

Computer Science 805

Spring 2001

Project 4 – Particle Systems

Due: Thursday, 4/26/2001

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
- a link to a tar file containing your source code and makefile
- 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.

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