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**Justify development choices for your 3D scene.**

The photo I selected, during week three, is an indoor scene of a counter with an opened book. The scene also includes a coffee cup, with saucer and spoon, with a window to the outdoors. I thought it would be best to structure the book, first, using multiple planes, with connecting triangles, to form the book's hardback. I formed the places in the same manner. After the book was built, I added a plane to complete the counter. I then added a black pyramid, and a black cube to serve as a lamp. I finished the scene by adding three lights. The green light is positioned on the left side of the counter. The white light is positioned on the right side of the counter. The last light was positioned on top of the lamp cube to serve as the light bulb. Three lights were added to prevent an object from being in shadow. I selected these objects because I felt that they were an accurate representation of the original image with some small additions to increase the complexity. I was able to program for the required functionality by keeping the code efficient, organized, and structured in a manner that was easy to follow for an outside programmer or artist.

**Explain how a user can navigate your 3D scene.**

A user may navigate the 3D scene by using the mouse and a combination of specifics keys on the keyboard. The 'W' key was reserved for forward movement. The 'A' was reserved for panning left. The 'D' key was reserved for panning right. The 'Q' key was reserved for upward movement whereas the 'E' key was reserved for downward movement. The mouse scroll wheel was reserved for movement forward and backward. In addition to navigation functions, the left and right bracket keys were reserved to manipulate the UV Scale and the '1-4' keys were reserved to manipulate the selected texture wrapping mode. Finally, the 'ESC' key was reserved to close the scene. The combination of inputs from the mouse and inputs from the keyboard allow the user to navigate the 3D scene with ease. A fluid like motion is created by using the keyboard navigation and the mouse positioning at the same time.

**Explain the custom functions in your program that you are using to make your code more modular and organized.**

There are several functions in the program to include multiple vertex shaders, multiple fragment shaders, and a function that builds and binds the texture provided. These functions are modular because they are self-contained and can receive any texture source file. The source code is organized in a manner that keeps the logic simple and easy to follow. The shader functions receive input, process the data, and return a fragment color to the caller. This method of compact functions and methods allows for a developer to easily use this logic in other applications or projects as appropriate by the software requirements that are provided to them. These methods and functions receive minimal inputs, perform all the logic, and return a value to is easily used by the calling logic to deliver a polished product.