

# 2D Physics engine

## Objective

- Simulate physics
- Objects of different kind

## Tasks

- Gravitational acceleration
- Collision detection and response
- User I/O

# Gravitational acceleration

- Constant acceleration
- Applied to all objects
- 2 velocity variables X and Y-axis

# Collision detection and response

## Detection

- Detection after occurrence
- Exploiting temporal coherence
- Pairwise pruning

## Response

- Direction
- Speed
- Softness – kinetic energy loss

# User I/O

## VGA Controller

- Paint the screen
- Event-driven (max 60Hz)
- Optimization – send object data

## Keyboard Controller

- User input
- Event-driven