

Reflection

Starting the project, I selected items on my desk as the basis because I thought the objects were complex enough to fulfill the requirements but simple enough that my lacking artist skill could recreate them. I chose a metal cup being made up of two cylinders, a coffee cup made up of a cylinder and a torus, a tissue box being a single box, and a stack of cards which I decided could be seen as several layered planes. Creating, scaling, and adjusting the locations of the objects proved simple enough. Sourcing good textures proved to be quite a challenge without access to Adobe Stock or any other stock subscription service, but I made do with what I could find.

Regarding navigation, a decent percentage of the work was already done for me from the camera header that was included in our tutorials. That allowed for free look with the mouse and free movement with the keyboard. Some of the required functionality I implemented on my own. I implemented the upward and downward movement as well as the orthographic view. To ensure that the orthographic view button functions correctly, I had to implement an input delay based on delta time.

The program was written modularly splitting most requirements into separate functions for handling certain types of movement or certain parts of the graphics pipeline. Most of the work occurred inside of the `URender()` function and if I were to redesign this project from the ground up I would have likely separated the `URender()` function into several pieces to improve code clarity. One thing I did to ensure organization is when creating the stack of cards, I created a loop to handle procedurally generating the stack instead of rendering each one manually. The loop also allowed me to test out how many cards should be in the stack to make it look accurate to the source.