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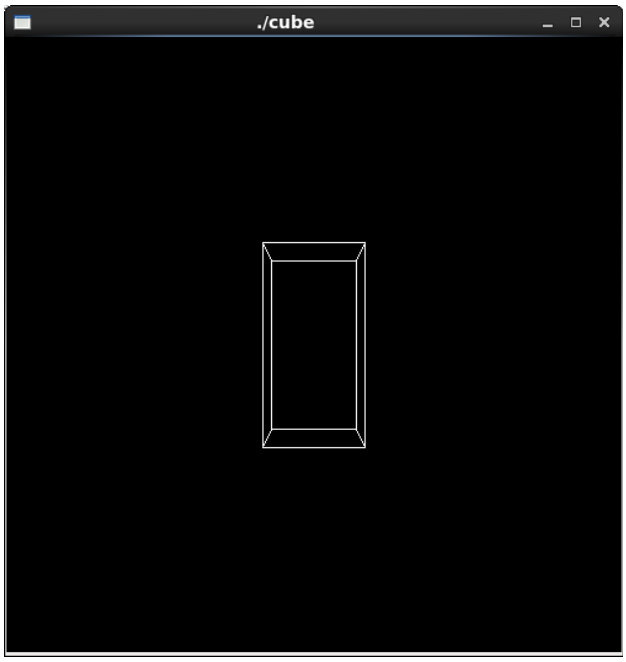
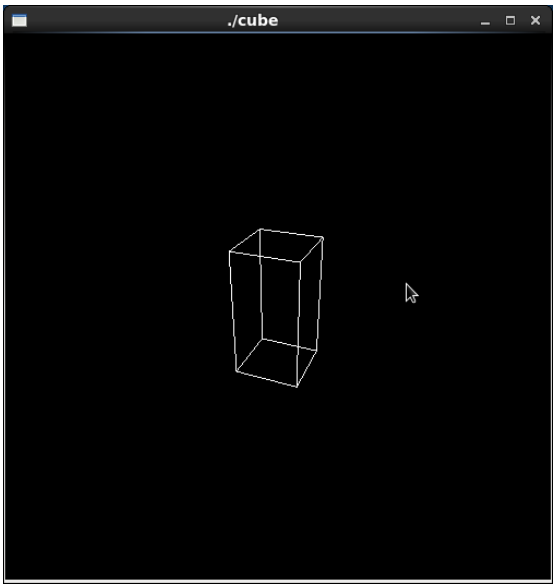
Lab 11

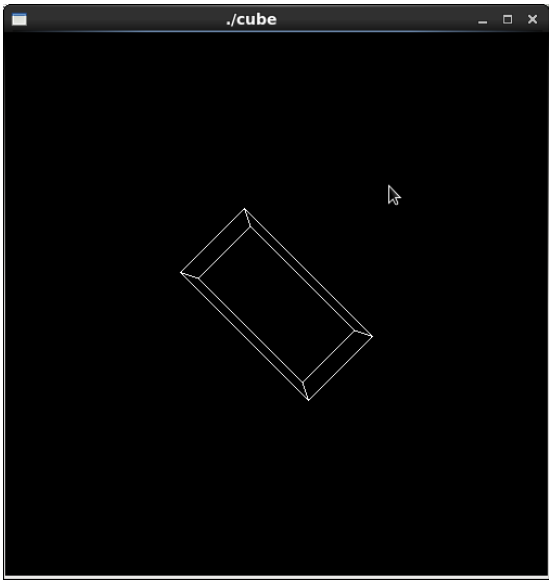
Copy the program cube.cpp from the lecture notes. Compile and execute it. What do you see?



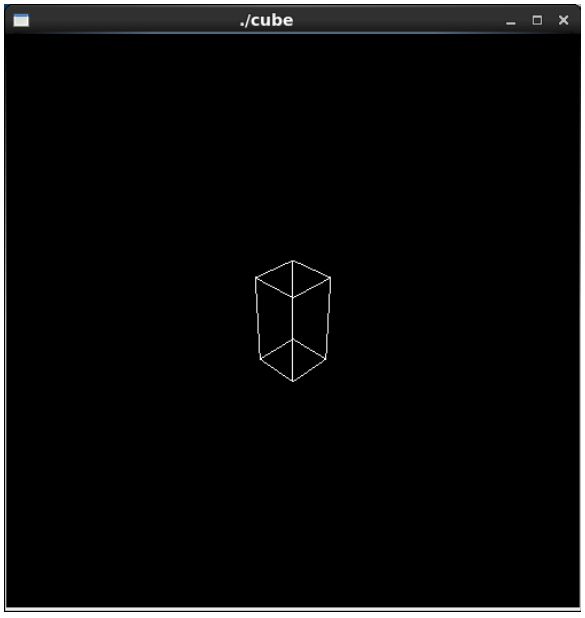
Try various parameters of gluLookAt(), including the cases of using an up vector of (1, 1, 1), and looking at the cube at a point of (5, 5, 5)? What do you see?



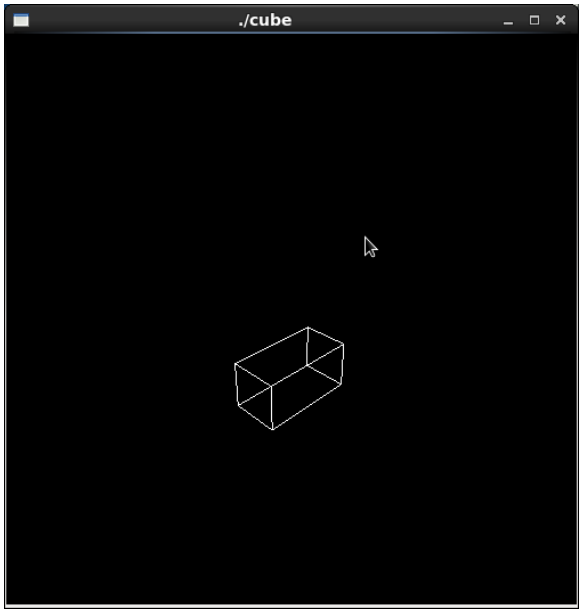
(2.0, 3.0, 5.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0)



(0.0, 0.0, 5.0, 0.0, 0.0, 0.0, 1.0, 1.0, 1.0)

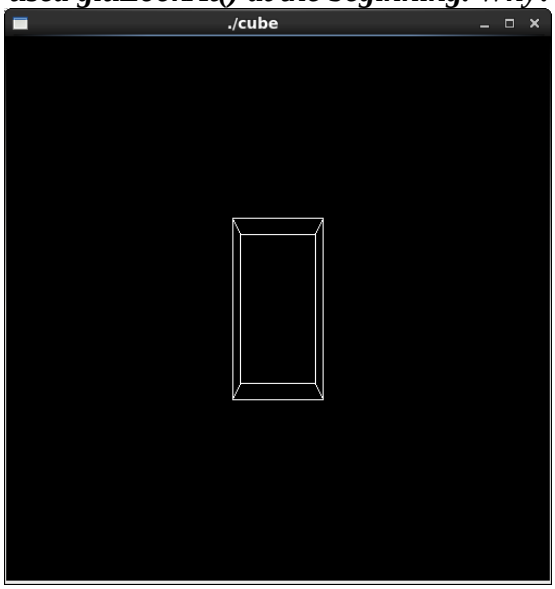


(5.0, 5.0, 5.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0)



(5.0, 5.0, 5.0, 2.0, 1.0, 1.0, 1.0, 1.0, 1.0)

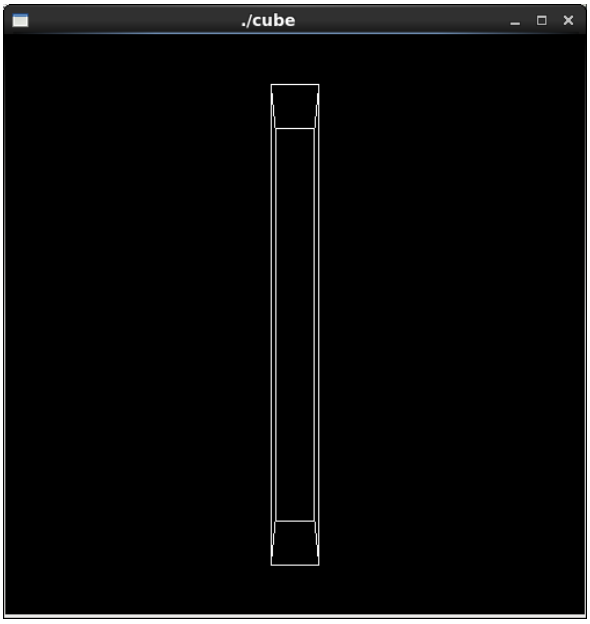
Replace gluLookAt() by glTranslatef() with parameters (0.0, 0.0, -5.0). The result should look exactly the same as when you used gluLookAt() at the beginning. Why?



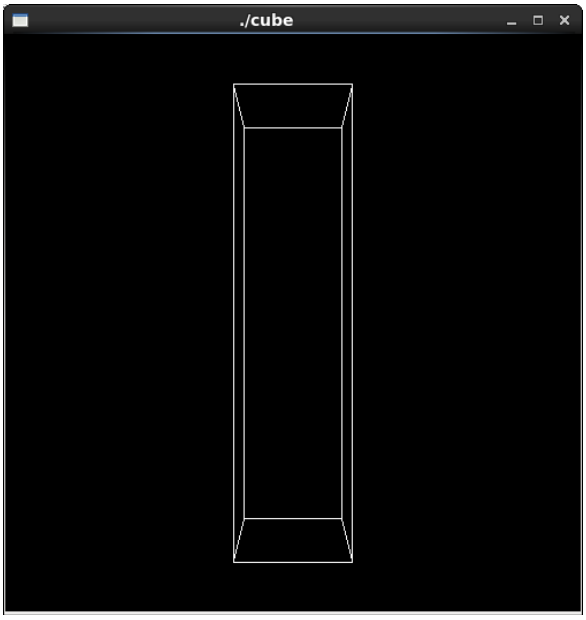
glTranslatef(0.0, 0.0, -5.0);

glTranslate() multiplies the current matrix by its parameters. When camera is placed at (0, 0, 5), it's the same as multiplying the z-axis of the matrix by -5.

Change the glFrustum() call to the more commonly used Utility library routine gluPerspective() with parameters (60.0, 1.0, 1.5, 20.0). Then experiment with different values.



gluPerspective (30.0, 5.0, 3.5, 10.0);



gluPerspective (30.0, 2.0, 0.5, 10.0);

Report:

I didn't really understand how glTranslate() works at first, but after I went online and googled it, I now understand the difference between glTranslate() and gluLookAt(). I think I successfully completed all the parts of this lab.