

Project 1 – Due Sept 30, 2014 at Midnight

The purpose of this assignment is to demonstrate your knowledge of a scene graph, and the matrix stack for performing rotation, translation and scaling.

In this project, you will implement a Java GUI that uses the processing library to display graphics. The GUI will have 3 main components:

1. Your self-defined drawing class that inherits from PApplet. This class implements the draw() and setup() functions for your scene graph.
2. A tree or list widget that displays the various nodes in the scene graph. The nodes should be listed by some string that somehow describes the node, and what it relates to. Using a tree widget should show child nodes by expanding the “+” sign next to the node. If you use a text list, then use “-” to show that something is a child of the parent node. By this I mean;

Army

-Platoon 1

--Soldier 1

-Platoon 2

-Platoon 3

--Soldier 1

...etc.

3. The third component displays the specific values of the selected node in the scene graph. There should be sliders to control:
 - The local rotation.
 - The scaling factor.
 - The global rotation.

The ovals representing soldiers should at least have individual RGB values. Please try to use images or use some of the OpenGL features to define your own shapes with the vertex(x,y,z, u, v); functions.

There should be at least 3 groups of soldiers. One can be a direct child of the root, but the other two groups should be either linked to each other, or to a common invisible node. In other words, the scene graph must have at least a height of 2.

Let me know if you need any clarification and have fun with this and be creative.