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SNHU CS 330

[CS-330 Comp Graphic and Visualization](https://learn.snhu.edu/d2l/home/1426437)

**Reflection**

**Justify your development choices for your 3D scene.**  
in selecting objects for my 3D scene, I aimed for variety and complexity to challenge my skills with OpenGL. The spherical object with a layered texture demonstrates my ability to implement advanced surface detail, whereas the cylindrical shape with attached rings showcases my understanding of hierarchical modeling. I chose a muted, concrete texture for the ground plane to contrast with the objects and highlight their individual textures and lighting effects.

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

I've enabled user navigation through keyboard and mouse inputs, allowing for an exploration of the scene from multiple perspectives. Users can move the camera around using the WASD keys for a first-person viewpoint, while mouse movement is linked to camera orientation, providing a smooth and natural way to look around. This setup is akin to common 3D video game controls, ensuring that users find the experience intuitive and engaging.

**Explain the custom functions in your program that you are using to make your code more modular and organized.**

My code is structured around custom functions that enhance modularity and readability. For instance, the **loadTexture** function abstracts the process of loading and setting up textures, which is repeatedly used for each textured object in the scene. Another function, **setupLighting**, configures the scene's lighting, ensuring that shadows and highlights contribute to the realistic appearance of the objects. These functions can be easily reused for any new objects or lighting scenarios I might want to introduce in the future.