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CS 330 Computer Graphic and Visualization

Final Project

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**Final Project Design Decisions**

For my scene I chose a mobile desktop setup. My items include a laptop, a candle, headphones, a book, a pencil, and a deskmat. I chose these items as they are common items that offer a plethora of different textures and reflective surfaces. I liked them because they call the average person, and in the current day that is a familiar sight that calls upon a familiar memory. The items themselves do not have overly complex designs that are smooth surfaces that were surprisingly difficult to model accurately.

I could only image trying to use the same tool to make completed designs, trying to just make a box have rounded edges took a combination of 3 different objects and several hours of adjustments to make it seem decent. The preprogrammed objects in OpenGL are simple yet versatile that allow the programmer to have repertoire of building blocks. These building blocks can be manipulated, albeit with skill, to make more complex and intricate designs. While programmers do not have a high level of control with objects, they can implement many different tools without having to have a major change in data or requirements.

I set the user controls to be the common keys used in most programs that require you to control a camera. The user can move the mouse to point and change the angles and orientation of the camera while the scroll wheel increases and decreases the speed at which the W, S, A, D, Q, and E move the camera. The W and S keys move or zoom the camera in the direction that the mouse is pointing. The A and D keys move or shift the camera left and right again according to the direction of which the mouse has the camera pointer towards. The Q and E keys move the camera up and down.

The function I spent developing this semester starts by loading and creating objects using the OpenGL architecture. Next it imports textures and creates materials to apply to those textures and objects. The following parts of the function allow you to set lights for the scene you added the objects with textures that interact with the materials applied to the objects that give them different reflective properties. The function then manipulates the objects created by OpenGL into adjusted shapes and combines them into more realized items that are recognizable to others and conveys a message or imagery.

The function I developed while learning in this course was applied at a basic level. This allows me to apply it across many if not all projects by simply using the OpenGL imported framework. I did not need to install any specific tools or rely on any complex tools or files to be able to run or finalize the program. The only outside tool we would need is the folder I used to house images I then made textures out of. The rest of the functions and tools needed pulled from the framework and even then, it seemed light weight and does not seem to cause a heavy increase in resources needed to be able to efficiently run the program.

In conclusion, while making my scene of a mobile workstation I chose recognizable objects that were not too complex. I was able to add simply functions and function calls to be able to properly implement the tools needed to manipulate my program to achieve the desired results. I used common controls to be able to move around my scene with a mouse and keyboard. I can use the function created this class for this project across any future project if I import OpenGL. Since this project did not have heavy requirements, I will be able to transfer what I learned and the function I created across any program I chose in the future.