# Portfolio

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# MORGAN'S

# Experimental Game Morgan's Fly

#### Summary

This game is about biology, with the main purpose of helping people understand biological principles through gameplay. The game is based on the early 20th-century Drosophila melanogaster experiments by Morgan. In each game session, players are given a target for generating specific types of fruit flies. Additionally, players receive a certain number of flies to serve as parent organisms for the next generation. The player's subsequent goal is to achieve the required types of flies for the game target through step-by-step genetic inheritance.



#### Inspiration

This game draws inspiration in part from Nicky Case's "The Evolution of Trust." I believe that interactive methods are an efficient and easily understandable way for people to grasp scientific concepts. It presents abstract ideas in a more intuitive manner, which can be challenging for textbooks and filmed materials. Games, as a new medium, can, to some extent, replace expensive or impractical experiments in teaching.

When I came across information about genetic inheritance, I felt that it was a subject ideally suited for presentation through gaming in an educational context. In many cases, practical genetic experiments involve intricate procedures and lengthy waiting times, making them challenging to replicate in a classroom setting. Additionally, genetics inherently involves visual elements, as traits and inheritance patterns are often conveyed through diagrams and representations. By transforming this knowledge into a game, the complexities of genetic principles can be simplified and made more accessible to learners, allowing for a more engaging and interactive educational experience. Because this game leans more towards educational purposes, a rough overview indicates that the control and inheritance of traits by alleles are relatively easy to understand. Between 1865 and 1910, Mendelian hybridization experiments and Morgan's fruit fly experiments revealed two ways in which alleles are inherited.

One involves inheritance along with autosomes, and the other involves inheritance along with sex chromosomes. The mode of inheritance associated with autosomes reveals the fundamental principles of genetic inheritance. During the reduction division of germ cells in the parents, alleles associated with autosomes are randomly assigned to the germ cells, giving one of the two alleles carried by the parents. Subsequently, during the formation of the fertilized egg, the combination of germ cells from the two parents results in the formation of new alleles for the offspring.

The other mode is sex-linked inheritance, where alleles are located on sex chromosomes, and specific traits differ based on the offspring's gender.











#### Gameplay

In a visual representation, fruit flies, eye color, body color, and wing length will be presented as three traits controlled by alleles.



Players have four jars to store fruit flies, which can be rotated for viewing. Clicking the corresponding button will transport the currently selected fruit fly to the respective jar.



After selecting a fruit fly, clicking the "Parent" button will transfer the fruit fly into the parent container. Players can then use these two parent flies to generate any desired number of offspring.

When a fruit fly is selected, it will be highlighted, and its traits will be displayed on the screen to facilitate the player's better observation of the selected fruit fly's characteristics.

Players can choose the quantity of offspring fruit flies they want to generate, and then click the "Confirm" button to initiate the generation process.

#### Game Flow

The target fruit fly will appear in the upper right corner of the screen to ensure that players are aware of the game objective.

> Frogs are used as trash bins, allowing players to discard unwanted fruit flies (feed them to the frog). This helps better manage a large number of offspring and ensures the ability to filter out the correct results.

Objective:

Generate a homozygous genotype.

Two parent fruit flies with black bodies.



Generate offspring through the initial parent generation.

Due to the emergence of a new trait, it can be inferred that the new trait is a recessive gene, and both parents are heterozygous for that trait.

Firstly, observe the gender to determine if it is sex-linked inheritance. If not, it can be inferred to be autosomal inheritance. The next step is to determine which one is the homozygote.

The ratio of black-bodied to gray-bodied offspring is 3:1.

Judging genes and traits according to the condition of offspring.

Achieve the goal through hybridization.



You can perform a cross between the first generation and the parents, and then observe the second generation to confirm if the first generation is a homozygote. Based on this foundational model, you can adjust levels by controlling the objectives and initial parents.

#### Programming - Spawn a New Fly

The establishment of a genetic information repository for fruit flies





Decoupling methods through gene encoding in the form of strings





#### Different Gene Fly Sample





#### Programming - The Creation of Gene Strand

![](_page_3_Figure_11.jpeg)

Variable 1 is used to control the spacing distance between two gene nodes (which affects the length of the gene chain in a variant), variable 2 is used to control the node density in a single closed loop (which affects the rotation Angle difference between a single node of the gene chain and the previous node), and variable 3 is used to control the number of constituent nodes in the entire chain.

#### Clayxel (3D Modelling Plugin for Unity)

![](_page_3_Picture_14.jpeg)

Modelling Process

![](_page_3_Picture_16.jpeg)

#### Prefab Iteration

#### Version 2: 4 Color Strand

![](_page_3_Picture_19.jpeg)

In an effort to increase the academic nature of the game, I decided to recalibrate the appearance of the genetic chain to more closely match the actual genetic makeup.

A base pair consists of two complementary DNA nucleotide bases that pair together to form a "rung of the DNA ladder."

So I took the whole base and split it in two and made an animation of the merging of DNA nucleotide bases to reinforce the idea of what genes are made of.

![](_page_3_Picture_23.jpeg)

#### Fly Teleport

In the game, the player can rearrange the fruit fly storage, which is to transfer the fruit fly to other containers in the form of teleport. The reason why I decoupled the fly's generative logic earlier is actually to assist this part of the function. Each Container game object is attached to a subclass of the parent container script, generally they will each have an string array for storing fruit flies in the container, of course, the length of the array may vary, such as the parent container is 2 only for the upper limit, the others are 9.

![](_page_3_Figure_27.jpeg)

The transfer here, essentially, destroys the fruit fly in the source container, but records the gene string, and then creates a new fly with the same gene on the other side of the target container.

![](_page_3_Picture_29.jpeg)

Nucleotide base Merging Strand Matching Strand Shinning

![](_page_3_Picture_33.jpeg)

#### Use Three Variables to Instantiate Strand

![](_page_3_Picture_35.jpeg)

#### Animation: 2 Split Gene Node Merge

![](_page_3_Picture_37.jpeg)

Animation: Change Global Volume (Color)

#### | Reference

![](_page_4_Picture_1.jpeg)

![](_page_4_Picture_2.jpeg)

![](_page_4_Picture_3.jpeg)

![](_page_4_Picture_4.jpeg)

![](_page_4_Picture_5.jpeg)

#### | Environment Iteration

I built the game scene first and then visually optimized it step by step using the rendering pipeline

![](_page_4_Picture_8.jpeg)

#### Add AO(Ambient Occlusion)

![](_page_4_Picture_10.jpeg)

#### Add Postprocessing

![](_page_4_Picture_12.jpeg)

Name	3
Downsample	C
After Opaque	C
Source	
Normal Quality	
Intensity	0
Radius	0
Direct Lighting Strength	_

#### Postprocessing Properties

🛚 🗐 🗹 Volume	
Mode	Glo
Weight	
Priority	0
Profile	🖹 P
▶ 🗸 Bloom	
🕨 🗸 Film Grain	
🕨 🗸 Vignette	
🕨 🗸 Tonemapping	
🕨 🗸 Depth Of Field	

#### | Visual Effect (Transmit)

![](_page_4_Picture_18.jpeg)

l exposed some parameters to modify the effects, and by modifying the properties of these effects, I was able to create a variety of different transfer effects

l connected vfx with shader and implemented some visual effects in shader, such as Fresnel

![](_page_4_Figure_22.jpeg)

#### Ambient Occlusion Properties

epth Normals   Iedium  .75 .25  0.25	creenSpaceAmplentOcclusion		
epth Normals   Iedium  .75 .25  0.25			
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1edium - .75 .25 	epth Normals		Ŧ
.75 .25 0.25	ledium		
0.25	.75		
• 0.25	.25		
	•	0.25	

After Light Bake

![](_page_4_Picture_26.jpeg)

#### | Visual Effect (Crt Screen)

#### | Shader(Outline)

In the game, in order to create the screen effect of showing the fly, I made a shader for the CRT monitor. The effect of CRT display is superimposed by multiple effects, I first split the effect, and then implement them step by step..

#### Selected Fly

Layer:outline

![](_page_5_Figure_5.jpeg)

T 2 Out Lines (Ren	der Objects)	
Name	OutLines	
Event	BeforeRenderingPostProc	essing +
T Filters		
Queue	Opaque	
Layer Mask	OutLine	
> LightMode Tags		0
T Overtides		
Material	M_Outline	0
Pass Index	0	
Depth		
Stenicii		
Camera		

In the game, in order to display the selected fly, a outline shader effect was made. In the beginning, I chose to enlarge the vertexs of the model to create the outline effect, but since the fly is composed of multiple mesh, the effect is not good. In the end, I made the out shader using a screen space based approach

![](_page_5_Figure_8.jpeg)

Pixel Scan Line

Screen Scan Line

Edge Clipping

Toy Shadow

![](_page_5_Picture_13.jpeg)

_ayer:de	efault
Normal	Fly

![](_page_5_Figure_15.jpeg)

![](_page_5_Figure_16.jpeg)

![](_page_5_Picture_17.jpeg)

![](_page_5_Picture_18.jpeg)

![](_page_6_Picture_0.jpeg)

![](_page_6_Picture_1.jpeg)

![](_page_6_Picture_2.jpeg)

![](_page_6_Picture_3.jpeg)

![](_page_6_Picture_4.jpeg)

![](_page_6_Picture_5.jpeg)

![](_page_6_Picture_6.jpeg)

![](_page_6_Picture_7.jpeg)

All art is generated by Al

# Tabletop Game Ocean Survival

#### Summary

In the game Ocean Survival, players take on the roles of various levels of marine organisms in the vast ocean, seeking food to survive within the food chain.

However, the availability of food in different ocean regions is limited. Players must do their best to assist each marine creature (represented by marine creature cards) in filling their bellies. Additionally, they must avoid accidentally consuming "plastic waste", which can lead to indigestion and ultimately result in death.

### | Game Componets

![](_page_7_Picture_6.jpeg)

#### Conponents

Total 56 cards Fishing Boat Card x 4 Marin Debris Card x 4 Photoautorophs Card 4 × 4 Herbivores Card 4 × 4 Carnivores 4 × 4 Top Predators Card 4 × 4

![](_page_7_Picture_9.jpeg)

#### Target Audience

Marine Protectors, Marine life lover, Environmentalists

![](_page_7_Picture_12.jpeg)

#### 'Eat or be Eaten, this's a question'

#### 'Marine Food Chain Inspiration'

"During my study of marine science, I realized that the marine food chain is a very worthwhile direction for in-depth study. Whether it's in the context of social competition or marine science itself, the concept of 'big fish eating small fish' is often used to describe it. At the same time, the marine food chain is also related to a very important concept, which is environmental protection. If the marine environment is polluted by human activities (marine litter, overfishing), then the marine food chain will also be disrupted. This is an issue worthy of global attention, and I hope to convey this problem through this game."

#### 'Do you still remember what the color of the sea is?'

For fish creatures in the blue ocean, the most important thing every day is to find food and survive. However, marine debris appearing in the ocean can cause fish species to accidentally eat and digest it until they die.

![](_page_8_Picture_6.jpeg)

In nature, the relationship between animals is that of prey and being preyed on. In human society, the relationship between people is that of supply and being supported, or the relationship of need and being needed. The support relationship constitutes a food chain in a hierarchical order: superiors and subordinates, businessmen and customers, bosses and employees, students and teachers, patients and doctors, etc. In the relationship between people, there is always a strong party and a weak party, and they are intertwined.

![](_page_8_Figure_9.jpeg)

![](_page_8_Picture_10.jpeg)

![](_page_8_Figure_11.jpeg)

![](_page_8_Picture_12.jpeg)

#### Research

![](_page_8_Picture_14.jpeg)

![](_page_8_Picture_15.jpeg)

![](_page_8_Picture_16.jpeg)

Coral reefs are hotspots of biodiversity, providing complex habitats and shelters for thousands of marine species.

![](_page_8_Figure_18.jpeg)

#### 'primary producer'

Usually refers to phytoplankton, such as algae, which convert solar energy into bioenergy through photosynthesis and are the basis of the marine food chain.

![](_page_8_Picture_21.jpeg)

'primary consumer'

Such as Seahorse, which feed on phytoplankton or zooplankton.

![](_page_8_Picture_24.jpeg)

'secondary consumer'

This layer includes small fish and medium-sized marine animals that feed on primary consumers.

![](_page_8_Picture_27.jpeg)

![](_page_8_Picture_28.jpeg)

Such as whales, dolphins and seals, they occupy an important position in the marine food chain. They are not only the top predators of the marine food chain, but also the bottom nutrient providers that nourish the entire marine ecology.

'Marine Mammals'

'Marine Fishes'

From small reef fish to large predatory fish, marine fish occupy diverse positions in the food chain.

'advanced consumer

Such as large fish, dolphins, seabirds and sharks, preying on small fish and other marine life.

![](_page_8_Picture_38.jpeg)

'Top predator'

Whales, for example, are at the top of the food chain and play an important role in maintaining the ecological balance of the ocean.

![](_page_8_Picture_41.jpeg)

#### | Card Set Show

Ocean Interference

Photoautorophs

Herbivores

Carnivores

Card Back Design

![](_page_9_Picture_6.jpeg)

![](_page_9_Figure_7.jpeg)

![](_page_9_Figure_8.jpeg)

![](_page_9_Figure_9.jpeg)

![](_page_9_Picture_10.jpeg)

![](_page_9_Figure_11.jpeg)

# 2.5kg-9k

![](_page_9_Picture_13.jpeg)

Top Predators

![](_page_9_Picture_15.jpeg)

![](_page_9_Picture_17.jpeg)

"Whate"

### | The Game Cards

#### Marine life cards

![](_page_9_Picture_20.jpeg)

There are 16 marine life cards at each level. The intensity distribution of marine life is as shown in the following table:

Food chain level	Creature strength (score)
1	1-3
2	4-6
3	7-9
4	10-12

There are 4 types of Ocean creatures on each level, and there are 3 copies of each sea creature with different Strength.

![](_page_9_Picture_24.jpeg)

#### Marine Debris cards

Every time you get a marine debris card, you will lose points.

![](_page_9_Picture_27.jpeg)

![](_page_9_Picture_28.jpeg)

![](_page_9_Picture_29.jpeg)

![](_page_9_Picture_30.jpeg)

#### Fishing Boat cards

When a player plays a Fishing Boat card, no player can gain points in the foraging action in the [Survival Phase] in that round.

![](_page_9_Picture_33.jpeg)

#### The Rule Book

![](_page_10_Picture_1.jpeg)

#### Game Begin:

1: Card Playing Phase

![](_page_10_Picture_5.jpeg)

#### : Card Playing Phase

Flip over the played cards at the same time, and players with high strength will take priority. If the strength of the creatures is the same, the creature with the longer max longth will take precedence in the [Survival Phase].

![](_page_10_Figure_8.jpeg)

#### Survival Phase

\*1. Foraging Action

According to the "Foraging Law", if there are ocean cards that can be foraged in one of the fish farms, the player will move all the ocean cards in the fish farm to his own scoring area, and then place the ocean cards he played in the fish farm.

When the player plays a dolphin card at the level 4 of the food chain, the dolphin can enter the fish ground area to feed on Herring which at the level 3 of the food chain.

![](_page_10_Figure_14.jpeg)

Then, the player can get the correon the creature strength)

#### \*2. Clustering Action

If no [Foraging Action], check whether there are creatures in the fish ground that are at the same food chain level as the card you Each player plays I ocean card and places it face up on the table. played, if so, place your card in a fish ground at the same level of the food chain

![](_page_10_Picture_18.jpeg)

#### Special Card:

\*Fishing Boat Card

![](_page_10_Picture_21.jpeg)

![](_page_10_Picture_25.jpeg)

![](_page_10_Figure_29.jpeg)

![](_page_10_Picture_30.jpeg)

![](_page_10_Picture_31.jpeg)

![](_page_10_Picture_32.jpeg)

Now the player playe a doption at the Level 4 of the food shain, the food study female because there are not no option to the second or option to every writt. The player moves the deforming and to the player moves the deforming and

![](_page_10_Picture_35.jpeg)

![](_page_10_Figure_36.jpeg)

#### Game Mechanics

#### Game Set up

#### Step 1

Shuffle all the cards, randomly draw 3 cards, and place them face up on the table to become the starting 3 fish ground. If the special card is drawn (marine debris card or fishing boat card), please draw again until all fish ground are marine life cards.

![](_page_10_Figure_42.jpeg)

Game Flow

Game Start

Game Start

Deal the remaining ocean cards to each player's corresponding hand according to the table below:

Players	Cards for each	Cards left
 3	17	2 Cards left out of the game
4	13	1 Cards left out of the game

Each player plays 1 ocean card and places it face up on the table.

![](_page_10_Figure_46.jpeg)

Flip over the played cards at the same time, and players with high strength will take priority. If the strength of the creatures is the same, the creature with the longer max length will take precedence in the [Survival Phase].

![](_page_10_Figure_48.jpeg)

D max length > B max length

#### Action 1 : Foraging

"Foraging" in marine creatures refers to the process of searching for, finding, and consuming food. It's a fundamental behavior that is critical for the survival of marine organisms, and it varies widely among different species based on their dietary needs, habitat, and physical capabilities.

#### Action 2 : Clustering

"Clustering" in marine creatures refers to the behavior where individuals of a species gather together in groups. This behavior is observed in many marine animals, including fish, mammals, and even some invertebrates. Clustering can occur for various reasons and can take different forms, depending on the species and the environmental context.

#### Action 3 : Food Chain Borken

When we say the marine food chain is "broken," it means that there's a disruption or imbalance in this system, which can have significant consequences for the entire ocean ecosystem.

#### Action 1 : Foraging

According to the "Foraging Law", if there are ocean cards that can be foraged in one of the fish farms, the player will move all the ocean cards in the fish farm to his own scoring area, and then place the ocean cards he played in the fish farm.

![](_page_11_Figure_3.jpeg)

As seen on the previous page, during the survival phase, the player has three actions to choose from. They are:

1. Action 1 : Foraging 2.Action 2 : Clustering 3.Action 3 : Food Chain Broken

When an action meets the conditions and is executed, then, the next player can go next to make their action.

For example, if the player A does not meet the conditions of "1. Foraging action", then continue to check whether it meets the conditions of "2. Clustering action".

Assuming that there are creatures of the same food chain level in the fish farm, player A will end directly after performing the action, skip "3. Food chain break", and replace with the next player.

![](_page_11_Picture_9.jpeg)

When the player plays a dolphin card at the level 4 of the food chain, the dolphin can enter the fish ground area to feed on Herring which at the level 3 of the food chain.

![](_page_11_Figure_11.jpeg)

Then, the player can get the corresponding score (scores are based on the creature strength)

When the plays Herring at the Level 3, he can choose to cluster with octupus of the same level because there is no option to feed on. (Level 3 can only prey level 2) Therefore, Player will leave Herring with octupus in the fish ground, round end.

#### Action 2: Clustering

If no [Foraging Action], check whether there are creatures in the fish ground that are at the same food chain level as the card you played. If so, place your card in a fish ground at the same level of the food chain.

![](_page_11_Figure_16.jpeg)

can get clustered

#### Action 3: Food Chain Broken

When the player is unable to perform the first two actions, it proves that the food chain of this marine creature is broken, and this card will be put into the discard pile.

When the player plays a dolphin at the Level 4 of the food chain, the food chain breaks because there is no option to feed on and no option to swarm with. The player moves the dolphin card to the discard pile and gets O points this round.

![](_page_11_Picture_21.jpeg)

#### Marine Debris Card

In [Order Deciding phase], the order is still based on numbers. Players can place this Marine Debris card in any fish farm.

When players take action later, if they find a fish ground with a marine debris card, they need to take it away with them, resulting in a deduction of points.

![](_page_12_Picture_4.jpeg)

Players can place the Marine Debris card on any fish card in the fish ground. When a player preys on this card pile in the next round, the Marine Debris card will be taken away together, and the corresponding points will be deducted.

![](_page_12_Picture_6.jpeg)

![](_page_12_Figure_7.jpeg)

Fishing Boat Card

In [Survival Phase], players who perform the "foraging action" will directly throw the card they obtained into the discard pile (no points will be obtained), and the Cluster action and food chain break action will not be affected.

![](_page_12_Figure_10.jpeg)

### | Test

#### Core Experience

Through this game, players can learn about the ecological chain and food chain in the ocean, and learn some characteristics of different creatures.

At the same time, players can also feel the pleasure of big fish eating small fish, and the fear of small fish being eaten by big fish.

The most important thing is that the marine debris card mechanism will arouse people's protection of the marine ecological environment.

![](_page_12_Figure_17.jpeg)

![](_page_12_Picture_18.jpeg)

Test 1

![](_page_12_Picture_20.jpeg)

![](_page_12_Picture_23.jpeg)

Test 3-N

![](_page_12_Picture_25.jpeg)

Final Test

## VR Game (Thsis Proposal)

# Good Morning. Another Day.

#### Summary

Good Morning. Another Day. is a VR game that allows players to immersively experience the difficulties, challenges, and emotions that may arise during the aging process. Built on the foundation of resonance experience, the game aims to provide players with a nuanced understanding of different elderly communities' subtle experiences in daily life through various types of level designs.

![](_page_13_Picture_4.jpeg)

#### Starting Point

#### The blurry vision

I know an elderly individual who is currently experiencing a severe decline in vision due to conditions such as cataracts, severe nearsightedness, and presbyopia. This has caused significant disruption in his daily life, and, more importantly, he is reluctant to accept this reality. He has been undergoing continuous eye examinations and trying to switch to presbyopic glasses; however, the consistent conclusion is that the vision decline is mainly attributed to aging.

#### Walking with you

However, on one occasion, I had the opportunity to walk a short distance with this elderly person.During this process, I found myself experiencing his perspective. What might be an ordinary and straightforward path for me, I felt a heightened sense of caution in my steps as I followed his rhythm. For someone with limited mobility and blurred vision, the surroundings appeared to be fraught with potential dangers.

#### Accept the as an outsider)

Mostly, our perception of the aging experience of the elderly around us is primarily formed through their narratives, our observations, and references from various sources. Acknowledging the inevitability of aging as a process where bodily organs gradually weaken, we seek comfort by reasonalising these situations with these established facts. However, as our life processes move forward in parallel on different trajectories, it is almost impossible to truly understand and share their feelings.

![](_page_13_Picture_12.jpeg)

# 年龄 (age)

#### Different percetion of the surroundings

![](_page_13_Picture_15.jpeg)

#### Game Idea

By matching his speed, I felt as if I had shared part of his sensations. This resonating shift from objective cognition to subjective experience seemed to provide me with a fresh perspective on the aging process.

![](_page_13_Figure_18.jpeg)

issues that may arise during the aing process.

#### Concept (Narrative Design)

I choose to obscure the notion of the game's protagonist by presenting each player as a unique experiencer inside the game. I'll employ aspects that convey a general direction without providing specifics, producing a nebulous notion for players at the start of the game that will progressively become apparent as the game proceeds.

#### The notion of 'A Place'of nowhere (Worldview)

At the start of the game, players will be in an anonymous building-like environment. This arrangement might be understood as a figurative picture of the whole community from a macro viewpoint, while also expressing the limits felt by individuals as they age.

#### The notion of 'A Room' (Game Setting)

As the game level begins, players are instantly immersed in a room-like environment. Each area is a gamified representation of the obstacles, events, or intangible sensations that come with aging. This shift from building-like to roomlike space is intended to take gamers from seeing the ageing population at a global level to experiencing it personally at a local one.

![](_page_14_Picture_6.jpeg)

## Inspiration & Idea

#### 'Don't be afraid of the clocks, they are our time...'

![](_page_14_Picture_9.jpeg)

Felix Gonzalez-Torres, Untitled (Perfect Lovers), 1991

Two clocks synchronised in opposite directions

![](_page_14_Figure_12.jpeg)

I decided to include Felix Gonzalez-Torres' poetic interpretation of timeless love, synchronising two progression to represent "looking back."

I will simulate regular time moving forward in an alternate timeline to represent time. Synchronising opposite movement on the same temporal axis will also bring players together in the same position. This enhances empathy and understanding of their experiences, conveying the emotional core of this game.

#### 1. Day: 24 Rooms (Levels)

Considering the concept of time, I have decided to set the number of levels to 24, symbolizing the concept of "a day."

![](_page_14_Figure_17.jpeg)

#### Mechanics

#### Experience Design

## clocks, into game mechanics. We often struggle to focus on our elderly because we sync with their time. Only afterward do we realise we missed many important details. Thus, I will countdown the game's

#### 2. Year: Four Season

I have decided to visually showcase the changing seasons, symbolizing the concept of "a year," through the visual design of the initial game page at specific stages of the game progression.

![](_page_14_Figure_23.jpeg)

#### Gaming Experience (VR Game)

To craft an immersive gaming experience, I drew inspiration from the presentation of art pieces in a gallery, where an expanded cinematic form lends an atmospheric vibe to the space. I decided to apply this approach to the game, translating the essence of that experience into interactive gameplay.

![](_page_14_Figure_26.jpeg)

#### First-person Perspective

In order to enhance the audience's sense of immersion and provide a more personalized experience, I decided to incorporate a first-person perspective, into the gaming experience.

![](_page_14_Figure_29.jpeg)

![](_page_14_Figure_30.jpeg)

#### Visual Design

#### Visual idea & UI Prototype

For the game's visual style, I aim to evoke a tranquil and solitary atmosphere. I have chosen trees as a primary element introduced into the game, symbolizing life and time. The following prototype showcases the artistic style generated by Al for the game's visuals.

![](_page_14_Figure_34.jpeg)

![](_page_14_Picture_35.jpeg)

![](_page_14_Picture_36.jpeg)

![](_page_14_Picture_37.jpeg)

![](_page_14_Picture_38.jpeg)

![](_page_14_Picture_39.jpeg)

#### Level Design

The essence of the level design of this game is to evoke a sense of "frustration" rather than achievement. Players will have the objective of completing a level, experiencing diverse aspects of the challenges encountered by older individuals. To enrich the game experience and depict the life experiences of aging from multiple perspectives, I have categorized the level design into three main types.

#### – 'Genre 1'

In the level design of this game, to offer players a profound experience of the various challenges brought about by aging, I will integrate findings from research to combine the everyday difficulties and challenges faced by older individuals with the inherent challenges of the game itself.

3 genres \_\_\_\_\_ 'Genre 2'

'Genre 3'

I aim to center the gameplay around "doing nothing" to allow players to experience the passage of time in stillness and immerse themselves in the feelings of the elderly. Additionally, the quietness that provided by this setting offers an contemplative moment to listen to some hidden voices

In this game genre, I've decided to entirely transform the gaming experience into a cinematic mode, where players don't need to interact with the game but simply watch the visual narrative unfold. Through this approach, it becomes a catalyst for deeper emotional engagement, adding a new dimension to the storytelling of the entire game.

#### Game Flow

Each level is relatively independent, without a progression of difficulty or logical narrative connections. Therefore, the overall game flow tends to resemble a unfolding journey, with the sole prerequisite being the completion of each level before advancing to the next.

![](_page_15_Figure_9.jpeg)

#### Level Design - Genre 1

#### Sample 1: Find Your Way Home

This level design is inspired by the challenges older individuals face in their daily lives due to cognitive decline, including reduced memory and spatial perception. In the game, I transform everyday environments into a forest with low spatial recognition, accentuated by dense fog to simulate the visual impairment they might experience. Additionally, I introduce vehicles as a difficulty element, requiring players to quickly memorize a specified direction (finding the way home) and react promptly to oncoming traffic; failure to do so results in level failure. This reflects the potential risks elderly people may encounter in their daily lives due to mobility issues.

![](_page_15_Figure_13.jpeg)

![](_page_15_Picture_14.jpeg)

Similarity and unclear sense of direction

potential dangers

Result

Result

![](_page_15_Figure_17.jpeg)

## Intro .....

Showing the direction of 30 steps one by one in the fast speed (tbc)

Players have to memorise all the direction within the short amount of time

#### In-game

Players enter a foggy forest-like space and repeat the previous direction to exit in required amount of time.

#### Cars

Late Response - failure

Wrong step - failure

If the cars appears, the sound of the driving vehicle or the break will be played or the screen will be brighter. Player must react to stop their move immediately.

![](_page_15_Picture_26.jpeg)

![](_page_15_Picture_27.jpeg)

![](_page_15_Picture_28.jpeg)

#### Sample: You Have A Visit Today

In this level, my intention is to immerse players in the emotions of loneliness, social detachment, and even a sense of abandonment experienced by the elderly. Through the narrative design, I symbolize these emotions by portraying an elderly person waiting for a visit from family—a metaphor for their inner yearning for care and companionship. In the game, players will interact with the passage of real-time. At the beginning, players are informed that someone will visit today, and their only task is to wait, turning waiting into the primary challenge. Players must remain in the scene, enduring a randomly and unpredictably varying duration of waiting, and leaving midway will require restarting the level.

![](_page_16_Figure_3.jpeg)

![](_page_16_Picture_4.jpeg)

![](_page_16_Picture_5.jpeg)

#### Level Design - Genre 3

**Sample:** In the final level (Level 24), I decided to incorporate the experience of approaching death as the culmination of the game. I envisioned a scene where the 'protagonist' lies in bed, quietly gazing at the light on the ceiling, with only the subtle movement of blinking. Through the blinking motion, I aimed to convey the conclusion of a cycle and the beginning of a new start. To achieve this, I chose David Whyte's poem "*Blessing*" as the narrative's main thread, as I discovered that the content of the poem subtly and artfully resonated with the theme of this section. I intricately blended the blinking motion with the flow of the poem's two distinct parts (Blessing for sound and Blessing for light) to visually manifest this concept.

![](_page_16_Figure_8.jpeg)

(Stills of the film)

**Visual Reference:** I took inspiration from orbital sunrise for the blinking motion. Also, Inspired by Hiroshi Sugimoto's use of long-exposure photography to capture the essence of a movie, I have decided to incorporate a similar style, combined with the original window elements, for the final scene of the game.

![](_page_16_Picture_11.jpeg)

![](_page_16_Picture_12.jpeg)

![](_page_17_Picture_0.jpeg)

### | Future Plan

![](_page_17_Figure_2.jpeg)

![](_page_17_Picture_3.jpeg)

(Stills of the film)

## Thanks for watching.

To see more of my works, please visit: https://www.jason-chiu.com/