CIS 410/510: Project #6B
Due November 7th, 2015
(which means submitted by 6am on November 8th, 2015)

Worth 5% of your grade

2%: committing correct cases to SVN (part 2 below)
3%: working proj6A.cxx (part 3 below)

Important: you must complete part2 by Nov. 7th. After that, you will not be able to earn credit for that portion (as I will insert the correct answers for you).

Assignment:

1) Using Subversion, checkout the files for this project.
    a. 410 students:
    svn co svn+ssh://USERNAME@ix.cs.uoregon.edu/home/users/hank/SVN/mc410
    b. 510 students:
    svn co svn+ssh://USERNAME@ix.cs.uoregon.edu/home/users/hank/SVN/mc510

2) We are crowdsourcing the marching cubes tables. Your name is associated with ~10 cases if you are in 410 and ~20 cases if you are in 510. Find each instance and replace it with the correct answers.
    a. As we discussed in class, one solution to the ambiguity problem is to enforce conventions for how to perform a split along the diagonal for ambiguous cases.
    b. We will not pursue that solution. Instead, we will expect that people put forward the "simplest" solution.
    c. I put a program on ix called ~hank/case_checker. It can help verify your solution.
    d. That said, its reference implementation follows (a), where we are going to do (b). So it might not be helpful to you in complex cases.
3) Extend your proj6A.cxx to work with 3D data.
    a. In 6A, you implemented 16 cases to work with 2D quads. As per step #2, you will only be implementing a subset of the cases for 3D, and using other's solutions yourself.
    b. In 6A, you used a module for setting up lines. I have created a new version for setting up triangles (see TriangleList.h).
    c. You should test with the data file test_data.vtk and isoval == 0.5. That will give you over 400 instances of each case.
4) After all of the cases are in, we will have a functional version of marching cubes.
5) Two parts to submission:
    a. Commit the solutions for all of your cases to SVN.
    b. Upload to Canvas your source code and a screenshot of it working (with isoval == 3.2 and test data proj6B.vtk). Make sure to cross-reference with the correct image posted on the website. Not everyone will have their cases in by Nov 7th, but I anticipate enough committed that your isosurfacer can produce a good picture.