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Project Design Decisions

CS-330

**Justify development choices for your 3D scene. As you write, think about why you chose your selected objects. Also consider how you were able to program for the required functionality.**

Attempting to decide on what options to use what a tough starting point for me with this project. I wanted to make sure to include enough of the shapes in my scene, while still choosing things that I enjoy. I thought of drawing (colored pencil), Dungeons and Dragons (the two dice), and a book. These are all things I use often within my different hobbies. The dice represented two of the shapes, the cube and sphere. The book was representing the plane. Lastly, the pencil was the complex shape consisting of a cylinder and a pyramid. I was a bit nervous choosing the pencil but it was fun to figure out how to use both shapes together to create one object.

**Explain how a user can navigate your 3D scene. As you compose your thoughts, discuss how you set up to control the virtual camera for your 3D scene using different input devices.**

The navigation within my scene can be done with both the mouse and keyboard. There are various different keys programmed in to be able to move around the different view points. WASD all move around the scene, while Q and E will allow you to change your viewpoint from the top of bottom. The mouse allows the user to be able to scroll in and out (with the scroll wheel) and change the camera angle by moving the mouse around.

**Explain the custom functions in your program that you are using to make your code more modular and organized. Ask yourself, what does the function you developed do and how is it reusable?**

I ended up doing my program a bit differently to make it easier for me to read, and keep it more organized while using it. I created two different .cpp files - SceneBuilder and ShapeBuilder. I wanted to split up how the code was presented and keep the specifications of the different objects/shapes separate from the code that represents the scene itself. This helped me be able to troubleshoot any issues and find the different bits of code I was needing to change to adjust the objects and other features in the program.