Intermediate Computer Graphics

Project A => Particle Systems

MOVING PARTICLES IN THE WORLD

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Hi! Welcome to the Project Report for the subject Intermediate Computer Graphics.

The following report is presented to fulfill the requirements of Project A

Please find the following available in the subsequent pages of this report:

(1) User's guide to navigating the project

(2) 'Results' section to showcase the screenshots

Thanks!

(1) User's Guide for Project

Please find the following detailed instructions for User controls for particles traveling in Canvas screen:-

>>> GOALS

> Below is provided a brief with detailed explanation about the project presented.

> In this project you can view 5 particle assemblies

> Also User inputs and other interactions are provided as instructions.

>>> PROJECT REQUIREMENTS FULFILLED

=> Particle Systems (5):

>Tornado

>Bouncy balls

>Fire

> Boids

>Spring pair

=> User onscreen Interactions:

Details regarding User interactions are given below and on the HTML page to the User for reference.

=> Different solvers:

The particle systems have multiple solvers to see their different effects.

=> Ground grid:

Ground grid for the world has been created with +z up

=> Smoothly adjustable 3D View Control:

Required 3d controls are present on screen for smooth traveling in the world.

=> User navigation into the world

We can explore the world by using user controls and moving into it.

>>> USER CONTROLS

=> Keyboard controls:

Use the following navigation for the above views:

Letter 'A' >> Tilt Left
Letter 'D' >> Tilt Right
Letter 'W' >> Tilt Up
Letter 'S' >> Tilt Down

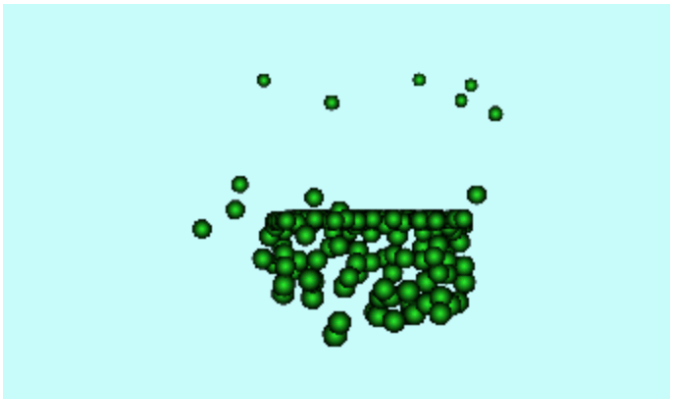
Letter 'J' >> Move Left
Letter 'L' >> Move Right
Letter 'I' >> Move Up
Letter 'K' >> Move Down

Letter 'Z' >> To switch between OLDGOOD and EULER
Letter 'M' >> To switch between MIDPOINT and VELOCITY VERLET

>>> RESULTS

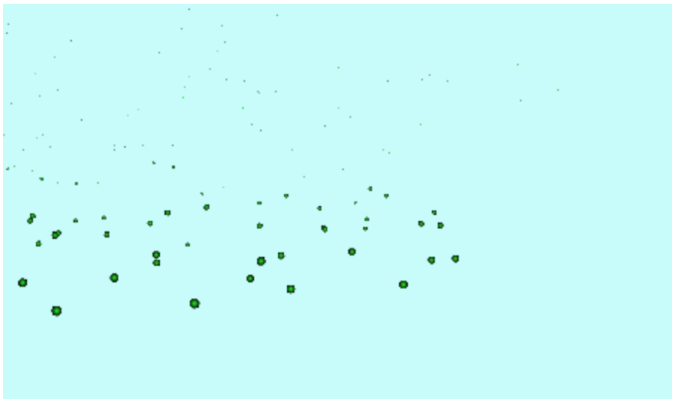
The following results for particle systems as required:-

(1) Particle 1



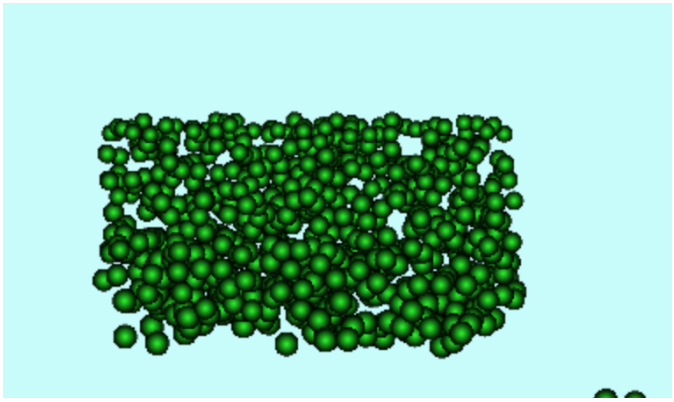
Tornado

(2) Particle 2



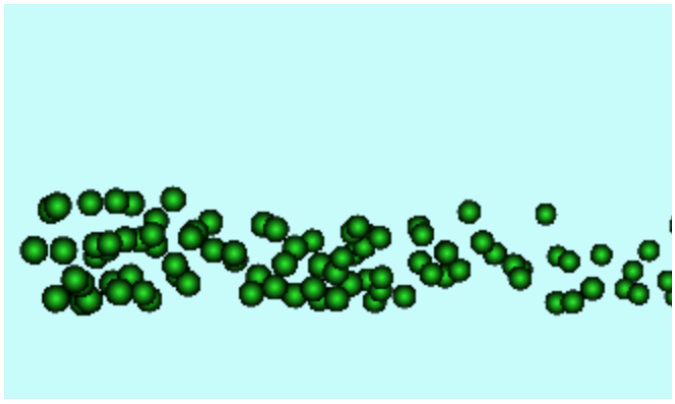
Boids.

(3) Particle 3



Fire

(4) Particle 4

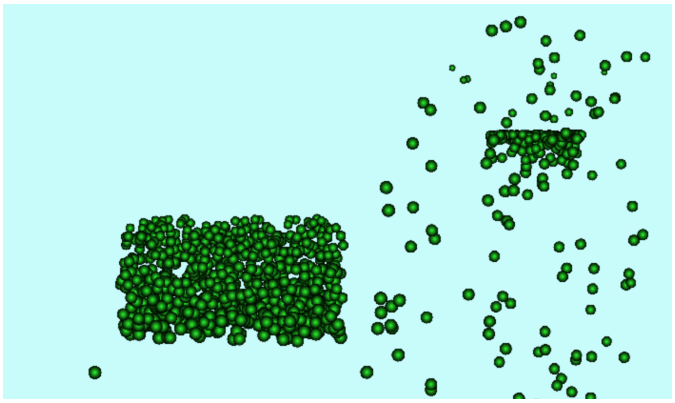


Bouncy balls

(5) Particle 5

Spring

(6) Solver effect



Explicit solver