

Project A, Particle System

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COMP-SCI 351-2 Computer Graphics

1. User Guide

- You can also clear the mouse drag by clicking the clear button underneath it.
- Up, Down, left, right arrow keys are able to tilt the camera forward, backward, left, and right.
- WSAD keys to move the eye position.
- Button to switch on different solvers

2. Basic Introduction

- In this project, I have four parts of the particle system implemented in the scene, including bouncy balls, boids, flames, and spring.(Figure 1)

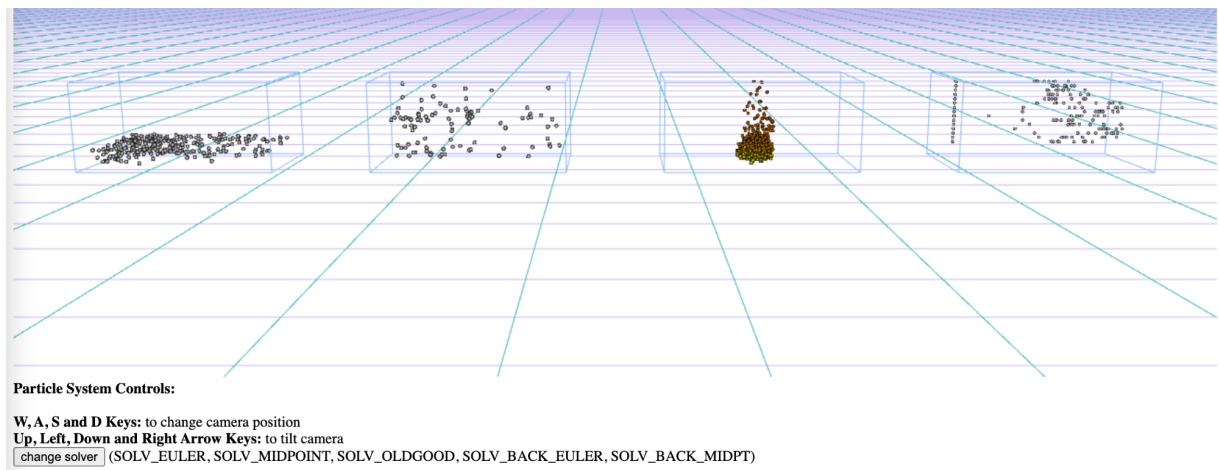


Figure1

3. Bouncy Ball System

- The bouncy ball particles contain 300 balls that thrown from the top left corner and bounced in the box as Figure2, Figure3 and ending up as Figure4 shows.

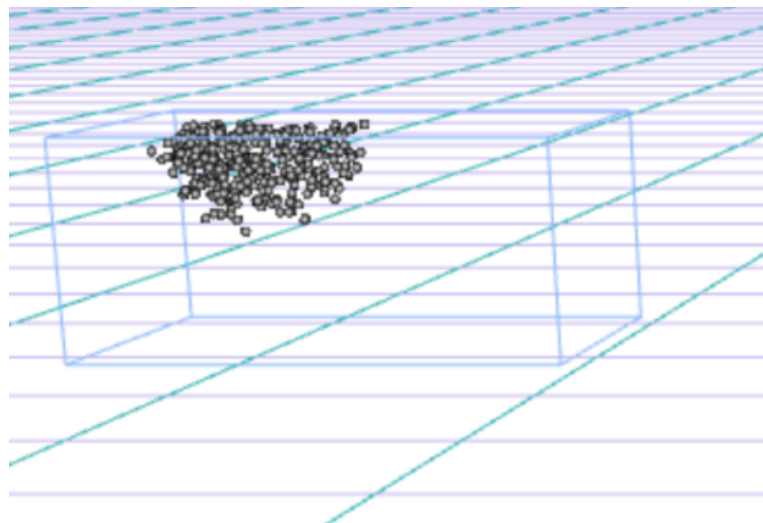


Figure2

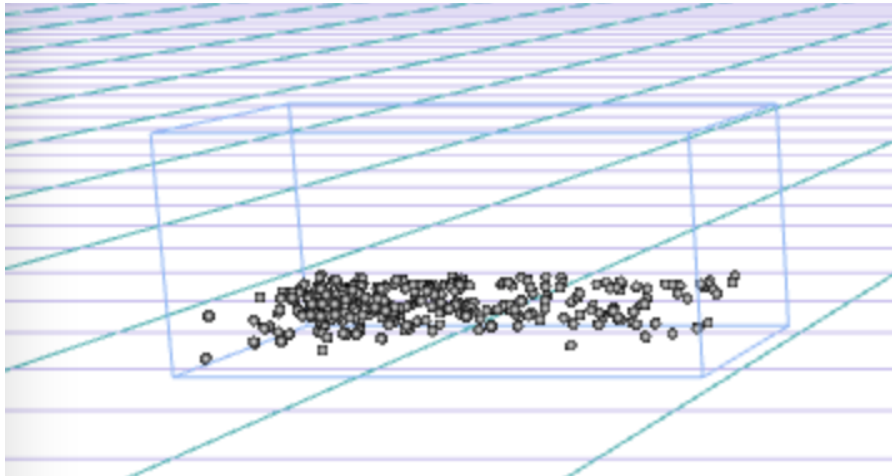


Figure 3

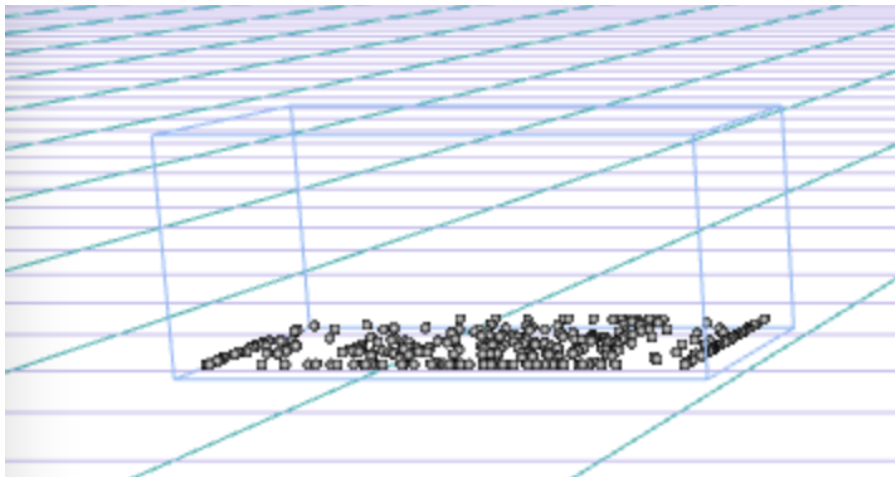


Figure 4

4. Boid System

- It contains 100 particles flying the box as Figure 5 and Figure 6 shows. This would end up as Figure 7 shows.

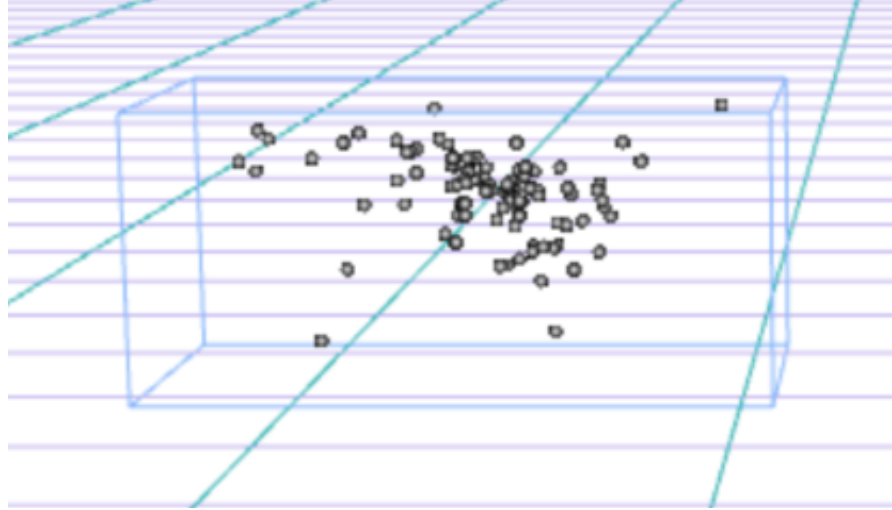


Figure5

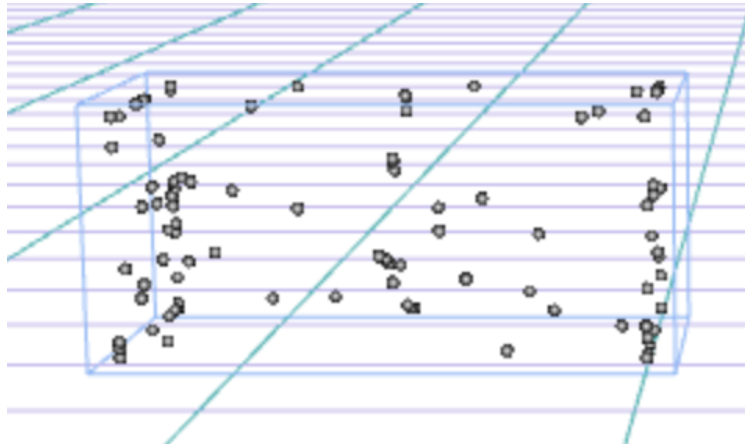


Figure6

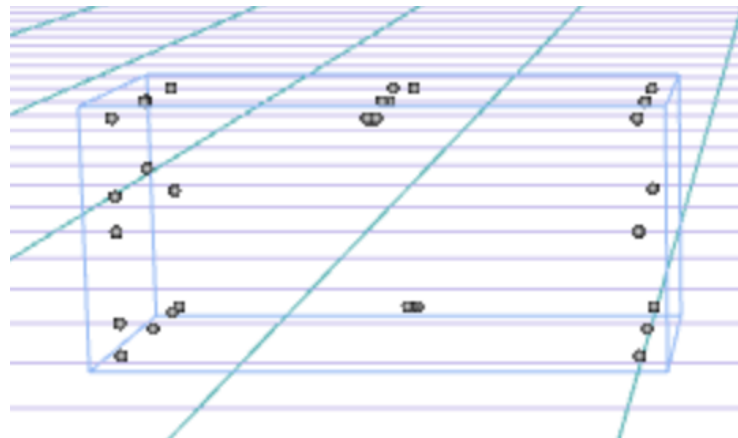


Figure7

5. Fire Flame

- The fire flame containing 600 particles is introduced to mimic the fire in real life. I set the color changing from yellow to red. The direction of each particle would also be affected by wind. (Figure8)

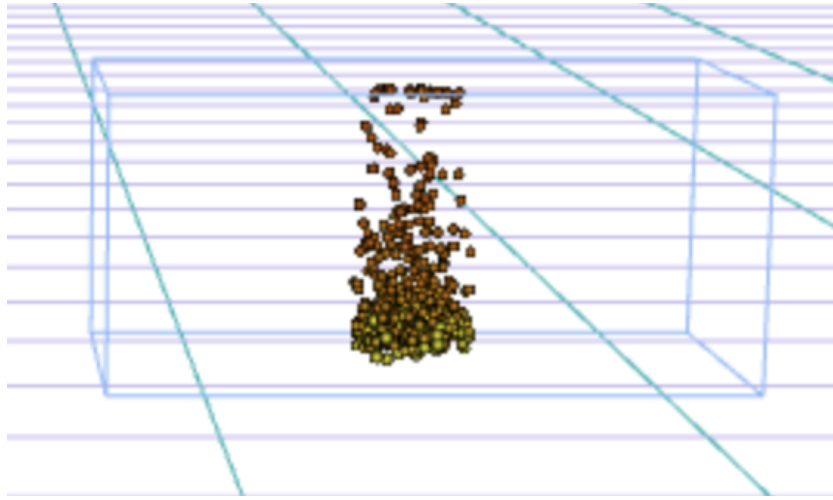


Figure 8

6. Spring system

- This contains 10 strings and each string represented as 15 particles. They would each collide on the right hand side wall and then fold together as Figure9 and Figure10 shows. Finally, it will end up like Figure 11 but still damping a little bit.

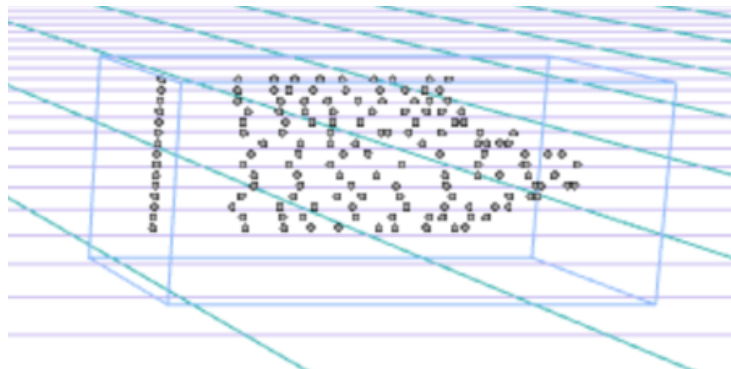


Figure9

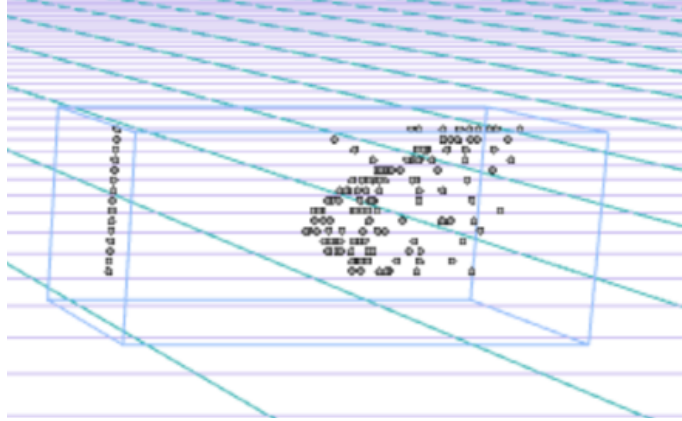


Figure10

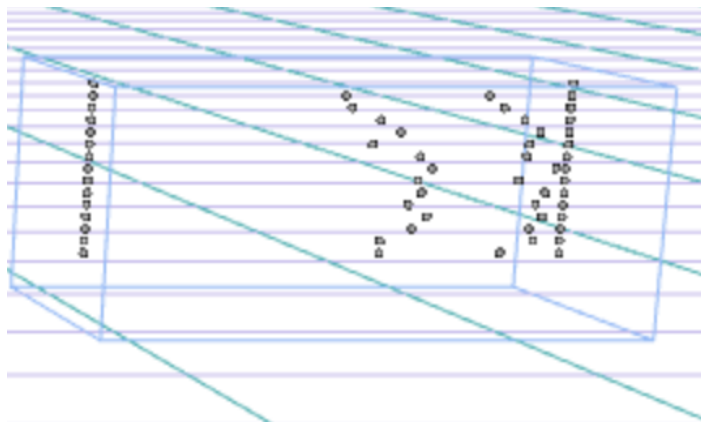


Figure11