* Justify development choices for your 3D scene. As you write, think about why you chose your selected objects. Also consider how you were able to program for the required functionality.

My scene is an education-based theme showing a clock, eyeglass case, book, and a graduation hat. The image is meant to illustrate that if you put the time in studying you will graduate. This scene uses mostly cube objects. The clock, book, and eyeglass case representations are accomplished by cubes of different dimensions. A “not so obvious” use of the cube is the flat square piece on the skull cap of the mortarboard. This was modelled using a cube so that it would not disappear when viewed from the side. The skull cap part of the mortarboard is a partial sphere. Finally, the mortarboard cap is finished with two cylinders representing the tassel cord and a pyramid modelling the tassel. The second complex object in the scene is the clock which is modelled by inserting a cylinder into the cube to model the clock face.

* Explain how a user can navigate your 3D scene. As you compose your thoughts, discuss how you set up to control the virtual camera for your 3D scene using different input devices.

Navigating the scene is accomplished by a combination of keyboard presses and mouse movements. The keys {W,A,S,D} “slides” the view camera UP, LEFT, DOWN, and RIGHT respective to the view camera’s current UP position. Moving the mouse changes the angle of the view camera and consequently the UP position. The keys {Q, E} move the camera forward and backward. ‘Q’ has the effect of moving the image further into the screen while ‘E’ brings the closer, or out of the screen. Lastly the rate of movement is controlled by the scroll wheel. Movement can be sped up or reduced by rolling the scroll wheel forward or backward.

* Explain the custom functions in your program that you are using to make your code more modular and organized. Ask yourself, what does the function you developed do and how is it reusable?

The main custom functions in my code are the objects to create cubes, cylinders, and spheres. These make it possible to generate the vertices, normal, and texture coordinates for data to render. By using these objects, a new primitive can be created and then placed where it needs to be. An improvement on this would be to combine primitives into a single set of vertices for a complex object, but this is beyond my capacity at this time.