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Date: February 18th, 2025  
CS 330  
Professor Shaykhian

CS330 Final Project Reflection

For my 3D scene, I built a beach island to show my love for the ocean. I wanted to make a simple but nice-looking tropical spot, which included a grass island with a wooden hut on top roofed with metal. I did include a beach ball, as well as the water textured plane. I picked these objects because they let me use different shapes and show off textures, lighting, and camera movement around the island.

The island is a box flattened and stretched to make a ground surface for the hut which was made with a box. I used a pyramid for the roof, a sphere for the beach ball, and the water is a plane stretched out to make a vast ocean for the scene. These shapes have textures to fit the environment, the hut being wood, the roof is metal, the island is grass, and the plane is water. I made sure the textures fit well so nothing looked weird or out of order. I think I could’ve extended the roof and added some pillars to make it cozier, like a porch in the picture.

Lighting was important and one of the hardest parts in this project for me. I used several lights to not have much darkness because for my scene to be in the middle of the ocean representing tropical life, there is lots of light. A direct light to act like the sun. The sunlight made shadows and reflections, especially on the metal roof, while the other lights help luminate the scene to show the metal roof and waters reflection. I think I could’ve toned down the lighting, making it less reflective.

To let users move around the scene easily, I followed the previous assignments and set up a camera that moves forward, backward, left, right, up, and down using the WASD keys. I also set up Q/E for vertical movement. The mouse lets users look around, and the scroll wheel changes movement speed (this was also a difficult task). I added a way to switch between perspective and orthographic views by pressing the P/O keys, so users can see the scene in different ways.

I kept my code as clean as possible, following the template from previous modules. Which made it easy to follow, other than troubleshooting, which some errors arouse, making me claim in another file or something of that sort. I used certain formatting like comments like the ones we used in pervious modules. I made different functions for creating objects, adding textures, setting up lights, and handling the camera. This way, the code is organized and easy to change if needed. Creating the texture file and making sure I was pulling from the correct directory was tough.

In the end, my beach island scene turned out well, I think. It has different 3D objects, textures, lighting, and a working camera. The hut, water, and beach ball make a simple but fun tropical setting. This project helped me get better at using OpenGL and understanding 3D graphics. I learned a lot about how textures, lighting, and movement work together to make a scene look good and feel interactive. I hope to continue this scene and expand my knowledge of OpenGL. Thank you, Professor Shaykian, for grading my work proficiently and stating what I could do to make my scene better.

Attached below is my 3D island scene.

