CIS 410/510: Project #7B  
Due November 19th, 2015  
(which means submitted by 6am on November 20th, 2015)  
Worth 4 points toward your grade

Assignment:

1) Download file proj7B.ascii.  
   a. Proj7B.ascii contains a scalar field for a data set that is 50x50x50.  
   b. There is one entry per line, for a total of 125,000 lines  
   c. We have been dealing with data where X varies most quickly, and Z  
      varies most slowly. For this file, Z varies most quickly, and X varies  
      most slowly.

2) You will write a VTK program. Where 7A was about using VTK filters, this  
   project is about manipulating VTK data structures.  
   a. Load data from file proj7B.ascii into a VTK data set.  
   b. Compare the vtkDataArray (from 2a) of scalar field in proj7B.ascii to  
      that the scalar field "hardyglobal" from proj7.vtk. They should have 3  
      spots where they differ. Tell me what the three indices are.  
   c. In project 7A, you made hedgehogs and thinned them. I want you to  
      modify your thinning procedure for this project. Write a function that  
      takes a vtkDataSet corresponding to the data in proj7.vtk and outputs  
      a vtkPolyData. The vtkPolyData should contain only the vectors that  
      have magnitude greater than or equal to 1.

3) Upload your source code and a screenshot of it working to Canvas.

Note: solutions are expected to be within the context of the VTK library. If you were  
   to solve 2B by writing code that does not involve VTK, then you won't get credit.  
   (This is designed to teach you VTK!)