PHYSICALLY-BASED SIMULATION PROJECT PLAN: POSITION-BASED FLUID

Group 8

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SIMULATION SCENARIO

- Different fluid simulations scenarios
- Motivation: Use Position Based Dynamics to simulating some fluid phenomena.
- Replication of the main results from the paper "Position Based Fluids"[1]

[1] M. Macklin, M. Müller (2013). Position Based Fluids. In Proceedings of the 2013 ACM Transactions on Graphics, SIGGRAPH

SIMULATION METHODS

- SPH (Smoothed-particle hydrodynamics)
- Neighbor Search
- Rigid Body Collision
- Two-Way Coupling of Fluids with Clothing and Rigid Bodies

RELATED WORK

RELATED WORK

MINIMAL TARGET

- 3D Position Based Fluid Simulation
- Collision with static convex objects (spheres, cubes…)

DESIRED TARGET

- Collision with dynamic simple objects and maybe static meshes
- Properly modeled scene
- Proper rendering

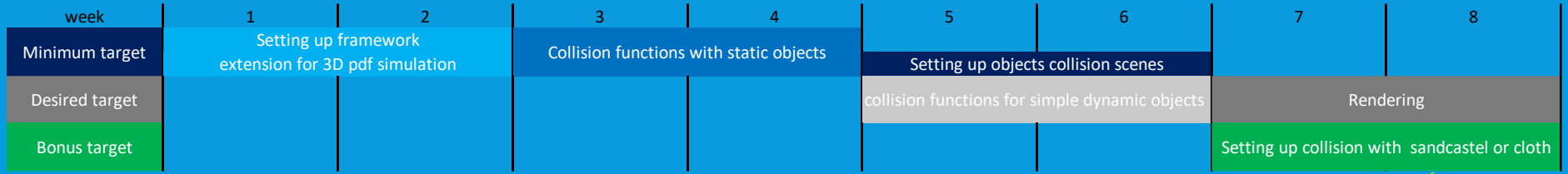
BONUS TARGET

- Collision with sandcastle or cloth

MILESTONES

1. Setting up framework, extension for 3D pdf simulation (1-2 week)
2. Collision functions with static objects (3-4 week)
3. Setting up objects collision scenes and collision functions for simple dynamic objects (5-6 week)
4. Rendering and eventually bonus target (7-8 week)

TIMELINE



01.11.
Project Plan Presentation

29.11.
Mid-term Presentation

23.11.
Final Presentation