7-1 Final Project

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A computer on a desk

Description automatically generated

When creating a plan on how to execute my scene the first step I did was decide what 3D shapes I would need to make my scene. For the desk I would need multiple boxes and cylinders to make the legs. The plant was made from a tapered cylinder that was rotated, cylinders for the stems, and cones for the flowers. The monitor in the scene would need a box, a plane to create the screen, a cylinder, and another box for the stand. For the desktop I would need a box with three cylinders to create the fans. Lastly the keyboard would need to be a box. In the end I also created a mouse out of a couple cylinders and a sphere, and a mouse pad out of a plane. I also created a room to place my scene in, which consisted of four walls.

When executing my design I started with the room, built the desk, and then did one element at a time. The plant, lamp, desktop, monitor, keyboard, mouse, and mousepad. As I finished each object I would add patterns, colors, and textures as needed. When using boxes, I used code that allowed me to select a pattern or color for each side. For the desktop this allowed me to put a pattern on one side that looked like the inside of the computer. For the rest of the sides, I used color. For the side with the pattern, I made a glass texture so that I reflected lighter than the other sides of the computer.

When choosing lighting for my scene I chose to make the lamp, because it gave me a base location to place my first lighting option. The other two lights were used to create a glow from the monitor and desktop. Like in my image, the light in the room is not vary bright, so I chose to make the lights have little to no ambient, darker diffuse, and a little brighter ambient, but not completely white. This allowed my light to reflect, without being to bright on my scene. I also used textures so that the reflection of the light would affect each object differently. For the wood on the desk, I wanted a little bit of shine, but not too much, so I created a wood texture that had a lower shininess, so the shine would spread more across the surface, rather than be a harsher direct shine.

To navigate the scene, I set up mouse and keyboard functions. To move around the scene, the user can use the keyboard buttons W for forward, S for backward, A for left, D for right, Q for up, and E for down. To control the speed of the movement of the camera, the user can scroll the wheel on their mouse forward to slow down the movement and scroll backwards to speed it up. I also used the keys O and P to create an Ortho and Perspective view of the scene. Each of these has their own setting to adjust the camera so the user doesn’t have to move to those locations themselves. They can click the different views and are automatically taken there,

Most of the code in my project I was able to use over and over, with slight adjustments to make each object and setting. Each time I created a shape for an object in the scene I would copy that exact code and paste it. Then I would change the shape and make a few location adjustments so that it would be easier to combine the shapes to create the object I was working on. I did this all through the project so that I would not have to keep scrolling back and forth throughout my code to determine the location I needed to place a shape. For example, I took the plant vase and pasted it to create a desktop. I changed the shape and moved it to the right to sit on the opposites side of the desk. Then I made the necessary adjustments to change the size and appearance, and a few more location changes to make up for the size. This process saved me time on the entire project.