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**Module Seven Reflection**

The 3-D scene that I chose to create was a log cabin set at night with the moon in the sky and a pine tree. I chose to develop this scene because it allowed for the use of various 3-D shapes to be implemented into the scene and the ability to seamlessly combine them. For example, the house was created using a box shape because it has the general shape of a house already to work off of and provided a good foundation for the building itself. The cylinder was utilized as the bottom of the pine tree as the stump with a bark-like texture added to provide a realistic feel. This shape was able to be elongated and slimmed to seem more realistic to a tree bottom. As for the top of the tree, it had two cones stacked on top of each other to give more depth for the tree and height. This was then added to have a green tree shrub-like texture. As for the moon, I had utilized a sphere-like shape to replicate the moon with a yellowish evening moonlight texture. This mix of shapes was able to fulfill the requirement for having used 3-4 different shapes, and by combining them together to create singular objects, such as the tree.

The scene was able to be navigated through using keyboard keys to move the camera into and around the scene. This functionality helps the user zoom into specific features of the screen they may wish to see closer, or change their view. WASD alphabetic keys were used to control the zoom in, zoom out, left, and right panning of the camera within the scene. And the QE was able to move the camera up and down. This functionality helps users examine the scene further as needed. Additionally, within this program, I tried to maintain code organization through keeping comments throughout the code. This helps any future developers reading it to understand what each part does, and what the plan was as it was being written by reading the comments. Furthermore, the code was thoughtfully including adequate spacing among similar features so that it would not all blend as a block of text, but enhance readability. For example, having extra spacing between each shape that was added in the code to help make it easier on the eyes to read.

These coding best practices can be reused in future programs and may help technical or non-technical people in their readability. While this was an interesting 3-D scene to create, it was also challenging. I was unable to focus on adding lighting into the scene, despite reviewing the module guide and reviewing YouTube tutorials. It was difficult to figure out what was necessary, and it looked more appropriate without the lighting addition. I believe I will need to revisit and analyze lighting within OpenGL for future reference, but this was the most complex aspect I found within the program. Overall, I believe this was an interesting, challenging, and fun project to complete and work on throughout the term.