

CISC440/640 – Spring 2017
Programming Assignment #2
Due 03/27/15 (before 11:59:59pm)

Objective: In this project you will build a simple application for modifying and manipulating 3-D models program using OpenGL. It will read in 3D models in Wavefront OBJ format and display and modify them. You must implement several user interface options. You may use code from the lecture 10 as a starting point.

Requirements (for both undergraduate and graduate students)

- 1) You must implement the virtual trackball code described in Lecture 10.
- 2) You should also provide an interface for translating the model in eye-space (right, left, up, down, into and out of the screen)
- 3) You must be able to select any single polygon from the model (as specified by a mouse click) and mark it with a different color. This can be done using `glRenderMode(GL_SELECT)` described in Chapter 13 of the red book.

You can use an existing Matrix and Vector class or program your own, and use them where appropriate (to make your code readable).

Graduate Students Only

- 4) You should display two views, one showing a perspective view of the 3-D model, the second showing an orthographic view of the polygons removed from the model. In the “removed polygon” view port, each polygon should be oriented so that it lies in the viewing plane.