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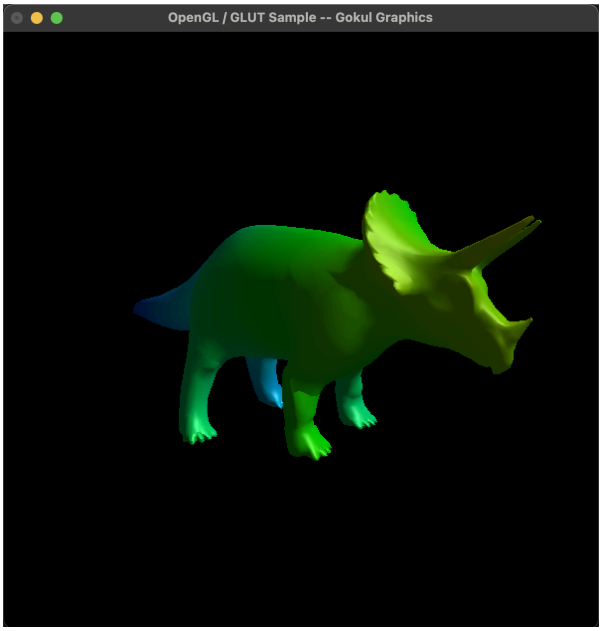
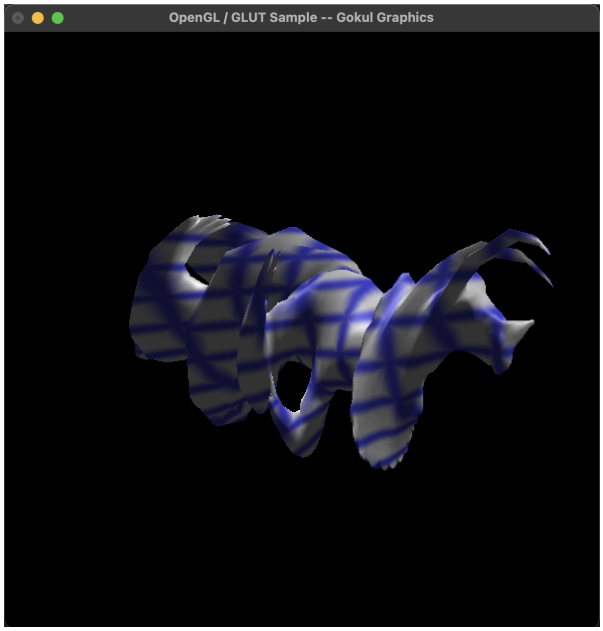
CS557 - Computer Graphics Shaders

Project #7B: **Twist**

Description:

I am using a Mac so I did the 7B version of the project. My shader code works by transforming the 3D object and then adding a dynamic visual pattern. In the vertex shader, each vertex is "twisted" around the x-axis—the twist amount depends on both a uniform variable (named twist) and the vertex's x-coordinate. This means that vertices further along the x-axis are rotated more, creating a spiraling or twisted effect, and the normals are rotated accordingly to maintain correct lighting. This can be done for other 2 axes as well but I did only for x. In the fragment shader, the code creates a striped pattern by calculating smooth pulses along both the vertical (x-axis) and horizontal (y-axis) directions using the model coordinates. These pulses are combined so that the stripes appear as a blend of two colors, which can be dynamically altered. Additionally, if chroma depth is enabled, the code maps the depth of each fragment to a rainbow color, adding another layer of visual complexity. Lighting is then applied by calculating ambient, diffuse, and specular components, resulting in a final, well-lit image with both twisting and striped effects.

Screenshot:

ChromaDepth	Twist with Stripes
	

Video Link: https://media.oregonstate.edu/media/t/1_lfukyz0o