CS 330

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Reflection

The objects I chose to create for this 3D scene include a lighter, keyboard, Nintendo DSi, and pen. Each of these come with unique challenges that I believe highlight various skill sets as a 3D scene creator, including attention to detail, creative problem solving, and replication of a realistic environment. Creation of the keyboard involved many individual shapes, which needed to be spaced equally in a set boundary. The lighter introduced challenges of making an object that came with a unique design, as the shapes provided in OpenGL did not have custom parameters for the intricate top pieces. My favorite object to design was the Nintendo DSi, as I was able to use many smaller shapes to create highlighted features, like the power indicator lights and the camera lens.

Users can navigate the scene using mouse and keyboard controls. Starting with perspective toggles, users can switch to an Orthographic projection by pressing the letter “O” or to a Perspective projection by pressing “P”. Moving throughout the scene is accomplished by keys: W, A, S, D, Q, and E. Q and E move the camera upwards and downwards, while W moves forwards, A moves towards the left, S moves towards the right, and D moves backwards. The angle of view can be adjusted by the mouse cursor and the scroll wheel adjusts the speeds at which the camera can navigate the scene.

Most of the functions found within my OpenGL program revolve around modularity, with the use of many function calls within main. All lighting, textures, shapes, and shaders have their respective sections, making it easily accessible for modifications. These individual areas are also able to be copied and reused in other programs, if the names get properly redefined. My functions set up lighting, initialize the use of texture files, create and transform shapes, and renders shader programs – which all come together to form a realistic 3D scene.