# EXTERNAL OBJECTS

1. Loading scene content from files

- Java 3D enables the construction of complex 3D content:
  - Build content directly within your Java application
  - Load content from files
  - Do both
- File loader classes enable reading content from files in standard formats
  - VRML (Virtual Reality Modeling Language)
  - OBJ (Alias—Wavefront object)
  - LW3D (Lightwave 3D scene)
  - others

- Ship: an example of loading an OBJ file
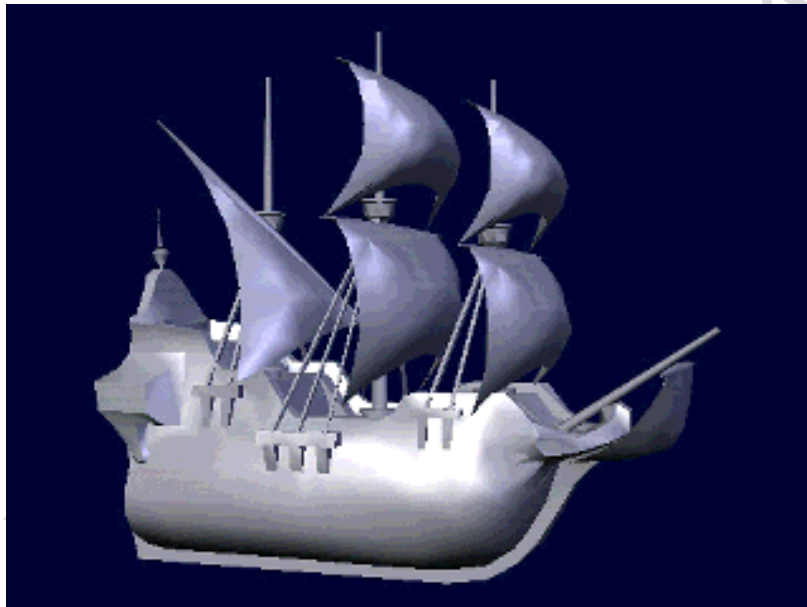
2. Interface for the scene loading

- `Loader` interface is used to specify the location and elements of a file format to load.

- `Scene` interface is a set of methods to extract Java3D scene graph information from a file loader utility.

3. Publicly available loaders

| File Format	Description
3DS	3D-Studio
DXF	AutoCAD Drawing Interchange File
LWS	Lightwave Scene Format
OBJ	Wavefront
WRL	Virtual Reality Modeling Language

4. Using the *VRML97* loader

- Place `vrml97.jar` in the directory `C:\jdk1.4\jre\lib\ext`

- Import two classes in your program

  `com.sun.j3d.loaders.vrml97.VrmlLoader`

  `com.sun.j3d.loaders.Scene`

- Declare a `Scene` instance and a `VrmlLoader` instance

  `Scene scene;`

  `VrmlLoader loader = new VrmlLoader();`

- Get the scene and assign it to a `BranchGroup`

  `BranchGroup myScene = scene.getSceneGroup();`
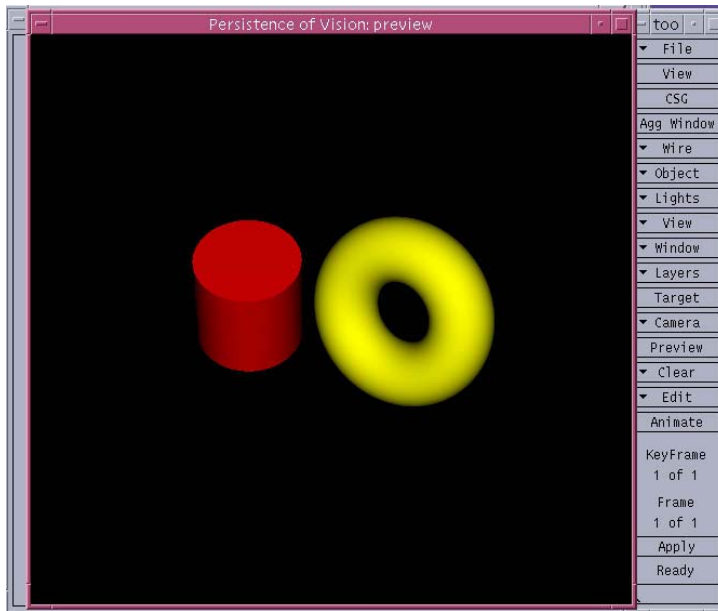
5. SCEDA II: A *SC*ene *ED*itor/*A*nimator
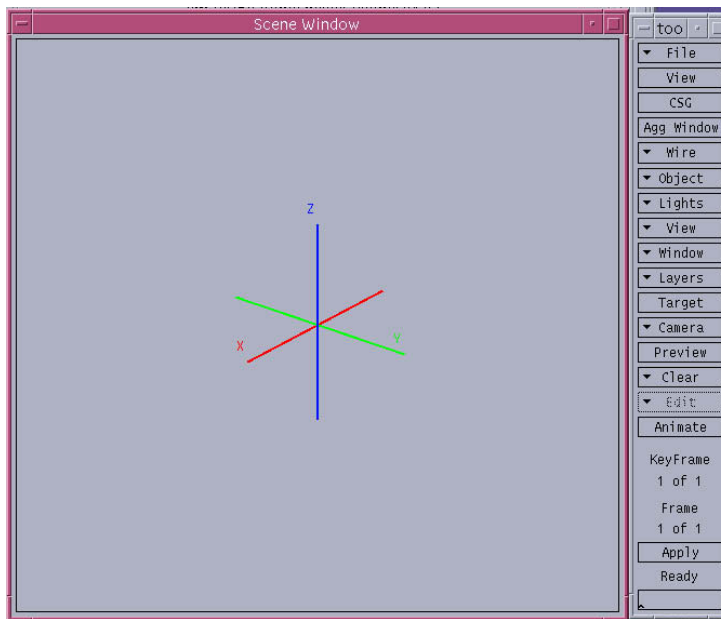
6. Scence construction with *sceda*
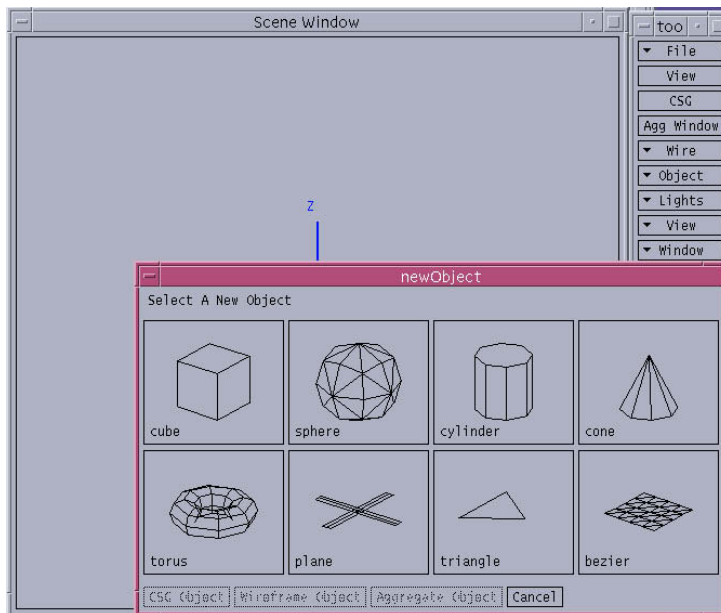
7. Object modeling in *sceda* (sced tutorials)
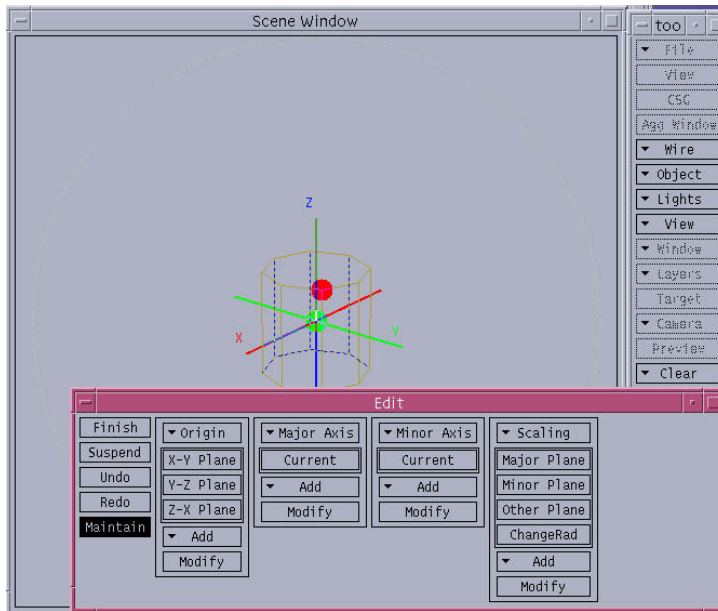
8. Defining object attributes in *sceda*
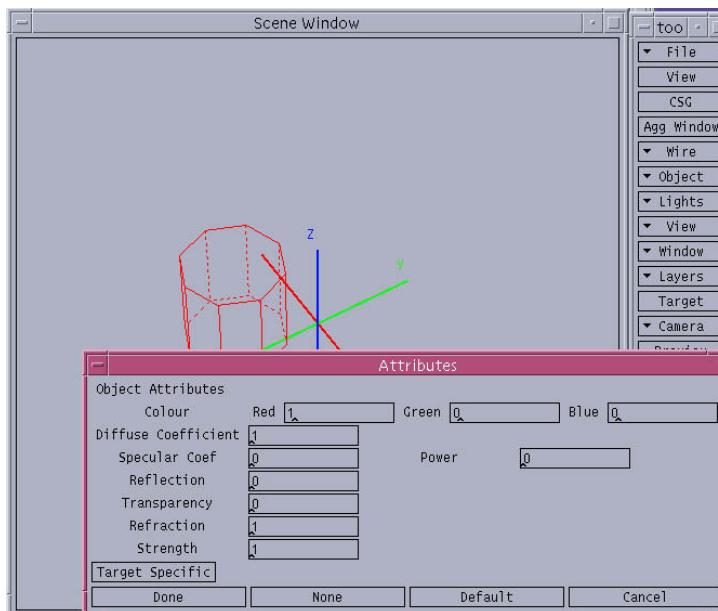
9. Online scene visualization with povray

10. A more complex example