4.206 Visualization

Massachusetts Institute of Technology

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Recitation 7

April 3,4, 2003

Introduction to Rendering

Recitation Schedule

1) Points from the lecture & preview of Recitation 7.

2) Open your **Design Model .MAX file & Recitation_07.PDF** tutorial from StudioMIT.

3) Go through the tutorial.

4) Discuss Assignment 7.

5) Questions.

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Texure Mapping

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1. Bitmap texture

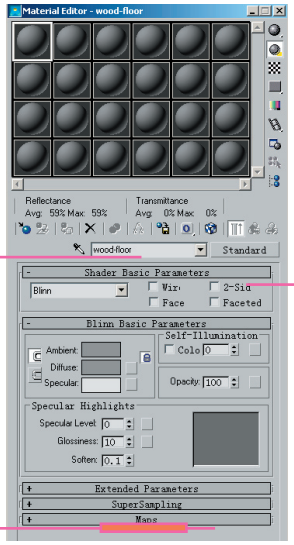
1.1) prepare the texture image file

Save all image files you need to the same folder of your .Max file.

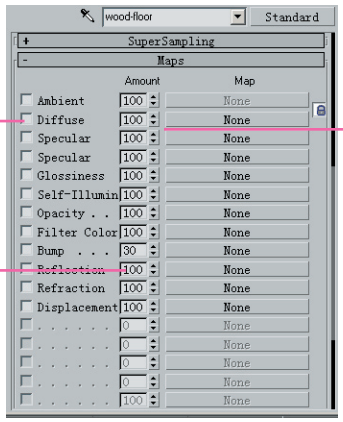
1.2) Make a bitmap texture map.

a) Click **Material Editor** 

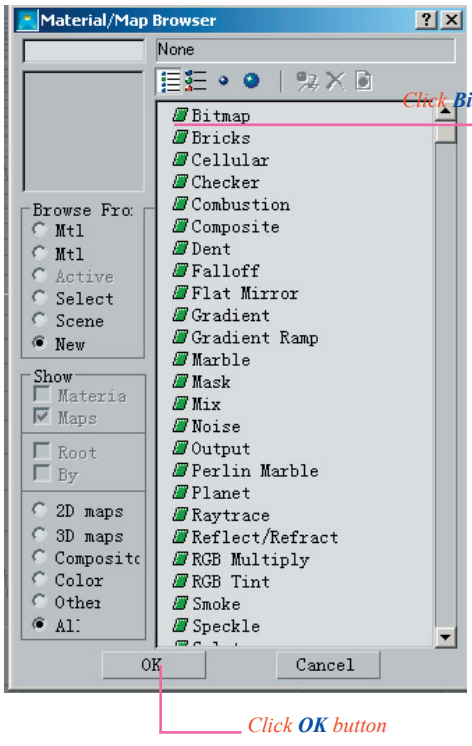
b) Choose a material editor sample and name the new material. click **Map** botton. Lets you select an image file to be mapped.



c) Use **Diffuse Color** map



d) Choose Bitmap in the table



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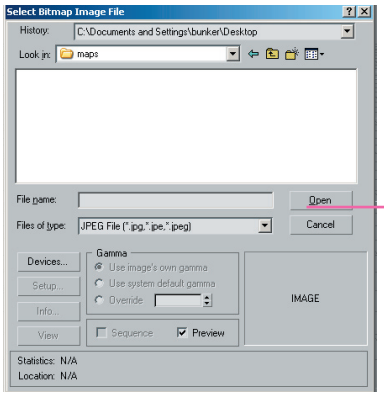
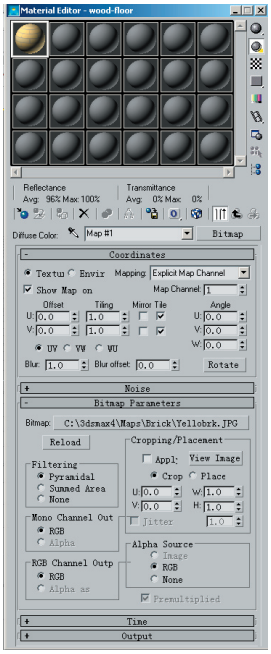
e) Select an Bitmap image file



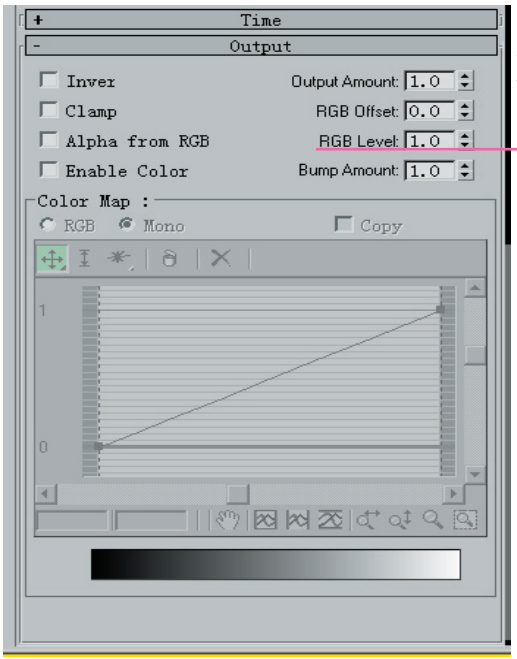
choose the file you have prepared, then click Open

Material Editor shows a new set of parameters for bitmap type



g) Adjust reflectance of the texure mapping

To reduce or increase the reflectance , adjust the RGB level of bitmap.
Scroll down the dialog to find **Output.**



RGB Level:
Default value is 1. Reducing the value will lower the reflectance.usually it can be between 20%-80%.

g) Select the object and assign the material to object.

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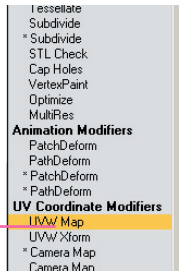
1.3)Set texure coodinates.

If an object is assigned with a material map defined with bitmap, you need to specify mapping coordinates. That means you need to specify where and in what scale the texture mapped images should be placed on object surfaces.

a) Select the object assigned material 

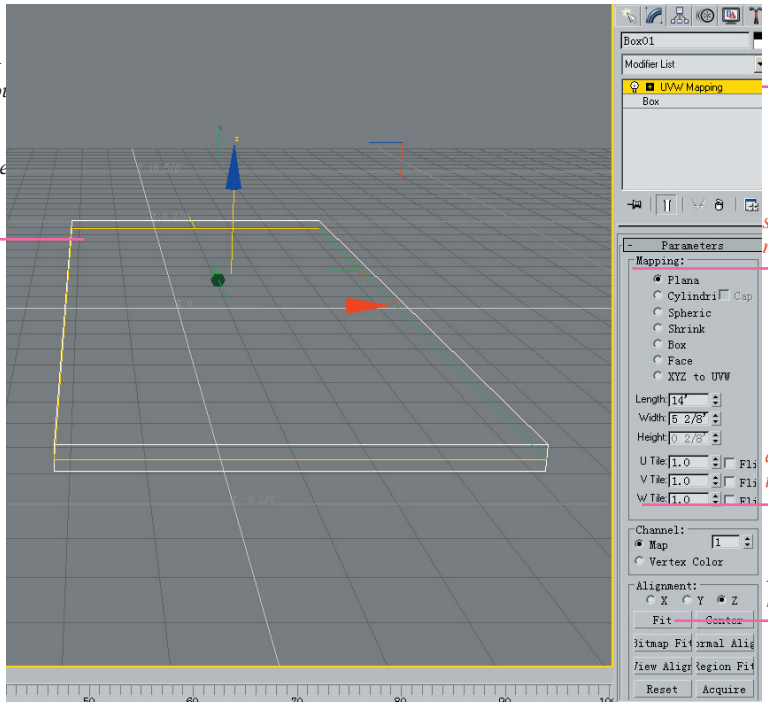
b) Go to **Modify >Modifier List>UVWmap**

C) Adjust texure coordinates to the selected



*yellow **Gizmo,** represents the orientation and position of the mapped texure image, depending on the type of mapping method you choose.*

It can be moved and rotated by the usaul method. 



*double click on **UVW Mapping,** yellow **Gizmo** appears in the viewports.*

select an appropriate mapping method.

adjust the number of repetition of texure pattern on a surface

Fit: quick way of fitting the mapped texture on a surface

Note:After editing the texture coordinates with Gizmo, make sure to unclick the UVW Mapping to go back to the regular editing mode

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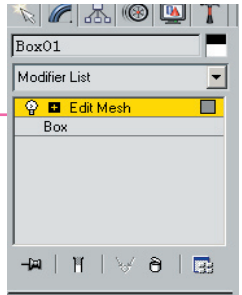
1.4)Detaching surfaces

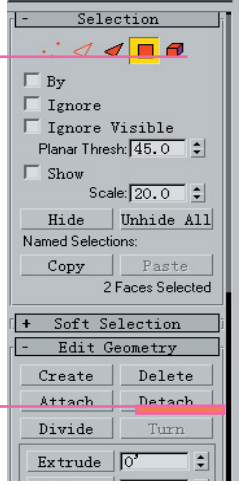
It may be necessary to apply a different texture coordinate to each surface in a single object. This means you need to break down a solid into individual surfaces. You can do this easily in AutoCAD using **explode** command, also you can do it in VIZ.

a) Select the object

b) Go to **Modify >Modifier List>Mesh Editing> Edit Mesh**

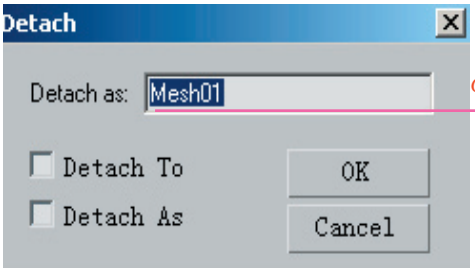


C) Click **Face** Icon, then carefully select the surfaces you want to detach. You can hold down **Ctrl key** to select faces incrementally.



d) Go to **Edit Geometry>Detach**

This will detach the selected surfaces from the object. The detached surfaces will become a new object and you will name it.



Give a name, then click OK

Note:After editing the texture coordinates with Gizmo, make sure to unclick the Edit Mesh to go back to the regular editing mode

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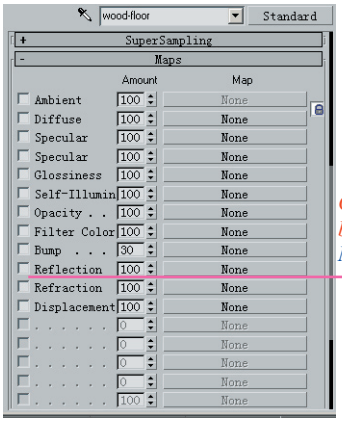
2. Reflection Map

a) Click **Material Editor**

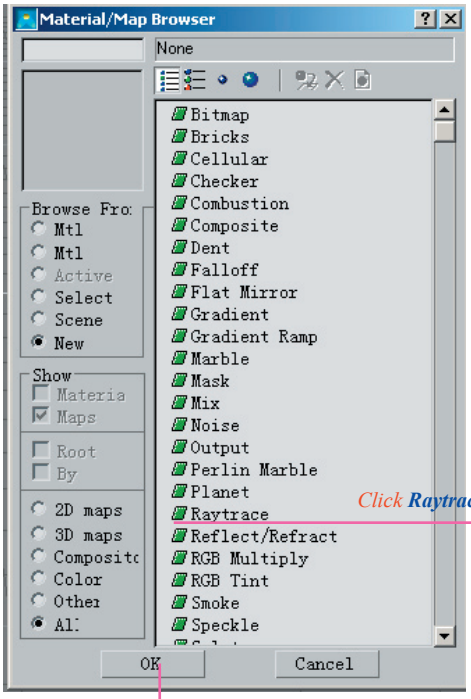
b) Choose a material editor sample and name the new material or add reflection effect to a used material .

c) Use **Reflection** map



*Click **None** button, brings up a **Material/Map Browser***

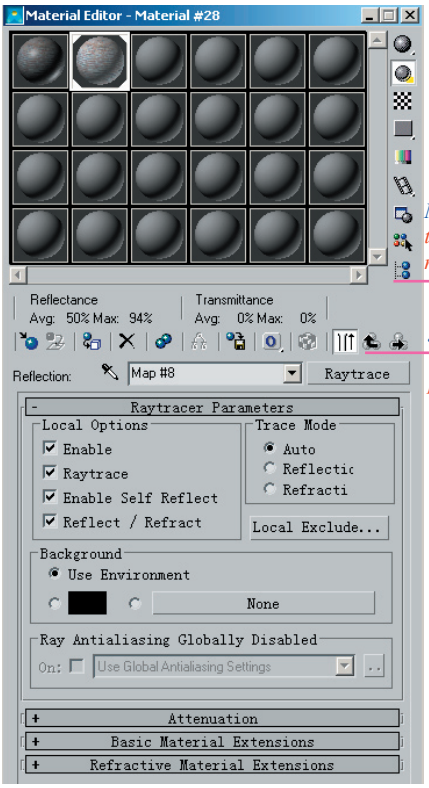
d) Choose **Raytrace** in the table



*Click **Raytrace** button*

*Click **OK** button*

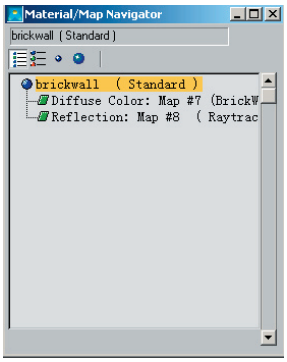
e)Raytrace parameter



Material /Map Navigator to check the componets of material you are editing

go to parent to go out from the raytracer paremeter

This material sample includes bitmap and reflection



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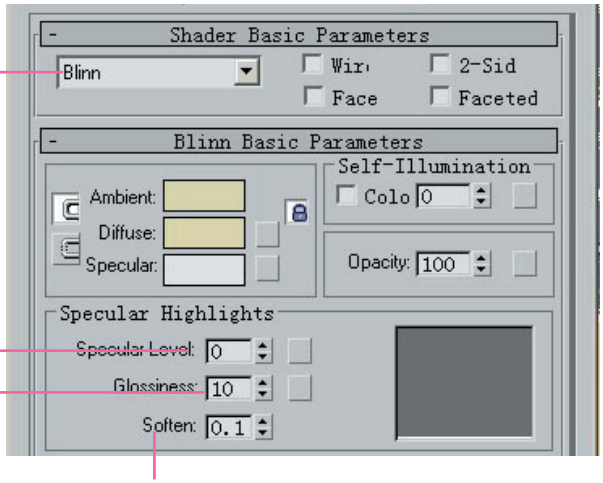
3. Simple color material

Sometime you just need to assign simple color meterial to the objects. You still need to adjust some parameters of the meterial to achieve the goal of simulation of different texture.

This one is recommended for Standard material



Specular Level showing the intensity of the specular highlight. A larger value makes the hotspot brighter When you make the material with strong specular reflection, you should change this value larger.(such as the metal, suede, glazing ceramic tile, etc)

Glossiness showing the size of the specular highlight. A larger value makes the hotspot smaller.

Soften controlling the sharpness of the edge of the hotspot. A larger value more blurred edge. For softer or rougher materail, you should get higher soften value

4. Photoshop

Sometime you need to prepare your personal texure image first in Photoshop, and then map that image to the model.
To avoid make tiling texture mapping directly in VIZ , you might need to make a image of one wall or floor in Photoshop first.

a) Open the texture file.

b) New a file, which should be larger size or higher resolution than the texture image file you opened.

c) Move the texture file to the new file by clicking **move** 

d) Copy the texture file several times until you get enough repetition, by using **Alt+Move tool** 

e) Layout all the images you just copied, by using **move** 

f) go to **Layer>matting,** to merge all layers into one layer.

g) Use **Doge Tool**  to blur the edge between each two repetitive images.

h) Save as **.Jpg** or **.Tiff** file.