10 Final project process
Goals of final project

Assignments exposed you to:

- some simulation domains (fluids, cloth, deformable solids, rigid bodies)
- some techniques (procedural flows, masses and springs, elastic potentials, collision resolution)
- …but mainly in 2D and in pretty isolated settings

Final project lets you explore an aspect of your choosing

- go more in depth on one of the applications (higher quality, better robustness, …)
- promote one of your simulations from 2D to 3D
- explore a new method (position based physics, material point method, implicit integration, …)
- explore a new problem (rod simulation, fluid mechanics, flocking, …)

You are helping define what a CS5643 project looks like!
Criteria for project scope

**Project should be about as much work as one CS5643 PA**
- focus on doing one simple thing well
- structure complex ambitions into core requirements + stretch goals

**Work in groups of 2 to 4**
- we expect somewhat more scope from larger groups but sublinear
- try to ensure projects have N components that can be implemented and tested with some degree of independence

**Include plans for evaluation**
- how will you know whether your simulator works?
- propose some test cases where you can say what you expect to happen
Some possible ideas

**Cloth with collisions**
- add collision detection and response to your PA1 cloth simulator
- with a larger group, implement a better cloth deformation model too

**Rigid bodies in 3D**
- generalize PA3 simulator from 2D to 3D

**Deformable solids in 3D**
- generalize PA2 simulator from 2D to 3D

**Fluid simulation**
- Particle Based Fluids or Stable Fluids
- with a larger group include a simple volume rendering component for nice looking results

But there are lots more possibilities!
Timeline

Proposals due 18 April
Proposal revisions due 25 April
Milestone presentations 9 May
Final presentations 18 May