Assignment 0402

Surprise, surprise — for this assignment, you are asked to figure out and implement the rest of the TODO method stubs in the Java projection program.

Not for Submission

We are still on these readings, and they are worth re-reading for additional/deeper understanding (especially in conjunction with doing the homework for submission):

- The remainder of Angel Chapter 4
- Angel Appendix C
- Red book Appendices E and F
- And, though you’ve already read this, red book Chapter 3 is worth reading again now that you know the theory and mathematics behind the APIs in that chapter

For Submission

Figure out and implement the gluPerspective and gluLookAt workalike methods in the Java projection program (called perspective and lookAt, respectively). You can test your solutions by using these methods in the projection program: gluPerspective when setting up the viewing volume, and gluLookAt when setting up the “camera” for the scene (see the comments at the relevant places for some additional information; note that, when you have successfully implemented gluLookAt, the modified code won’t look exactly like what was there before, but should still be pretty close).

gluPerspective must end with the corresponding call to glFrustum (frustum in the projection code) — it essentially converts the y-axis field of view, and aspect ratio into the corresponding left, top, right, and bottom boundaries of the viewing volume.

Submit hardcopy showing your mathematics or geometry for gluPerspective and gluLookAt (including any relevant diagrams and proofs), and commit your implementations back to CVS.