

Computer Science 411/611
Virtual Reality Systems
Fall 2002
Midterm – Texture World

Due: Thursday, 10/31/2002

For this project, you will create an icosahedron and assign each facet a different texture. You will also incorporate this figure in your flight simulator virtual world so that it can be viewed from any side.

An icosahedron is a 20-sided polyhedron with all vertices equidistant from its center. (The vertices for the example icosahedron are all length one from the center, but you can scale the length to your liking.) Each of the 20 facets is a triangle.

To obtain your textures, you will take pictures with a digital camera. Please be creative and find some interesting textures, such as tree bark, grass, cement, brick, fur, etc. Each of these images should be transferred to a computer and converted to **ppm** format (you can use **xv** or the **gimp**). You will also want to crop your texture images to a square region where each side is a power of 2 in terms of pixels.

Map a texture to each triangle of the icosahedron. The textures should wrap on at least three of these triangles. You may also want to experiment with transparency.

You may work in groups for this project, but all group members should take part in collecting the texture images. As with the last project, you should designate a team captain. The team captain will submit evaluations of the team members, and the team members will submit evaluations of the captain.

Aside from the object successfully incorporated into your flight simulator, you must also create a web page with

- team member names, date, and a description of the project
- each of the 20 sample images you captured
- at least three different views of the textured icosahedron (window captures from your flight simulator)

Students in 611 must also establish a creative theme for their textures.

You may submit your code by e-mail (tadavis@vr.clemson.edu). Please include the platform on which your code works (IRIX or Linux) and a makefile or compile command, along with the URL for your project web page.