Matthew Dziewiecki 10/17/2024

SNHU CS330

Final Project Reflection

* Justify development choices for your 3D scene. Think about why you chose your selected objects. Also consider how you were able to program for the required functionality.

The reason why I chose my selected objects is that I wanted to make a scene where it best described myself as an induvial and my interests. I was also wanting to make my final project themed as the courses ends closer to Halloween. My scene consists of a LEGO skull storage container which related to the Halloween themed, and one of my hobbies is building LEGO models. The decorative pumpkin in the photo also has a relation with Halloween, and I wanted to include a low reflective material in my scene to represent the differences between different materials. The Gameboy was the first video game handheld that I had while growing up and that’s how I developed my other interests into video game development and coding. The mug I included in my scene is my favorite mug that I use for drinks, soup, etc. while I did at my computer to either code or play videos. I was able to program the objects through continuous trial and error throughout the milestones and the week of the final project. I kept running the code, tweaking, and repeating that process until I got my 3D scene to be a close resemblance to the photo in terms of where each object is located, size, and mimicking the lighting as close as possible.

* Explain how a user can navigate your 3D scene. Explain how you set up to control the virtual camera for your 3D scene using different input devices.

The user can navigate through my 3D scene by using the W/A/S/D keys to go forwards, backwards, left and right. Allowing the user to view the scene at different angles. The user is also able to use the Q/E keys to be able to move the camera up and down within the scene, and the O/P keys allow the user to change the camera in between perspective and orthographic projection, keeping the camera at the same orientation and the mouse scroll wheel can be used to adjust the speed of the camera when moving the camera’s position. The camera direction can also be adjusted by moving the mouse itself allowing the user to move diagonally as well.

* Explain the custom functions in your program that you are using to make your code more modular and organized. Ask yourself, what does the function you developed do and how is it reusable?

The customized functions that are module in my program is the camera functions being able to navigate through the scene along with the lighting which can be reused for other projects without needs to adjust existing code greatly. The way that I ensured that my code was more organized was loading in the lighting, the textures, and the shapes before beginning to draw the shapes. To keep the code organized, I would create the shapes all needed to recreate one object in the chosen photo before I would move on to the next. I would then properly comment on what each shape represents to create that specific object. I also organized the code by creating comment line breakers to separate the code before each shape was created for the scene. This was to ensure that if I needed to go back into the code to tweak a certain shape to my liking, I knew exactly where I needed to go instead needing to spend time searching and figuring out which shape represents a part of that object. Another function I customized and would be able to be reused is the loading the shapes in function along with setting up the textures which would only need small tweaking the texture file names and the material name if used for another program.