FATIH GULEN
MA - NEW MEDIA DESIGN

ADAPTIVE ENVIRONMENT

LETS PLAY THE GAME

DESIGN YOUR OWN WORLD ON THE VIRTUAL CANVAS WITH YOUR PROMPTS

This game invites you to wield AI as your brush, crafting bespoke worlds from your imagination. Immerse yourself in a dynamic painting studio where every prompt transforms into a unique, personalized canvas.

Experience the future of artistic expression and interactive design, where every player becomes an integral part of the creation process.
By transforming player prompts into unique, dynamic worlds, fosters curiosity about the potential of AI.

This game was created without any coding knowledge, It use AI as much as possible for the production process of the game.

MA New Media Design

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ADAPTIVE ENVIRONMENT

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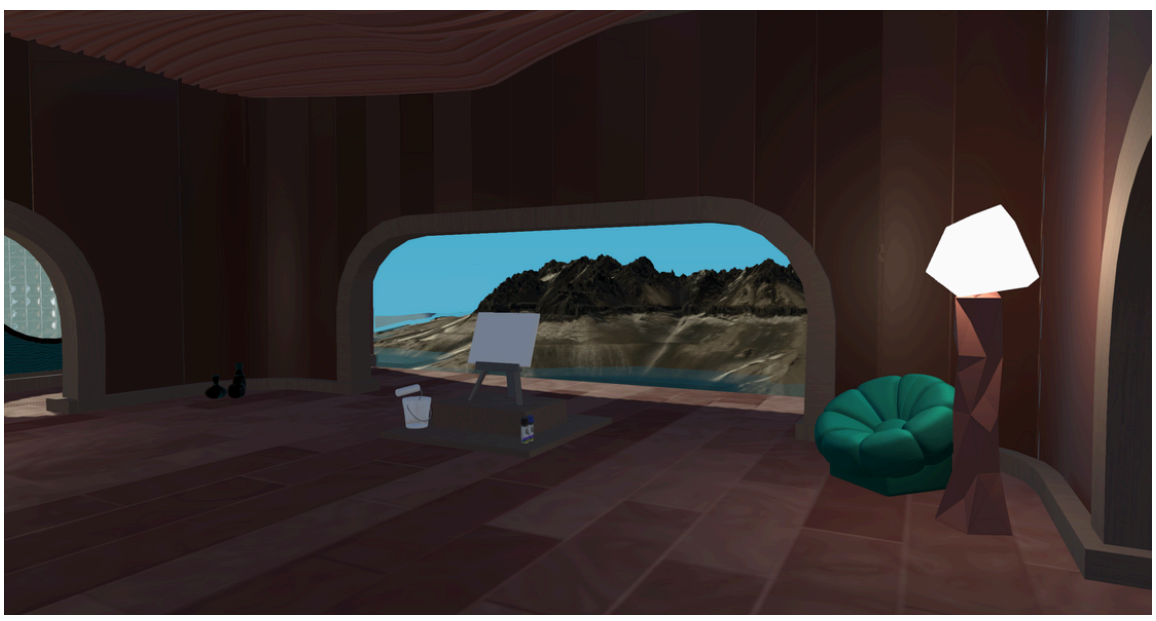
ABSTRACT



The project aims to provide integrated innovative preferences that can enhance the gaming experience and benefit the user with advancing technologies based theoretically on the historical development of in-game user preferences. This will provide users with the opportunity to build the game, making them a part of the design process, thus ensuring the production of an endless experience. This game leverages the capabilities of the AI that allows players to create and customize their own canvases through their prompt, offering a unique interactive experience.

OVERVIEW

This project leverages the capabilities of the AI integrated with Unity to create an innovative game environment where users can change the textures of the 3D environment using their prompts The idea came from the use of procedural content generation in game design to create millions of level designs with algorithmic methods. Since AI is used in the game development process most of the industry leaders have started trying to integrate AI into in-game. Nowadays, AI is getting to be a part of our daily activities. While people play the game, AI can be used as an assistant or completely used for changing the virtual atmosphere by the player's commands.

This game is set in a painting room with a canvas and paints, the game allows players to create and customize their own canvases, offering a unique interactive experience. This idea will enable users to participate in the game design process enhancing the sense of belonging to the virtual space.

Connection to Theory

This project has been created to show how AI, integrated into existing game mechanics and influencing the narrative, can be utilized in content production based on the analyze of the theoretical part of the impact of Procedural Content Generation (PCG) in content creation. AI is already being used in various fields today, and this project aims to investigate this necessity and the potential benefits it can offer in games. The goal of the project is to explore the effects of AI on game content production, proposing that AI can offer more than what is currently possible with PCG in game design. Moreover, this project emphasizes its potential for further development by suggesting possible uses in other fields.

As technology advances, server processing power increases, and makes it more accessible to users, the integration of AI into games is certain to become an indispensable part of the future. Although current technology does not propose to influence the entire design from scratch, it can create integration piece by piece. From text generation within the story to texture control and even using AI as an assistant to adjust game mechanics, it is possible to incorporate AI in various ways.

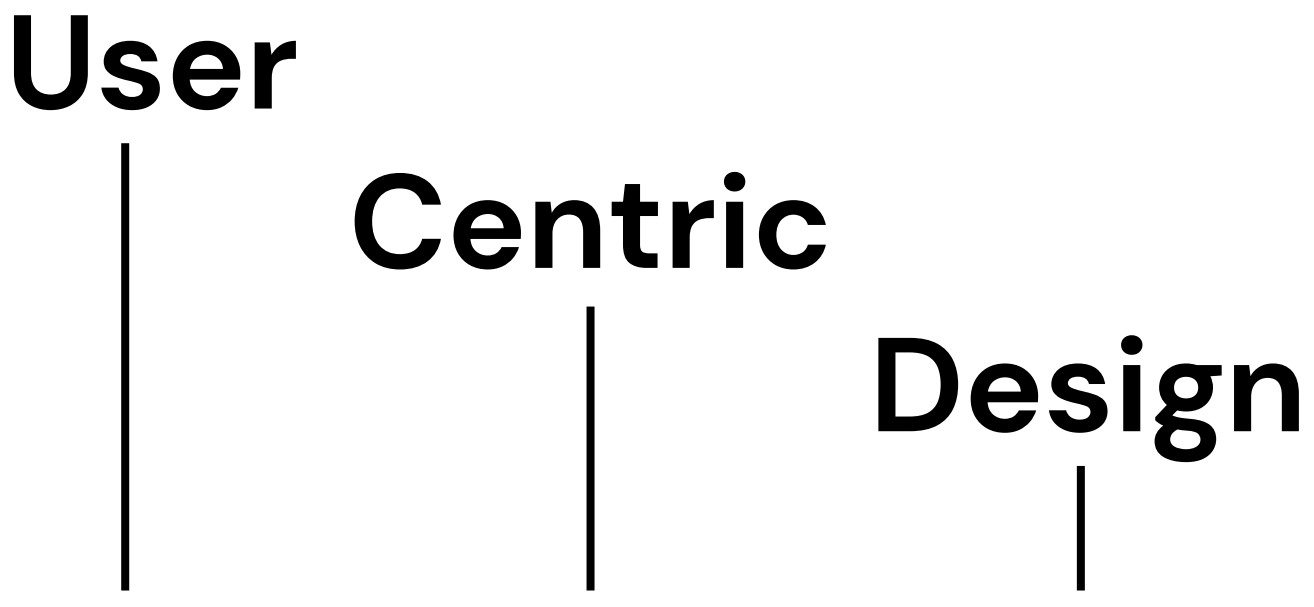
In conclusion, this project aims to demonstrate the evolution of user preferences provided to users over time and what new technologies can add to these preferences.

User Preferences in Game Design

The theoretical part of this project examines what are the current user preferences offered by game designers to players. This project searches for new possible options integrated into gameplay through advancements in AI.

Figure 1.0

With the idea of using AI, users are allowed to change the environment and the style of the game design. The ongoing development of these user preferences provides game developers with the opportunity to enhance gameplay and attract a broader audience. The goal is to expand the limitless narratives produced by AI through this model of personalization.



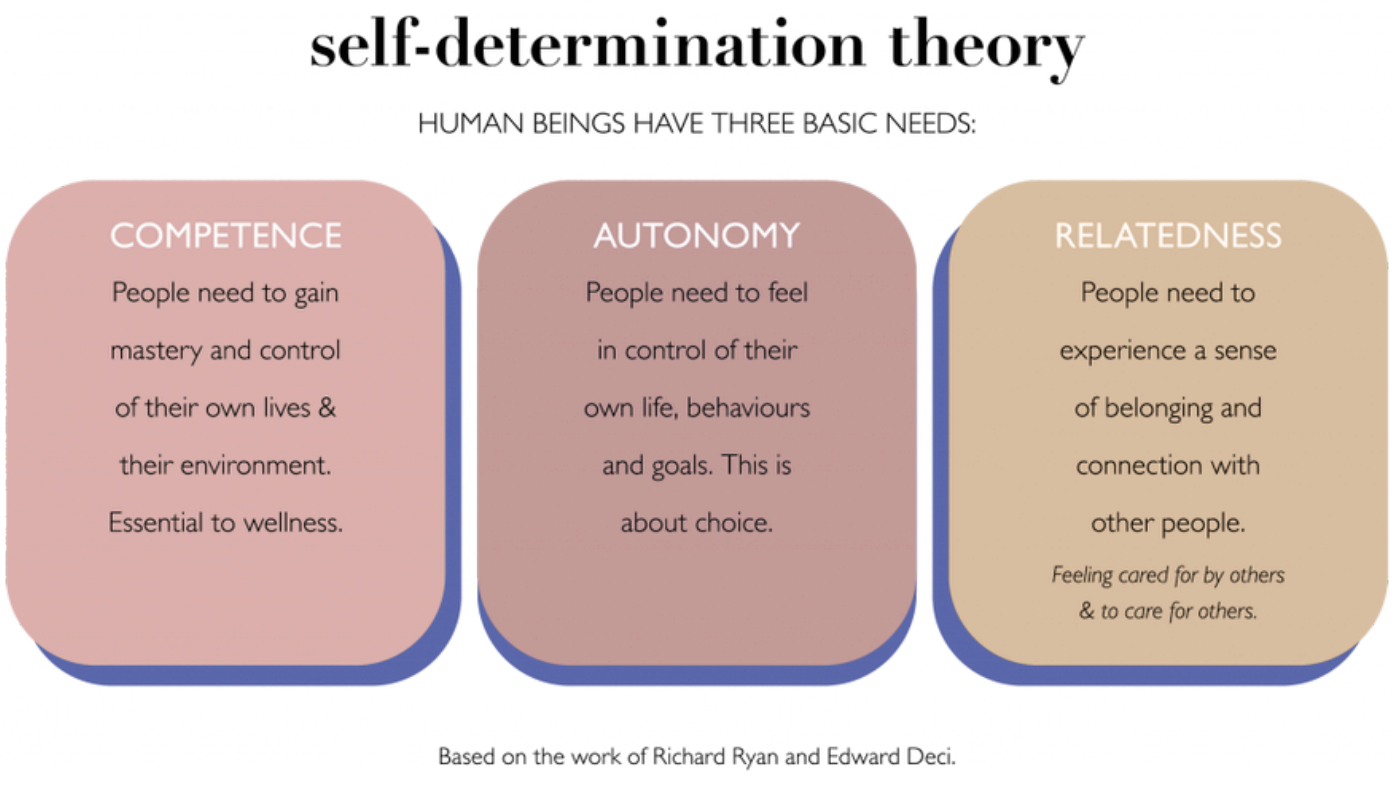


Figure 2.0

This project aligns with modern game design theories emphasizing user-centric experiences. The game exemplifies how adaptive environments can enhance user engagement and satisfaction by integrating AI. This approach is supported by theories such as the Self-Determination Theory, which highlights the importance of user control for enjoyment and motivation. It increases the sense of belonging to the game and also increases the satisfy with intensified gaming experiences.

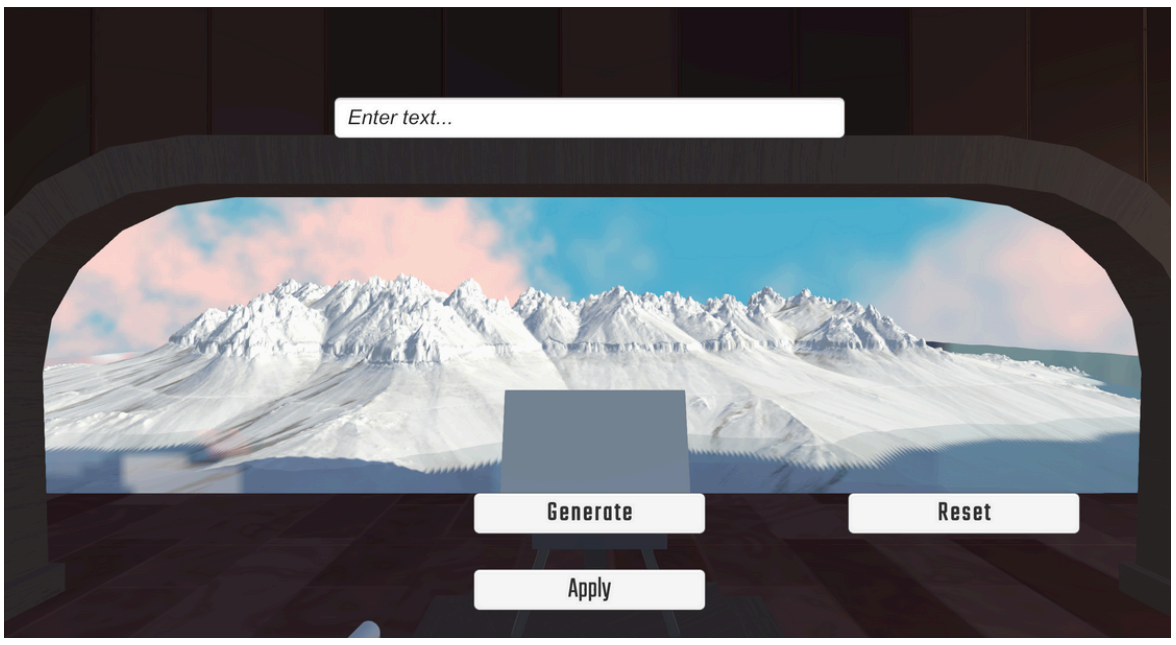
SELF DETERMINATION

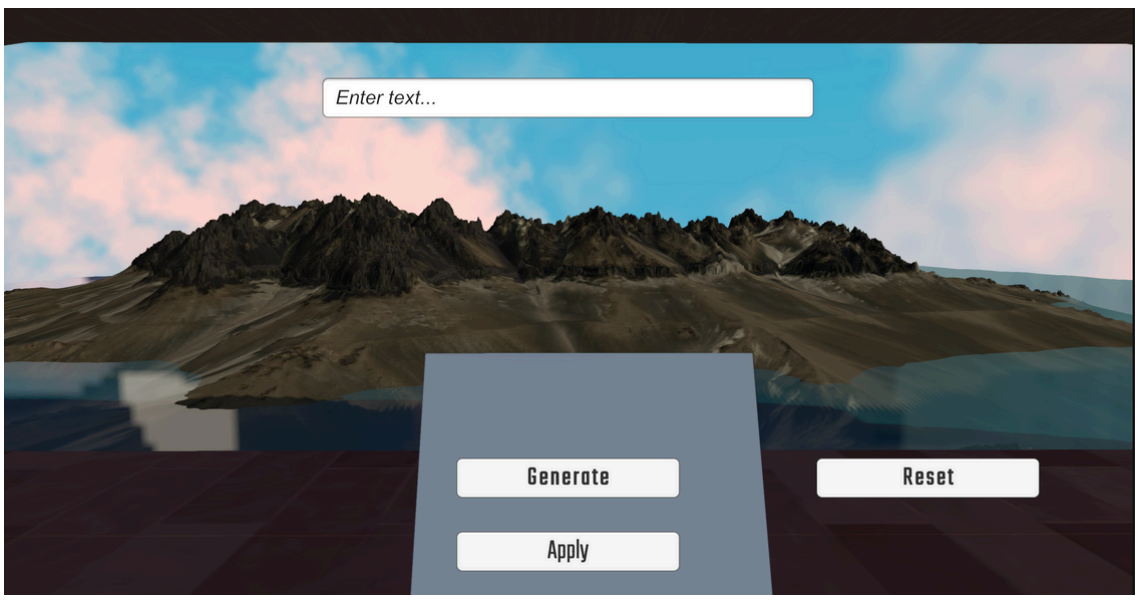
Autonomy

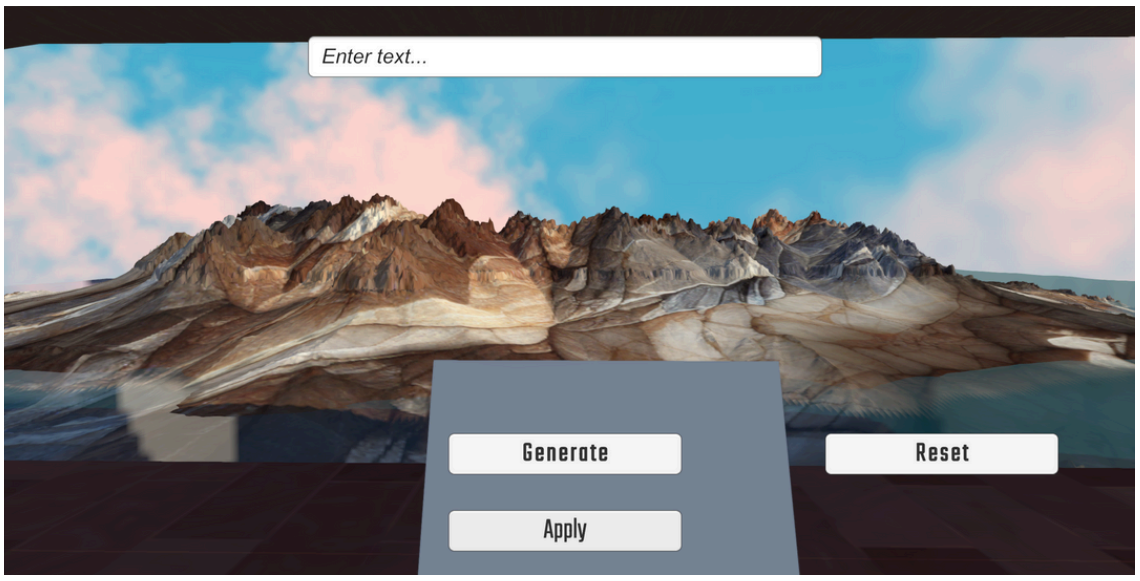
The sense of belonging in a person increases with the marks they leave in the area they inhabit. With this feeling, a person embraces the area they belong to and continues to build it. In a game, when players adopt the virtual space as their own and contribute to it, this experience provides a personalized environment, offering users a unique gameplay that only they can observe. By involving the user in content creation, allowing them to share different scenarios with each other and their social circles, the game increases its reach.

SKETCHES

Screenshoots from in-game.







TECHNICAL

The project utilizes Unity as the game engine and integrates the DALL-E API for texture generation.

- Creating Game Assets: 3D game assets modeled using Blender and optimized according to the unity requirements.

- Unity Setup: Creating the basic level design including the game environment, painting room, canvas, and interactive elements in Unity.

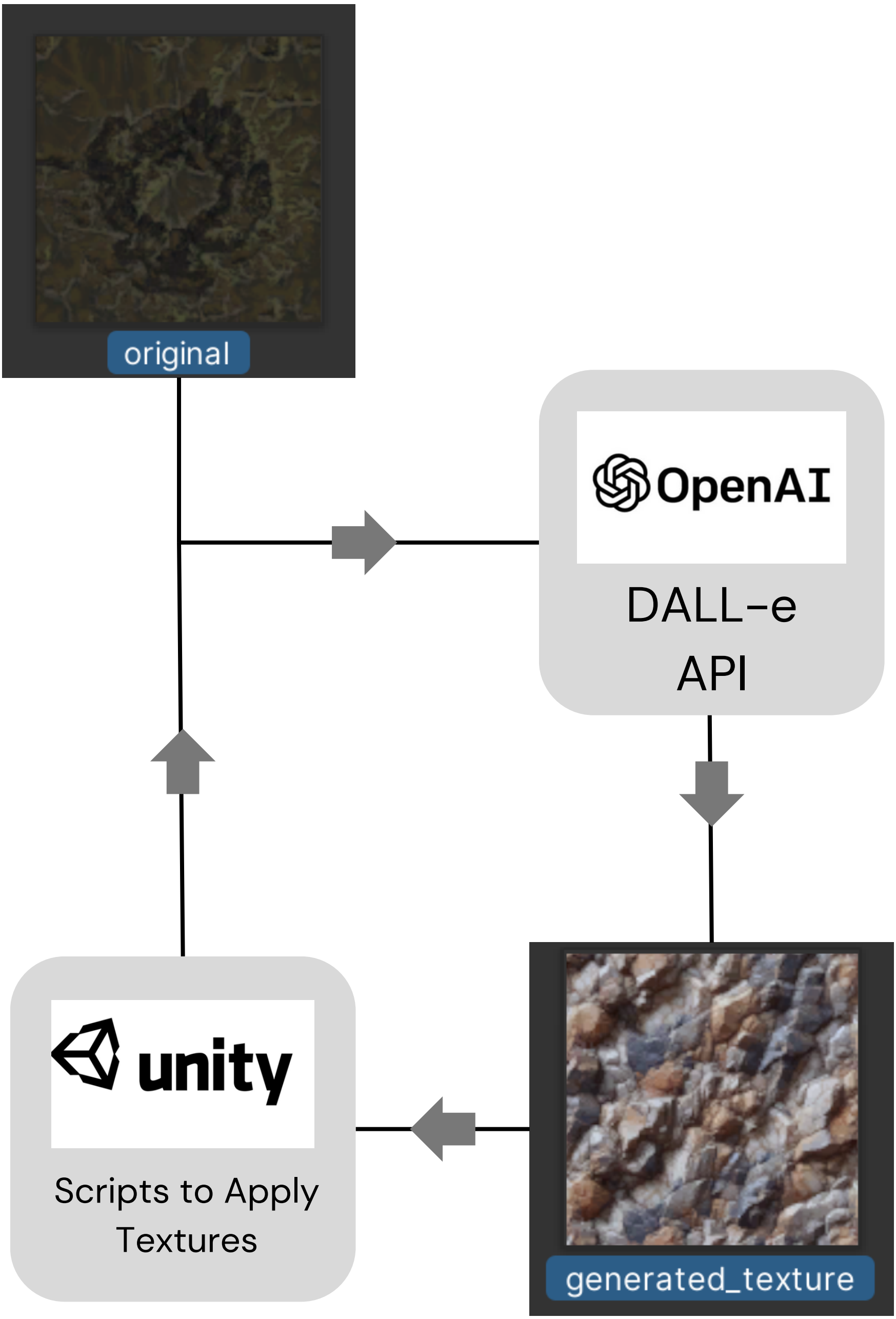
- DALL-E API Integration: Connecting Unity with the DALL-E API to enable real-time texture generation based on user prompts.

- Realtime Texture Generation: Created scripts using C# language via ChatGPT prompts. The entire code used in the script was created by ChatGPT.

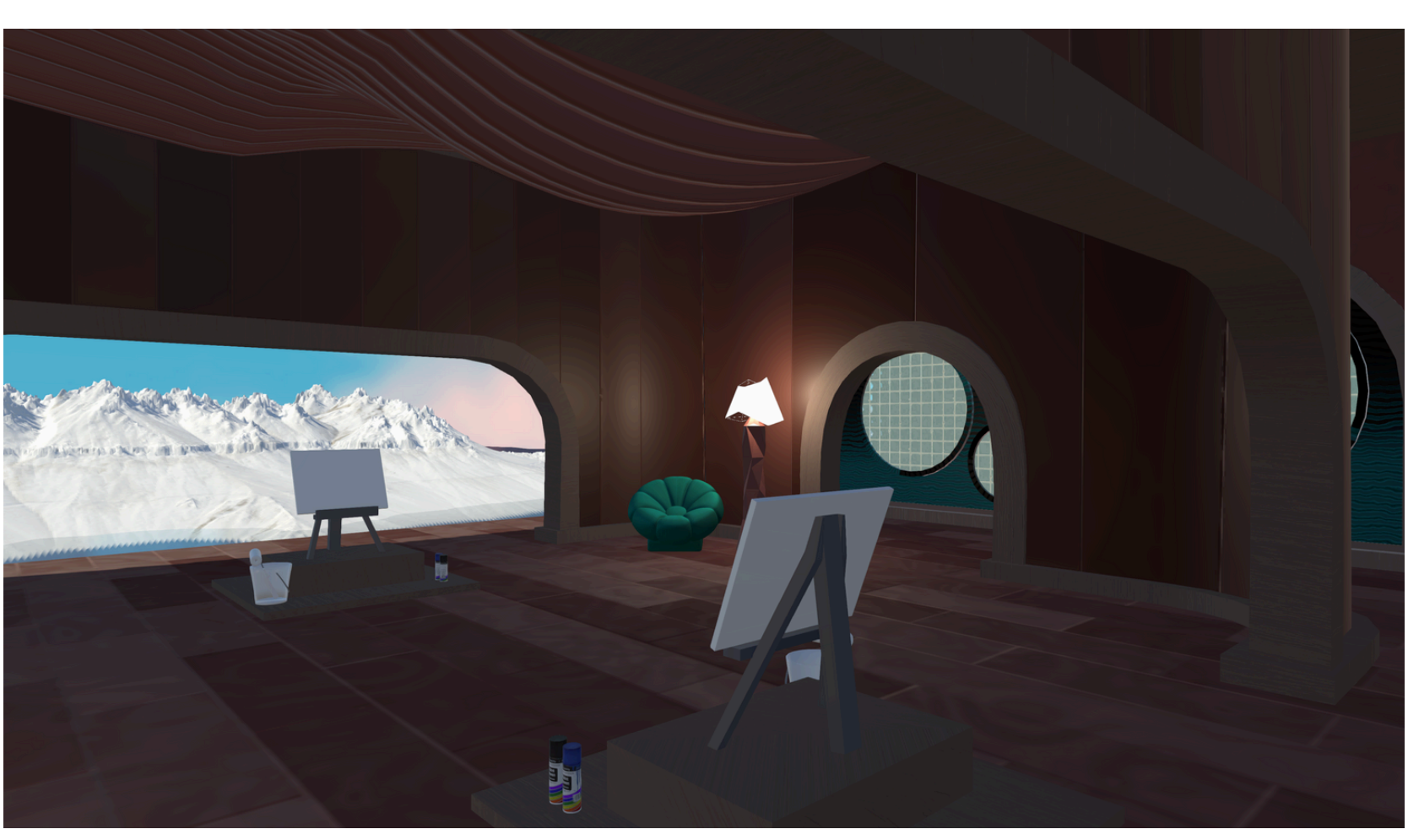
- User Interface: Designing a user-friendly interface for inputting text prompts and applying generated textures to the canvas and the scripts arranged according to the game experience.

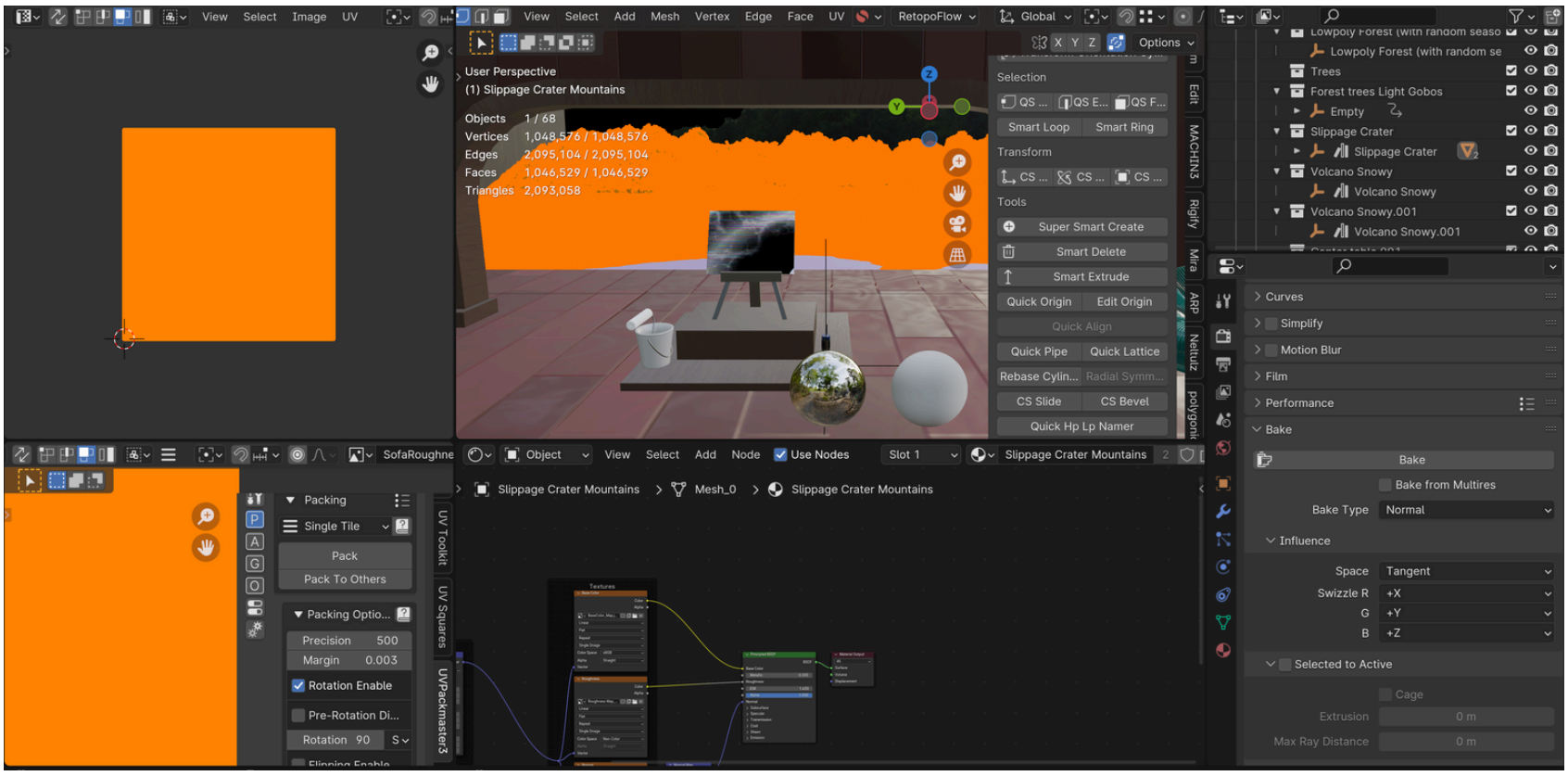
- Texture Application: Implementing the functionality to apply generated textures dynamically to the environment.

- Building The Game: The game was built for the PC experience but it can also be adapted for the other types of bases.

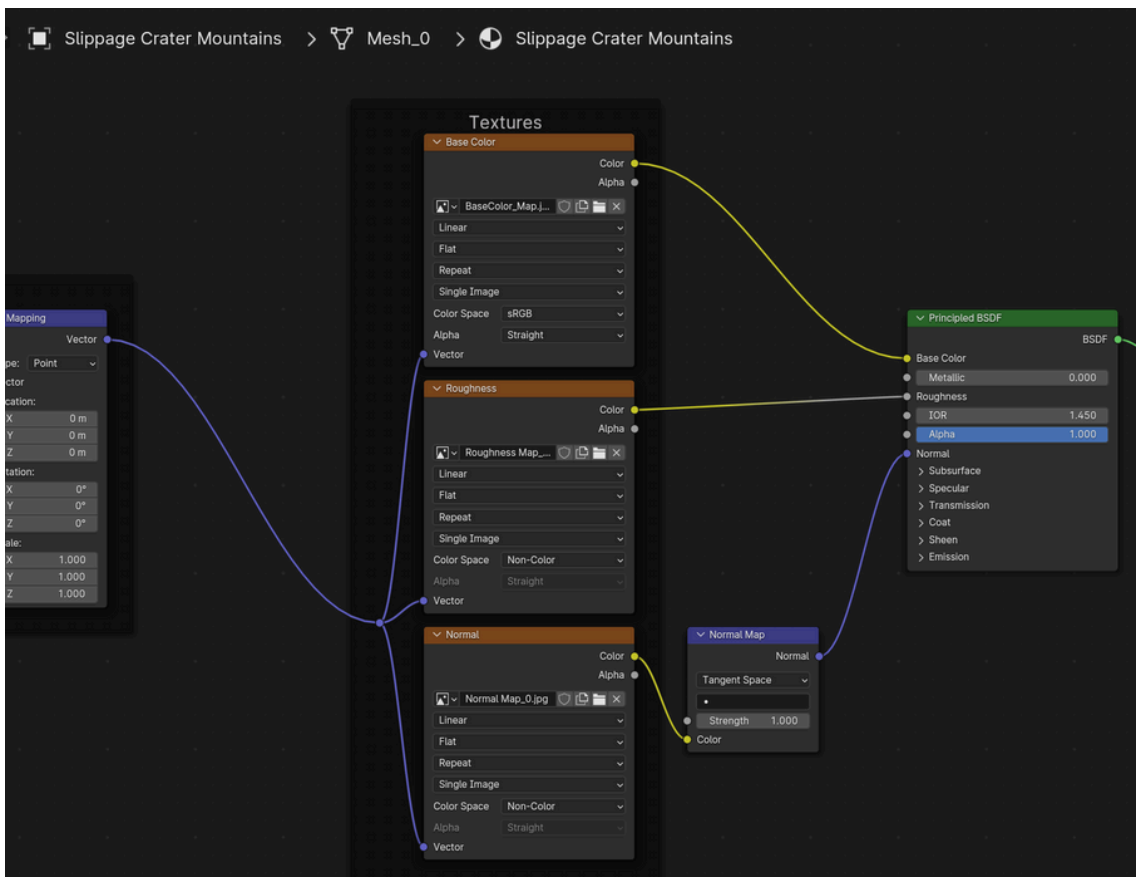

original
OpenAI
DALL-e
API
unity
Scripts to Apply
Textures
generated_texture

This project uses Blender for 3D Asset creation. Then the assets imported into and built by Unity game engine.

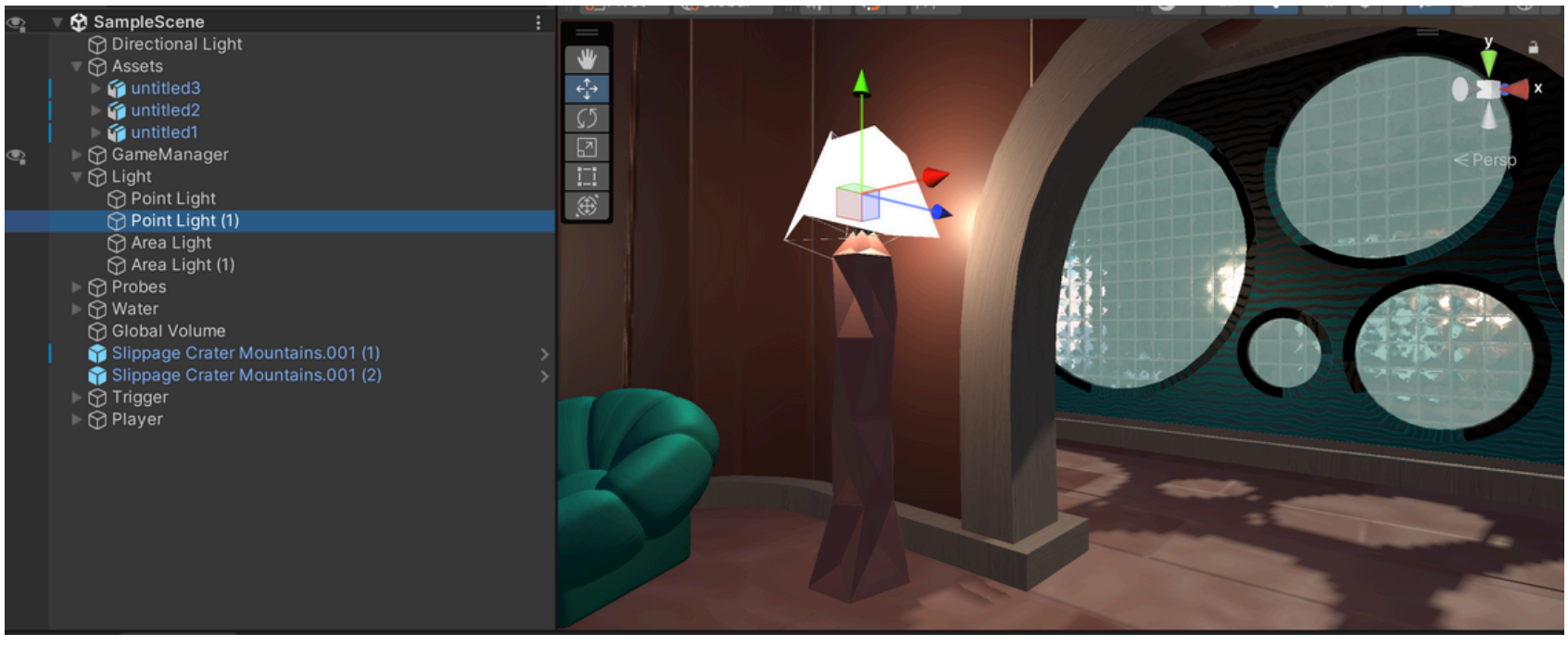




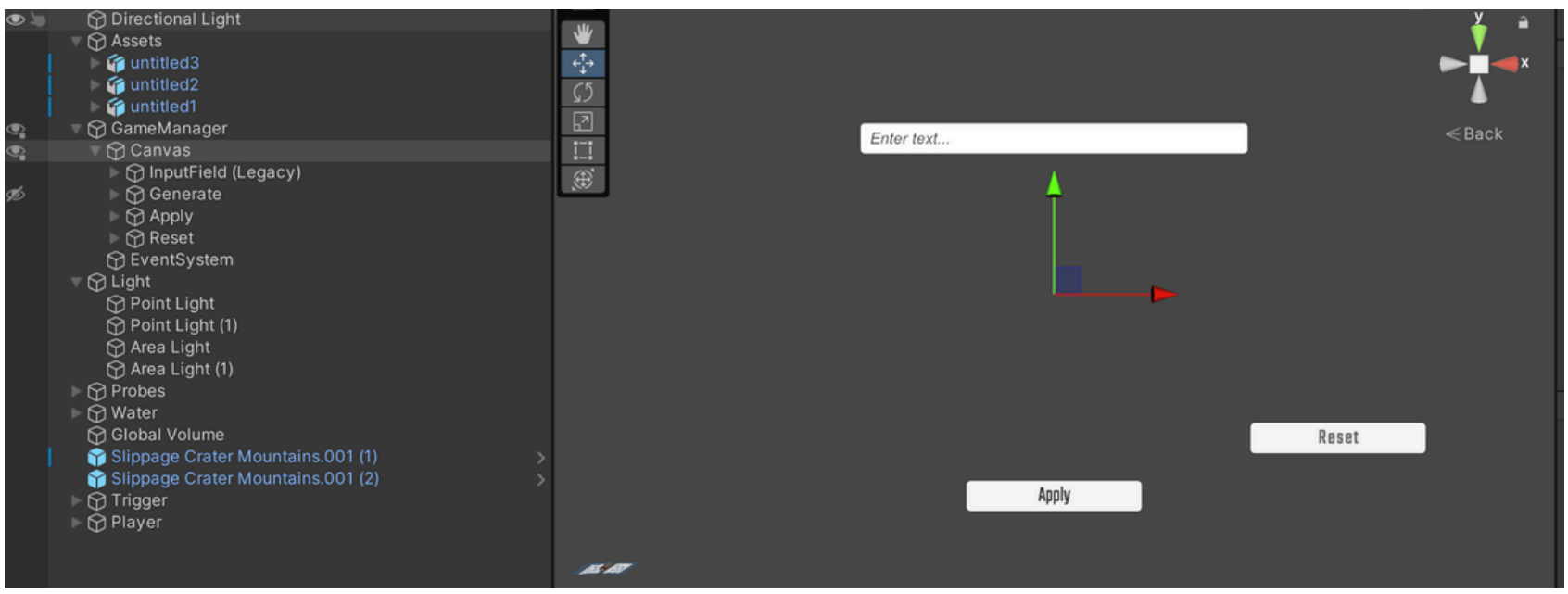
UVs arranged for Unity, and texture applying process.



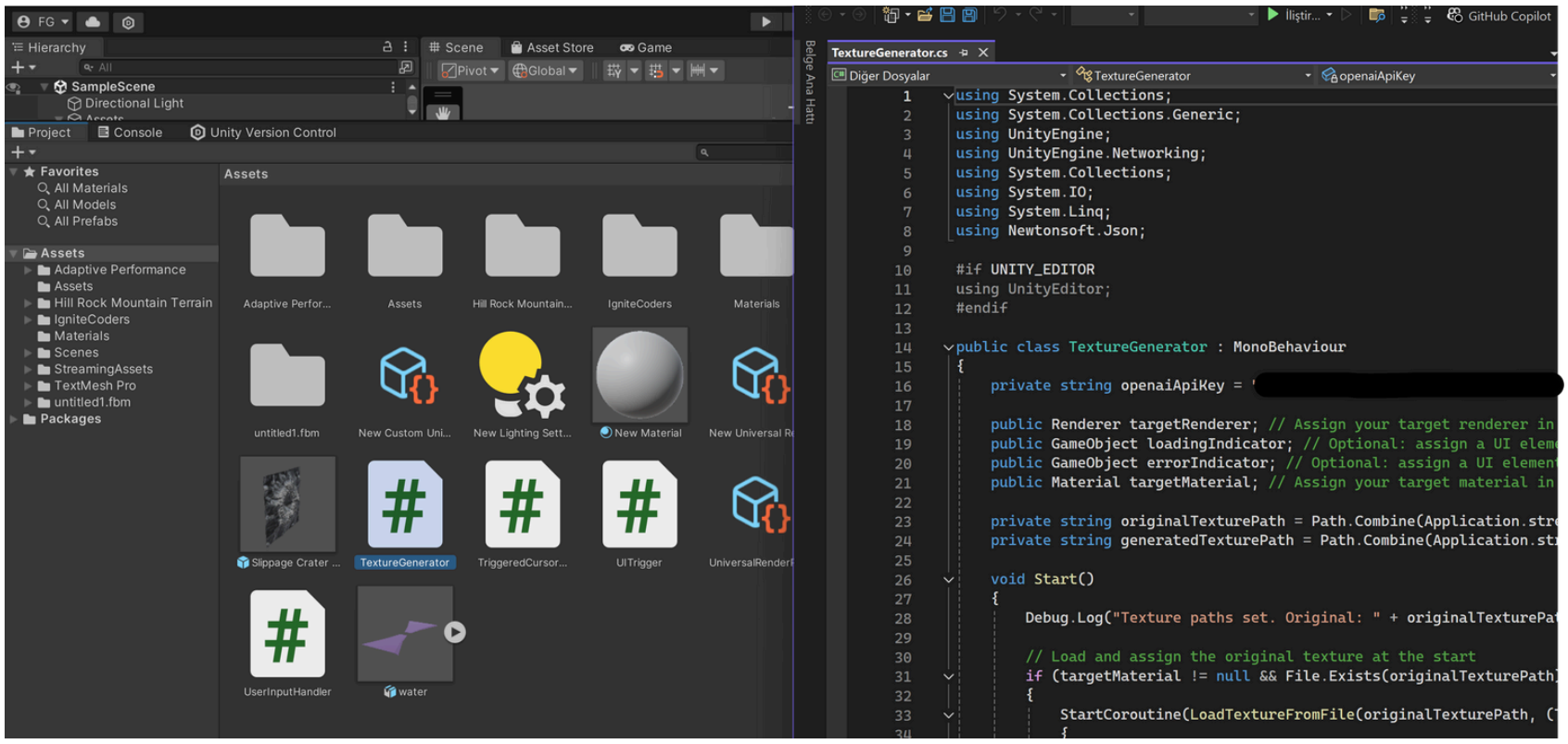
Textures optimized according to Unity needs.



Light design settled for the game scene



UIs and buttons arranged according to players interactions.



The interaction of players defined by scripts.

- 3D Assets Creation
- UV Arangements

- Code Writing

- Game Engine

- Texture Generation

- Built Game

OUTCOME

- This project allows people to be part of the design. Through this feature, it offers unlimited, non-linear, and personalized experiences.

- With the advancement in AI technology, AI models can be used as well for 3D asset generation the same process as texture generation. This feature offers to rebuild the game from scratch for the users. This project would be the prototype of the idea AI integrated gaming experiences.

- Nowadays, using specifically trained AI models and integration of offline service for texture generation would require more technical equipment.

- This project is a prototype of how it can be used in games. With this feature, while players play the game AI can be an assistant for them to solve the puzzle type of games or navigate them to complete the path created by level designers.

OUTCOMES

- This project also reveal new opportunities for artworks as well allowing audiences put something into the canvas from themselves.

- Decoration games such as sims can use this type of AI-integrated game experience to provide endless possibilities for their users.

- This method can be used in many fields such as Interior Design offering client to change the material or the texture in real time depending on their choices.

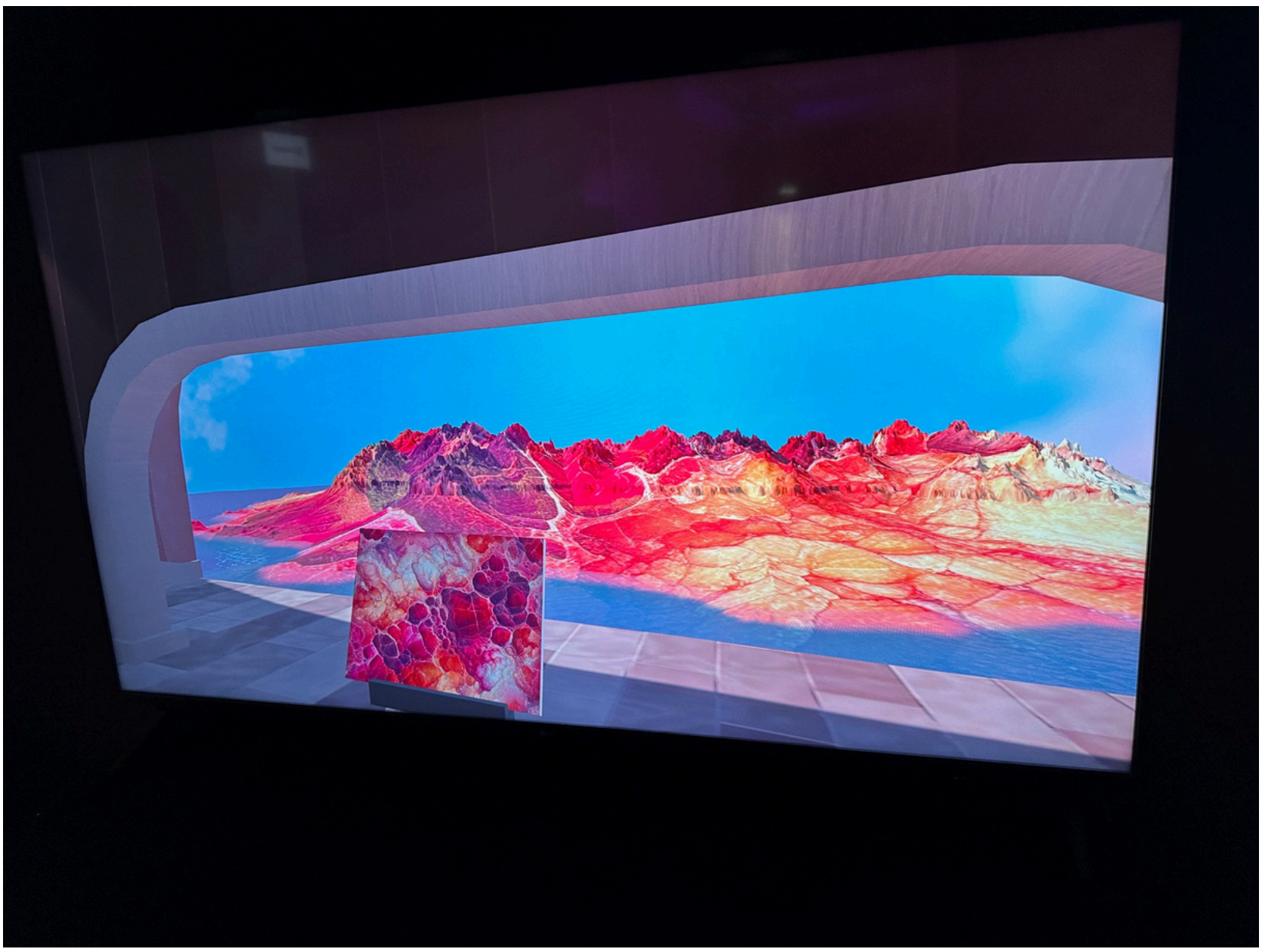
- The method used in this project sometimes faces unexpected texture generation.

EXHIBITION

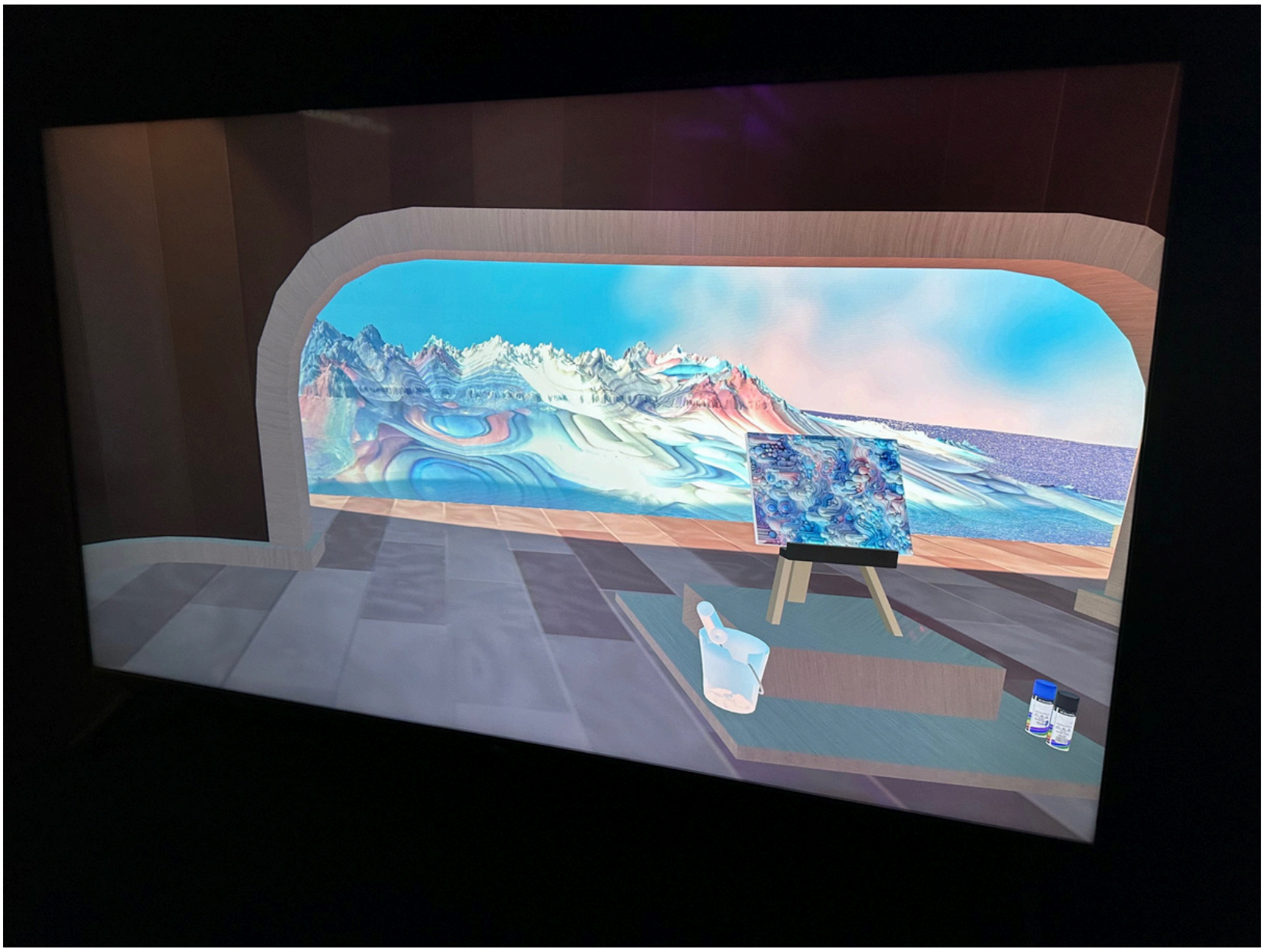
Figure 3.0

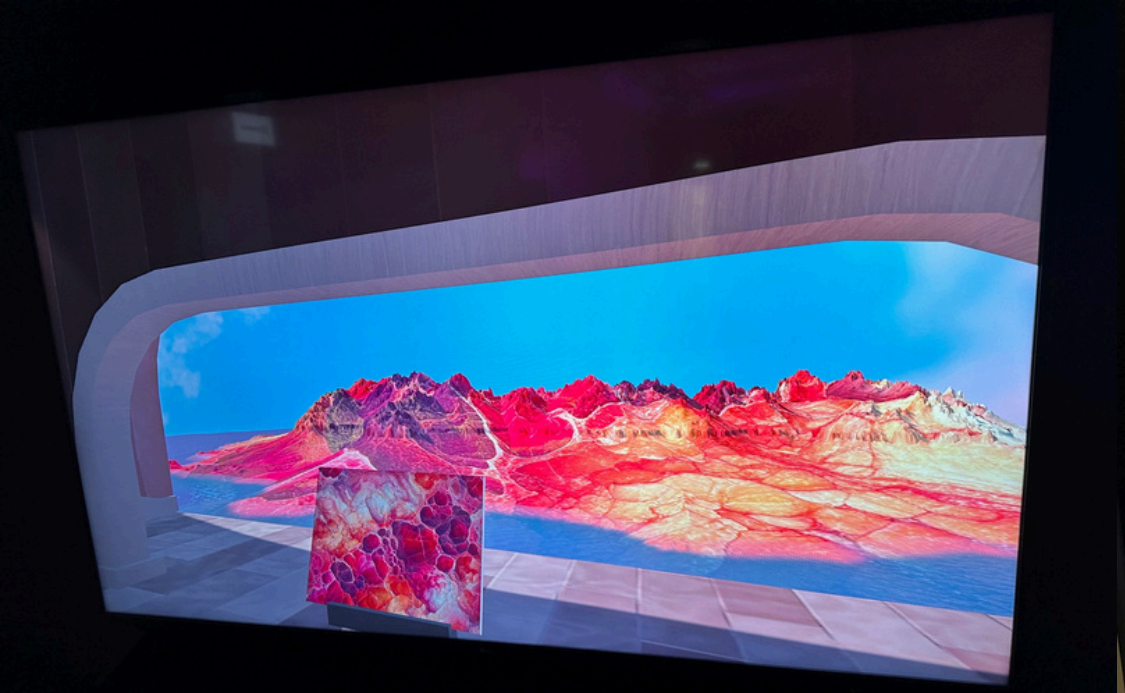
EXHIBITION

Figure 4.0




stripper with bikini
Generate
Paste
Reset
Apply





EXHIBITION

There will be a gaming atmosphere where people can also see players' production and creation.

- Gaming chair, Table.
- Keyboard, Mouse.
- PC
- Large Screen 75" (So audiences can also see the player's experience from 3rd person perspective and invite them to play the game.)

BIBLIOGRAPHY

Figure 1.0

OpenAI. (2024). ChatGPT [Large language model]. /g/g-2fkFE8rbu-dall-e

A conceptual artwork of a box viewed in perspective, split down the middle. One half of the box reveals a cartoon-style environment with bright, vibrant colors, featuring playful elements like rainbows, clouds, and cheerful characters. The other half showcases a futuristic, cyberpunk-inspired cityscape with neon lights, advanced technology, and a darker, more complex atmosphere. The box should have distinct lighting for each half, emphasizing the contrast between the two different environments. The entire scene should be dynamic and visually engaging, capturing the essence of both worlds

BIBLIOGRAPHY

Figure 2.0

BC Campus, Self-Determination Theory, https://opentextbc.ca/peersupport/chapter/self-determination-theory/

BIBLIOGRAPHY

Figure 3.0

OpenAI. (2024). ChatGPT [Large language model]. /g/g-2fkFE8rbu-dall-e

A sketch of an exhibition setup featuring a single gaming chair and a gaming table. The table has only a keyboard and a mouse on it, with no screen or other computer setup. The room has a modern and immersive design, with lighting that highlights the gaming area. The wall is removed, showing an open space around the setup. The sketch should clearly show the layout, with labels indicating the table and chair. There is no screen on the table and no large screen mounted on the wall.

BIBLIOGRAPHY

Figure 4.0

OpenAI. (2024). ChatGPT [Large language model]. /g/g-2fkFE8rbu-dall-e

A black and white sketch of a gaming atmosphere with a single player at a modern gaming station. The player is seated in a comfortable gaming chair at a sleek desk with a PC in front of him. Behind the player, a large screen on the wall displays the player's creation on the PC. The scene is set in a stylish, minimalist room with overhead lights focused on the screen, and a few people standing nearby, watching the screen with interest. The overall setup resembles a high-tech gaming exhibition booth.