



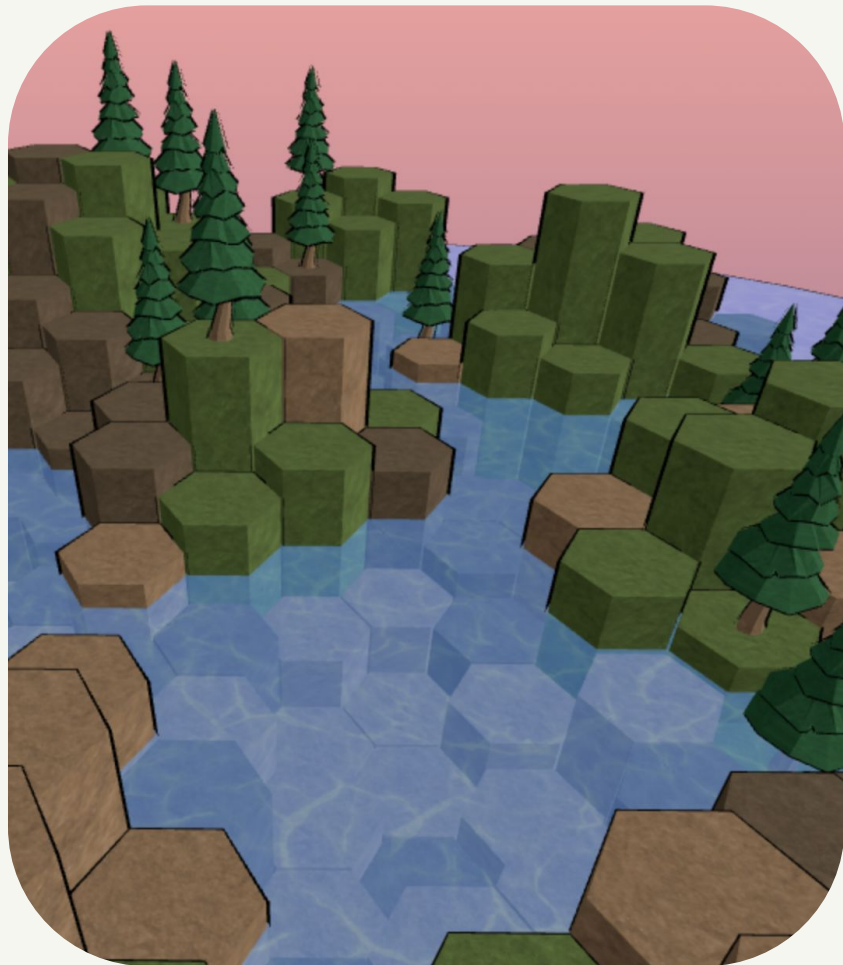
HexWorld: A Procedural Hex World Island Generator

TartanHacks 2025

Charis Graham, Ollie Arrison, Clytie Qiu

Why Our Project

HexWorld is an innovative web application developed for the 2025 TartanHacks Hackathon, designed to generate procedurally crafted hexagonal world maps. Whether you're a game developer, digital artist, or storyteller, HexWorld provides a seamless tool for creating immersive landscape content for map-based storytelling, game design, and animation content generation.



Notable Elements

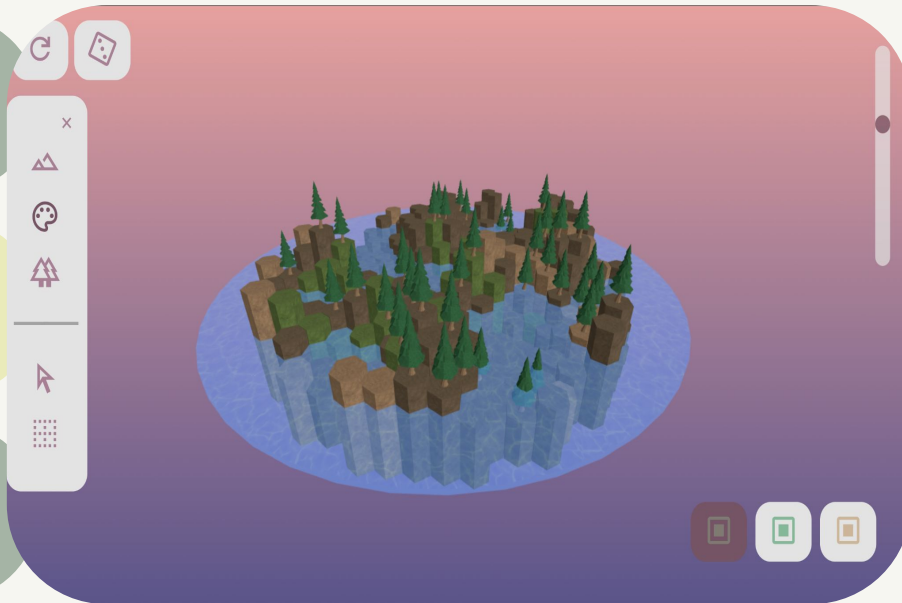
- Custom UI & Interactions
- Shader Customization
- GLSL Shaders
- Custom Textures
- Noise-Based Texturing

UI Elements

**Expandable
Sidebar with
Editing Modes**

**Click versus
Drag Mouse
Input**

Toggle Outlines



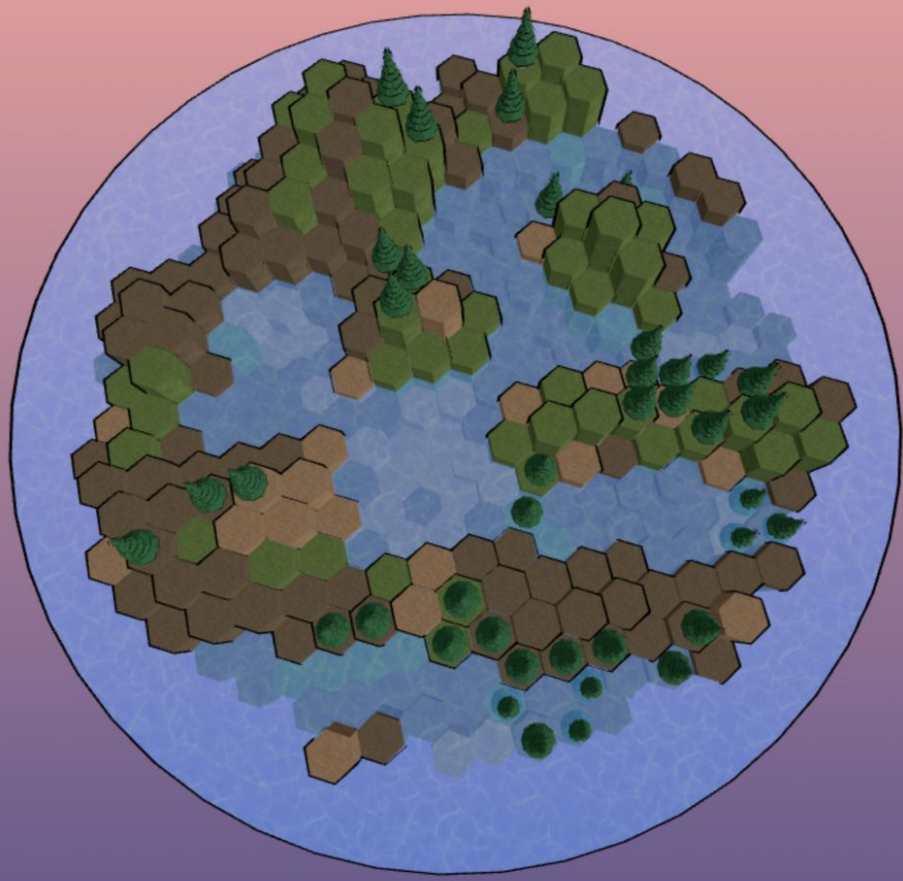
**Random and Reset
Buttons**

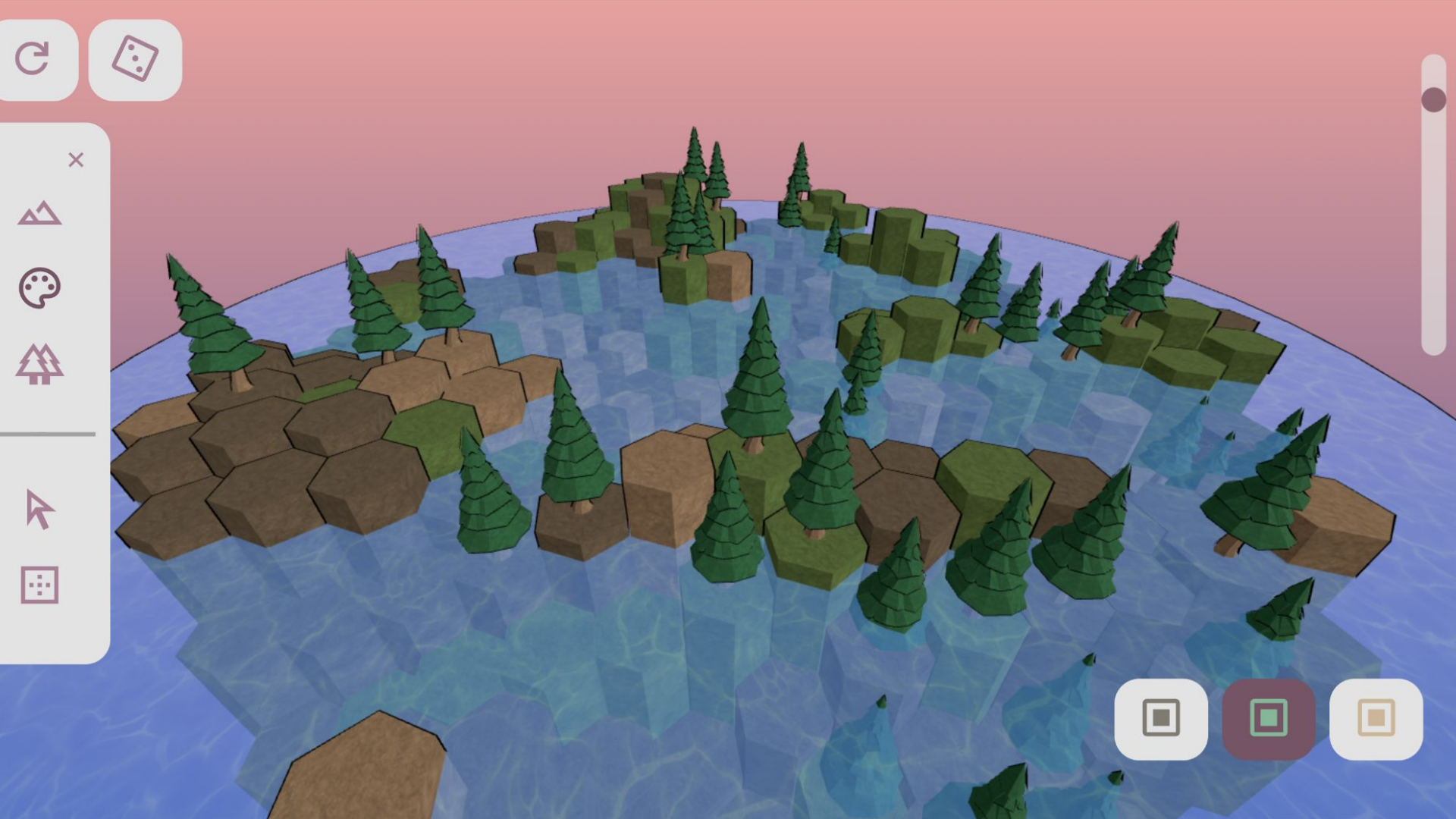
Slider for Water Level

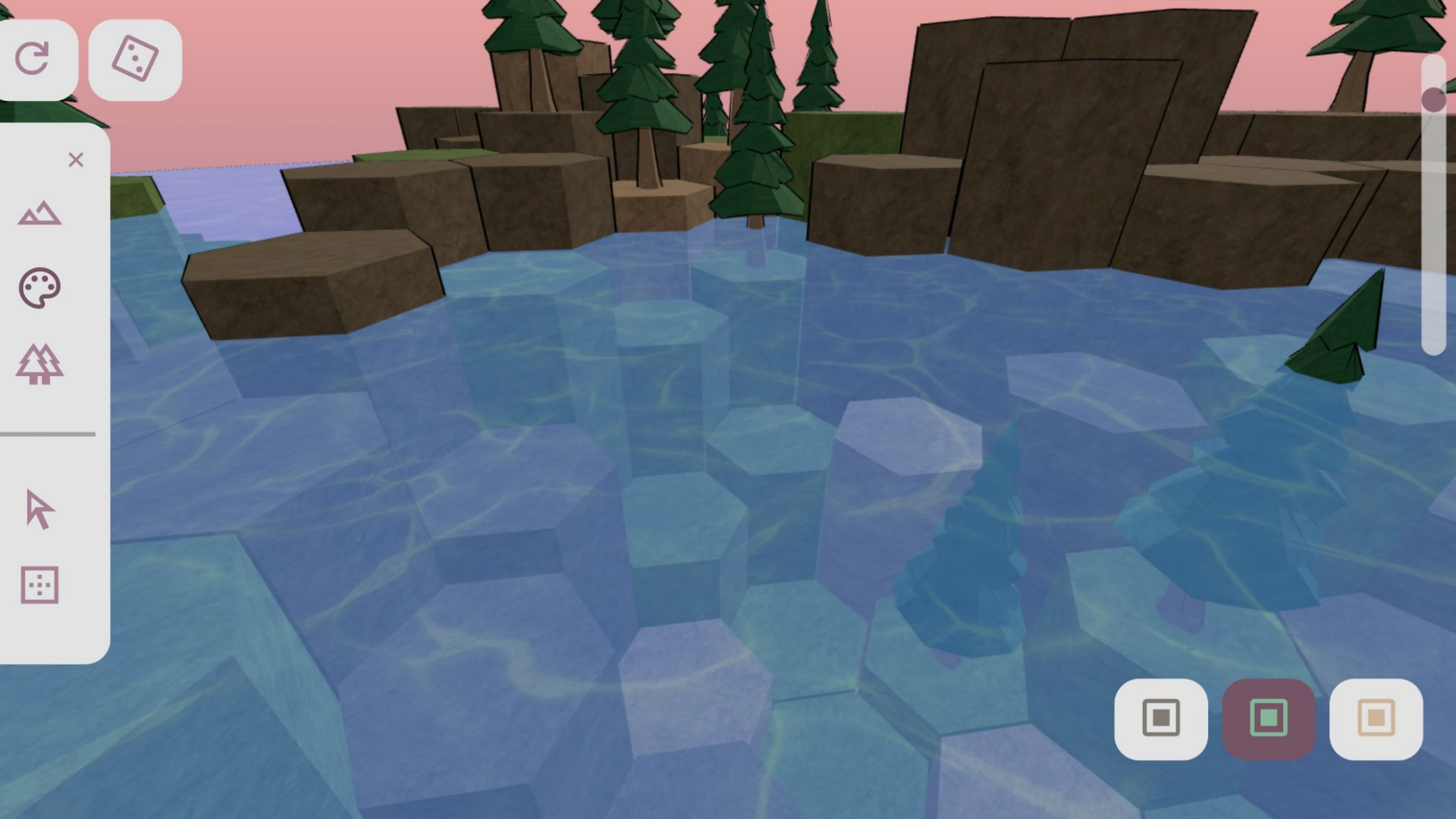
Paint Skin Buttons

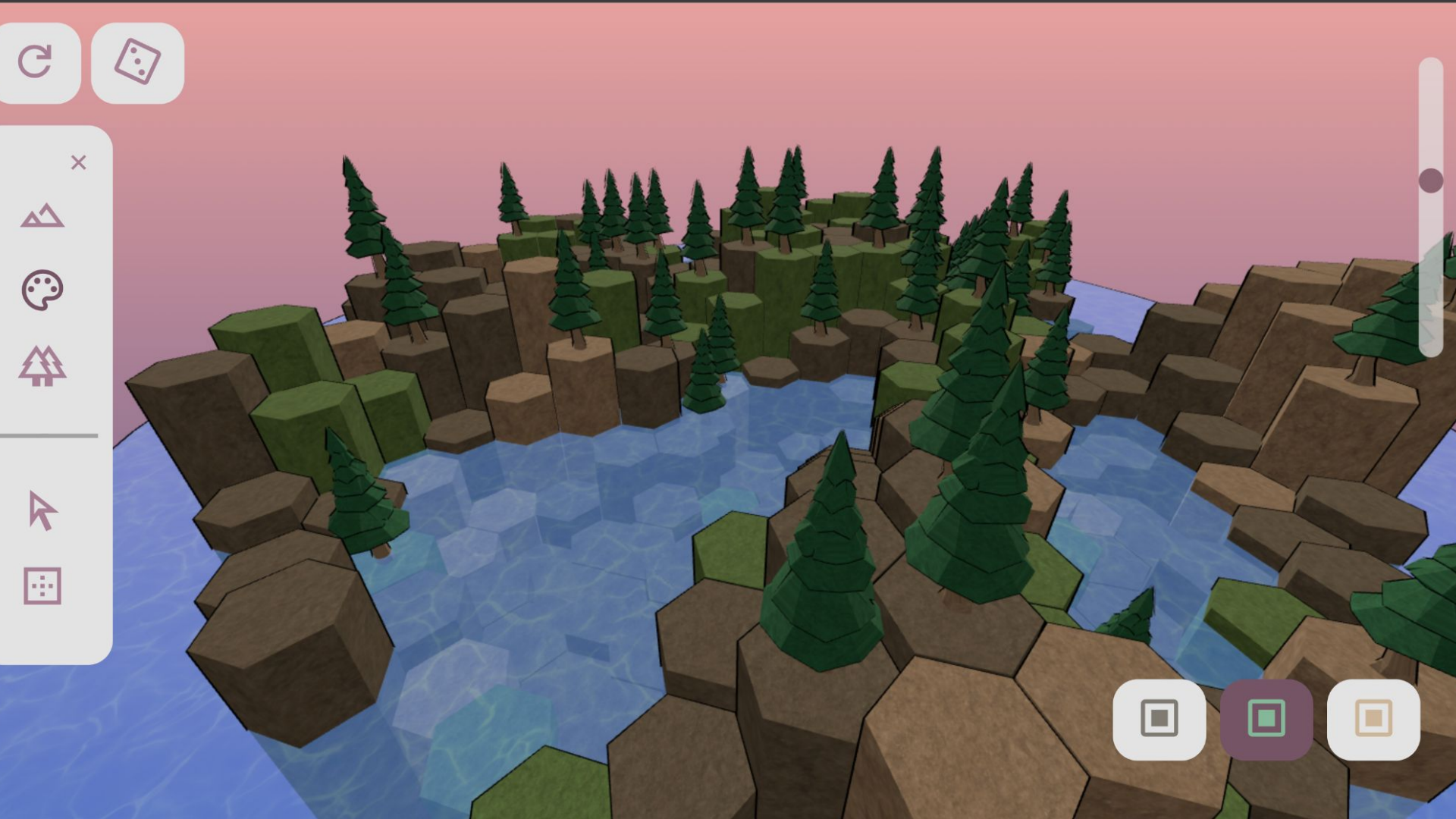


Gallery









Next Steps

More UI Elements

Next, we plan to enhance HexWorld by adding new features like a **slider** for adjusting the size of the island, allowing for more customization. We'll also expand the **objects users can place on the island**, such as buildings or animals, and introduce **additional textures** for terrain to increase visual variety. Finally, we aim to implement a feature for users to **easily screenshot or save their creations**, enabling them to preserve and share their unique landscapes.

Practical Extensions

To expand HexWorld into a tool for real-world map generation or video game level design, we could **integrate real-world geographic data to generate accurate terrains**, such as elevation maps or climate zones, making it suitable for applications like virtual tourism or simulations. For video game levels, we could **add gameplay-focused features** like strategic terrain placement, dynamic environment interactions, and customizable difficulty based on terrain types. Additionally, we could **refine the procedural generation algorithms to create more complex, interactive, and scalable maps** tailored to specific game genres, from open-world exploration to tactical strategy games.



Thank You