CS4052: Computer Graphics
LAB 5- Final Project

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For this assignment we were asked to create our own game or anything of our choice, implementing a selection of features from a provided list.

Project Description

A cube is positioned in the space. There are light sources on the ceiling and there is a camera control so that you see around in 360 degrees and you also move forward/backward or sideward. Simultaneous usage of both forward/backward and rotation is also enabled. You can also see the 3-D view for the room (in the form of cube) if you take the camera out of the room. I also implemented hierarchies in light sources as you can see in the video. Also, for the Phong illumination you can check the vertex shader and fragment shader programs that I have included in the submission. Texture Mapping was implemented as well. I also attempted to implement cube mapping for skyboxes but was not very successful with that. However I was able to include multiple light sources (24 to be exact) and some advanced camera features in the project and was able to successfully design a cube or a kind of a room. I also tried to implement collision detection so that when it touches the walls it can get reset to its original position but I failed at doing that too.

To start this assignment I began by trying creating the models in blender. I then modified my solution from the previous assignment for loading them.

I also added lightening to my scene by modifying the fragment shader. Initially I increased the light sources intensity linearly but when I noticed very small change I increased it exponentially. I then included the advanced camera control features and Phong shading along with Texture mapping for the floor and the walls of the room.

Finally, I tried to implement collision detection and cube mapping but was unable to do so at the end.

Link for the video: https://www.youtube.com/watch?v=7SZ3W83fquA

Screenshot for the video: