Engine Name: GQuuuuuuX Engine
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CLASS:

Main

- This class serves as the central part of the engine for any particle and generators to be created and generated in the program. It contains details that serve to construct the model objects to be rendered, the input system, as well as the update function that simulates time elapsed, required for simulating physics. It also contains the camera logic for the fountain demo.

RenderParticle

- This class serves to optimize the rendering of particles to be drawn by using Model3D and P6Particle as variables to be contained in one class so that it may be easier to call and draw the particle model3D while simultaneously setting the position of particle to the Model3D for proper simulation of physics on the particle.

FountainDemo

- This class handles the logic and functions for the fountain firework demo. It is mainly used for its update() function. This is called onto main for inputting parameters for easier testing.
    - FountainDemo(P6::PhysicsWorld* world, Model3D* model, int maxSparks);

Physics Engine Folder:

P6Particle

- This P6Particle class is a physics simulation class for individual particles used in a particle system. It handles the motion of a single particle using basic physics—such as velocity, acceleration, and forces. For the lifespan variable and functions related to lifespans/lifetimes of particles.

ParticleSystem

- This class is responsible for the management of the particles and its properties. This includes:
    - Spawning
    - Updating their physics/lifetime
    - Rendering
    - Cleaning up memory when destroyed

This was not utilized as much for this demo because of RenderParticle and changes to the particle class.

ForceGenerator

- This is an abstract class that can be used to create for other classes to inherit and utilize the function that adds the force value to the particle, serving as a basic foundation for other force generators used in the program.

GravityForceGenerator

- A Force generator that is meant to simulate gravity by constantly adding the gravity value to the force applied for the particles that have a mass.

ForceRegistry

- This class acts as a tracker of all force generators and particles being affected by their respective force generators. All force generators are updated by this class's updateForce, which is called in Main.

MyVector

- This class is meant to simulate vectors, a quantity with magnitude and direction. It is an essential component that is often utilized for Particle positions, force simulation, acceleration, velocity and other physics based calculations.