Comp_0275 Individual Project 1 – Particle Systems

Part 1 Implement a basic 3D particle system
As a bare minimum, your particle system should include
- A representation for a single particle
- A representation for a particle system
- A function for generating new particles
- A function for killing particles
- A function for rendering particles using OpenGL
- A function for getting the state of a particle
- A function for setting the state of a particle
- A function for computing the derivative of the state of a particle
- A function for updating the state of a particle at the next time step (e.g., A Euler method solver)
- A set of (2 or more) functions for computing forces acting on a particle (e.g., gravity, explosion forces, damping, inter-particle attraction, …)

Part 2 Build an application that uses your particle system to do something fun
- Use Microsoft Visual Studio .NET, with C or C++
- Use Windows and OpenGL
- Consider using keyboard and mouse inputs
- The system should run at interactive rates

Hand in.
1. A 1 page write-up describing 1) the components of your particle system and 2) your application. Include a description of what you implemented, an analysis of whether or not you were successful, and what you might do next if you had more time. Make sure you reference any outside sources (ideas, approaches, code).
2. Your source code with comments and a readme file explaining how to operate your application.
3. An executable.
4. A screen shot of your application in action.

Due Dates:
1. Present a demo and 4 minute description of your particle system to the class on Thursday, Feb. 9
2. Hand in your final project by Mon. Feb. 13