
# 2D Movements

2D Movements plugin is a set of designer friendly base movements created to speed up setting levels is 2D environments.

Components prepared for this package allow to setup movements without any scripting with on-scene visualization and on-scene edition.

Package contains components for four types of movement:

- Bezier Spline Movement
- Elliptical Movement
- Pendulum Movement
- Point-Based Movement

To use a movement, simply add wanted movements' script to selected game object through the Inspector. Movement and its behavior can be fully controlled within Scene view and Inspector window.

Also please take a note, that visual representation can also be displayed on Game view window, if "Gizmos" toggle of this window is selected.

Link to a video tutorial: https://www.youtube.com/watch?v=R7nvL7iKqGY

# COMPONENTS AND THEIRS FIELDS

## 1. Shared fields

- Show gizmos

  Show/Hide gizmos line representation of movement. Color of gizmos is editable for every type of movement.

- Movement duration

  Duration of the movement in seconds. Moving object will get to next control point in given time. For bezier and point-based movements this means time to reach next movement point, for pendulum movement time between reaching every next peek, for elliptical movement time for object to go around full ellipse.

- Waiting time

  Delay between reaching destination point and starting movement to next point.

- Start delay

  Initial delay, before starting the movement towards first destination point.

- Ease

  Allows to setup any ease to the movement.

# 2. Bezier Spline Movements

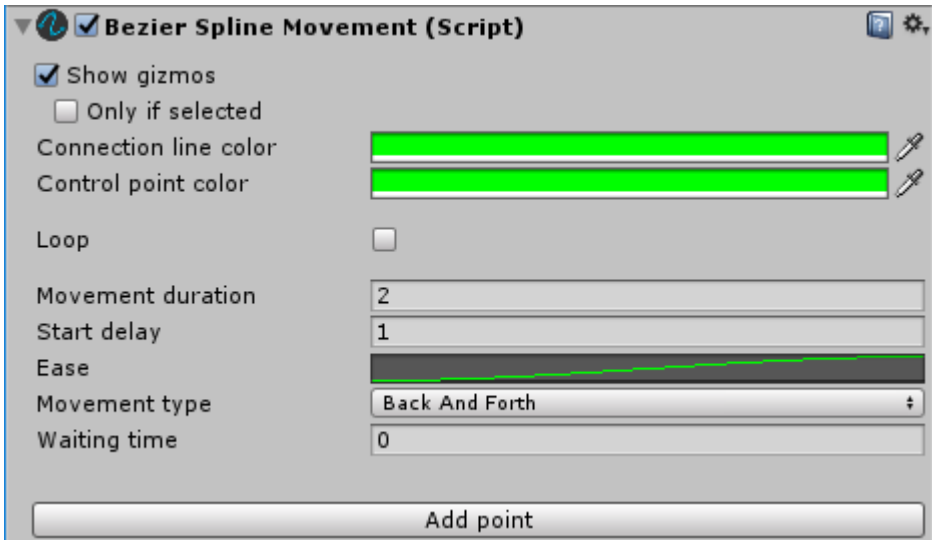


*Illustration 1: Bezier Spline Movement component*

- Loop

  Allows to connect last destination point with the first one. With this options selected, movement will have its finish point on the point where it started.

- Movement type

  Set of three options to determine objects behavior after reaching final point:

  - Repetitive – after reaching final point, object will teleport to starting point and start movement again.
  - Back And Forth – after reaching final point, object will start moving backwards, with starting point as new final destination. After getting back to the point, it will start movement all over again.
  - Once – after reaching final point, object will stay on it.

- Add point

  Clicking “Add point’ button will create new movement point right after the last one.

# 3. Elliptical Movement

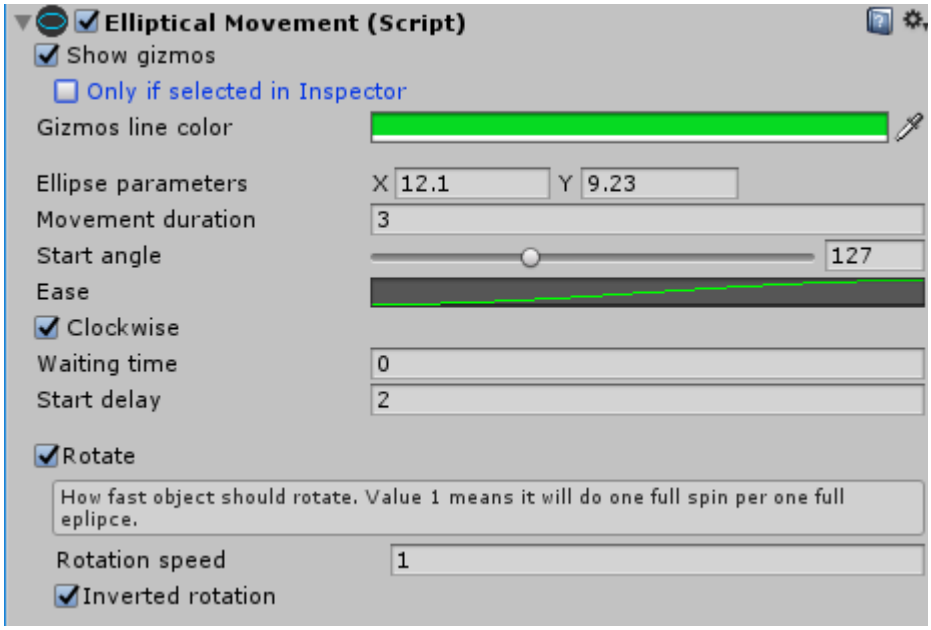


*Illustration 2: Elliptical Movement component*

- Ellipse parameters

  Setting up X and Y sizes of ellipse.

- Start angle

  Angle of ellipse, looking from top, from which the movement will start.

- Clockwise

  If toggle selected, object will rotate clockwise, counter-clockwise otherwise.

- Rotate

  If selected, object will rotate around its pivot center. Direction of rotation can be set by additional toggle, speed of rotation is also editable.

# 4. Pendulum Movement

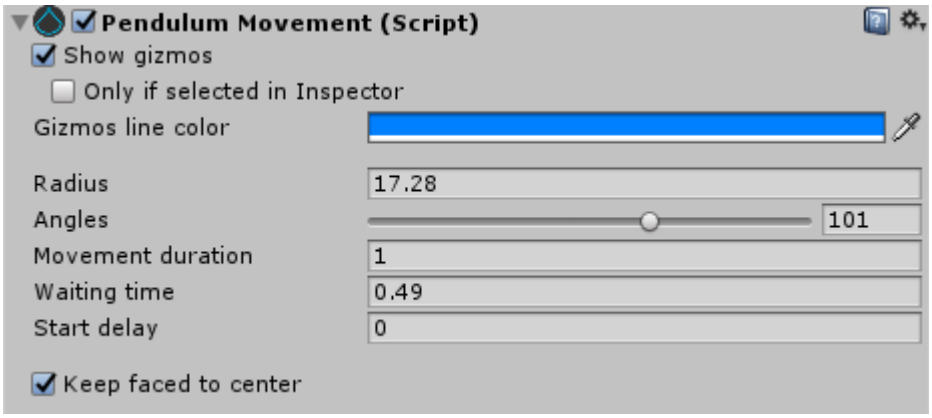


*Illustration 3: Pendulum Movement component*

- Radius

  The radius of movement.

- Angles

  Angles of movement, allow to setup how wide the movement will be.

- Keep faced to center

  If toggled, object will rotate to keep its up direction faced to center of the movement.

# 5. **Point-Based Movement**

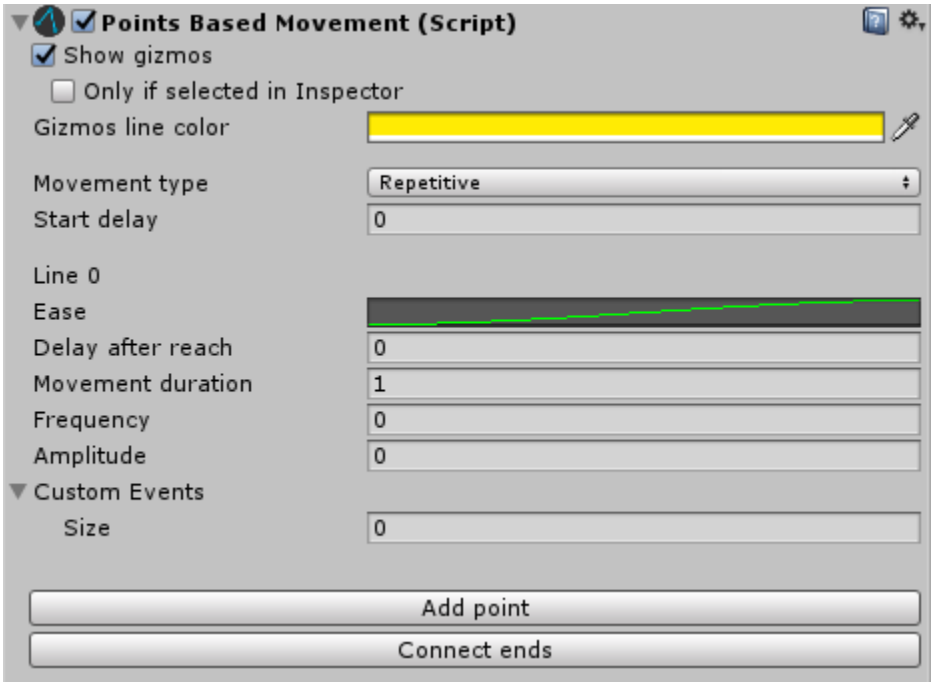


*Illustration 4: Point-Based Movement component*

- Movement type

  Set of three options to determine objects behavior after reaching final point:

  - Repetitive – after reaching final point, object will teleport to starting point and start movement again.
  - Back And Forth – after reaching final point, object will start moving backwards, with starting point as new destination. After getting back to the point, it will start movement all over again.
  - Once – after reaching final point, object will stay on it.

- Add point

  Clicking “Add point’ button will create new movement point right after the last one.

- Connect ends

Clicking “Connect ends” button will connect final point with starting point. It will result in object going from last point to the first one as a final movement destination.

- Additionally, for every connection line these parameters can be set up:
  - Ease – allows to setup any to the movement between points.
  - Delay after reach – delay between reaching destination point and starting movement towards next point.
  - Movement duration – duration in seconds between starting and reaching destination point.
  - Frequency – frequency of sinusoidal movement between points.
  - Amplitude – amplitude of sinusoidal movement between points.

## 6. **Custom events**

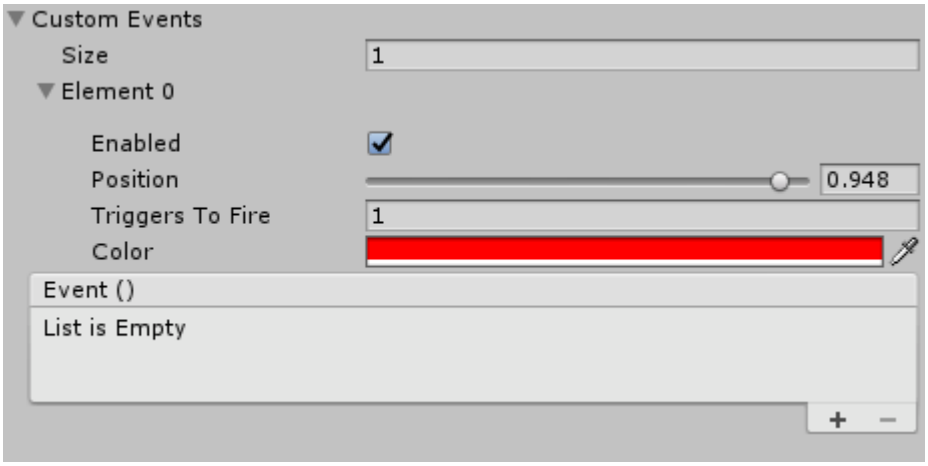


*Illustration 5: Custom events section*

To every type of movement user can setup any number of custom events. Event will be called when an object passes through given point on the movement line (or lines, for bezier and point-based movements). Custom events have given fields:

- Enabled – determines if event should be active or not.

- Position – position of event alongside of the movement line. Position is represented by gizmos dot with editable color.
- Triggers to fire – event will be called after object will pass through events position given number of times.
- Event – Allows to drag and drop an object, and select an action from that objects component to be called.