CS-330 Final Project Reflection

Zachary Wright

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This class has taught me a lot about myself as a developer. It has taught me that not only that programming can be even more fun than I thought but it also taught me that imposter syndrome is real. I was super intimidated when I read the syllabus and as the milestones approached, I was freaking out telling myself I could not do this and that this class would be the one that prevented me from getting my degree. However, I was completely wrong. In fact, I actually grew the slightest bit fond of C++ when creating my final project, after all it is Object-orientated Programming (OOP) and I do it everyday for work with Java. To overcome the imposter syndrome, I really buckled down on studying and gave my all to the models and tutorials given to us.

For this project we were tasked with recreating a 2D scene into a 3D scene utilizing C++ and OpenGL. The original 2D scene I submitted to recreate had a candle, notebook, pen, stress ball, coffee mug, and a wooden platform that everything sat on. During the planning and development of this program, I hit numerous obstacles like getting the coffee mug just right, and that was the piece I was really looking forward to building. I spent a little too much time on it and that prevent me from completing the candle and stress ball, but I think the end product of what I created was worth it.

Other than trying to get all my created object perfect, I also aimed to have my code in industry standard. This means that I wanted to utilize in line comments and keep my functions to a single purpose and I think I did a well job at that. I did my best to follow the SOLID principles to create a beautiful scene. From the start I wanted a modular application that had very specific components that allowed me or anyone else to jump into this down the road and make easy adjustments. At work I write very modular code and think that translated very nicely to this project. Each function in my project is reusable if you wish to build another cube you would just need to make another object in SceneBuilder.cpp and instantiate the build functions in ShapeBuilder.cpp.

My styling was another obstacle that I hit, I wasn’t able to go with my initial ideas one the plane or notebook, but I am happy with the outcome. The issues I faced was that the colors were colliding, and some images used as initial textures just were not working; I struggled the most with getting the perfect look for my notebook but ended up going with a open notebook look. The pen I used in my 2D scene was also an issue as it was all black and when I made an all-black pen with OpenGL it lost a lot of the details, so I went with a two-tone look.

I had a ton of fun early in the class with the navigation portion and was super happy with how the controls came out. Users can use the WASD keys to move left, right, up, and down as well as the Q and E key to move the came higher or lower. The users of my application can also navigate using the mouse, moving left or right will move the camera in that direction allowing you to view the back of the objects. The scroll wheel on the mouse also helps adjust the speed of which the camera moves.

Finally, lighting was another key aspect that I wanted to put an importance on. I used a rotating light that helps capture different areas of the scene. The user can actually press 1 and 3 key to change the lighting as well as use IJKL keys to move the light around the X and Z planes while using U and O keys to move it up and down. I think that doing this with the lights add a nice navigation effect and user accessibility to see more detail throughout the scene.

***See below for snip of final product***

