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Reflection

For my CS 330 project, I created a 3D scene centered around a single 8-sided die (1d8), inspired by Dungeons & Dragons. I chose this die because it has an interesting shape that challenged me to carefully build and render its unique geometry. Working with the 1d8 allowed me to dive into modeling and rendering a complex object in OpenGL.

To make the die look realistic, I added textures to give it a specific material finish, making it appear more like an actual D&D die, whether that be metallic, stone, or plastic. I also set up lighting to add depth, with shadows and highlights that bring out its unique shape. This not only makes the scene look better but also gives the die a sense of weight and presence.

For navigation, I set up a virtual camera controlled by the mouse and keyboard. The scroll wheel lets users adjust the camera speed, allowing for both close-up details and quick scene exploration. The Q and E keys control vertical movement, letting users move up and down, which provides a true 3D view of the die from every angle.

I kept my code organized and modular by creating custom functions for specific tasks. For example, I developed functions for initializing and rendering the die, which made it easy to adjust or refine without affecting the rest of the code. I also used separate functions for handling lighting and texture applications, making it easier to update these aspects in one place rather than throughout the code.

Overall, I’m pleased with how the project came together. Working on the 1d8 die gave me a strong foundation in 3D graphics, helping me understand modeling, textures, lighting, and interactive controls in OpenGL. This project has not only met the assignment requirements but also sparked my interest in further exploring 3D graphics.