**Compiling and running Tutorial 6 (OpenGL Wikibook) with Visual Studio 2010 under Windows 7**

1. Follow the instructions on [this link](http://inst.eecs.berkeley.edu/~cs184/sp12/compilation.html) to set up the GLUT and GLEW libraries for Windows. To learn how to get the GLM library, go [here](http://glm.g-truc.net/).
2. Create a new Visual Studio Project (Win32 Console Application), and add the following items:
   1. Source files: “cube.cpp”, “cube.f.glsl”, “cube.v.glsl”, “readBMP.cpp”, “shader\_utils.cpp”
   2. Header files: “readBMP.h”, “shader\_utils.h”
3. In solution explorer, right-click on the project name, go to Properties | Linker | Input | Additional Dependencies, and add “glew32.lib;glut32.lib;glu32.lib;opengl32.lib;”
4. Go to Properties | C/C++ | Preprocessor | Preprocessor Definitions, and add “GL\_GLEXT\_PROTOTYPES”
5. Build solution

NOTE: In order for Tutorial 6 to compile properly under Visual Studio, it had to be modified to read bitmap images directly from a file (rather than the GIMP trick used in the original version). For reading Windows Bitmap images, we have used the readBMP() functions from a previous ECS 175 offering (found [here](http://www.cs.ucdavis.edu/~amenta/s06/proj0/portrait.html)). The modifications have been made in “cube.cpp” and “cube.f.glsl”.

The fragment shader was modified to support BMP images. In Windows Bitmaps, pixel lines are stored from bottom to top, so flipping the image coordinates is not required.