JS Gaming Physics - Part 1

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Lecture Prerequisites

1. Basic (JS) scripting skills
2. Passion to game-like development
3. <canvas> knowledge
4. Physics foundations

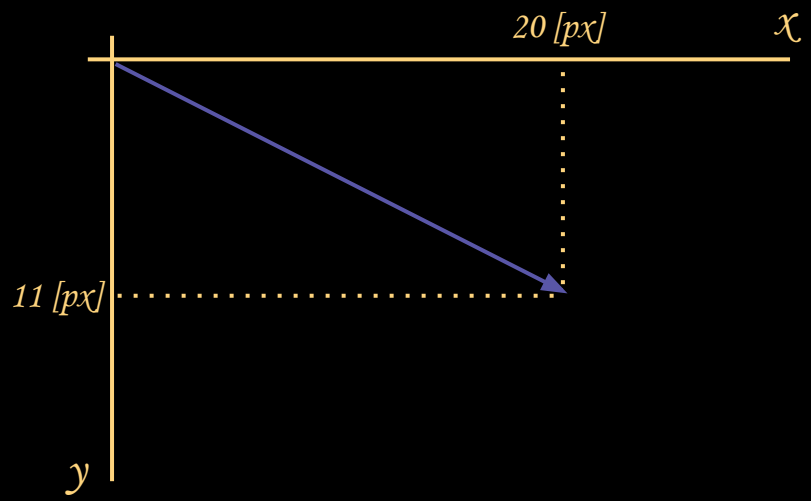
Concept cloud

Topics

1. Theory
2. EaselJS - Basics Movement
3. EaselJS - Basic Interaction
4. In a Nutshell: Particles and Optimization
5. Questions
6. Break

Kinematics - concepts

Position



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Kinematics - concepts

Time

1 Time Unit = 1 Clock Tick

Kinematics - concepts

Velocity

$$\vec{v} = \frac{\partial x}{\delta t}\hat{x} + \frac{\partial y}{\delta t}\hat{y}$$

$$v_x = x_1 - x_0 = \Delta x$$

Kinematics - concepts

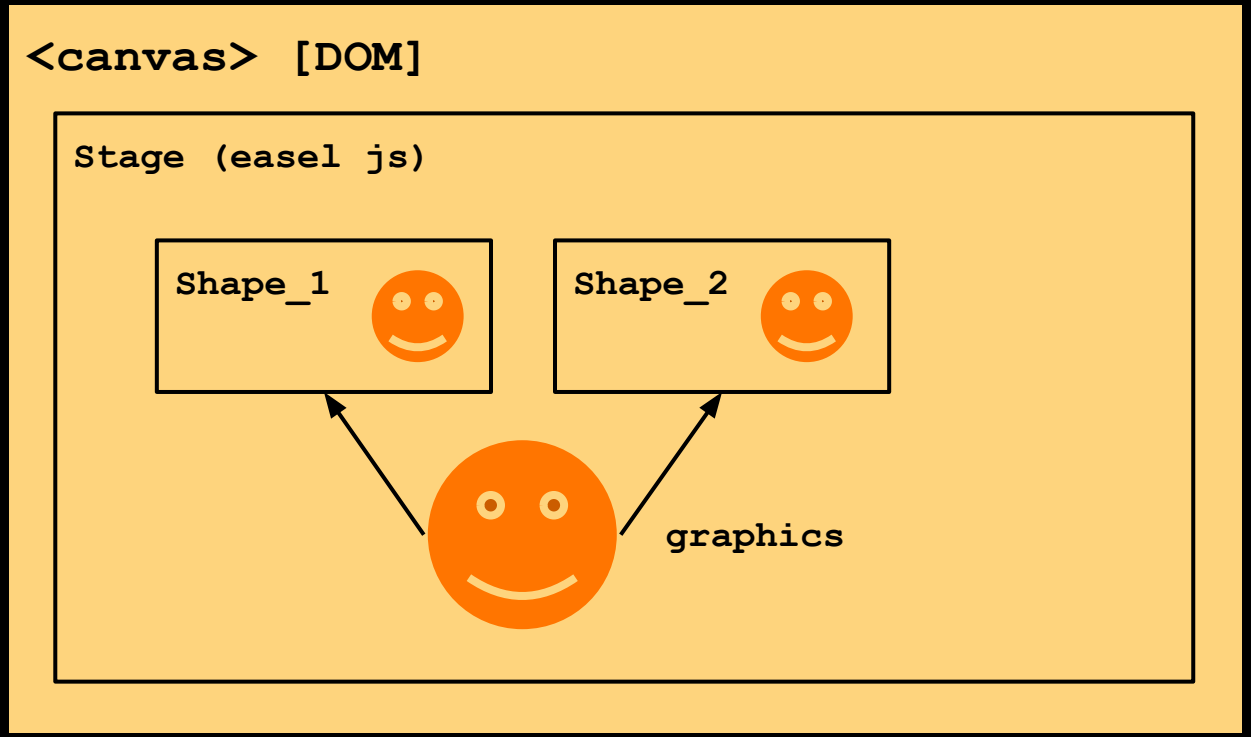
Acceleration

$$a_x = \frac{\partial v}{\delta t}$$

$$a_x = v_1 - v_0$$

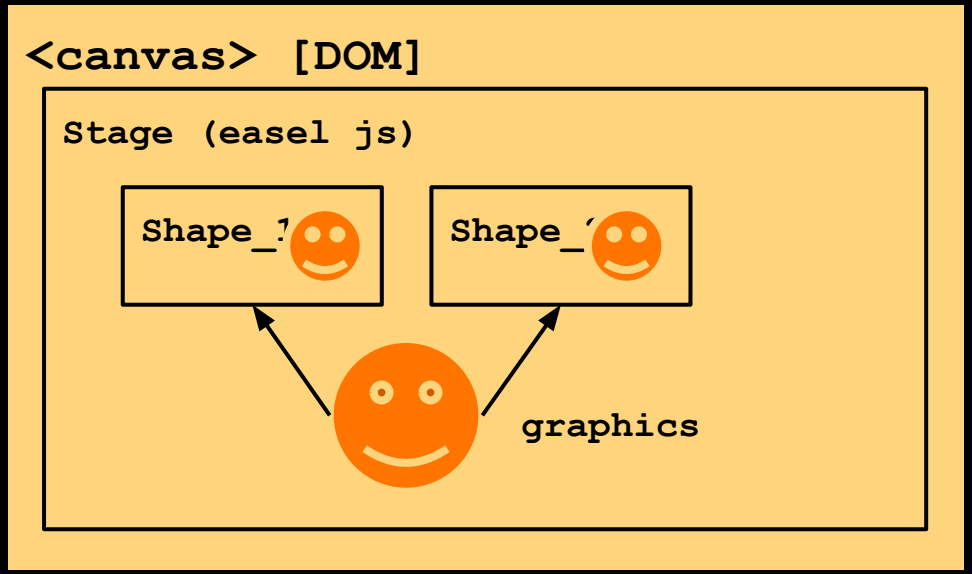
Concept cloud

Easel JS - Object Hierarchy



Easel JS - Object Hierarchy

Ticker



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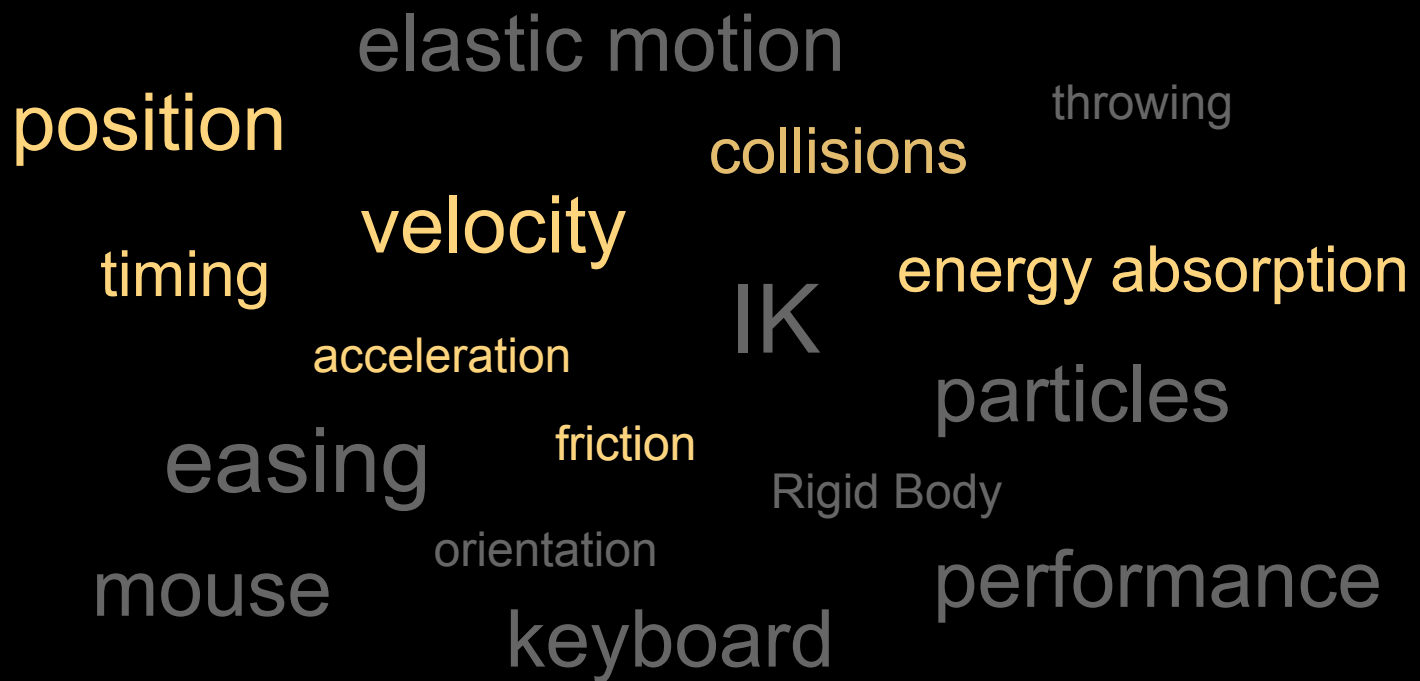
Easel JS - Start Moving!

Examples

1. Inertic Movement
2. Accelerated Movement - 1D
3. Energy Absorption (collisions)
4. Accelerated Movement - 2D
5. Friction

Concept cloud



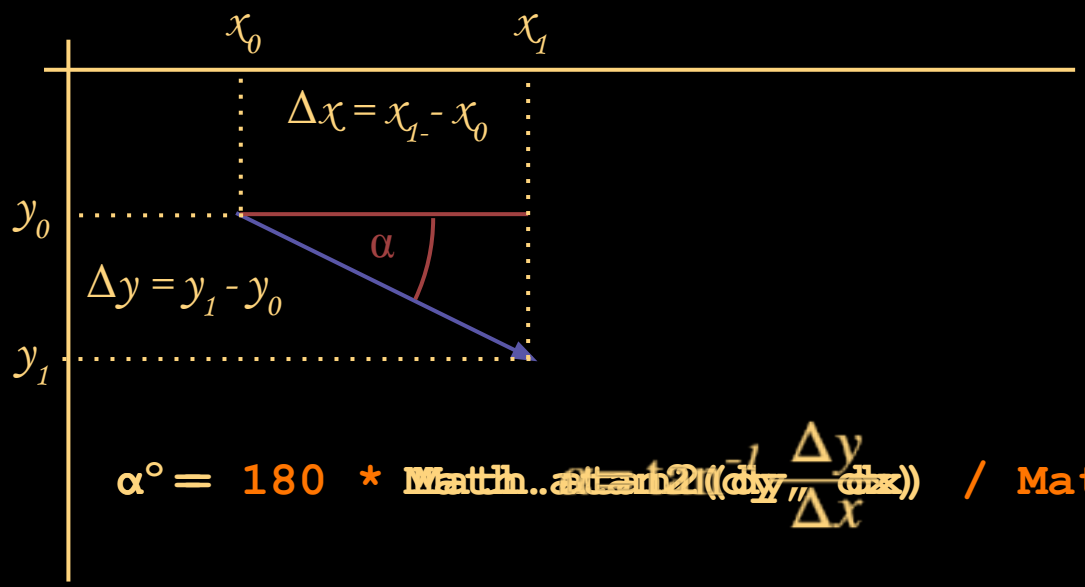
Easel JS - Start Playing!

Examples

1. Mouse Drag and Drop
2. Easing
3. Orientation

Easel JS - Start Playing!

Orientation



$$\alpha° = 180 * \text{Math.atan2}(\Delta y, \Delta x) / \text{Math.PI}$$

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Easel JS - Start Playing!

Orientation

Live Example

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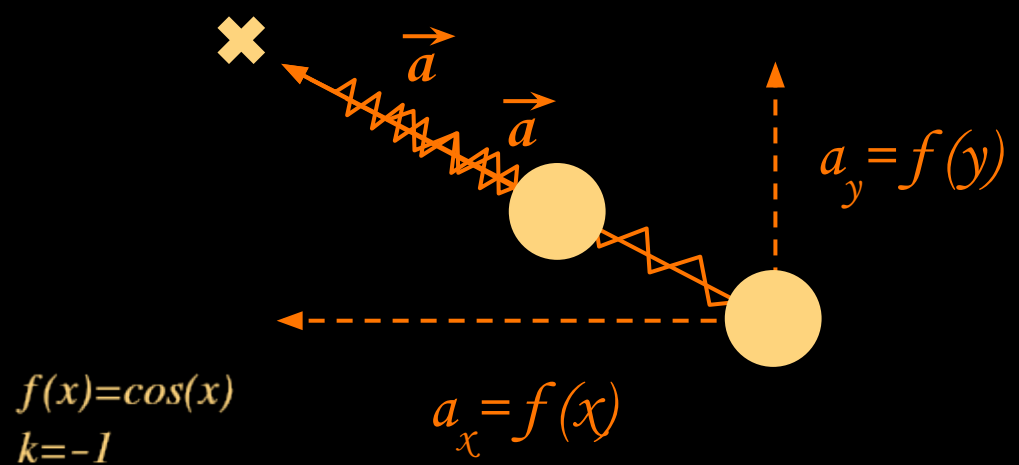
Easel JS - Start Playing!

Examples

1. Mouse Drag and Drop
2. Easing
3. Orientation
4. Elastic Movement

Easel JS - Start Playing!

Harmonic Motion (Elastic)



Easel JS - Start Playing!

Harmonic Motion (Elastic)

Live Example

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Easel JS - Start Playing!

Examples

1. Mouse Drag and Drop
2. Easing
3. Orientation
4. Elastic Movement
5. Throwing

http://roxik.com/ecodazoo/

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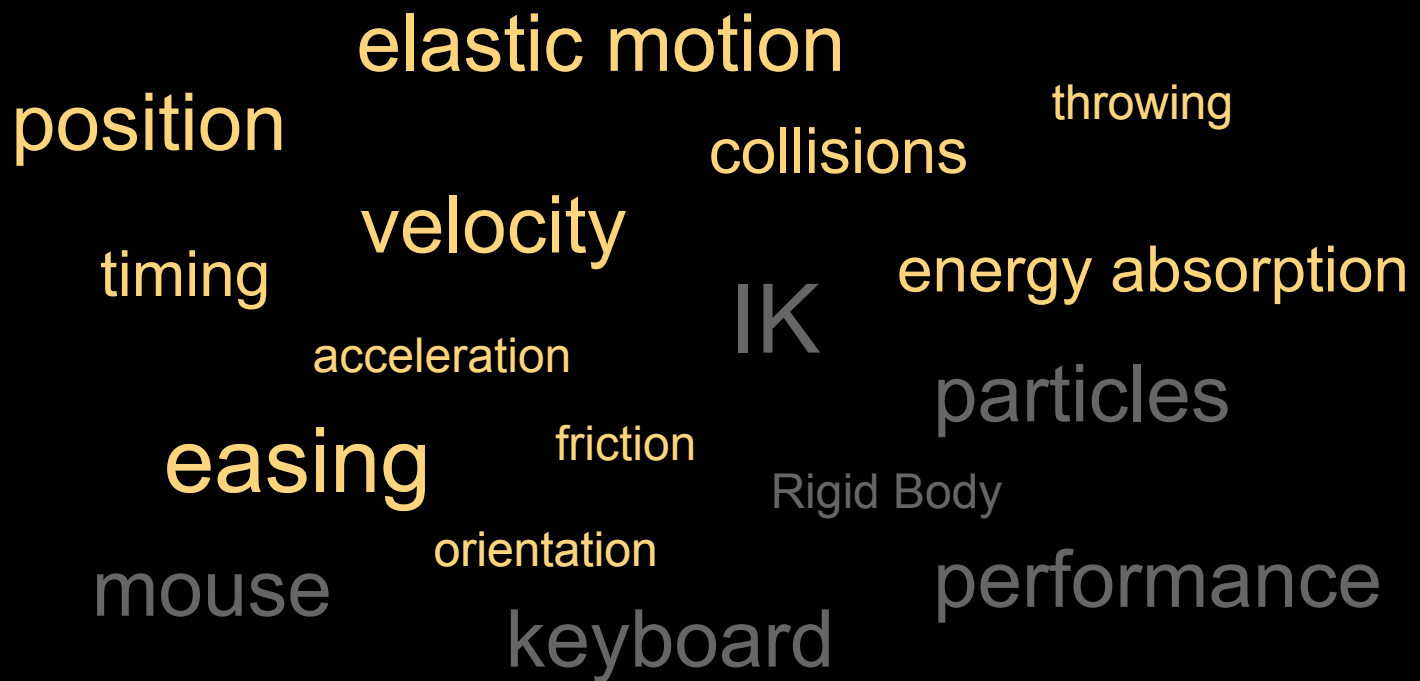

Easel JS - Start Playing!

Particle System

1. Emitter
2. Dynamics
3. Life Cycle
4. Performance optimization

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Easel JS - Start Playing!

Questions?

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