

Simple

by Bill Bumgarner

Overview

This example demonstrates how to take advantage of many of the features provided by the 3Dkit. It does this through a subclass of N3DCamera called SimpleCamera. This class controls a very simple 3D environment featuring:

- Light Sources
 - ambient light
 - point light (close to the surface being lit with an intensity less than or equal to 1.0-- though light sources do accept intensities over 1.0, Pixar strongly recommends against intensity values over 1.0)
- Surface Shader
 - simple matte surface, color turned off by default so that it tracks quickly on a B&W machine (the code to turn on color is included, but commented out)
- Shaded surface rendering. Drops to wireframe when being manipulated by the mouse.
- A simple scene w/a Torus (though the code to draw a teapot are included and commented out).
- Use of the N3DRotator class to intuitively control 3D rotations via the mouse.
- Saving of RIB code to a file (along with a custom "Display..." command)

Classes defined within Simple

SimpleCamera

The SimpleCamera is a subclass of N3DCamera (which is a subclass of the View class). SimpleCamera creates the scene, including the shader, the light sources, and the N3DRotator instance within its initFrame: method. It also specifies what surface type should be used.

SimpleCamera also supports saving of RIB code to a file via that dumpRib:

method that is the target of a menu item in InterfaceBuilder. SimpleCamera implements a custom mouseDown: method that tracks the mouse in a modal loop and rotates the scene via a modal loop. When tracking the mouse, SimpleCamera specifies that surfaces should be rendered as wireframe to make the mouse tracking more responsive.

SimpleShape

SimpleShape is a subclass of N3DShape that implements a single method; renderSelf:, that calls RiTorus. The code needed to generate the classic teapot is also included.