CS 499 Milestone Two

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For this artifact I needed to present something that would show off my software design and engineering skills. With this in mind I decided on my final project from CS 330, computer graphics and visualization, because I believe this to be one of the more interesting projects that I have created during my time at SNHU. My original plan was to convert the project over from OpenGL to DirectX but, as with life, plans change and instead I improved upon the project's complexity while also scaling up the model into a better visual representation of what it is supposed to be. I also took this opportunity to clean up my code by removing lines that were not being used but somehow slipped passed my initial review.

For the complexity of this project I started with enhancing the design of the bookcase. The original was made up of 48 vertices that resulted in flat triangles building the basic shape of a bookcase. You could tell what the object was but if you looked directly at it, the bookcase would disappear since each triangle lacked any depth. To fix this I increased the vertex count to 144 with the result being a much more life-like depiction of the bookcase, that can be viewed from any angle. Next I took to adding more complexity to the design by implementing a feature that I had missed out on in the original class. This is a switch to actively toggle the rendering perspective whenever the user wants by using the keyboard. To accomplish this I first set up my switch logic and implemented a function to determine if the button was pressed or not. Once that was up I set the “p” key to change between the perspective projection and orthographic projection. Then the real challenge manifested because whenever the orthographic projection was called the bookcase would disappear. After much trial and error I eventually found the right view coordinates that brought my bookcase into the camera view. Once both projections were set up and running correctly I then combed through the code to clear out any unnecessary lines. I found a couple of lines that needed to be removed and then adjusted my texture mapping on the bookcase. I believe by adding in the projection functionality, expanding on the complexity of the object, and refining my code really highlights my skill in software engineering and design.