

Textured Buddha

This week you will need to use Assimp to read in the UV texture coordinate information from a mesh and use that information to map provided textures onto it. These textures will be applied to the provided Buddha mesh object. The Buddha should have one texture, while the floor he is standing on should have a different texture. To create textures you will be using ImageMagick, which is used to convert common image formats into a form usable by OpenGL.

Useful Tutorials:

The following websites are relevant to the completion of this project.

This link is good if you still need help loading a model using Assimp.

<http://ogldev.atspace.co.uk/www/tutorial22/tutorial22.html>

This is a useful tutorial for applying textures using Assimp and ImageMagick.

<http://ogldev.atspace.co.uk/www/tutorial16/tutorial16.html>

If you are still having trouble using ImageMagick after following the tutorial above, you may wish to check out this, which is a link to a PDF titled “A Gentle Introduction to Magick++”.

http://www.imagemagick.org/Magick++/tutorial/Magick++_tutorial.pdf

Hints:

You should already have a functioning Assimp model loader program. That would be a good place to start for this project.

The provided Buddha file has multiple meshes in it. You will need to modify your code to render each mesh. The floor portion of the mesh is stored in the first six vertex points in the file, while the Buddha is stored in the remaining 300,000 vertices.

UV texture coordinates are stored in a mesh just like the mesh's vertex positions and are used in a very similar way.

The code provided in the second link tutorial gives you header classes “texture.h” and “texture.cpp”. They are very useful. When the texture object is created, you pass it the file name of the texture to be used, then there are just the two functions you need to use, Load(), and Bind(GLenum). Load makes a texture ready to use and should be called when variables are initialized. Bind is used to declare which texture is being used and should be called before rendering each portion of the Buddha.

Required Lectures:

Texture Coordinates (a.k.a. UV Coordinates)

Required Libraries:

glut

glew

glm

ImageMagick

Assimp

Example Screenshots:

