**Geology 340 Lab 7: 3-D Visualization**

1. **Smiley Face**

Using the VRML commands we learned in class or other 3D software like Wings (see below), create a 3D representation of a goofy head of some sort. The face must contain a minimum of the following:

Two (2) eyes One (1) nose One (1) mouth

One (1) head One (1) silly hat

The face must be in color, but the colors are of your choosing. (20 points)

1. **Frank Family Science Center**

Create a 3D model (VRML or Wings or other) of the Frank Family science center and its surroundings. The model must include multiple different objects, but you can pick which objects you want to use and which features you wish to show. Strive to produce as much accuracy and detail as possible in your representation - you will need to wander around the building and grounds to measure and "groundtruth" your 3D construction.

**Grading Rubric**

|  |  |  |  |
| --- | --- | --- | --- |
| **Points** | **50/80** | **65/80** | **80/80** |
| **Level of Detail** | At least 6 objects  Basic building features shown  Dimensions fairly accurate | At least 15 objects  All major building features shown; some extra detail features also shown  Dimensions very accurate | At least 30 objects  Nearly all building features shown  Dimensions extremely mathematically accurate |

When you are done, turn in the final version of each 3D file (for VRML, the .wrl file; for Wings3D, the Wings file).

**Optional – Wings3D or other 3D rendering software**

For each of these projects, you may either write VRML code using a text-based editor like Notepad++, or you may use the 3D modeling software accessible from the course web page. I have Wings3D (demonstrated in class) linked there; you can also use another 3D modeling package if you wish. ***Remember that the goal for the Frank building is to be very accurate, so if you use Wings3D or another package, you’ll need to construct it carefully.***

Wings3D is multi-platform and powerful, but the interface is difficult to learn. If you use it, you can turn in your Wings3D files as your homework instead of VRML files.

# Viewing VRML

If you use VRML on a Windows machine, you may use the Qiew program or one of the other viewers on the course web page.

**The magic of Bing! –** Bing’s maps feature provides very detailed views of each side of the building under bird’s eye view. That can be helpful to check on details of what you’re building.

