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Enhancement One: Narrative

CS 499

For Enhancement One in my ePortfolio for this Capstone Course in Computer Science, I selected a previous OpenGL 3D scene project from CS 330: Computational Graphics and Visualization, taken around December 2024. This artifact demonstrates my ability to translate real-world graphics into a three-dimensional environment. I chose this artifact for Enhancement One to highlight my proficiency in C++ programming, as well as my understanding of software design and engineering principles. The project involved building upon existing code, adjusting lighting, textures, and colors to improve functionality. Additionally, incorporating various shapes and lighting effects showcases my growth in software development and my knowledge of C++ as a programming language.

While the artifact has been successfully rendered, there are still areas for improvement. Transitioning the project from a previous virtual environment at SNHU to my local system using Visual Studio requires extensive background work to ensure proper build and execution. This process involved configuring the environment and making necessary modifications to the codebase. During initial rendering, I encountered significant issues such as missing textures, overly dark lighting, and black shapes. I addressed these challenges by increasing overall scene lighting, enabling textures, and adjusting material properties to reflect correctly. I also added an additional shape to the scene to further demonstrate my ability to design and develop complex 3D environments.

Currently, I believe I am progressing towards meeting the course outcomes, including the ability to design and evaluate computing solutions that solve specific problems using appropriate algorithmic principles and standards, while managing trade-offs inherent in the design process. I have successfully incorporated additional lighting and objects into the scene. Moving forward, my goal is to create a more polished and fully functional render of the scene, eliminating remaining issues such as blacked-out shapes and inadequate lighting.

The primary challenge I faced during this enhancement process was ensuring proper initial rendering of the 3D scene. A considerable amount of backend work was required to guarantee initial functionality. Through this experience, I learned the importance of debugging and continuous testing in software development and design, which are essential practices for preventing issues in the future

Current Render:

