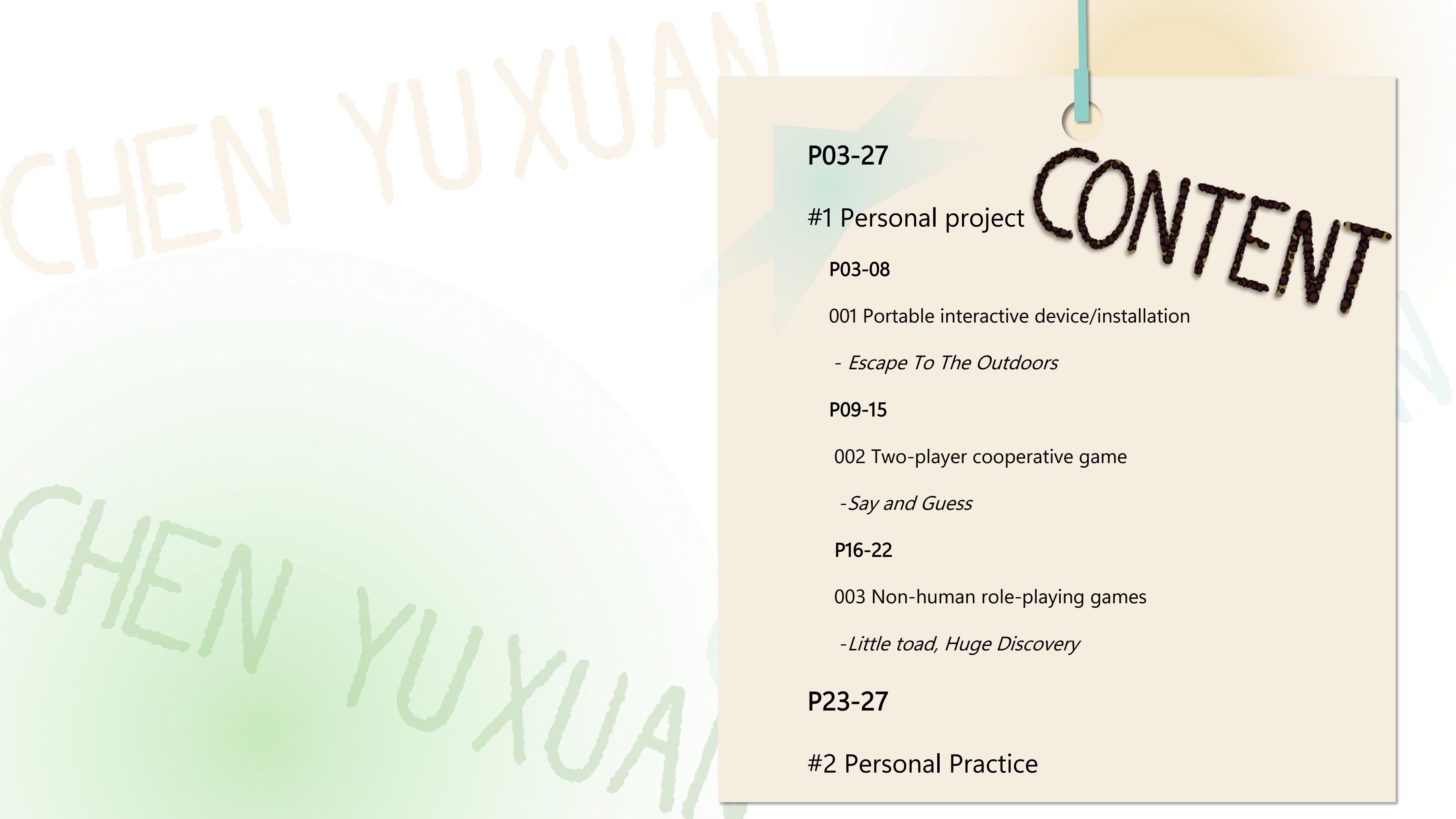


PORTFOLIO

REALITY & WHIMSY

Game Design · Interaction · Illustration

Selected Works of Chen Yuxuan



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P03-27

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#2 Personal Practice



#1

Personal Project

Interactive Installation and Game

This collection of three works attempts various combinations of digital media and reality, aiming to bridge the gap between digital natives and the real world, address the noise in human communication, and facilitate a shift in perspective under the human-centered approach. It creates multiple interactive systems that cultivate empathy and stimulate curiosity.



001

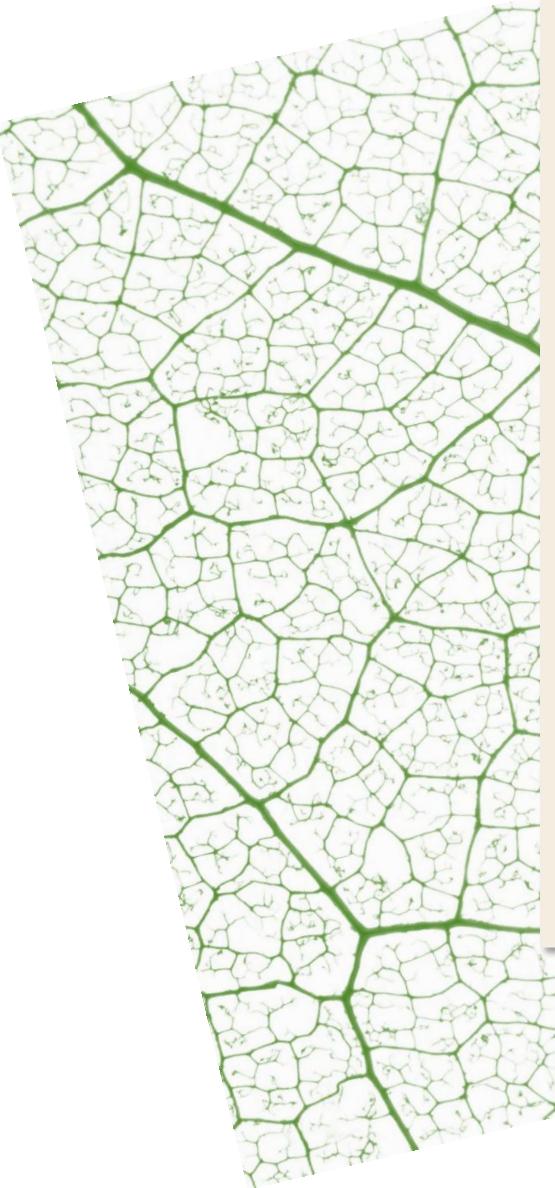
ESCAPE TO THE OUTDOORS

Phygital Interactive Installation,
2024

A portable interactive device
designed for virtual games,
which was independently
developed by me from the
planning stage to the
programming and art aspects.
Non-human role-playing games



Scan the code to view the trial usage effect





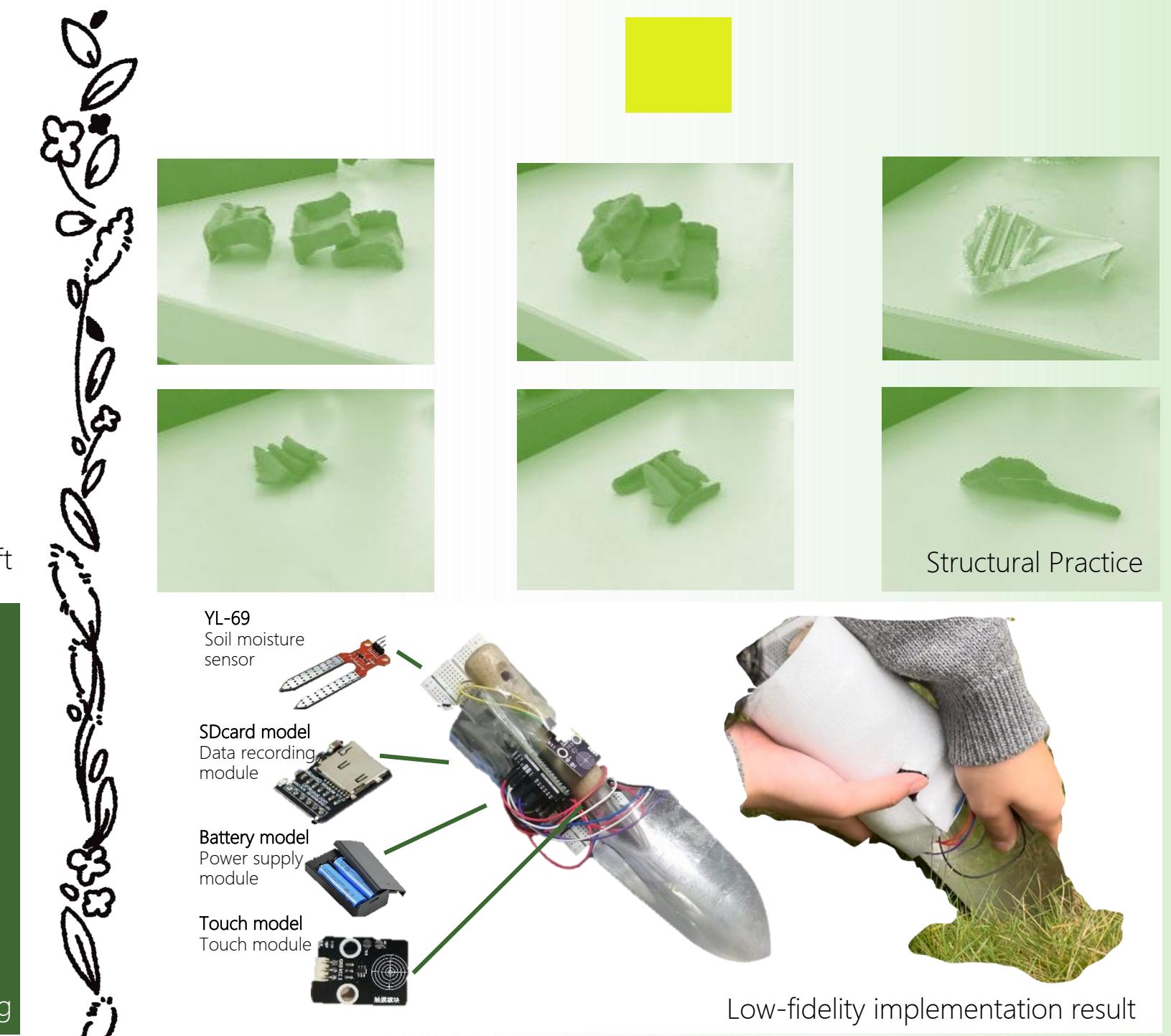
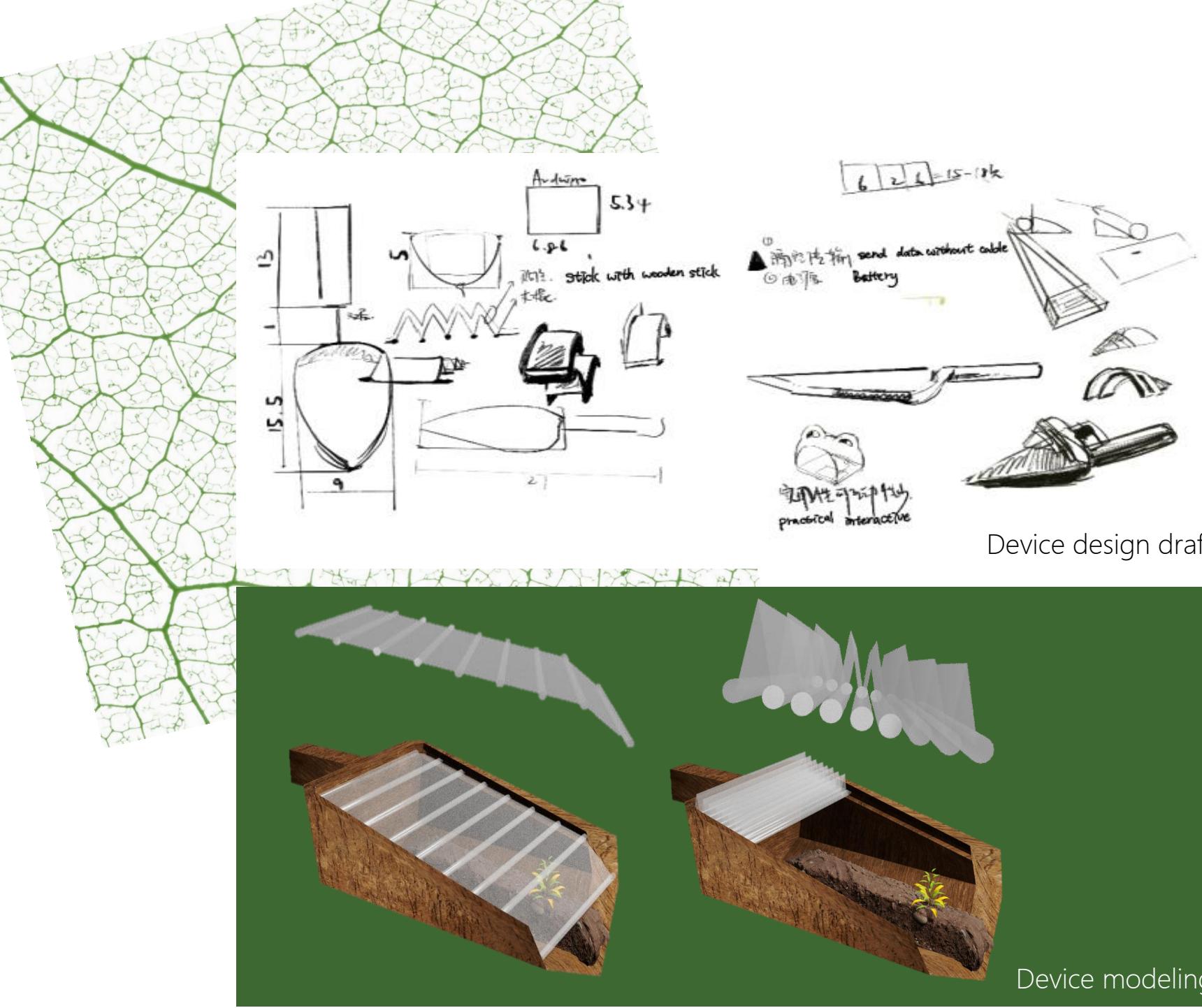
Purpose

The phenomenon of contemporary teenagers suffering from nature deficiency and their growing estrangement from the natural world, as well as their neglect of the surrounding environment, is quite serious. The core concept of "Escape to the outdoors" is to utilize immersive and interactive experiences, with sensor-driven interaction methods. It converts real-world environmental data such as humidity and temperature into visual and tactile feedback in the virtual world. While preserving teenagers' love for virtual games, it also stimulates their curiosity to explore the natural world and re-establishes their connection with nature.

-The game is set in a world where the network is on the verge of collapse, with repetitive information overwhelming and in urgent need of new data from the real world for rescue. In the game, players act as data collectors, using the item "Data Shovel" (one of the devices) to collect data on the survival soil environment of different plants in the real natural world. After collecting the data, they use the "Data Handle" (another device) to generate different collectibles that can be controlled in the virtual environment. By building the collectibles to create steps, they escape from the collapsing sealed data space.

-“逸外” is derived from the homophone of “unexpected”, meaning to escape from the ordinary environment and venture into an environment outside the internet. During their exploration of nature, players will constantly encounter unexpected things and events that cannot be predicted, which is also a journey filled with surprises.

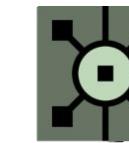
GAMEPLAY SETTING.



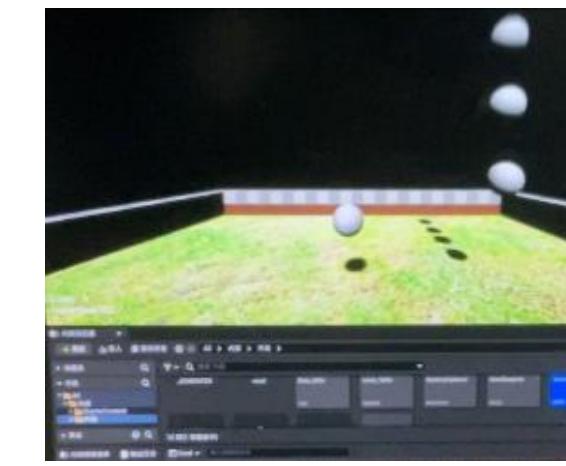
- Based on the combination of the single-lock button module and the SD card module, the data recording triggering function is realized by embedding it in the handle of the shovel.
- By embedding the DHT11 temperature and humidity sensor inside the shovel, the measurement of temperature and humidity in a stable and independent space can be achieved.
- To enable the shovel space to be conveniently isolated from the external environment while not affecting its own functionality, I designed a foldable cover that can be restored by a spring.

PRODUCTION DESIGN.

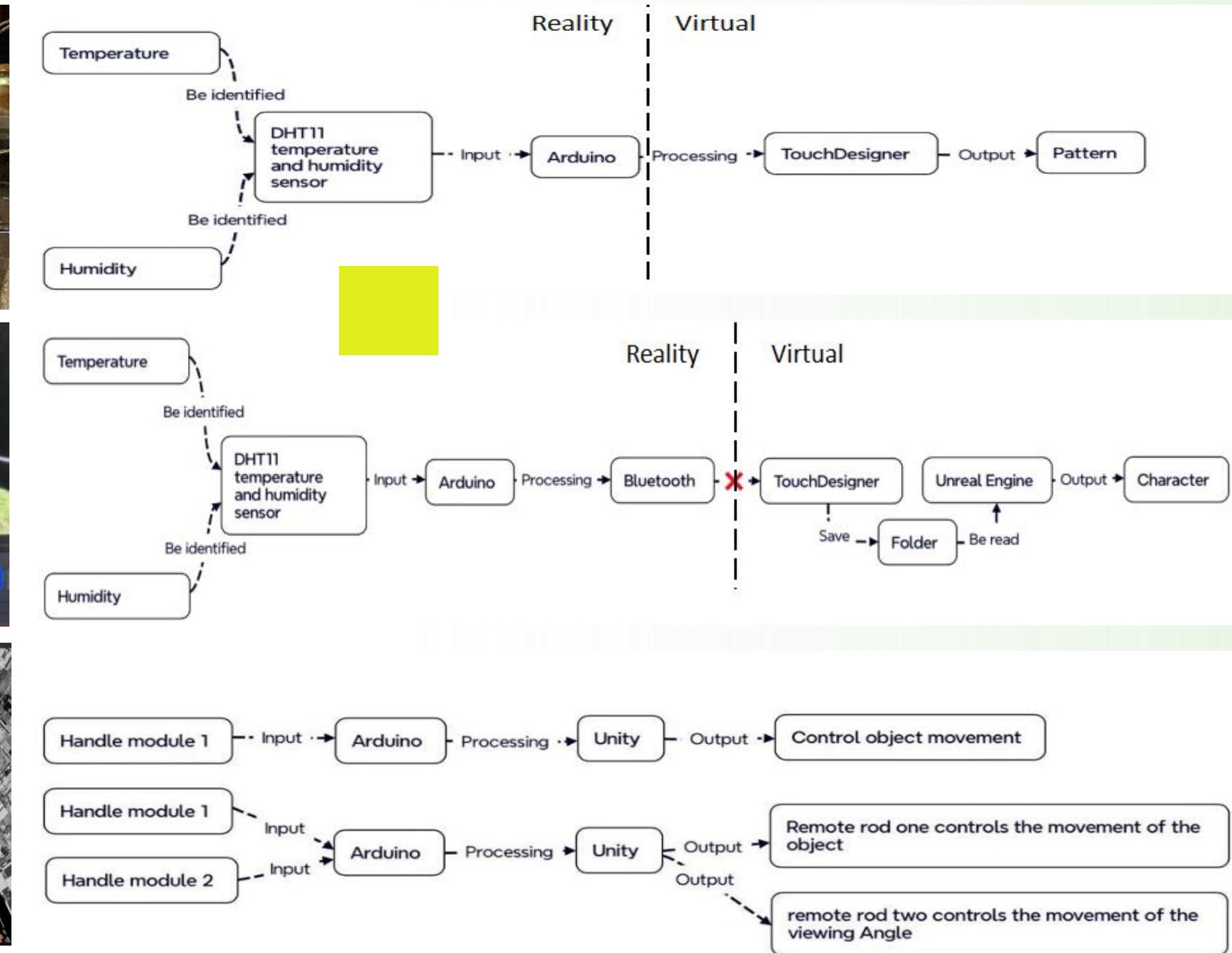
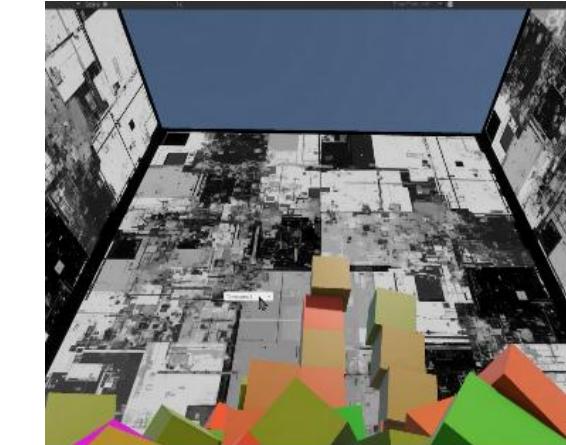
Visualization & Interaction
Upgraded from basic TouchDesigner visualizations to developing an immersive, real-time interactive experience in a game engine, greatly improving user engagement.



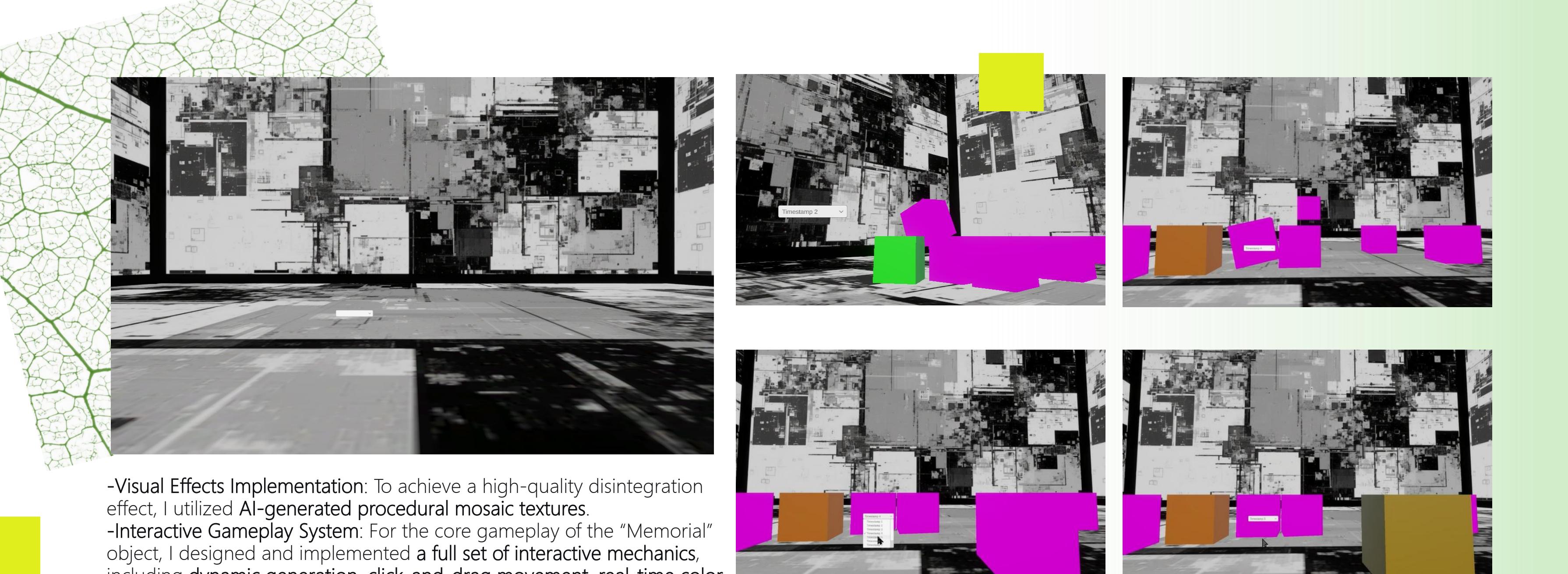
Technical Implementation
Built a system that uses real-time environmental data to generate virtual objects. Initially prototyped with Unreal Engine and Arduino, then switched to Unity to resolve compatibility issues—bridging data via SD card and applying AI-assisted debugging.



Outcome & Skills
Created a dynamic color feedback system driven by sensor data. Strengthened skills in cross-platform integration, hardware-software bridging, and modern problem-solving tools.



INTERACTION FRAME DESIGN.

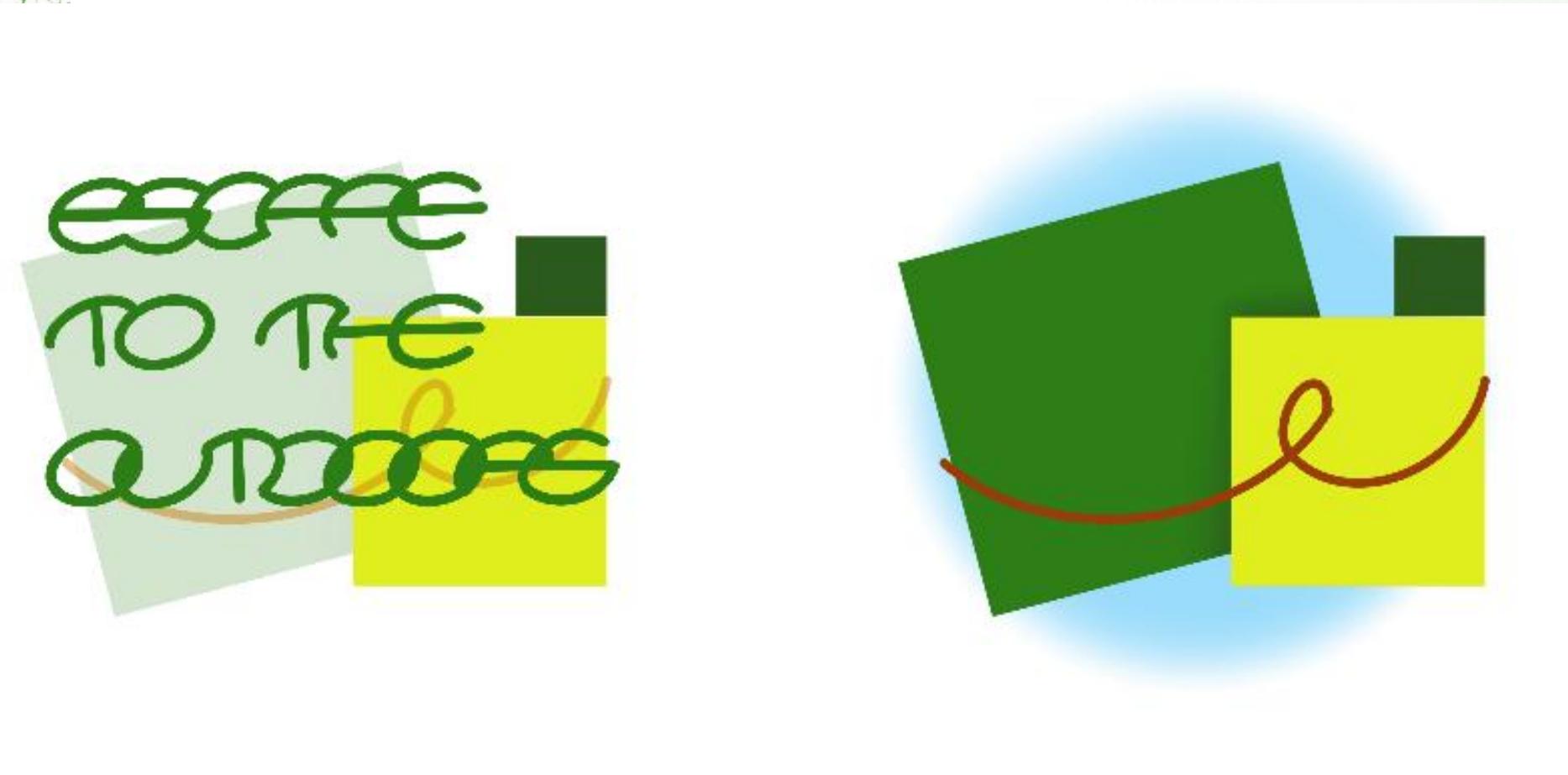
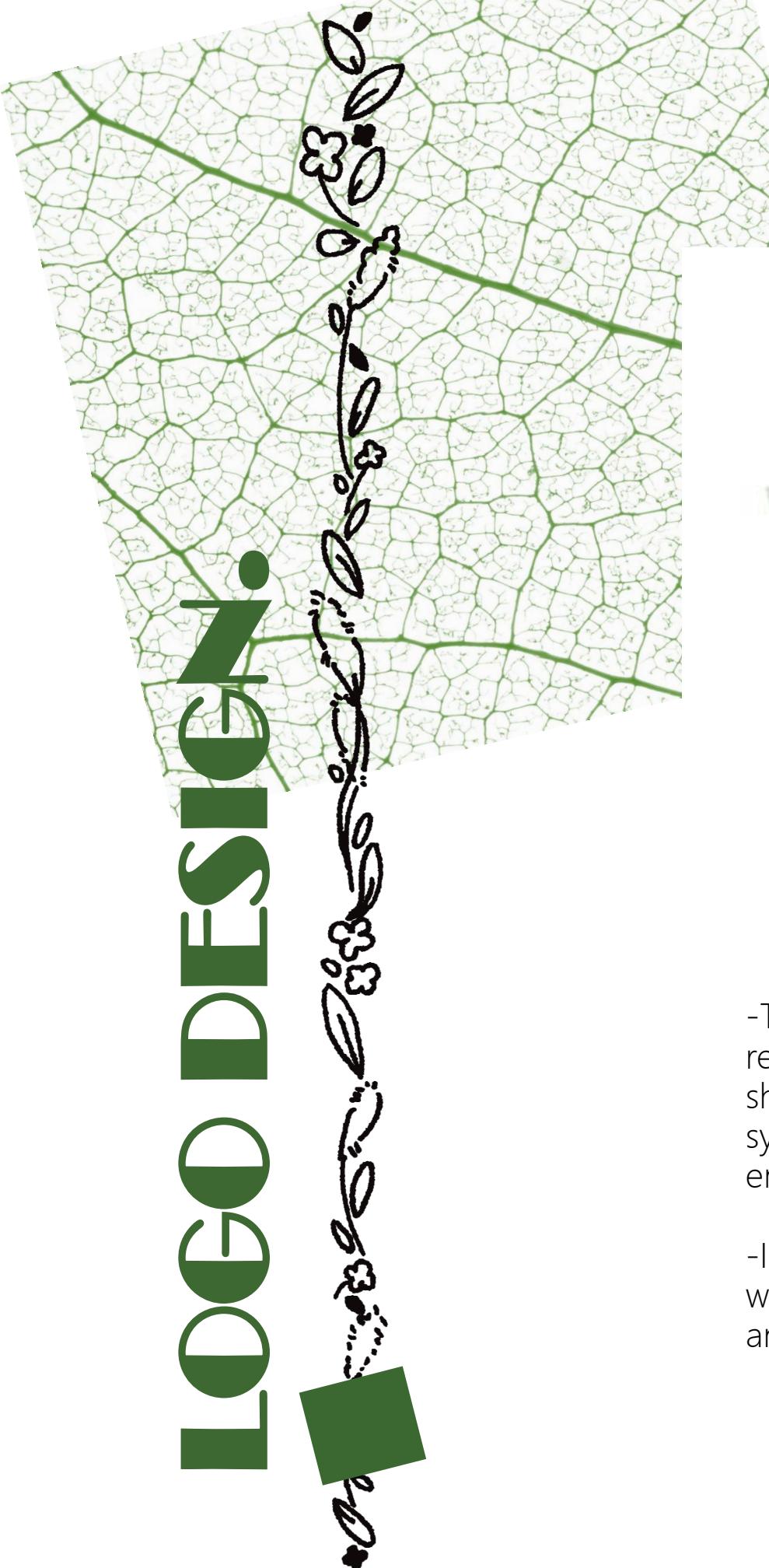


-Visual Effects Implementation: To achieve a high-quality disintegration effect, I utilized AI-generated procedural mosaic textures.

-Interactive Gameplay System: For the core gameplay of the "Memorial" object, I designed and implemented a full set of interactive mechanics, including dynamic generation, click-and-drag movement, real-time color switching, and physical collision response. The design of this system provides an intuitive and engaging user experience, enhancing my end-to-end implementation capability from design to technical execution.

PROP DESIGN.

The logo consists of a green square icon positioned above the word "PROP DESIGN.". The word is written in a bold, dark green, sans-serif font. A decorative border made of small black floral or leaf-like shapes surrounds the entire logo.



-The primary colors employ natural grass green and leaf green, while the blue in the background represents the sky, evoking a desire to break through confining frames and gaze upward. The square shape directly references the interactive cube content, and the like-hand gesture on the right symbolizes humanity while expressing a positive attitude toward nature. Maple leaf red is used to emphasize the connection between the two.

-In the typography design, the elliptical chain is intentionally broken to visualize its inseparable bond with nature. The ellipse, as a shape without sharp corners, further conveys a sense of natural affinity and approachability.



Scan the code to view the trial play effect

002

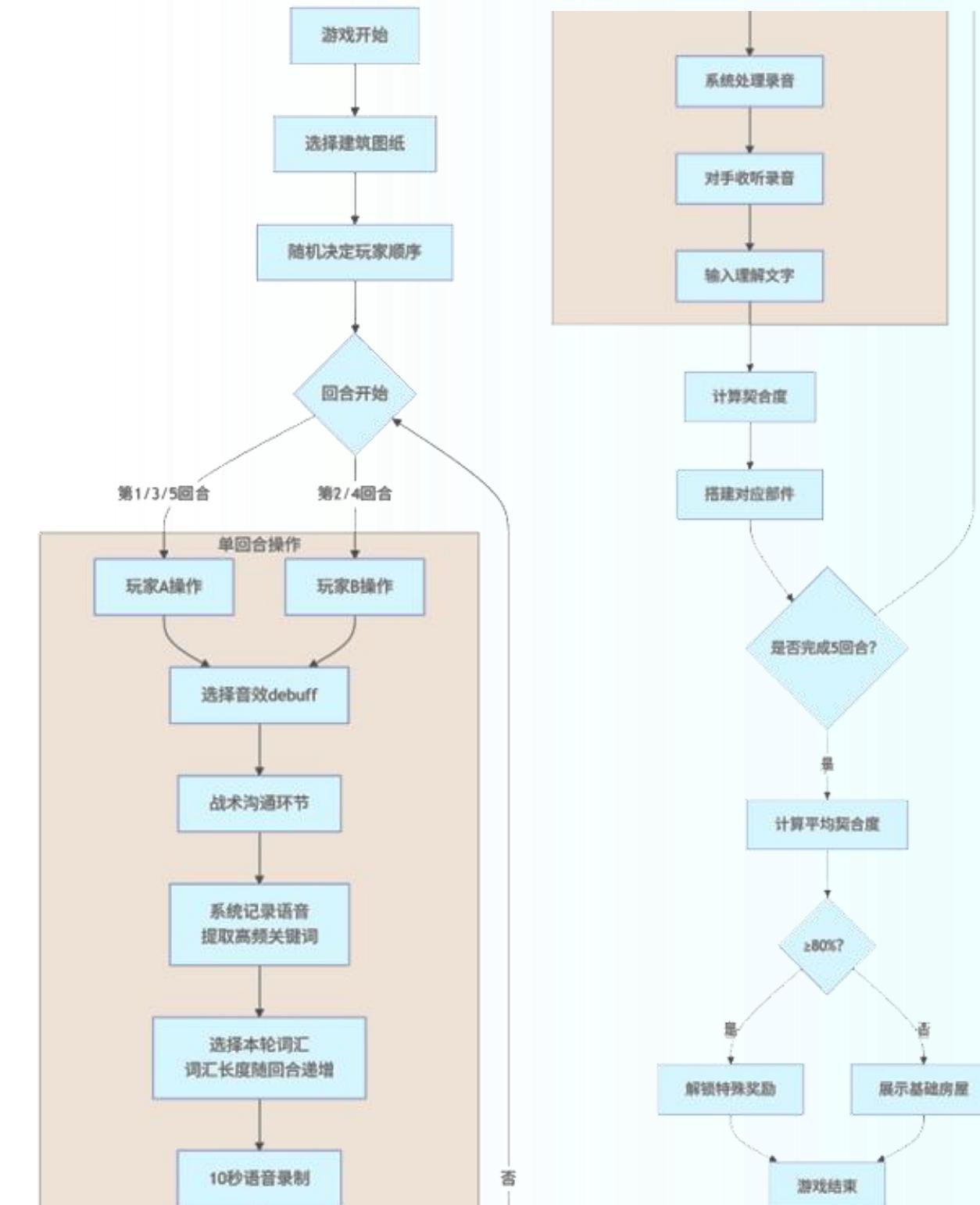
SAY
AND
GUESS

**2-Player Cooperative Party Game,
2024**

A party-themed cooperative word-guessing game for two players, exploring the pros and cons of the internet on human development and the effectiveness of this communication method in interpersonal relationships. It was created by a two-person team, and I was responsible for the game planning, music, and art design.



- Target Audience: Designed as a two-player cooperative experience ideal for friends, focusing on communication and mutual understanding.
- Core Gameplay Loop: Players take turns providing clues to guide each other's guesses, simulating a realistic and engaging information exchange process. A visual house-building system serves as a shared progress meter, intuitively reflecting how well the players understand each other amidst communication noise.
- Roles & Interaction: Each player assumes the role of a worker: Worker A supplies Material A and Worker B supplies Material B. They must collaborate by exchanging information to select the correct materials and gradually construct their ideal house based on a chosen blueprint.
- Blueprint Selection Mechanism: Blueprints are assigned through a random draw or scrolling selection system, ensuring varied replayability and encouraging adaptive communication strategies.
- Gameplay Loop:
 - Input:** Player A records voice instructions based on specific prompts.
 - Noise:** The game applies progressive audio "debuffs" (noise effects) representing communication barriers.
 - Output:** Player B interprets the distorted audio to select building materials. High accuracy leads to a perfect house; misunderstandings lead to a chaotic structure.



GAMEPLAY SETTING.



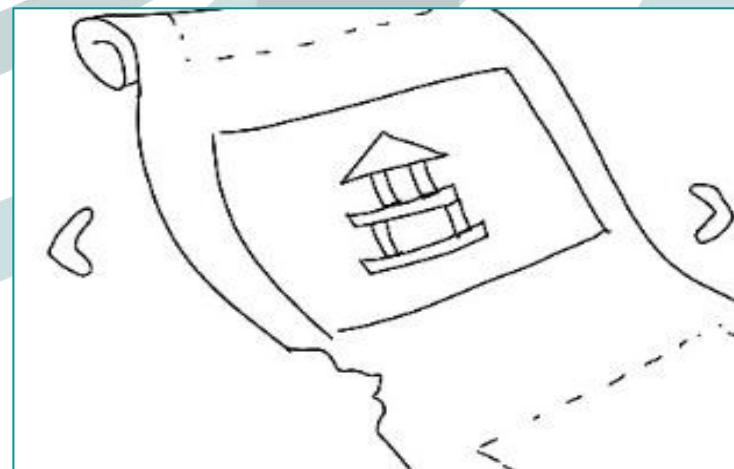
- Character Design Rationale: I selected the beaver as the central character to align with the cooperative house-building gameplay. Beavers are natural builders and highly social animals, traits that inherently emphasize communication and teamwork—directly reinforcing the game's core theme of shared understanding and collaboration.

- Visual Design Process: During the visual development phase, I encountered a challenge where the initial beaver prototype appeared too similar to other animal characters. To ensure visual distinctiveness and strengthen the character's identity, I conducted several iterative refinements to its design, focusing on silhouette, color palette, and expressive details.

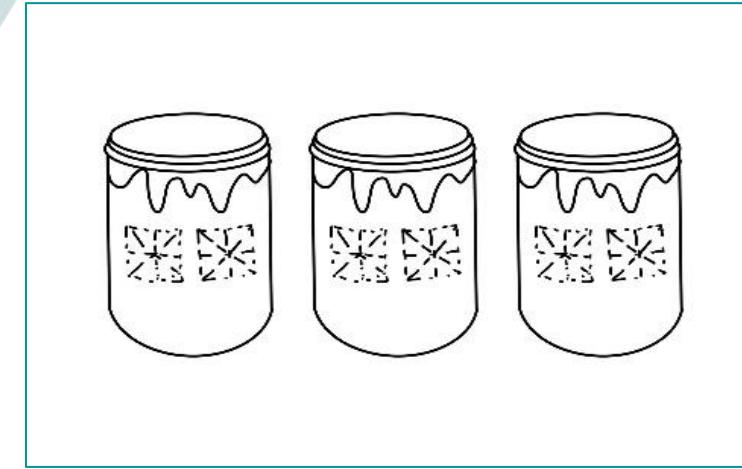


Character Design Sketch

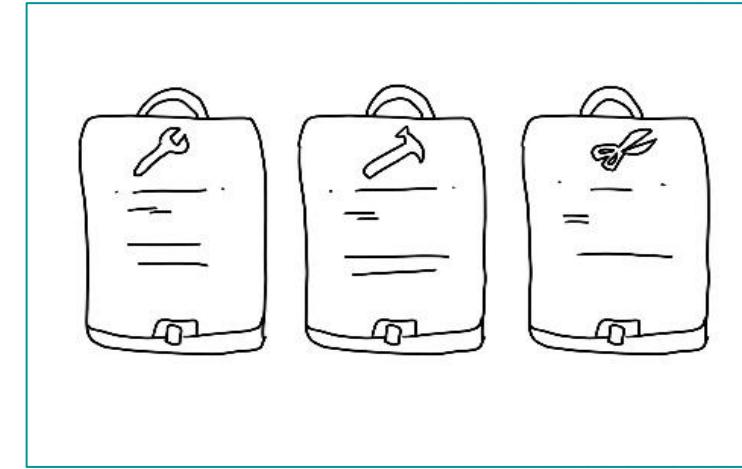
GAME CHARACTER DESIGN.



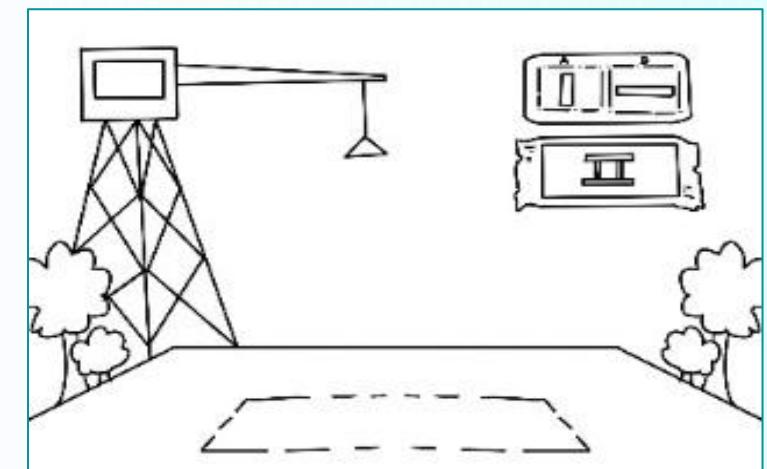
Select the design draft for the card-blocking interface



Selection of word interface design draft



Select the design draft for the DEBUFF interface



Select the design draft for the DEBUFF interface



Game Start Screen



System Screen



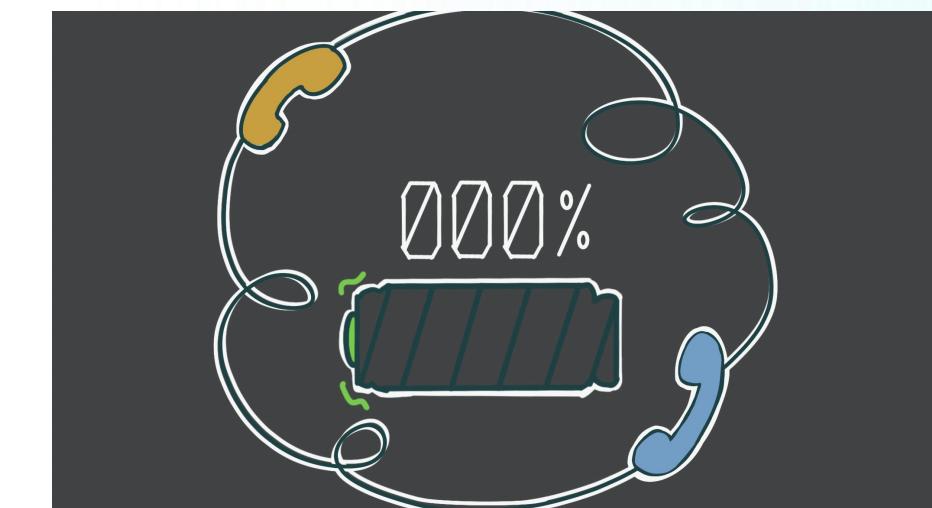
Game playing Screen

UI DESIGN.

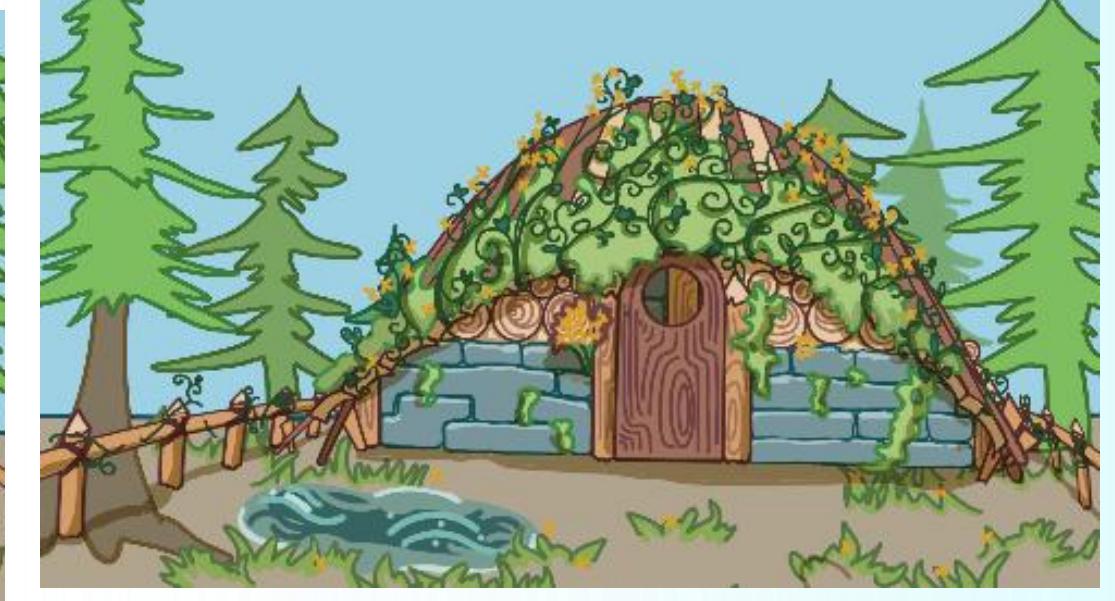
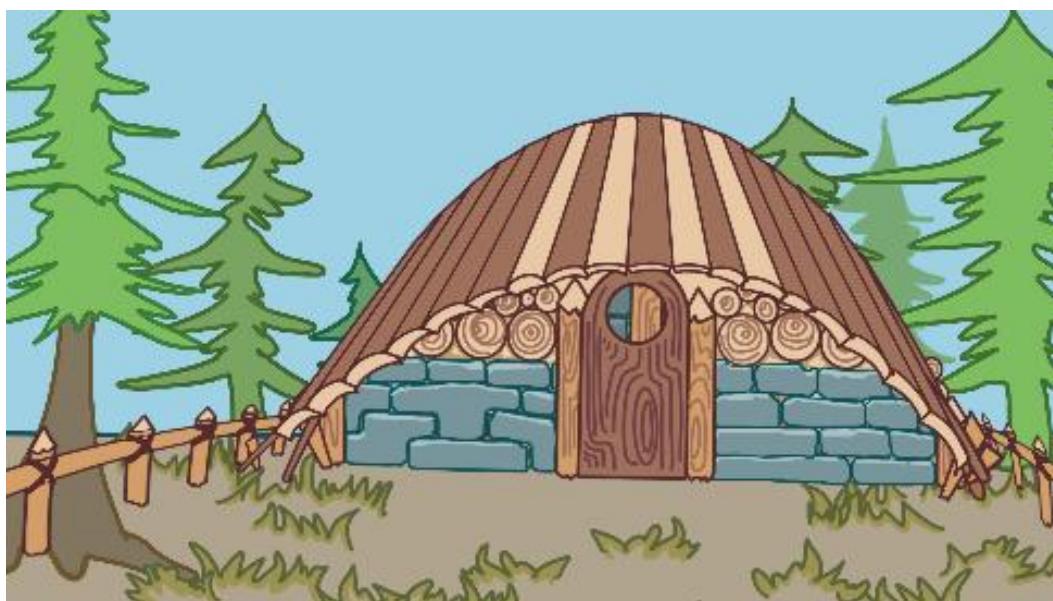
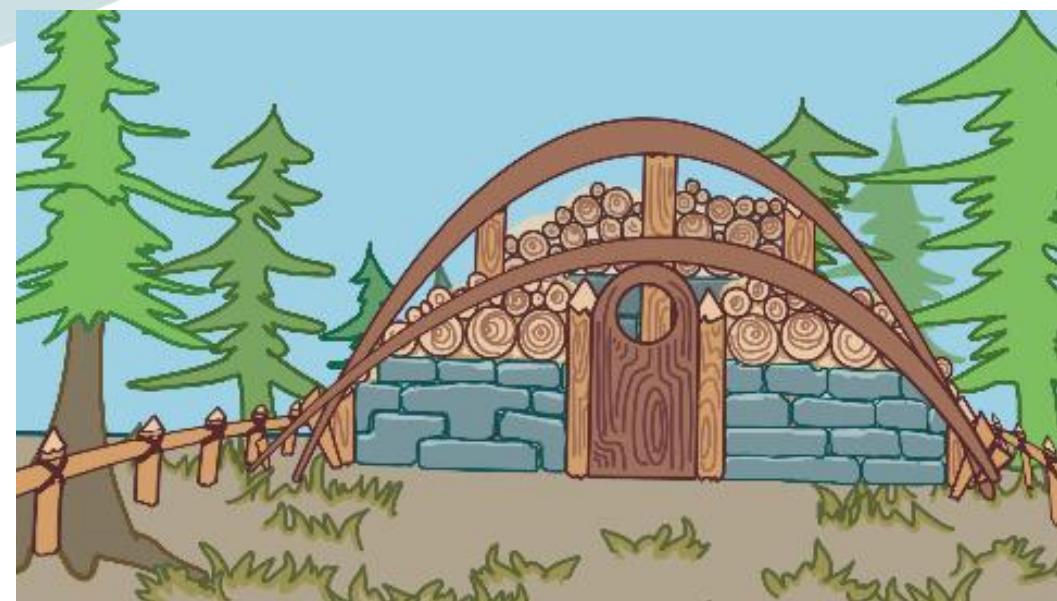
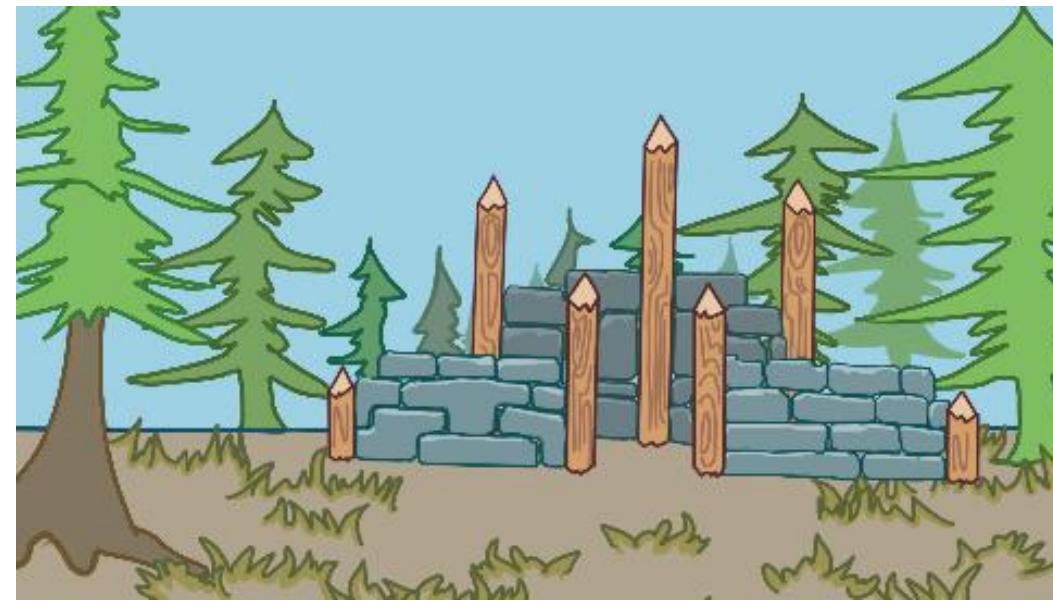
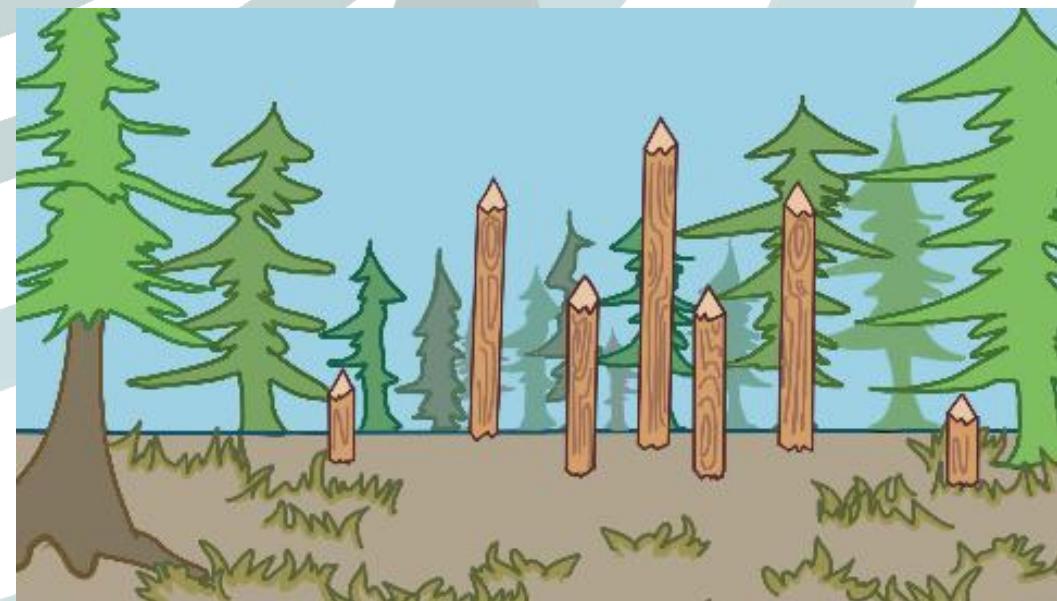
GAME ANIMATION.



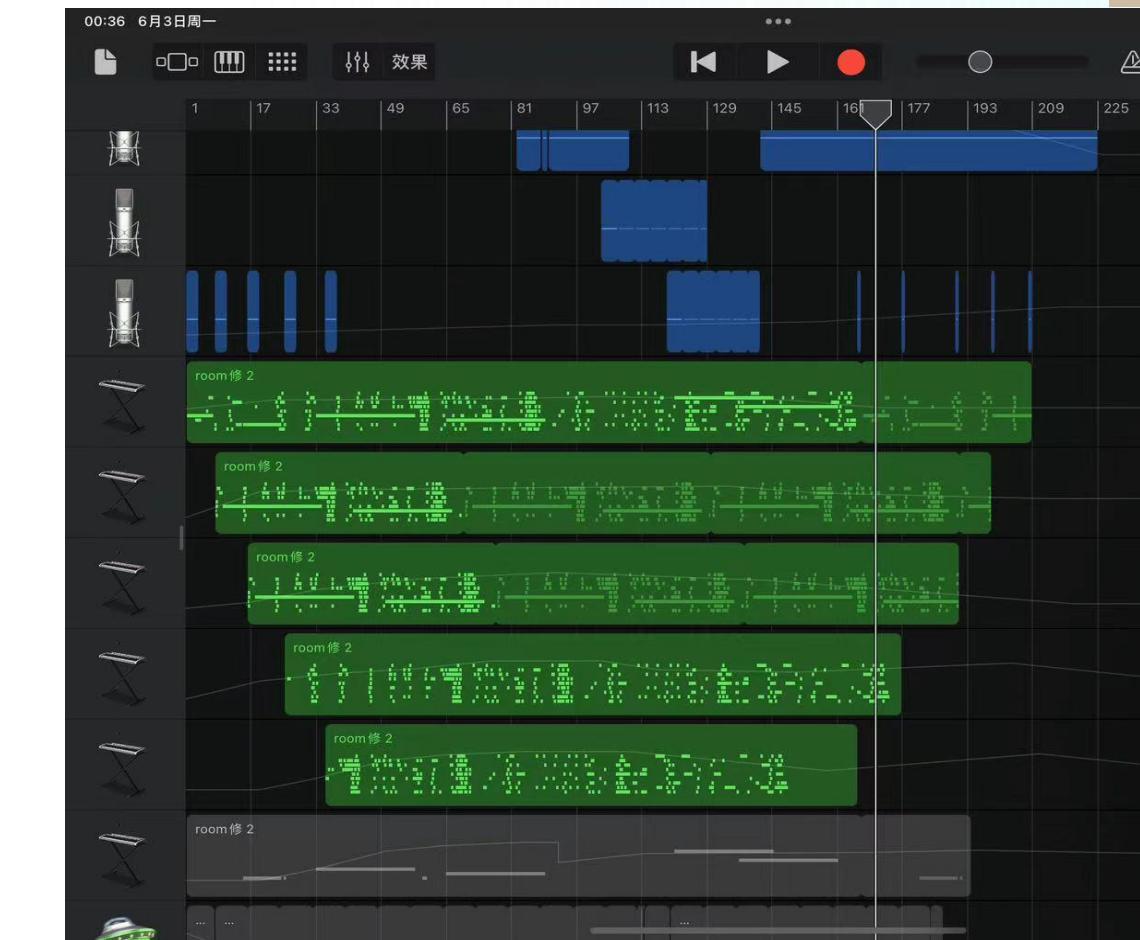
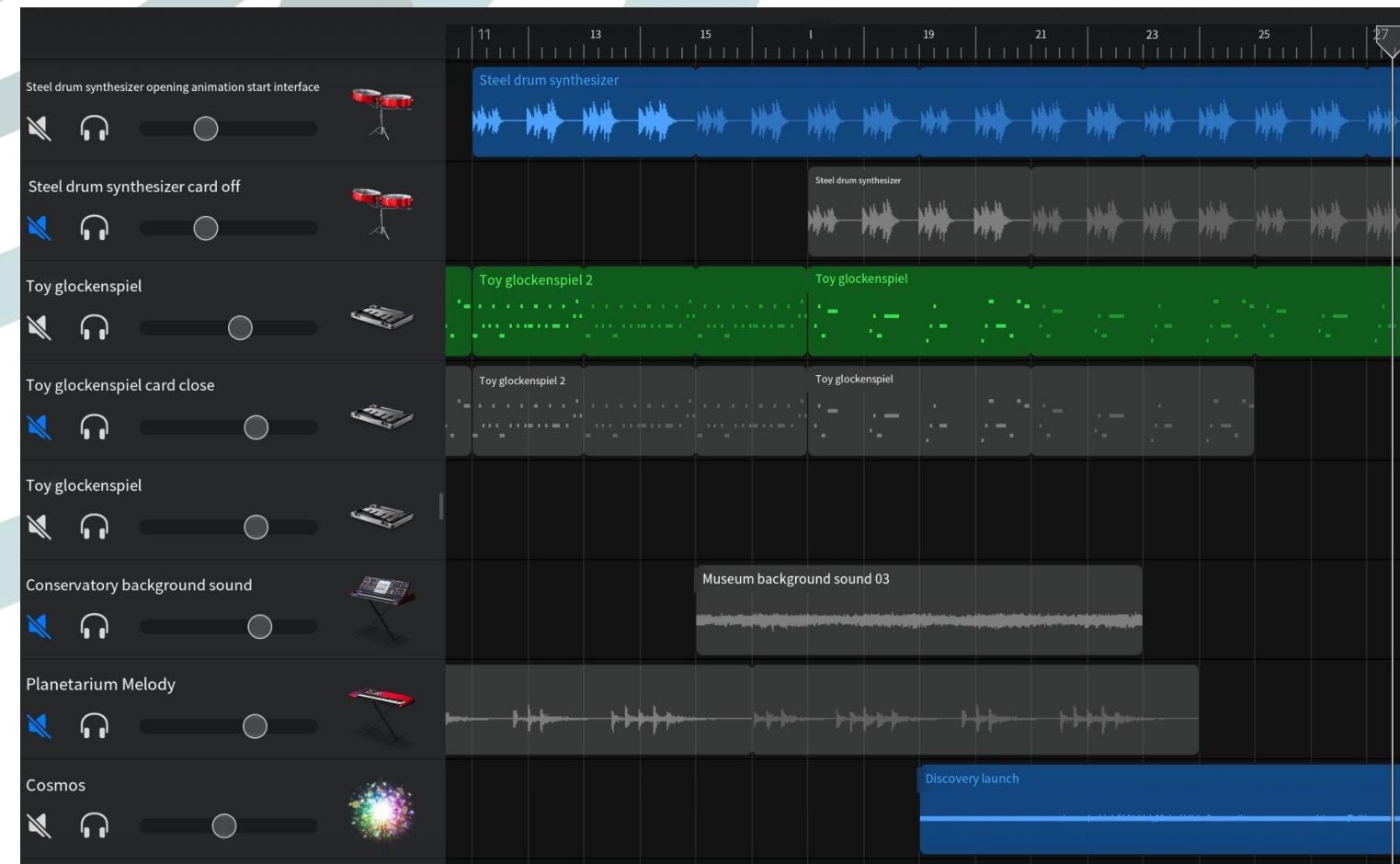
Game opening animation



Game level process animation



GAME SCENE DESIGN.



- **Audio Design Concept:** To reinforce the game's theme of "communication through noise," I designed the background music and stage sound effects to evolve alongside gameplay progression. As players advance through later levels, the background music gradually layers in more interference and noise, intentionally increasing acoustic difficulty and mirroring the growing challenge of clear communication.
- **Implementation & Impact:** This dynamic audio system directly ties the player's sensory experience to the core mechanic—heightened noise levels require greater focus and clarity in player dialogue, thereby deepening immersion and reinforcing the game's central theme of understanding amidst distraction.

GAME MUSIC DESIGN.



003

LITTLE TOAD, HUGE DISCOVERY



Name: Black Eyed Toad

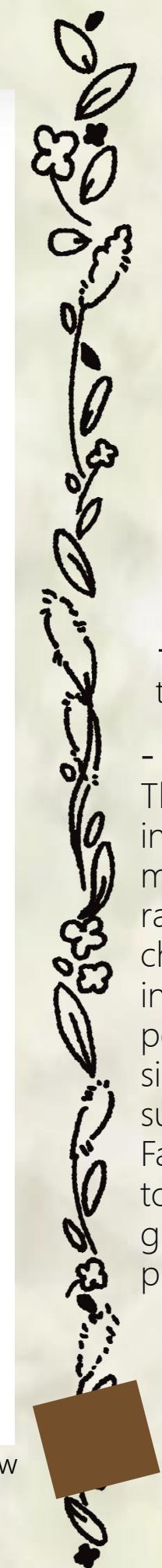
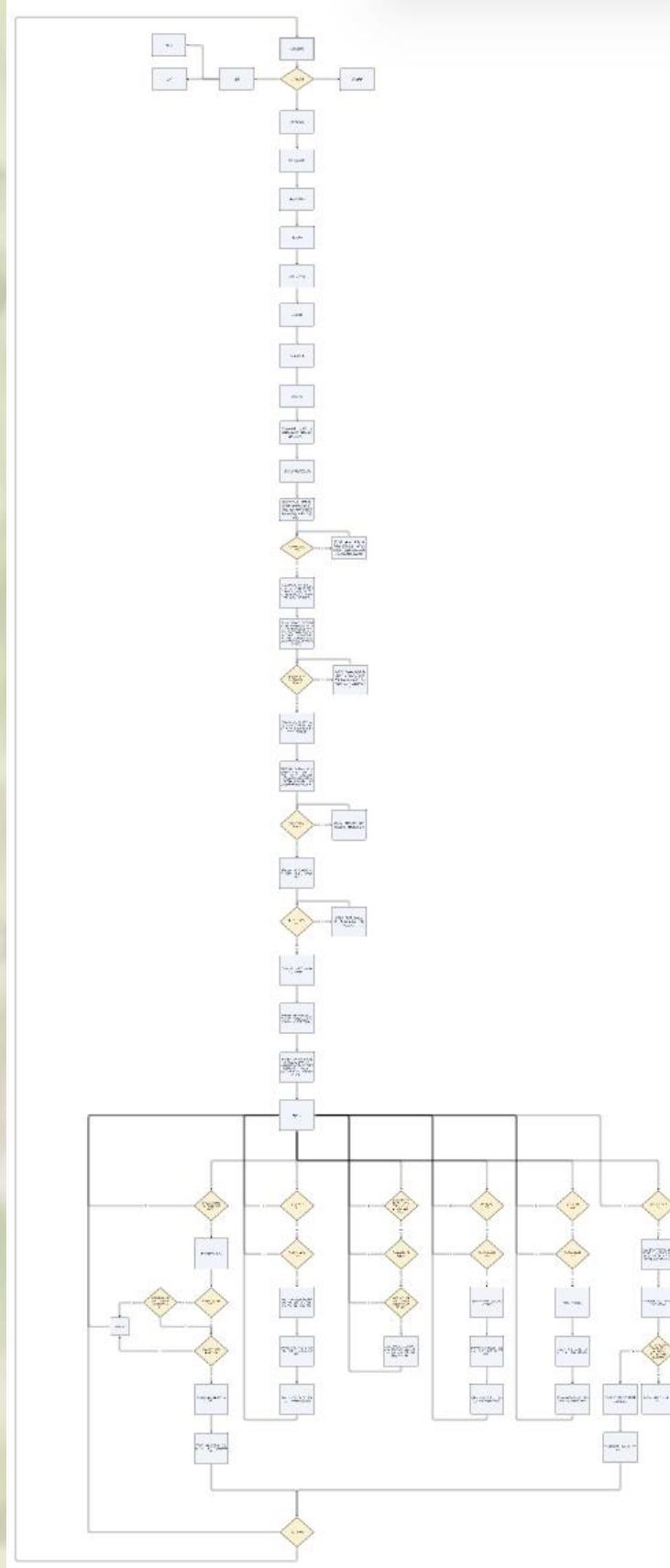
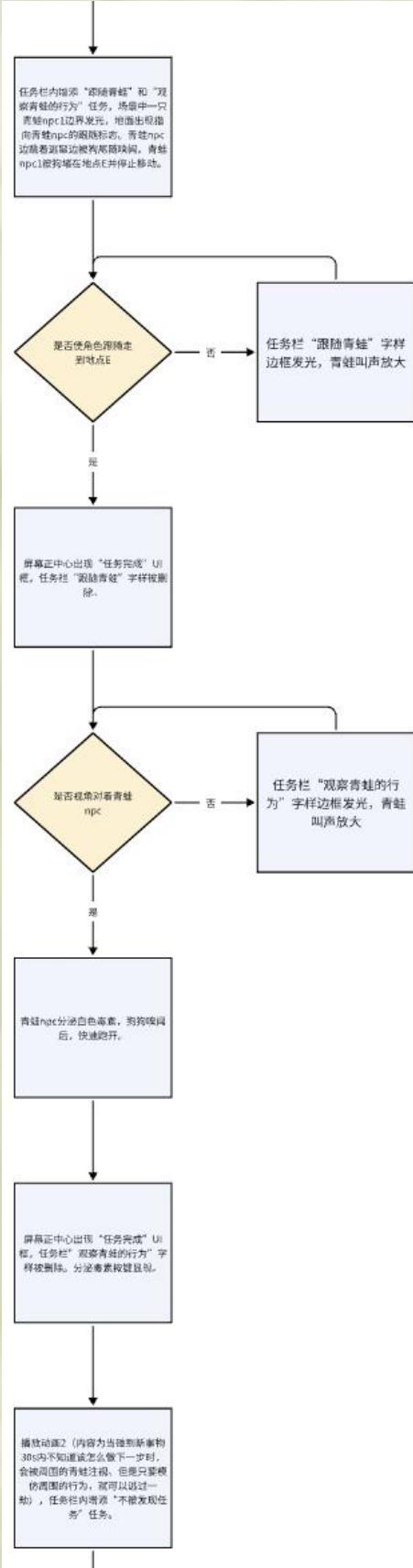
Rarity: Amphibian Class / Anura Order

Characteristics: Dark lines around the eyes, prominent eardrum, toxic glands behind the ears

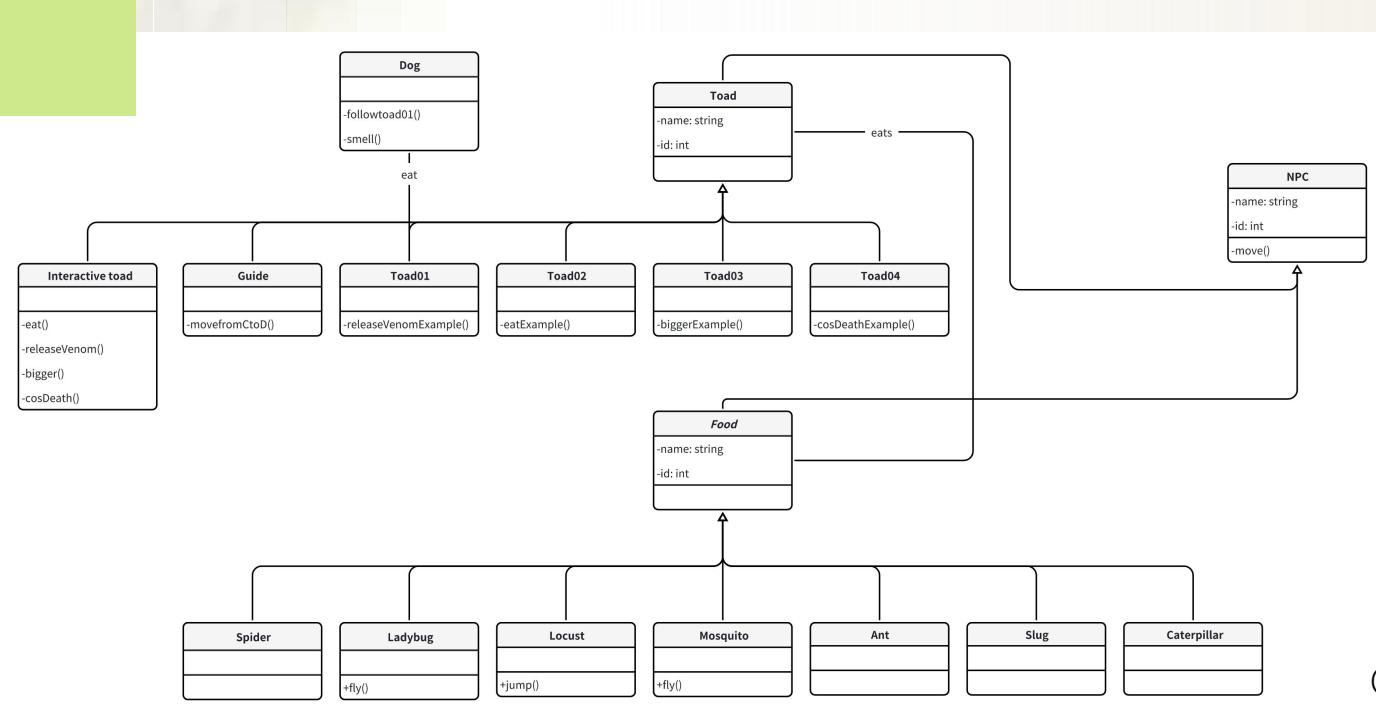
Open World Role-playing Game, 2025

An open-world role-playing game that explores the phenomenon of anthropomorphism being exploited by human-centrism from a non-human perspective. It was independently developed by the creator from concept planning to programming and art design.





GAMEPLAY SETTING.

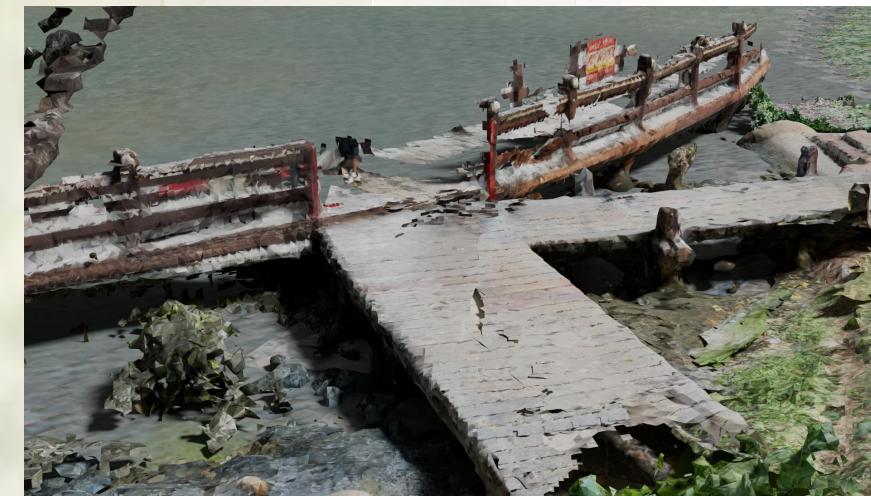
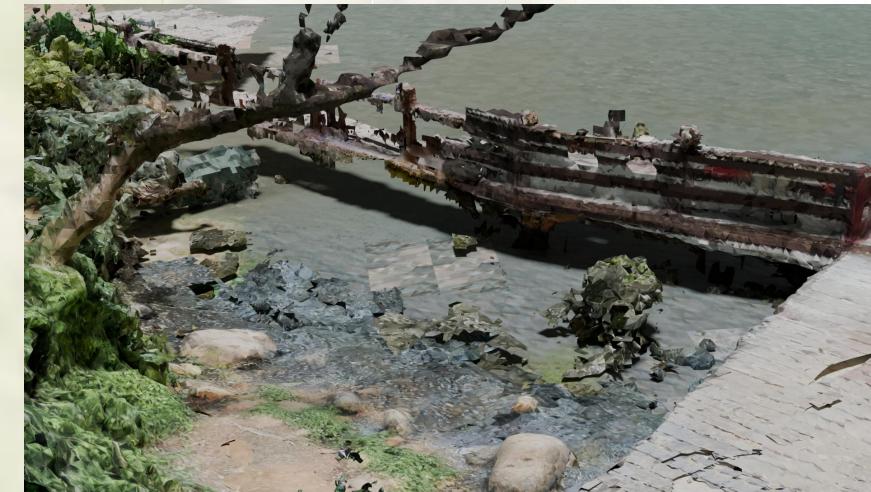


-Core Concept: An open-world RPG that challenges anthropocentrism. Players soul-travel into a toad, forced to navigate an ecosystem. To survive, one must understand the "Umwelt" (sensory world) of a toad.

- Game Setting & Narrative Design: The protagonist finds themselves inhabiting the body of a toad and must carefully blend in to avoid raising suspicion. Players are challenged to observe and interpret the world from a toad's perspective—learning its behaviors, signals, and social cues—to successfully interact with others. Failure to convincingly "act like a toad" risks expulsion from the group, creating tension and driving player immersion.

- Core Gameplay Mechanics: Through interactions with various NPCs, players unlock unique skills. The central challenge involves observing randomized NPCs perform a sequence of actions, then accurately replicating the same sequence using the corresponding skills within a time limit. This mimicry-based mechanic reinforces the theme of adaptation and subtle learning.

- NPC System & Worldbuilding: To enrich ecological authenticity and gameplay variety, the NPC roster extends beyond toads to include natural predators (such as dogs and crocodiles) and prey (like beetles and other insects). This design not only reflects real-world ecosystems but also introduces diverse behavioral patterns for the player to study and emulate.



Game scene construction diagram

- Real- World Scene Reconstruction & Creative Adaptation:

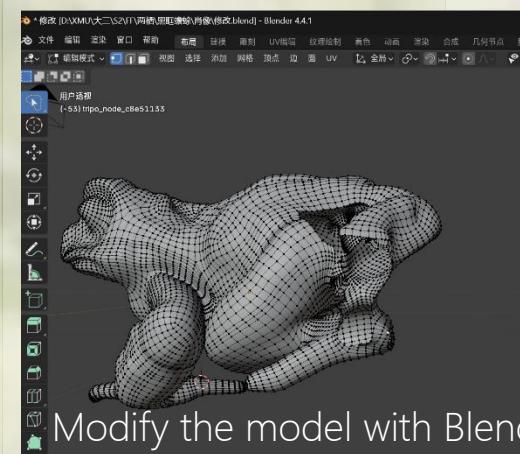
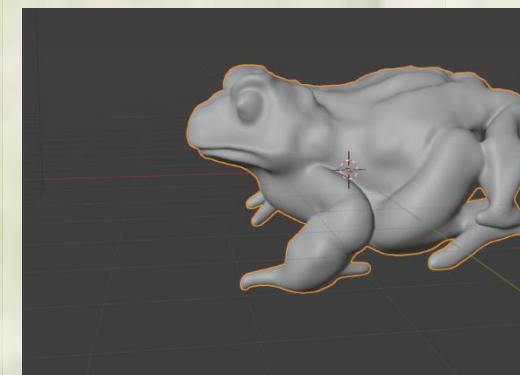
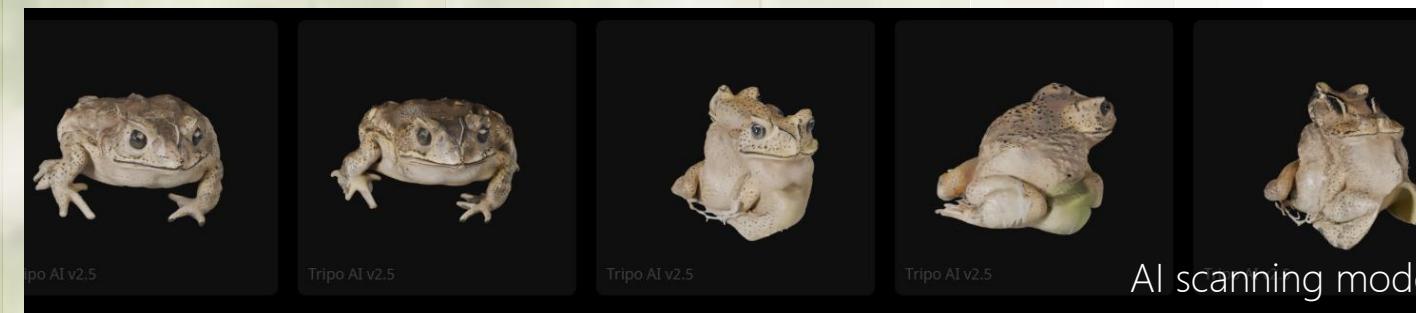
Leveraging 3D scanning technology, I captured real- world environments and transformed them into detailed digital models. This approach allowed me to faithfully reproduce physical spaces while also enabling creative reinterpretation and artistic adaptation for use in immersive projects.

- Texture- Blending Technique Development:

To enhance visual coherence between scanned assets and surrounding terrain, I independently researched and developed a procedural texture- creation method that simulates the look and feel of 3D- scanned surfaces. This solution ensures that scanned objects integrate naturally with hand- painted or generated terrain textures, maintaining aesthetic consistency and improving workflow efficiency.

GAME SCENE DESIGN.

CHARACTERIZED REALISTIC MODELING



- Photogrammetry-Alternative Modeling Workflow:

Due to the animal's toxic nature, direct 3D scanning was not feasible. To achieve a highly realistic model, I conducted visual research and collected multiple orthographic reference images, then utilized **AI-assisted 3D modeling** to generate a base mesh.

- High-Detail Modeling & Refinement:

I imported the AI-generated model into **Blender**, where I performed **topology optimization**, **surface retopology**, and **detailed sculpting** to transform the rough mesh into a clean, production-ready asset. This process included reconstructing accurate edge flow, filling gaps, and refining forms to meet high visual standards.

- Outcome:

The final model achieves **photorealistic quality** while maintaining optimal geometry for animation and rendering—demonstrating adaptability in overcoming physical constraints and proficiency in integrating AI tools with

Selection of the jumping movements of the black-edged toad



- Binded the skeleton of the protagonist, the black-furred toad model, and designed four movements, totaling 270 frames..

Selection of the hunting actions of the black-edged toad



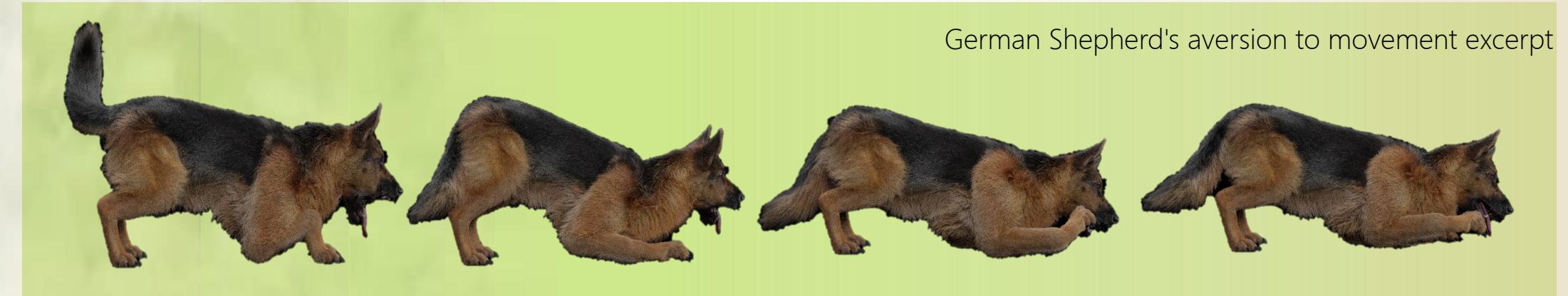
Selection of the crawling movements of the black-edged toad



CHARACTER ACTION ANIMATION.



-Three actions were designed for the predator German Shepherd, with a total of 220 frames.



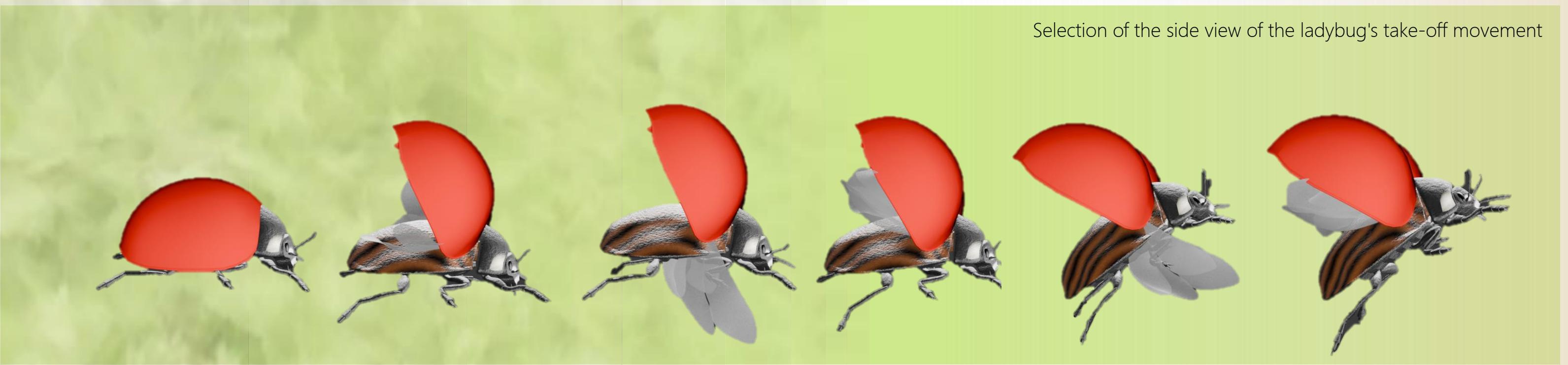
German Shepherd's aversion to movement excerpt

CHARACTER ACTION ANIMATION.



Selection of German Shepherd's Fearful Actions

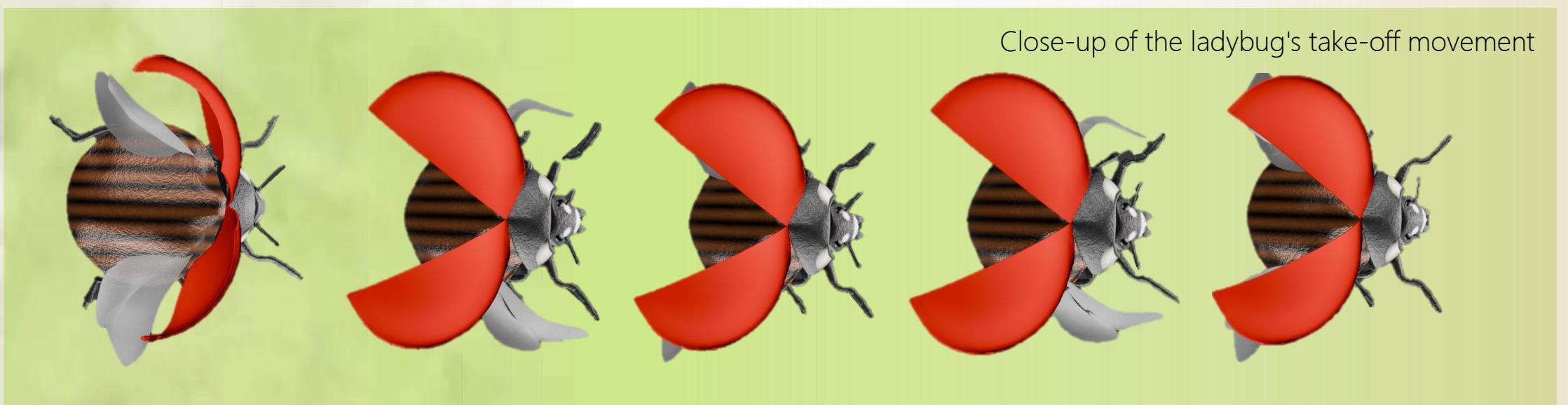
Selection of the side view of the ladybug's take-off movement



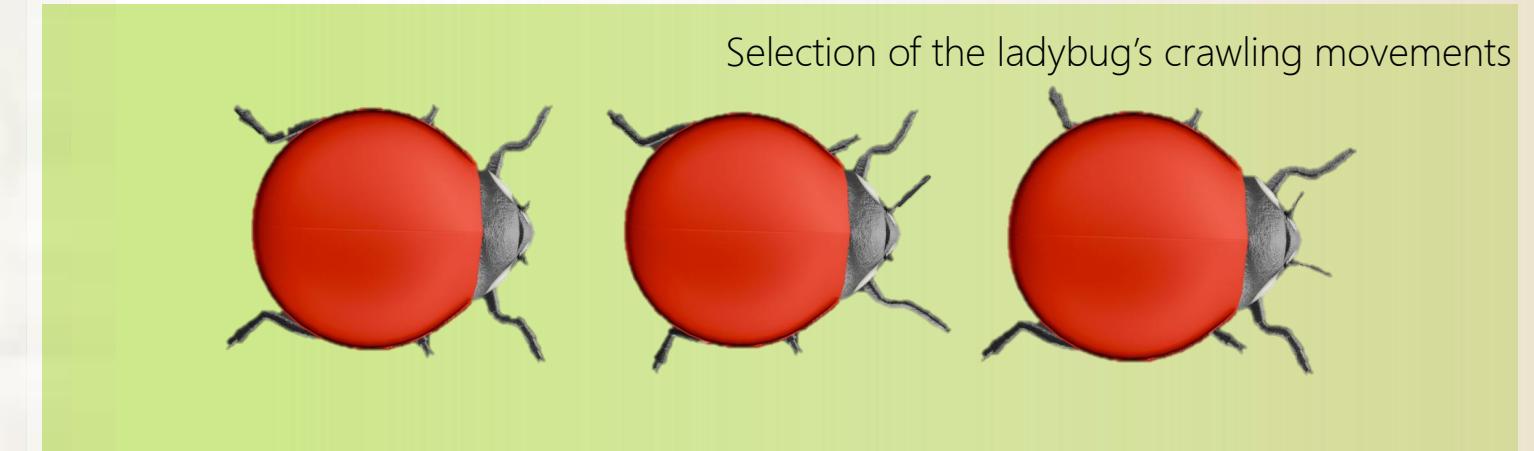
Three actions were designed for the food-loving ladybug, consisting of a total of 170 frames.

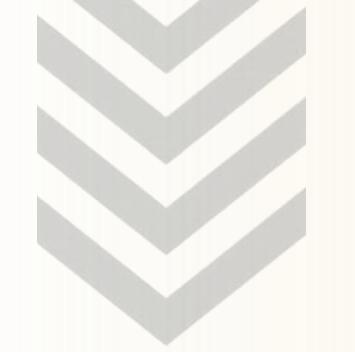
CHARACTER ACTION ANIMATION.

Close-up of the ladybug's take-off movement



Selection of the ladybug's crawling movements





#2

Personal Practice

Character Design Explorations

This collection explores how distinct visual styles shape character personality. By re-imagining characters from League of Legends, Apex Legends and so on, I practiced adapting to different artistic directions while retaining the soul of the original designs.



CHARACTER DESIGN.

2D Character Design

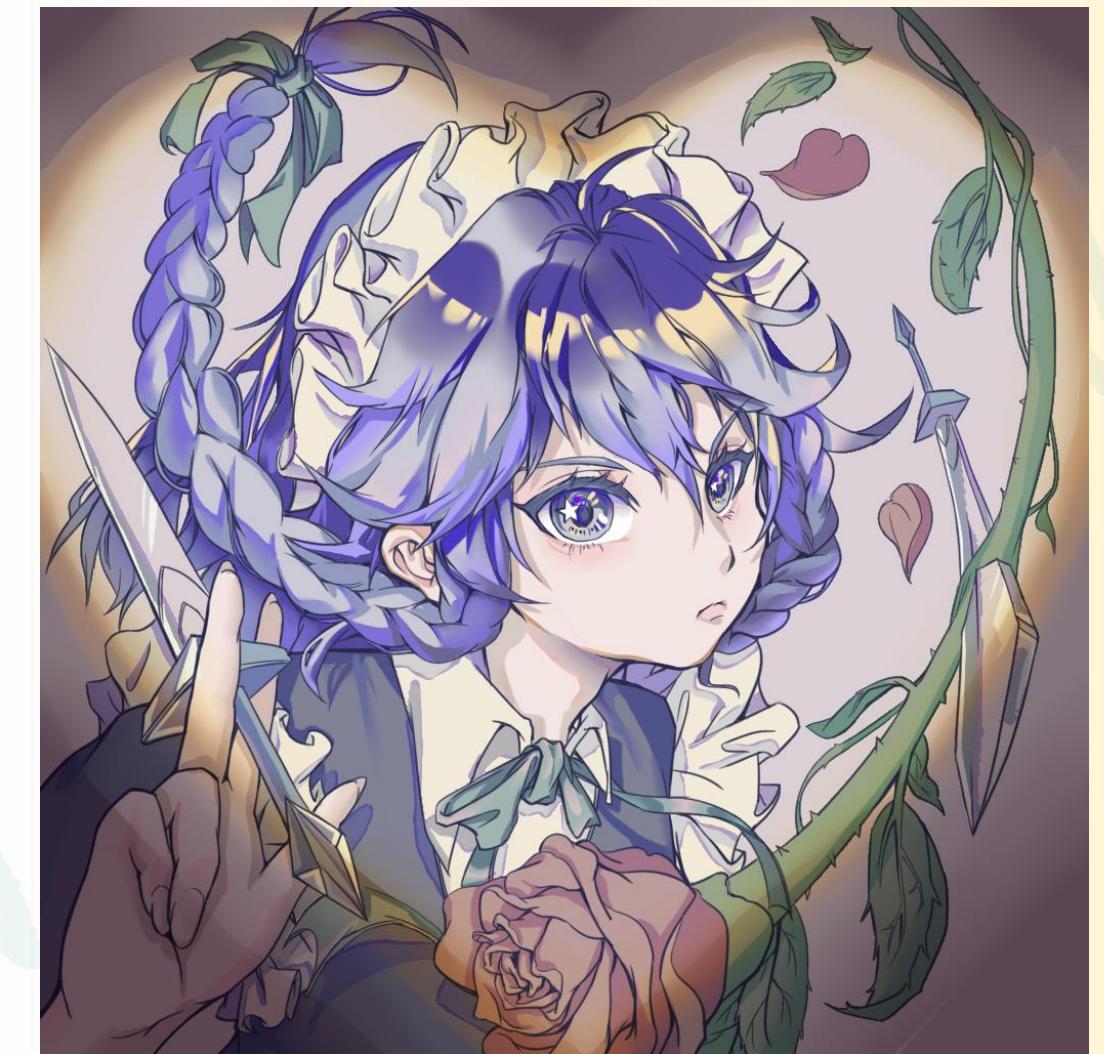


Halloween character design

CHEN YUXU

CHARACTER DESIGN.

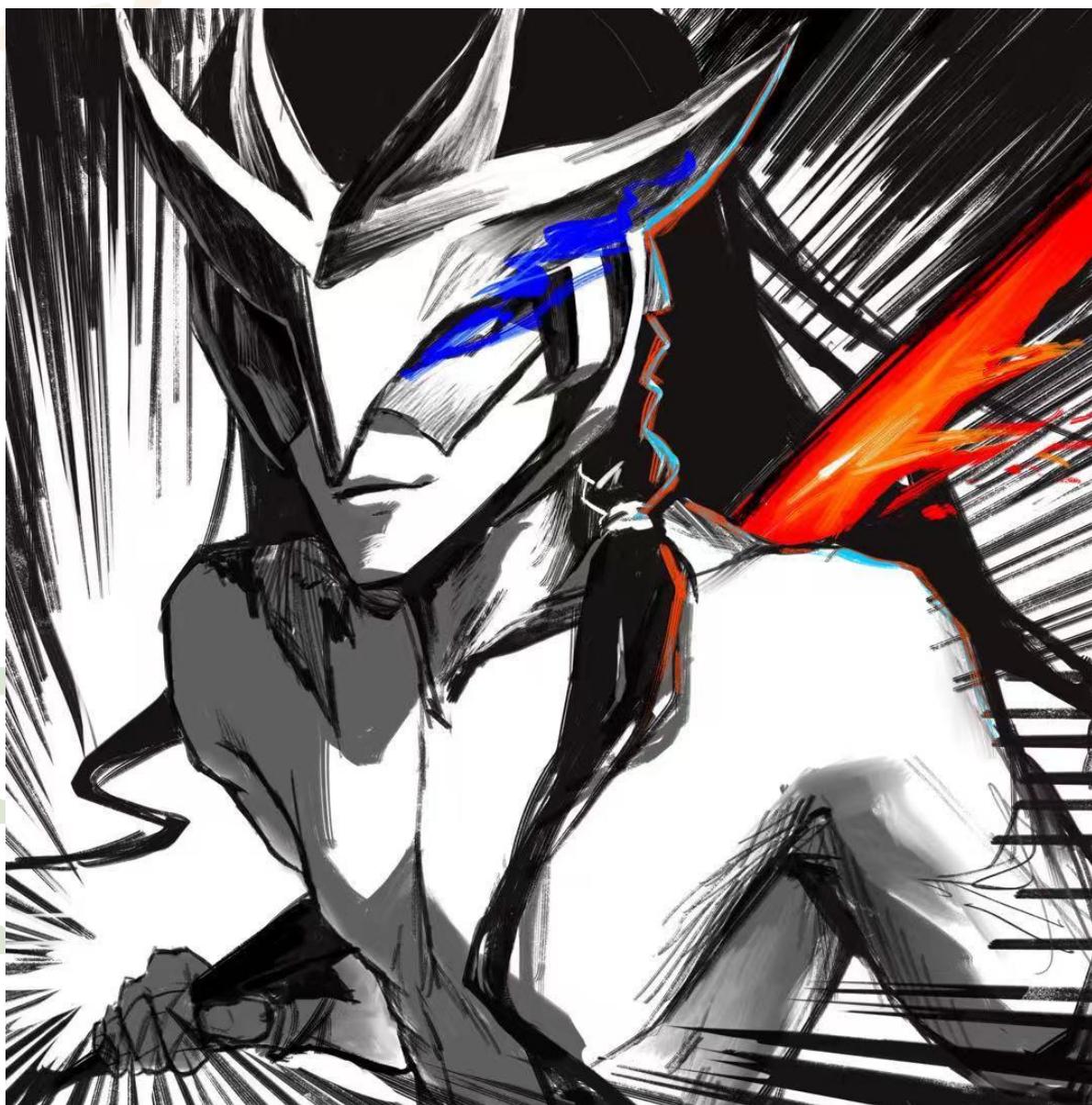
Animation character derivative design



Touhou Project Animation character derivative design

CHARACTER DESIGN.

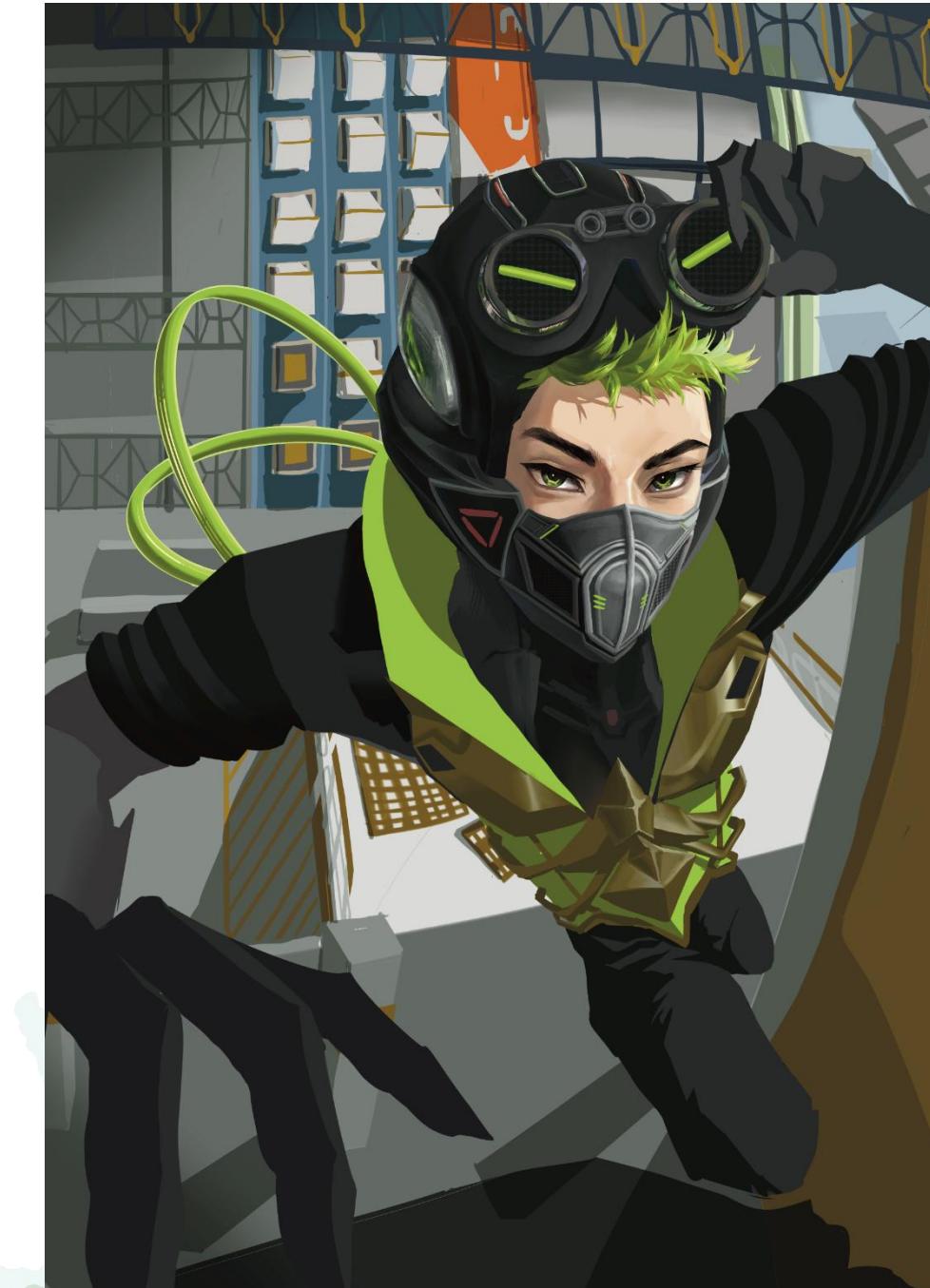
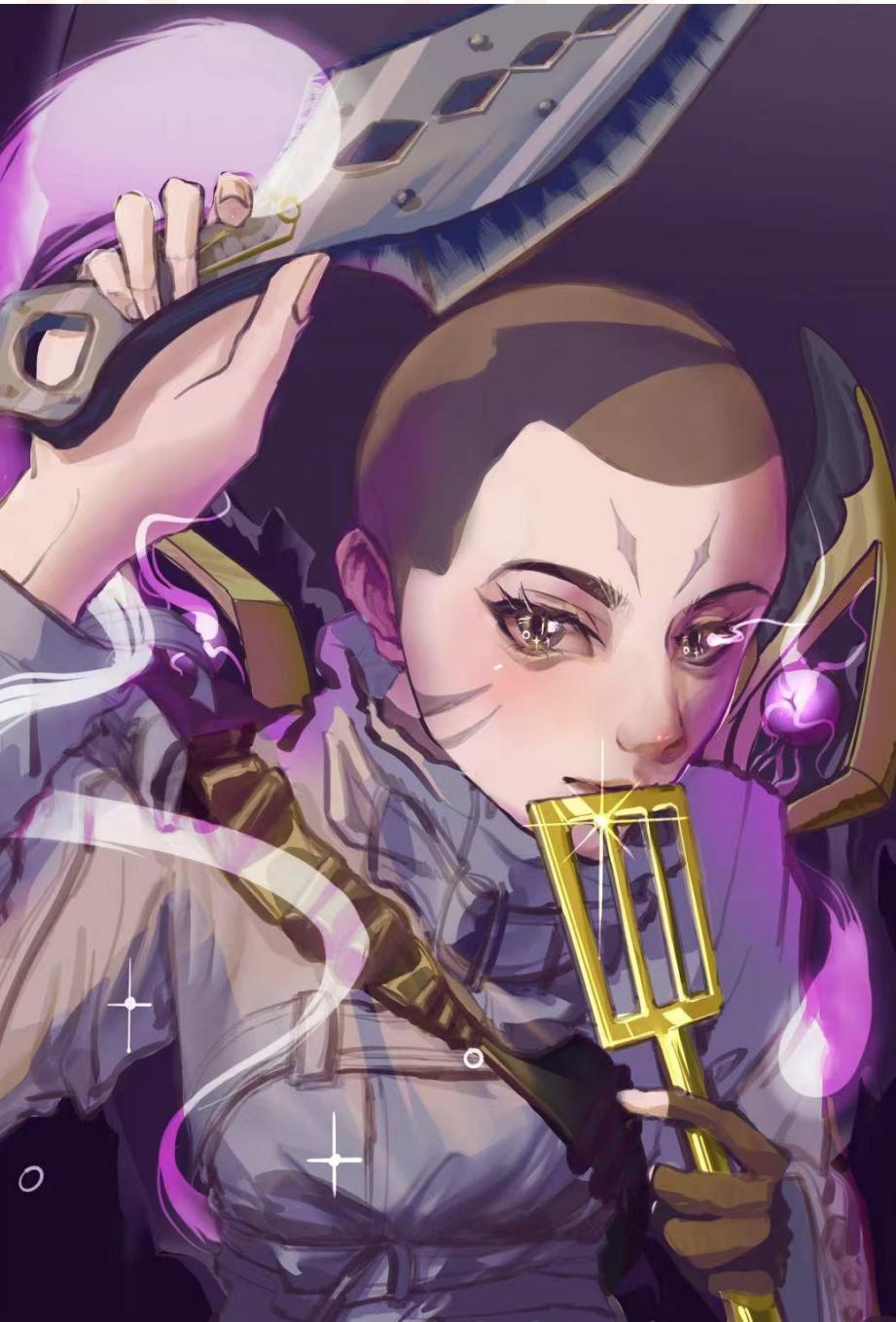
Derivative Design of Game Characters



Design of Game Characters Derived from *League of Legends*

CHARACTER DESIGN.

Derivative Design of Game Characters



Derivative Design of Game Characters in *Apex Legends*

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