CS 248 Videogame project

Presented by Michael Green

(based loosely upon Rene Patnode's help session slides from 2003)

Nov 3, 2004

Project Help Session

- Today
  - Project description
  - Details about required features
  - Helpful hints
  - Deliverables

OpenGL Help Session

- Friday
  - Sean will give a brief overview/tutorial on using OpenGL
  - Read the OpenGL Redbook chapters 1-3

Where to Work

- You can develop on any platform (Windows, Mac, Linux) since OpenGL is cross platform. And for you adventurous types, you can do your game in DirectX in Windows.
- Working on the Sweet Hall machines will allow Sean and I to help more. Working on a laptop could be convenient, but remember, laptops don't usually have the nice videocards that desktops computers will have. Design you game and choose your development platform accordingly.

Forming Teams

- Do it ASAP
- Groups of 2-3 encouraged but not required
- Stick around after the review if you're looking for people. Alternatively, post to the newsgroup.
- Once in a group, plan our your schedules for the course of the project and make some deadlines.

Forming Teams

- Make sure your team is compatible
  - Will I like this person at 7 am after an all-nighter?
- Make sure everyone has the same goals
  - How much effort?
  - Desired grade?
  - Competition?
- Make sure everyone wants the same type of game
  - Genre: Action vs. RPG
  - Game-play: Button Masher vs. Sit and Watch
  - Content: Blood vs. Puppies

(from Rene’s slides from last year)

Helping those that help themselves

- Despite the fact that Sean and I are such awesome TAs, we aren’t going to be able to answer all your questions or help you in all facets your game. The scope of the project is just too large. We’ll help when we can (and we encourage you to ask us questions), but as mentioned in the handout, “there will be a considerable amount of learning on your own.”

Learning on your Own

- http://graphics.stanford.edu/courses/cs248-04/proj3

- My favorite sites from that page are: Nehe productions (great OpenGL tutorials), and Gamasutra (great discussion of a wide variety of techniques and game design in general).
- If you find an informative website, let us know and we'll add it to the list so other students may take a look.

Basic Requirements

- 3D Viewing and objects
  - You’re not developing for the Game Boy Advance. Your game should have a 3D world that can be navigated.
- User Input and Gameplay
  - We’re looking for more than just a tech demo. It needs to be interactive. A keyboard and mouse should be sufficient for most of you. Some might want to use a joystick or gamepad.

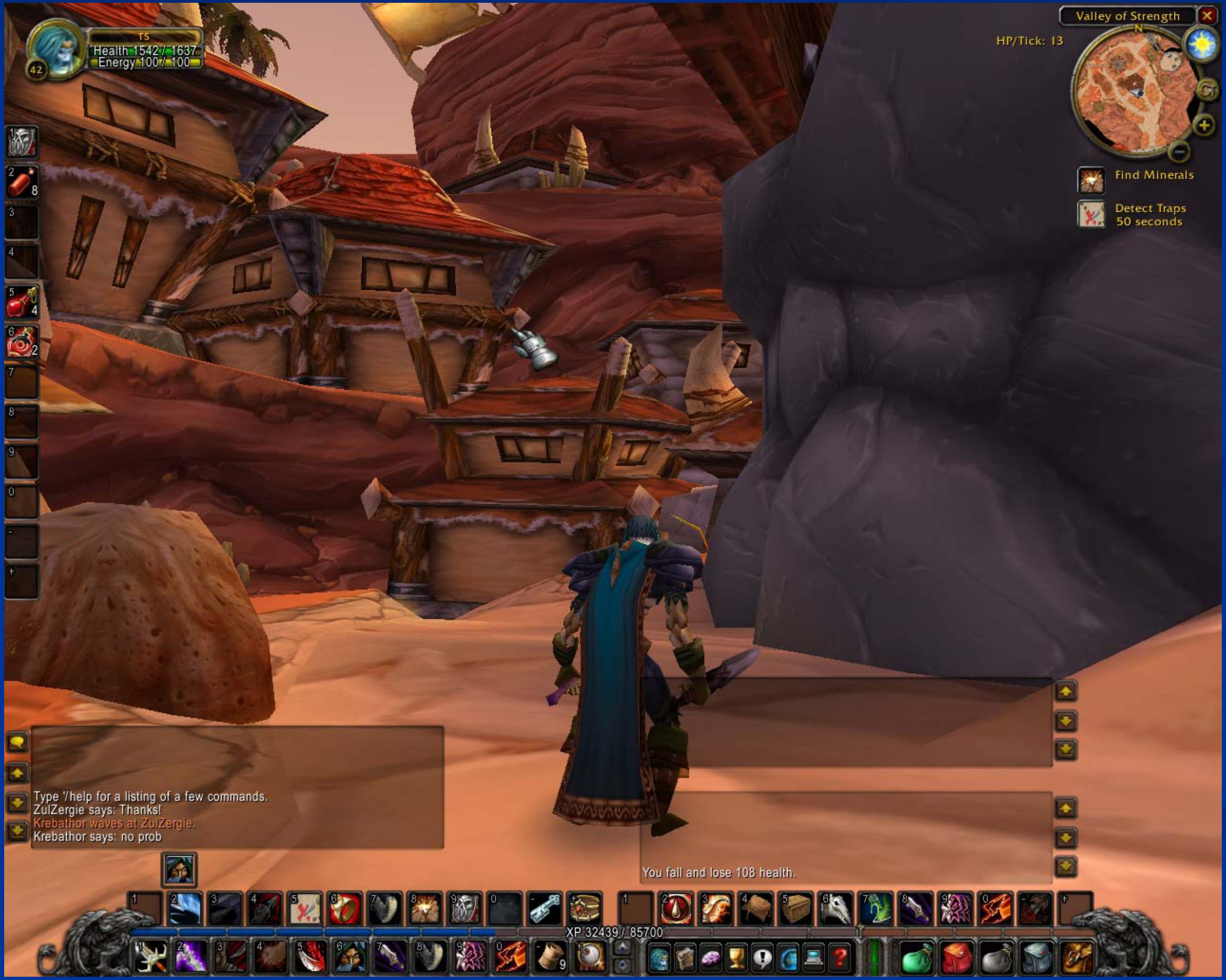
Basic Requirements continued

- Lighting and Smooth Shading
  - Create a light source, define normals for your object and OpenGL can handle the rest.
- Texture Mapping
  - Texture mapping gives life to objects without adding huge complexity to models. Good texture work can greatly add to the artistic vision of your game.

Advanced Features

- 2 advanced features required per person in the group (i.e. 2 for one person, 4 for a pair, 6 for a group of 3).
- At least one of these features needs to be done extremely well (probably more than one in a larger group).
- An e-mail will be sent out describing “too easy”, “better”, and “great” examples of each feature.

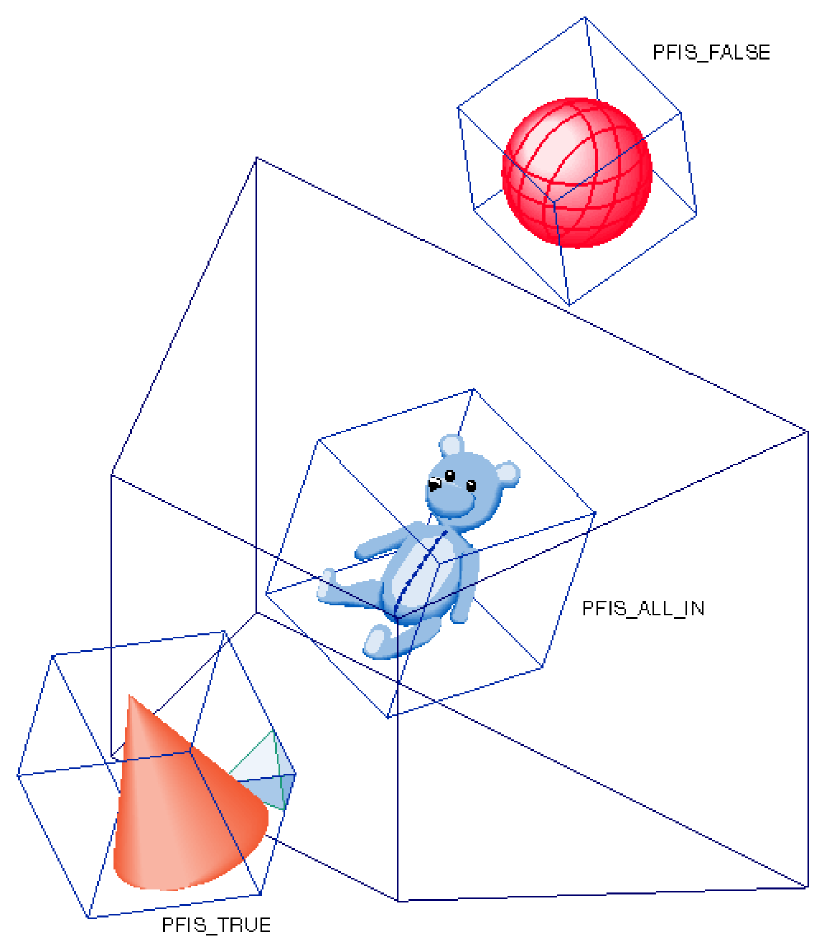
On-screen control panel



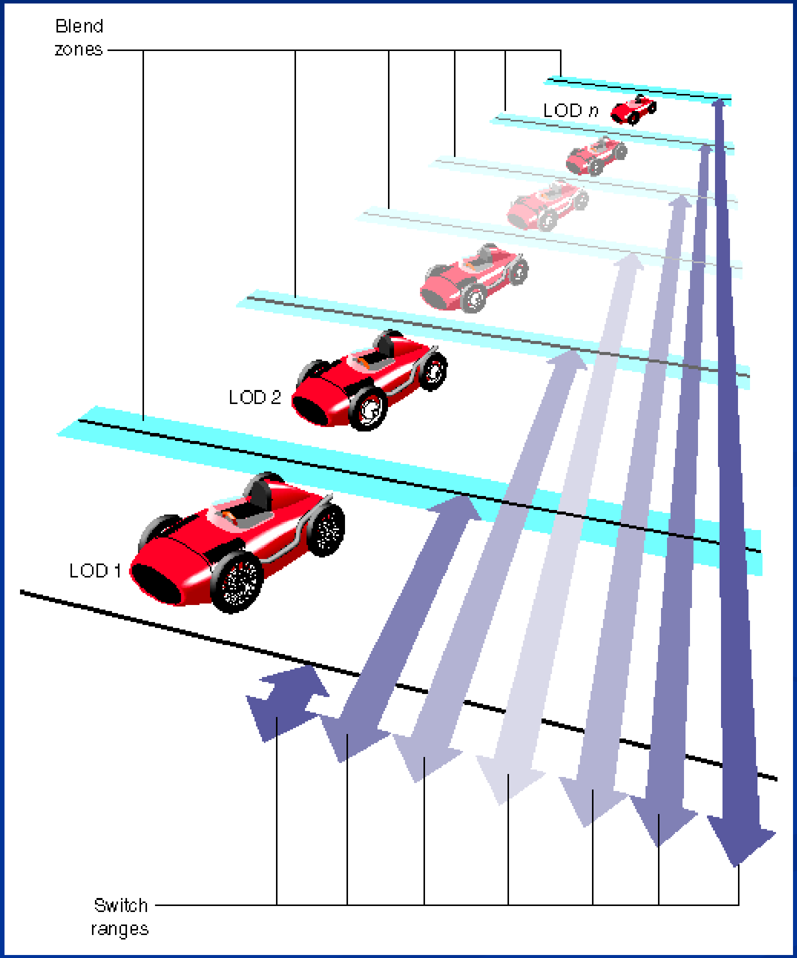
Type '/help for a listing of a few commands.
ZulZergie says: Thanks!
Krebathor waves at ZulZergie.
Krebathor says: no prob

You fall and lose 108 health.

View Frustum Culling



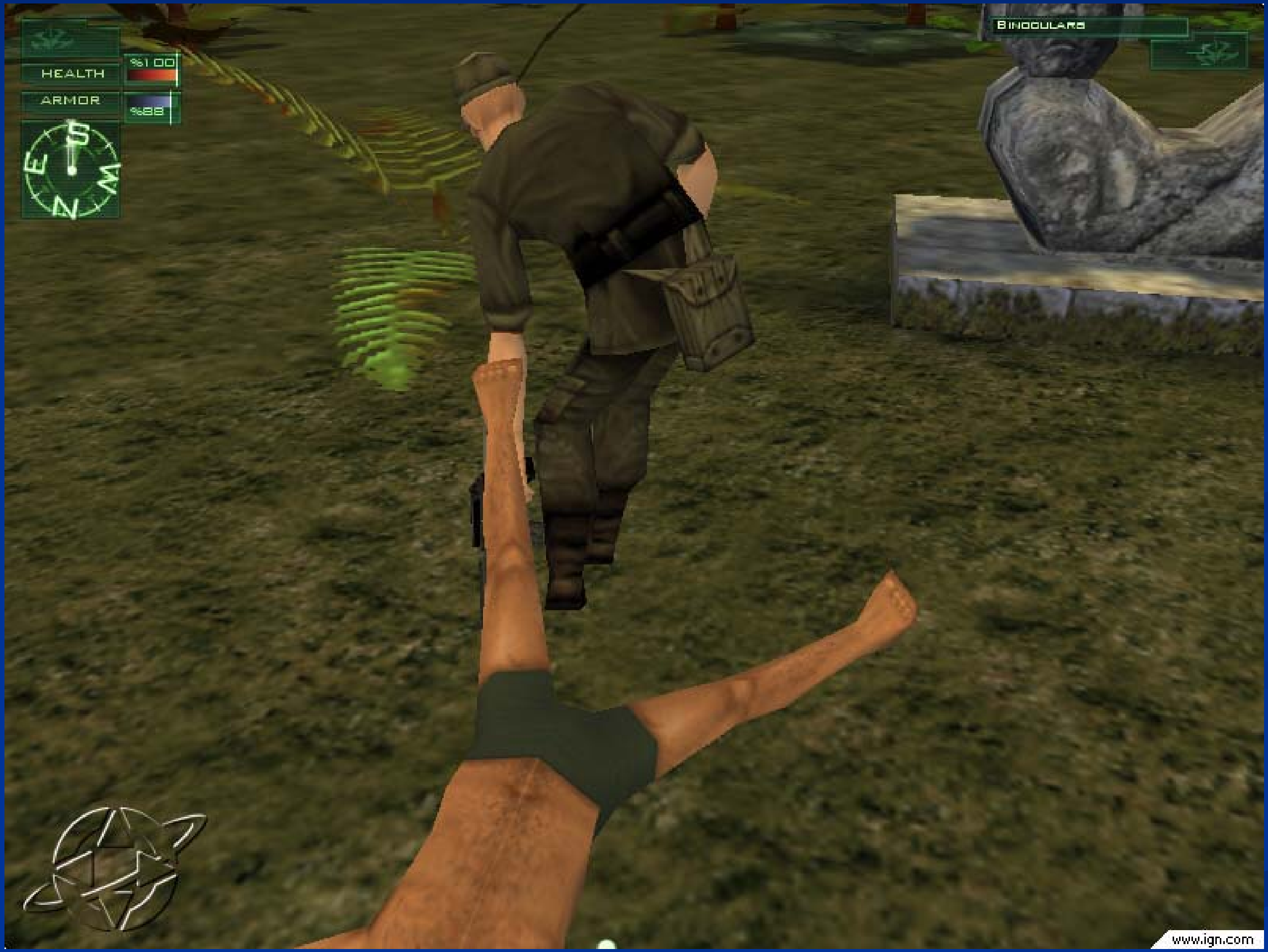
Level of Detail Control



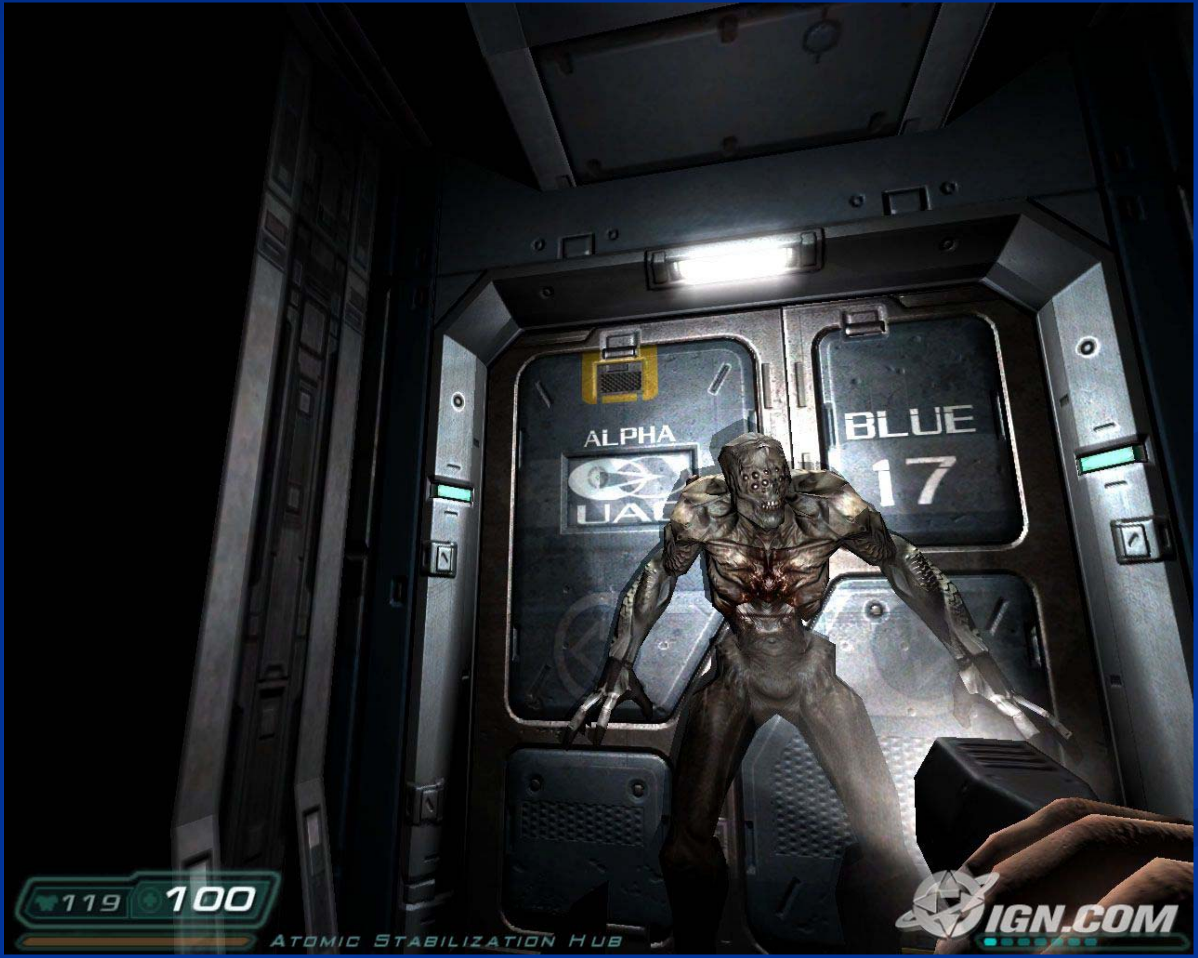
Procedural and Physically Based Modeling

Collision Detection

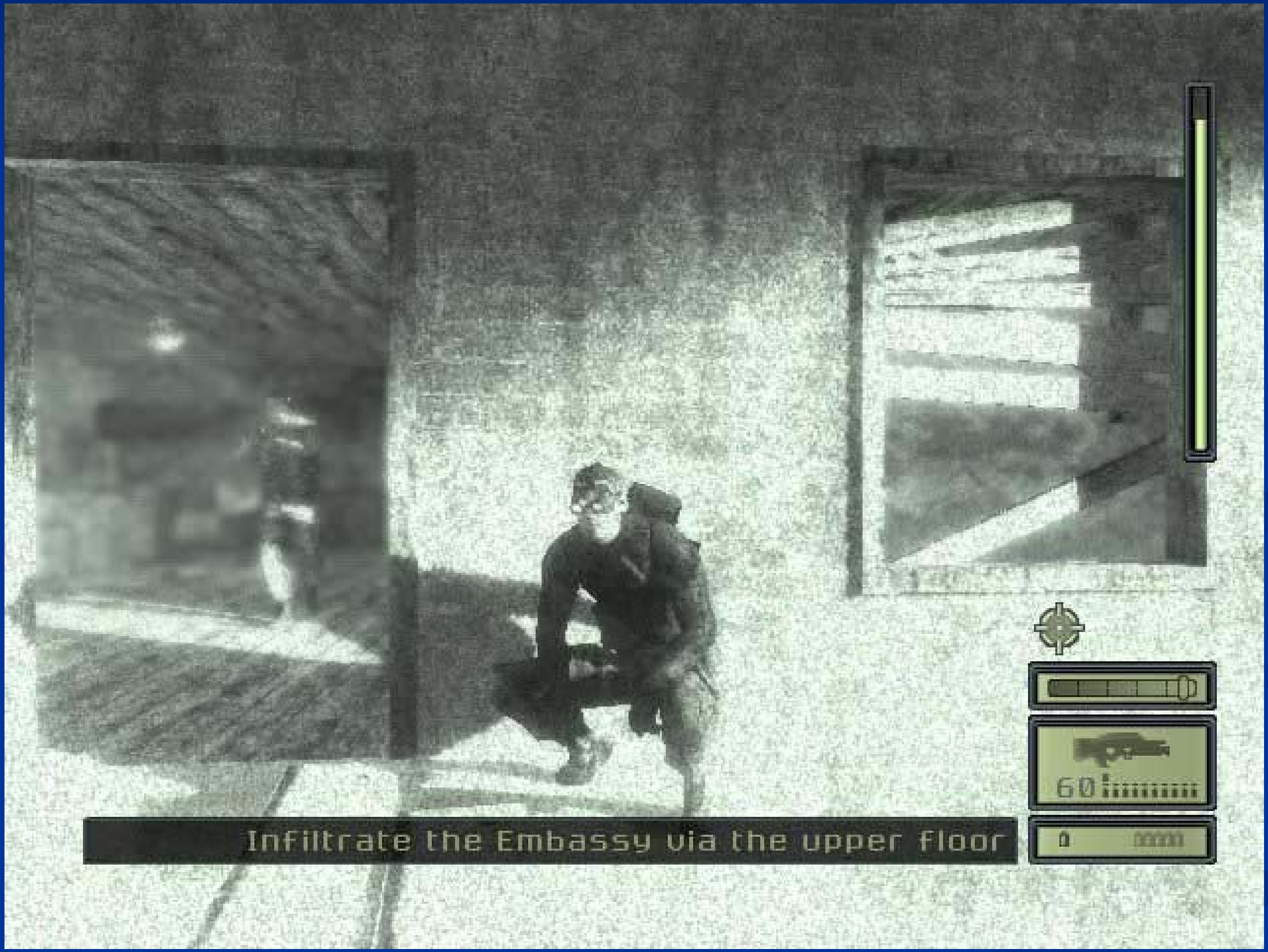
Simulated Dynamics



Advanced Rendering Effects



Advanced Rendering Effects

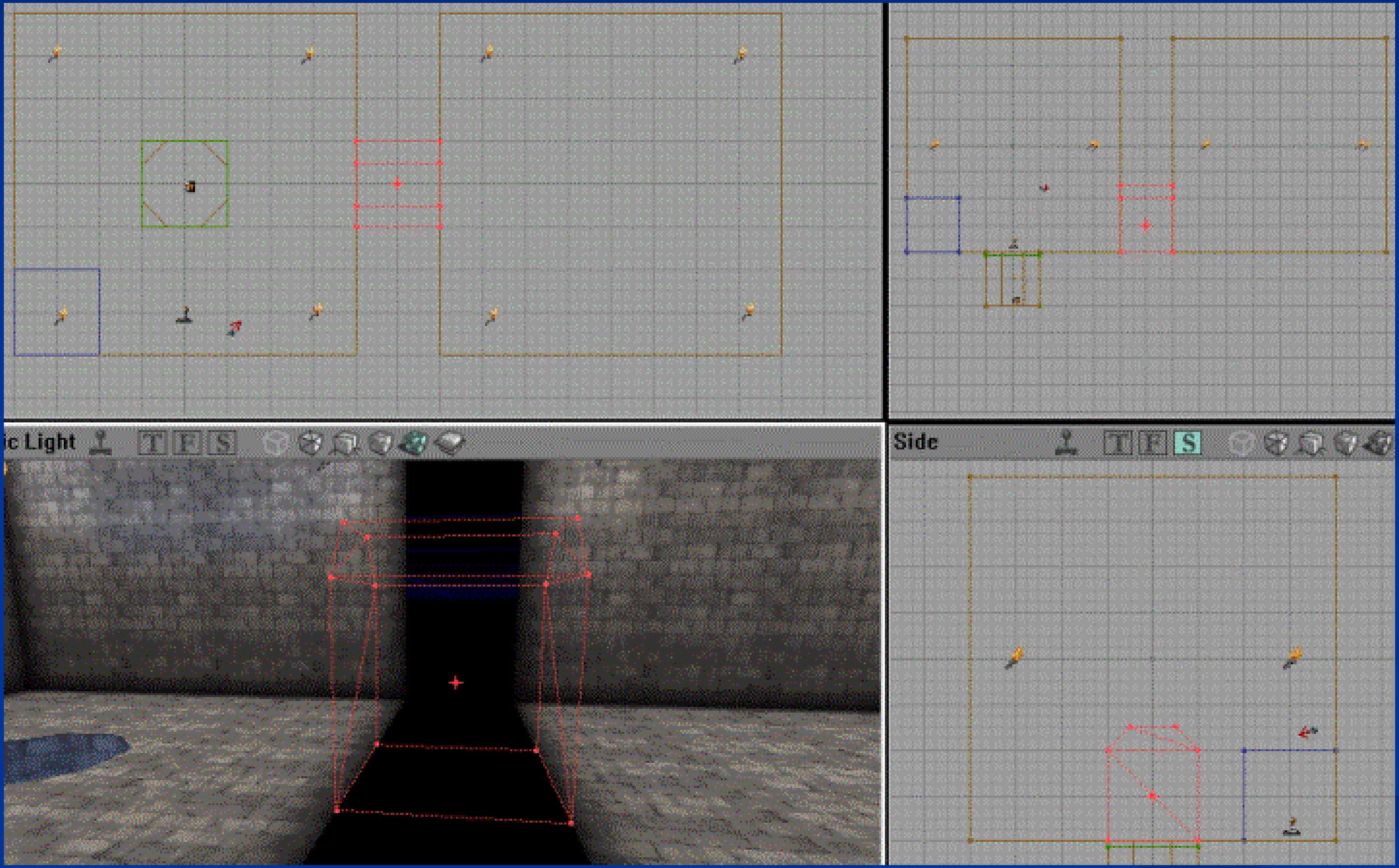


Infiltrate the Embassy via the upper floor

Advanced Rendering Effects

Artificial Intelligence

Game Level Editor



Example Game

- Total Request Live: The Game
- Goal: Play as the latest American Idol winner and make your way through the shrieking throng to talk with Carson Daly.
- 3D world: a 3d model of MTV's Times Square Studio
- User Input: keyboard + mouselook to run and strafe (Quake veterans wouldn't have it any other way)
- Lighting: A few light sources will light up the studio.
- Texture Mapping: Textured billboards outside the studio advertising Broadway musicals and Calvin Klein underwear.
- Advanced Feature #1: Collision Detection – The hyperactive fans get in your way…avoid or crash through them to get by!
- Advanced Feature #2: AI – flocking algorithm controls the behavior of the teenagers in the studio

Deliverables

- Proposal: Monday, Nov. 8 by 5:00 pm
- First Demos: Wednesday, Nov. 17
- Final Demos: Wednesday, Dec. 1
- Competition (optional): Wednesday, Dec. 1 at ~4:00 pm
  - Need to make a web page
- Write-ups: Friday, Dec. 3 by 5:00 pm

Proposal

- Hopefully you've been thinking of a game idea. If not then watch movies, look at existing games, think of something you'd like to play, etc…
- Although the proposal is not graded, it is important. It will be a guide for you for the rest of the project.
- 1 page and a "screenshot" is sufficient

Proposal

- Game name
- Premise
- 3D world you plan to build
- Gameplay
- Advanced techniques you plan to implement

First demos

- By this point you should have the basics:
  - 3d world
  - User input
  - Lighting
  - Texture Mapping
  - Some form of gameplay
- Advanced features are not required at this point

Final Demos

- The moment of truth:
  - Will your game be the next Quake?
  - Are you going give Shigeru Miyamoto a run for his money?
  - Is EA going to toss barrels of money at you to come join them?
  - Are you going to get a good grade? (if you put in some hard work and met all requirements, then yes)

Final Demos

- If you don’t develop on the Sweet Hall machines, make sure you have some way to get your machines to Sweet Hall for the demos. And remember, what runs on your desktop may not run so well on a laptop.

Writeup

- Explain the advanced features you implemented
- Reference your sources (for libraries, ideas, artwork, etc…)
- Private submission: If you did all the work and your partner just played videogames all the time, then let us know.

Sleep

- You will need it after the final demos. =)

GOOD LUCK

HAVE FUN

GG