

Project Proposal

Physical based simulation PS

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1 Overall idea

Implementation of a game similar to the game shown in the video at the following link:
<https://www.youtube.com/watch?v=JutEsb0ye94>

Additionally, also an example App for that game can be found at:
<http://www.mobogenie.com/download-labyrinth-ball-in-balance-2d-1746679.html>

In the game a labyrinth is shown from above and the goal is to navigate a ball from start to goal. The ball is controlled by tilting the board.

2 Technical implementation

- 3D model of labyrinth
- Rendering in OpenGL combined with SDL 2.0
- Tilting controlled by mouse or keyboard
- Physical-based implementation:
 - Ball and maze are rigid bodies
 - Ball can collide with maze
 - Ball starts to roll according to gravity, when the board is tilted
 - Additionally, adding roll friction to the ball

3 Development roadmap

1. Setting up the whole graphical visualisation and the controlling interface.
2. Implementing the rigid body simulation.
3. Implementing collisions of the rigid bodies.
4. Implementing gravity-induced rolling of the ball.
5. Adding game elements (start, win, fail)