Lawrence Arundel

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SNHU

CS 330

**7-1 Submit Your Project – Lawrence Arundel**

**Justifying Development Choices**

Regarding the justification for creating the 3D scene, I decided to use the things I thought would best demonstrate my knowledge of and proficiency with OpenGL. Although my initial scenario contained five things, the overall scheme only called for four. These four items were a pyramid (glasses case), cube (iPad), cylinder (water bottle), and spherical (lacrosse ball). Given the abundance of resources and videos my professor offered, I was able to program for the scene's necessary functionality. These tools made it easier for me to comprehend OpenGL and turn the selected image into a usable environment (de Vries, 2014, p. 1). I selected my items to meet the needs of the client for a more consolidated and immersive vision of the 3D world. By adhering to suitable coding practices, syntax specifications, and compliance guidelines, the programmer made use of the resources and functionalities that were implemented within the infrastructure. The intricacies and challenges were well-adjusted when the 3D environment planning process took place thanks to a deeper understanding of how the systems operated within OpenGL's infrastructure. Last but not least, employing the appropriate techniques to depict the pertinent things inside the environment aided in illuminating the correct requirements.

**Navigation Of 3D Environment**

The keyboard and mouse input devices can be used by a user to move around the 3D world. The devices feature a variety of inputs, including the mouse's scroll wheel, left and right clicks, and wheel clicks, as well as the Q, W, E, S, A, and D keys for the keyboard. As part of the setup procedure, the project's functions are built by making several file modifications (7-1 Submit Project.cpp, camera.h, etc.) to include the camera functionality-related routines (de Vries, 2014, p. 1). The Q and E keys are used to move the camera up and down, respectively, along the y-axis. The camera can be moved using the W key to advance along the z-axis, the S key to reverse along the z-axis, the A key to move left along the x-axis, and the D key to move right along the x-axis.

**Custom Functions Utilization**

The program's custom functions, such as loadTexture() and processInput(), create a more modular and structured code. There are many different uses for these two functionalities. To produce the textures required to meet the client's request, the first function can be recycled (texturing of at least 2 objects). The program's inputs, including the movement of the camera that surrounds the 3D environment, must be processed by the second function for it to operate properly. We can more effectively develop and reuse the functions if we have a deeper grasp of how these two functions interact in the 3D environment. When trying to add a new object to the environment, the loading of the texture function can be employed. The function makes it simpler to maintain both the method for handling these inputs and the readability of the code. The inputs are processed to produce a more nuanced picture of how the camera will operate in the environment and how the processes comply with the client's needs. The processing moves the camera up, down, right, and left, and changes its speed depending on the inputs (de Vries, 2014, p. 1).

**Ending**

I appreciate all that I have learned professor! I hope you have a great rest of your day! Take care! I am grateful to meet you!

Sincerely,

Lawrence

**References**

De Vries, J. (2014, June 1). LearnOpenGL., from <https://learnopengl.com/About>

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