**Briefly Describe the Artifact**

The artifact I selected is a set of files (Camera.h and Camera.cpp) that implement a camera system for use in a 3D OpenGL environment. It was created as part of my final project for CS-330: Computer Graphics and Visualization. The camera system is designed to handle user input and update the camera’s position and orientation using vector math.

**Justify the Inclusion of the Artifact in your ePortfolio**

I chose this artifact because it highlights my work with core computer graphics concepts like camera control, movement, and 3D transformation using vector math. Although I faced technical issues during this milestone, the logic of the camera system is sound, and I worked hard to try and get the necessary math library — GLM (OpenGL Mathematics) — properly integrated. This is an important part of working with larger C++ projects and demonstrates my effort to deal with practical setup and build challenges.

**How was the Artifact Improved**

My main focus was trying to get the GLM library recognized in Visual Studio. The program was not recognizing commands like glm::vec3 or glm::mat4, which caused many errors even though the code logic itself was correct.  
  
Steps I took to address this included:  
- Adjusting the Additional Include Directories in the project’s C/C++ settings.  
- Rearranging the file structure to place GLM in a location where it could be referenced (External/glm/glm-master).  
- Learning how Visual Studio handles project paths and relative directory references.  
- Attempting to add the correct folder to both include and library directories.  
  
Unfortunately, I ran out of time before the issue was fully resolved, but I got very close and now have a much better understanding of how to approach this in the future. I plan to return to this setup and finish resolving it.

**Did You meet the Course Outcomes from Module One**

I made partial progress toward the outcomes I selected:  
  
Design and evaluate computing solutions: Although I couldn’t get the final build working due to GLM issues, the underlying logic of the camera system uses proper vector math and problem-solving techniques.  
Use of tools and techniques: I gained valuable experience with Visual Studio configuration, handling include paths, and setting up third-party libraries.

**Reflection on the Enhancement Process**

This enhancement taught me that setting up an external library in a large C++ project can be one of the most frustrating and time-consuming parts of development — even more so than writing the logic itself. It also showed me that knowing the theory or writing good code isn’t enough; configuration and project structure matter just as much.  
  
I now know how to check project settings like include paths, library directories, and understand why file structure and relative paths are so important. While I didn’t fully complete the enhancement yet, this experience has made me more confident in approaching similar setup issues going forward.