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CS 330

Project One

For my project, I made headphones, a can of soda, a CD, and a video game case. I chose these items because of the different shapes that are needed to create them (headphones with a torus and two half spheres, the CD is two circle pane coordinates, the game case is a rectangular cube, and the can of soda is a cylinder).creating the objects themselves, I plotted the coordinates using a unit circle, adjusting the scale based on how big or small each part of the circle/spheres needed to be. I also added lighting cube above the scene in the middle of the plane so I can reflect light off of each object equally, while I laid the game case on the CD to give the scene a more realistic placement and make it closer to the photo (although since I had to use a different photo I had to change the dimensions of the case).

For navigation, I used the W,S,A,D keys to move forward, back, left, and right respectively. I used the Q and E keys to also move up and down, and the mouse is used to change where the user is viewing though it’s movement. I also used the P key to change the perspective of the camera, and the mouse wheel controls how fast or slow that a person can navigate through the scene.

For the functions with my program, the first two functions, UInitialize and UResizeWindow creates the window for the scene in which we will be working in and checking to see if the window is being minimized or maximized and adjust accordingly. This part can be reused with little to no changes, only needing to update the opengl version accordingly. UProcessInput handles the keyboard inputs for navigating the screen, and the three UMouseCallback handles the mouse inputs for it. In terms of actually creating the scene, the UCreateMesh function translates and scales the objects created in the mesh accordingly to each placement while also applying the correct texures (which is created with the UCreateTexture function), while URender plots each coordinate, normal coordinate (for lighting purposes), and texture coordinates for each object. In these two, I created a comment line in between each object array to make it easier to sort out which objects is being plotted. Finally, the UDestroyMesh and UDestroyTextures get rid of the mesh and textures after we are done using them.