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Computer Graphics Project 4 - Lighting

For this project I again added a few objects to my scene from the prior projects, this time including an updated free helicopter object from cgtrader (with the same free helicopter texture from OpenGameArt.org) and lit the scene with 4 lights (3 point lights and 1 spotlight). I was hoping to show how difference in vertex density impacts visual quality of lighting, as well as how different colors of light bounce off of different colors of objects. Currently, the distortion features from the prior project are disabled, but I might get them back up and running later. I have two high-vertex spheres, one of which is dull and the other shiny. These 2 spheres have smooth lighting whereas the other 2 spheres do not. These orbit the positive Y-axis along with 2 point lights (1 red, 1 blue), but at a slightly different speed than the lights. Other than these two, I have a stationary white light beneath the orbiting spheres, and a stationary white spotlight pointing down on the scene from an angle. As required, there are a few custom keybinds:

- f freezes the animations
- 0-3 toggle the respective lights
- b toggles between the old 2D and new 3D helicopter blades
- wasd, space, e, and . all impact the front sphere and optional axes
- r resets the program state back to the default
- / and ? toggle optional info and help strings

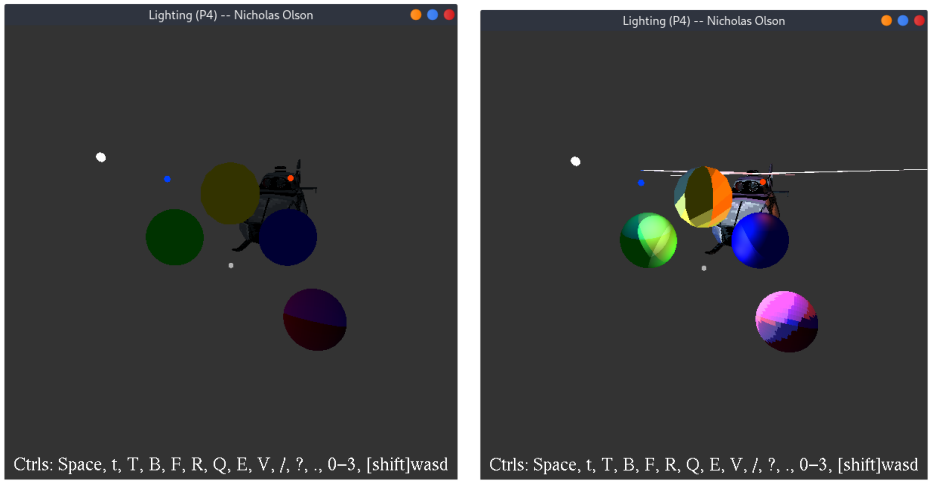

Figure 1: Screenshots of my program with all lights off and on

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