

STEERING APPLICATION

User manual

ABOUT THE APPLICATION

The application is a demonstration of some steering behaviors usable in games, it is often used for movement and AI handling in general.

Bindings

F1 - F12	Shortcuts to all main behaviors (details below)
F	Toggle entities steering force visibility
V	Toggle entities velocity visibility
H	Toggle Help panel
MouseWheel Up/Down	Go to next or previous behavior When in formation, only way to change to the next
1 - 0	Change the number of entities
Right / Left Arrow Key	When in multiline formation, increase or decrease the number of entities per line

BEHAVIORS

Seek / Flee (F1)

Entities are divided in two groups, the first seek the other that flee. In this state, the entities will stop moving at some point because of the application setting that keep everyone in the screen. When an entity reaches one border of the screen, it appears on the opposite side which will make the other change direction and so on.

Pursuit / Evasion (F2)

Pretty much the same as Seek / Flee but the entity will now determine the future position of its peer and act in consequence, flee to the opposition of that position for the Evasion and go to that position for the Pursuit one so the entity will be ahead of its target. There is the same issue than the Seek / Flee behavior with the teleporting entities so they will stop moving too at one point.

Arrival + Obstacle avoidance (F3)

Entities will follow the cursor and stay on it when reached. While they move they will avoid the obstacles on the screen.

Wander (F4)

Entities will randomly determine the direction to follow for its movement but in a restricted range so it will not have too much gap between two directions.

Path following (F5)

Entities will go from obstacle to obstacle to form a path. When they reach the end, they will turn around and go along the path in reverse order.

Unaligned Collision Avoidance (F6)

Each entity verify if the future position of others will intersect with its own and then go the opposite way by using and Avoid behavior.

Separation (F7)

Each entity will look around itself and track the position of the ones in a given perimeter to calculate the average one and go to the opposite.

Cohesion (F8)

The opposite of the previous one, each entity will go to the average position of the ones around itself.

Alignment (F9)

Each entity will go in the same direction as the others around in a given perimeter.

Flocking (F10)

All the entities will all go in the same direction and remain separated while doing so. It is a behavior that can be related to a group a fish swimming in the sea.

Lead following (F11)

Entities will follow a designated leader which will follow the mouse cursor, if an entity is in front of the leader, it will avoid it. Also each entity try to remain separated from the others.

FORMATIONS (F12)

From now on, the only way to change from a formation to another is the mousewheel, down for the next one, up for the previous one.

Circle

All the entities will form a circle around the leader. The circle radius grows according to the number of entities.

V

Entities will form a V shape by a given angle behind the leader.

Line

Entities will form a single line behind the leader.

Multiline

Entities will form multiple lines behind the leader, the number of entities per line is alterable by pressing the left or right arrow key.