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CS 330 Comp Visualization and Graphics

Module 7 Final Project

Project Reflection

The scene I recreated in this project was a golf course green in the foreground with a pond and fountain just behind it and a hill further behind in the distance with trees along the horizon line. This scene contained many complex shapes which required that I pay close attention to the size and scale of the object I used to maintain the correct look of the scene. I began by establishing a ground plane to place all my objects on top of which I used the plane mesh scaled up to cover the distance I thought I needed for the scene. My next goal was to begin recreating the green and all the objects on it. I started by placing a flattened cylinder along the y-axis which I then made into more of an oval shape with changes to the x and z-axis scales. I then placed a very small cylinder at the ground level which I chose not to texture and instead left black to represent the cup the flagpole would sit in. The flagpole was another cylinder which was the opposite process of the green because it needed to be stretched along the y-axis and shrunk along x and z to make it thin and tall. The flag and ball were the last touches to finish the green which were simple shapes being a sphere for the ball and a box mesh for the flag shrunk along the z-axis to make it thin like a flag.

Once the foreground was completed, I started working on the ponds and fountain. The ponds were easy enough to recreate using the same method and mesh as I had used for the green. For the fountain I had decided to use a cone but had to rotate it to be upside down in order to have it wider at the top like the fountain. I used a torus to try and recreate the ring on the pond surface of where the fountain was splashing back down, and I think it was a close enough match to the image however I wasn’t fully happy with it. The only remaining shapes I needed to recreate were the bushes, trees, and the hills. The foreground hill I ended up using a sphere that I placed below the ground plane to smooth out where the hill would meet the front pond as well as the pond placed further back. Next, I took a cylinder and rotated it onto its side to represent the fairway in the background and how it seems to move back and to the left of the original image. To recreate the trees, I needed to combine two mesh shapes which I did by using a cylinder for the tree trunks and a sphere and place them so that the sphere would sit on top of the cylinder. Finally, the bushes next to the pond were just the spheres I used for the treetops but placed below the ground level to appear more like a bush.

The controls for navigating around this scene use a combination of keyboard and mouse. The keyboard uses the W, A, S, D keys to control the movement of the camera along the x and z axis while the Q and R keys control y-axis movement. The mouse movement input changes the direction the camera is looking without physically changing the camera location. The combination of these controls allows you to fully navigate the scene in a manner like most first person view video games. The mouse scroll wheel also acts to speed up the speed of the movement of the camera as well as slowing it down. I didn’t really create any custom functions for this project but I did make use of a few for loops to help place the trees along certain objects like the cylinder hill top and the ground plane moving from the green to the hill to help close the scene in a bit and not just have a ground and horizon plane when looking left or right.