**Project Reflection**

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CYB-330 Comp Graphic and Visualization

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June 26, 2023

**Justify development choices for your 3D scene.**

*As you write, think about why you chose your selected objects. Also consider how you were able to program for the required functionality.*

My choices for my 3D scene allowed me to learn a lot about OpenGL without being overwhelmed with the difficulty involved in complex objects. My primitive object was a protein bottle, a rectangular object with a cylinder at the top for a cap, I believe that was a perfect choice for someone with basic knowledge in C++.

I kept my code as simple as possible, basing it off the sample code we were given close to the beginning of the class. I created a new texture for each object that required a different image, and applied shaders.

**Explain how a user can navigate your 3D scene.**

*As you compose your thoughts, discuss how you set up to control the virtual camera for your 3D scene using different input devices.*

WASD are the keys used for horizontal, vertical, and depth camera navigation. I also bound Q and E to control the upward and downward movement. I was trying to bind a key to toggle between orthographic and perspective displays, however I couldn’t do so successfully.

The scroll key is used to adjust the speed of the movement, whereas the cursor controls the perspective, an easier way to think of this is first person view.

**Explain the custom functions in your program.**

*Ask yourself, what does the function you developed do and how is it reusable?*

My functions are reusable and that’s what I love about keeping code clean and functions separated accordingly. I separated the creation of my cylinders and sphere from the rendering functions, which not only kept my code from being confusing, but also kept it neater and more understandable. I also separated my vertices with comments denoting which side of my cube was being created at a time and separated all my shader/texture sections to their objects.

I was not able to create light into my environment successfully, and I still don’t understand why, I tried everything, I changed the shaders, redid all of the texture creation, even removed textures and left only shaders, my environment would only stop running or look indistinguishable from my photo, I don’t know what I did wrong but I strongly regret not being able to figure it out in time.