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Computer Graphics Project 5 - Shaders

This is the first project where I didn't keep all of the old project objects in the scene. I kept them out because the per-fragment lighting I included in my shaders from the sample code would have required a good amount of extra work to incorporate with my multiple, moving lights from the last project. In addition, I spent a good amount of time refactoring the project code into multiple header files rather than including the source files directly, and so with the time I had left after these steps, I wanted to focus on the shaders more than porting all the old work over. For this project, the vertex shader produces spikes from a sphere that can animate in and out of the surface or just out from the surface and back to it, and the fragment shader creates a checkerboard pattern with wavy lines, where the number of squares on the checkerboard is controllable, the lines can wiggle on an animation cycle, and two different color modes can be applied to the object. I have two spheres in the scene, but both have the same shaders, one is just more shiny than the other. As required, there are a few custom keybinds:

- space, f, and o all play/pause the spheres from orbiting the origin
- z plays/pauses the vertex shader spike animation, Z cycles between the two options
- x plays/pauses the fragment shader wavy animation (only one option, sorry)
- c enables/disables the fragment color option, C cycles between the two options
- w/s inc/dec by 2 (W/S inc/dec by 10) the number of checks on the checkerboard
- r resets the program state back to the default

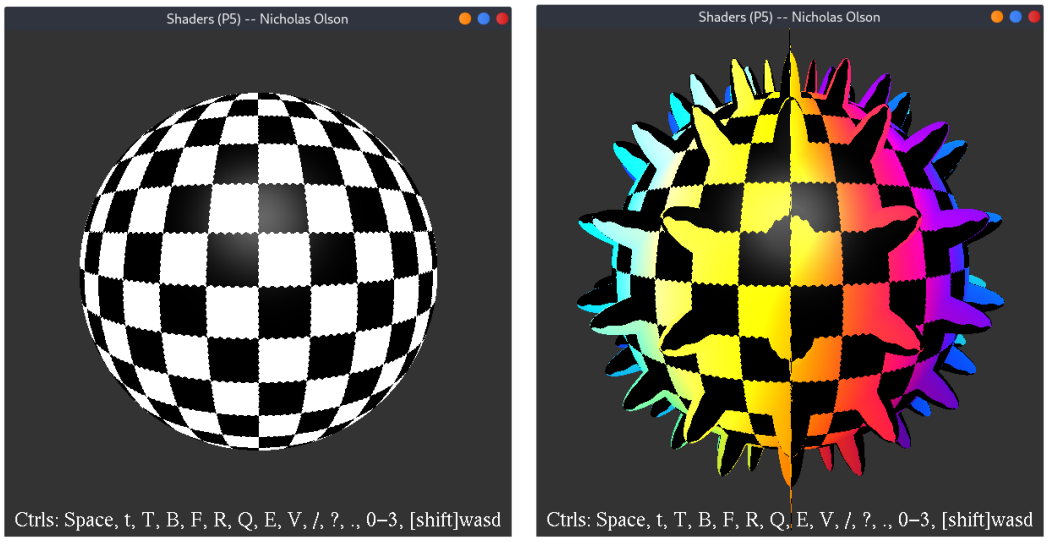

Figure 1: Screenshots of my program with the vertex and color animations off, and on

The video showing off the program can be found at this link.