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CS-499

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The Artifact

The artifact I chose to use for this enhancement is a project we worked on here at SNHU in class CS-330. In this class we learned all about using C++ to create 3-D objects and render scenes with them. The artifact being used specifically was created to display static shapes we created.

Justification

I wanted to choose this artifact because it demonstrates my ability to enhance a static image/render using algorithms and create something that is visually pleasing and more immersive. Below is an image of the original output from the code we created.

A group of colorful objects

Description automatically generated

As you can see, it is nothing special. Shapes sitting on top of shapes. To demonstrate my knowledge of algorithms, I added different features to the code. For starters, I implemented a technique that renders and manages frame rates. Each of the shape has a pulsing feature that moves and increases size. Managing the frame rates of these shows the ability to create a well-management function. The pulsing also demonstrates the ability to create smooth transitions. Using linear interpolation, I was able to create a visually pleasing animation.

Another feature that was added is the ability to use a keyboard and mouse to navigate through the scene. This is by far the best way to properly show input algorithms for movement in a scene.

The objects pulsating and keyboard controls aren’t the only additions to the original code either. I also included a rotation animation to all the shapes to show off my knowledge of trigonometric functions. This provides each shape with a rotation to show off the 3-D objects so that each side can be appreciated. Below is the output of the new and enhanced code.

A group of objects on a black background

Description automatically generated

Course Outcomes

From the beginning, I knew I wanted to work on this assignment since I finished CS-330. There was so much opportunity to make the scene better and show off my newfound skills. Personally, I feel like I did meet the course outcomes and finished the assignment the way I wanted to.

Reflection

Like my project before this, I needed to re-write a lot of the code that was already set in stone. That part was the most time-consuming. Especially with the specific shapes being used and the math that needed to be used to get the animations to work properly. It was a nice change to work on something that needed a lot of tweaking repeatedly to get the right scene.