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August 13, 2022

CS-330-Comp Graphic and Visualization

**Reflection**

* **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**.

Having experience in graphic design, I’ve very familiar with creating 3D scenes. The biggest difference for this project was instead of using a 3d program like Maya or 3DMax, I had to draw the scene by coding in visual studios. Was tasked with selecting an image that I would like to recreate. I choose the scene because it had a variety of shapes that I could create using primitives. The first task was to create the shapes using vertices and triangles. Some shapes were harder to recreate than most. One object that was hardest to create was the coffee beans, unfortunately, wasn’t able to get them right, so had to omit them. The second shape that I also had to omit was the utensil, the thinness of the object caused it to look like a 2d object. Even trying to add texture to it, didn’t help. The most complicated object I create was the teacup. It involves creating a cylinder with a handle. Keeping track of all the vertices is something I should work on because the handle didn’t come out as perfect as I like. When I finished the Tea, I had a foundation that made creating the saucer easy. I only had to adjust the height and scale of the code I had already written The books, sugar cube and the plane was the easier shapes to create. Since I was unable to create the sphere shape, I added a pyramid shape to the scene so that it contain four primitive shapes.added a pyramid to satisfy the After having all the shapes, I went on to add textures and lighting to the scene.

* **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.**

The User can easily navigate my scene by controlling the camera. This was coded by using a combination of if statements and input devices, which are the mouse and keyboard in this case. Moving the mouse-controlled where the camera is facing, while the keyboard clicked pan the camera in a different direction. An example from my code would be to move the camera left and right, the user would have to press the A and D buttons. Also added was a way to switch between Perspective and Orthographic views.

* **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?**

There are custom functions throughout my programs. From creating the shapes, shaders and casting light, many of these functions can be reusable in other projects. I mention the camera movement in the previous paragraph. The functions use to move the camera could be usable in projects that may not be as graphic orientated.