Jared White

IGME 202, Section 5

***Assignment:***

Project 1: Random

***Description:***

The project assignment was to make a randomized scene in Unity to demonstrate how random values can help make games feel natural, as well as to utilize and practice different methods of random applications.

***User Interaction:***

The user interacts with the program by running the program and exploring the randomized setting. The user is first introduced into the project through a static camera, and the left and right arrow keys can be used to cycle through 5 different viewing camera of the project, each showcasing a different feature or view.

Pressing the ‘F’ key will allow the user to enter and leave First Person Mode, in which the user can explore the terrain in first person using the mouse and arrow/WASD keys (as well as using space to jump and shift to sprint).

***“Above and Beyond”:***

The “Above and Beyond” feature for this project was the implementation of a dynamic water plane as a plane within the scene. Within the TerrainGenerator class, a CreateWaterPlane() method is used, which creates an entire object in the scene programmatically and dynamically – meaning, that if the size or resolution or location of the terrain were to be altered, the plane object would be created to dynamically fit the size of the terrain created.

The WaterBehavior script is a script that is used to make an object behave as a water plane. All of the vertices’ y-values within the object will use Perlin noise to make a ‘bobbing’ effect, and the origin for sourcing the Perlin values, and the direction the values shift in will change within a randomized range every time the program is run. (Meaning that the speed of the water bobbing and choppiness/smoothness will be randomized each time the project is run.)

In addition, not only does the script also cause the texture of the water plane to be animated with an offset, exploring underwater while in first person mode will apply a blue fog overlay effect to the camera, based on depth below the surface of the water.

The random object generation script and the non-uniform random scripts also utilize the water plane in their creation of objects. Optionally, LandObjects can be put into those scripts, and when those objects are randomly generated and placed, they are generated on some point on the terrain that is *ABOVE* the maximum “bob” height of the water. They will never be beneath the waves of the water plane object.

(Side note – I had fun applying the WaterBehavior script to a cube.)

***Known Issues:***

Just about every form of case checking that I could think of, I took care of. The user can, however, run off the edge of the terrain in first person mode, and fall for infinity.

**LINKS TO BORROWED ASSETS:**

Water texture: <https://dab1nmslvvntp.cloudfront.net/wp-content/uploads/2011/08/02-cze.jpg>

Jungle grass: <http://wallpaperswa.com/thumbnails/detail/20121226/jungle%20grass%20textures%201500x1500%20wallpaper_wallpaperswa.com_92.jpg>

Trees: <https://www.assetstore.unity3d.com/en/#!/content/50418>

Goblin: <https://www.assetstore.unity3d.com/en/#!/content/6314>

Dinosaur: <https://www.assetstore.unity3d.com/en/#!/content/45319>