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Final Project Design Decision

CS-330

Graphical design is something that is completely out of my comfort zone, but I was excited to take on the challenge to see what I could do. When initially choosing objects to use as a 2D reference, I gravitated toward objects that were simple in design but could test my programming skills to make sure I recreated the original image. My scene is 4 objects placed on a plane, all with different textures that can be seen by manipulating the camera with the built-in up-down, forward-back, and swivel controls. To manipulate the objects to their correct locations, I had to include different processes within the render function to get them to match the original image as closely as possible. Taking on this project was daunting, but I learned a lot and although the outcome could use some fine-tuning, it’s safe to say that I am satisfied with the results.

Choosing objects to recreate in a 3D space was difficult, but I ultimately chose a candle with a lid, a Rubik's cube, a glasses case, and a docking station. I chose these objects because they were simple shapes so I knew that I would be able to recreate them with ease and apply textures to them that closely resembled their real-life counterparts. The only object that was difficult to program was the candle, and this was because I struggled with creating a lid that would accept textures properly. In the finished product, I went with a planar circle, which accepted the texture and sat properly on top of the candle (cylinder). Programming each object was exciting in a way because I could make the changes and see them instantly as I debugged and ran the program. Making sure that I was able to adjust height, width and length was very important to me.

Navigating the scene is straightforward, there is an up-down (Q & E), left-right (A & D), and a forward-back (W & S). With this movement, You can fully navigate the scene get close to the objects, and view the textures that I placed on each one. Making sure that I had full mobility of the scene was crucial because it allowed me to get up close to the objects I was placing and make sure that they matched the 2D image as closely as I could get it. If an object was clipping through the plane, I would be able to move the camera down and see how much I needed to move the object up so it would look relatively natural. The same goes for textures, if a texture wasn’t mapping correctly or had imperfections, I was able to get up close and inspect and either change the texture entirely or just change the code where it was mapped to the object.

Within the rendering function, I implemented the ability to change the location, scale, and rotation of each object. Including these custom functions allowed me to move each object and change each parameter with ease. Adding these functions gave me the ability to manually change a few numbers to get the object in the right place, rather than completely reconfiguring the object to behave how I wanted. I could have added more functionality to make other tasks easier, but overall I was satisfied with the outcome.

In tackling this graphical design project, I ventured beyond my comfort zone and embraced the challenge. Selecting simple yet meaningful objects as my references, I navigated through programming intricacies to recreate them in a 3D space. Despite encountering hurdles, each obstacle was met with perseverance and problem-solving. While acknowledging room for improvement, this journey has expanded my technical knowledge and deepened my appreciation for graphical design.