IMGD 3000 - Technical Game Development I: Texturing

by

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Texturing

- Created/manipulated using image-processing software
  - Photoshop
  - Paint Shop Pro

- Mapped to geometry (models)

- Very powerful image enhancing techniques
  - Can be used for fake shadows, fake reflections, much more
Mapping to Models

- Objects are made from
  - Geometry (a.k.a., polygons)
  - Lighting
  - Textures

- Vertices and connectivity
  - Triangles
  - Triangle-strips
  - Meshes
  - Patches/surfaces
Textures

- Images that are applied to geometry
- Many ways to apply textures
  - Decal
  - Blend
  - Layer
- Can use for other things as well
  - Height fields
  - Environment mapping
  - Bump mapping
  - Displacement mapping
Scenes
Texture Mapping Example
Texture Mapping Example
Bump Map Example: Texture
Bump Map Example: Bump Map
Advanced Mapping Techniques

- Parallax Mapping
- Ambient Occlusion
- Backed-on Radiosity
Parallax Mapping (1 of 2)
Parallax Mapping (2 of 2)
Ambient Occlusion

Without Ambient Occlusion

With Ambient Occlusion
Example of Blending
Blending Result
Skybox Rendering

- Create **really big** a cube around the world
- Texture each side with a sky texture
Sources of Textures

- Computer-generated
  - Complete control, might not be realistic
  - Generate a repeating pattern
  - Generate a random pattern (like noise)
  - Simulate physical properties

- Digital camera
  - Realistic, but hard to control
  - Can stitch into mosaic

- Hybrid
  - Start with a photo, edit as necessary
Resources

- Nice place for textures (pay)
  - http://shop.3dtotal.com/