Design Decisions

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Justify development choices for your 3d scene:

My first choice was not giving in and using the glut framework, I wanted to try to complete all the objectives using the first learning modules dependencies. This made things far more difficult than I original anticipated. This is because most of the online resources I found are using glut and not the class frameworks. The only part I could not complete was creating a torus, once again trying to find resources on creating one where very difficult and I could not figure that out, so I resorted to using the pyramid from the learning modules, since I already had one textured from that, so I just needed to include its part of the code in my main source.cpp file. Next was making sure all the shapes aligned with the plane, or my wooden table. This was a bit difficult for the sphere and cylinder since they are different on the coordinate systems, but with a little playing around I got them where I wanted. Next was lighting, I just did 2 boxes of light above to simulate how my light is above my real table. With just enough ambient lighting to show some shadows and the other 2 lightings to Light and focus the middle of the table.

Explain how a user can navigate your 3D scene:

The user can navigate my using their mouse and keyboard. The main use of the keyboard is W, A, S and D for in, left, right and out. You can use Q, and E to move up and down as well with P to switch between the 2 different perspectives. The mouse is used to look around on the center camera point and the mouse wheel can control to movement speed when using the keyboard.

Explain the custom functions in your program that you are using to make your code more modular and organized:

The first custom function was creating code in the camera.h file on the mouse scroll wheel, at first you can scroll past 0 and this would switch the direction of the keyboard key you where using. Such as you could scroll left using A than slow down to 0 and past it is making it negative making you scroll to the right. I used

MovementSpeed -= (float)yoffset;

if (MovementSpeed < 0)

MovementSpeed = 0;

if (MovementSpeed > 60)

MovementSpeed = 60;

This would stop it at 0 and not allow it to switch directions.

The other custom code I used was creating a second light illumination effect, that required a second Phong set up, having to change all the attributes to be different but match in the next section so I was able to have two lights.

I wish there was able documentation for creating shapes such as the torus and other objects. Creating header and source files for those when just beginning is very difficult especially being newer to coding things in general.