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SNHU

CS 499 – Milestone 4: Enhancement Three: Databases

**A. Briefly describe the artifact. What is it? When was it created?**

The artifacts that I re-modified to my project were the libraries for GLFW, GLM, GLEW, and GLAD. Earlier versions of these libraries were used in an earlier version of my OpenGL project, and I added the newer versions of these libraries during the start of CS 499.

**B. Justify the inclusion of the artifact in your ePortfolio. Why did you select this item? What specific components of the artifact showcase your skills and abilities in software development? How was the artifact improved?**

I added the newer versions of these libraries to my project for three major reasons. The first reason was because the older versions of these libraries were corrupted and prevented me from opening my project due to libraries such as opengl32.lib or glu32.lib. The second reason for updating the libraries was because I was able to add more features to my project such as GLAD allowing me to implement openGL version 4.5 instead of openGL 3.3 in my project, which allowed the project to have a better resolution. Also, the updated GLM library allowed an update on the mathematics being provided to the project. Lastly, the updated libraries for GLFW and GLEW allowed me to implement my project into visual studios 2022 instead of visual studios 2019, which allowed me to use a newer SDK version. I was also able to use the newer version of GLFW and GLEW to update my project from a x32 or 32-CPU system to a x64 or 64 CPU system, which allows my project to run faster and have better overall performance. The updates of these libraries allowed me to show my skills to use additional resources to find developed libraries to upgrade and update an already developed project to enhance it instead of starting over from scratch. I was also able to use other programs to help build the lib files such as using cMaker to develop the lib files for GLFW.

**C. Did you meet the course objectives you planned to meet with this enhancement in Module One? Do you have any updates to your outcome-coverage plans?**

The updating of the library files did meet my enhancement to change my project from a x32 bit to a x64 bit because it allowed my project to run faster by allocating more than 4GB of Ram while the project was running. Next, the updates allowed me to fix the corrupted lib files and they allowed my project to run with no errors.

**D. Reflect on the process of enhancing and/or modifying the artifact. What did you learn as you were creating it and improving it? What challenges did you face?**

During this enhancement, I ran into a challenge with the GLFW library when using a x64 binary to create the lib files. In order to properly create these lib files, I used cMaker to develop a build for the GLFW library and linked the library to the 2022 visual studios. I learned my libraries had to be updated in my project because I was using a newer version of visual studios and without updating these libraries, my project ran into multiple errors and failures due to linker issues.