

Intermediate

Raytracing

Introduction

This simple tutorial will explore the raytrace feature in Amorphium Pro. Raytracing creates realistic reflections, refractions (transparency), and shadows by tracing rays of light through the environment. Raytracing gives enhanced image quality but at the cost of longer rendering times.

You will use objects and textures that are build into Amorphium Pro to illustrate these features. You won't have to load anything to create the final image.

Getting Started

The first thing you will need for this tutorial is an empty project.

Launch Amorphium Pro and create a new project.

Go to the Composer mode and delete the default sphere (if you had the preference set to make one at the creation of a new project).

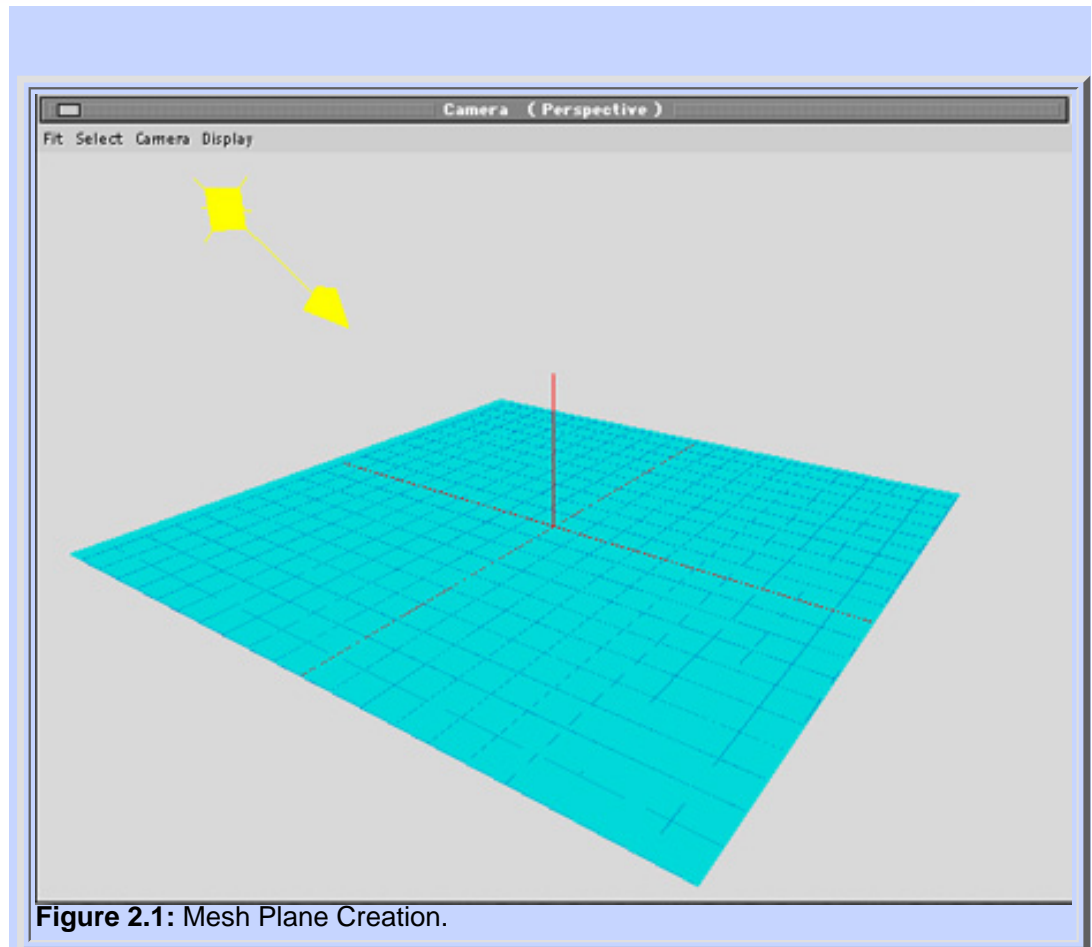
Now create a Mesh Plane that completely covers the grid as shown in the perspective view. (below & figure 2.1)

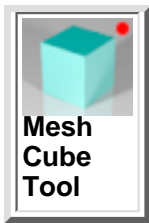


This plane will form the **floor** of our scene.

Let's create the objects that will be resting on the floor. One of the objects that you will add is a cube. The default form of a cube is called **organic** this form is very useful in Amorphium Pro when painting or deforming, but for this project, the other form, **synthetic** is more appropriate. Synthetic cubes have sharper edges which will look very nice in your project.

Click on the Mesh Cube icon to make it active and then right-click (control-click) on it to bring up its options dialog box. Switch from Organic to Synthetic as shown below (figure 3.2)





Now that you have set the creation options, go ahead and add a cube, sphere, and cone. Position them so that they rest on the **floor** and are approximately the size and in the position as shown in (figure 3.3).

Go ahead and save your project.

Do a sample rendering. Turn on Shadows in the options area of the Render tab. The result is very blue! All of our models have the same light blue color. In the next section, you will give interest to the scene by assigning different materials to each object. (figure 3.4)

Close the display window with the rendered image.

Setting the Materials: Floor

Materials define the overall look of the objects in your scene. They control color, reflectivity, transparency, shininess, and smoothness.

Begin by going to the Material mode, by clicking on Material at the top of the screen.

Use the choose menu at the bottom of the screen to select the MeshPlane.

The view window is now empty! Why? You are now looking edge-on to the plane. This is the front view and isn't too useful for viewing a flat plane.

Switch to the top view by selecting it under the View pull-down menu (figure 3.5)

Raytracing

Now you can see the plane.

An appropriate material for the floor is some sort of wood. Let's create a parquet tile floor that is slightly reflective.

From the Material palette on the right, switch the Diffuse setting from Paint to Parquet.

The view window now contains the MeshPlane with a smeared looking wood image. (figure 3.6)

The image is smeared because, by default, all materials are applied to

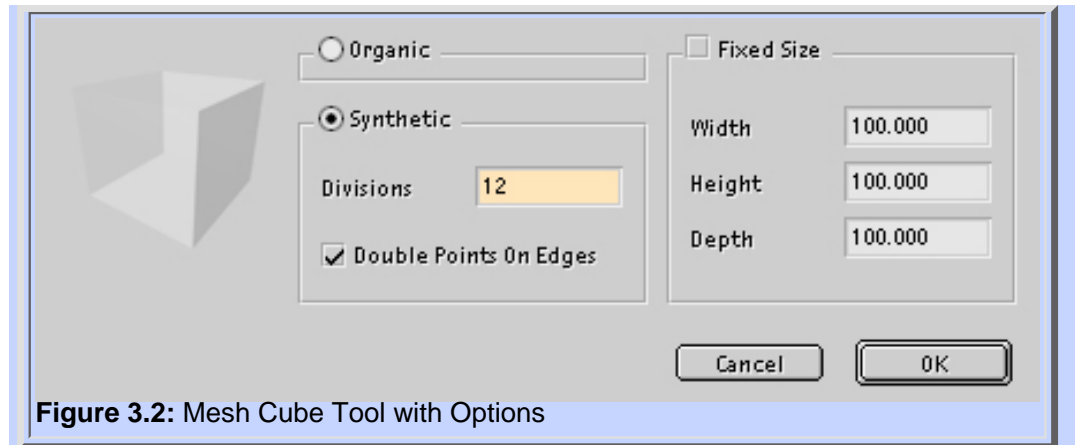


Figure 3.2: Mesh Cube Tool with Options

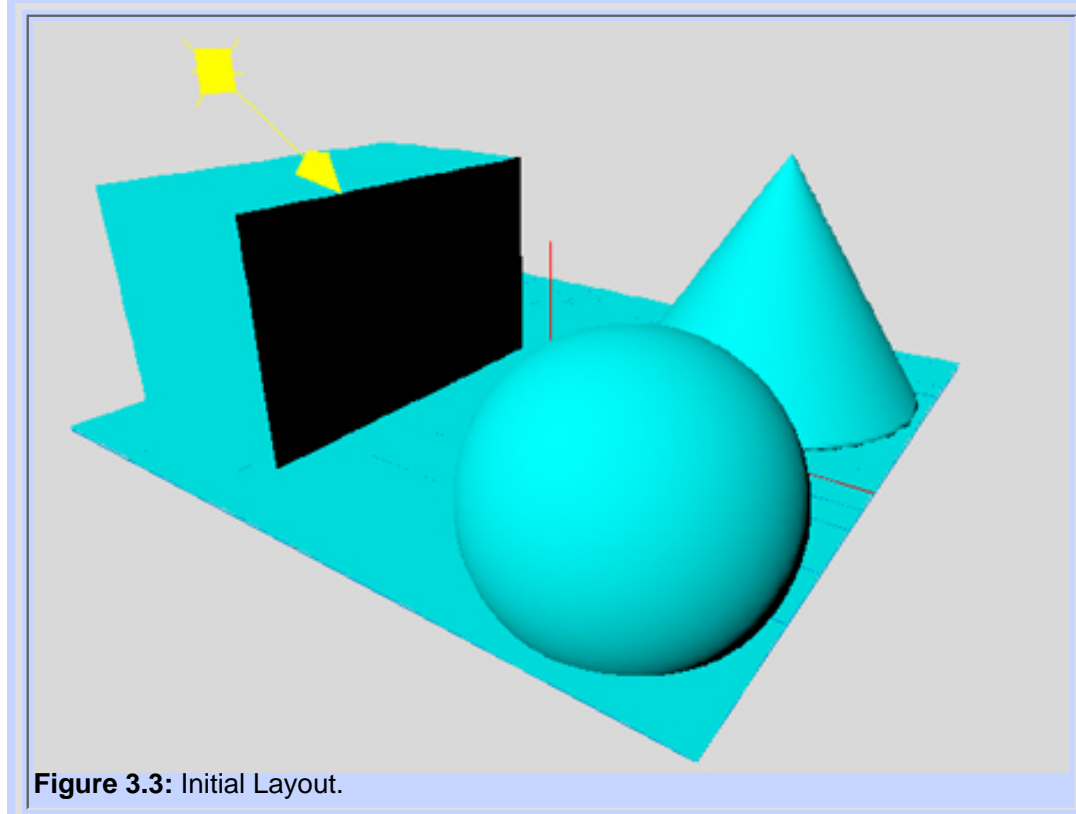


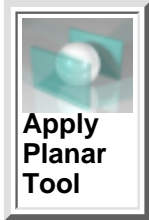
Figure 3.3: Initial Layout.

raytracing 1

the front of the object. The front of our MeshPlane is the edge, so the image shown is just a thin slice of the parquet floor smeared across the face of your MeshPlane. To fix this, you need to reapply the material to the top of the plane.

Switch to Mapper mode, by clicking on Mapper at the top of the screen.

Select the Apply Planar tool and then click on the plane.



Since you are looking at the top view of the MeshPlane, the Apply Planar tool has reapplied the image to the top. Now the MeshPlane contains a recognizable version of the Parquet tile floor image. But there are only 4 tiles. You need to shrink down the image so more tiles are visible on your floor.

Switch back to Material mode, by clicking on Material at the top of the screen.

Click on the small image of the Parquet tile in the Diffuse Color setting of the Material palette. This brings up the options dialog for Parquet. (figure 3.8)

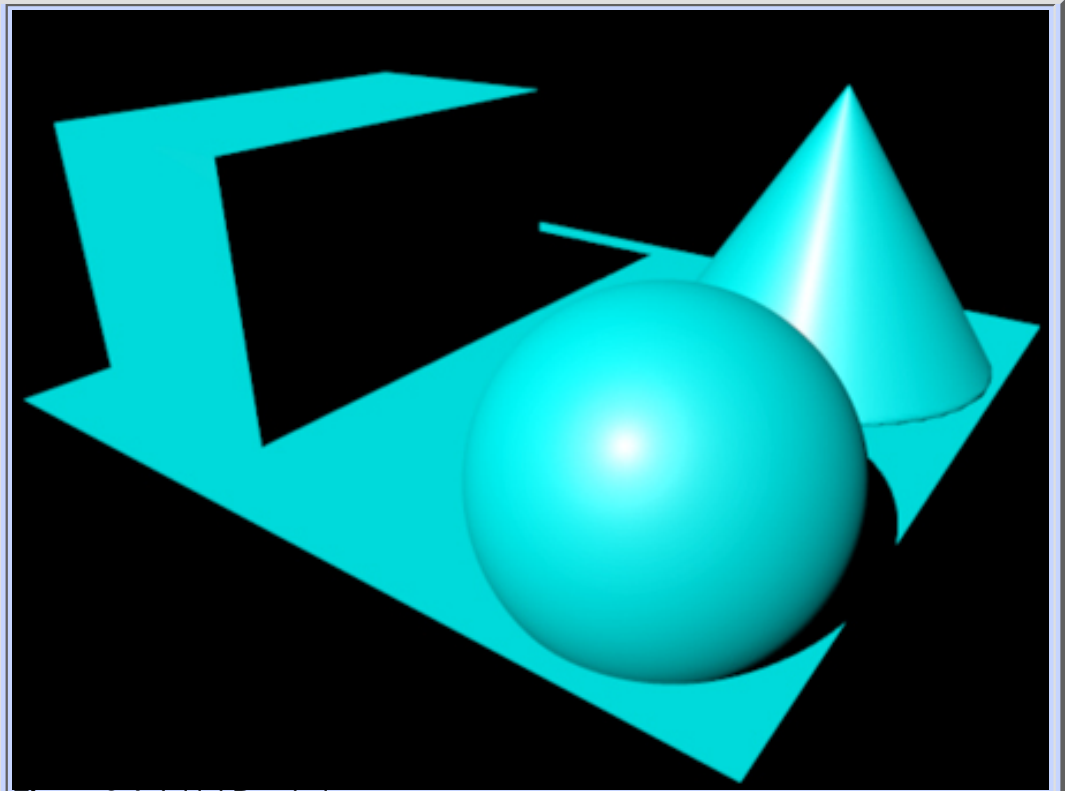


Figure 3.4: Initial Rendering

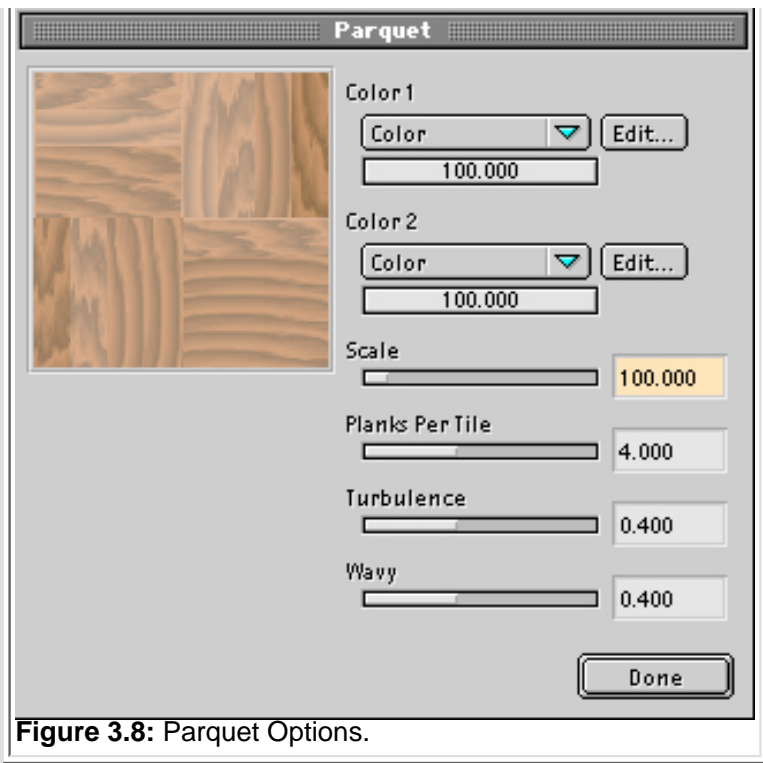


Figure 3.8: Parquet Options.

Set the scale to 400. This will give us many more visible tiles on the floor during the final rendering.

In order to make the floor appear highly polished, you can give it some reflectivity. This will cause the objects resting on the floor to cast a reflection. Amorphium Pro uses ray-tracing to create the reflection. This yields a high quality look.

Set the Reflectivity slider in the Material Palette to 20.

At this point you may wish to go to Composer mode and render the scene. If you do, make sure you come back to Materials mode before continuing with this tutorial.

Setting the Materials: Cube

Set the cube up so that it acts like a mirror in the scene.

Use the choose menu at the bottom of the screen to select the MeshCube.

Just set the reflectivity to 100 and the specular color to 0 in the Materials palette.

Setting the Materials: Sphere

You are going to make the sphere a transparent ball of glass.

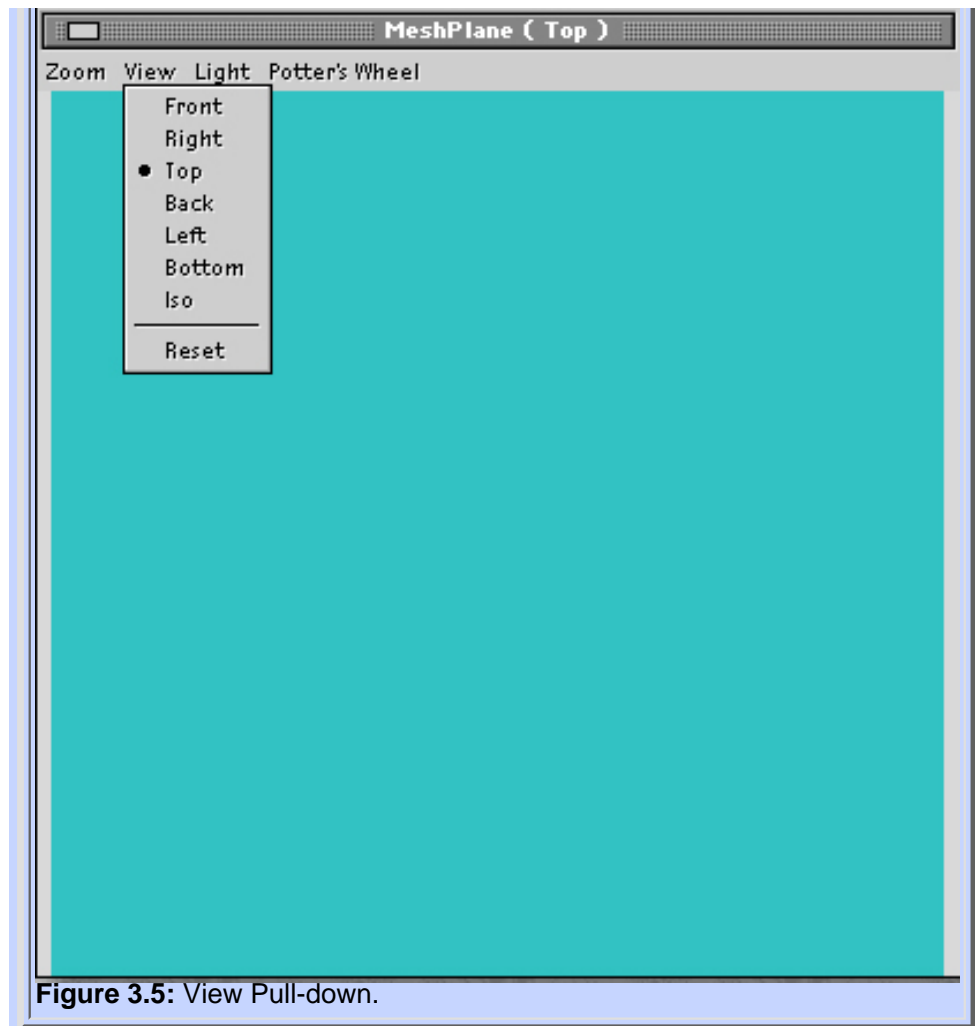


Figure 3.5: View Pull-down.

Use the choose menu at the bottom of the screen to select the MeshSphere.

Set its Transparency to 80, Reflectivity to 20, and the Refraction to 1.21 in the Material palette.

Refraction controls how much light bends as it passes through an object. Refraction of 0.0 is no bending at all. A value of 2.2 is that of a diamond. Set the sphere's color to red using the Diffuse Color pull-down in the Material Palette.

Setting the Materials: Cone

Why not give the cone a psychedelic look.

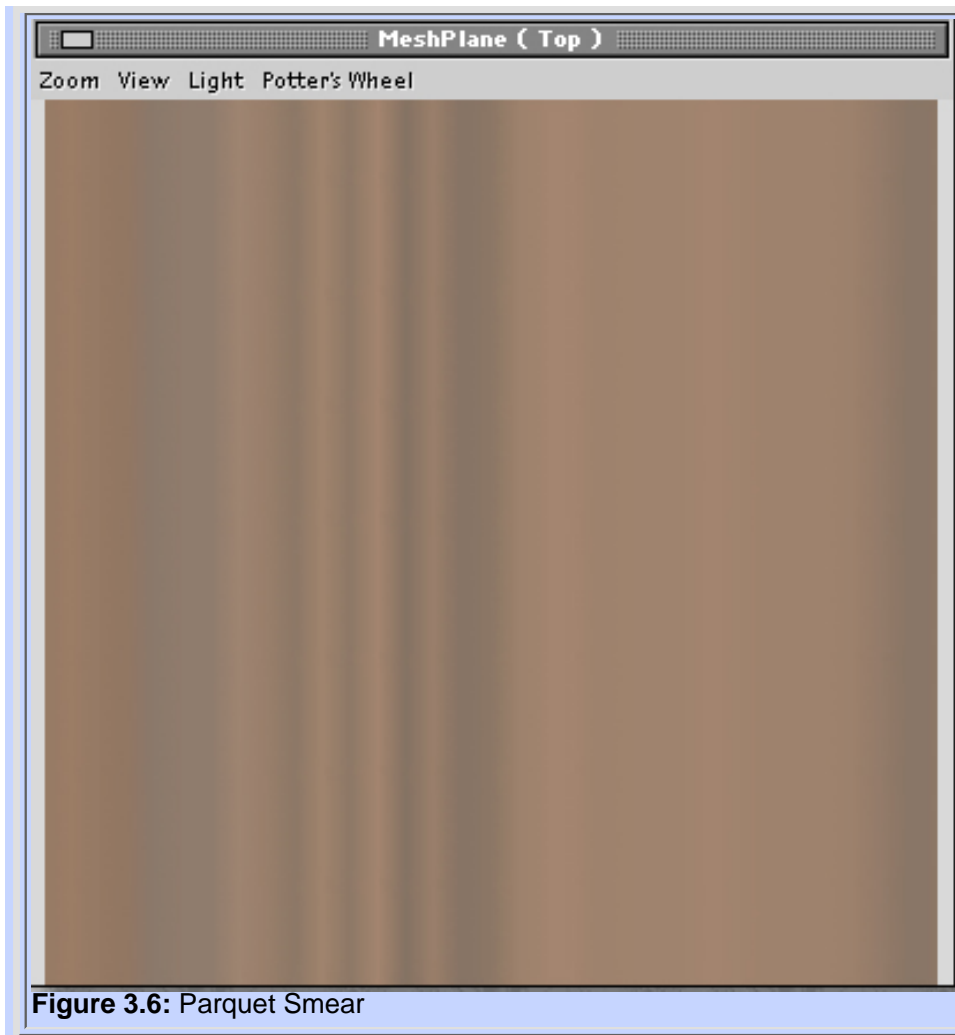
Use the choose menu at the bottom of the screen to select the MeshCone.

From the Diffuse Color pull-down in the Materials palette, select Rough. Click on the small image of the rough texture in the Materials palette to bring up the Rough Options dialog box. (figure 3.9)

Set Color 1 to blue and Color 2 to green. Now the cone looks really wild.

Time to go back to Composer mode and do a rendering. (figure 3.10)

The raytrace features really make the image look nice. As you noticed, this time it took longer to render. Raytracing creates wonderful imagery at the expense of time.



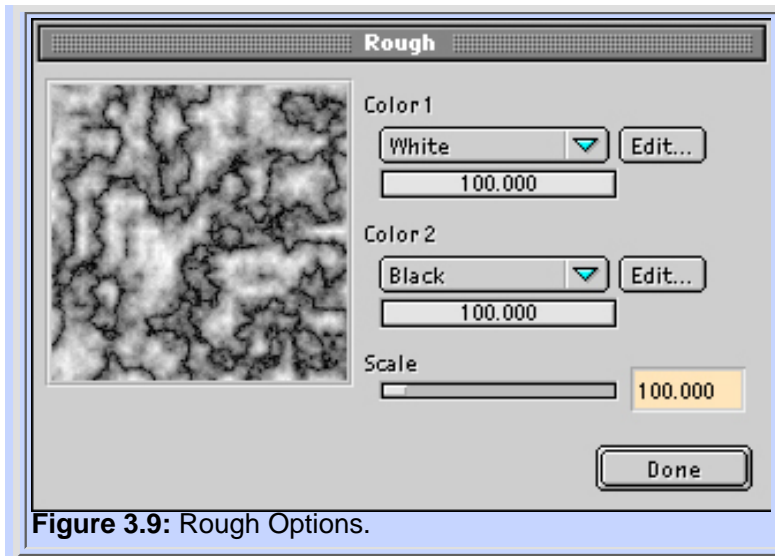


Figure 3.9: Rough Options.

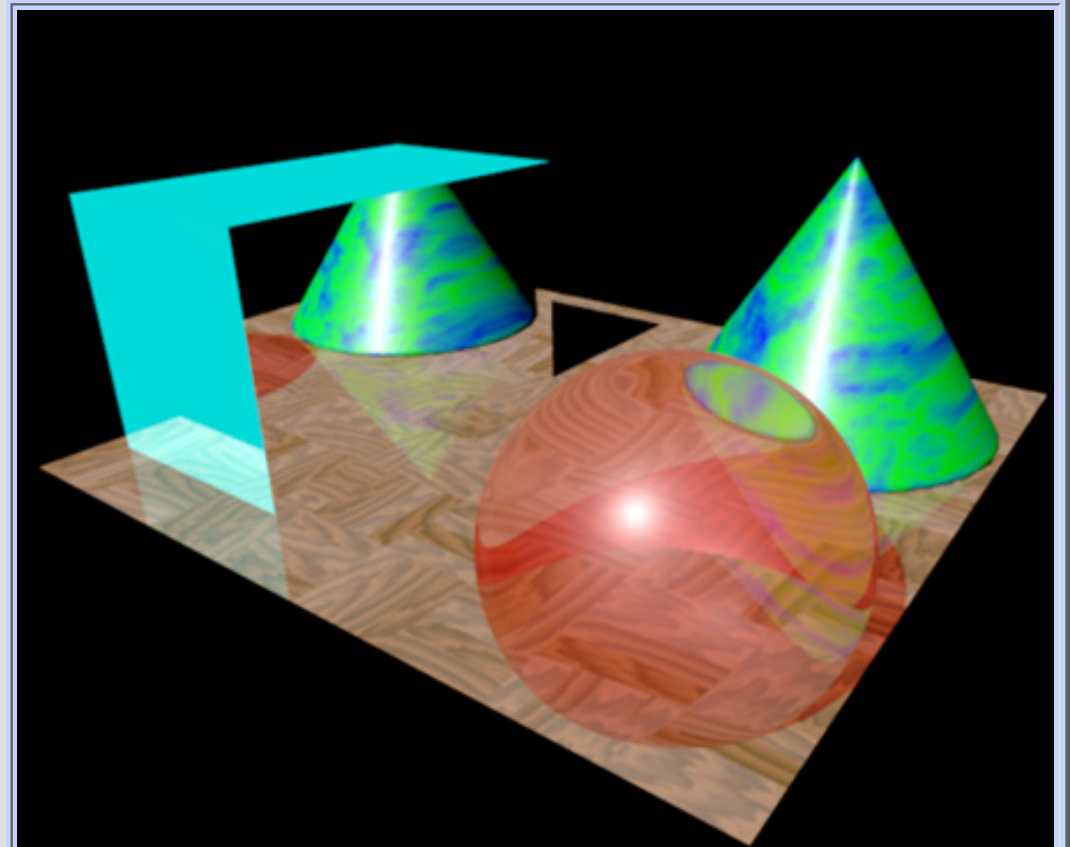


Figure 3.10: Material Rendering.