEVEL DESIGN				
NEW LEVEL	New character, Art, Particle effect, Data	L	3hrs	N/B
	Enemy Action Pattern	M	6hrs	Main Mechanics
TUTORIAL UI	New Text panel for hints	L	2hrs	N/B
	Updated Present UI dialogue text	L	2hrs	N/B
FEEDBACK LOOPS				

<b>ATTACK BOOST</b>	Update attack formula	H	3hrs	Data Sets, Main Mechanics
	Test out different iterations for attack boost	M	3hrs	Data Sets, Main Mechanics
	Develop feedback to communicate loop	M	3hrs	Particle Effects, Colours, Data Sets, Main Mechanics, Sound

---

### Resources and Technologies:

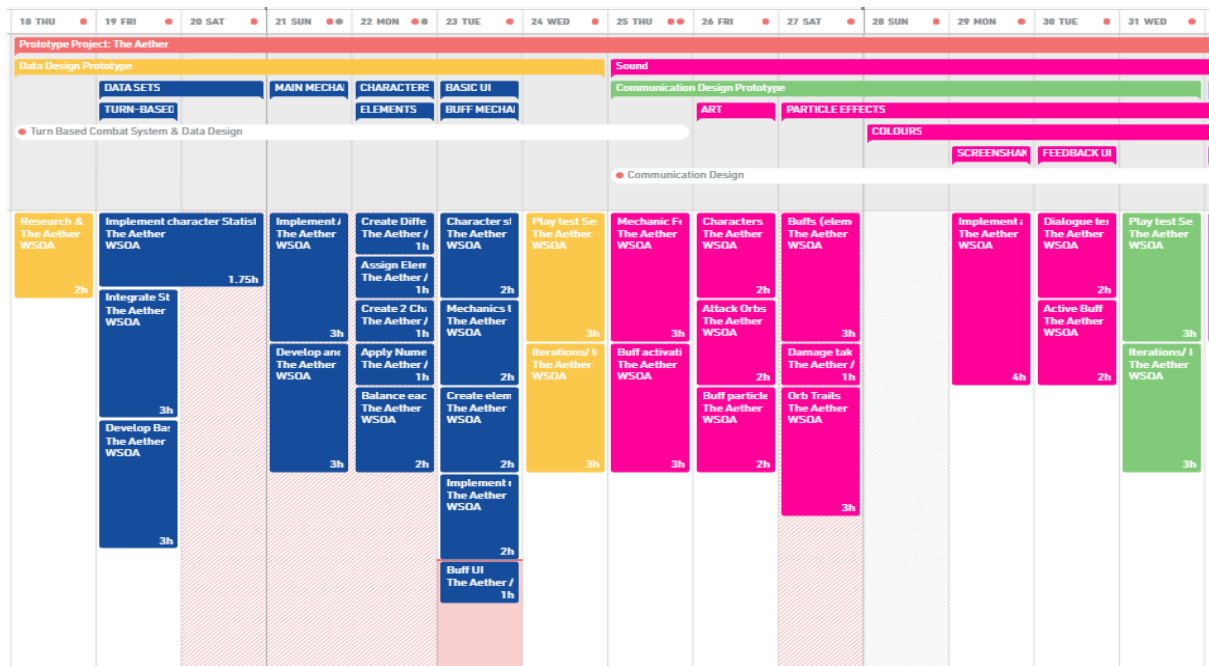
- Krita: Art and asset creation.
  - Unity: gaming engine that will be used.
  - Discord: For feedback on playtests.
  - Team Viewer: For playtest sessions.
  - Github: Source Control
  - Float.com: resource planning and project tracking
- 

### Schedule

The following images display the predicted timeline, where each feature has been broken into phases and the tasks broken down within each phase. For a better view of this schedule follow the link below: <https://memoryghost.float.com/share/azVkS0tNWTZiTXNOcVFudm9ycDZmQT09de144711f754eeb0>

The first image acts as a guideline:





## Risk analysis

Risk Type	Time Setback	Potential Solutions
Load Shedding	4-2 hrs	<ul style="list-style-type: none"> <li>Other facilities will be provided in times of load shedding.</li> <li>A generator will be available but can only be used between certain hours.</li> </ul>
Unstable Internet Connection	1 hr	<ul style="list-style-type: none"> <li>Additional Modem on hand.</li> <li>Moving to other facilities (university, coffee shop, etc).</li> <li>Perform task that can be done offline.</li> </ul>
//Performance Risk (Unpolished prototype features, Features do not meet requirements)	3 hrs	Emergency days are allocated for extra work on content if need be.
//Operational Risk (Build Errors, Poor Code Implementation, Etc	1 hr	Emergency days are allocated for extra work on content if need be. Committing to Github every 3 hrs.
Designer Lack of Knowledge	2 hrs	Assigning and taking on appropriate tasks within one's skill level or considering one's ability to learn a new skill.

Looking back at the work hours and days section., 9 hrs have been set aside each day, although most days the design works for a maximum of 6hr per day. The 3 hrs that remain are allocated for any unforeseen inconveniences. Likewise, there are emergency days allocated in the event that the project falls behind schedule.

## Feedback loops Analysis

### Intention

This section of the report documents the feedback loop design process for the turn-based combat prototype. The designer hoped to develop a negative feedback loop with the intention of showing players that any enemy can be defeated when the right strategy is used. Hence, developing a loop that increases the players attack damage, which is triggered once the players health drops below certain percentage, aiding them increase their chances of winning. I wanted the tension players experience to increase and at the same time give them hope of defeating the enemy as the loop builds up, therefore choosing to make the players aware of the function of the loop and how/when it is triggered. Using the communication design aspect as a method of visually displaying the loop, I had to change and implement some of the already existing communication mechanics. Looking back at previous prototypes, we will be assessing another negative feedback loop, that occurs at the beginning of each new level.

## Process

I started by experimenting with two ideas: Creating a critical attack mechanic, with chances of you performing the critical attack increasing as the players health decreases. This idea worked as a feedback loop, although it was not obvious enough for players to pick up, as the attacks would seem random from the beginning of the match. Hence why I moved onto the second idea. This idea revolved around changing the attack directly (meaning there was no chance involved). Although to make it obvious to players that the attack was now increasing, the designer decided to experiment with the data as seen in the table below:

Health (%)	Iteration 1 -Attack Boost (%)	Iteration 2 -Attack Boost (%)	Iteration 3 -Attack Boost (%)	Final Iteration -Attack Boost (%)
100	0	0	0	0
90	2	2	0	0
80	5	5	0	0
70	10	10	0	0
60	12	15	15	20
50	15	25	25	30
40	20	35	35	40
30	30	50	50	60

During the first iteration, it was observed that the effect the loop was not as strong as the designer would hope, making no real difference to the players attacks. Due to this the loop could not be noticed by the player. In the second iteration, the boost was increased to make the loops effect stronger. Although because the boost starts from a very high percentage, the players attacks seem random from the beginning of the game. In the third iteration, I decided to apply the boost once the health is below 60%, this made the attack damage no longer seem random, although the attack boost was still not enough to give the player a chance of catching up. In the final iteration, the boosts have all been increased, giving the player a better chance of catching up and allowing the player to easily notice the change in attack damage. To make the effect even stronger, the boost will build on the previous boost. For instance, if the players health is below 50 percent, the attack damage will be:  $\text{damage} + (\text{damage} + \text{damage} \times 20\%) \times 30\%$ . In simple terms the boost is applied to the already boosted damage.

## Communicating the Feedback Loop

To make the player even more aware of the feedback loop, I wanted to the feedback loop to be visually communicated to the player. Hence the following decisions were made:

1. Changing the colour of the player as their health drops, this helped show the player taking damage, and also made their character look more intimidating.

2. To show the increase in strength the designer created an aura that would grow as the players health decreases.

To implement the second communication mechanic, I used a particle effect and experimented with different settings, to an effect that grows over time. Some of these setting choices are as follows:

1. Choosing the appropriate render modes. Using the Billboard render mode, created a ball like effect that made the aura seem more of an explosion than a radiation of power. Switching to a Horizontal Billboard effect removed the ball shape and created a streak like visual, with an improved flow for the purpose of the aura.
2. Emission Rate Over Time (EROT) vs Start Lifetime. To make the effect grow and shrink according to the players health two properties of the particle effect could be altered. The EROT worked best when showing the growth of the effect. The start lifetime, helped showed the development of the aura, not only in growth but also with change in colours, the effect would move from a shade of blue only to shades of blue and red.

### **The second Feedback Loop**

To give the player a better and fair chance on each individual enemy fought on different levels, a negative feedback loop was implemented, although most are not directly aware of this. After defeating an enemy, the players stats all return normal giving them a fresh start on each new level. This was done with intention of reducing the initial tension built up from the previous feedback loop discussed. When players move into the new level, they can rest assured knowing that their actions in the previous level have no consequences in the new level.

### **Reflection**

As one of the most challenging design prototypes, I have gained more insight in game design through this specific assignment. Experimenting with different loops and realising that some games are design without intended on creating these loops, I found this explicitly interesting. As a designer I would like to look further into games that use loops in different ways and games that choose to remove their loops (intended or not) completely.

This prototype proved to the designer that different areas of games cannot exist on their own. From the process of creating this loop, I had to constantly revisit previous prototypes, updating and implement new aspects to the data and communication design of the project.

As an assignment, I believe I not only met the requirements but also excelled by implementing my intentions and taking it a step further. This being said, I was not only able to implement the intended communication feedback, but also implement a sound mechanic that works hand in hand with the loop. Introducing a soundtrack to the game, I used the soundtrack to further build on the main loop by increasing the depth of the soundtrack as the players health fluctuates (when at 100% health the soundtrack will slowly change as the health decreases, and the same occurs when the health increases.)

### **Recommendations**

With the new sound mechanic, I recommend working on the flow of the sound, when the change occurs. When the sound does change, it happens in an instant. Working on the change to occur gradually will improve on the communication of the mechanic. Similar, the colour change that occurs in the players character could be smoother, allowing change to gradually occur.

### **References**

[1] Foundation, K., 2021. *Krita*. [online] Krita. Available at: <<https://krita.org/en/>> [Accessed 22 April 2021].

[2] Technologies, U., 2021. *Unity - Unity*. [online] Unity. Available at: <<https://unity.com/>> [Accessed 22 April 2021].

[3] Discord. 2021. *Discord | Your Place to Talk and Hang Out*. [online] Available at: <<https://discord.com/>> [Accessed 22 April 2021].

[4] TeamViewer. 2021. *TeamViewer – The Remote Connectivity Software*. [online] Available at: <<https://www.teamviewer.com/en/>> [Accessed 22 April 2021].

[5] GitHub. 2021. *GitHub: Where the world builds software*. [online] Available at: <<https://github.com/>> [Accessed 22 April 2021].

[6] Float.com. 2021. [online] Available at: <<https://www.float.com/>> [Accessed 22 April 2021]