IMGD 1001:
The Game Art Pipeline

(Visual) Artistic Courses

- ☐ **AR 1100. Essentials of Art.**
- ☐ **AR 1101. Digital Imaging and Computer Art.**
- ☐ **IMGD/AR 2101. 3D Modeling.**
- ☐ **IMGD/AR 2200. The Art of Animation.**
- ☐ **IMGD 2005. Machinima.**
- ☐ **IMGD 3500. Artistic Game Development I.**
- ☐ **IMGD 4500. Artistic Game Development II.**
- ☐ **(AR 2yyyy. Digital Painting)**

Introduction

- ☐ "The computer artist is modern-day alchemist"
  - -- Matthew Omernick
  - ■ Turn polygons and pixels into wondrous worlds
- ☐ Sources of inspiration
  - ■ Playing games!
    - ☐ How can make fun game if not having fun yourself?
  - ■ The real world
    - ☐ The real world is always more interesting than anything we can make up

Based on Foreword, *Creating the Art of the Game*, by Matthew Omernick

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Introduction: Remember the Constraints

- ☐ Year 2098, Microsoft will release FunStation 3000, 14 million terabytes of RAM, quantum-holographic drive with near infinite storage, processors at the speed of light
  - ■ Game developers complain not fast enough
- ☐ Game artists must be creative *inside confines of technology*
  - ■ All disciplines: engineering, design, sound
  - ■ But often constraints biggest on artist

Based on Foreword, *Creating the Art of the Game*, by Matthew Omernick

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Outline

- ☐ The art pipeline (this deck)
- ☐ Concept art
- ☐ 2D Art
  - ■ Animation
  - ■ Tiles
- ☐ 3D Art
  - ■ Modeling
  - ■ Texturing
  - ■ Lighting

What's a Pipeline?

- ☐ *In the pipeline*
  - ■ *Informal.* in the process of being developed, provided, or completed; in the works; under way. (Random House)
- ☐ For our purposes
  - ■ The sequence of operations required to move art assets from concept to the finished product
- ☐ The Art pipeline
  - ■ 2D: Concept, Creation, Conversion
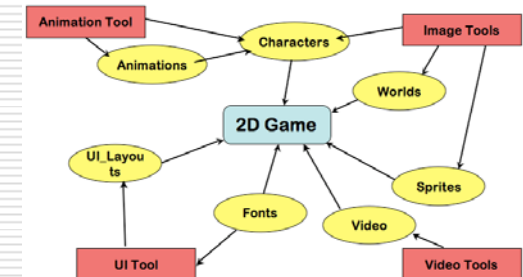 - ■ 3D: Concept, Creation (modeling, texturing, lighting), Conversion
  - ■ Asset management

Types of 2D Art

- These are created with tools:
  - User Interface (UI)
  - Sprites, tiles, and other pixel art
  - Type and fonts
- These need a pipeline:
  - Character art
  - Scenery / worlds
  - Characters
  - Animation
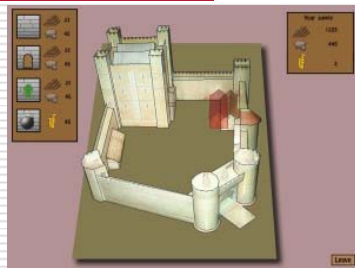 - Video

2D Asset Creation

2D Pipeline (1 of 3): *Concept*

- Sketches
  - Napkin-style
  - Detailed design treatments
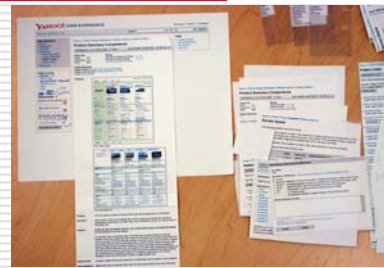 - Prototypes

"Napkin-style" Concept Art

2D UI Prototype

designersnotebook.com
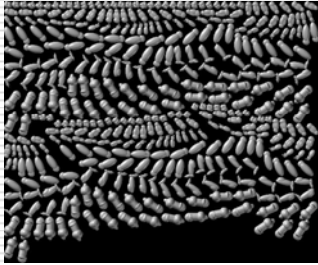
Paper UI Prototype

boxesandarrows.com

2D Pipeline (2 of 3): *Creation*

- Commercial / third party tools:
  - Photoshop, The Gimp, sprite editors, HTML/browsers, Flash…
- Homegrown tools
  - Specialized animation systems
  - Tools that simulate key game features (UI layout tool, etc.)
  - The game engine

Assets for 2D Animation (1 of 3)

eberlein.org/euphoria

Assets for 2D Animation (2 of 3)

cvrpg.com

Assets for 2D Animation (3 of 3)

aniway.com

2D Pipeline (3 of 3): *Conversion*

- Putting the assets into the final form
  - File type conversion
    - PSD to TGA / JPG, for example
    - Compression
    - Collection (zip files, pak files, etc.)
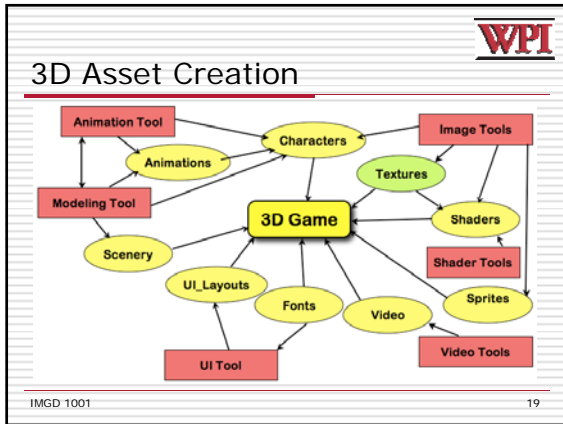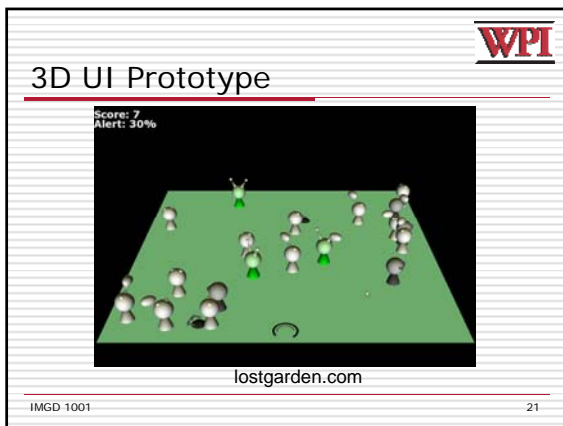 - Testing in the game
  - Debug / fix

Group Exercise

- Break into your project groups
- At the top of a piece of paper, *each person* writes the description (text) of a visual concept for a character/item/object in your game (3-4 minutes)
  - About 1 small paragraph
- Rotate papers among group
- In the middle of the paper, draw a concept art sketch based on the text (5 minutes)
- Pass back to the original person
- Provide feedback (verbally), and briefly in text on bottom (2-3 minutes)
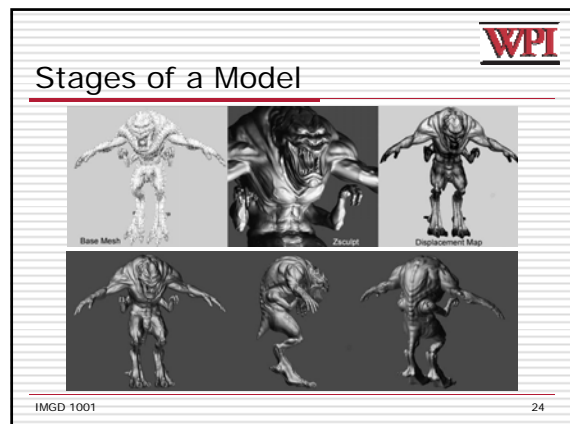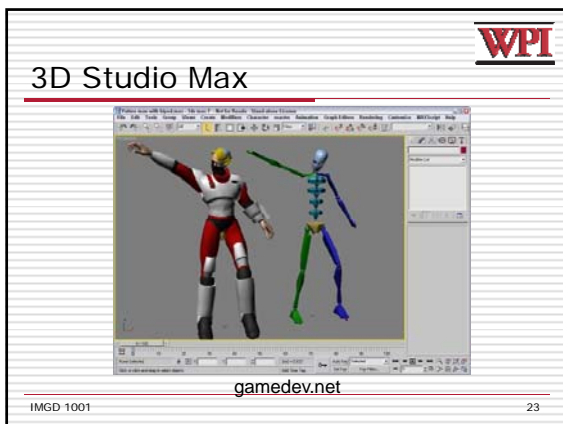- (Hand in)

3D Asset Creation

3D Pipeline (1 of 4): *Concept*

☐ Sketches
- *Napkin-style*
- *Detailed design treatments*
- *Prototypes*
- Maquettes (a small scale model)
- Animation sketches / flipbooks
- Mockup models
- Texture mockups
- Architectural layout

3D UI Prototype

lostgarden.com

3D Pipeline (2 of 4): *Creation*

☐ Commercial / third party tools:
- *Photoshop, The Gimp, sprite editors, HTML/browsers, Flash…*
- 3D tools: 3D Studio Max, Maya, Lightwave, Blender

☐ Homegrown tools
- Specialized animation systems
- Tools that simulate key game features (UI layout tool, etc.)
- The game engine
- Exporters / plugins

3D Studio Max
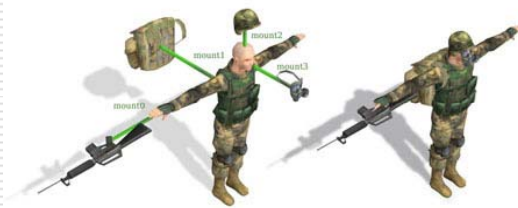

gamedev.net

Stages of a Model

3D Pipeline (3 of 4): *Texturing*

- *Animation systems*
  - *Motion capture*
  - *Third party tools*
  - *Homebuilt tools*
- Texturing systems
- Shaders / surface tools
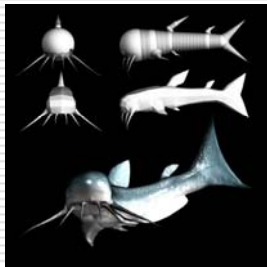- Renderers / video systems

Texturing and Accessories

garagegames.com

A Model, Textured

zbrush

Character and a Skin (1 of 2)

secretlair.com

Character and a Skin (2 of 2)

cresswells.com

3D Pipeline (4 of 4): *Conversion*

- Export from modeling to custom formats
- *Putting the assets into the final form*
  - *File type conversion*
    - *PSD to TGA / JPG, for example*
    - *Compression*
    - *Collection (zip files, pak files, etc.)*
  - *Testing in the game*
  - *Debug / fix*

Asset Management

- How do you share the production process across time, space, and content creators?
  - Source code has many tools -- "solved"
  - Data/Art is harder
    - Not easily merged
    - Dependencies not obvious
    - Relationships complex
  - Some commercial systems are trying
  - Typically a combination of:
    - Homegrown tools
    - Convention and process