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Period 5

Project Proposal

Subject: Exploration of a 3-D World

Purpose and Scope: This project is meant to load and display a 3-D world, create a realistic physics environment, play over a network, and implement a realistic chat system. It should allow users to communicate with each other through their avatars.

Background and Review of Current Literature: Proximity-based chat in a first person shooter: using a novel voice communication system for online play, by Gibbs, Wadley, and Benda, concerns the chat system in first person shooters. Namely, they generally consist of a two way radio system, which is not very conducive to the social aspect of the game. The article suggested instead employing a proximity-based system of chat, much like we see in real life. That is to say, a chat system which uses audio (not text) chat, and people close to your avatar hear you, and the people farther away do not hear you as well. The study they did suggested that this enhances social, teamwork, and realism aspects of gaming, all extremely important in their own right. I think the same theory will apply in a program designed specifically for chat, though probably more so due to the more central role of the chat system.
How computer gamers experience the game situation: a behavioral study, by Clarke and Duimering, has varied suggestions on the structure of the game, including controls, networking issues, and gaming environments, as well as discussing players' experience of the game, styles of play, and frequency of play. The study was done by interviewing FPS players of different skill levels about their in-game experience. These are considerations to note while constructing the program. I want to keep the simulation as realistic and enjoyable as possible, and they provide many suggestions on how to attain this.

Procedure and Methodology: I will write all of this in C. I employ OpenGL as my graphics display, and for networking, I am thinking about employing MPI (The message passing interface), though I have not looked much into that yet. C is my language of choice mainly because of its speed, which is absolutely necessary for a networked graphical program over a network, but secondarily because of its powerful libraries, my acquaintance with it and affinity for it, and its eternally unchanging syntax.

Expected Results and Applications to Others: My end result should be a networked, graphical, proximity-based chat system, and perhaps puzzle game, which users can easily set up and use to communicate, and can be easily extended graphically (make levels, add textures, add weapons, add models). The simulated 3-D world should respond realistically to physics, and the chat should be audio (not text), and also realistic, in that people near your avatar hear you, and people farther away do not hear you as well.