Joseph Shaffer

CSE 5541 Computer Animation

Lab 3 Physical Animation

ReadMe

In this Lab, I tried to show collisions between spheres being dropped from a certain starting position, which is at a certain height y, but is randomly distributed between a range of x and z values, and two different planes. The only force acting on the sphere is gravity, which I scaled to 1f. The spheres will collide with 1 or both planes, which are both non-axis aligned and each plane is rotated about a different axis. The objective I tried to show is that after colliding with the first plane and then colliding with the second plane, a sphere would continue in a direction that was relative to both planes, instead of moving in the direction towards the lower side of one plane and then basically change its direction 90 degrees and move towards the lower side of the second plane, which seemed unrealistic especially at higher velocities. Thus the spheres will collide with the first plane and come off that plane, collide with the second plane and move in a direction that is relative to both planes.

The amount of spheres created can be increased to a max of 50 as to keep the scene less complex by pressing the up arrow key.

The amount of spheres created can be decreased to 0 by pressing the down arrow key.

The maxAge of a sphere can be increased to a max of 250 by pressing the right arrow key and decreased to 0 by pressing the left arrow key.

The starting height of the spheres can be increased infinitely by pressing the ‘W’ key, although the farther the sphere falls then the greater the velocity of the sphere will be and collision detection will not be as accurate as with a smaller starting height.

The starting height of the sphere can be decreased to a minimum of 10 in the y-axis by pressing the ‘S’ key.