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CS 330

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7-1 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.*

My choices for my 3D scene were simply because I am a gamer, so I wanted my scene to reflect one of my favorite hobbies. 3 of the 4 objects selected were basic shapes (the console, game cases, and batteries), while the other object (the controller) was a more complex collection of shapes. While I wanted the project to be most simple, I also wanted to challenge myself a bit with the creation of my controller object, and it was absolutely challenging to construct the controller to the best of my abilities.

***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.*

For the user to navigate the scene, camera control was setup via the method ProcessKeyboardEvents. This method included a way for the user to pan inward using the “W” key, outward using the “S” key, left using the “A” key, and right using the “D” key. Additionally, this method allowed for the implementation of panning up in the scene using the “Q” key, and down using the “E” key. Lastly for the ProcesskeyboardEvents method, there was options for viewing the scene in a 3D view (projection) using the “P” key and viewing the scene in a 2D view (orthographic) using the “O” key.

Along with the panning of the camera and the different scene views, two other methods allowed for camera movement within the scene, the Mouse\_Position\_Callback method and the the Mouse\_Scroll\_Wheel\_Callback method. The Mouse\_Position\_Callback method allowed the user to move around the scene while panning for a full 3D view of the scene while the Mouse\_Scroll\_Wheel\_Callback method allowed the user to change the speed at which moving around the scene occurred.

***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 many functions within the project that are reusable. One prime example is the lighting functions implemented within the SetupSceneLights method. By changing the variables within the function, you can change the color, focal strength, and intensity of the lighting to produce differing shadows, highlights, and reflections in the scene. Along with this method, the DefineObjectMaterials method allowed for the implementation of multiple different materials to help define the way the lights reflect, produce shadows and/or highlights off the objects in the scene. By keeping both methods next to each other and essentially relying on one another to create realistic objects within the scene, it keeps the code organized modularly.