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CS499

Narrative for SceneManager.cpp

Artifact One

This artifact is SceneManager.cpp, which comes from CS330. The purpose of this code is to render 3D objects in a scene. This artifact was originally created in October of 2024. This program is coded in the C++ language. This program consists of many classes that all work together to render 3D objects, apply textures to meshes, apply light sources to the scene, and move around the scene with a camera using keys and the mouse.

I selected this artifact to be included in my ePortfolio because it was one of the more complex projects I have worked on during my time at SNHU that is in the software design and engineering category. The specific components in the artifacts that showcase my skills and abilities in software development is the addition of more meshes(objects) in the 3D scene and rendering them with textures, enhancing the textures on past objects to make the scene look more realistic, and enhancing the lighting of the scene. The enhancements improved the artifact as it made it more advanced with better textures, more objects, and better lighting. The enhancements made the 3D scene more realistic. Some specific skills I demonstrated in my enhancement was making the scene more realistic and mastering rendering of 3D objects using OpenGL by creating advanced objects.

Some things I learned while creating and enhancing the artifact was troubleshooting. Opening a .sln solution from a previous class that was completed on a Virtual Machine made it hard to get it running again, there were many bugs in the code that had to be resolved by rewiring some paths as well as importing libraries. After spending the past three weeks trying to get this program running from my zipped final project in CS330, I decided to try to replace the OpenGL sample SceneManager.cpp that was given as a starting point in CS330, with my SceneManager.cpp that I created in the final project of that class. This resolved the issues, and I was finally able to work on my .cpp file. The artifact was improved by creating a background with a realistic texture of brick on it, creating a cup with a realistic texture of ice on it and fixing the light sources. The course outcomes that I met with these enhancements are design, develop, and deliver professional-quality oral, written, and visual communications that are coherent, technically sound, and appropriately adapted to specific audiences and contexts. Design and evaluate computing solutions that solve a given problem using algorithmic principles and computer science practices and standards appropriate to its solution, while managing the trade-offs involved in design choices. Demonstrate an ability to use well-founded and innovative techniques, skills, and tools in computing practices for the purpose of implementing computer solutions that deliver value and accomplish industry- specific goals. All of the other outcomes were not met in this artifact as they did not relate with this project. There was not any feedback to incorporate as I made changes to the artifact.