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Project 1: GenWorld

After sharing our initial ideas, our group decided on one that would allow both designers and computer scientists to contribute as much as they can. This decision resulted in GenWorld. GenWorld is a virtual environment that is procedurally generated, elements of the environment generate on the fly based on static and random parameters determined by algorithms.

In the beginning we envisioned an environment full of geometric structures and shapes in motion that grew and spawned off of each other, but that proved to be more difficult than initially expected, so GenWorld is an evolved version of our original concept. This evolution can be simplified into a virtual environment that uses procedural generation to spawn different natural elements contributing to an overall cohesive feel while still providing random and unique experiences.

The environment consists of a terrain with natural organic objects such as trees, grass, and boulders. The color palette and textures are non-naturalistic, and also generated at random with the implication of a complementary color palette. As you progress through the landscape new elements are generated to form new and unique landscape environments.

The original plan was to have everything be randomly generated, but having this component dictate the terrain presented the problem of not having a good point of reference while navigating the terrain, and the addition of water on our terrain would not be possible with the random generation (We wanted to include the water effect for aesthetic appeal and it serves as the connection of our abstract environment to its real world intent). It is for these reasons we decided to standardize the terrain and remove the randomly generated aspect.

The trees are rendered vector lines that spawn off of each other in random increments of 45 degrees. Originally we had 3d modeled boulders to accompany the

trees throughout our terrain, but the look of the boulders next to the line trees seemed detached so we rendered the boulders as 3d wire frame objects to bring a more cohesive element to our project. The grass are renders similar to the trees but have a height limit so they do not spawn as tall as the trees. All of these assets are generated at random on the terrain.

The project is an overall visual experience with a unique "explorable" landscape each time the application is launched. Movement is based on a first person camera where the user could simulate walking and jumping, and adjust the camera view direction with the use of the navigation wand.