MeJ Makers 26’ Spring School

Multi-agent crowd simulation - Learning week in Pertuis activity
Pertuis, 30 March - 1st April 2026

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Funded by
the European Union

This document is the course material for the activity 10 (Multi-agent crowd simulation - Learning week in Pertuis) in the framework of the Erasmus+ KA210 Small-scale partnerships in school education project ***MeJ Makers****. 2023-2-FR01-KA210-SCH-000176068*

The electronic version is an interactive document delivered under the Wolfram Notebook format. Read it or interact with it can be done with the help of the freely available Wolfram Player.

Introduction

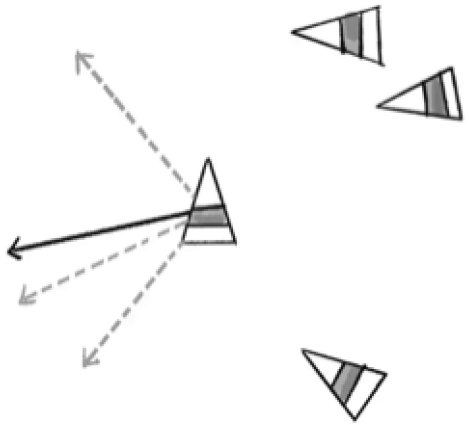
Bases of simulation : Vectors, Position, Velocity, Acceleration

Adding a bit of Physics to simulation

Reaching a target, Following a Path

Flocking : Separation, Alignment, Cohesion

Separation



Do It Yourself

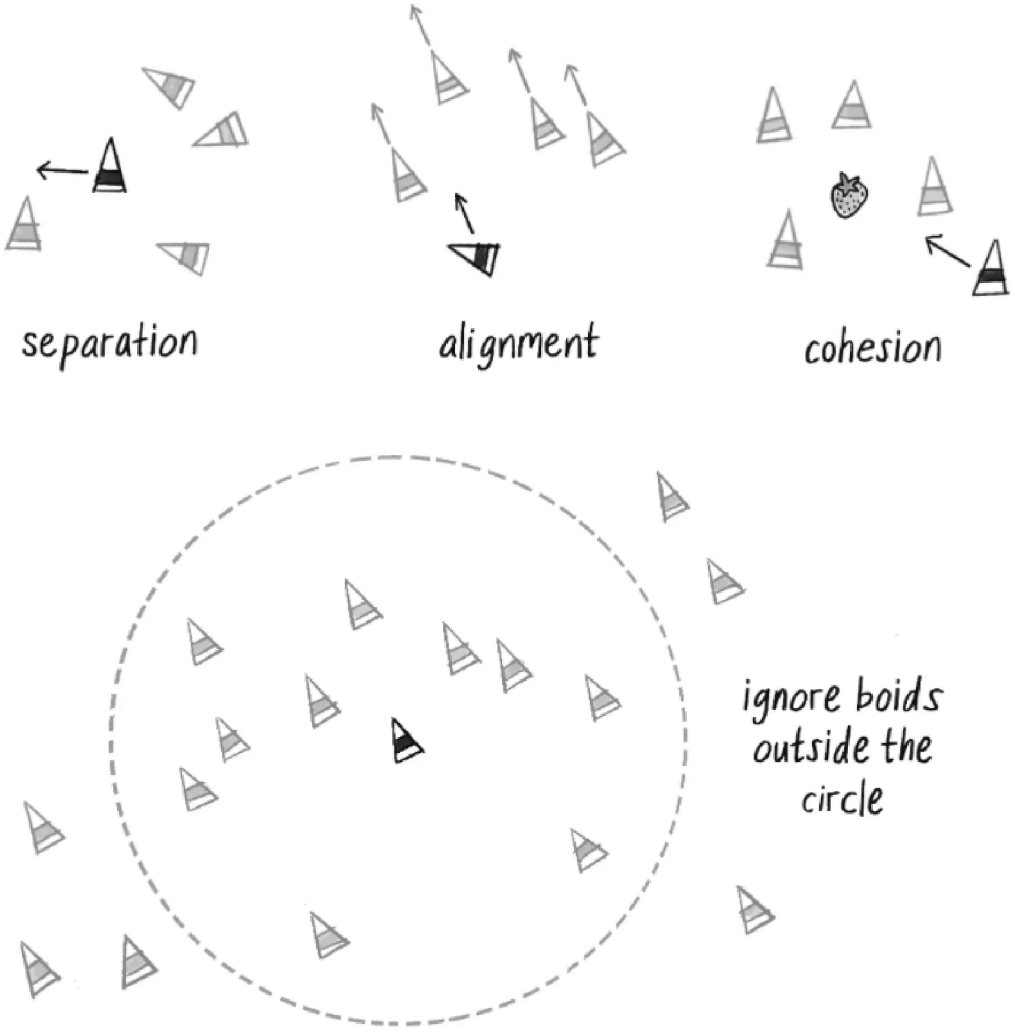
Separation

Explore the sketch “Separation” and the two sketches that are mixing separation with other behaviors “Crowd Path Following” and “Seek and Separate”.

Flocking

Flocking is a group animal behavior found in many living creatures, such as birds, fish, and insects. It consists in the mixing of the three following behaviors :

- Separation (aka avoidance): Steer to avoid colliding with your neighbors.
- Alignment (aka copy): Steer in the same direction as your neighbors.
- Cohesion (aka center): Steer toward the center of your neighbors (stay with the group).



Do It Yourself

Separation

Explore the sketch “Flocking”.