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CS-330

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Final Project Reflection

The scene I chose to recreate in OpenGL is of me playing a trading card game called Magic the Gathering. That includes a playmat, some dice, a deck box, a deck of playing cards, some cards in play on the table, and a coffee cup because I tend to drink a lot of coffee. There is also a table to play at, and four chairs, along with two back walls and a floor for setting the scene. I chose this scene because it provided a decent number of different objects to work with.

Starting with the table, it is comprised of four cubes made to look like legs, and a cylinder for the tabletop which is morphed to look thin and wide to emulate the table surface. The chairs are made up of seven different cubes. Four of them are made up to look like chair legs, one is made to look like the seat of a chair, and 2 are used as back braces and to connect the back two legs. The deck and deck box are comprised of the same size cube because in the world, the deck is supposed to fit in the deck box. I thought about adding multiple thin cubes for the deck because there would normally be around 99 cards in the deck but that seems redundant for the scope of this project. I wasn’t sure how to add texture to just the sides of it either to make it look like it has many cards in it, so I just made the whole thing green, the same color as the card sleeves.

For the individual cards, I decided to make them out of planes. Cards are incredible thin so I thought a plane would work best for them. It also makes the texture look nice on them, as I added the same cards used in the scene. The dice were simple to add, as I just needed a small cube representing a d6.

Lastly, the coffee cup ended up being a cylinder with a black texture. I tried to make it out of two cylinders and an upside-down cone to make it look more similar to the real cup, but I couldn’t get the dimensions right and had to continue on with the project.

The user can navigate throughout the scene using a keyboard and mouse. For directional movement, the standard WASD is used; W for forward, S for backward, A for left, and D for right. Q is used to move up in space, and E is used to move down in space. The mouse is used to look around and control the relative forward and backward direction.

I used the code provided in order to facilitate how my functions in the program work. The code that I added the most of are objects to the scene. Each object or mesh needed a scaleXYZ, XrotationDegrees, YrotationDegrees, ZrotationDegrees, and positionXYZ for drawing the object, followed by SetShaderColor, SetShaderTexture, and SetShaderMaterial to change the appearance of the mesh. All of that is followed by m\_basicMeshes->DrawSomeMesh() with Some equaling the type of mesh wanting to be drawn. I added a comment at the beginning of each mesh code to make it easy to see what is being drawn, and for complex objects, I added more comments signifying that the meshes work together to make a bigger, complex object. I felt as this was necessary for how large the codebase is and keeping it organized made it much easier to work on.