***Original Idea***

For my Final year project. I wanted to create an API that would handle the backend of openGL, so users do not have to worry about it. I also did not want to limit people, so the API had to allow for custom shaders. The aim of the project was to create a 3D API (in the form of a dll) that would allow someone to add to a c++ project and be able to easily and quickly load 3d models and have them drawn on the screen, but also allow for the option of loading shaders.

***Disclaimer***

Before I get started, I would first like to say that I did not get everything I had originally planned done and put into the project. The main reason for this is because of the COVID19 Disruption. Because I couldn’t go into university and get work done, I found myself get distracted a lot at home and becoming a bit lazy towards my work. If I was able to work at university, where I could communicate with people (to help bounce ideas of them) and just be in an environment where everyone is working, I would of found that I wouldn’t get distracted as much. Because of this, in the report I will talk about the things I have done. I will then talk about the things that I had planned but didn’t get implemented and how I would of implemented it.

*The things that I had planned and implemented:*

* *Model loading and Handling*
* *Bling-Phong Lighting (a default shader that comes with the api)*
* *Allow for custom shaders*
* *Camera system*
* *A basic light class*
* *All functions are wrapped*
* *Input management*
* *API auto sets up the window ready for use*

*The things that I had planned and Didn’t implemented:*

* *Shadows*
* *Screen Space Ambient Occlusion*
* *Anti-Aliasing*
* *PBR Textures*
* *Animation*

Overall I got about 50% of the project done, but some of the main system are their, such as openGL being set up and being able to easily load models. About half way through the planned I had planned on creating a questionnaire so that I could see what people would like in the API and see if I was on the right track. I had planned to do it in university will my fellow students but because of the university being shut I just had to stick with my original plans for my API.