

CS/SE 3GC3 Lab 3

October 6, 2019

1 Resources

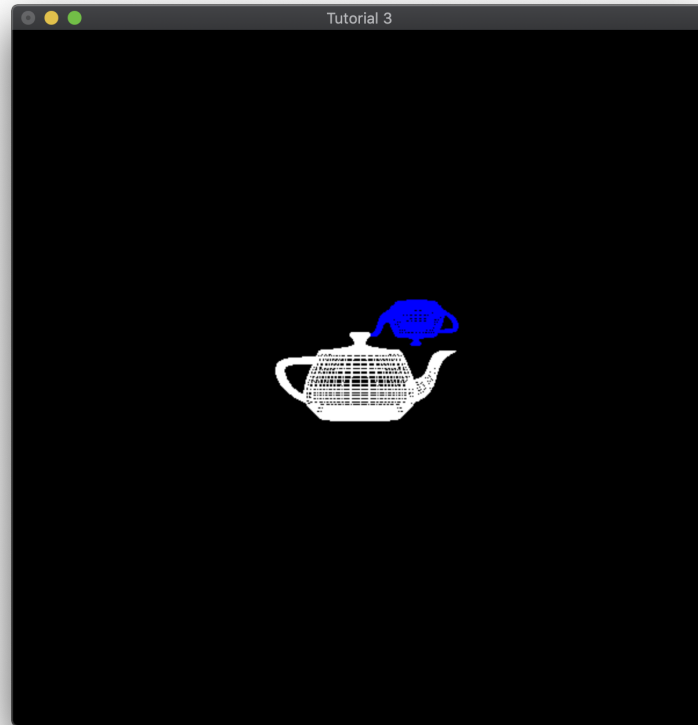
1. Red Book Chapter 3 <http://www.glprogramming.com/red/chapter03.html> (particularly “Using the `gluLookAt()` Utility Routine”)
2. GLUT documentation (e.g., `glutInitWindowSize`) <https://www.opengl.org/resources/libraries/glut/spec3/spec3.html>

2 Practice Exercises

These are ungraded exercises for the first hour of the tutorial. This is your time to get 1-on-1 help from the TA!

1. Read “Using the `gluLookAt()` Utility Routine” from Chapter 3 of the Red Book.
2. Run `make` to compile and run `tut3.c`.
3. Call `gluPerspective` below the comment in `handleReshape` with:
 - A 45 degree field of view
 - An aspect ratio of 1
 - A near value of 1
 - A far value of 100
4. Call `gluLookAt` below the comment in `display` with the vectors given (`eye`, `lookAt`, `up`). i.e., `gluLookAt(eye[0], ...);`
5. Rotate the second teapot such that your output looks *exactly* like Figure 1.

Figure 1: Looking directly at the white teapot. The blue teapot is rotated behind it.



6. Note that you are looking directly at the center of the white teapot.
7. When the user presses 2 you should change the look at vectors such that the camera points directly at the blue teapot.
 - Your result should look *exactly* like Figure 2 after pressing 2.
 - There is boilerplate given in the `handleKeyboard` function.
 - 1 will reset the camera to looking directly at the white teapot.
 - The lid of the teapot should still be oriented upwards, even though we rotated it before.
 - You should **not** alter the transformations to accomplish this.
 - You should **only** change the look at vectors.

Figure 2: Looking directly at the blue teapot after hitting 2. The white teapot is behind it.

