Due Oct. 26, 2006

In this project, you will demonstrate the following texture mapping techniques within OpenGL:

- Mipmapping
- Bumpmapping

First, review completely the texture mapping chapter in the OpenGL Red book and as well check out additional features in version 2.0 (www.opengl.org).

We will continue to use the city object model as an example. Augment your loader to also read in texture coordinates. In addition sample OpenGL code fragments to illustrate the above texture mapping techniques will be provided. Example texture images will be provided.

1. Mipmapping: Pick a fraction (user definable) of the building objects in the model and apply mipmapping. Be able to switch this feature on/off, thus illustrating the distinction. Is there a performance tradeoff?

2. Bumpmapping: Apply the bumpmap to the "Ground" object in the city model. You will use a normal map to implement bump mapping

You should be able to turn on/off each of the texture mapping techniques and be able to also display them simultaneously.

Evaluation:

Projects will be evaluated by interactive demos. Properly documented source code (C++) should be turned in by the deadline.