Final Project Final Draft

In the first draft of the final project, you demonstrated your knowledge of modeling transformations and camera transformations, but with the final rendering performed using OpenGL/SDL. With this assignment, you will demonstrate your mastery of 3D rendering techniques, which will also include clipping also need to render entirely from GLSL.

You are welcome to modify your first draft of the project to suit the new requirements, or you may wish to start anew. The requirements for the project are the same as the first draft, with some minor modifications, plus some additional ones.

- There must be a total of at least 50 objects in the scene. All objects must be represented by 3D triangular meshes. If you wish, all objects may be cubes, or composed of cubes.
- The scene must have a well defined notion of up. For instance, this may be achieved by having several objects aligned on a common plane. All cameras will use this direction as the relative up direction.
- At least two of the objects must form an earth/moon pair. That is, one of the objects must be rotating about an axis passing through its center, and the second object must be orbiting the first object.
- One object must be moving through the scene. Note that two of the cameras will view the scene from the point of view of this object, the viewing object and that object need change its color when it collide with the earth/moon pair.
- There must be three (perspective) cameras. The space bar on the keyboard should be used to cycle through the different camera views.
- The first camera should be a stationary camera. Both the earth/moon pair and the viewing object should be visible using this camera.
- The second camera should move along with the viewing object, with the camera lookat vector parallel to the direction of the viewing objects forward motion.
- The third camera should also move along with the viewing object. However, the camera should always look directly at the earth/moon pair.

Note that the project will not be graded on artistic merit, although I will give a bonus point or two if it looks nice. You will be graded primarily on the correctness and efficiency of your code. Your submission for this project should be visual studio project with solution file is included.