CS 535 Fall 2006

Assignment 2—due Tuesday September 12, 7AM

In a nutshell, this assignment asks you to implement a wireframe renderer.

The application should:

- Load geometry from a file in the OBJ format; please find a sample file at http://www.cs.purdue.edu/cgvlab/courses/535/FALL_2006/assignments/teapot.obj; it is not important that your loader knows about all features of the OBJ format; correctly loading this file is sufficient; the OBJ format specifies vertices and then triangles as one-based connectivity triples.
- Load a configuration text file that specifies the image resolution, the field of view of the camera, and the geometry to be loaded.
- The first view should be meaningful (i.e. you should see something).
- Allow the user to navigate around the scene interactively using the keyboard; document the keys to be used in your project report; the geometry should be draw in wire frame; draw 3 segments for every triangle; no z-buffering, lighting, or shading is required.
- You should allow the user to translate forward/backward, left/right, and up/down, and to pan (rotation about an axis that passes through the center of projection and the –b camera vector), tilt (rotation about an axis that passes through the center of projection and the a camera vector), and roll (rotation about the view direction).
- You should allow the user to modify (increase and decrease) the translation and rotation steps exponentially (e.g. multiply/divide by 1.2); the translation and rotation steps should be modified independently.
- The user should be able to load and save the view.

Extra credit

- Navigation with the mouse by dragging (2%)
- Gouraud shading and lighting of the wireframe (2%)
- Z-buffering of the wireframe (1%)
- Complex scene (with many objects, see the Stanford 3D Scanning Model Repository and other sources on the web) (x%)

What to turn in

- Turn in your assignments via the web; email me and the TA a URL with your assignment archive; let us know if you do not have access to web space
- Implementation source files and project; use relative paths; we should be able to build your project easily
- A report that includes the graph for part A and the output image for part B, as well as instructions on how to use the Graphical User Interface (GUI) for part B

Voicu Popescu, popescu@cs.purdue.edu , Fall 2006.