

Computer Science 805

Spring 2002

Final – Particle Systems

Due: Monday, 5/6/2002

Overview

This project examines the simulation of physical dynamic systems, as modeled by particles. You will be required to implement one of two related programs.

Description

Write a program to implement either of the following:

- a jello cube, capable of bouncing and responding appropriately to global forces
- a waterfall, where the water is composed of particles constrained by global forces

Suggestions:

- use gravity in your program to act on the jello cube or water
- employ springs to model the forces between the vertices of the jello cube
- initialize the jello simulation by suspending the cube some distance above a surface; to start the simulation, let gravity act on the cube
- initialize the water simulation with an emitter at the top of the waterfall
- both programs require a modular particle-plane detection routine

Submission Requirements

You should create a web page with the following:

- your name, the date, and a title/description of this project
- two or three still images from your simulation
- any accompanying comments describing your source code
- instructions on how to compile and run your code
- any interesting problems you encountered and how you resolved them

Additionally, you will give a short presentation in class showing some of the images you produced and discussing any interesting problems you uncovered and how you resolved them. Please e-mail me the tar'ed and compressed source code, along with a makefile.

You will be graded on the source code you submit, the animation your code produces, the web page presenting your results, and your presentation.