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CS-330

Final Project

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Reflection

I chose the objects that I did for my scene because they are everyday items which I encounter on a regular basis, and none of them are overtly complex. With the exception of the French press, each object can be broken down into three 3D shapes or fewer. The basic 3D meshes included in the initial source files were sufficient enough to build accurate representations of the real-world objects in the scene.

The user can navigate the scene with keyboard input: The W and S keys move the camera forward and backward, respectively. The A and D keys pan left and right. The Q and E keys move up and down on the camera’s Y axis. I greatly reduced the default camera movement speed and the user can adjust this speed with the mouse wheel. Further, the camera angle can be changed by moving the mouse. Additionally, the camera perspective can be switched to orthographic view with O and back to perspective (default) with P.

I experimented with several default camera settings (position, angle, and zoom) to start the scene with a perspective in which every object can be clearly seen, and to more accurately match the photo that the scene is based on. I also tested a few different default camera movement speeds because the initial value seemed extremely sensitive and could make it difficult for the user to navigate effectively. The light effects in the scene are dead simple - one directional light from above the objects to represent the real-life kitchen lights shining down on the countertop.

The scene rendering functions in my program are organized such that related operations are grouped close together. The functions for loading texture files and defining materials used in the scene, for example, are all bundled together in the first half of the SceneManager.cpp file to clearly layout the assets that we will use when the objects are finally rendered at the end. Additionally, objects using the same textures or materials are bundled together to cut down on redundancy where possible. Finally, I included comments to clearly demarcate where each object’s rendering operations are laid out to make it easier to navigate the code for future modifications.