EGP 425 - Assignment #2 - Blob Game (Major Assignment)

Due Today by 5:30pm **Points** 100 **Submitting** a file upload

In this assignment you will implement a simple game/tech demo that highlights a complete particle physics engine.

This is your second graded assignment.

Overview

Adventure and puzzle games based on 'blob' gameplay have been popular in the last several years. See examples such as Loco Roco, Gish, and Katamari Damacy.

For this assignment you will have the freedom to implement a game in this style to show off your particle physics engine.

You will control a blob character as he navigates an obstacle course. The blob and the world environment should be constructed from mass-aggregate bodies, as explained in chapter 8 of the text.

Gameplay must involve interaction with obstacles, including at a minimum one 'collectable' item in the environment.

Ideas:

- Allow your character to grow in size by dynamically constructing bungees/rods to mass aggregates in the environment.
- Dynamically allow your character to decimate by shedding mass aggregates.
- ... What can you come up with?

Requirements/Grading

- Completion of force generators: Springs, Bungees [10 points]
- Contact handling and resolution. [50 points]
  - Particle contact generator [10 points]
  - Particle velocity resolution [10 points]
  - Particle interpenetration resolution [10 points]
  - Resting contact support [20 points]
- Mass Aggregate Bodies [15 points]
  - Cube [5 points]
  - Tetrahedron [5 points]
  - Other shape - you decide [5 points]
- Level Editor Support (External human readable text file describing the level) [10 points]
  - Obstacle Course Editor [5 points]
  - Collectable Item [5 points]
- Good Tech-Demo Features [5 points]
  - Reset Button, Game State Display, Debug Info
  - Display Of Springs, Rods, and Cables
- Professionalism of submission [10 points]
- Blog Post
  - Gameplay Video [5 points]
  - Write Up [5 points]
- Bonus Opportunities
  - AI NPC [5 points]
  - Spring-based look-at camera [5 points]

Submission Process:

We will use GitHub as the primary submission means for this assignment. Your work will be submitted via canvas.

- A zipped exe for your work that will run on any Windows 7/8 machine. (Make sure to test on 'naked' machines so that you do not have any surprise dependencies)
- A link to your blog post where you've described your work - learnings, challenges, relevant implementation details.
- A link to a commit on GitHub where we will code review your work.

Notes:

- There is intentionally some ambiguity in the assignment description. Use your best judgement in designing your demo.
- Please feel free to reach out to me for help, but also use your peers. You should help each other, but always make sure that the work that you submit is your own.
- Keep things simple, and focus on the physics simulation first!