**Assignment 1 Lights, Camera, Action**

**Preslav Chonev**

For this assignment I used a version of one of the labs cpp files as I found it to be a fitting base for the project. I chose to use fraglight.cpp, doing this allowed to have a standard lightning implemented together with a basic structure to the main file.   
  
I worked on building a simple scene with a table on which a laptop lied, the laptop could open and had a ‘screen’ which would appear when the device would simulate turning on. Once turned on it would display a hexagon which would rotate around itself displaying an animation. Doing this I found quite easy and enjoyable, so I felt very confident with how it turned out.

During the development I found myself struggling with following up when trying to change some colours of objects but resolved the issue but modifying the structure of my cubes and when working on the hexagon I followed the pattern of the cube as I found it easy to understand and with a few lines of code generating the coordinates of vertices felt easy. The hexagon presented a big issue to me when trying to implement normals to its side and vertices. I tried using multiple different guides from general sites like stack overflow but struggled with the implementation of some as my code didn’t seem too fitting with the designs online. As I had some limited time to work on this, I tried multiple more simplistic in concept ways of adding normal but those didn’t work and later lead to a corruption on one of my files so the normal idea was abandoned as it felt too difficult to implement. I described and left comments of my work trying to implement the normal in the hexagonPrism.cpp file.

Aside from the big bump with normals on hexagon, I felt confident in working with the code. After couple of hours exploring different methods to implementing objects to the scene, I did conclude that it would have been a good practice and idea to implement some of the object classes myself to further understand every bit.

As a conclusion to this assignment, I believe I did very well in understanding and implementing the movement and animation to objects on the scene with very good understanding of how the vertices translation and rotations work. If I were to take on this assignment on again, I believe I would have focused on fully understanding the shapes and the way they are implemented as that would have taught me better how to operate with making my own objects and calculating their normals better.

Source of the concept I was trying to imitate for normal calculations - <https://community.khronos.org/t/how-to-calculate-polygon-normal/49265>

* To be noted the flying hexagon in the top right of the view is there to demonstrate the shape implemented by me. It has no purpose to the main scene.