

CMSI 371
COMPUTER GRAPHICS
Spring 2009

Assignment 0326

Carrying on the theme of trying to figure certain things out before walking through them in class, this assignment asks you to think about viewing volumes and how they are implemented.

Not for Submission

The following readings supplement our current material (and then some):

- 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

Now that you know that the *glOrtho* and *glFrustum* are “merely” transformations just like *glTranslate*, *glRotate*, and *glScale*, spend some time thinking about what those transformations might look like. Work out what you think they might be, and implement them through the incomplete Java *projection* program that has been committed to your respective CVS repositories (look for the *TODO* comments to find the places to fill in).

Submit hardcopy showing how you derived the *glOrtho* and *glFrustum* matrices (including any relevant diagrams and proofs), and commit your implementations back to CVS.