

A series of white-outlined squares of varying sizes arranged in a horizontal line at the top of the slide.

Game Project Momentum

A vertical column of white-outlined squares on the left side of the slide.

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A single white-outlined square on the left side of the slide.

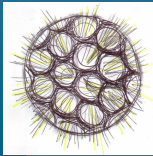
Game Programming Lab
March 2008

A vertical column of white-outlined squares on the left side of the slide.A single white-outlined square on the left side of the slide.A single white-outlined square on the left side of the slide.

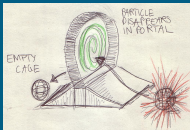
Momentum - Overview



- What is the game setting?
a warp drive



- Who is the player?
a quantum particle inside the warp drive



- What is his goal?
reach the portal to the warp core matrix

- What is his motivation?
the competition with other particles

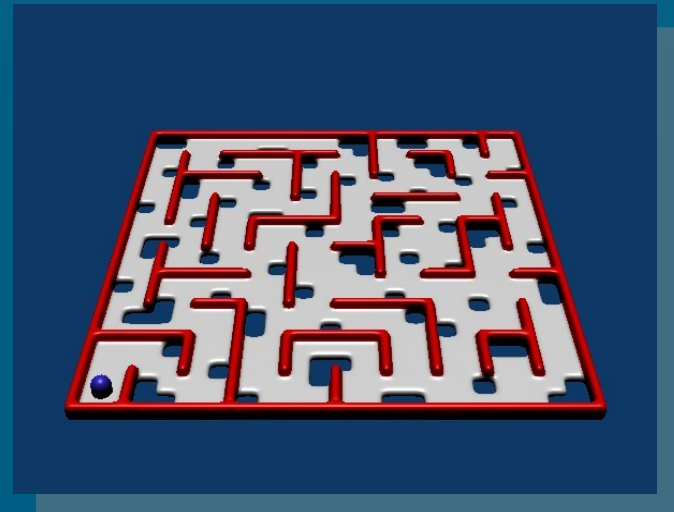
Game Modes

- Classic SP Balancing
- Classic MP Cooperative Balancing
- Momentum SP Training
- Momentum MP Race



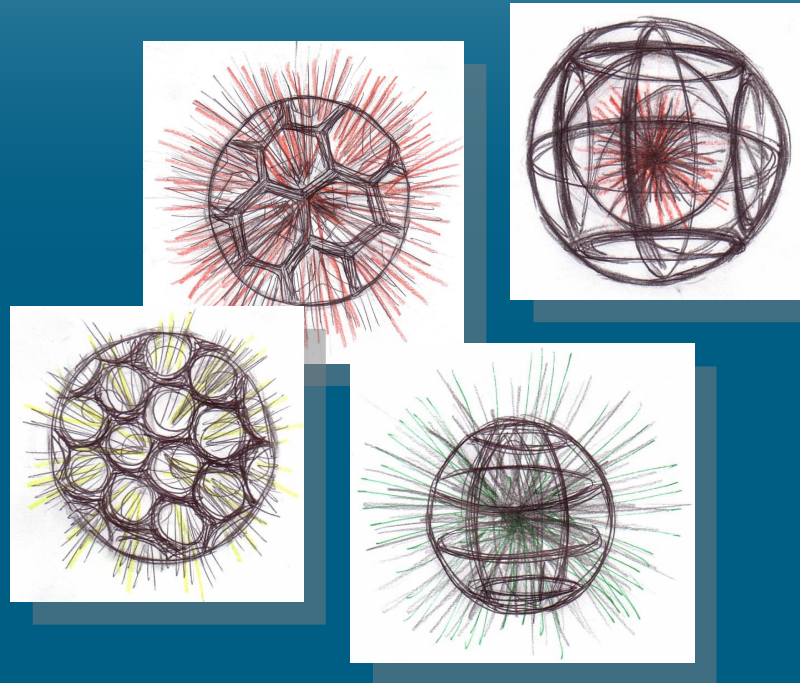
Game Modes - Classic

- balance the board
- direct the ball through the maze



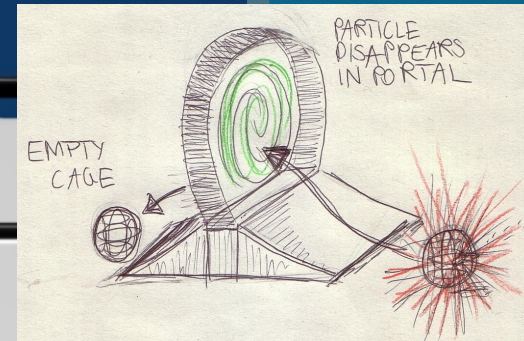
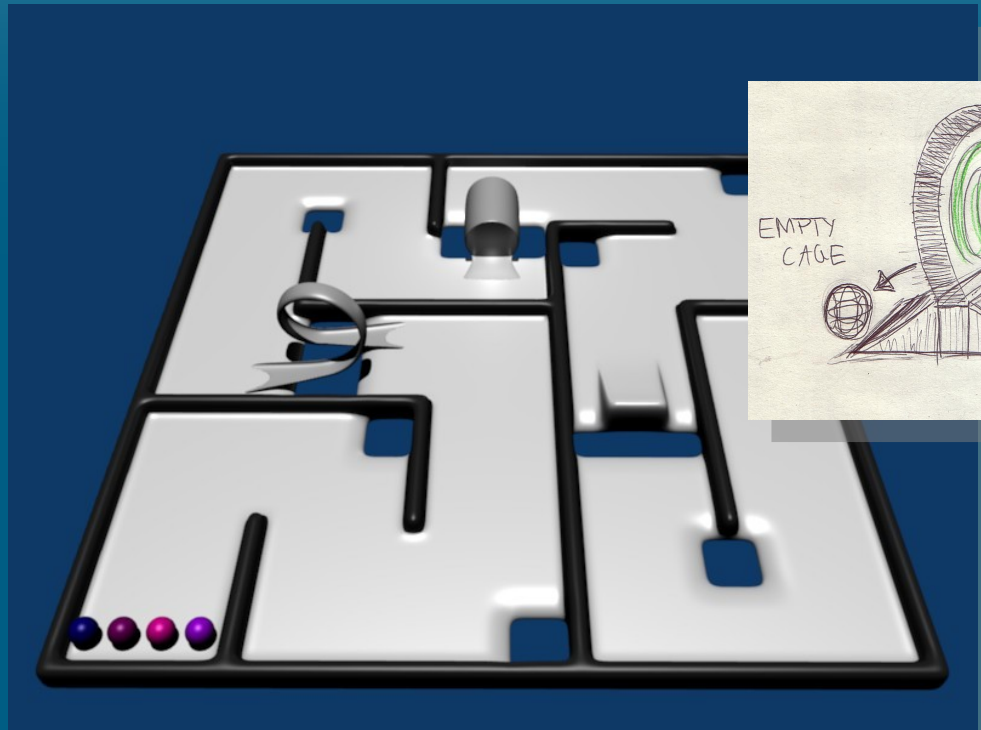
Game Modes - Momentum

- momentum balls: cage with enclosed quantum particle

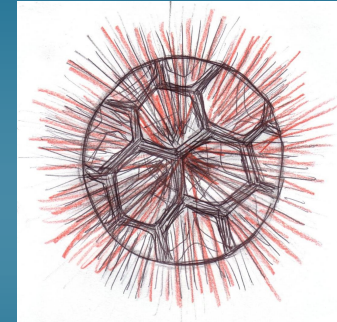


Game Modes - Momentum (2)

- race against other particles
- control ball directly









Momentum Energy



- energy of the balls rotation
- stored within the quantum particle
- enables special moves (jumps, speed ups)
- increases collision impact on other balls
- gained by moving the ball in the maze
- lost by colliding with obstacles









Technical Aspects

- realistic rotating ball physics
 - convincing particle simulation
 - glowing & fire effects
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Where the fun comes from

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- competing in a race
 - training personal skills and mastering challenging levels
 - experimenting with the momentum energy and real world physics
 - intuitive and easy to learn
 - multiplayer game on one screen encourages social interaction

A series of white-outlined squares of various sizes are arranged in a grid-like pattern on the left side of the slide. Some squares are solid blue, while others are white with a blue outline. They are positioned at the top, left, and bottom edges of the slide.

Development Schedule - Idea

- physics engine - import game boards defined by geometry built in DCC tool
- development at physics engine - support increasingly complex boards
- concurrently add artwork and rendering skills (shadowing, particles...)

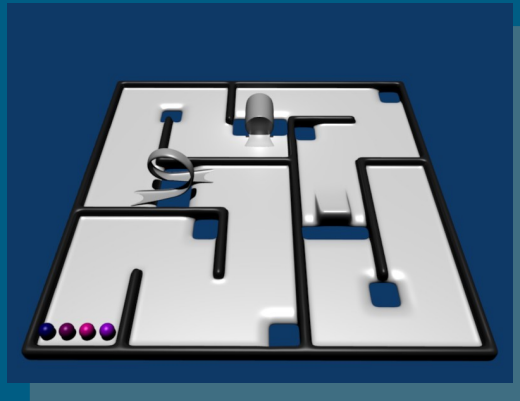
A series of white-outlined squares of various sizes are arranged in a sparse, non-uniform pattern along the left edge of the slide, extending from the top to the bottom.

Functional Minimum

- ~ game prototype (XNA)
- flat game board
- simple opaque ball (c,r)
- single player
- no artwork

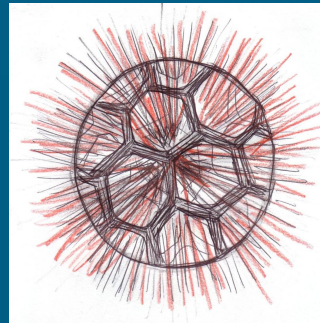
Low Target

- enhanced boards: maze, loops, ramps
- single player momentum effects
- momentum visualized with progress bar
- artwork: texturing, basic sound
- rendering: shadowing



Desired Target

- multiplayer mode (cooperative, competitive)
- momentum: particle simulation



A series of white-outlined squares of various sizes are arranged in a pattern on the left side of the slide. Some are in a vertical column, while others are scattered to the right.

Tools

- XNA 2.0
- Xbox 360
- C#
- Visual Studio 2005 / VS C# Express
- Blender (3D)
- Gimp (2D)