ATOMI SYSTEMS INC.

Saola Animate 4

User Manual

HTML5 animation and interactive content

Version 4.0.0

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Welcome to Saola Animate

This manual covers Saola Animate 4.0 for Windows and macOS. Start with the Overview, or use the table of contents to find a task.

Moving from 3.1.4

Keep a copy of your 3.x project and resource folder before upgrading; check browser preview and exported output before replacing published content. Projects saved in 4.0 may not reopen unchanged in older versions.

- AI agents: optional connection, off by default.
- Custom Elements: Canvas shows static content; test JavaScript in browser preview or HTML5 output.
- Video export: built-in exporter and optional external FFmpeg.
- License activation: product key replaces account sign-in.
- System requirements, interface languages, and themes.

Using This Manual

Shortcuts are written for Windows unless a macOS shortcut is shown. On macOS, use the shortcut beside the command or in **Preferences > Shortcuts**. Open Preferences from **Edit** on Windows or **File** on macOS. Some illustrations are from earlier versions; follow the current command labels in the text.

For help, visit the User Community or email support.

Chapter 1: Overview

Use Saola Animate to create scenes, animate elements, add interactions, and export HTML5 content or video.

User Interface

Welcome Screen

The **Welcome Screen** appears at startup and when no project is open. It provides access to projects and samples.

At the top of the **Welcome Screen**, you can see the main menu and the toolbar where you can:

- **Create a new project**: Open the **File** menu, select **New** (**CTRL+N**). Or, click the **New** button  in the toolbar.
- **Open an existing project**: Click the **File** menu, select **Open Project** (**CTRL+O**). Or, click the **Open Project** button  in the toolbar.
- **Customize the application settings**: Open **Edit > Preferences** on Windows or **File > Preferences** on macOS.
- **Change the display language**: Click the **View** menu, select **Language**, choose the language that you want.
- **Get Help**: Open the **Help** menu to get information about the current version (**About**), open the documentation (**Help Contents**), access the Saola Animate forum (**Report a Problem**/ **Provide a Suggestion**), check for updates (**Check for Updates**), manage or deactivate the license (**Manage License Activation**/ **Deactivate License**).

The rail on the left switches between two pages: **Home** and **Samples**.

The **Home** page contains the following:

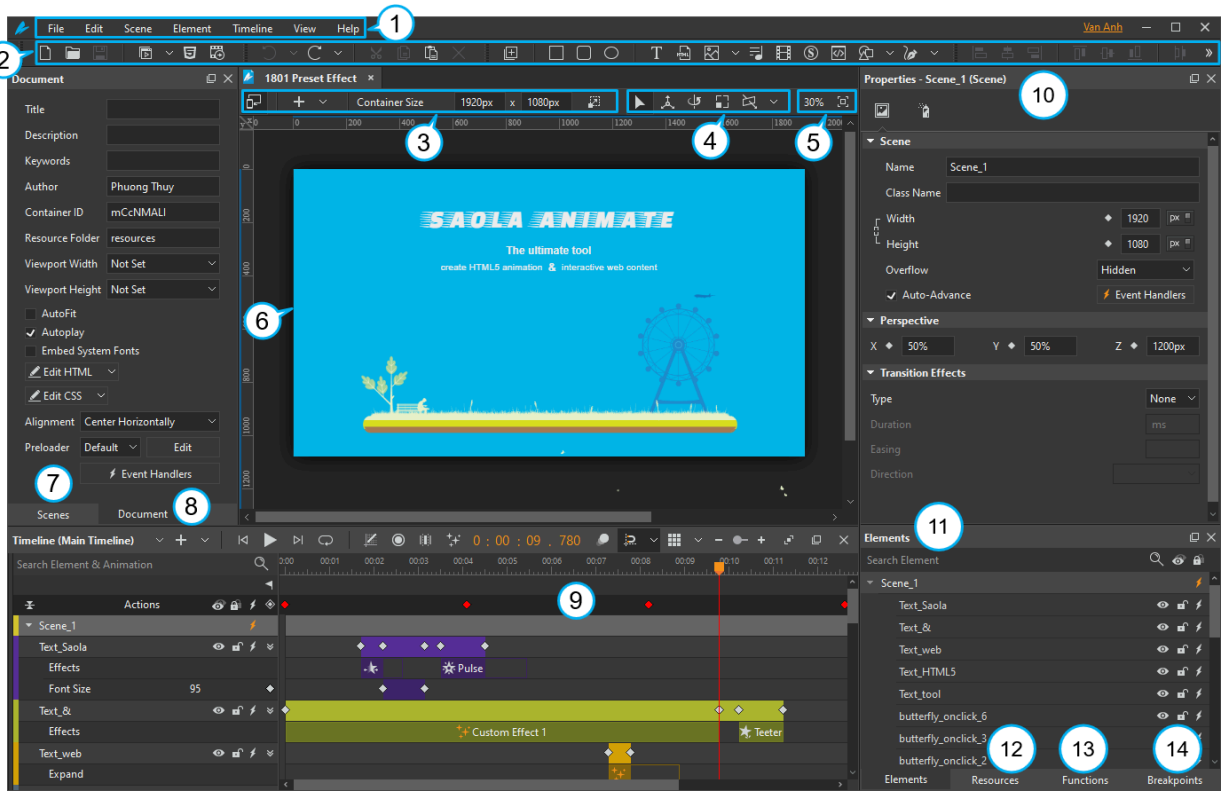
- **Search field**: Find projects, samples, and new-project formats, or type a size such as 640x480 to start a project of that size. Press **CTRL+K** to go to this field.
- **New project...** and **Open...** buttons: Create a new project or open an existing one.
- **Recent**: The projects you have recently been working with (if any), pinned projects first. You can do the following:
    - Click a project to open it.
    - Right-click a project and select **Pin** to keep it first, **Show in Folder** to open its containing folder, or **Remove from List** to remove it from the list.
    - Switch between the grid view and the list view, or click **View all** to see every project.
    - A project that can no longer be found is marked **Not found**. Click **Remove** to remove such projects from the list.
- **Start a new project**: Click a format, such as **Responsive** or **Banner ad**, to open the **New Project** dialog with that size filled in.
- **Start from a sample**: Click a sample to open it, or click **All samples** to go to the **Samples** page.

The **Samples** page lists all Saola Animate samples, which you can filter by group.

You can also drag a project file (**.saola*) or a project package (**.saolapack*) onto the **Welcome Screen** to open it.

Workspace

The workspace contains the Canvas, menus, toolbars, and panes. You can resize, hide, group, or float panes; see Customizing the User Interface.



1. The **Main Menu** is in the top left corner of the workspace. It consists of seven drop-down menus.
2. The **Dockable** toolbar, located below the main menu, contains many buttons that act as shortcuts to the most frequently used commands from the main menu.
3. The **Responsive** toolbar is above the horizontal ruler. It contains commands for creating and managing breakpoints and layouts in responsive documents.
4. The **3D Transformation** toolbar, next to the responsive toolbar, will come in handy when you need to adjust 3D transformation.
5. The **Zoom level and Fit on Screen button** allow you to scale the Canvas as you wish.
6. The **Canvas** is the central area of the application window. It displays scene content and allows viewing, adding, modifying, and arranging elements.
7. The **Scenes** pane, located on the left side of the workspace, displays thumbnails of scenes in a project.
8. The **Document** pane, next to the **Scenes** pane, includes options to edit document properties.
9. The **Timeline** pane, on the bottom of the workspace, is where you devote most of your time to creating HTML5 animation.
10. The **Properties** pane, on the right side of the workspace, displays element properties and provides lists, text fields, and other controls to adjust and fine-tune element properties.
11. The **Elements** pane displays all elements included in a scene. It allows viewing, searching, reordering, changing the selection, locking, and toggling the element's visibility state.
12. The **Resources** pane displays all resources in a project. It also holds any symbol you have created or imported, allowing you to edit them.

13. The **Functions** pane displays all JavaScript functions in a project. Here, you can create and manage functions to control various aspects of a document.
14. The **Breakpoints** pane displays breakpoints and layouts in responsive documents.

System Requirements

Windows: Windows 10 version 1809 or later, including Windows 11, on x64. There is no native Windows ARM build.

macOS: macOS 12 or later, on Apple silicon or Intel.

Minimum hardware: a 2 GHz or faster 64-bit processor and 8 GB RAM.

HTML5 output: mobile targets are Safari on iOS 13 or later and Chrome on Android 10 or later. Test your exported project in the browsers and devices used by your audience. Media codecs, browser security restrictions, and autoplay policies can affect playback. Use browser preview or a web server when testing content that needs HTTP access.

Internet connection: required for license activation and deactivation, online resources, and any online AI service used by your chosen client. The MCP connection itself is local to your computer.

Activating a License

Open **Help > Activate License**, enter your **Product Key**, and click **Activate**. If the connection requires a proxy, use **Connection Settings**. An activated installation shows **Deactivate License** in the Help menu. **Manage License Activation** opens the license-management webpage.

If your 3.x key requires an upgrade, follow the release upgrade instructions before purchasing another license.

Common Editing Commands

Use the toolbar, **Edit** menu, or an item's context menu to cut, copy, paste, delete, undo, and redo.



Cut

The **Cut** command removes the selected items and store them to the Clipboard.

Toolbar shortcut: 

Default keyboard shortcut: **CTRL+X** (for Windows) or ⌘ **X** (for macOS)

Copy

The **Copy** command copies the selected items to the Clipboard. While the **Cut** command remove the selected items from a scene, the **Copy** command still leaves them in its original place.

Toolbar shortcut: 

Default keyboard shortcut: **CTRL+C** (for Windows) or ⌘ **C** (for macOS)

Paste

The **Paste** command inserts the content of the Clipboard at the current location. You can paste the Clipboard's content into any opening Saola Animate projects.

Toolbar shortcut: .

Default keyboard shortcut: **CTRL+V** (for Windows) or ⌘ **V** (for macOS)

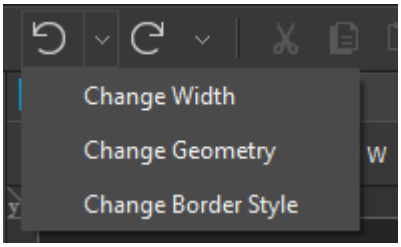
Delete

The **Delete** command deletes the currently selected items.

Toolbar shortcut: .

Default keyboard shortcut: **Delete** (for Windows) or ⌫ (for macOS).

Undo



Undo reverts the last change. Repeat to undo more changes, or use the button's drop-down list to undo several at once.

Toolbar shortcut: .

Default keyboard shortcut: **CTRL+Z** (for Windows) or ⌘ **Z** (for macOS).

Redo

Redo restores an undone action. Use the button's drop-down list to redo several at once. It is available only after **Undo**.

Toolbar shortcut: .

Default keyboard shortcut: **CTRL+Y** (for Windows) or ⇧⌘ **Z** (for macOS).

Chapter 2: Creating Projects

For existing 3.x projects, follow the upgrade precautions.

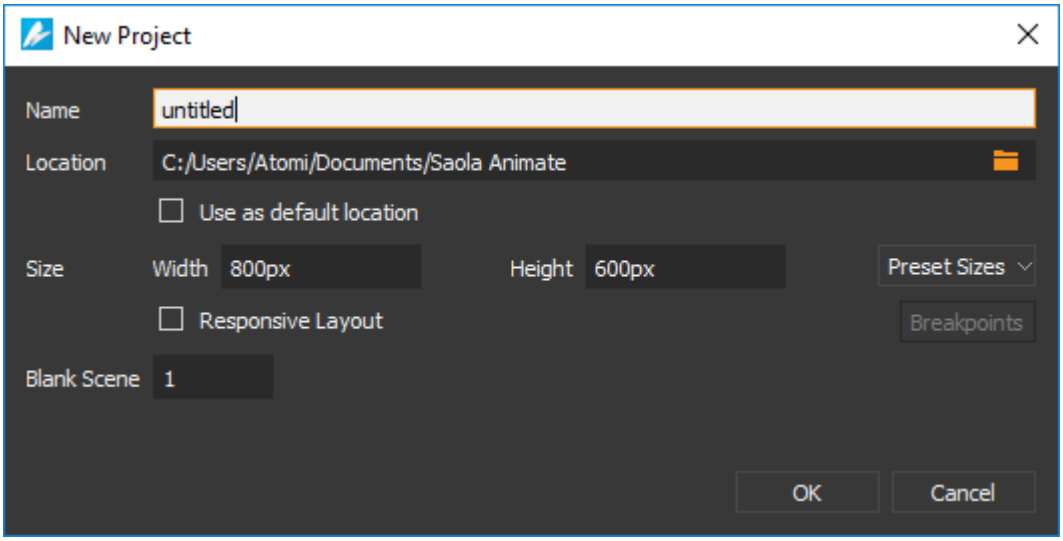
Creating, Saving, and Opening Projects

Saola Animate stores a project in a folder whose name is based on the project title or project name. It also allows packaging project files into a package file (*.saolapack*) for faster and easier sharing.

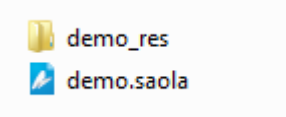
Creating Projects

On the **Welcome Screen**, click **New project...** or press **CTRL+N** to create a new project. Alternatively, click **New** in the toolbar.

Fill in required information in the **New Project** dialog and click **OK** to submit.



- **Name**: Enter the name of your project.
- **Location**: Define the location where your project will be stored.
- **Use as Default Location**: Select this option to use this location as the default for new projects.
- **Width, Height**: Enter manually the width and the height of the container in which the document is embedded. Alternatively, click **Preset Sizes** to choose one default size from the list. The container size is also editable afterward in the **Responsive** toolbar.
- **Responsive Layout**: Select this option to create a **responsive document** in which the scene size starts at 100% of the container and the viewport width is set to the device width. Disabling this option will create a non-responsive document. You can also change the settings to create a responsive document later.
- **Breakpoints**: Click this button to add and manage breakpoints. You can add and **manage breakpoints** later.
- **Blank Scene**: Enter number of blank scenes you would like to initially create. Later you can insert new scenes at any time. The scene size, by default, is the size of the above- mentioned container.



After filling in all nescessary information, click **OK** to create a new project. Note that once a project is successfully created, Saola Animate will automatically create a folder to store that project. This folder is named after the project title or project name. It will include of a folder and a manifest file as shown in the below image:

demo_res: A folder contains all resource files (images, audio, videos, etc.) that will be inserted into project during editing.

demo.saola: A manifest file stores information and data of the project.

Saving Projects

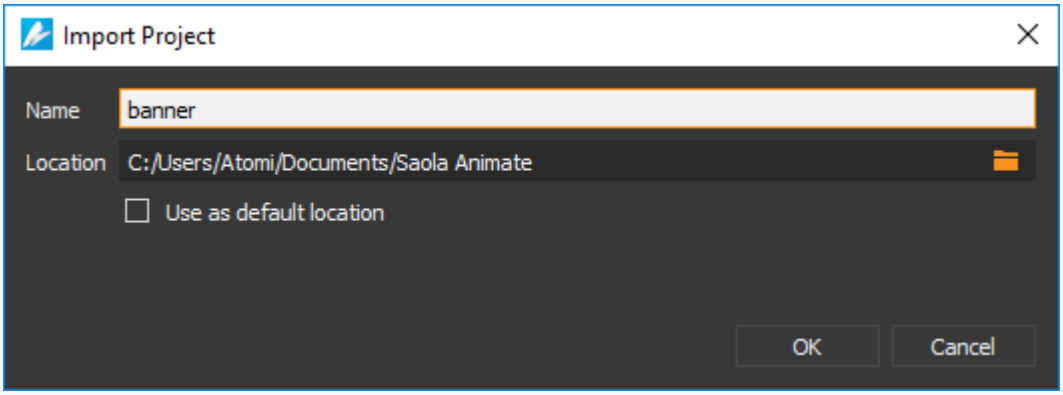
There are several ways to save a project:

- **Save a project normally**: Pressing **CTRL+S** or clicking **Save** in the dockable toolbar.
- **Save a project with a different name**: Click **File** > **Save As** > **Project**. Fill in required information in the **Save As** dialog and click **OK**. This way will come in handy when you want to make a backup of a project.
- **Save a project as a package** (**.saolapack*): Click **File** > **Save As** > **Package**. Provide the file name for the package and click **Save**.

Opening Projects

Do one of the following ways to open an existing project:

- On the **Welcome Screen**, click **Open...**. Alternatively, if the project is listed in the **Recent** section, just click to open it.
- In the open project window, click **Open Project** in the dockable toolbar or click **File** > **Open Project** in the main menu.
- On the **Welcome Screen** or in the open project window, press **CTRL+O**
- Access the project folder and double-click the manifest file (**.saola*).
- You can also import a project from a package file. Click **Open Project** and select a package file (**.saolapack*). The **Import Project** dialog appears as follows. Fill in the project name and click **OK** to import.



Working with Scenes

Scenes contain elements and timelines. They are helpful in separating content and controlling the flow of animations. A document can have one or multiple scenes which are managed in the **Scenes** pane. You can customize the initial number of blank scenes a project has when you **create a new project**.

Managing Scenes

Inserting Scenes

Do one of the following to insert a new scene:

- Click **Blank Scene**  in the dockable toolbar.
- Click **Scene** > **Blank Scene** in the main menu.
- Right-click a scene and select **Blank Scene**.

The new scene will be inserted below the last selected scene from which its size and background property will be inherited.

Duplicating Scenes

Duplicate a scene to create a copy which copies all aspects of the current one. To duplicate a scene, right-click it and select **Duplicate Scene**, or click **Scenes** > **Duplicate Scene in** the main menu. The new scene will be inserted below the current one.

Copying Scenes

Scenes can be copied and pasted inside a current project or into another project. If you copy scenes across projects, all resources and user-defined functions used in the scenes will also be copied. To copy a scene, right-click it and select **Copy**, or press **CTRL+C**.

Removing Scenes

Select one or more scenes, right-click and select **Delete**, or press **DELETE** to delete them.

Displaying Scene Thumbnails

The **Scenes** pane displays thumbnails of scenes in two modes. Right-click the pane and select either of the modes:

- **Show in Column**: Scene thumbnails expand their size to fit into the available width.
- **Show in Grid**: Scene thumbnails are uniformly sized and displayed in grid.

Editing Scene Properties

Edit scene properties in the **Scene** and **Transition Effects** sections of the **Properties**

pane. You can edit properties of multiple scenes simultaneously except the name of scenes.

- **Name**: Enter the unique name of the scene.
- **Class Name**: Enter the class name of the scene.
- **Width, Height**: Set the exact width and height of the scene. The size can be a fixed value (in pixels) or relative to the container size (in percentages).
- **Overflow**: Specify how scene content should be displayed if it extends beyond the bounds of the scene.
    - **Visible**: The overflow isn't clipped; it renders outside the scene's box. This is default.
    - **Hidden**: The overflow is clipped; any content that extends beyond the box will be hidden.
    - **Scroll**: The overflow is clipped, but a scroll bar is added to view the rest of the content.

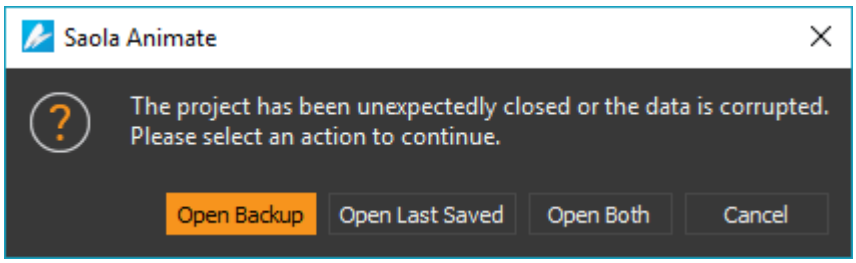
    - **Auto**: If the overflow is clipped, a scroll bar should be added to view the rest of the content.

- **Auto-Advance**: Select this option to move to the next scene automatically when the current scene ends. If you disable this feature, use **actions** to play scenes.
- **Transition Effects**: Movement from one scene to another.
    - **Type**: Select one type of the transition effect (**None**, **Fade**, or **Push**).
    - **Duration**: Set the duration of the transition in milliseconds.
    - **Easing**: Select one easing animation from the list.
    - **Direction**: Select one direction of the **Push** transition effect from the list (**From Left**, **From Top**, **From Right**, **From Bottom**).

Project Backup and Recovery

Auto-backup saves recovery data every five minutes by default. Change the interval or turn it off with **Create a backup every** in **Preferences > General**.

When you open a project after an accidental closure or crash, a dialog appears as follows:



- **Open Backup**: Open the backup version of the project. When editing, if you save your changes, this version will overwrite the last saved version.
- **Open Last Saved**: Open the last saved version of the project. The backup version will be deleted immediately.
- **Open Both**: Open both backup and last saved version to help you decide which version will be used. The backup version will be opened as a temporary project, meaning that it will be deleted if not saved.
- **Cancel**: Cancel the pending action.

Chapter 3: Responsive Design

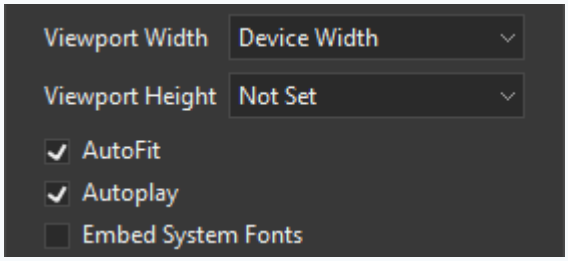
Combine responsive scaling, flexible layout, and breakpoint layouts to adapt content to different viewport sizes. These methods apply to both main documents and symbols.

Responsive Scaling

Responsive scaling fits the entire document into the browser window while preserving its proportions and layout.

To make a document scale responsively:

1. Use scene dimensions other than 100%. AutoFit does not scale 100%-size scenes, but still scales other scenes in the same document.
2. In the **Document** pane, select the **AutoFit** check box.



Flexible Layout

Flexible layout uses relative units (percentage, auto) and different types of positioning (top- left, top-right, bottom-left, or bottom-right) to adapt the document content to the browser window size.



Relative Positioning and Sizing

Scenes don't have relative position but elements do. You can set the size of a scene (width and height) in pixel or percentage. The position and size of elements can have absolute pixel unit (px) or relative percentage unit (%). Using percentage unit keeps the position and size of elements relative to their parents. For example, a top-level element whose width is 30% will resize to ensure that its width is always 30% of the scene width. A scene whose width is 100% will expand to take up the entire viewport width. As a result, to make the position and/or size of a top-level element respond to the viewport size changes, you must first set the scene size to % unit, then set the element position/size to % unit, too.

Maintaining Aspect Ratio

To maintain an element's aspect ratio, set one dimension to a percentage and the other to **auto**. For example, set an image's width to a percentage and height to **auto**.

Pinning Element Position

Flexible layout allows pinning elements to the corners of the scene thanks to the coordinate modes. Elements can be set to relative to the top left, top right, bottom left, or bottom right corner of the scene, affecting how they adapt to the viewport size changes. When being positioned using percentage values, the relative distance from an element to the pinned corner of the scene will remain unchanged. For example, an element is positioned 30% away from both the top and the left edges of the scene will always keep its relative distance to these edges regardless of the viewport sizes.

The coordinate modes also affect how elements are resized. When you adjust the width or height of an element, it will shrink or grow to the opposing corner but not the pinned corner. For example, an element is positioned relatively to the bottom right corner of the scene. When being enlarged, its bottom right corner stays where it is while the rest of the element grows.

Aligning Elements with Flexible Layout

Saola Animate lets you align elements with **Flexible Layout** option. Elements aligned with this option will keep the layout unchanged when the parent size changes. It's very useful for creating responsive documents.

Flexible Layout alignment can work well with not only relative-sized elements in the percentage unit, but also fixed-sized elements in the pixel unit.

To use flexible layout, you need to select both **Align to Parent** and **Flexible Layout** before applying alignment tools.

Responsive Layout

Overview

Responsive layouts define different element properties and animations for different viewport sizes. Each layout can also use responsive scaling and flexible positioning.

Breakpoints and Layouts

When a responsive site reaches a certain viewport width or height, it calls new element properties and animations for that width/height. **Breakpoints** mark the transition to a new layout where the element properties and animations change. You can create both horizontal and vertical breakpoints.

A range is the space between two breakpoints. If a scene has only one set of either horizontal or vertical breakpoints, each horizontal/vertical range will be equal to a **layout**. If a scene has two sets of horizontal and vertical breakpoints, a pair of horizontal and vertical ranges will define a layout.

For example, adding only one horizontal breakpoint at 500px creates two horizontal layouts: one is from 0px to 500px and the other extends right from 500px. Meanwhile, adding one horizontal and one vertical breakpoint creates two horizontal and two vertical ranges that intersect with each other. The four grids where these ranges intersect are equal to four layouts.

When the output document is displayed in a browser, the HTML5 player will choose the layout based on the current device's viewport size. Take the 500px horizontal breakpoint above as an example. Your output document has two layouts: the small layout below 500px and the large layout above 500px. If the current viewport width is smaller than 500px, the player will choose the small layout, otherwise it will choose the large layout. As the viewport width changes and passes 500px, the player will alter the layout, calling the new element properties and animations which fit the new width range.

Base Layout

Each scene starts with a base layout. Its properties and animations are inherited by all responsive layouts. Edit the base first, then switch to responsive editing mode to customize individual layouts.

Setting the Viewport

Saola Animate allows you to set the viewport size for mobile browsers to give instructions on how the page should be rendered. For responsive projects, Saola Animate sets the viewport size to the size of the device by default to match the virtual viewport with the device dimensions. You shouldn't use this setting in non-responsive projects, unless you know exactly what you want.

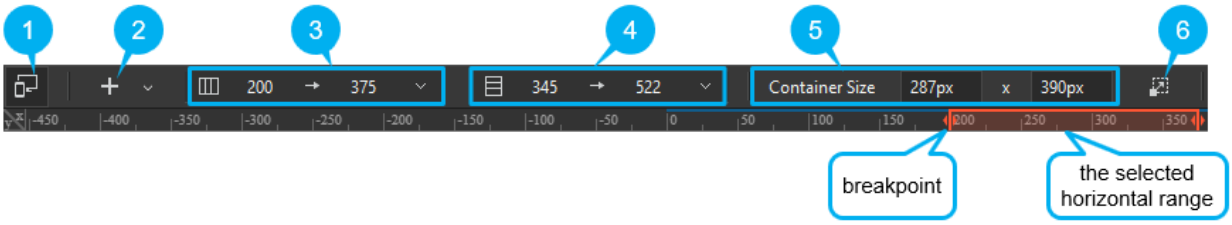
For more details, see **Updating Document Properties**.

Managing Breakpoints and Layouts

Responsive Toolbar and Breakpoints Pane

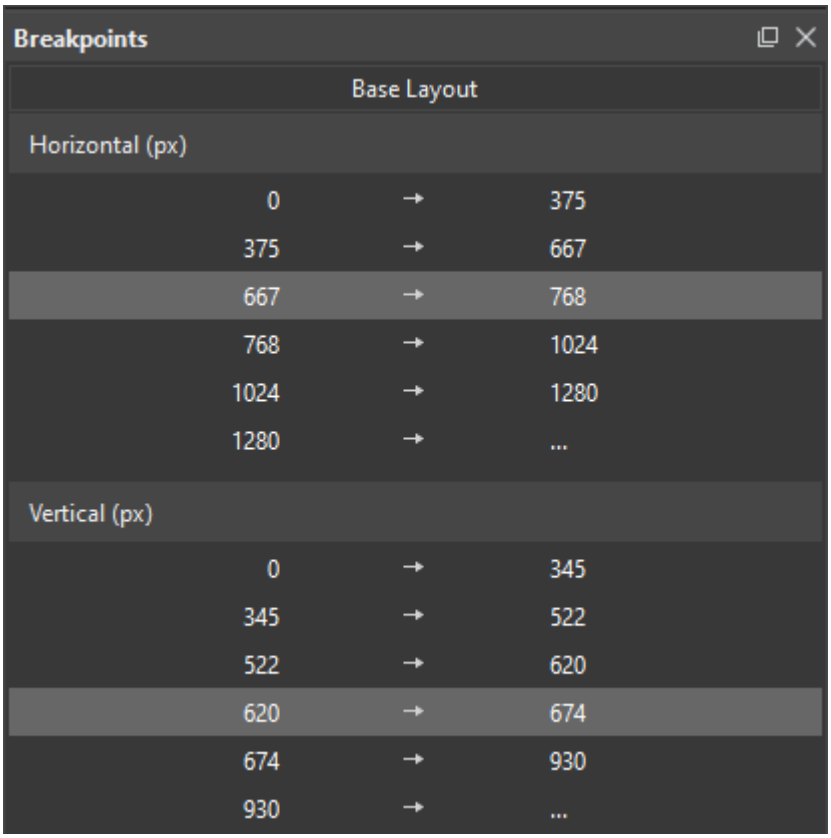
Use the **Responsive** toolbar and **Breakpoints** pane to create, edit, and switch between layouts. See Breakpoints and Layouts for how ranges define layouts.

The **Responsive** toolbar is located above the Canvas and below the Document tab.



- Click **Responsive** (1) to enter or exit the responsive editing mode.
- Click **Add Breakpoint** (2) > **Horizontal/Vertical** to add new horizontal/ vertical breakpoints.
- Click **Add Breakpoint** (2) > **Horizontal/Vertical Preset** to add the default horizontal/ vertical breakpoints.
- Change the horizontal breakpoint values (3) by scrolling the mouse wheel or entering a new value into the boxes. Alternatively, you can click the drop-down arrow to select one default horizontal range from the list. When a range is selected, it will be highlighted along the horizontal rulers. If you no longer want a range/layout, select it and click **Remove**.
- Change the vertical breakpoint values (4) by scrolling the mouse wheel or entering a new value into the boxes. Alternatively, you can click the drop-down arrow to select one default vertical range from the list. When a range is selected, it will be highlighted along the vertical rulers. If you no longer want a range/layout, select it and click **Remove**.
- Change the container size (5) by scrolling the mouse wheel or entering a new value into the width and heigh boxes.
- Click **Adjust Container Size** (6) then drag the Canvas to see how the scene will look like in different container sizes.

The **Breakpoints** pane displays breakpoints and ranges. Click a range to select it. You can click the **Base Layout** button to select the base layout.

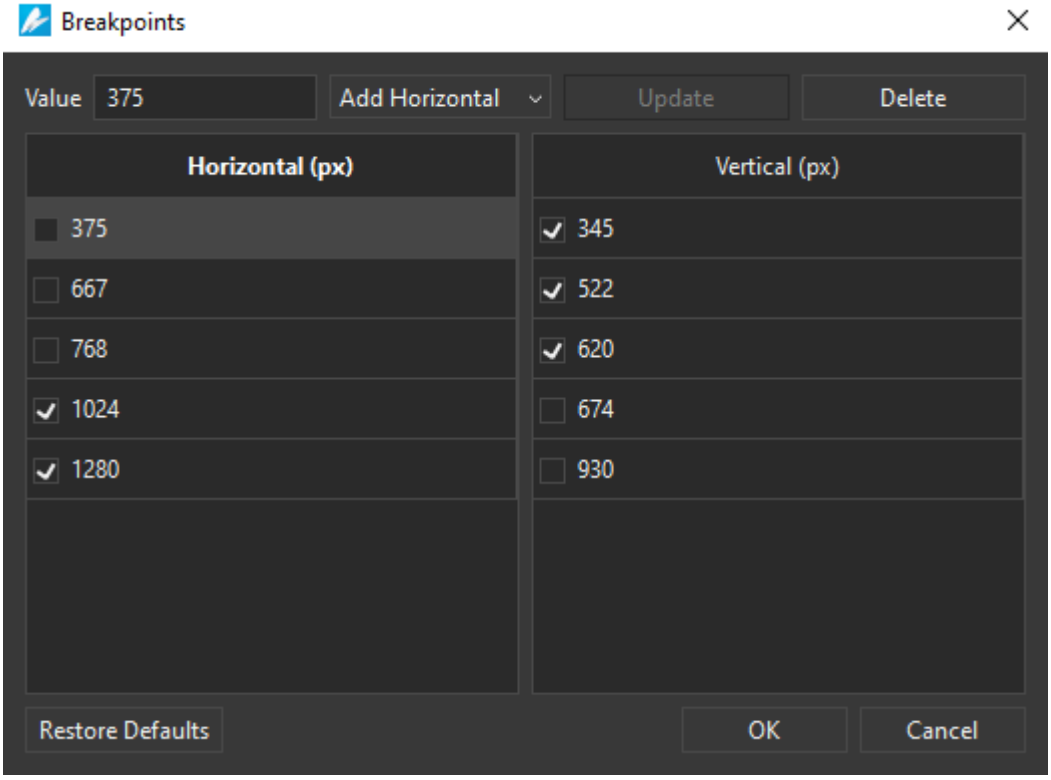


Adding Breakpoints

You can add and manage breakpoints right from the start when you create a new responsive document, or later when you are editing the document.

Adding Breakpoints When Creating New Projects

In the **New Project** dialog, select **Responsive Layout**, then click **Breakpoints** to open the **Breakpoints** dialog.



- **Add new breakpoints**: Enter a numeric value in the **Value** box. Then, click **Add Horizontal/Add Vertical** to add a new horizontal/ vertical breakpoint, respectively.
- **Adjust existing breakpoints**: Select an existing breakpoint. Enter a new value in the

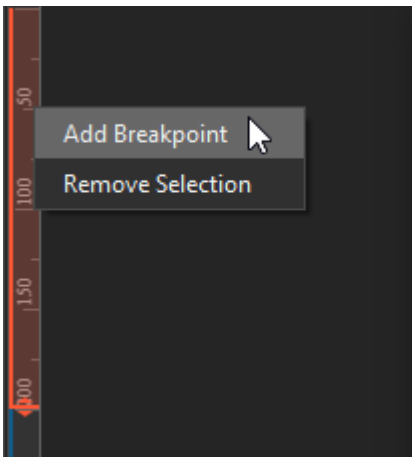
Value box and click **Update**.

- **Remove breakpoints**: Select an unwanted breakpoint and click **Delete**.
- **Exclude breakpoints**: Deselect the corresponding check box to not include an unwanted breakpoint in the document.

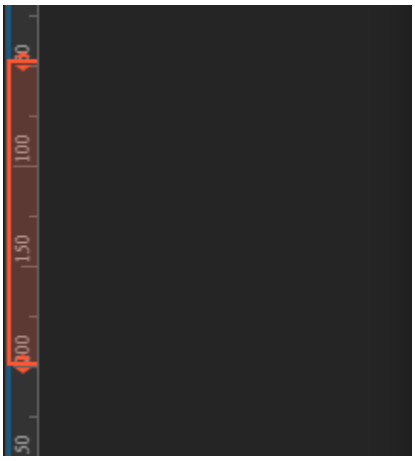
You can always go back to the original settings by clicking the **Restore Defaults** button at the bottom left corner.

Adding Breakpoints on the Canvas Rulers

1. In the **Responsive** toolbar, click **Responsive** to turn on the responsive editing mode.
2. Right-click on either the horizontal or vertical ruler where you want to add a breakpoint.

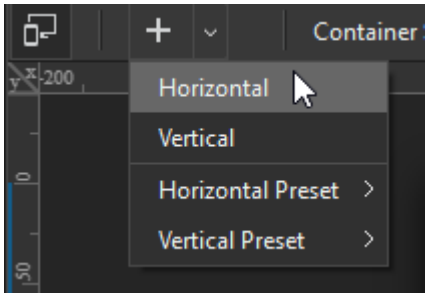


3. Select **Add Breakpoint** to add a new breakpoint. The range that extends right or bottom from the added breakpoint to the next breakpoint is automatically selected for editing.

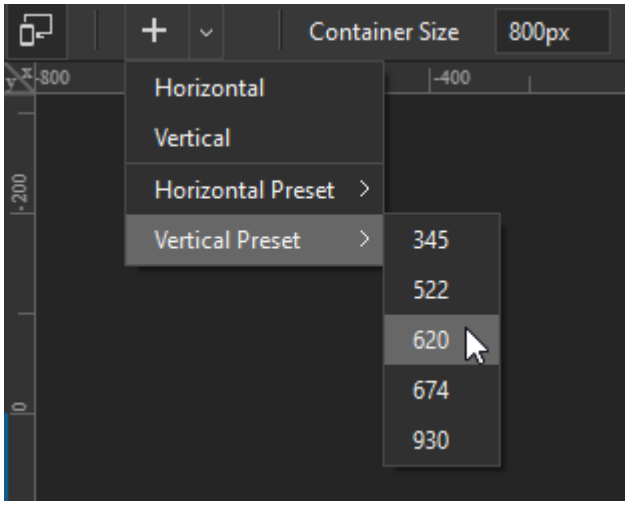


Adding Breakpoints in the Responsive Toolbar

1. In the **Responsive** toolbar, click **Responsive** to turn on the responsive editing mode.
2. Click **Add Breakpoint** > **Horizontal** or **Vertical** to add a horizontal/ vertical breakpoint. The range that extends right or bottom from the added breakpoint to the next breakpoint is automatically selected for editing.



You can also select **Horizontal/Vertical Preset** to add a preset horizontal/ vertical breakpoint.

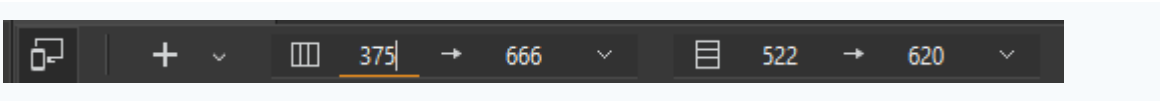


Changing Breakpoints

You may want to change a breakpoint to adjust the corresponding layout. Make sure the responsive editing mode is enabled, then do either of the following:

- Drag a breakpoint on the canvas rulers to a new location.

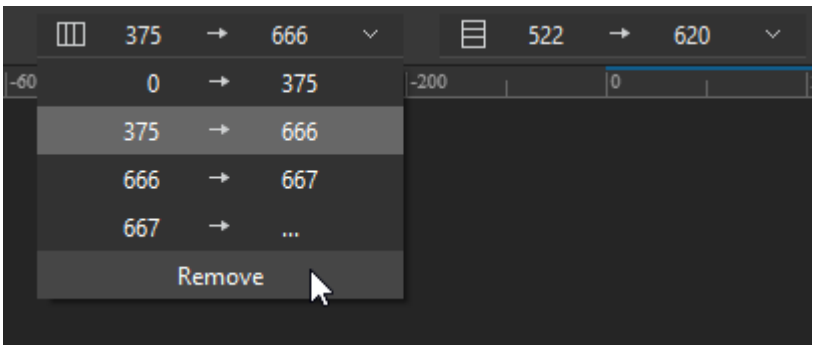
- In the **Responsive** toolbar, click the breakpoint value, then scroll the mouse wheel or enter a new value.



Removing Breakpoints

To remove the unwanted breakpoint and its corresponding range, make sure the responsive editing mode is enabled, then do either of the following:

- Right-click a range on the canvas rulers > **Remove Breakpoint**.
- Click the drop-down arrow next to the horizontal/ vertical value boxes in the **Responsive** toolbar > select **Remove**.



Choosing a Layout to Edit

To switch between the base layout and the responsive editing mode:

- In the **Responsive** toolbar, click the **Responsive** button.
- In the **Breakpoints** pane, click the **Base Layout** button if you want to work in the base layout. Or, click the range/ layout you want to select it to edit.

To switch between different responsive layouts:

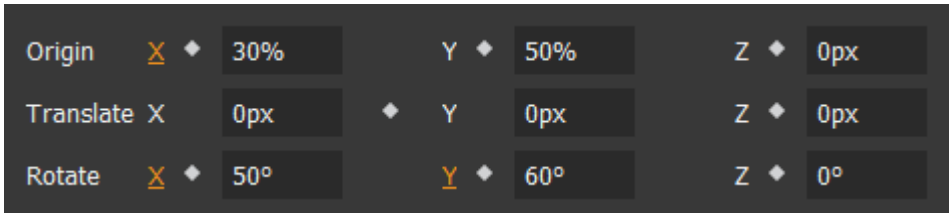
- In the **Breakpoints** pane, click the range/ layout you want.
- Click the range/ layout on the canvas rulers.
- In the **Responsive** toolbar, click the drop-down arrow next to the horizontal/ vertical value boxes, then choose the range/ layout you want from the list.

Managing Property and Animation Overrides

Creating Overrides

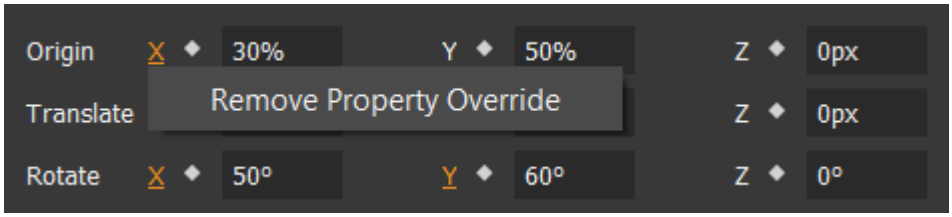
You can restyle element properties and animations in each responsive layout as you wish. In the responsive editing mode, when you make a change to a property or an animation, it overrides the default set in the base layout. Overridden properties or animations are no longer inherited from the base layout.

Overridden properties, animations, and the elements contain them are marked orange in the layout they appear. They are also marked in the base layout. This allows you to easily recognize overrides and remove them when needed.



Removing Overrides

When you make a change in element properties and animations in responsive layouts, it overrides those in the base layout. You can remove overrides to bring back the default properties and animations in the base layout. Just click any highlighted properties, animations, or elements and select **Remove Property/Animation Override**. You can also remove all overrides from an element by right-clicking the element on the Canvas > **Remove All Overrides**.



- **In the responsive editing mode**: Removing overrides will revert the selected property/animation in that layout *only* to the default in the base layout.
- **In the base layout**: Removing overrides will revert the selected property/animation in

all layouts to the default in the base layout.

For example, a scene has a base layout and two responsive layouts (layout_1 and layout_2). The left position of an element is 200px in the base layout and is overridden in layout_1 (changed to 50px) and layout_2 (changed to 100px). If you remove override of the element's left property in layout_1, it will go back to 100px, meaning it is inherited from the base layout. Layout_2 won't be affected at all. If you remove override in the base layout, the element's left property will go back to 100px in both the layouts.

Resizing the Viewport

Resizing the viewport while creating responsive content allows you to see how the output document will look with different container sizes. You can preview your responsive content in browser or right within the program.

In the responsive editing mode, do the following:

1. Click **Adjust Container Size** in the **Responsive** toolbar. The light gray control handles appear on the edges and corners of the container.
2. Drag the control handle to change the container size.

You can also click anywhere on the canvas rulers to snap the container to that pixel size.

Responsive Symbols

In responsive documents, symbols inherit the parent symbol's or main document's breakpoints and layouts when created. Subsequent layout changes in the parent and child are independent. Double-click the symbol on the Canvas or in the Resources pane to edit it as a responsive document.

The symbol element's size acts as its content's container size and selects the matching layout in the output. Resize the element to use a different layout, including when reusing the symbol in another responsive document.

Chapter 4: Inserting and Editing Elements

Elements include DIVs, text, HTML widgets, images, audio, video, symbols, and shapes.

Element Overview

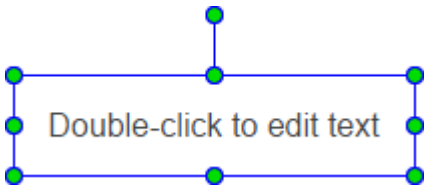
Elements share properties such as name, position, and transformation; other properties depend on the element type. See Using Properties Pane.

DIVs

DIV element is displayed as an HTML element. They come in three predefined shapes, namely Rectangle, Rounded Rectangle, and Ellipse. These shapes are flexible and can be edited by adjusting the **corner** property.

Insert DIV elements by clicking **Rectangle Div**, **Rounded Rectangle Div**, and **Ellipse Div** in the dockable toolbar.

Text



Text element displays text in a scene. Insert text elements by clicking **Text** button in the dockable toolbar. Double-click the element to edit text inline.

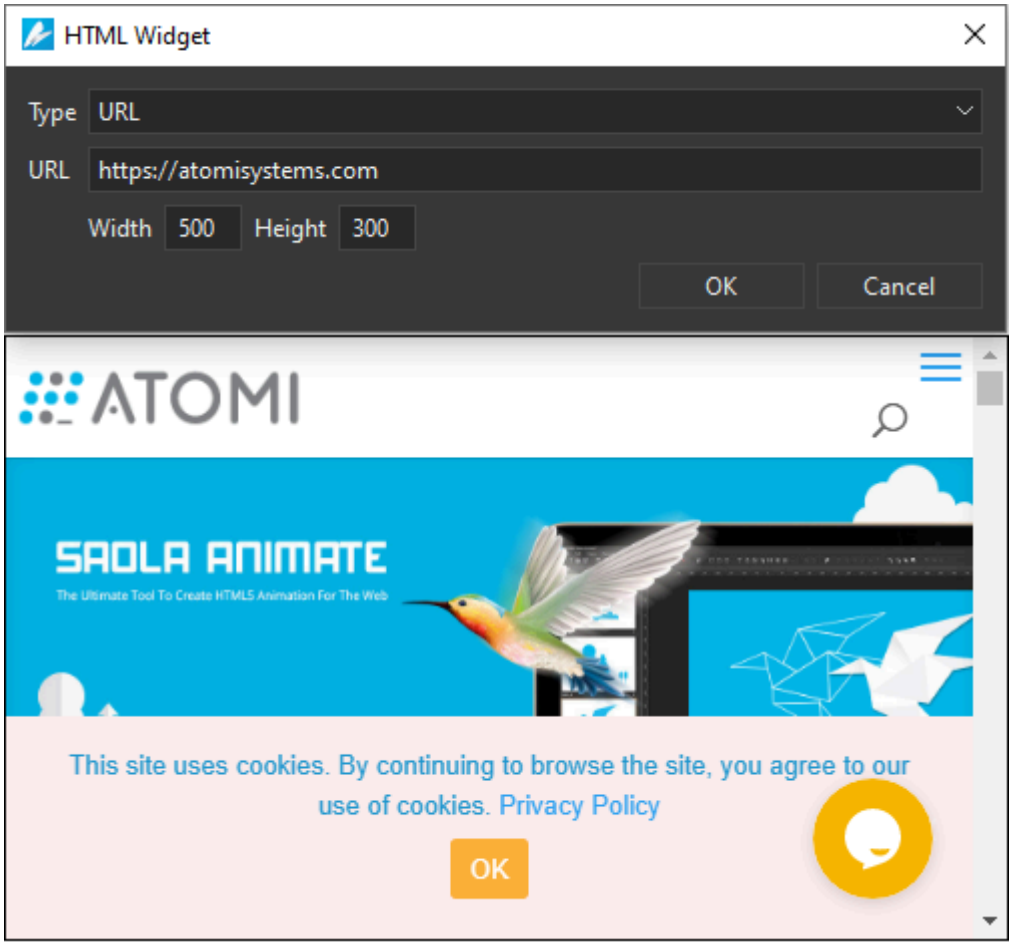
Format or style text using the **Floating Text Format** toolbar or the **Properties** pane > **Text** section. You can change the font, size, color, styling, alignment, spacing, etc. For more styling control, edit the HTML for the text element.

Saola Animate makes web safe fonts and system fonts available. When using system fonts, you can embed fonts in the HTML5 output using CSS3 Web Fonts Specification. Text will maintain appearance no matter the font installation on viewers' computer. Saola Animate also includes support for **adding Google fonts**. Added Google fonts will appear as font resources in the **Resources** pane.

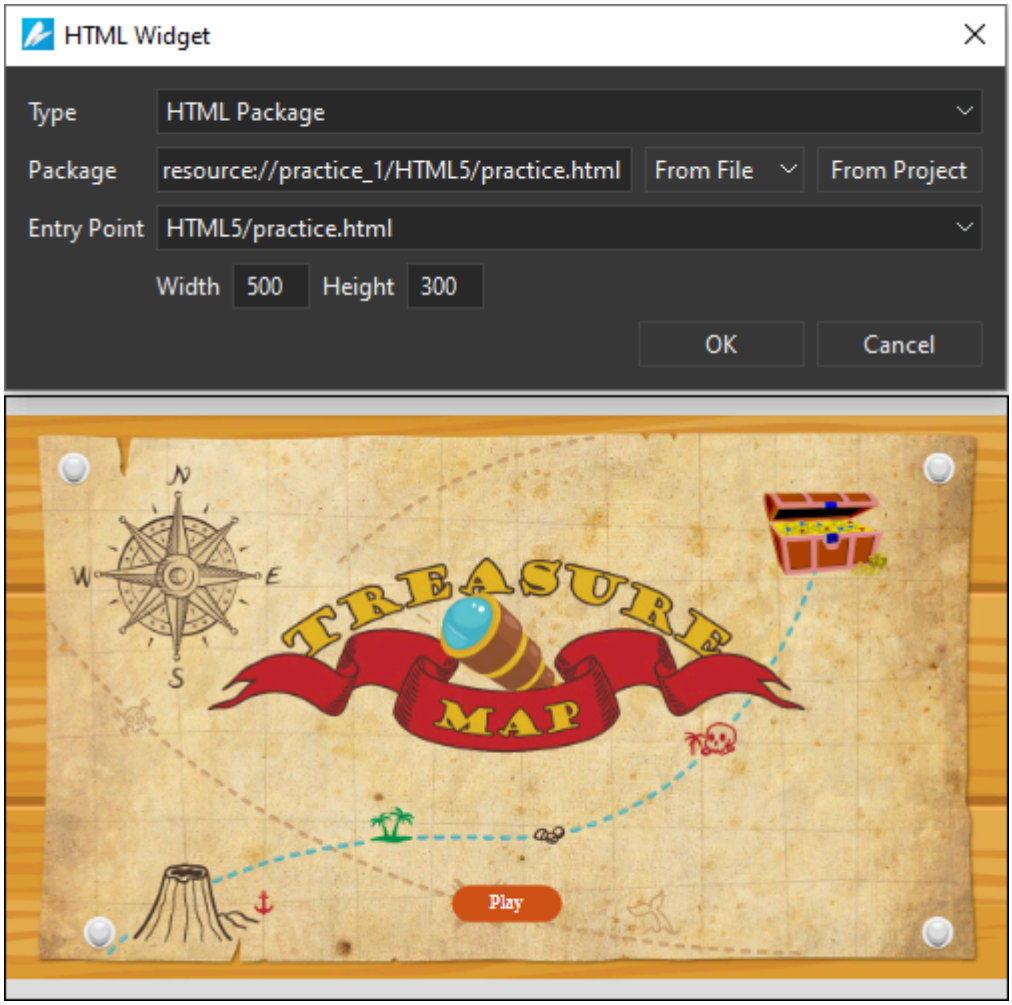
HTML Widgets

HTML widgets can be used to display a webpage, embed an HTML package, or embed a piece of code in a scene. To insert an HTML widget, click **HTML Widget** in the dockable toolbar. Then, the **HTML Widget** dialog appears.

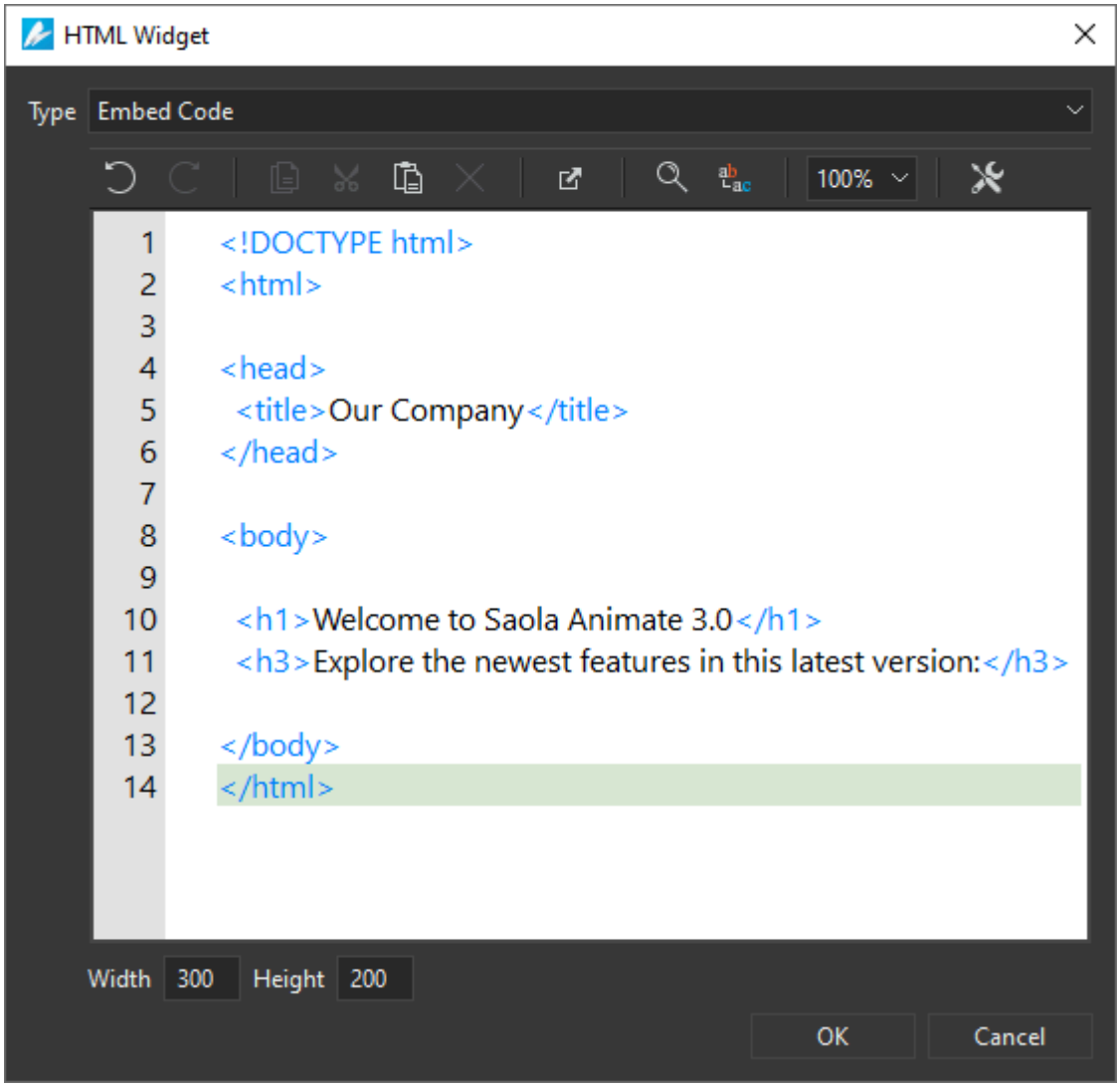
- **To display a webpage**: Select **URL** from the **Type** list and enter an URL in the **URL** box. You can enter specific value in the **Width** and **Height** combo box to change the size of the widget. You can also change the size later:



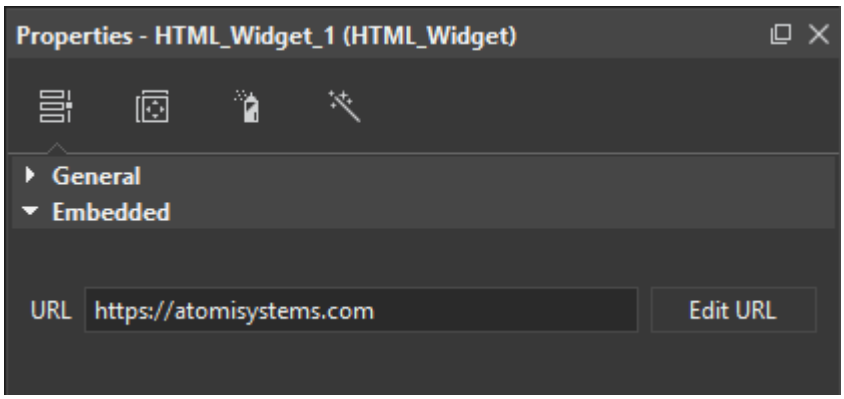
- **To embed an HTML Package**: Select **HTML Package** from the **Type** list. Import one package from your computer (**From File**/ **From Folder**) or from the current project (**From Project**). Then, select one from the **Entry Point** list. Enter specific value in the **Width** and **Height** combo box to change the size of the widget. You can also change the size later:



- **To embed code**: Select **Embed code** from the **Type** list and enter the code that you want to embed. You can also copy and paste the code into the box:



After inserting an HTML widget, you can edit it in the **Embedded** section in the **General** tab of the **Properties** pane. Simply click the **Edit URL** or **Edit HTML** button to edit:



Note that HTML is always given priority. So, if you specify both the HTML and the URL of a webpage, the widget will show the embedded HTML. In that case, clear the HTML to display the webpage.

HTML widgets have no border or background by default. On the Canvas, a dashed outline shows the area of a widget without a border or background. The outline doesn't appear in the preview or in the HTML5 output.

Images

Saola Animate supports six image formats, namely JPG, JPEG, PNG, GIF, BMP, and SVG.

There are many ways to import images:

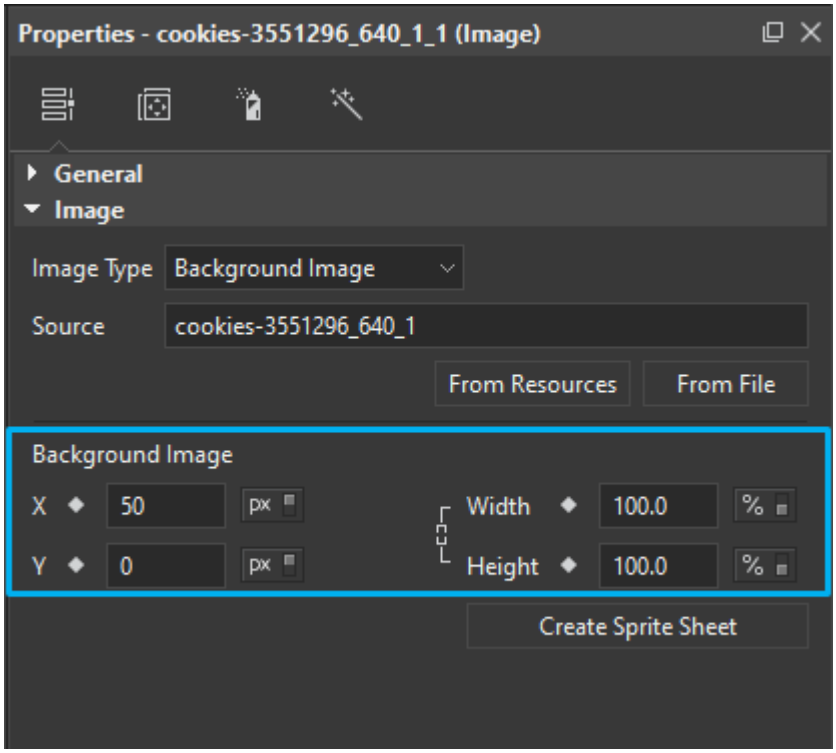
- Click the **Image** button in the dockable toolbar.
- Drag images from your computer and drop them onto the Canvas.
- Drag images from many other applications, for example, Adobe Illustrator, and drop them onto the Canvas.
- Copy images from your computer and paste them into the Canvas.
- Copy images (**CTRL+C**) from many other applications and paste them into the Canvas.
- Import images into the **Resources** pane to add them to a scene later.

Besides, when you click on the down arrow button next to the **Image** icon, Saola Animate lets yout import images by one of three options: **Background Image**, **Image <img>**, and **Inline SVG**. The following sections will explain the differences among those options:

Background Image

The **Background Image** option specifies an image to be used as a background. Select this option when you want to:

- **Create sprite sheet animation**.
- Display a specific part of the image by changing its position (**X**, **Y**) and size (**Width**, **Height**) in the **Background Image** section of the **Properties** pane:

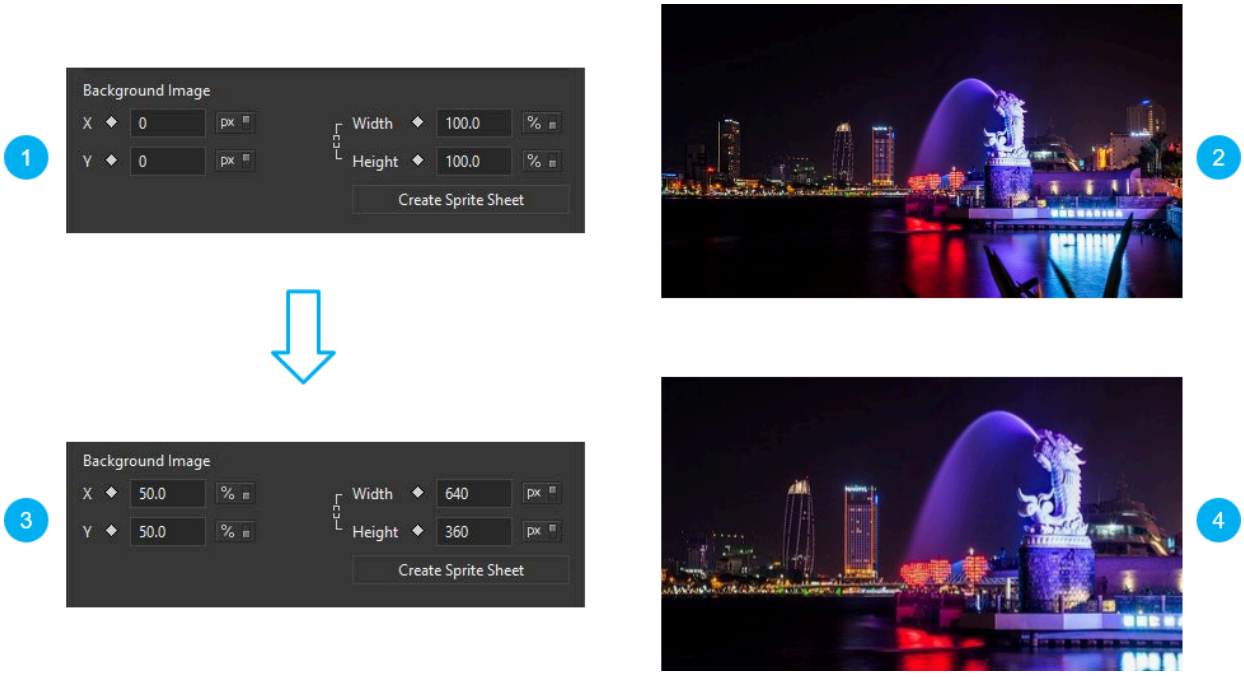


- Use a high-res image as a background but can crop its unnecessary parts in small screen devices by changing its position and size.

For example, let's take a look at the following image:



By default, the X and Y values of an background image are set in pixel while its width and height values are in percentage (1). When being resized, this image will be scaled without changing its original proportion (2).



Now, let's change the width and height values to pixel, then set the X and Y values in percentage (X=Y=50%) (3). When being resized, the image will be cropped to focus on the central part (4).

Note that when you import image using the **Image <img>** or **Inline SVG** options, the **Background Image** section is not available.

Image <img>

The **Image <img>** option is used to embed an image in an HTML page.This option helps to create a holding space for the referenced image. Using this option is the most straight-forward way of displaying a static image on a page. The **Image <img>** option should be used whenever an image is

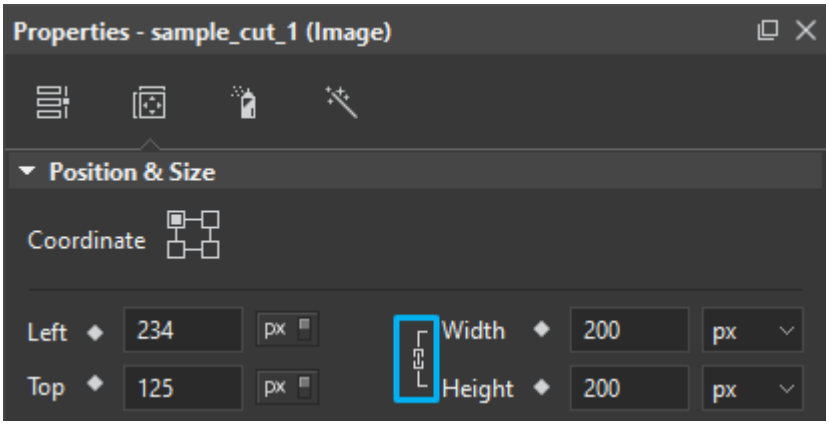
actually a part of the content (as opposed to using an image as part of a page's design).

Inline SVG

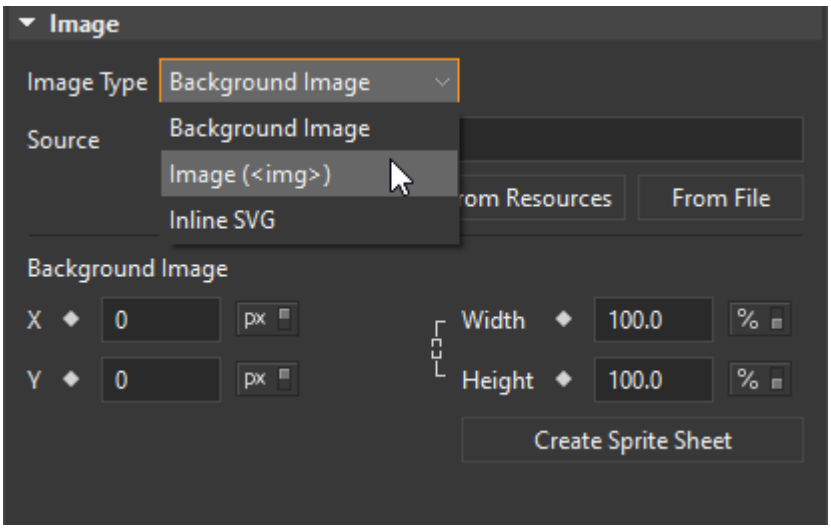
SVG stands for Scalable Vector Graphics, used to define graphics for a web. The **Inline SVG** option is only available for SVG images (.sgv files). This option allows you to embed SVG images directly in an HTML page. Later, you can use CSS or Javascript to customize styles and properties of SVG elements in that image.

Notes

- Image elements maintain their aspect ratio by default, which keeps them proportional while being resized. To change the ratio, clear the **Link width to height** check box (the chain icon):



- Images larger than the scene are scaled down to fit it when inserted, keeping their aspect ratio.
- While editing images, chances are you want to revert them to their original size. Just right-click the images on the Canvas and select **Restore Original Size**. The option works at any time without affecting images' other properties except the size property.
- You can switch the current image type to another one. In the **Image** section, selecting another image type from the drop-down list:



- You can replace the image embedded within an image element while maintaining all existing animations. To do that, you just need to click **From Resource** or **From File** and select a new image. In doing so, make sure the new image has the same size as the original one. Otherwise, it may be resized or look messy.

Audio and Videos

Saola Animate supports the HTML5 <audio> and <video> elements, enabling native audio and video playback within the browser. You can import the following audio and video formats:

- **Audio**: MP3, WAV, M4A, AAC, OGA, OGG
- **Video**: MP4, M4V, WEBM, OGV

The ways to import audio and videos are similar to those used to import images. You can click **Audio** and **Video** in the dockable toolbar, drag and drop files onto the Canvas, or paste them there. By default, video elements also preserve their proportion while being resized. Videos larger than the scene are scaled down to fit it when inserted. After resizing videos, if you want to revert them to their original size, right-click the videos on the Canvas and select **Restore Original Size**.

Converting Text to Speech

Saola Animate can turn text into narration with a cloud voice from ElevenLabs, Azure AI Speech or Amazon Polly. The speech is generated with your own account at the provider, so first set up at least one provider in the **Voices** tab of the **Preferences** dialog, or click **Set Up Voices...** in the **Text to Speech** dialog.

1. Click the arrow next to **Audio** in the dockable toolbar and select **Text to Speech...**, or select **Element > Text to Speech...**.
2. Type or paste the text in the box on the left. The number of characters appears below the text box, with the character limit of the selected model or provider if it has one.
3. Select a voice on the right. The last five voices you used appear under **Recent**, and all voices are grouped by provider. Type in the search box to find a voice by name or language, or narrow the list by language and gender. To hear a voice, click the play button next to it, or select it and press Space; do the same again to stop. **Set Up Voices...** opens the **Voices** tab, where you add or change a provider.
4. If the provider offers a choice, select the **Model** (ElevenLabs) or **Engine** (Amazon Polly). Set the **Speed** if the voice and model support it; Eleven v3 has no speed setting.
5. Click **Preview** to generate and listen to the speech inside this dialog, then click **Insert**. During generation, the same button becomes **Stop**, which cancels the request. During playback it becomes **Pause**, then **Play** when paused or finished. Use the slider beside it to seek; the elapsed time and duration appear alongside. Preview and voice samples take turns, so they do not play over each other.

Changing the text, voice, model, engine or speed stops the old preview and returns the button to **Preview**. You can also click **Insert** directly without previewing first.

Saola adds the audio to the **Resources** pane, adds an audio element named after the first words of the text, and adds a **Start** playback action at the playhead on the current timeline, so the speech plays from that time. A single **Undo** removes all of them. Speech newly generated in this dialog is reused if you click **Preview**, **Insert** or **Regenerate** again with the same text, voice, model, engine and speed.

When you reopen **Edit Speech...**, **Preview** plays the saved audio without generating it again if the text and voice settings still match. This also works after reopening the project. Clicking **Regenerate** explicitly creates a new take unless you have already generated a matching new preview in that dialog; simply listening to the saved audio does not prevent regeneration.

Notes:

- The provider bills each generation, including **Preview**, according to your plan with that provider. A generation that you cancel or that times out may still be billed.
- A voice sample is free when ElevenLabs offers a recording of the voice. Other samples read the first sentence of your text, up to 200 characters, and are billed like any generation; Saola generates each sample once while the dialog is open.
- ElevenLabs takes up to 5,000 characters per request with Eleven v3 and 40,000 with Eleven Flash v2.5. Amazon Polly takes up to 3,000 characters. Azure AI Speech returns at most 10 minutes of audio: for its voices that report a speaking rate, Saola shows the estimated length of the speech and warns when the text is too long. Split longer text into several audio elements.
- Amazon Polly has no Vietnamese voices.
- The project keeps the text, voice, model and speed with the audio resource, so that you can edit the speech later. Your keys are never stored in projects.

Speech from Text Elements

Saola Animate can also read out the text that elements show, such as texts, divs and shapes.

1. Select the elements on the Canvas, or a group that contains them. Right-click the selection and select **Text to Speech...**.
2. With one element, the box on the left shows its text, a line for each paragraph, and the dialog shows when the speech starts: with the first entrance effect of the element, or of its group, on the current timeline, or at the playhead when there is none. Emphasis, Exit and Motion Paths effects do not count; custom effects do. You can change the text in the box, for example to spell out an abbreviation, without changing the element.

   With several elements, the list on the left shows them in the order they start, with the start time, the number of characters and the status of each. Select an element in the list to see or change its text in the box below the list. **Up to date** marks an element whose speech still matches its text.
3. Select a voice and click **Insert**. With several elements, the voice, model and speed apply to all of them, and Saola generates the speech of each element marked **New** or **Changed** in turn. When all of them already have speech, the button is **Regenerate**.

Each audio element starts at the time shown and stays linked to its text element. A single **Undo** removes all the speech that one **Insert** adds. If a generation fails or you cancel it, the speech generated so far is added, the list shows why the other elements were left out, and you can click **Insert** again for them.

If you select a single element whose text already has speech and select **Text to Speech...**, the **Edit Speech** dialog opens for that speech.

Notes:

- Saola reads the text of the base layout.
- When you copy and paste a linked audio element together with its text element, the copy is linked to the copy of the text. Pasted alone into the same scene, it stays linked to the original element; anywhere else, it is no longer linked.

Editing Speech

To change the text or voice of generated audio, select the audio element and click **Edit Speech...** in the **Media** section of the **Properties** pane, or right-click the audio in the **Resources** pane and select **Edit Speech...**. Change the speech and click **Regenerate**.

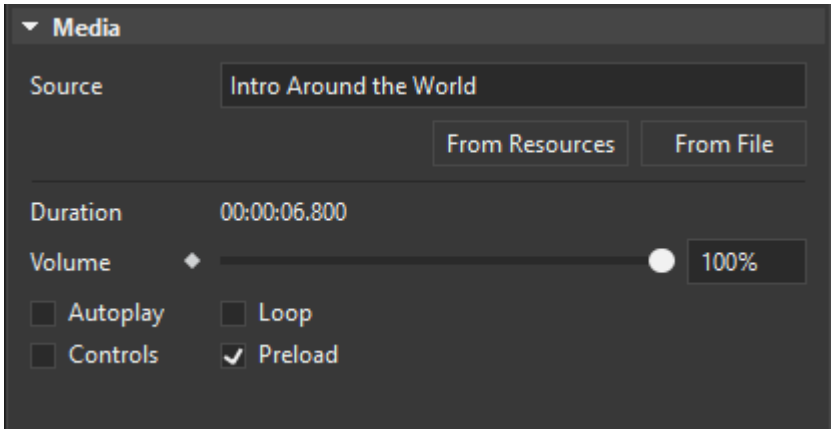
When the text of a linked text element has changed since its speech was generated, the **Media** section says so above **Edit Speech...**. **Edit Speech** opened from there or from the text element then shows a **Use Current Text** button, which puts the current text of the element in the box.

Regenerating replaces the audio of every element that uses the resource, in every scene and symbol, and updates their durations. Other formats in the resource group hold the old speech, so they are removed. Playback actions stay where they are. A single **Undo** restores the previous audio and speech. Speech linked to a text element is the exception when you edit it from the **Properties** pane or from the text element: only the selected audio element gets the new speech, so that copies of it, such as those in a duplicated scene, keep reading their own text element.

Edit Speech... is available only for audio generated from text. Once you add, replace or remove a file in the resource group, the audio no longer matches its text, and the command is no longer offered. Replacing the audio of an element with **From Resources** or **From File** ends its link to the text element.

Controlling Playback

You can control audio/video playback using the following options:

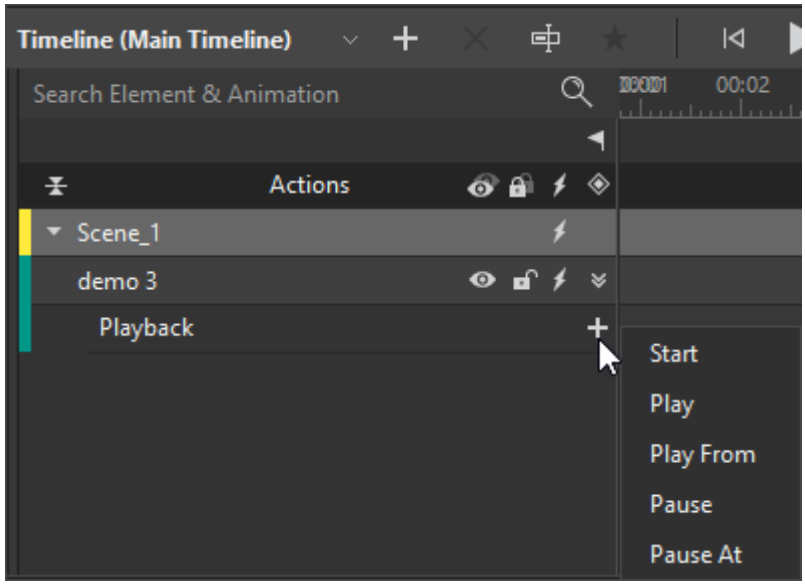


- **Autoplay**: Select this option to allow the audio/video to play automatically at the beginning of the scene.

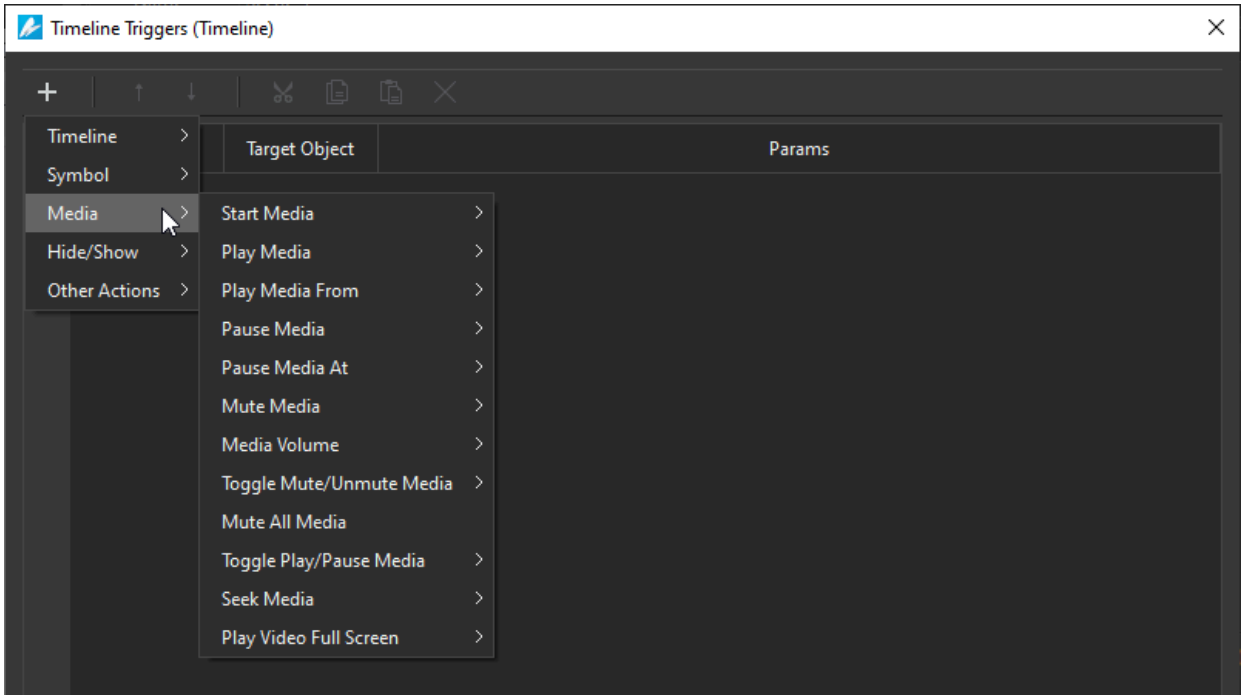
Note: Browsers can block automatic audio/video playback. Saola retries blocked playback after a permitted user interaction, such as a click, tap, or key press. An explicit mute choice remains in effect. Include a Start button and test playback in your target browsers, particularly if your project has:

- Audio/ video with the **Autoplay** option enabled.
- Audio/video with playback animation (see the **Playback** option below).
- Audio/video played by **timeline triggers.**

- **Loop**: Select this option to make the audio/video replay automatically from the beginning after it finishes.
- **Controls**: Enable the default player controls.
- **Preload**: Preload audio/video before the document. This option is selected by default.
- **Playback:** You will see this option in the **Timeline** pane. Click the plus button (the **Add Playback** button) and you will see the following options:



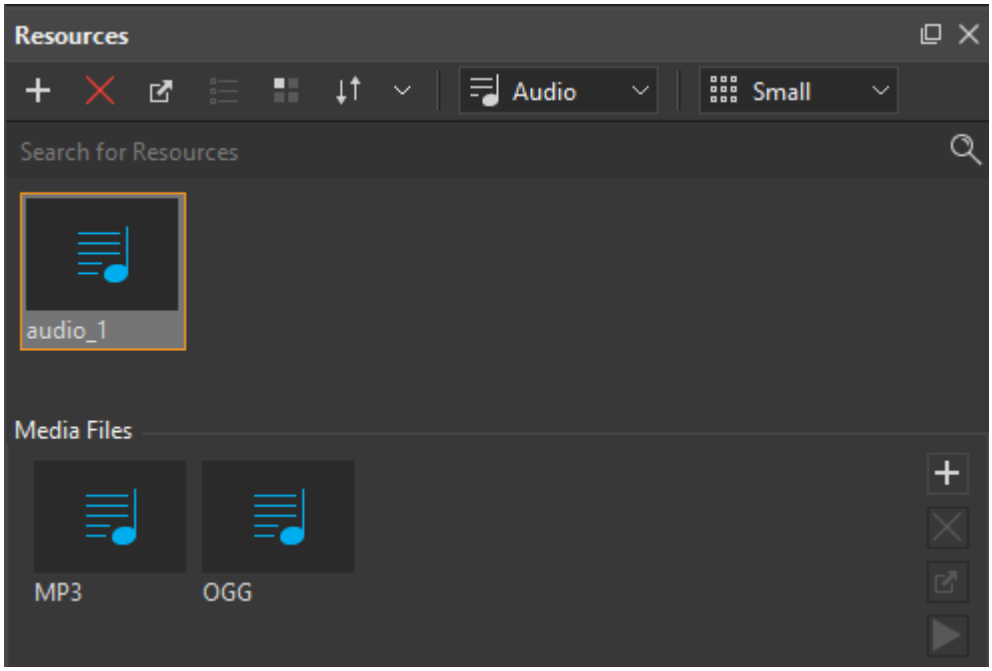
- **Start**: Play the audio/video from the beginning.
- **Play**: Resume the audio/video from the point where it has been paused.
- **Play From**: Resume the audio/video from a specific time.
- **Pause**: Pause the audio/video at the current time.
- **Pause At**: Jump to and pause at a specific time of the audio/video.
- **Media actions**: Use **actions** to control media playback through events:



Resource Groups

An audio/video group can contain multiple formats of the same media. In HTML5 output, the browser downloads and plays a supported format from the group.

To add additional audio/video formats, first open the **Resources** pane. From here, select an audio/video and add formats to the resource group. That way, each audio/video resource has a resource group which contains the resource file and the fallback versions.



For modern browsers support HTML5 <audio> and <video> elements, including just MP3 for audio and MP4 for videos is enough. But for the broadest browser compatibility, you should provide MP3 and OGG files for each audio group and MP4 and WEBM for each video group.

For information about browser support for different audio formats, please read **Media formats for HTML audio and video** on MDN. You can also get the latest information about browser compatibility on **caniuse.com**.

Symbols

Symbol element displays a symbol in a scene. In other words, it is a copy of the symbol

located on the Canvas. Insert symbol elements by clicking **Symbol** in the dockable toolbar.

The size of the symbol element is the container size of the embedded symbol. A single symbol can be displayed by more than one symbol element. When you modify a symbol, all related symbol elements update automatically. That way, you can share identical elements across scenes or at different positions in the same scene. On the contrary, applying effects to a symbol element updates that element only. So, a symbol element can be different from the embedded symbol and other elements using the same symbol.

For more details about symbols, see **Using Symbols**.

Custom Elements

Custom elements let you supply your own HTML and CSS. JavaScript in custom elements was introduced in 3.1.4 and remains available in browser preview and HTML5 output.

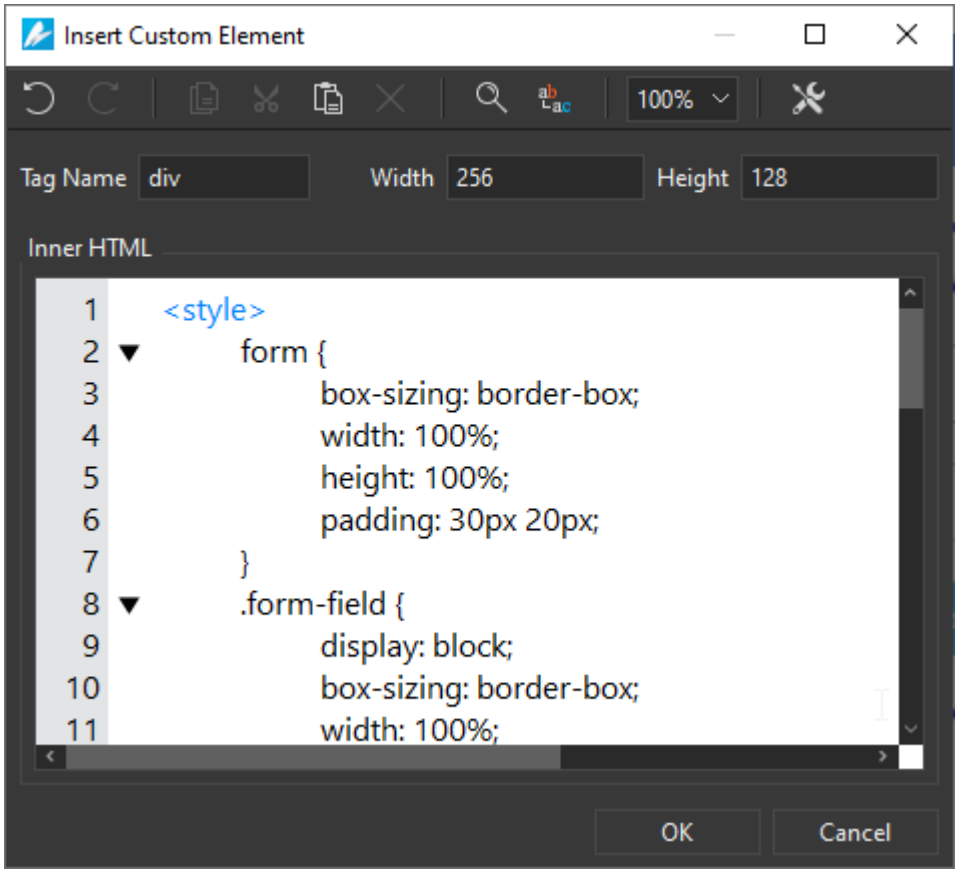
In version 4, the Canvas and scene thumbnails show a static representation. Custom-element scripts and event handlers do not execute there; interactive controls may be disabled. Test scripted behavior with browser preview or an HTML5 export.

To use a project resource in the custom HTML, import it into the project and reference its filename, for example `<img src="logo.svg">`. Saola resolves matching resource references for the Canvas, preview, and HTML5 output. This applies to `src`, `href`, `xlink:href`, `poster`, and `data` attributes. Absolute URLs, URLs with a scheme, and paths that do not match a project resource are left unchanged. It does not rewrite arbitrary CSS URLs or JavaScript strings.

You can insert a custom element by either of the following ways:

- In the dockable toolbar, click on the **Custom Element** button .
- Open the **Element** menu, select **Custom Element.**
- Right-click anywhere on the **Canvas** > **Element** > **Custom Element**.

After that, the **Insert Custom Element** dialog appears as below:

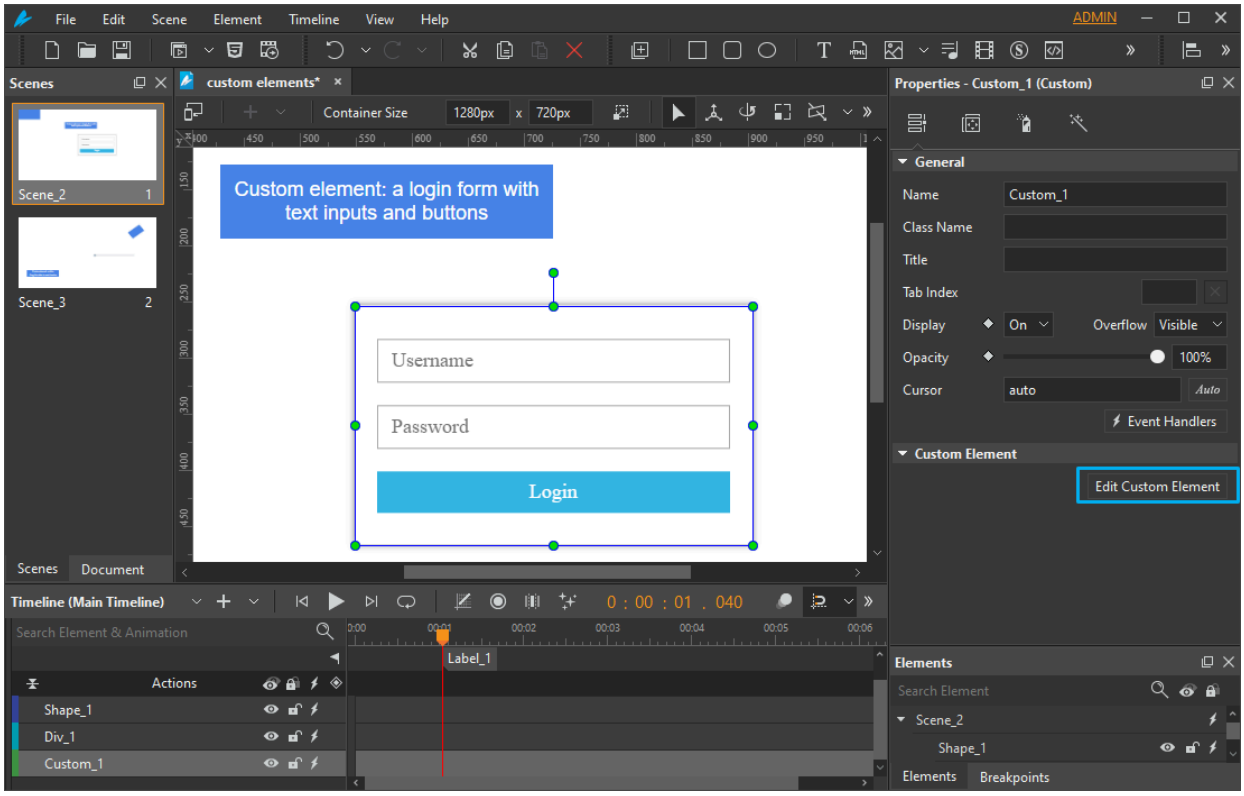


Enter or paste code in **Inner HTML**, then click **OK**.

For example, you can copy the following lines of code and paste them into the **Inner HTML** box to create a login form with text input and button's elements:

```
<style>
form {
box-sizing: border-box;
width: 100%;
height: 100%;
padding: 30px 20px;
}
.form-field {
display: block;
box-sizing: border-box;
width: 100%;
margin: 0 0 20px;
padding: 8px 12px;
font-family: "Roboto";
font-size: 18px;
transition: 0.4s;
outline: none;
}
.text-input {
color: #444;
border: 1px solid #aaa;
}
.text-input:focus {
border-color: #33b5e5;
}
.button {
cursor: pointer;
color: white;
background: #33b5e5;
border: 0;
}
.button:hover {
background: #178ab4;
}
</style>
<form>
<input type="text" placeholder="Username" class="text-input form-field">
<input type="password" placeholder="Password" class="text-input form-field">
<input type="button" value="Login" class="button form-field">
</form>
```

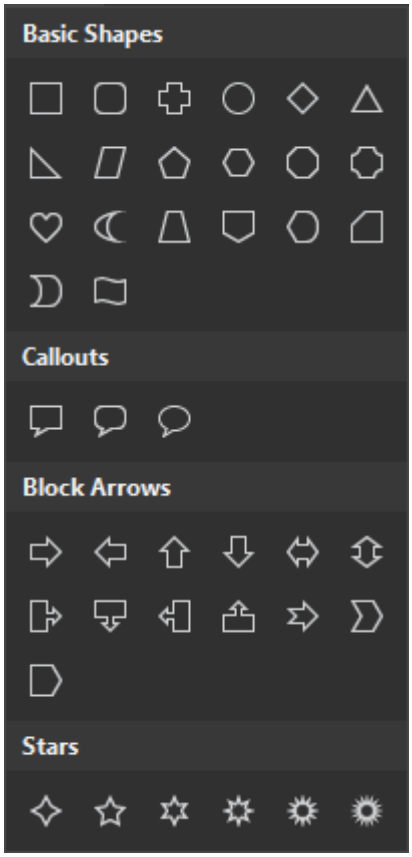
Here is what you get on the Canvas:



To edit a custom element, on the Canvas, double-click it to re-open the **Insert Custom Element** dialog. Alternatively, select the custom element > in the **Properties** pane > **General** tab > **Custom Element** > **Edit Custom Element**.

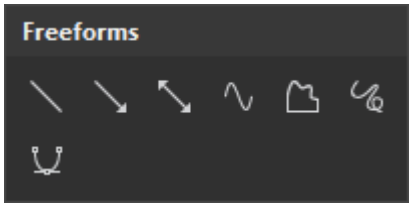
Shapes

Shape elements are the same as DIVs except that they have border and background using SVG images. To insert a shape, click the **Insert Shape** button  in the dockable toolbar and choose the one that you like:



Freeforms

Apart from predefined shapes, Saola Animate offers you seven freeform tools to draw custom shapes. In the dockable toolbar, click the **Insert Freeform** button to see all the tools:



- **Line, Arrow, Double Arrow**: Draw simple straight, point to point lines (with or without arrows).
- **Curve**: Draw curved lines (open curves) or shapes (closed curves).
- **Shape**: Draw lines/ shapes that have both straight and freehand segments.
- **Scribble**: Draw lines/ shapes as if you were using a pencil on paper.
- **Line and Curve**: Draw lines/ shapes that have both straight and curved segments.

Drawing Freeforms

Drawing Lines, Arrows, and Double Arrows

In the dockable toolbar, click the **Insert Freeform** button. Then, select **Line**, **Arrow**, or **Double Arrow**. As soon as you select one of those tools, the cursor changes into a cross hair.

Left-click on the Canvas to set the start point, without releasing the mouse button, move the mouse to draw a line. While moving the mouse, hold down **SHIFT** to constrain the line to 0, 30, 45, 60, 90, 120, 135, 150, and 180 degrees. Once you are satisfied, release the mouse button to set the end point.



Drawing Curves

In the dockable toolbar, click the **Insert Freeform** button, select **Curve**. As soon as you select this tool, the cursor changes into a cross hair.

Click anywhere on the Canvas to set the start point. Move the mouse to a different position to form a line. Click the mouse button to curve the line. As you move the mouse, the curve changes correspondingly. Now move the mouse and click the mouse button again to add a new turn to the curve. Note that to draw a curve, no need to hold down the mouse button as when you draw a line.



A curve can be either open or closed. If you want an open curve, double-click it or press **ESC** on your keyboard to set the end point. Otherwise, move the mouse near the start point and left-click to get a closed curve filled with a solid color.

Drawing Freeform Shapes

The freeform shape tool allows you to draw both straight lines and freehand curves.

In the dockable toolbar, click the **Insert Freeform** button, select **Shape**. As soon as you select this tool, the cursor changes into a cross hair.

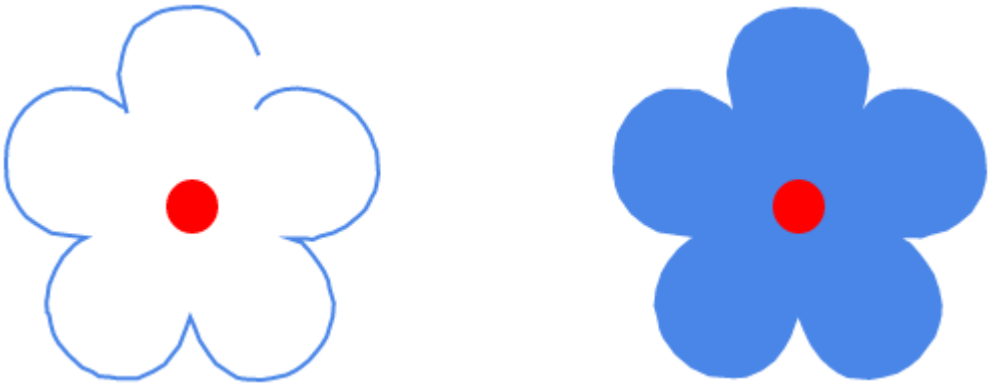
First, click anywhere on the Canvas to set the start point. To draw a straight line, release the mouse button and place the cursor elsewhere, then click. If you keep holding down the mouse button, you'll draw a freehand curve. When drawing, you can alternate between straight lines and freehand curves within the same line shape. Similar to drawing a curve, you can double-click click or press **ESC** at any time to set the end point, making an open shape. Otherwise, move the mouse near the start point and left-click to get a closed shape filled with a solid color.



Drawing Freeform Scribbles

The freeform scribble tool comes in handy when you want something to look like it was handwritten. In the dockable toolbar, click the **Insert Freeform** button, select **Scribble**. As soon as you select this tool, the cursor changes into a cross hair.

The way using this tool is almost similar to the freeform shape tool except one essential difference. Once you start drawing with the freeform scribble tool, you have to keep holding down the mouse button until you finish. The point where you release the mouse button will be the end point of your drawing.

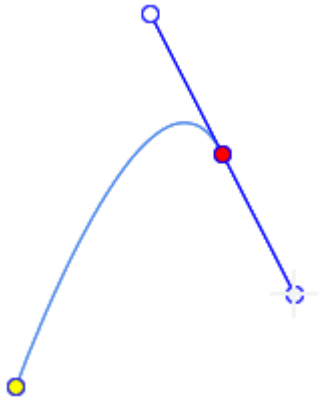


Drawing Freeform Lines and Curves

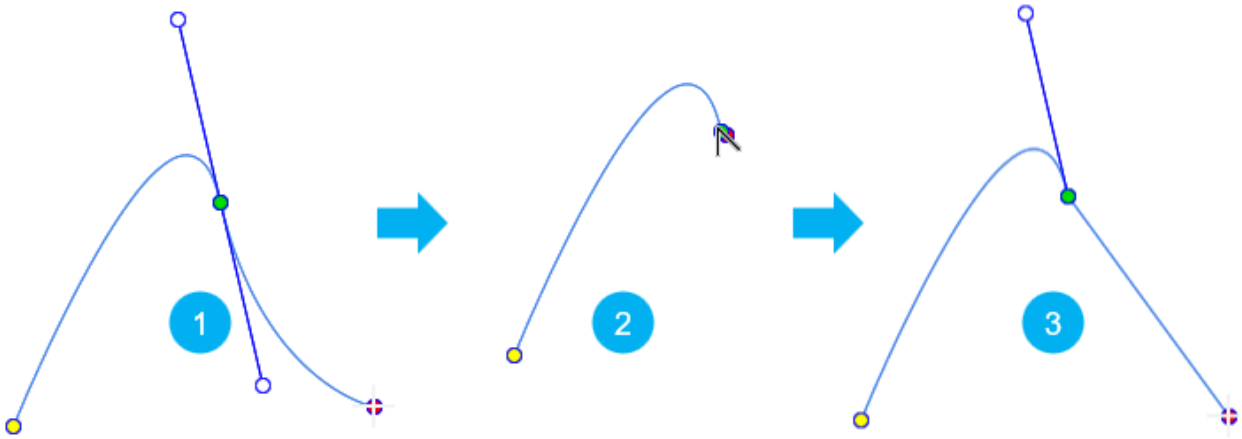
In the dockable toolbar, click the **Insert Freeform** button, select **Line and Curve**. As soon as you select this tool, the cursor changes into a cross hair.

First, click anywhere on the Canvas to set the start point. Then:

- To draw a straight line: Release the mouse button, move the mouse, place the cursor anywhere on the Canvas, then click.
- To make a curve: Release the mouse button, move the mouse, then click and drag the mouse. After that, you will see two blue handles with anchor point (the blue dot) and two control points (the white dots). Continue dragging the mouse to reshape the curved segment until you satisfy, then release the mouse button.



Note that if you want to cancel drawing a curved segment (1), just click on the recent curve's anchor point (2), and move mouse to another location to draw a line (3):



To draw a curve again, move mouse to anchor point, then click and drag.

To finish drawing, you can double-click or press **ESC** at any time to set the end point, making an open freeform. Alternatively, you can move the mouse near the start point and left-click to get a closed freeform filled with a solid color.

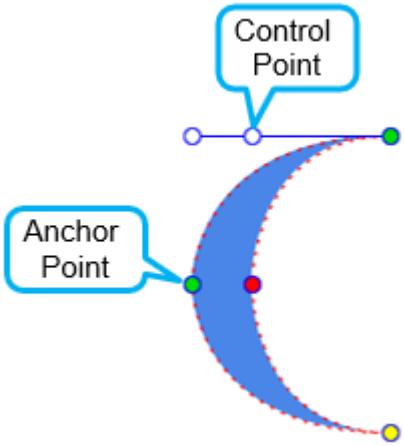
Note that in addition to drawing freeforms yourself, you can convert any shape to a freeform. To do that, you just need to select a shape, right click and choose **Edit Path**, then adjust its anchor points and control points.

Editing Freeforms

To edit a freeform shape, right-click it and select **Edit Path** to enter the editing mode. In this mode, Saola Animate will provide you with some tools for editing such as: **Select Tool** , **Add/ Remove Anchor** , **Anchor Point Tool** . Those tools are located at the left corner above the horizontal ruler. You will learn how to use them in the below sections.



In the editing mode, a freeform is outlined by a red dashed line. To edit it, you'll work with the anchor points and control points:



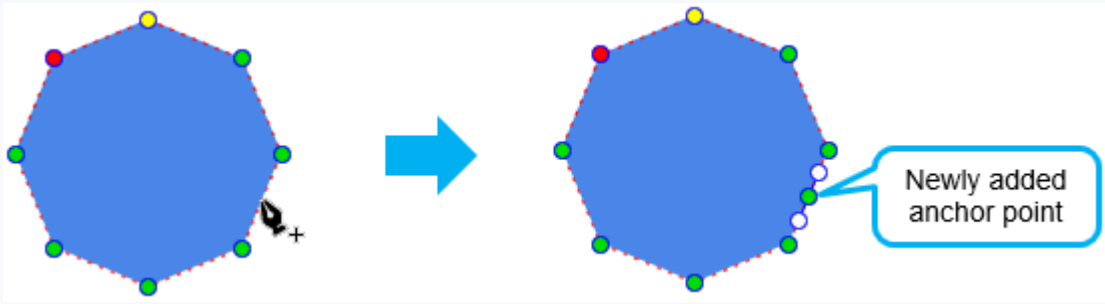
- **Anchor points**: Anchor points are green dots which indicate a curve or a corner.
- **Control points**: Control points are white dots that appear at the end of blue handles when you select an anchor point. Drag a control point to reshape the curved segment over the anchor point.

If the anchor point and the control point have the same position, clicking on that position will select the anchor point. If you want to select the control point, hold down **ALT** and click the mouse.

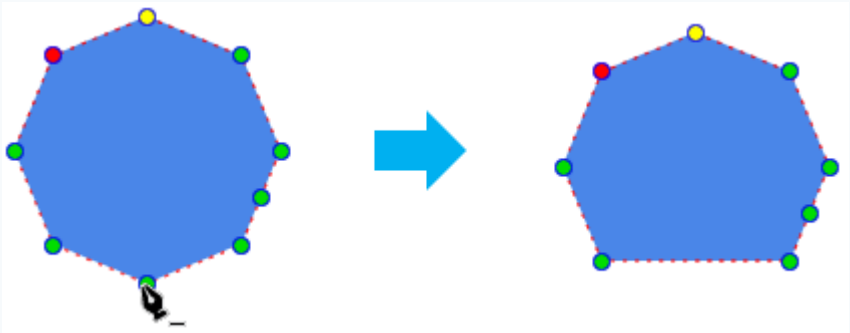
Adding and Deleting Anchor Points Using Add/Remove Anchor Tool

Use the **Add/ Remove Anchor** tool to add or remove an anchor point:

- Add an anchor point: Click **Add/ Remove Anchor** , then click on any point in the red dashed line to add an anchor point:



- Delete an anchor point: Click **Add/ Remove Anchor** , then click on any anchor point to delete it. Alternatively, hold down **SHIFT** and click an anchor point to delete it. Note that deleting an anchor point will make the shape change accordingly:



Converting Anchor Points Using Anchor Point Tool

Use the **Anchor Point Tool** to change types of anchor points. Details are described as below:

- **Corner Point**:

A corner point is a point whose anchor point and two control points have the same position. Notice that each corner point is the intersection of two lines. However, not every intersection of two lines is a corner point.

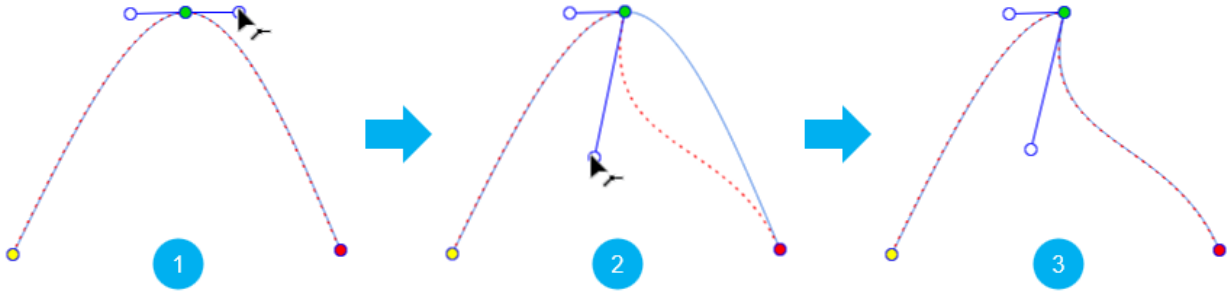


To convert to a corner point, click the down arrow next to **Anchor Point Tool**, select **Corner Point** , then do one of the following:

- Click an anchor point to make it a corner point.

- Drag an anchor point to create a corner point.
- **Free Point**:

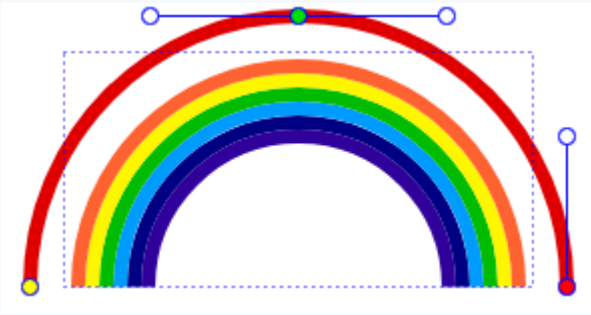
When dragging a single control point, the remaining will move to maintain the angle between them. A free point tool allows you to drag the selected control point freely without moving the remaining. Therefore, this tool comes in handy when you want to create curves that have sharp corners:



To turn on this tool, click the down arrow next to **Anchor Point Tool**, select **Free Point** . Then, select a control point (1) and drag it (2), the remaining control point will not be affected (3).

Alternatively, click the **Select Tool** , keep **CTRL** or **ALT** while dragging to drag a control point freely.

- **Smooth Point**:

> A smooth point is a point whose two control points always make a straight line, and their distance to the anchor point is equal. A curved segment connected by this point is smooth and symmetrical:
>
> 

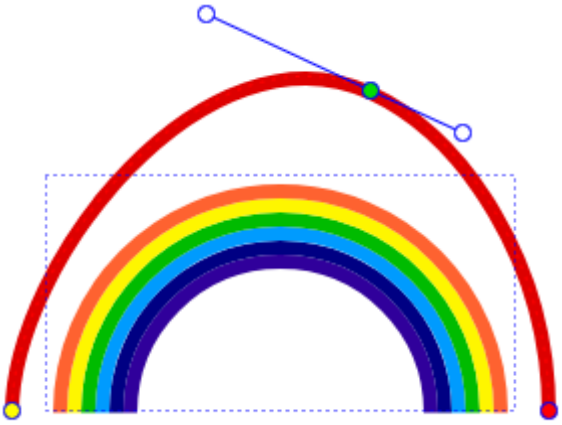
To convert to a smooth point, click the down arrow next to **Anchor Point Tool**, select **Smooth Point** , then do one of the following:

- Click on the anchor point to create a smooth point.
- Drag the anchor point to make a smooth point.
- Click and drag a control point so that the two control points make a straight line and their distance to the anchor point is equal.

> Besides, if you select the **Select Tool** , when dragging a control point, it can be snapped to a position to make a smooth point.

- **Straight Point**:

A straight point is nearly similar to a smooth point. That is, its two control points always make a straight line but their distance to the anchor point is not equal. A curved segment connected by this point is smooth but not symmetrical if two control points are asymmetric:



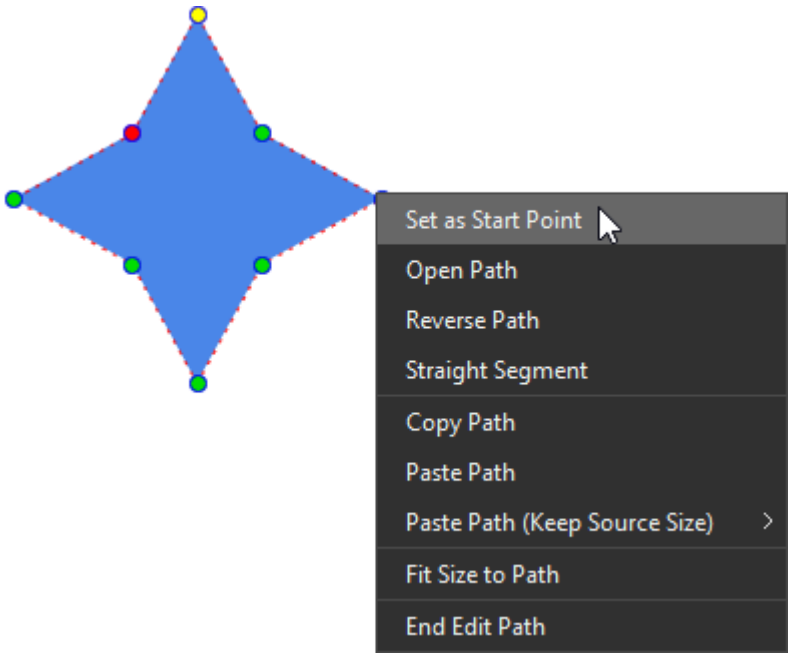
To turn on this tool, click the down arrow next to **Anchor Point Tool**, select **Straight Point**, then do one of the following:

- Click on the anchor point to create a straight point.
- Drag the anchor point to make a straight point.
- Click and drag a control point so that the two control points make a straight line.

> Besides, if you select the **Select Tool**, when dragging a control point, it can be snapped to a position to make a straight point.

Set as a Start Point

When you create **line drawing animation** or **morph animation**, you may want to set an anchor point as a start point. To do that, right-click an anchor point, select **Set as Start Point**:



The start point in indicated by yellow color while the end point is in red.

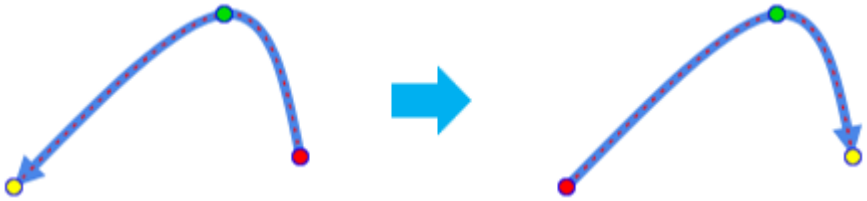
Opening and Closing Paths

- To open a closed path, right-click an anchor point, or right-click anywhere within the path and select **Open Path**.

- To close an open path, right-click it and select **Close Path**. A linear segment is added from the previous end point to the start point.

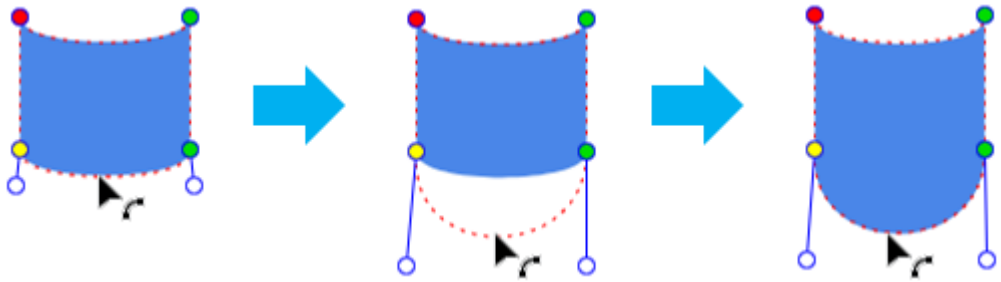
Reversing a path

When you create **line drawing animation** or **morph animation**, you may want to reverse a path. To do that, right-click it, select **Reverse Path**:



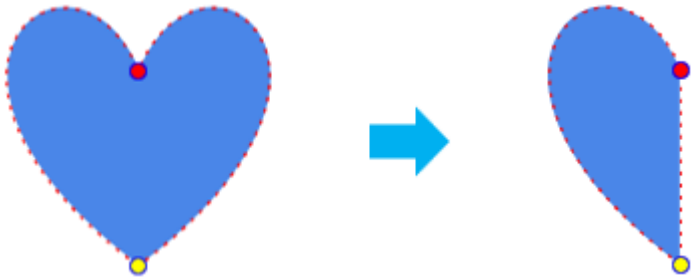
Bending a Path

Click on any point in a path, move the mouse to bend a path:



Making Straight Segments

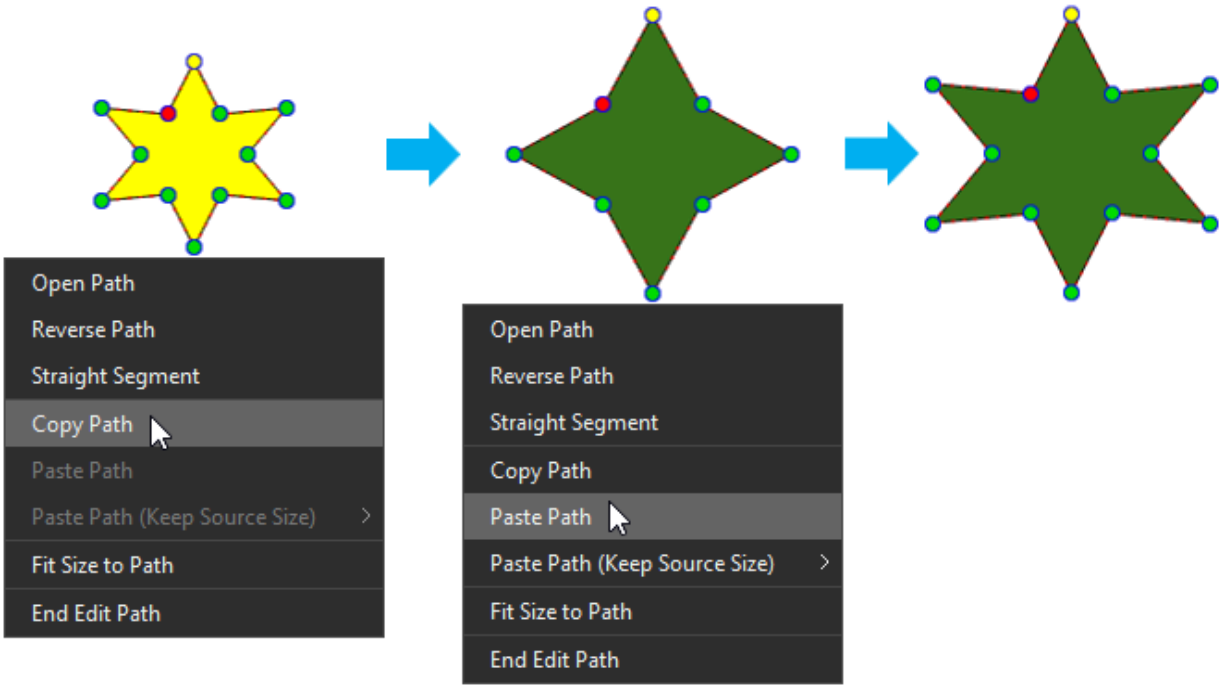
Right-click a curved segment and select **Straight Segment** to straighten it. The shape will change accordingly:



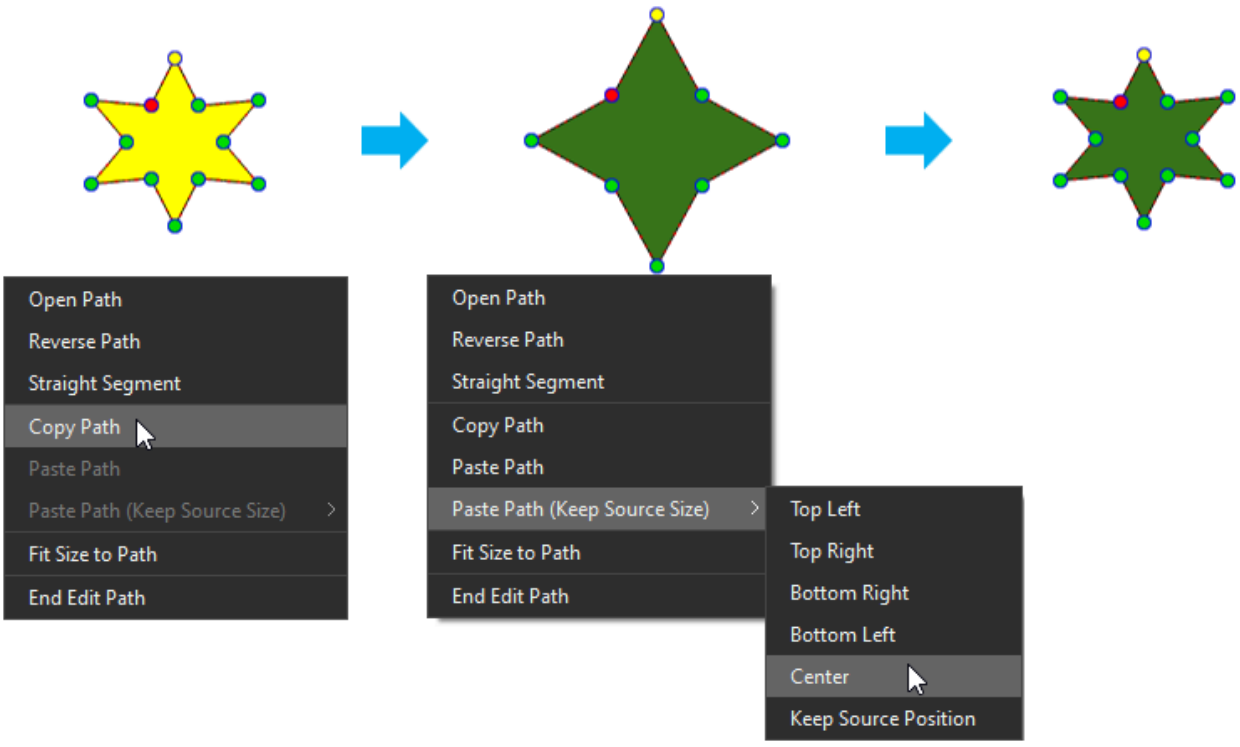
Copy and Paste Paths

Saola Animate lets you copy paths of one shape and paste them into another (the target shape).

- To copy paths: Right-click a shape, select **Copy Path**.
- To paste paths: Right-click a shape, select:
- **Paste Path**: Paste the copied path into the target shape's path. If two shapes have different path sizes, the pasted path will inherit the size from the target shape's path.

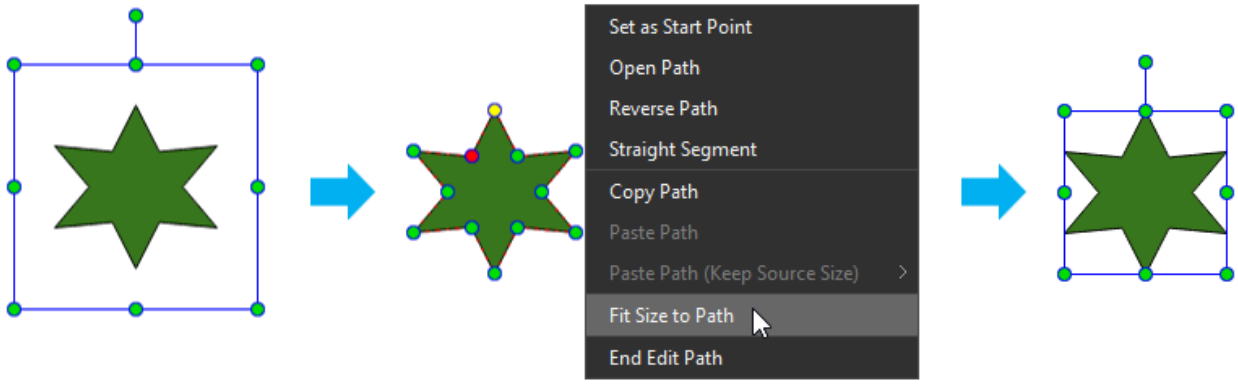


- **Paste Path (Keep Source Size):** Paste the copied path into the target shape's path but still keeping its original size. Besides, you can select its relative position compared to the target shape' path:



Fitting Size to Path

Sometimes after editing points/ paths of a freeform shape, its blue rectangle doesn't fit the edited path. In this case, you can right-click the path, select **Fit Size to Path**:



Note that if you add **Shape Path** keyframe to create morph animation, this option will be disabled.

Exiting the Edit Mode

Once you're done editing, press **ESC** on the keyboard or click the **End Edit Path** to exit the editing mode. Alternatively, right-click a shape and select **End Edit Path**.

Groups

A group contains child elements that you can move and animate together. See Grouping Elements.

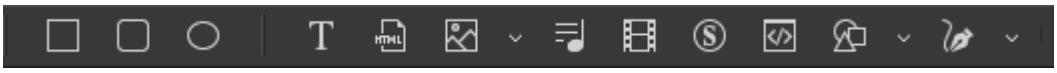
To create a group, select one or more elements and press **CTRL+G** or right-click and select **Group**.

Inserting Elements

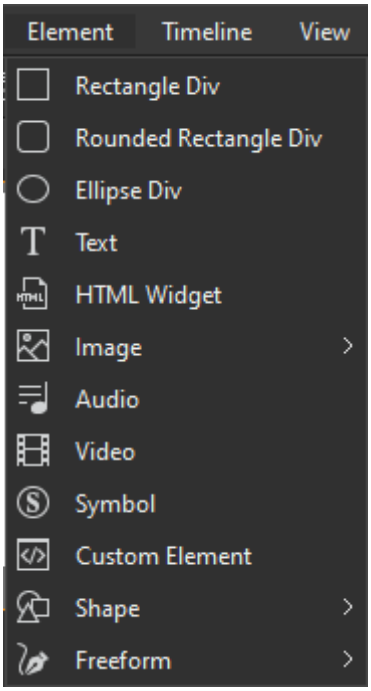
Inserting Elements

You have more than one way to insert an element into a scene. You can insert multiple elements at the same time.

- Directly drag or copy images, audio, videos, or symbols from your computer onto the Canvas.
- Click the buttons corresponding to each element type in the dockable toolbar:



- Click the **Element** menu and select the element you want, or right-click the Canvas > **Element** > select the element you want:



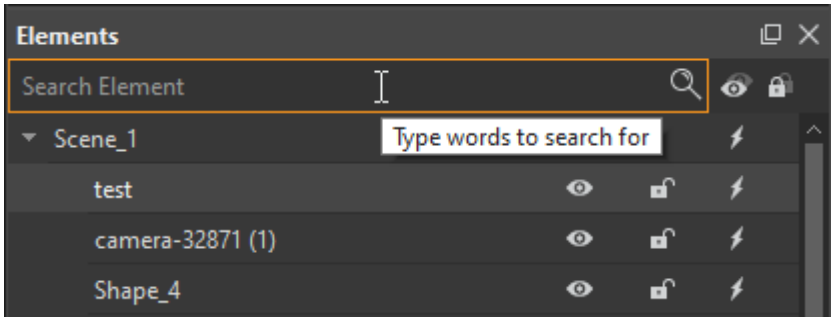
- Drag resources from the **Resources** pane onto the Canvas, or right-click and select **Add to Scene**.

Note:

- If you want to insert a DIV or shape, click the corresponding button in the dockable toolbar. Then, click the Canvas to insert the element there at the default size (256 × 128 pixels), or click and drag the mouse to define its position and size. The new element will be inserted when you release the mouse button. Lines and arrows must be drawn by dragging; a click alone inserts nothing.
- Text elements are inserted in the center of a scene with a placeholder text. Double-click the text element to enter text. New text is left-aligned, and it is white when the scene has a dark solid background. A text element grows taller as its text needs more room, and shrinks back to the height you gave it when the text gets shorter. To keep a fixed height, set **Overflow** to **Hidden**, **Scroll**, or **Auto** in the **Properties** pane.
- Images, audio, videos, HTML widgets, and custom elements are also inserted in the center of a scene. When you select several files in the file dialog, each one is offset from the previous one.
- For HTML widgets, specify required information in the **HTML Widget** dialog to insert them. For more details, see **HTML Widget**.
- After inserting an element, you may want to rename it. Double-click the element name in the **Timeline** or **Elements** pane to enter a new name. You can also click the **Properties** pane > **General** > **Name** and rename the element.

Searching Elements

A scene may contain multiple elements. To find any element, animation, or group quickly, type its name in the search box in the **Timeline**, **Elements**, or **Resources** pane:



Copying Elements

You can copy multiple elements within a scene or across scenes and documents. Use shortcuts to quickly copy and paste elements. There are three options to paste elements:

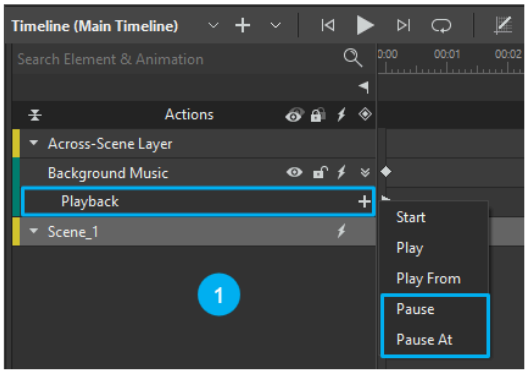
- **Paste**: Insert the copied elements without animations. New elements will be placed near the position of the original elements or in the center of the viewport (if the original elements are placed outside the viewport).
- **Paste Here**: Insert the copied elements at the position of the cursor.
- **Paste with Animation**: Insert the copied elements with their animations.

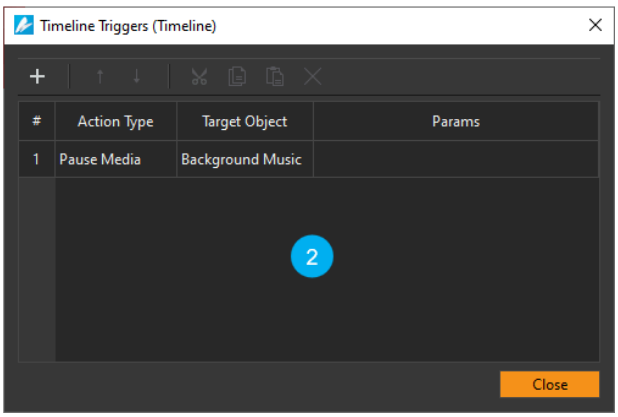
If elements are copied and pasted across documents, all of their resources and JavaScript functions will also be copied and pasted to the target document. For example, if an image element is copied from a document to another document, its image resource will also be copied.

Showing Elements Across Scenes

You can show any element across scenes. To do that, right-click the element on the Canvas > **Show Across Scenes**. Then, it will appear on the top layer - the **Across-Scene Layer** in the **Timeline** pane. Later, in each scene, you can separately create different animations for that element. In case you want to show symbols or media (audio/ videos) across scenes, take note that its playback animation is not synchronized with the scene's timeline.

For example, when you make an audio play across all scenes in your project, the audio will continue playing without being affected by any trigger to pause the timeline. In this case, you can create playback animation (1) or add a trigger to pause media (2):





If you don't want the element to be shown across scenes anymore, right-click it > **Show in Current Scene**. By doing so, the element will be shown in the selected scene only.

Removing Elements

Select one or more elements on the Canvas and press **DELETE** to remove them. Or right-click the element and choose **DELETE** from the context menu. You can also delete elements by selecting them in the **Elements** pane or the **Timeline** pane > press **DELETE**.

Selecting Elements

Scene elements can be selected in many ways from many panes with the selection state synchronized among panes. Thus, if an element is selected on the Canvas, it'll also be selected in the **Timeline** and **Elements** panes.

Selecting Elements on the Canvas

On the Canvas, do one of the following:

- Select a single element: Just click it.
- Select multiple elements: Use the rubber-band selector which appears when you click anywhere on the Canvas and drag the mouse. All elements that stay in or intersect with the selector will be selected.
- Select more elements: If you have already selected several elements and want to select more, hold down **CTRL** and click the additional elements. At the same time, if you want to cancel the selection of an already selected element, click it.
- Select child elements in **groups**: Select the group first, then click child elements to select them.

Selecting Elements in the Timeline Pane

Click the element name to select it. Alternatively, click the element's **keyframes** or **animation segments**.

Selecting Elements in the Elements Pane

Elements in the **Elements** pane are displayed in a tree view. Child elements are listed under and at the next indent level compared to their parent. You can click the triangle buttons to collapse or expand items. Click an element to select it.

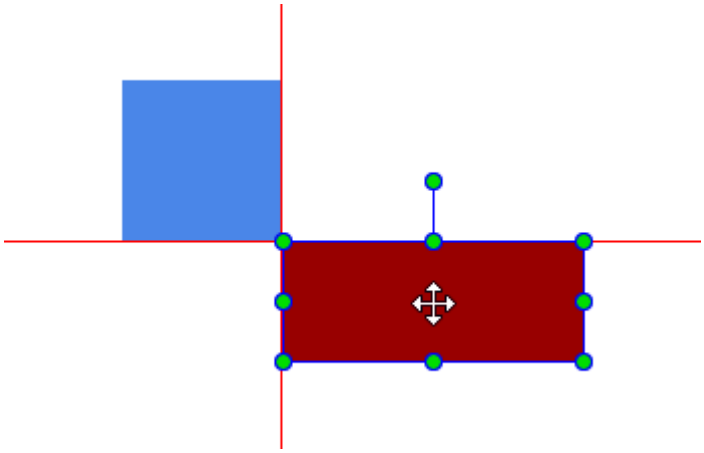
Arranging Elements

Aligning Elements

Saola Animate offers a variety of functions to align elements automatically and precisely.

Aligning Elements Using Canvas Snapping

Canvas snapping snaps elements to the center or edges of the Canvas or other elements. This feature is indicated by red lines which appear when an element comes in the vicinity of the Canvas or another element.



Canvas snapping is turned on by default. To turn it off, click **View** > **Canvas Snapping**. You can temporarily disable this feature by holding down **CTRL** when moving or resizing elements.

Aligning Elements Using Alignment Tools

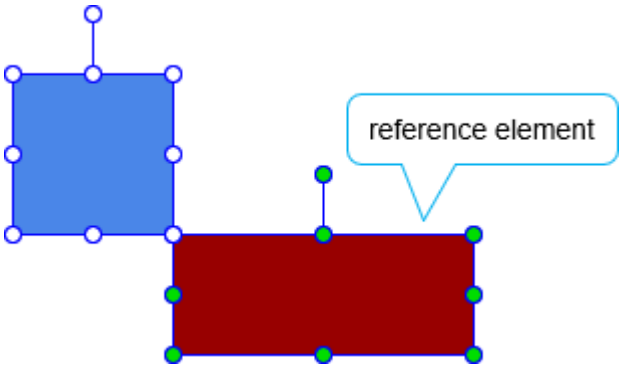
Saola Animate provides various tools to align and distribute selected elements with an anchor. The anchor can be the parent of selected elements, one of selected elements, or bounding rectangle of all selected elements.

Align to Parent

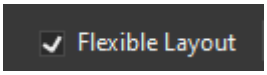


- If the **Align to Parent** check box is checked, the anchor is the parent of selected elements. In case selected elements are top level ones, the parent is the scene.
- If the **Align to Parent** check box is unchecked, distribution and spacing tools will distribute and space elements evenly across the bounding rectangle of all selected elements. Meanwhile, alignment tools will align elements with one of selected elements- the reference element. The reference element has green handles rather than white handles like other selected ones.

To choose a different reference element among selected ones, just click on that element.



Flexible Layout



The **Flexible Layout** option allows you to create a percentage-based alignment that will keep the elements relatively aligned to each other and to the enclosing parent as the parent size changed. This option is only applicable when the anchor is the parent element (i.e., the **Align to Parent** option is selected).

To use alignment tools, select one or more elements that have the same parent, then use one of the buttons on the dockable toolbar or click **Edit** > **Alignment** from the menu bar.

Command	Icon	Remark
Align Left		Align the left edges of the selected elements with the left edge of the anchor.
Align Center		Align the horizontal centers of the selected elements with the horizontal center of the anchor.
Align Right		Align the right edges of the selected elements with the right edge of the anchor.
Align Top		Align the top edges of the selected elements with the top edge of the anchor.
Align Middle		Align the vertical centers of the selected elements with the vertical center of the anchor.
Align Bottom		Align the bottom edges of the selected elements with the bottom edge of the anchor.
Distribute Left Edge		Distribute the left edges of the selected elements evenly within the anchor rectangle.
Distribute Horizontal Center		Distribute the horizontal centers of the selected elements evenly within the anchor rectangle.
Distribute Right Edge		Distribute the right edges of the selected elements evenly within the anchor rectangle.
Distribute Top Edge		Distribute the top edges of the selected elements evenly within the anchor rectangle.
Distribute Vertical Center		Distribute the vertical centers of the selected elements evenly within the anchor rectangle.
Distribute Bottom Edge		Distribute the bottom edges of the selected elements evenly within the anchor rectangle.
Space Horizontally		Distribute the selected elements so that the horizontal gaps between them are equal.
Space Vertically		Distribute the selected elements so that the vertical gaps between them are equal.

Resizing Elements to Reference Element

Besides Alignment options, Saola Animate provides three Sizing options to quickly resize elements to a reference element. Select at least two elements that have the same parent, then select one of the Sizing options in the dockable toolbar. Alternatively, in the main menu, click **Edit** > **Size**.

Command	Icon	Remark
Make Same Width		Match the width of all other elements with the width of the reference element.

Make Same Height		Match the height of all other elements with the height of the reference element.
Make Same Size		Match the width and height of all other elements with those of the reference element, respectively.

Ordering Elements

Ordering Elements Using Display Order Tools

Z-order determines which elements cover others. Use **Display Order** in the toolbar or **Edit** menu to change it, including for elements that do not overlap.

For example, there are five shapes in the following order. Four different display order tools will be used to change the z-order of the red shape.

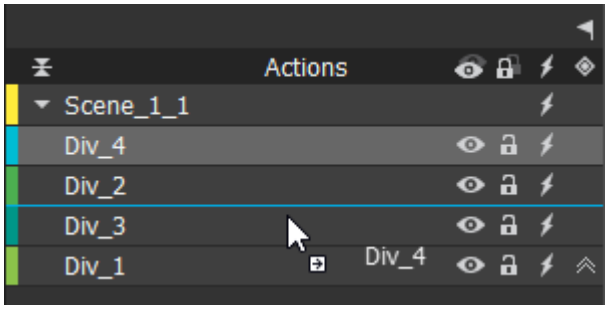


Command	Icon	Remark
Bring to Front		Place the selected element at the very top of the stack. 
Bring Forward		Send the selected element higher by one level in the stack. 
Send to Back		Place the selected element at the very bottom of the stack. 
Send Backward		Send the selected element lower by one level in the stack. 

Ordering Elements by Drag-n-Drop

Using the **Display Order** tools in the **Edit** menu or the dockable toolbar to set the z-order of elements may be inconvenient. Saola Animate offers you another way to order elements quickly. That is dragging and dropping elements in **Timeline** or **Elements** pane.

To do that, go to these panes, select desired elements, then drag them to a new position. A blue line appears to indicate the new position of the selected elements when you drop them.



Please note that this method can be used to **change parents of elements**, i.e., move elements from their groups to another group.

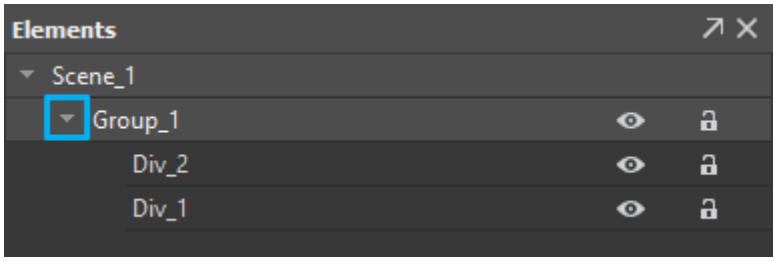
Grouping Elements

Grouping multiple elements as a single one lets you work faster and easier. For example, group several elements and they will stay together when being moved. Otherwise, you have to select all of the elements each time you want to change their position. Also, groups have properties like normal elements, meaning that you can animate their properties or add events and actions to them. You can group elements to animate them in the same way, instead of animating each with the same keyframes and properties.

Grouping Elements

1. Select just one or more elements of the same parent.
2. Press **CTRL+G**. Alternatively, right-click and select **Group > Group**. The selected elements are grouped. A single box with sizing handles appears around the entire group. All moving animations of selected elements will be converted to a new coordinate system of the new parent.

The newly created group appears in the **Timeline** and **Elements** panes with a default name. Double-click its name to rename it. In these panes, all child elements are listed under and at the next indent level compared to their group. Click the triangle buttons to collapse or expand the group.



After grouping elements, you can still edit child elements separately without breaking and affecting the group. On the Canvas, select the group first, then click the child element to start editing it. You can also click the child element name in the **Timeline** and **Elements** panes to select it.

Ungrouping Elements

Sometimes, you no longer need a group and want to break it apart.

1. Select a group.
2. Press **CTRL+SHIFT+G**. Alternatively, right-click it and select **Group > Ungroup**. The group will be broken apart into separate child elements.

Adding to Group

To add more elements to an existing group without nesting group:

1. Select the target group and some elements to add to that group.
2. Right-click and select **Group > Add to Group**.

The selected elements will become the children of the target group.

Removing from Group

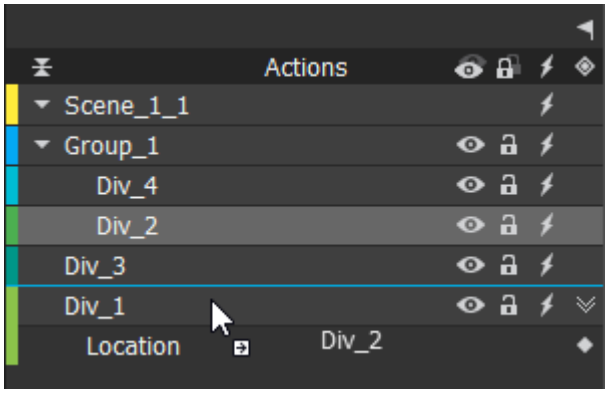
To remove one or more elements from a group:

1. Select elements that you want to remove.
2. Right-click and select **Group > Remove from Group**.

The selected elements will become children of the group's parent. If the group is a top-level element, the selected elements also become top-level elements.

Changing Group by Drag-n-Drop

You are free to change the parent of elements by dragging and dropping them on **Timeline** or **Elements** pane. Just select your desired elements, drag them to a new position and drop them when you see a blue indicator appears.



Laying out Group

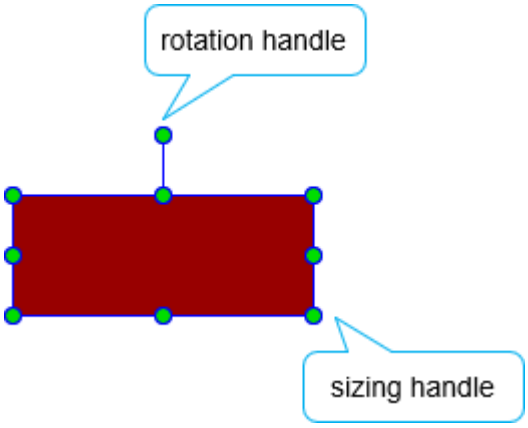
A group boundary may not fit its children bounding rectangle, for example, after adding/ removing elements to / from a group. In that case, you can use the **Layout Group** function to adjust a group position and size to fit its children.

1. Select your desired groups.
2. Right-click and select **Group** > **Layout Group**.

Editing Element Properties

Element properties are displayed on the Canvas, but not all of them could be directly edited from here. Instead, open the **Properties** pane to edit all properties of an element. You can select and edit multiple elements at the same time.

Editing Properties on the Canvas



On the Canvas, you can reposition, resize, and rotate an element using the sizing and rotation handles which appear when you select an element.

Editing Properties in the Properties Pane

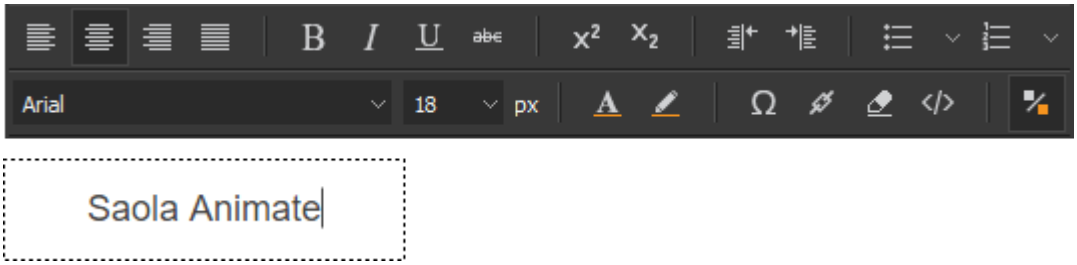
All element properties are listed in sections in the **Properties** pane. Each section shows a group of related properties. For example, the **Fill** section provides four background fill styles for elements.

Property values are shown in some UI control types, such as spin boxes, sliders, and text fields, depending on the property types. When multiple elements are selected, there are two cases:

- If a property is unique, such as name, the control showing the property will be disabled. It is enabled only when you select one element.
- If a property isn't unique, the control will be enabled, but it only displays a value when the property values of all selected elements are the same. For example, when you select two elements with different left values (in X, Y Motion relative to top and left), the left property shows no value. In that case, if you enter a value for the left property, you'll set the left value of both the elements.

Adding Text to Elements

Text can be added to any text-based elements, namely text, DIVs, and shapes. Insert these elements into a scene, then double-click them to open the inline text editor and type text. To stop editing text, click any elsewhere outside or select **Stop Editing** from the context menu.



Format text with the Floating Text Format toolbar or **Properties > Text**. For font choices, see Using Fonts.

Chapter 5: Creating Animations

Create and control animations in the Timeline pane.



1. **Playback controls** (left to right): **Go to Start**, **Play/Stop**, **Go to End**, **Loop Playback**. The playback controls allow you to **navigate in timeline** and **preview your animation** within the open project window.
2. **Easing button**: Customize the **easing method** which specifies the speed of the transition effect.
3. **Auto-Keyframe Mode button**: Toggle the **Auto-Keyframe Mode** to **create keyframes automatically**.
4. **Auto-Keyframe Range button**: Toggle the **Auto-Keyframe Range** to **create keyframes automatically in a specific range**.
5. **Preset Effects**: Insert **preset effects** to elements with entrance, emphasis and exit effects.
6. **Time control**: Display the current time or the current position of the Playhead (5). Click on it to make it editable to adjust the current time.
7. **Playhead**: The orange Playhead and its red marker line moves as a document plays to indicate the current time.
8. **Element name**: Elements on the Canvas are all displayed on the timeline.
9. **Property name**: Name of all properties that are animated.
10. **Property value**: Property value of properties at the Playhead position. Double-click it to make it editable, then you can change the property value.
11. **Add Keyframe button**: Add a new **keyframe** at the Playhead position.
12. **Animation segment**: An **animation segment** is composed of two keyframes defining its starting and ending values.

Keyframes

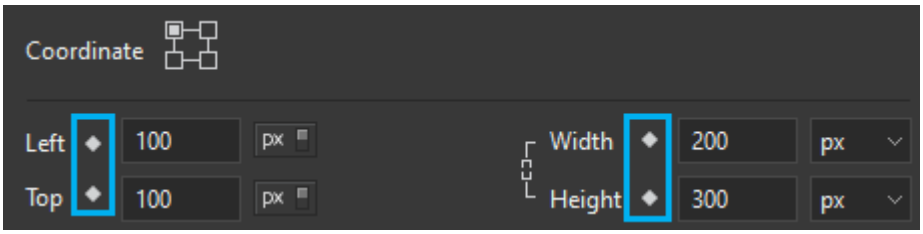
Keyframes specify the value of a property at a specific time. They are available throughout the **Properties** pane to set parameters of any property that can be changed over time. When animating with keyframes, you add at least two keyframes with different values of the same property. The animation is formed based on the property change from the start to the end.

Adding Keyframes

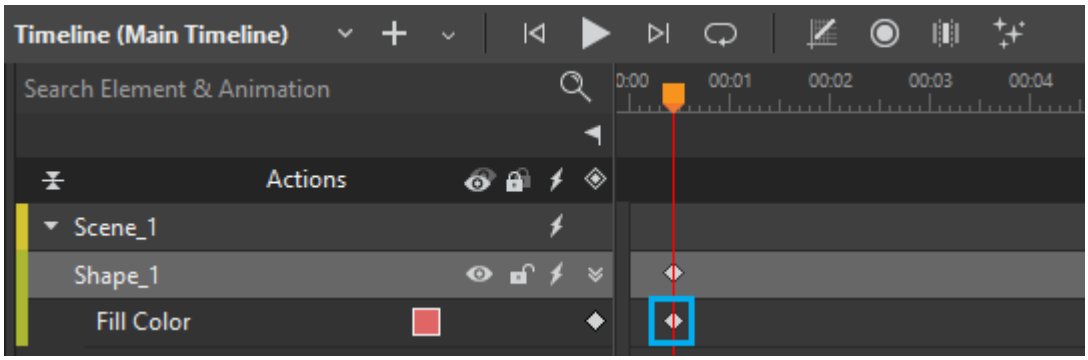
Keyframes can be added manually or automatically using several ways.

Using the Properties Pane

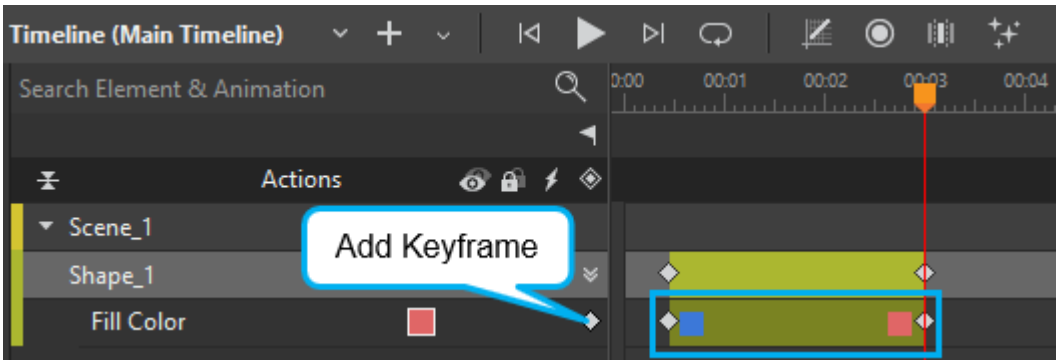
In the **Properties** pane, you can use small diamonds next to animatable properties to add keyframes. The keyframe will be visibly added at the Playhead position on the timeline.



To add the starting keyframe, first select an element. Then, position the Playhead to where you want the animation to begin, and click the keyframe diamond of a property. Now, set the property value of the starting keyframe. This will be the initial state of the element.



To add the ending keyframe, move the Playhead to where you want the animation to end. Add another keyframe for the same property and change the property value. A bar between the two keyframes appears, indicating that the property is animated.



Keyframe diamonds also appear in the **Timeline** pane. Any properties with at least one keyframe will be listed in this pane, thus allowing you to add more keyframes by clicking the **Add Keyframe** button. The best practice is to use the keyframe diamonds in the **Properties** pane to add the starting keyframes, then use the diamonds in the **Timeline** pane for other keyframes of the same property.

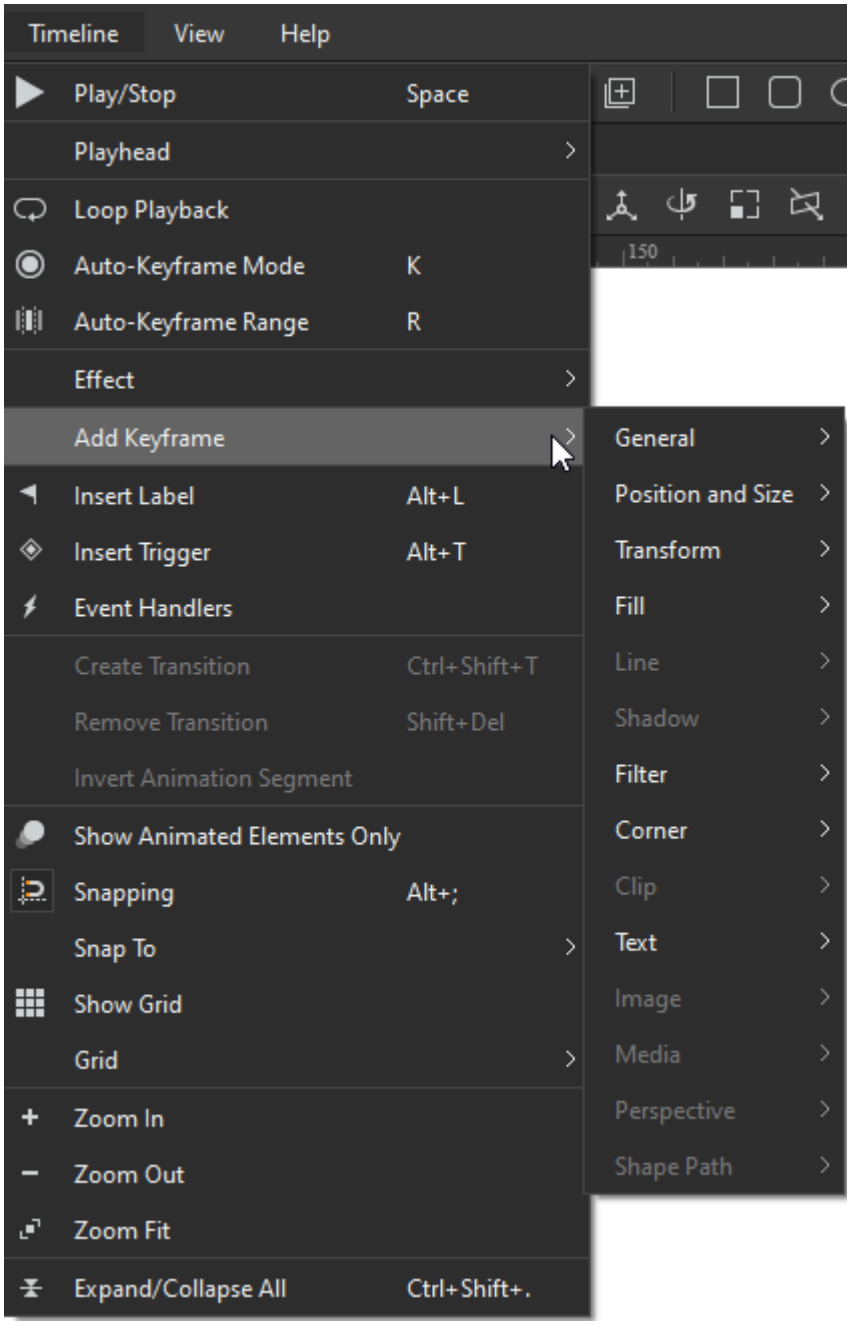
Using the Add Keyframe Menu

Another way to add keyframes is using the Add Keyframe menu which appears when you do either of the following:

- Select an element > **Timeline** menu > **Add Keyframe**.

- Right-click an element on the Canvas, in the **Timeline** or **Elements** pane > **Add Keyframe**.

When you point to the **Add Keyframe** option, a list of available keyframes appears, allowing you to select the keyframe you want.



Creating Keyframes Automatically

Auto-Keyframe Mode enables Saola Animate to generate keyframes automatically when you change the element properties. When being turned off, you have to add keyframes manually.

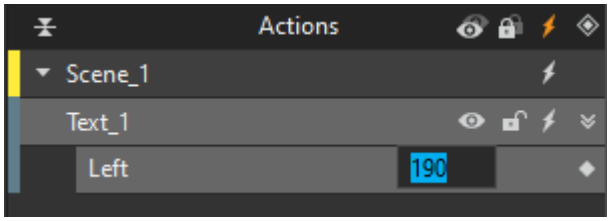
For more details, see **Auto-Keyframe Mode**.

Adjusting Keyframe Values

To adjust a keyframe value, drag the Playhead to the keyframe. Or you can double-click the keyframe to move the Playhead to the keyframe's position. Then do one of the following:

- **In the Properties pane**: Adjust the property value using spin boxes, sliders, text fields, etc.

- **In the Timeline pane**: Double-click the value to make it editable and adjust it. To finish editing, press **ENTER** or click any elsewhere outside.



- **On the Canvas**: For some visual properties such as position, size, and rotation, you can change the value visually on the Canvas. For example, drag the rotation handle to adjust the rotate value.

Note: If you place the Playhead at an existing keyframe and change the property value, the change will be applied to that keyframe only. Meanwhile, if you place the Playhead at any other timestamp and change the property value, the change will be applied to all keyframes of the same property animation.

Consider the animation [Left, duration: 2.5s, value: 200px - 400px].

- **Place the Playhead at the starting/ending keyframe**: Place the Playhead at the ending keyframe and change the Left value from 400px to 500px. The element now moves 300px to the right instead of 200px as before. The ending point changes, leading to the change in the space the element moves.
- **Place the Playhead at any other timestamp**: Change the Left value to 500px. The element still moves 200px to the right as before, but it now moves from a different position to another different position. The space remains the same while the starting and ending points are shifted to the new positions.

Moving, Copying, Pasting and Removing Keyframes

Moving Keyframes

You can move, copy, and delete multiple keyframes. When being dragged to move, keyframes keep their relative distance to each other. If you drag a keyframe to another, the animation segment has the same starting and ending keyframes. So, its duration becomes zero and the animation is displayed as a special keyframe  on the timeline.

By default, the **timeline snapping** mode is turned on, allowing keyframes to snap to particular tick marks or other timeline items. See **Snapping in Timeline** for more details.

Copying Keyframes

To copy keyframes, select them then do either of the following ways:

- Click the Copy command in the dockable toolbar.
- Right-click keyframes > select **Copy**.
- Press **CTRL+C**.

Pasting Keyframes

After copying keyframes, you can paste them by clicking the Paste command in the dockable toolbar, right-click the new position > **Paste**, or press **CTRL+V**.

Remember to paste keyframes onto the timeline of the same or of other elements as long as the target elements share the same properties with the source ones. For example, you can copy and paste the Color keyframe between elements filled with solid color, not between an element filled with solid color and another element filled with gradient.

Removing Keyframes

To remove keyframes, click to select them so that they become highlighted, then click the Delete command in the dockable toolbar or right-click them > **Delete**, or press **DELETE**. If you delete adjacent keyframes, the animation segments between those keyframes will also be removed.

Auto-Keyframe Mode

Auto-Keyframe mode allows automatically recording keyframes when building animations. Simply enable the Auto-Keyframe mode, move the Playhead, and make an edit. Saola Animate itself will insert keyframes for any changed properties.

In the **Timeline** pane, click the **Auto-Keyframe Mode** button (1) or press the **K** key to turn the mode on and record any changes as keyframes.



When you edit an element property, the animation of the element for that property will be changed or remain the same depending on the following cases:

Case	Auto-Keyframe Mode On	Auto-Keyframe Mode Off
There's no keyframe of that property.	Two keyframes of that property will be created to make an animation. One keyframe is at the current time. The other is at 0, or at the ending time of the existing animation of the element if that ending time is smaller than the current time.	The element animation remains unchanged (just the element property changed).
There's one or more keyframes of that property, but none of them is at the current time in Timeline.	A new keyframe of that property will be created at the current time.	All the keyframes of that property will be changed according to the changes of that property.
There's a keyframe of that property at the current time in Timeline.	The keyframe of that property at the current time will be updated to the current value of that property.	

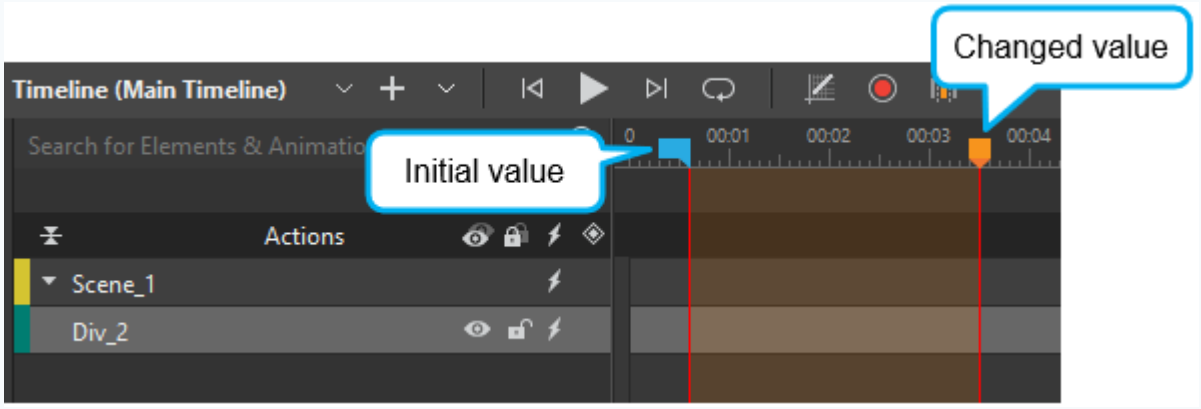
Auto-Keyframe Range

Auto-Keyframe range tool allows automatically creating keyframes within a range for elements.

Notice the following steps to work with this tool:

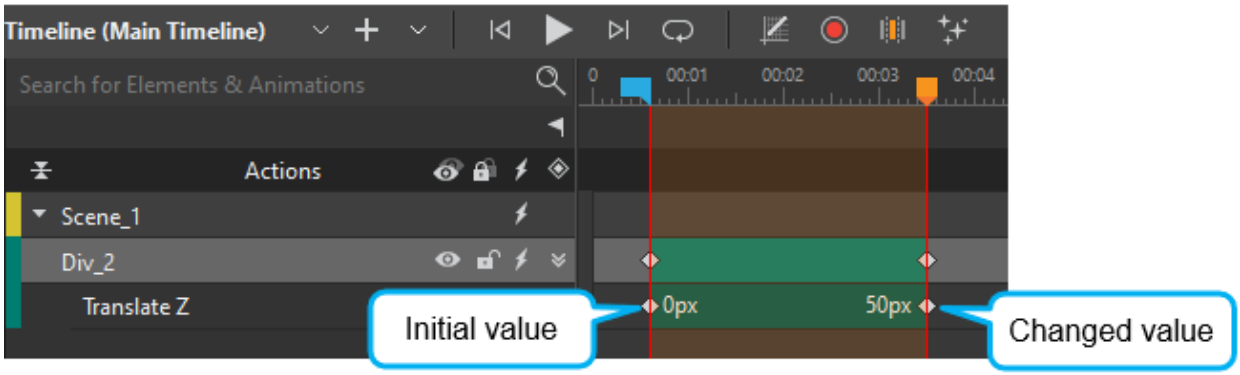
1. In the **Timeline** pane, click the **Auto-Keyframe Range** button (2) or press the **R** key to turn the mode on.
2. Drag the blue marker to the left or right of the Playhead to define the range.

> **Note**: Alternatively, holding down **SHIFT** while clicking the Playhead to another position will enable auto-keyframe range. That range is from the Playhead's previous position to the current position.
>
> The blue marker indicates the initial value and the Playhead specifies the changed value of a property. You can swap their positions by holding down **CTRL** while clicking on each of them.



3. Make changes for any properties.

Then, one keyframe representing the changed value is inserted at the Playhead position, another keyframe representing the initial value will be at the blue marker.

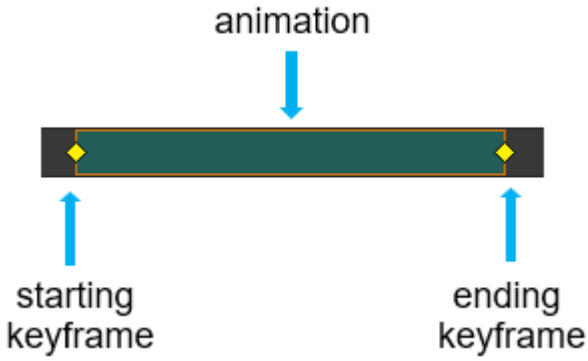


You are free to swap the starting and ending keyframe of the animation segment by right-clicking it > **Invert Animation Segment**.

If you want to use the Auto-Keyframe mode without selecting the range, you can click the **Auto-Keyframe Range** button (2) or press the **R** key again to turn it off.

Animations

An **animation segment** connects two keyframes that define a property's starting and ending values. A **transition** changes the value gradually between them; without one, the value changes instantly at the ending keyframe.



Animation Segments

Changing Timing and Duration

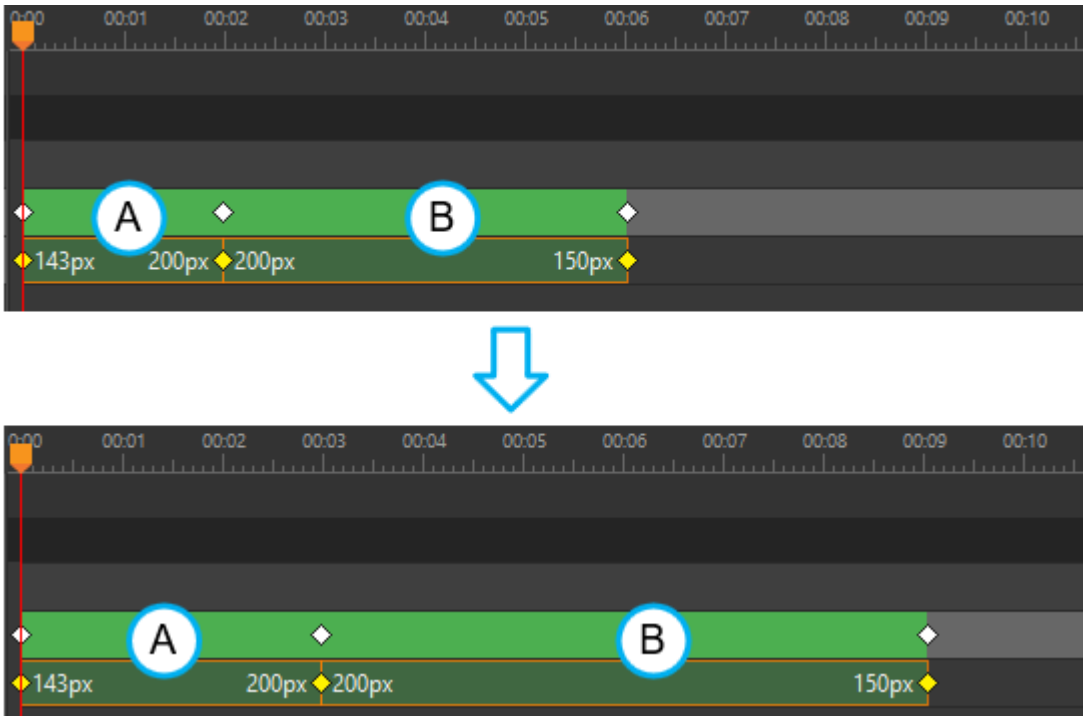
To change the timing of a segment, select the entire segment and drag it left or right. An orange border appears to indicate that that segment is selected.

To change the duration, select either the starting or ending keyframe and drag the keyframe. Longer segments make slower animations. If a segment has the same starting and ending keyframes, the duration is 0 and the animation is displayed as a special keyframe on the timeline.

Scaling Animations

In case you want to change the entire start time and duration of many animation segments, you can scale them. To perform this action, press **CTRL** while clicking to select multiple animation segments. Alternatively, you can use rubber-band selection to achieve that. Then, click the starting/ending keyframe then drag it along the Timeline.

For example, the A and B duration takes up 2 and 4 seconds, respectively. So, the length of B is double the length of A. After scaling the animation, both lengths are changed but the B duration still doubles as A's.



Inverting Segments

With any animation segment selected, right-click and select **Invert Animation Segment** to replace the starting keyframe with the ending keyframe and vice versa. This swaps the starting and ending values of the property animation.

Copying Segments

You can copy an animation segment and paste it onto the timeline of the same or other elements. That way, you copy both the starting and ending keyframes and the transition between them to the Clipboard.

1. Click a segment on the timeline. If you want to select multiple segments at the same time, hold down **CTRL** and click the segments.
2. Press **CTRL+C** or click **Copy** in the dockable toolbar to copy the segments to the Clipboard. You can also cut the segments from the element by pressing **CTRL+X** or clicking **Cut** in the dockable toolbar.
3. If you want to copy the segments to another element, select that element.
4. Move the Playhead to the position where you want the copied segments to start.
5. Press **CTRL+V** or click **Paste** in the dockable toolbar to paste the segments onto the timeline.

Removing Segments

Select a segment and right-click > **Delete**, click **Delete** in the dockable toolbar or press **DELETE** to remove both the segment and its keyframes. If you select a keyframe and press **DELETE**, you will delete any segments composed of that keyframe.

Transitions

Suppose that the left property of an element is animated with the starting keyframe [time: 1s, value: 50px] and the ending keyframe [time: 5s, value: 100px]. The transition between the two keyframes makes the element move smoothly from one position to another over five seconds.

Without a transition, Left remains 50px from 1s until just before 5s, then jumps to 100px at 5s.

Creating Transitions

Right-click a segment and select **Create Transition** to make the element gradually change from one state to another over time.

Removing Transitions

Right-click a segment and select **Remove Transition** to create an instant change in the property value.

Customizing Easing Functions

Control the speed of a transition with easing functions. For more details, see **Easing**.

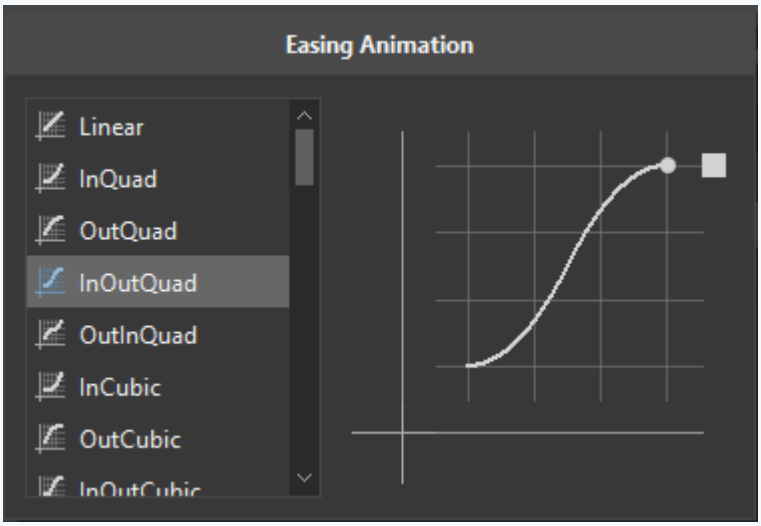
Easing

The motion in nature is rarely plain and linear from one point to another. In reality, when moving, things almost never move at an unchanging speed. Instead, they tend to accelerate or decelerate. For example, when a bus comes to a stop, it slows down before a full stop. When setting off again, it

speeds up to a full speed. So, to mimic realistic dynamic movement, use easing functions to make transitions change speed over time.

Linear easing keeps a transition's speed constant. Choose another easing function to vary its speed. In the **Timeline** pane:

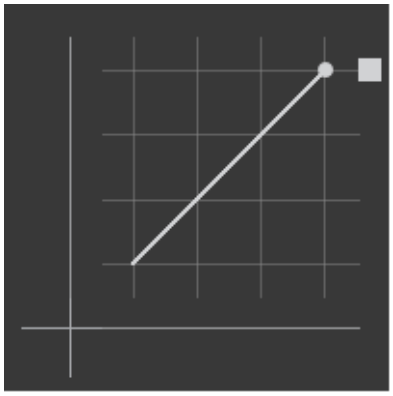
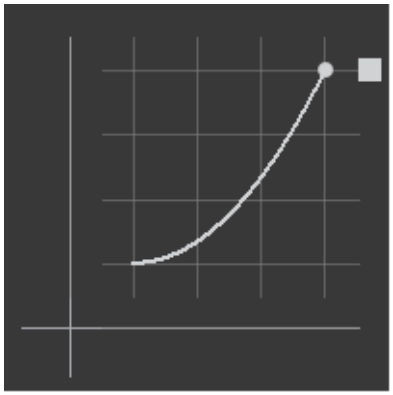
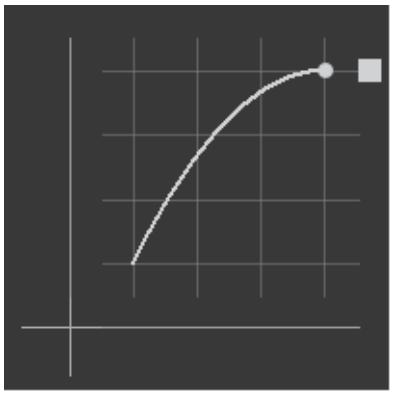
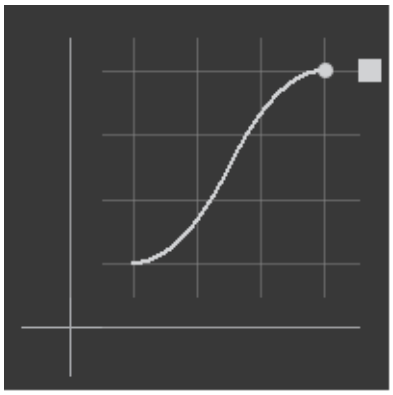
1. Select one or more animation segments.
2. Click the **Easing** button or right-click > **Easing...** from the context menu. Both open the **Easing Animation** dialog which lists all easing functions.
3. Select an easing from the dialog.

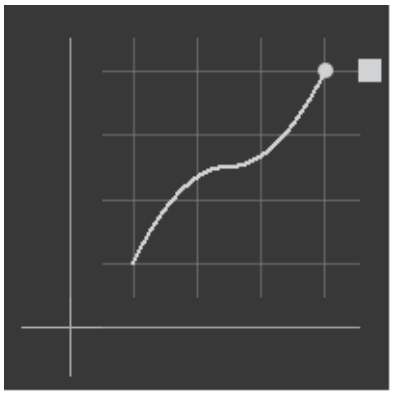
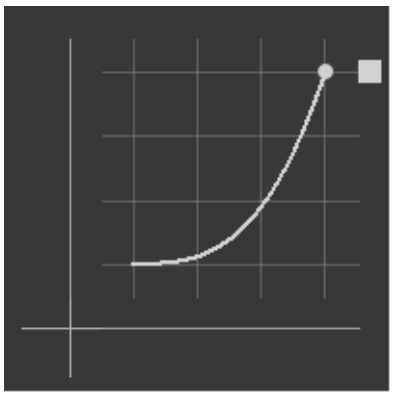
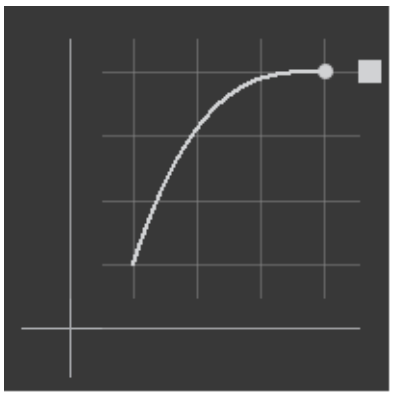
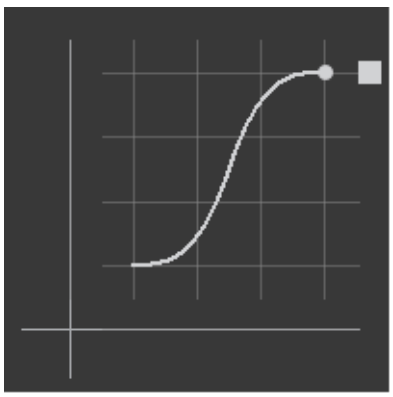


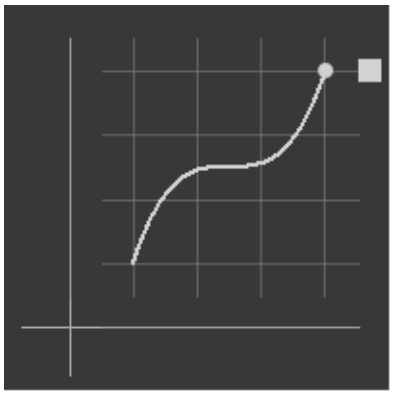
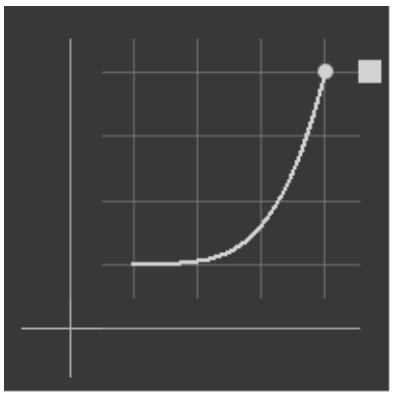
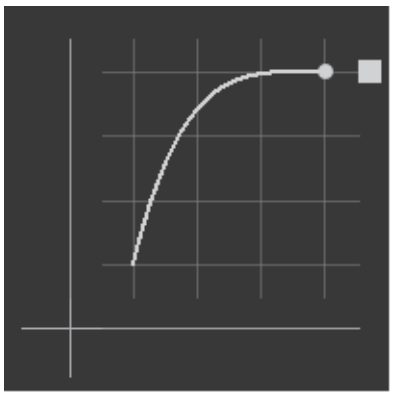
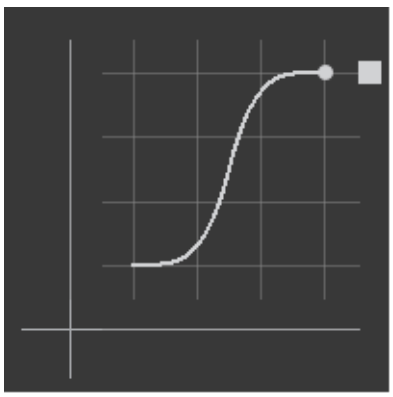
Easing functions in Saola Animate come in ten types:

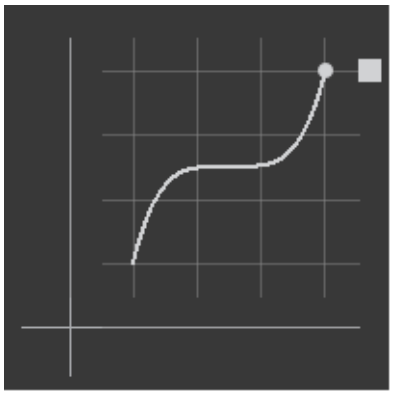
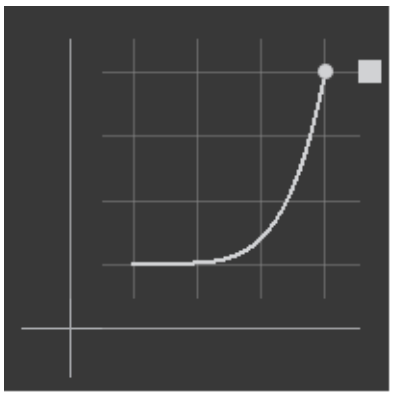
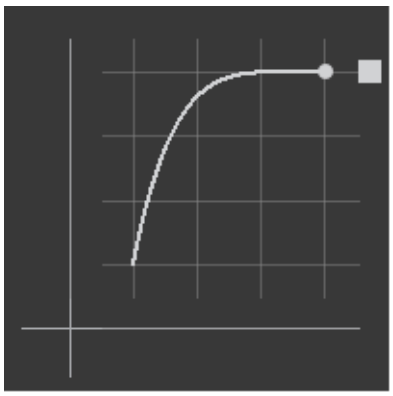
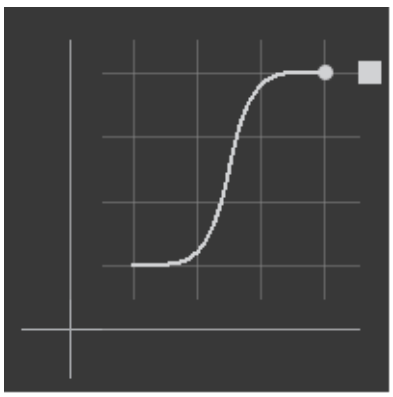
1. **Quad**: Display a quadratic transition.
2. **Cubic**: Display a cubicular transition.
3. **Quart**: Display a quartetic transition.
4. **Quint**: Display a quintic transition.
5. **Sine**: Display a sinusoidal transition.
6. **Expo**: Display an exponential transition.
7. **Circ**: Display a circular transition.
8. **Elastic**: Display an elastic transition that looks like a spring swinging back and forth until coming to rest.
9. **Back**: Display a cubicular transition with backward motion, overshoot, and settle.
10. **Bounce**: Display a parabolic bounce, simulating the motion of an object bouncing. Each type has four values:

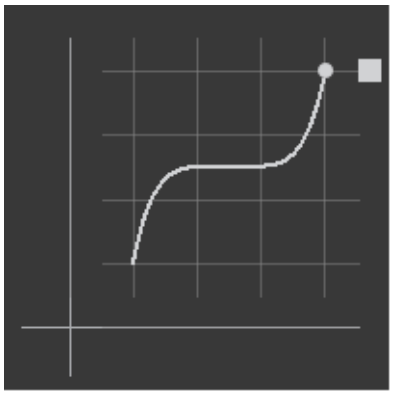
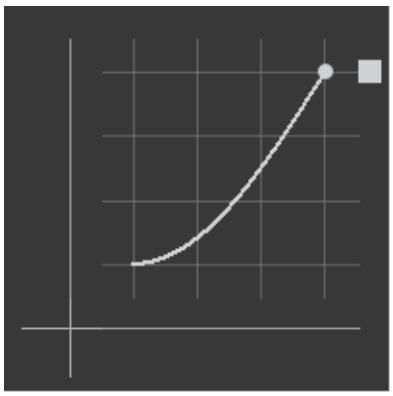
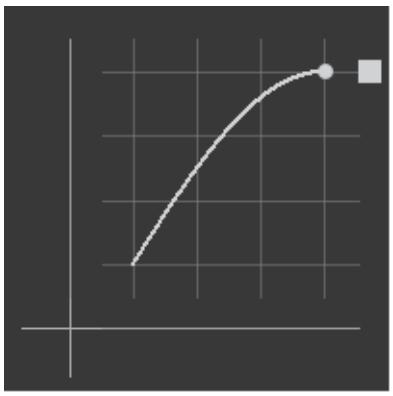
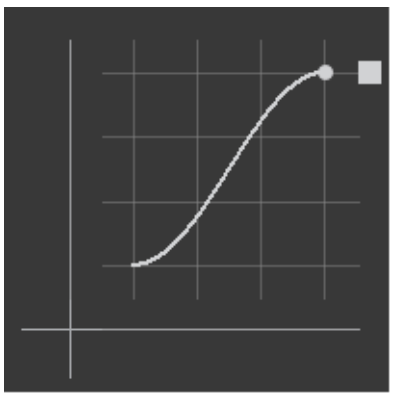
1. **Ease in**: Speed up from zero speed, then finish at full speed.
2. **Ease out**: Start at full speed, then slow down to zero speed.
3. **Ease in-out**: Start slowly, accelerate to the midpoint, then slow down.
4. **Ease out-in**: Start fast, slow to the midpoint, then accelerate.

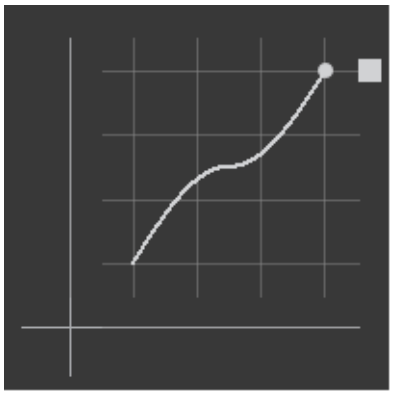
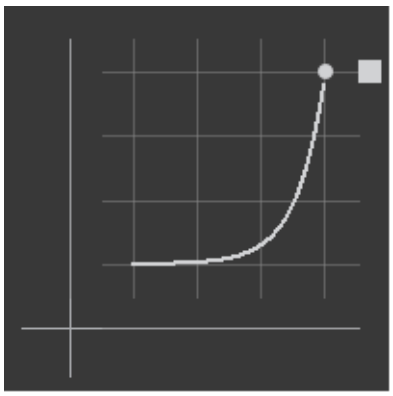
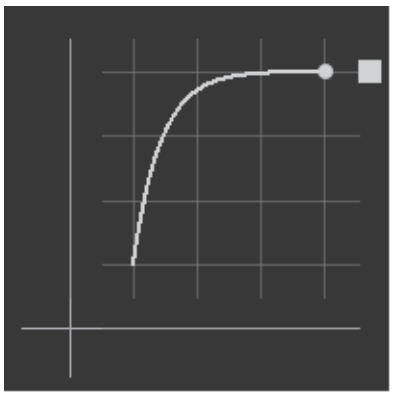
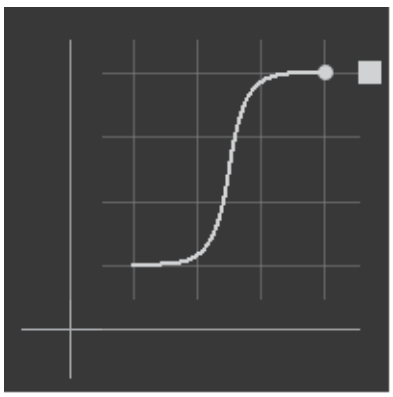
Constant	Illustration	Remark
Linear		Easing curve for a linear(t) function: velocity is constant.
InQuad		Easing curve for a quadratic (t^2) function: accelerating from zero velocity.
OutQuad		Easing curve for a quadratic (t^2) function: decelerating to zero velocity.
InOutQuad		Easing curve for a quadratic (t^2) function: acceleration until halfway, and then deceleration.

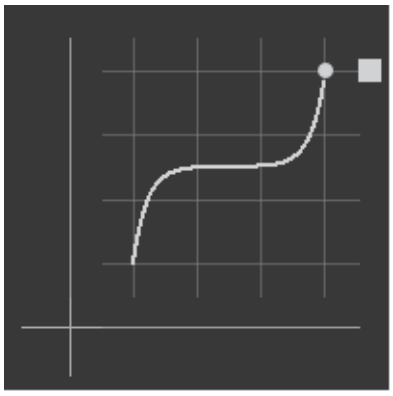
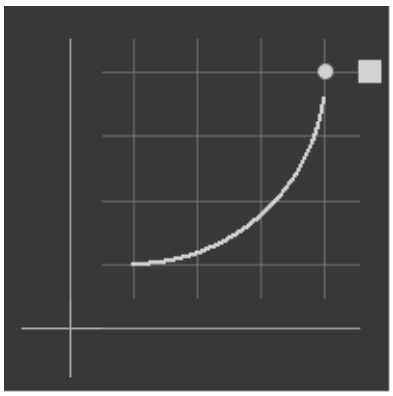
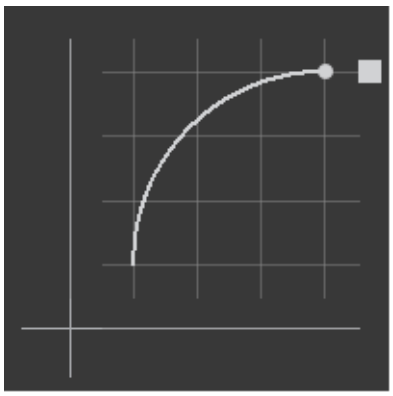
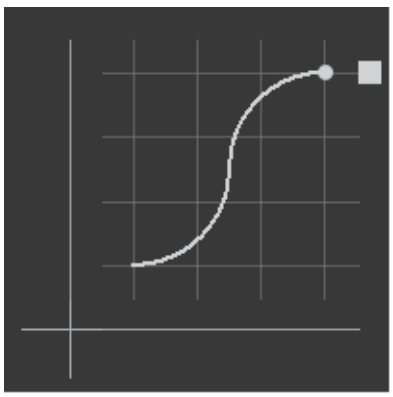
OutInQuad		Easing curve for a quadratic (t^2) function: deceleration until halfway, and then acceleration.
InCubic		Easing curve for a cubic (t^3) function: accelerating from zero velocity.
OutCubic		Easing curve for a cubic (t^3) function: decelerating to zero velocity.
InOutCubic		Easing curve for a cubic (t^3) function: acceleration until halfway, and then deceleration.

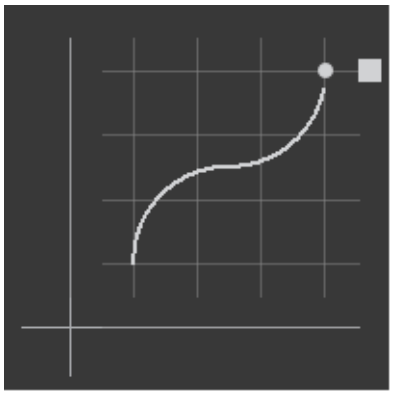
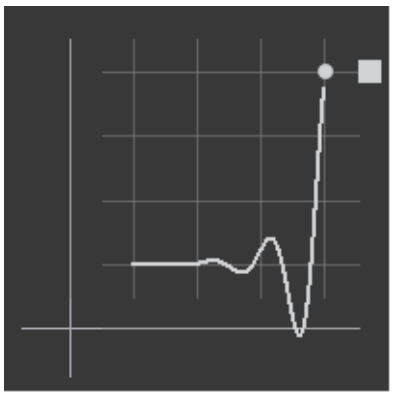
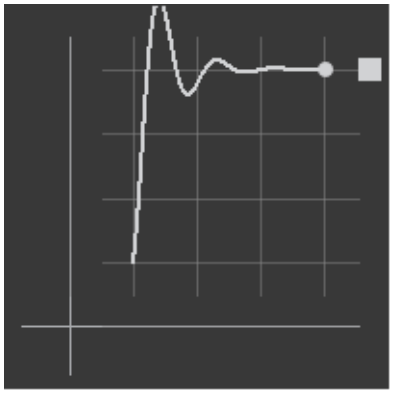
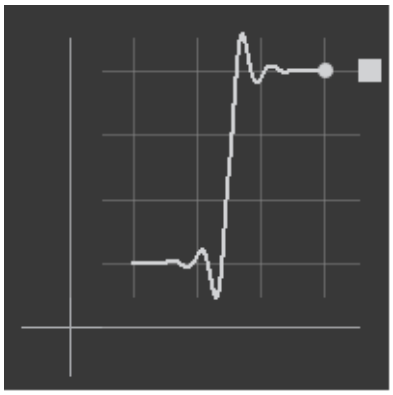
OutInCubic		Easing curve for a cubic (t^3) function: deceleration until halfway, then acceleration.
InQuart		Easing curve for a quartic (t^4) function: accelerating from zero velocity.
OutQuart		Easing curve for a quartic (t^4) function: decelerating to zero velocity.
InOutQuart		Easing curve for a quartic (t^4) function: acceleration until halfway, and then deceleration.

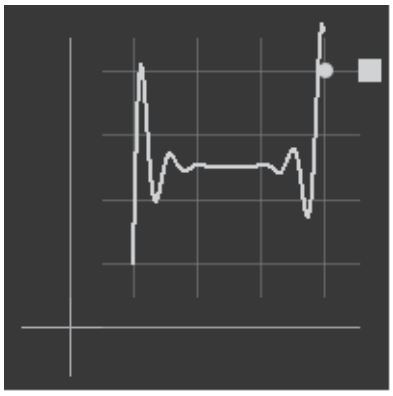
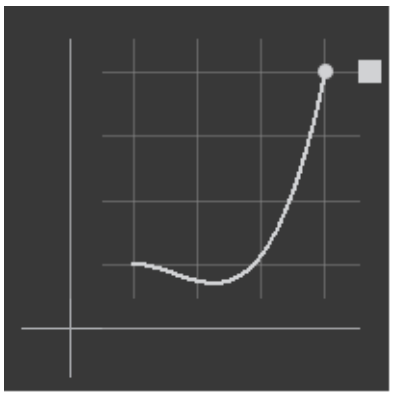
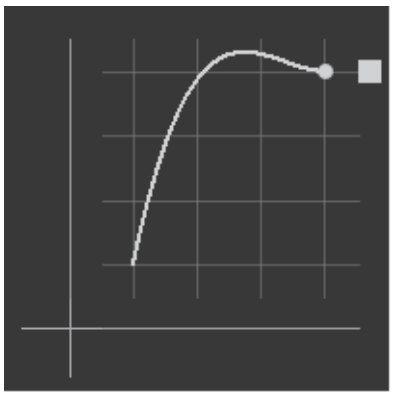
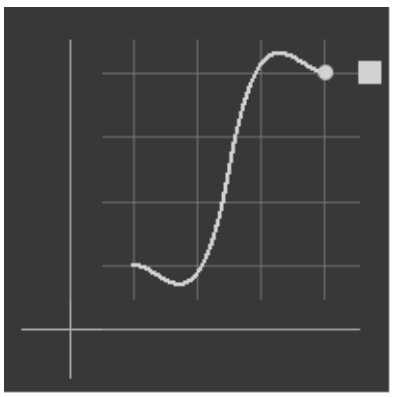
OutInQuart		Easing curve for a quartic (t^4) function: deceleration until halfway, and then acceleration.
InQuint		Easing curve for a quintic (t^5) easing in: accelerating from zero velocity.
OutQuint		Easing curve for a quintic (t^5) function: decelerating to zero velocity.
InOutQuint		Easing curve for a quintic (t^5) function: acceleration until halfway, and then deceleration.

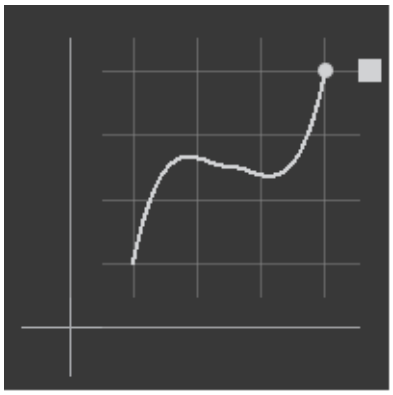
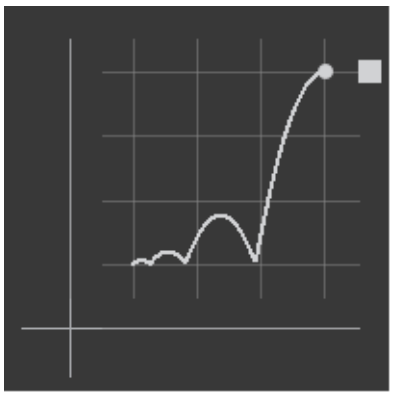
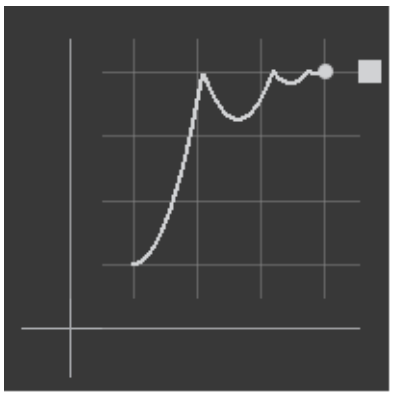
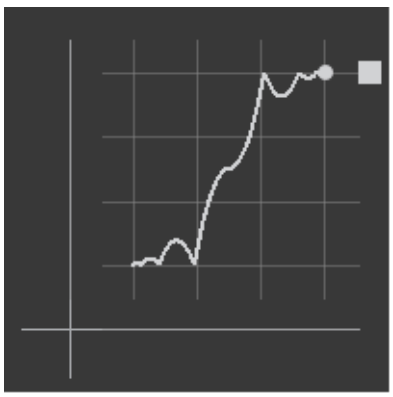
OutInQuint		Easing curve for a quintic (t^5) function: deceleration until halfway, and then acceleration
InSine		Easing curve for a sinusoidal (sin(t)) function: accelerating from zero velocity.
OutSine		Easing curve for a sinusoidal (sin(t)) function: decelerating from zero velocity.
InOutSine		Easing curve for a sinusoidal (sin(t)) function: acceleration until halfway, and then deceleration.

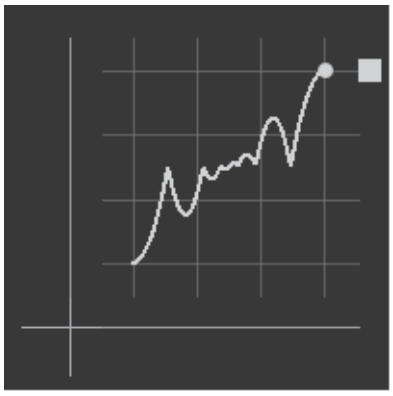
OutInSine		Easing curve for a sinusoidal (sin(t)) function: deceleration until halfway, and then acceleration.
InExpo		Easing curve for an exponential (2^t) function: accelerating from zero velocity.
OutExpo		Easing curve for an exponential (2^t) function: decelerating from zero velocity.
InOutExpo		Easing curve for an exponential (2^t) function: acceleration until halfway, and then deceleration.

OutInExpo		Easing curve for an exponential (2^t) function: deceleration until halfway, and then acceleration.
InCirc		Easing curve for a circular (sqrt(1-t^2)) function: accelerating from zero velocity.
OutCirc		Easing curve for a circular (sqrt(1-t^2)) function: decelerating from zero velocity.
InOutCirc		Easing curve for a circular (sqrt(1-t^2)) function: acceleration until halfway, and then deceleration.

OutInCirc		Easing curve for a circular (sqrt(1-t^2)) function: deceleration until halfway, and then acceleration.
InElastic		Easing curve for an elastic (exponentially decaying sine wave) function: accelerating from zero velocity. The peak amplitude can be set with the amplitude parameter, and the period of decay by the period parameter.
OutElastic		Easing curve for an elastic (exponentially decaying sine wave) function: decelerating from zero velocity. The peak amplitude can be set with the amplitude parameter, and the period of decay by the period parameter.
InOutElastic		Easing curve for an elastic (exponentially decaying sine wave) function: acceleration until halfway, and then deceleration.

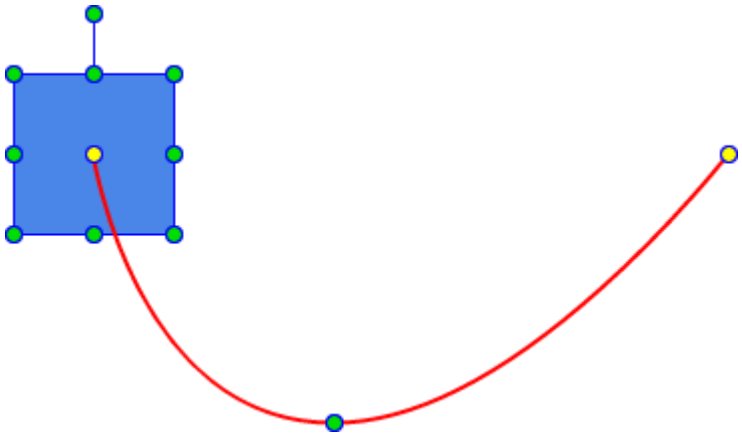
OutInElastic		Easing curve for an elastic (exponentially decaying sine wave) function: deceleration until halfway, and then acceleration.
InBack		Easing curve for a back (overshooting cubic function: (s+1) *t^3 - s*t^2) easing in: accelerating from zero velocity.
OutBack		Easing curve for a back (overshooting cubic function: (s+1) *t^3 - s*t^2) easing out: decelerating to zero velocity.
InOutBack		Easing curve for a back (overshooting cubic function: (s+1) *t^3 - s*t^2) easing in/out: acceleration until halfway, and then deceleration.

OutInBack		Easing curve for a back (overshooting cubic easing: (s+1) *t^3 - s*t^2) easing out/in: deceleration until halfway, and then acceleration.
InBounce		Easing curve for a bounce (exponentially decaying parabolic bounce) function: accelerating from zero velocity.
OutBounce		Easing curve for a bounce (exponentially decaying parabolic bounce) function: decelerating from zero velocity.
InOutBounce		Easing curve for a bounce (exponentially decaying parabolic bounce) function: decelerating from zero velocity.

OutInBounce		Easing curve for a bounce (exponentially decaying parabolic bounce) function easing out/in: deceleration until halfway, and then acceleration.

Motion Paths

A motion path is a curved animation between two or more points. Motion paths allow animating objects along complex curves to mimic real-life motion that cannot be achieved with linear motion.

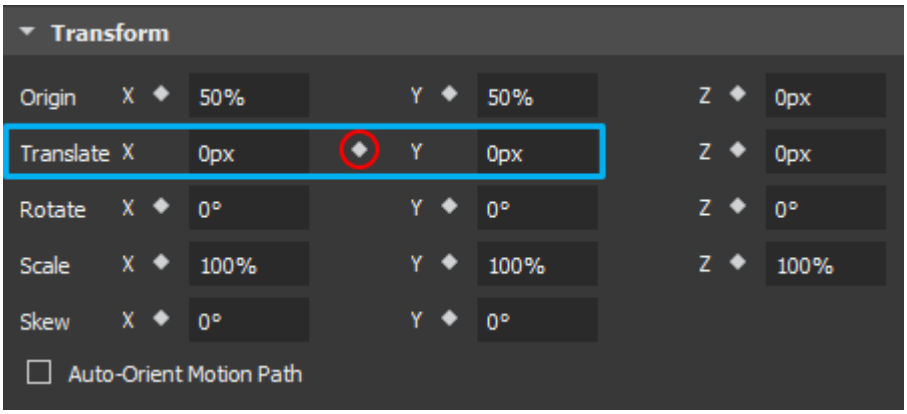


Creating Motion Paths

Motion path can be created manually or automatically using several ways.

Create Basic Motion Paths

To create a motion path, first create a basic path between two location **keyframes**. A location keyframe is a special keyframe of two properties: translate x and translate y.



1. Select an element.
2. In **Timeline**, place the Playhead at the time you want the animation to start.

3. In the **Properties** pane > **Position & Size** tab > **Transform** section, click **Add Location Keyframe** icon to insert the first location keyframe.
4. In **Timeline**, drag the Playhead to the time you want the animation to end.
5. Add the ending location keyframe.
6. On the Canvas, drag the element to a new position. This creates a red line indicating the path of the motion. The location property value changes, thus animating the element along a motion path.

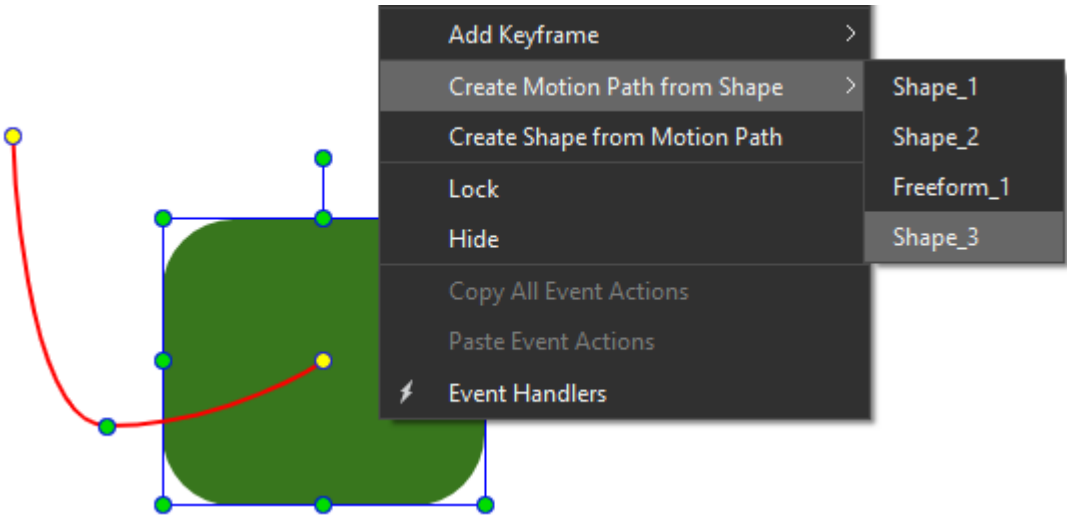
Repeat step 4, 5, and 6 many times to create a motion path between many points.

With these above steps, you've done creating a straight motion path between points. After that, you can edit the motion path by adding and modifying its anchor points.

Note: Apart from creating motion paths manually, you can also use Auto-Keyframe Mode or Auto-Keyframe Range to get the same results.

Create Motion Path from Shape

Saola Animate allows you to create a motion path from any available shape and freeform. To do that, right-click a shape on the Canvas > select **Create Motion Path from Shape**. Then select one element from the list.



Note: It is possible to create shape from a motion path. Just right-click a motion path > **Create Shape from Motion Path**. Then a freeform will be created similar to the motion path of the original shape.

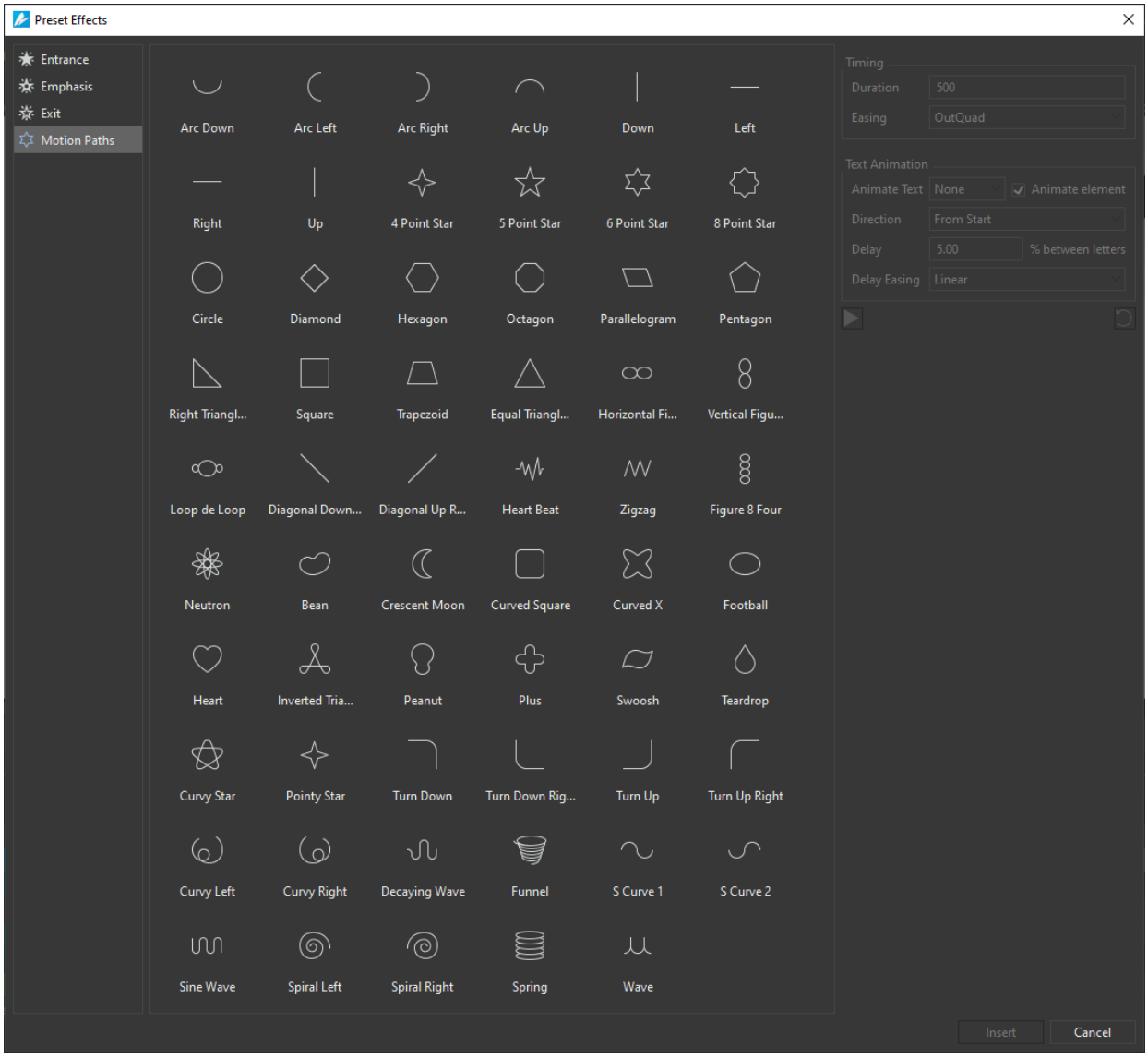
Create Motion Path using Preset Motion Path Effects

Saola Animate offers 59 preset motion path effects which allows applying directly to any elements. To apply preset motion path effects, follow the steps below:

1. Select an element.
2. Do any of the following:

- Click the **Timeline** menu > **Effects** > **Motion Paths** category.
- Click the **Effects** button in the **Timeline** pane > **Motion Paths** category.

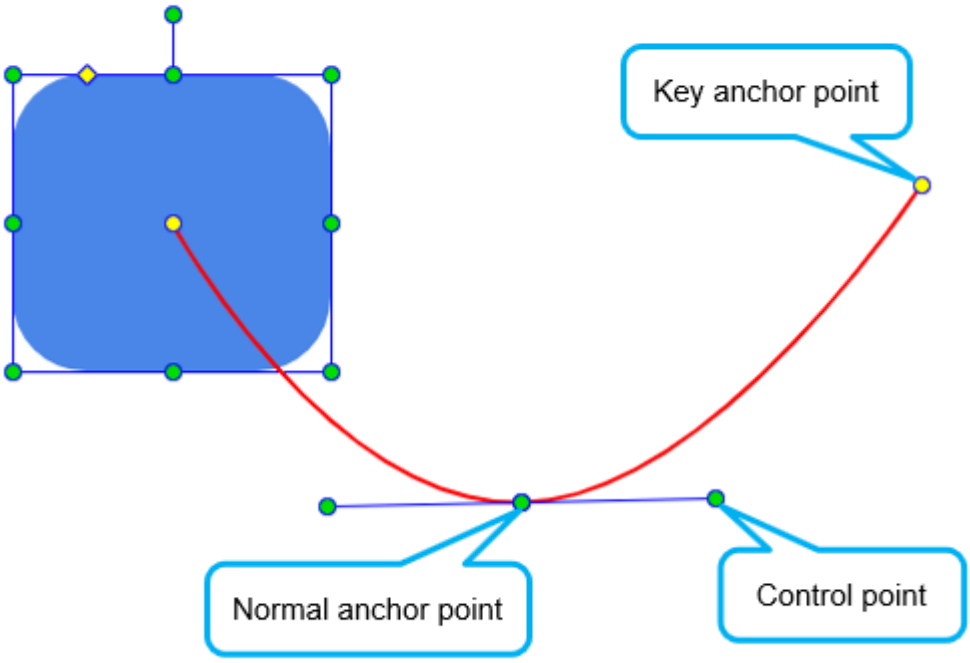
3. Double-click an available effect in the dialog, or select an effect then click **Insert** to apply it to an element.



Editing Motion Paths

Edit a straight path to make an element travel in a curve. Editing a motion path is actually working with its anchor points. Anchor points are circle points on a motion path that define the path. There are two types of anchor points:

- **Key anchor points**: Yellow points that have associated Location keyframes on the timeline.
- **Normal anchor points**: Green points with no associated keyframes on the timeline. They define the path an element moves between two key anchor points.



Each anchor point except the first/last key anchor one has two blue handles with a control point at their ends. The first and last key anchor points have a control point at the same position with the anchor by default so it doesn't appear. In case you want to adjust the curve at the first/last key anchor point, you can hold down **ALT** key, click and drag it, the control point will be dragged.

Creating Anchor Points

- **Key anchor points**: Add a Location keyframe to a motion path segment at a desired point of time. Location keyframes split a path into two. You can also delete a Location keyframe between two paths to create a contiguous path.
- **Normal anchor points**: Hover over a motion path until the mouse pointer turns into a pointing hand. Then, click and drag the path as desired.

Note: When the Playhead is on a Location keyframe, the element is on a corresponding key anchor point. Drag the element to change the shape of the path. If the Playhead isn't on a Location keyframe, dragging the element is equal to dragging the entire path. The shape of the path remains the same.

Adjusting Control Points

With any anchor point selected, its control points appear to help adjust the path between two anchor points. Drag the control points to modify the path.

When dragging a single control point, the remaining control point will move to keep the angle between them unchanged. If you want to change the selected point only, hold down **ALT** and drag the point.

Note: If a control point and an anchor point have the same position, when you click the point, the anchor point will be selected. If you want to select the control point, hold down **ALT** and click the mouse button.

Removing Anchor Points

To remove an anchor point, click it while holding down **SHIFT**. If you are removing a key anchor point, one of the following cases happens:

The key anchor point is the first/last point of the path AND there is no anchor point between this point and the next/previous key anchor point: The associated Location keyframe will be deleted.

The key anchor point is the first/last point of the path AND there is an anchor point between this point and the next/previous key anchor point: The next/previous anchor point will become the first/last key anchor point of the motion path.

The key anchor point is not the first/last point of the path: The associated Location keyframe will be deleted.

Note: If you click an anchor point and press **DELETE** without holding down **SHIFT**, you will delete the element together with the entire motion path.

Rotating Motion Paths

Hold down **ALT**, then click and drag the path. The path will be rotated around the element's transformation-origin point.

Moving Motion Paths

You can move the path without changing the relative movement of an element. Hold down

CTRL, then click and drag the path to move the path.

Orienting Elements to Paths

Imagine you want to animate a car to drive up a slope. As the slope is not a straight line, you need to use a motion path to move the car. However, even with a motion path, the car's movement is still unnatural because the nose of the car doesn't orient along the direction which it is heading.

To solve this problem, use the **auto-orient** property to orient elements in relation to the direction of the motion path. The Auto-Orient Motion Path check box is enabled only if the element already has a motion path.



Note: If the right edge is not the "front" of an image, you may need to rotate the element so that the correct edge is on the right side. For example, if the car is moving to the left direction with auto-orient on, it will flip vertically. You need to rotate the image by 180 degrees to avoid flipping.

Morph Animations

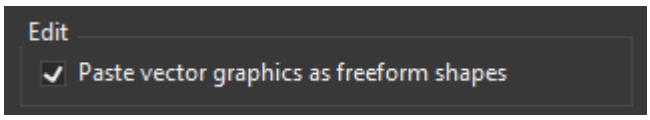
Morph animation allows animating from one shape's form to another through a seamless transition. It is applicable to freeforms. In additions, it is possible to copy SVG paths from other vector graphic editors and paste them into the app as freeforms for further editing.

Creating Morph Animations

To create a morph animation, firstly, you have to insert a shape or freeform (including SVG paths converted to freeform) into the Canvas. Perform one of the following:

- Click the **Insert Shape** button  > select built-in shapes from the list to insert one or more shapes into a scene.
- Click the **Insert Freeform** button  > select a tool to draw, except from the **Line**, **Arrow**, **Double Arrow** tools. Line and arrows don't have morph animation.
- Drag/ copy (**CTRL+C**) SVG paths from your computer or other applications (such as Adobe Illustrator) and drop/ paste them directly into the Canvas.

> **Note**: By default, the **Paste vector graphics as freeform shapes** check box is selected to help you insert SVG paths as freeforms. You can see this checkbox by opening **Preferences** (**Edit** menu on Windows; **File** menu on macOS), then the **General** tab > **Edit** section:



> If this checkbox is deselected, SVG paths are inserted normal images, therefore, cannot be used to create morph animation.

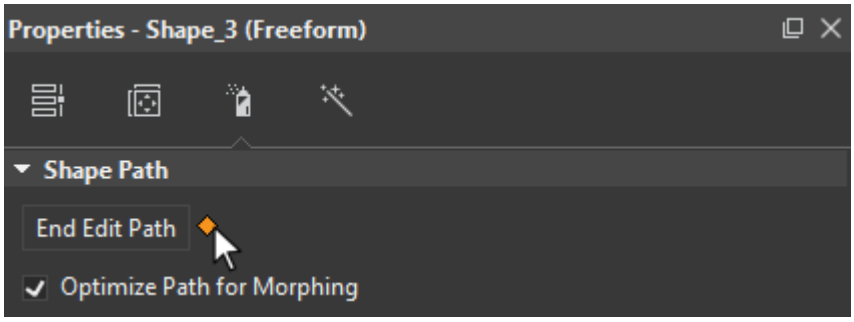
Next, you can consider doing one of these two ways below to create morph animation:

- **The first way**:

1. Place the Playhead at desired timestamp.
2. Turn on the **Auto Keyframe Mode** or **Auto Keyframe Range** button. Alternatively, press **K** or **R** on the keyboard.
3. Right-click the element on the Canvas > **Edit Path**. Then, make an adjustment to any anchor point and control point of that element.
4. Right-click the element on the Canvas > **End Edit Path** to finish editing.

- **The second way**:

1. Click the **Edit Path** button in the **Properties** pane to enable its editing mode (**Properties** pane > **Styles** tab > **Shape Path** section > **Edit Path)**.
2. Click the **Add Shape Path Keyframe** diamond to add the starting keyframe.



3. Drag the Playhead to the timestamp you want the animation to end. Click the **Add Shape Path Keyframe** diamond to add the ending keyframe.

Then, customize the freeform the way you want.

4. Click **End Edit Path** to finish adjustment. (**Properties** pane > **Styles** tab > **Shape Path** section > **End Edit Path)**.

See **Editing Freeforms** for more information.

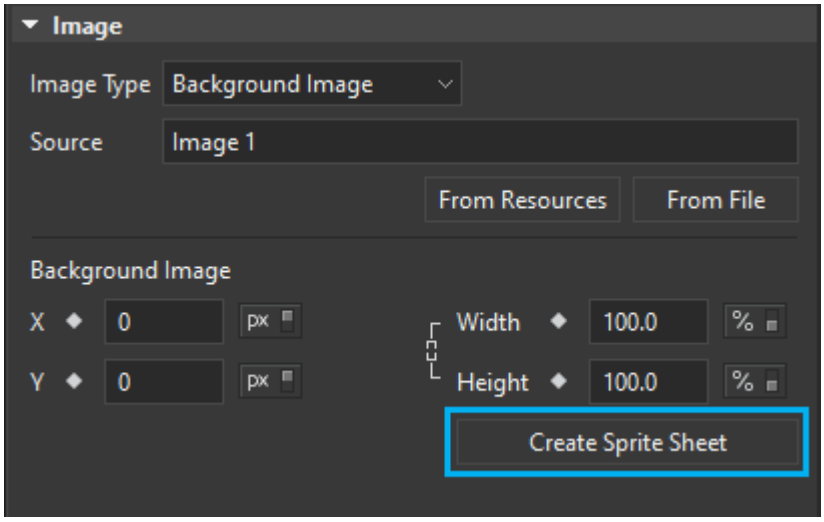
Note: The **Optimize Path for Morphing** option is available for Shape Path animation.

- If this check box is selected, it adjusts the paths automatically to animate from one freeform to another.
- If this check box is deselected, the anchor points of the original freeform will be mapped directly to that of the last edited freeform. This is useful when adjusting points manually. Notice that the original/last edited freeform should have the same number of anchor points, and the start point remains at the same position and direction.

Sprite Sheet Animations

A sprite sheet consists of multiple frames (also sprites) in one image. Using sprite sheets, you can create sprite sheet animation representing one or several animation sequences while only loading a single file. Sprite sheet animation changes which frame/sprite is rendered in quick succession to give the illusion of movement.

1. Select an image element.
2. Open the **Properties** pane > **Image** section > **Create Sprite Sheet**.

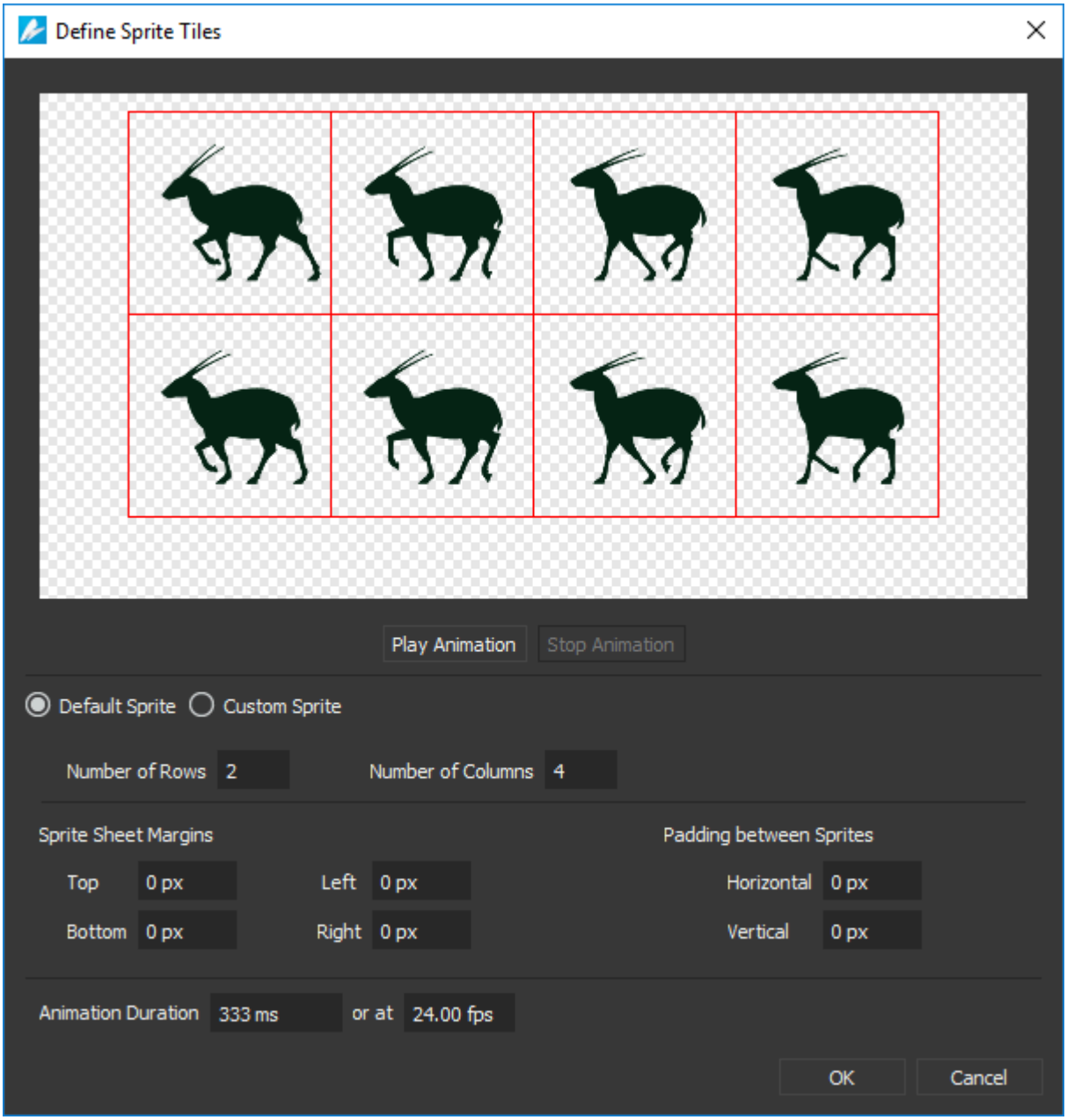


The **Define Sprite Tiles** dialog appears, providing two modes to define frames/sprites:

- **Default Sprite** generates frames automatically, which is suitable when a sprite sheet has uniform sized frames.
- **Custom Sprite** generates frames manually, which is suitable when a sprite sheet has non-uniform sized frames.

Default Sprite

To use the **Default Sprite** mode, ensure that the frames in the sprite sheet are of equal dimensions and the padding between them is uniform.



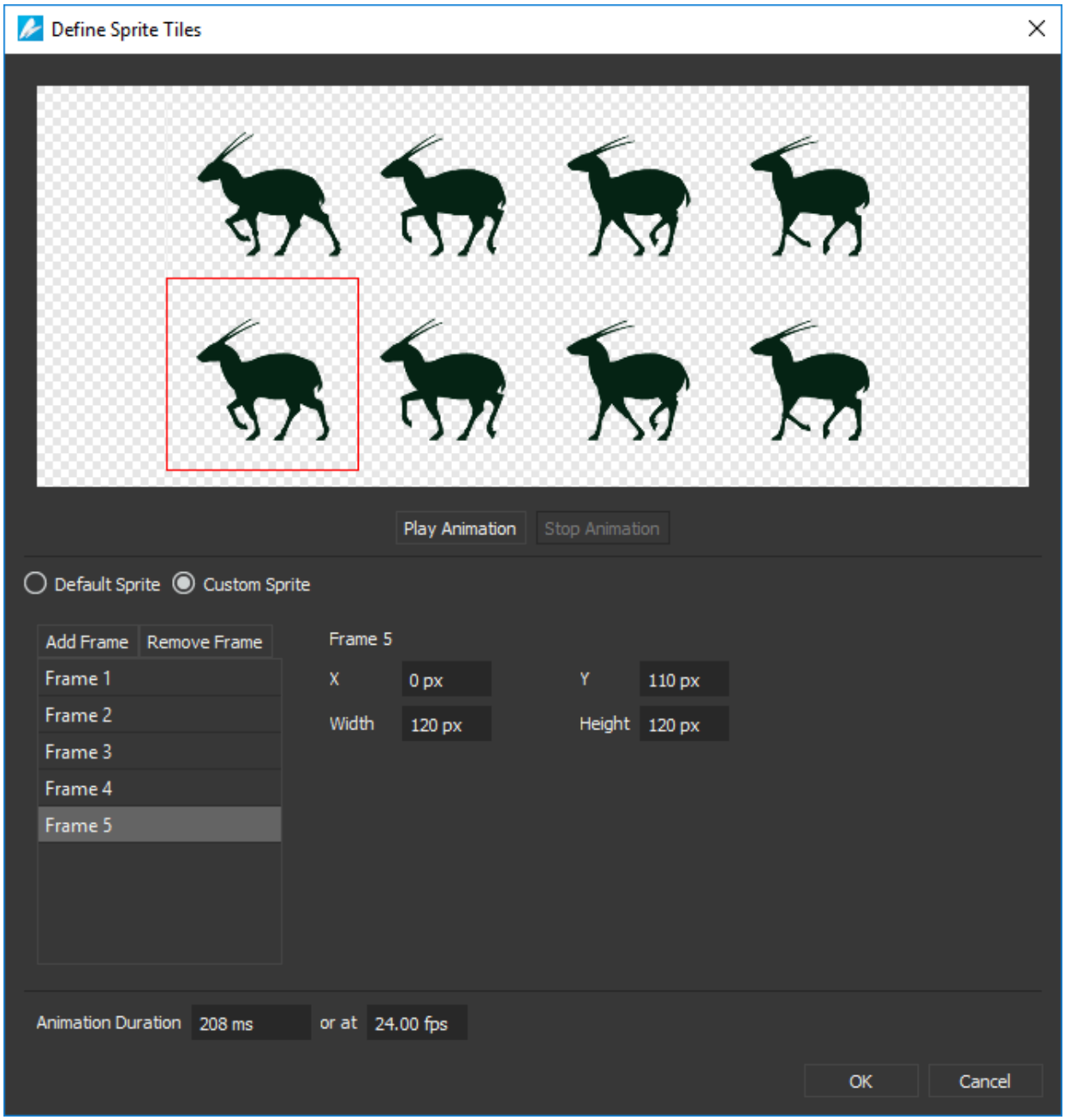
The dialog allows you to define both rows and columns for your sprite sheet animation.

1. Specify the **Number of Rows** and **Number of Columns**. Then, in the preview window, each frame is outlined by a red rectangle.
2. Specify the trimming options, namely **Sprite Sheet Margins** and **Padding Between Sprites**.
3. Specify the **Animation Duration** in milliseconds or the **Frame Rate** in FPS.

4. Click **Play Animation** to preview animation in the preview window. Then, click **Stop Animation** to pause the preview.
5. Click **OK** to create frames.

Custom Sprite

If the images in the sprite sheet are of different sizes, use the **Custom Sprite** mode to manually define frames.



Click **Add Frame** to add a frame. Immediately, a red frame rectangle appears in the preview window.

1. To define the frame size, either drag and resize the frame rectangle in the preview window or specify the frame's position (**X**, **Y**) and size (**Width**, **Height**) in text boxes.
2. Specify the **Animation Duration** in milliseconds or the **Frame Rate** in FPS.
3. Click **Remove Frame** to remove a selected frame.

4. Click **Play Animation** to preview animation in the preview window. Then, click **Stop Animation** to pause the preview.
5. Click **OK** to create frames.

Preset Effects and Text Animation

Apply preset effects to elements, convert effects to keyframes, or save keyframe animations as reusable custom effects. **Text Animation** controls how letters and words animate.

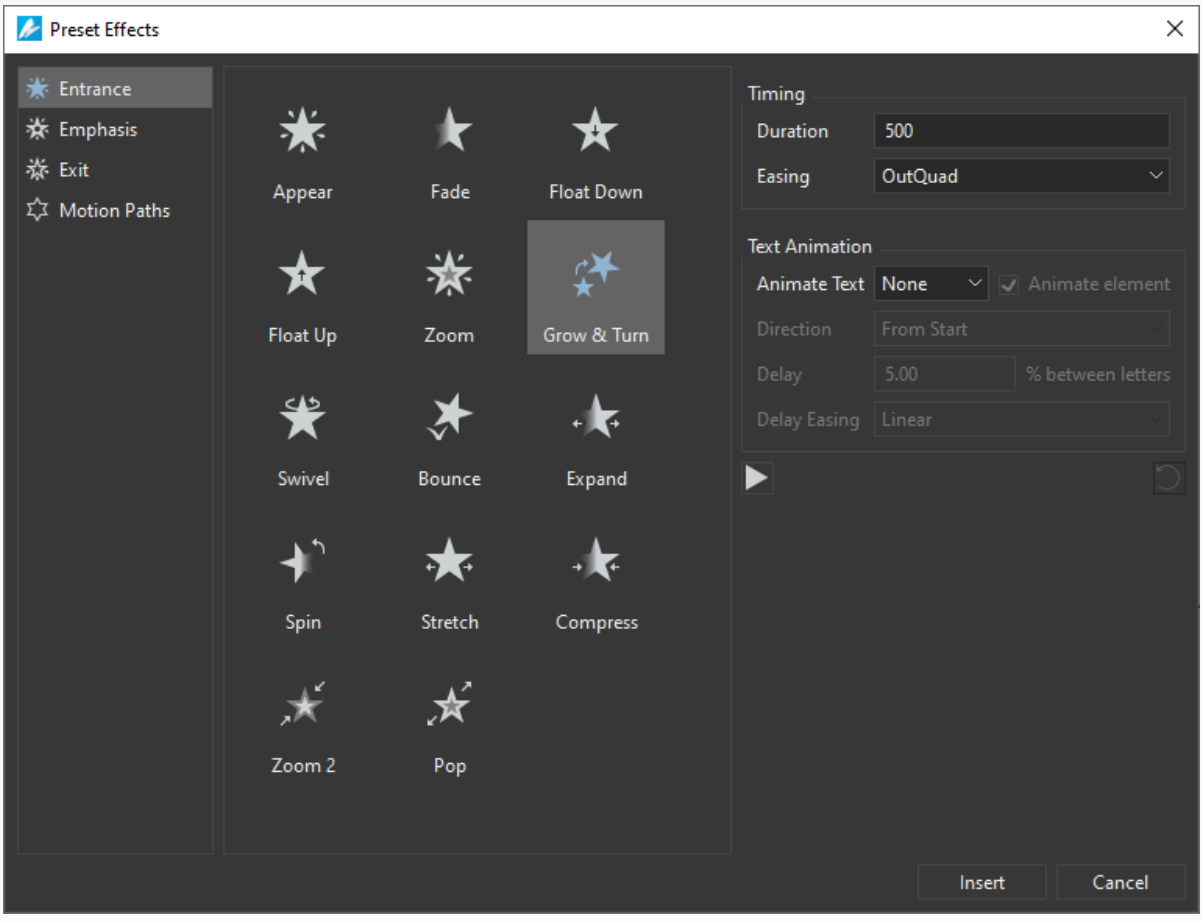
Insert Preset Effects to Elements

To add a preset effect to an element, follow the steps below:

1. Select an element on the Canvas, do either of the following:

- Click the **Timeline** menu > **Effects**.
- Click the **Effects** button in the **Timeline** pane.

Then, the **Preset Effects** dialog appears:

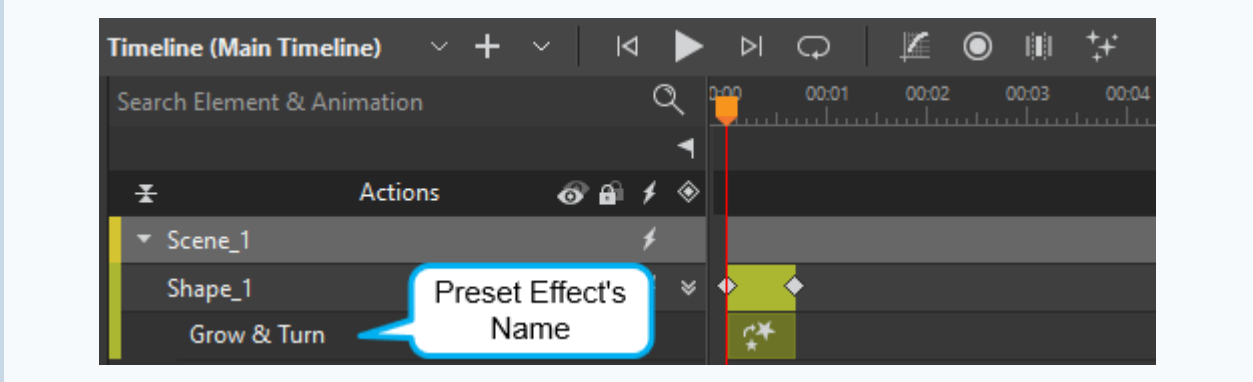


2. Select one out of four effect types: **Entrance**, **Emphasis**, **Exit,** or **Motion Path**.
3. Adjust **Timing** and **Text Animation** of the element in the right side of the dialog. You can change it now or later. Learn more in the next part.

4. Click the **Preview Effect** button at the bottom right corner of the dialog to see how the animation works. Otherwise, click **Restore Defaults** if you are not satisfied with the changes.
5. Double-click an effect, or click **Insert** to apply it to an element.

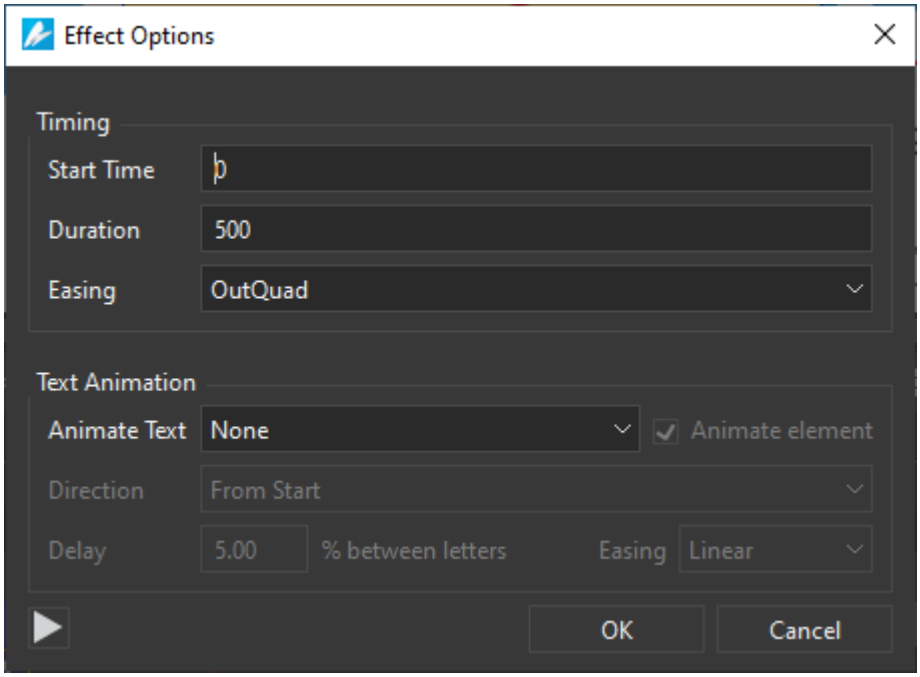
Customize the Preset Effect Timing

After inserting, a preset effect will be displayed in the **Timeline** pane with its name and the default duration. Its duration is indicated by two keyframes (except from the **Appear** and **Disappear** effects):



You can change its timing by performing any of the following:

- Click to select the preset effect segment and drag it along the Timeline to change its start time. Select the start or ending keyframe then drag it to change the duration.
- Right-click the preset effect segment > **Effect Options**. Alternatively, double-click the segment in the **Timeline** pane. This opens the **Effect Options** dialog allowing you to change some specific value:



- **Start Time**: Specify the start time of the animation.
- **Duration**: Set the duration of the animation.
- **Easing**: Select one type from the list to set easing functions. See **Easing** for more information.

Refer to **Set Animation for Text** to get detailed information about setting Text Animation section. After customizing, click **OK** to save the changes and close the dialog.

Copy and Paste a Preset Effect

To copy a preset effect, select it in the **Timeline** pane, do either of the following:

- Click the **Copy** command in the dockable toolbar.
- Right-click it > **Copy**.
- Press **CTRL+C**.

To paste a preset effect, select an element in the **Timeline** pane and place the Playhead at the timestamp you want to start the effect, perform any of the following:

- Click the **Paste** command in the dockable toolbar.
- Right-click it > **Paste**.
- Press **CTRL+V**.

Remove an Inserted Preset Effect

To remove a preset effect, select it in the **Timeline** pane, do one of the following:

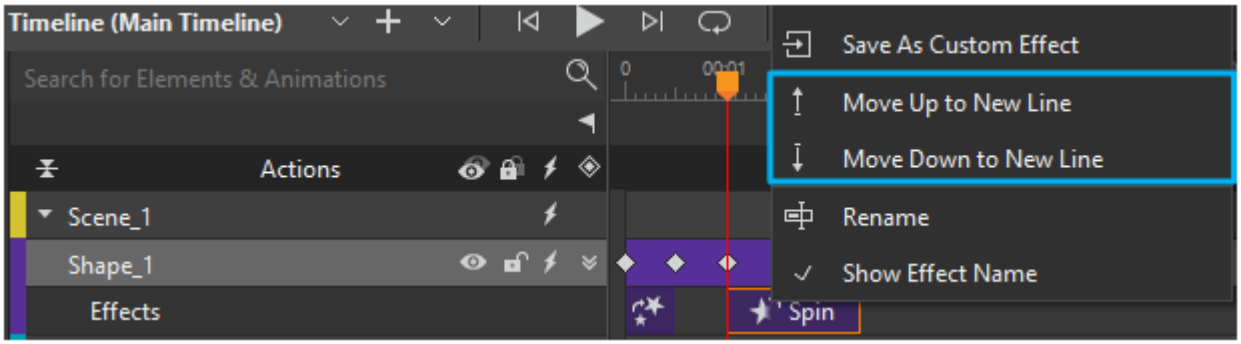
- Click **Delete** in the dockable toolbar.
- Right-click > **Delete**.
- Press **DELETE**.

Rename or Show an Effect Name

To rename an inserted effect, right-click its segment > **Rename**.

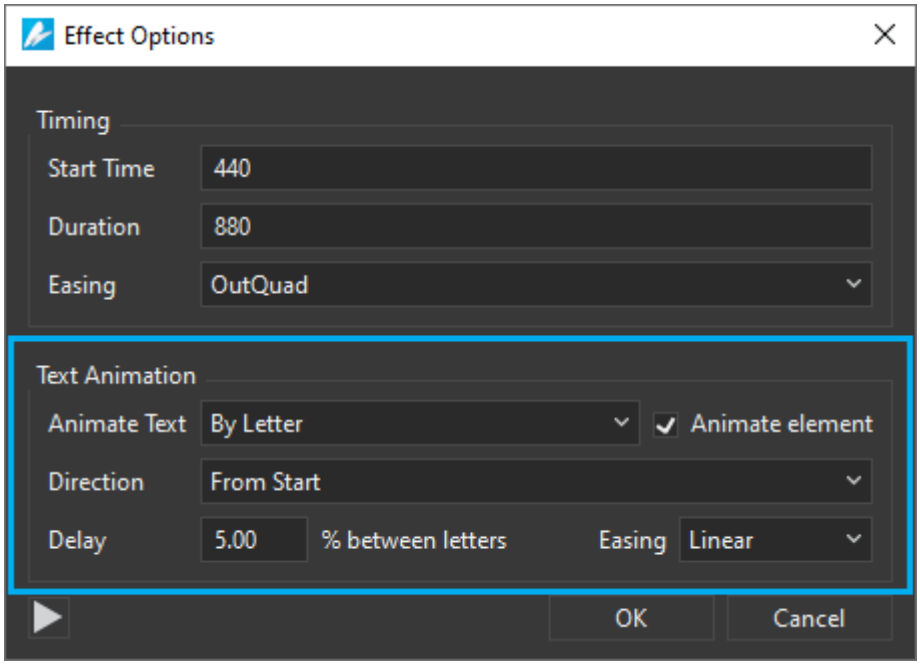
You can show or hide the effect name by right-clicking it > **Show Effect Name**. By default, this option is selected with a check mark symbol in the beginning.

Note: If you insert multiple effects for an element, they will display in the same line. To make any of them show up in a different line, right-click it > **Move Up to New Line** or **Move Down to New Line**.



Set Animation for Text

To set animation for text, pay attention to the **Text Animation** section of the **Effect Options** dialog:



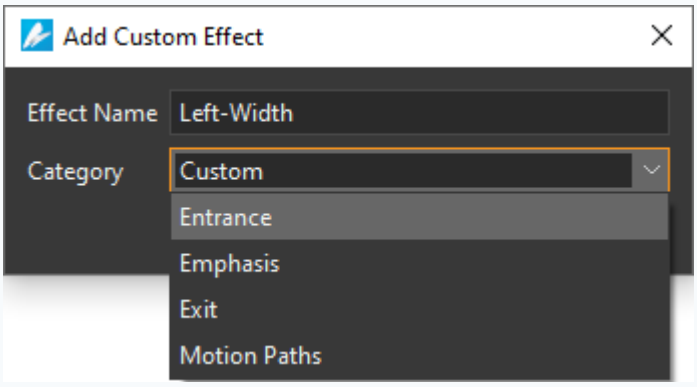
- **Animate Text**: Animate text **By Letter** or **By Word**. The default **None** option does not split the text for animation. Combined characters and emoji sequences stay together. On browsers without text-segmentation support, non-ASCII text runs remain together rather than being split into broken characters.
- **Animate Element**: Allows animate text with or without the element containing the text.
- **Direction**: Select the direction of the text animation. Saola Animate provides you several directions to choose from:
- **From Start**: Animate the text from the first letter/word to the last one.
- **From End**: Animate the text from the last letter/word to the first one.
- **From Center**: Animate the text from the middle letter/word.
- **To Center**: Animate the text from the first and last letter/word to the center.
- **From Position**: Animate the text from a specific position. Users can enter a value in the next percentage box to define the position.
- **To Position**: Animate the text from the first/last position to a specific one. Users can enter a value in the next percentage box to define the specific position.
- **Random**: Animate the text randomly.
- **Delay**: Set the delay between letters or words in text.
- **Easing**: Select easing functions for text delay. See **Easing** for more information.

You can click the **Preview Effect** button to see how your text animates before applying changes.

Save Keyframe Animations as a Custom Effect

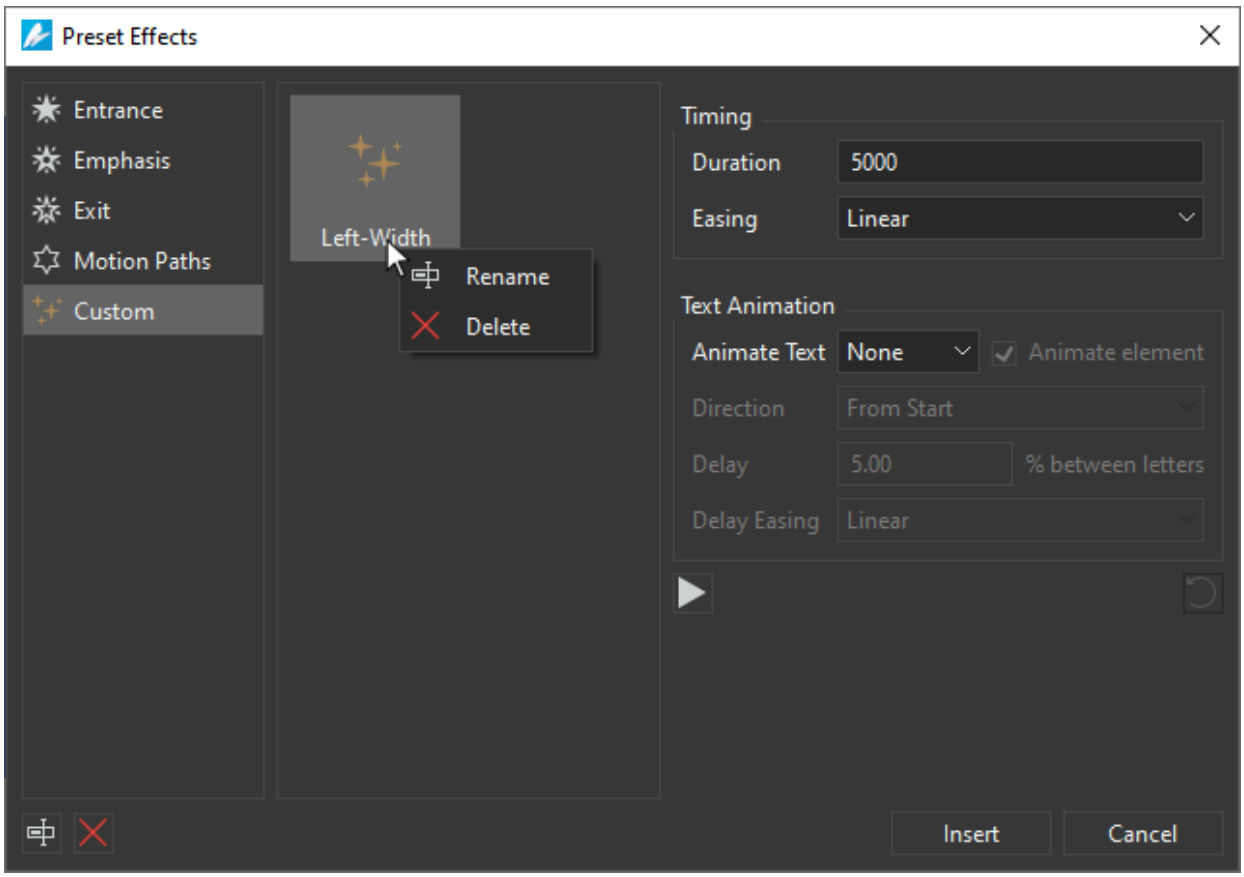
To save animations as a custom effect, do as follows:

1. Select the animation segment and right-click it > **Save as Custom Effect** to open the **Add Custom Effect** dialog:



2. Enter the effect name, and select one default category, or type a different category name to create a new one.
3. Click **OK** to finish.

After that, you can see your newly added custom category appears in the **Preset Effects** dialog:



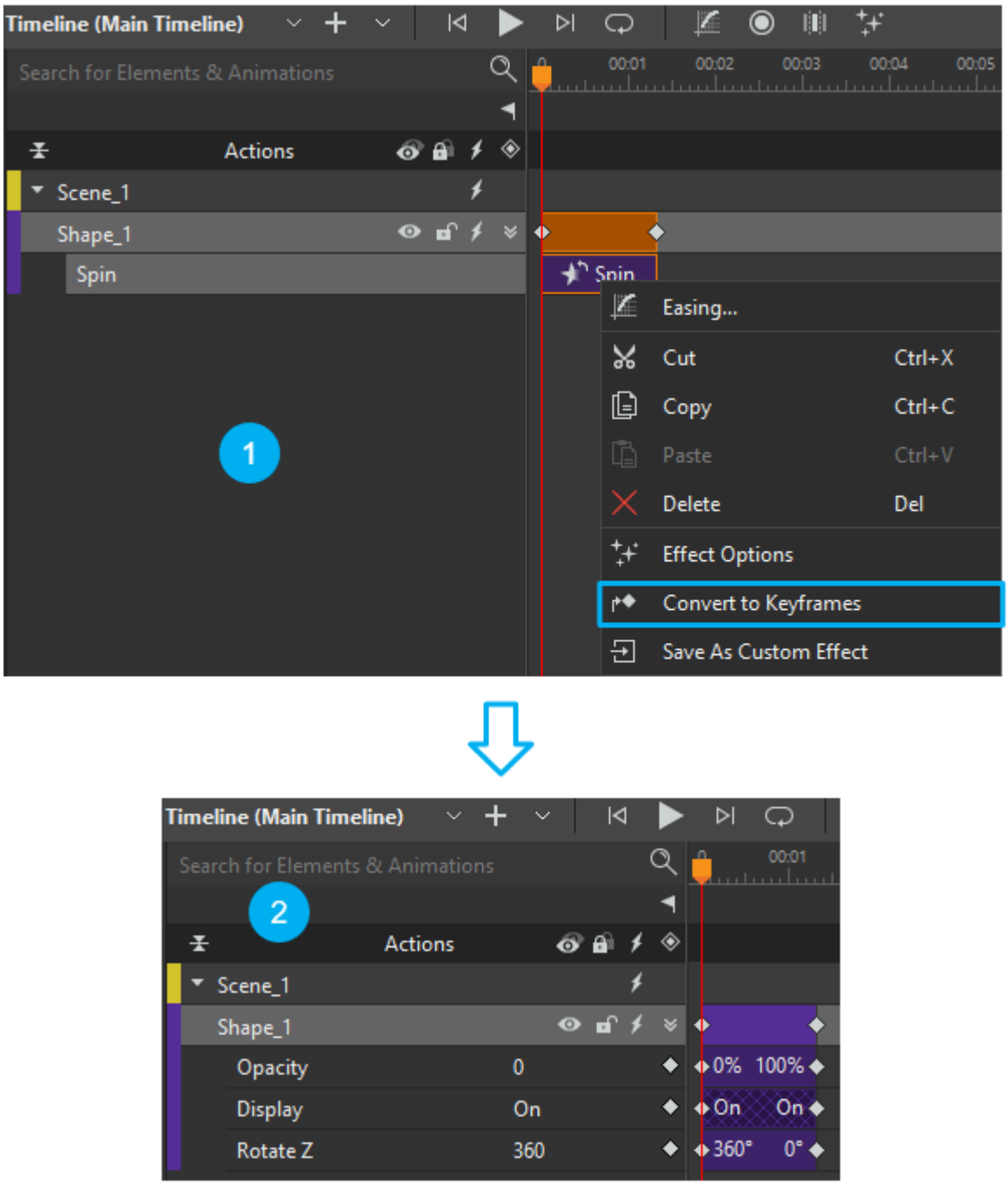
Here, you can rename or remove your custom effect:

- Rename a custom effect: Right-click it > **Rename**; or click the **Rename** button at the bottom left corner of the dialog.
- Delete a custom effect: Right-click it > **Delete**; or select the **Delete** button at the bottom left corner of the dialog.

Note: To remove a custom category, you have to remove all the custom effects in that category.

Convert Preset Effects to Keyframe Animations

You can convert preset effects to **keyframe animations** to customize the effects as you want. To do that, right-click the preset effect in the **Timeline** pane > **Convert to Keyframes** (1).



As can be seen, all the property animations used in this preset effect are converted to keyframes (2).

Note: Text Animations cannot be converted to keyframes. After converting, the animations for text will be removed.

Chapter 6: Adding Interactivity

Use events, actions, and triggers to add interactivity. For custom behavior, use JavaScript APIs, the built-in code editor, and external script resources.

Events, Actions and Triggers

Events are occurrences that determine when to trigger an action. For example, the Mouse Up event occurs when users release a mouse button over an element. Events can be caused by user interactions such as a mouse click. Or, they can occur based on some conditions within the tool such as when the timeline pauses.

Saola Animate provides **events** for five item types:

1. **Element events**: Mouse and touch events on elements.
2. **Scene events**: Scene-specific events, keyboard events, and all element events.
3. **Document events**: Document-specific events and scene events.
4. **Timeline events**: Timeline-specific events related to timeline playback.
5. **Preloader events**: Preloader-specific events related to the loading progress.

Events trigger actions. That is, actions perform a function that responds when an event occurs. Saola Animate offers many different built-in **actions**:

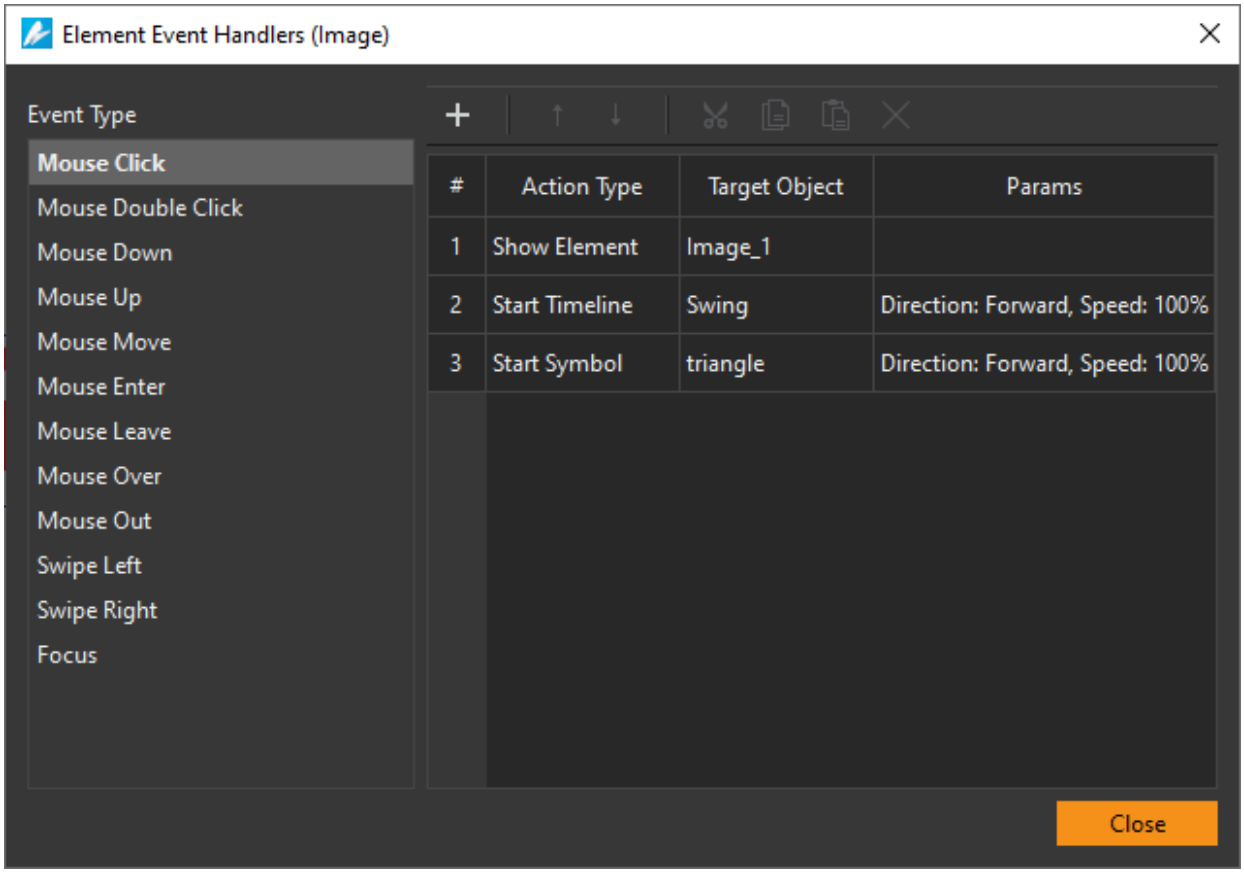
- **Timeline, Symbol, Media actions**: Control the playback of timelines, symbols, audio, and videos.
- **Visibility actions**: Show and hide elements, and toggle their visibility state.
- **Other actions**: Jump to a scene in the document, load a URL, change text of an element, and invoke a JavaScript function.

Triggers are actions placed on the timeline and executed without user control. You can insert many triggers on the timeline. Each trigger can hold different actions.

Adding Events - Actions

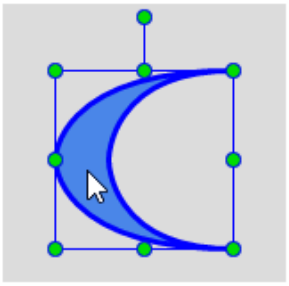
Add events and actions using the **Event Handlers** dialog. You can open this dialog by clicking the **Event Handlers**  buttons in the **Timeline**, **Properties**, **Document**, or **Elements** panes. You can also find the buttons in the context menu when you right-click an element on the Canvas.

In the **Event Handlers** dialog, the left side shows a list of available events that vary depending on the target, namely element, scene, document, timeline, and preloader. The right side is for actions that have type, target object (if any), and parameters (if any) and are arranged in order in a table. You can double-click a table cell to edit the item. The dialog also has a toolbar on the top containing buttons for adding, ordering, copying, and removing actions.

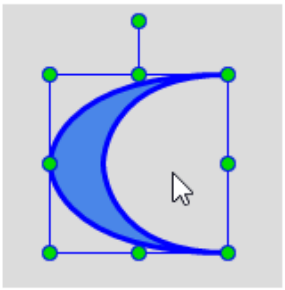


Note:

- Unpainted or non-filled interiors of elements do not receive mouse events, although the elements have closed borders. For example, a mouse click event is only taken into account when you click on the blue area of the moon shape element as shown in the image below. Otherwise, if you click on any non-filled areas of the element, no mouse event will be triggered.



Mouse events take into account when you click painted areas of elements.



Mouse events do not take into account when you click unpainted areas of elements.

- If you want to add events for a transparent element, you have to make the element transparent by using **Solid Fill** and setting **the Opacity level** of the **Fill Color** to 0.

Adding Actions

1. Choose an event to trigger the action.
2. Click **Add Action** to select the action and target object (if any).
3. Double-click the **Parameters** cell to edit the parameters. An action can have no or several parameters such as playback direction and URL.

In the **Timeline** pane, an element with actions has a highlighted **Event Handlers** button. So, it's easy to figure out which element holds interactivity.

Editing Actions

Double-click the **Target Object** and **Parameters** cells to change the target object and parameters (if any).

Replacing Actions

Double-click the Action Type cell to open the Action list. Then, select a new action to replace the existing one. Edit the new action's target object and parameters if needed.

Ordering Actions

The order of actions matters. Actions that are stated earlier are triggered before those stated later. You can reorder actions after adding them by clicking **Move Up** and **Move Down** in the toolbar.

Copying Actions

You can copy actions and paste them to the same or to another event. Just select the actions and use shortcuts or buttons in the toolbar to copy and paste them.

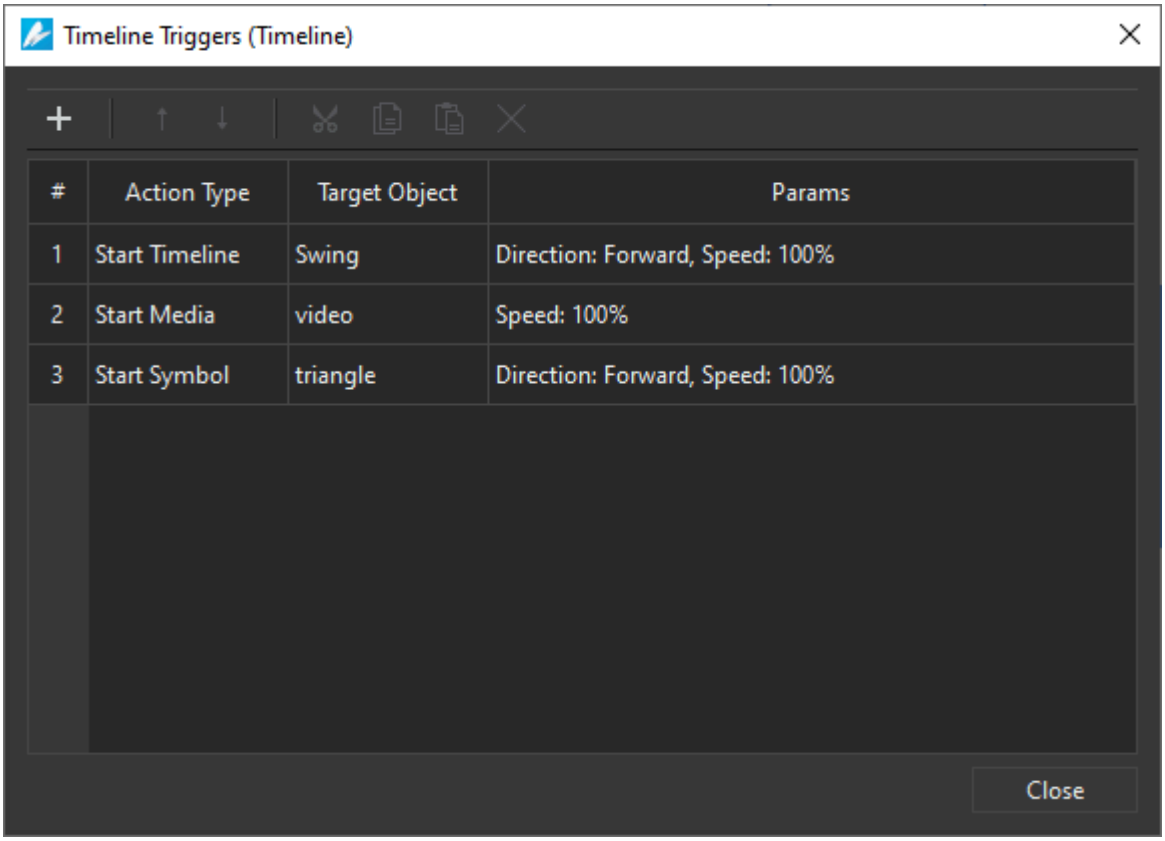
You can also copy all events and actions bound an element to another. On the Canvas or in the **Timeline** pane, right-click an element > **Copy All Event Actions**. Then, select another element, right-click it > **Paste Event Actions**.

Removing Actions

Select an action and press **DELETE** to remove the action. Alternatively, click **Remove Action** in the toolbar.

Inserting Timeline Triggers

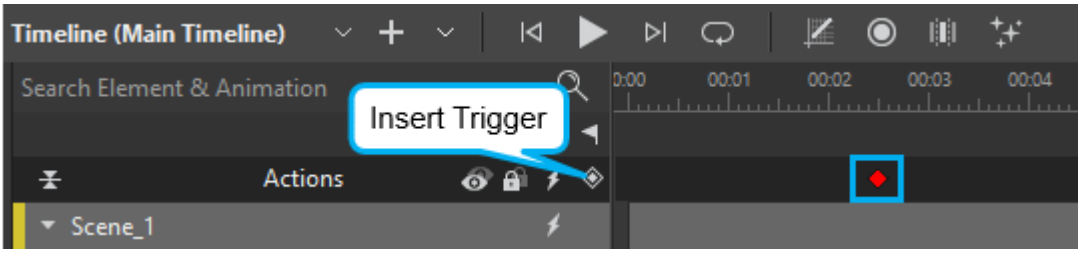
Timeline triggers fire automatically on the timeline, without user control. Manage timeline triggers in the **Timeline Triggers** dialog which looks similar to the **Event Handlers** one except that it doesn't have the Event Type column.



Inserting Triggers

1. Position the Playhead at the point you want to add a trigger.
2. Press **ALT+T** or click the **Insert Trigger** button to open the **Timeline Triggers** dialog.
3. Click **Add Action** in the toolbar to add an action. Do the same steps as when you add actions in the **Event Handlers** dialog.

Click **Close** to apply changes and close the dialog. In the **Timeline** pane, the trigger is inserted at the Playhead position. It appears as a red diamond on the Actions bar.



Editing Triggers

Double-click a trigger to open the **Timeline Triggers** dialog. Then, edit the actions as desired.

Moving Triggers

In the **Timeline** pane, click and drag a trigger to a new position.

Copying Triggers

Click a trigger on the Actions bar. When selected, it turns yellow. Then, use shortcuts to copy (**CTRL+C**) and paste (**CTRL+V**) the trigger to the new Playhead position. You can also use commands in the main tool bar right-click and select **Copy** to get the same result.

Cutting Triggers

Select a trigger you want to cut then right-click it and select **Cut**. Alternatively, you can press **CTRL+X** or using Cut command on the dockable toolbar.

Removing Triggers

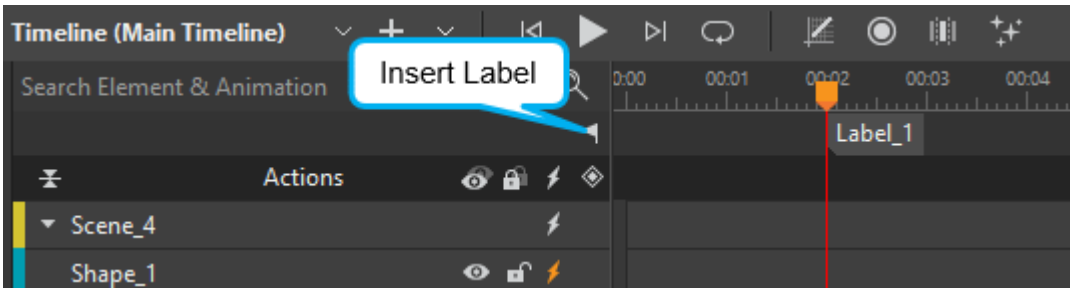
Select a trigger and click **Delete** in the dockable toolbar or press **DELETE** to remove it. Besides, you can right-click and select **Delete** from the context menu. If you delete all actions bound to a trigger, the trigger is also deleted.

Inserting Timeline Labels

Timeline labels mark important points on the timeline. They serve as bookmarks to which you can refer later. Labels appear below the timeline ruler and right above the Actions bar, giving you the benefit of both a word and number. Give a label a descriptive name and they prove highly useful for triggers and actions. For example, you want to add a trigger that seeks a time. Instead of jumping to somewhere like 0:00:12.357, add a "jump" label and seek it.

Inserting Labels

1. Drag the Playhead to a special point on the timeline that you want to mark.
2. Press **ALT+L** or click the **Insert Label** button (the flag icon). A label appears at the Playhead position with its default name such as Label_1.



Rename a label right at that time or afterward. If you created a label and later want to rename it, double-click it and enter a new name. Note that if you change the label's name, you have to go back to any triggers or actions using that label and update its name.

Moving Labels

Click and drag a label to a new spot. This comes in handy when you use labels to create actions. For example, you use a "jump" label in a trigger that seeks a time. When you're fine- tuning the animation, odds are you're constantly adjusting the timing to find a good time to "jump". Without a label, you'd have to manually update the time value repeatedly. But using a label, you only need to move it to a new spot and preview your changes.

Copying Labels

Select a label and press **CTRL+C** to copy, then press **CTRL+V** to insert the copied labels into the current Playhead position. Alternatively, use the options in the label context menu.

Removing Labels

Select a label and press **DELETE** to remove it. Or, right-click and select **Delete** from the context menu.

Chapter 7: Using Symbols

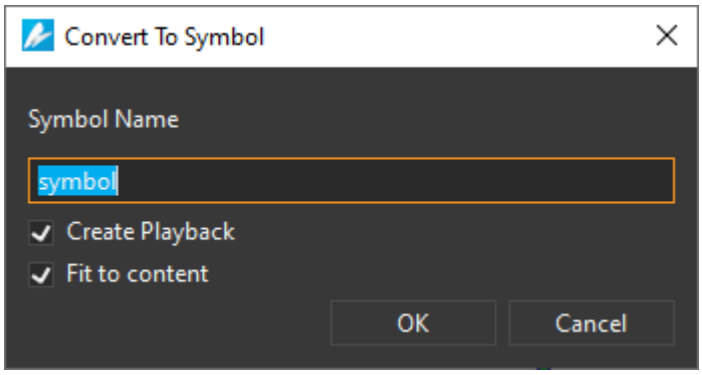
Symbols are reusable resources with their own scenes, timelines, animations, and interactions.

A **symbol** is a resource in the Resources pane. A **symbol element** places that resource on the Canvas; multiple elements can use the same symbol. Create symbols by converting Canvas elements.

Converting Elements to Symbols

Create animation symbols by converting one or multiple elements on the Canvas.

1. Select one or multiple elements of the same parent.
2. Right-click the selected elements > click **Convert to Symbol**.
3. In the **Convert to Symbol** dialog, type a unique name for the new symbol.



4. The **Create Playback** check box is selected by default to create playback animation for the new symbol. If you don't want to create symbol playback at this time, clear the check box. Later, use **actions** to control symbol playback.
5. The **Fit to Content** check box selected by default helps to fit the symbol element to the content, according to its size and position. If this box is deselected, the symbol element will take up its scene's size. In this case, the size of the symbol element is set to be relative to the scene size and starts at 100% of the scene size. When changing the size of the symbol element in the main document, the size of the symbol in editing mode also changed. If you want the size of the symbol element to be absolute, change the size unit to pixels (px).

> In a responsive project, if we add a symbol element (which hasn't been inherited from the base layout) into a responsive layout, this option will be disabled.

6. Click **OK** to convert selected elements into a symbol.

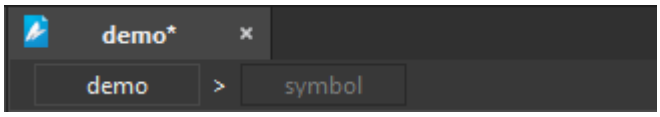
Saola Animate adds the new symbol to the **Resources** pane. The selection on the Canvas becomes a symbol element of that symbol.

Saola Animate also lets you create responsive symbols which have layouts and can respond to the container size changes. See **Responsive Symbols** for more details.

Editing Symbols

Double-click a symbol element on the Canvas to enter the symbol editing mode where you can edit the embedded symbol. Alternatively, double-click a symbol in the **Resources** pane.

The editor then displays the content of the symbol which resembles a normal Saola Animate document with scenes and timelines. You can work with elements, animations, and interactivity as you do with a normal document. At the top of the Canvas, there is a stack of buttons displaying the symbol hierarchy. These buttons not only show which symbols you are editing but also help navigate the hierarchy. In the figure below, **demo** is the main document. The **symbol** contains symbol that you are working on.



To navigate the symbol hierarchy, do one of the following:

- Click the symbol/document name in the hierarchy to navigate to a desired symbol or the main document. For example, click the demo button to close the symbol and return to the main document.
- Double-click outside the content of the symbol on the Canvas to navigate to the closest parent symbol. For example, double-click outside the content of the symbol_1 to jump up to jump up to the main document.

Editing a symbol updates all related symbol elements in a document, which helps maintain consistency and save a lot of time. That's why symbols are useful for sharing identical elements across scenes or at different positions in the same scene. Meanwhile, you can edit each symbol element of the same symbol differently. Editing a symbol element updates that element only.

Exporting and Importing Symbols

You can export symbols for reusing and sharing between Saola Animate documents.

Exporting Symbols

The **Resources** pane manages all resources of a document, including symbols. From here you can export a symbol to file (*.*saolasym*).

1. Select the symbol you want to export.
2. Click **Export** in the toolbar, or right-click > **Export** .
3. Provide the file name for the exported symbol.

Importing Symbols

When importing a symbol into a document, you also import all resources used in this symbol into the target document. These resources become resources of the document, not those of the symbol. Do one of the following to import a symbol:

- Drag and drop a symbol onto the Canvas.
- Copy and paste a symbol from your computer.
- Click **Symbol** in the dockable toolbar and select a symbol from your computer.
- Import a symbol into the **Resources** pane and then add the symbol to a scene.

Chapter 8: Using Fonts

Choosing Fonts

Choose from three font groups:

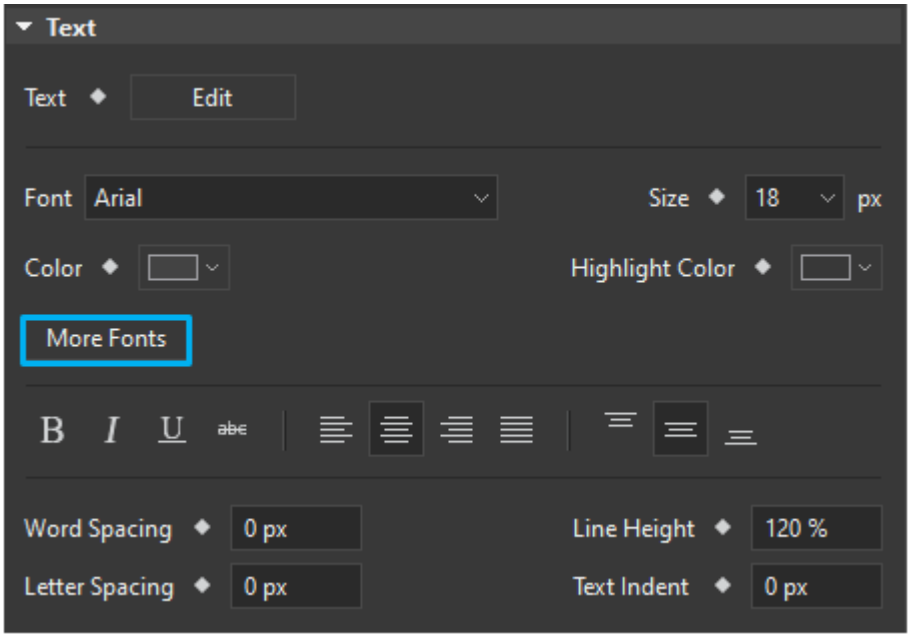
- **Web safe fonts**: Fonts are most likely to be available in a wide range of browsers and different computer systems. These fonts will show consistently across almost all browsers.
- **System fonts**: Fonts are already installed on your computer. You can use these fonts in your document and choose to export them with the project (**Document** pane > **Embed System Fonts**). That way, your text maintains consistent appearance despite the computer that plays the output.
- **Google fonts**: Fonts available through the **Google Fonts** dialog.

Adding Google Fonts

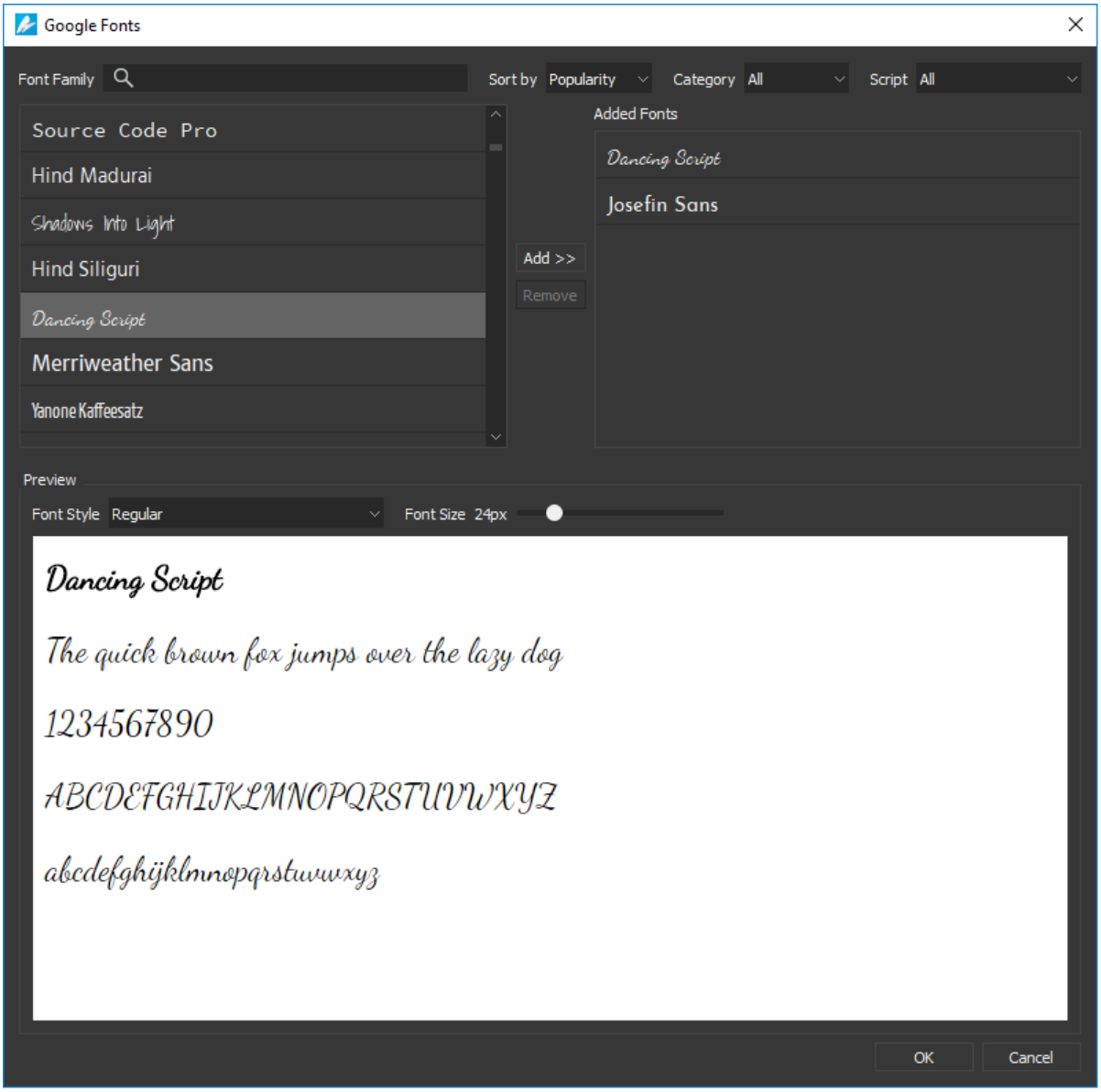
Add fonts from Google Fonts using the following steps:

1. Click the **Font** combo box in the **Floating Text Format** toolbar or in the **Text** section of **Properties** pane > **Google Fonts** > **Add fonts...**

> Alternatively, access the **Properties** pane > **Text** section, click **More Fonts**.



This opens the **Google Fonts** dialog which lists all the available Google fonts.



You can search for specific fonts or filter fonts by font properties.

- **Search**: Search the font by family names.
- **Sort By**: Sort the fonts based on popularity, alphabetical, date added, or trending.
- **Category**: Filter fonts by typefaces, namely **Serif**, **San serif**, **Display**, **Handwriting**, and **Monospace**.
- **Script**: Filter fonts by writing systems such as **Arabic**, **Bengali**, **Greek**, **Khmer**, etc.

When you select a font, it will be applied for the text in **Preview** pane. In this pane, you can change font style, font size, and text for preview purpose.

2. To add fonts to the document, select the fonts and click the **Add** button. The selected fonts now appear in the **Added Fonts** pane. You can select any added font to apply to the currently selected text or element, if any.
3. Click **OK** to apply changes and close the dialog.

Google fonts added to your document will appear in the **Font** combo box. They also become font resources in the **Resources** pane.

Note: Adding Google fonts requires a network connection.

Removing Google Fonts

To remove a Google font, do the following:

1. Open the **Google Fonts** dialog.
2. Select the fonts you no longer need in the **Added Fonts** pane.
3. Click the **Remove** button to remove them from the selection list.
4. Click **OK** to apply changes and close the dialog. The fonts no longer appear in the

Font combo box nor the **Resources** pane.

Besides, you can open the **Resources** pane, select the Google font you don't want and press **DELETE** or click **Delete**  in the toolbar.

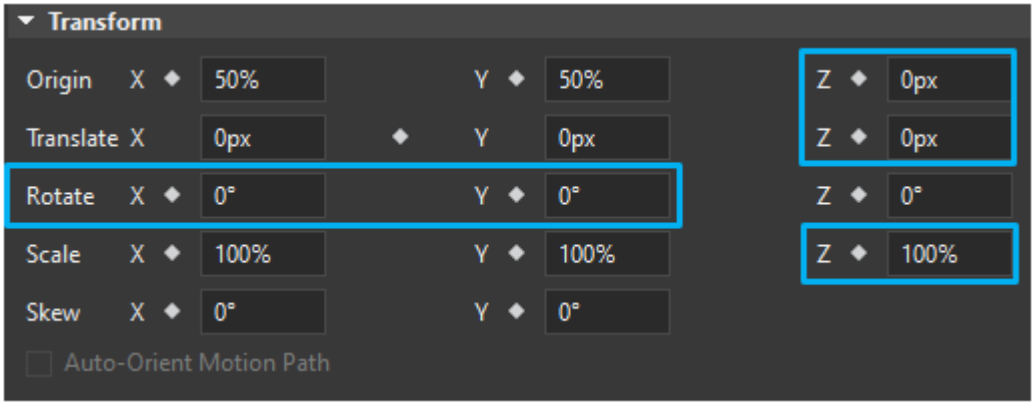
Chapter 9: Using 3D Transformation

3D transforms position and rotate flat elements in three-dimensional space; they do not create 3D models.

3D Transformation Properties

Use the horizontal x-axis, vertical y-axis, and depth z-axis to transform elements.

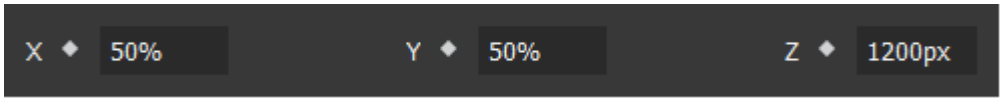
All the properties to create 3D transformation will be found in the **Properties** pane > **Position & Size** > **Transform** section of an element.



Property	Remark	Animatable
Origin Z	Set the z coordinate of the origin point around which the element is transformed. A value of zero (0) means that the transform origin is located in the element plane.	Yes
Translate Z	Move the element along the z-axis. A positive value moves the element toward the viewer, while a negative value moves it away. This property makes the element plane parallel with its original plane.	Yes
Rotate X, Y	Rotate the element around the x, y-axis. These properties make the element has a depth in the original coordinate (i.e points in the element may have different z values), though it is still flat in the new coordinate.	Yes
Scale Z	Scale the element along the z-axis. Please be noted that it just scales the distance (along the z-axis) to the origin, it doesn't help converting a square into a cube, the element is still flat.	Yes

Perspective defines the viewing point for the scene.

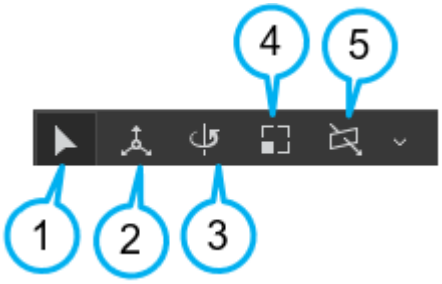
In Saola Animate, perspective property can be adjusted by **Perspective Section** in Scene properties pane.



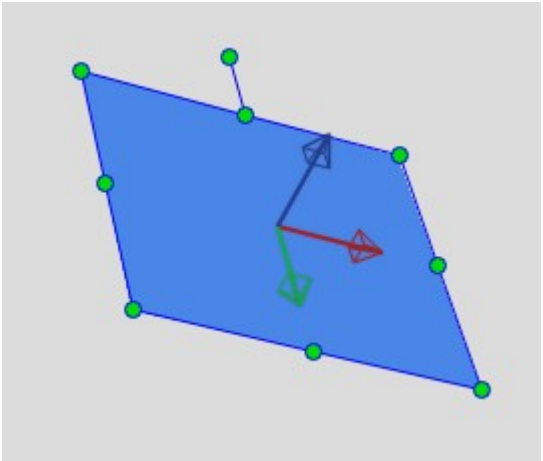
X, Y values are position of the viewing point in the scene plane, relative to the scene width, height respectively. Z value is the distance from the viewer to the scene.

3D Transformation Tools

Use the following Canvas tools to adjust 3D transforms:

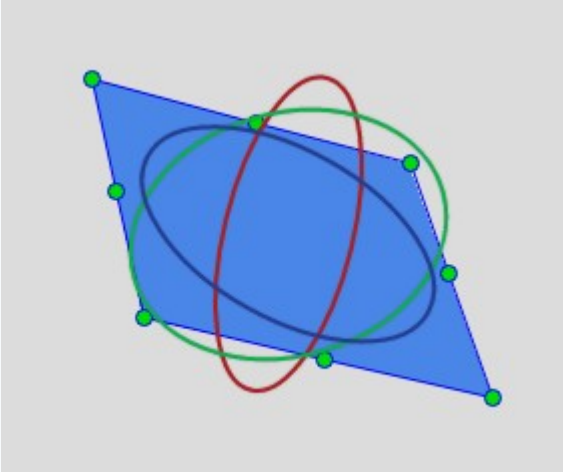


1. **Select Tool**: To select and edit elements normally. This tool is also used to deselect other 3D transformation tools.
2. **Translate Tool**: To adjust translation of the selected elements on Canvas along three axes.



> When this tool is enabled, there are three arrows rendered on the focus element. They're the red, green and blue arrows, which represent for the x, y, z-axis in the element local coordinate, respectively. Drag these arrows to move the selected elements along the corresponding directions.

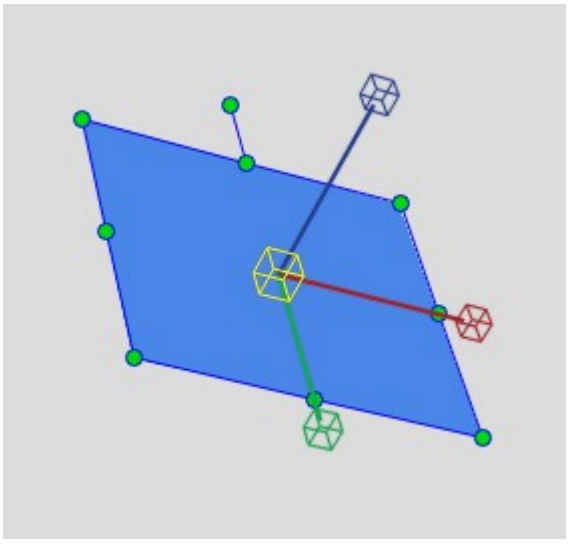
3. **Rotate Tool**: To rotate the selected elements on Canvas around three axes.



When this tool is enabled, there are three ellipses rendered on the focus element. They're the red, green and blue ellipses, which allow rotating the selected element around the local x, y, z-axis respectively when dragging them.

Besides, if you hover your mouse out of these ellipses, but still inside the focused element, the mouse cursor will change to the crosshair icon . It indicates that you can drag to rotate the selected elements freely.

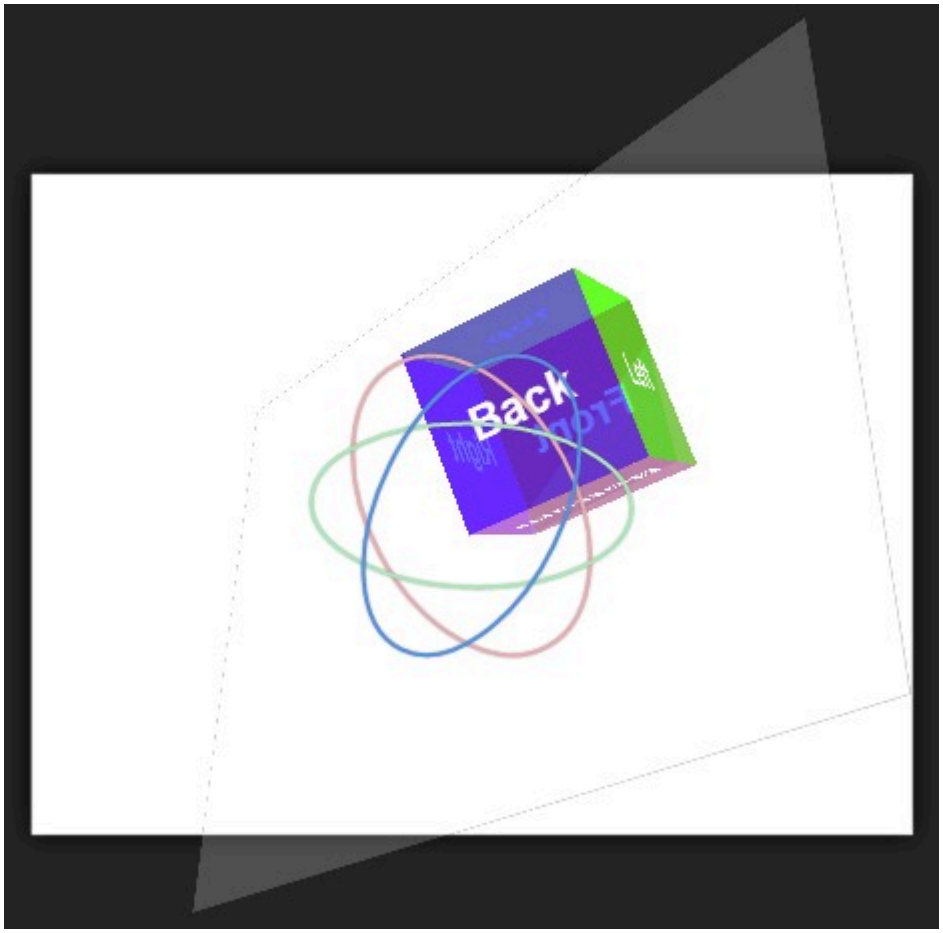
4. **Scale Tool**: To scale the selected elements on Canvas along three axes.



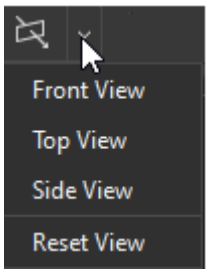
When this tool is enabled, there are three arrows (ended by cubes) rendered on the focus element. They're the red, green and blue arrows, which represent for the x, y, z-axis in the element local coordinate, respectively. Drag these arrows to scale the selected elements along the corresponding directions.

In case you want to scale along all axes uniformly, just drag the yellow cube at the transform origin of the focused element.

5. **Rotate View Tool**: Change the editing view to inspect elements in 3D space. This does not affect exported output.



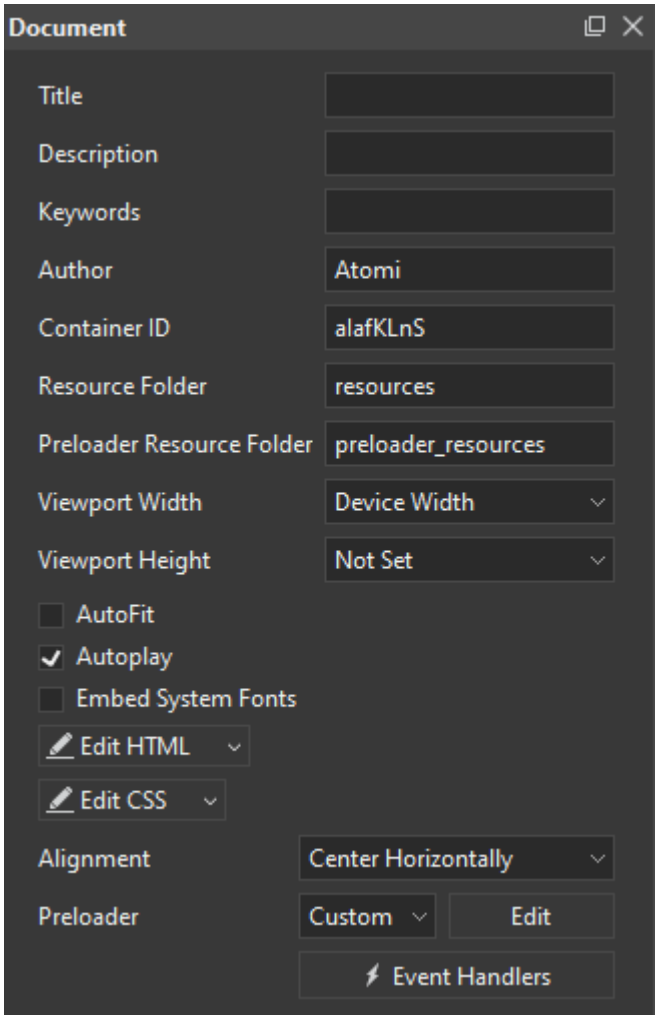
This tool can be used the same way as the Rotate tool. Saola Animate also provides some presets to adjust the view. Click the arrow next to Rotate View Tool icon to show the menu below.



Chapter 10: Previewing and Exporting Projects

Updating Document Properties

Edit document properties in the **Document** pane to set up global parameters of a project and export options.



- **Title**: Export the content to the <title> tag to define the title of the HTML document, shown in the browser title bar or on the page tab. The <title> tag also provide a title for the page when it is added to favorites and displays a title for the page in search- engine results.
- **Description, Keywords, Author**: Define the value of the <meta> tag to specify the description, keywords, and author of the HTML document. Metadata will not be displayed on the page but will be machine-parsable.
- **Container ID**: Define a unique identifier of the HTML tag in which the HTML5 output is embedded. The ID can contain only alphanumeric characters (A-Z, a-z, 0-9), underscore (_), and hyphen (-), and must start with an alphabetic character for CSS selector to work without escaping.
- **Resource Folder**: Define the folder path which contains the resources of the HTML5 output. This path is relative to the path of the HTML5 output. Make sure the path doesn't contain any of the following character: \ : * ? " < > | and uses / as a directory separator.

- **Preloader Resource Folder**: Define the folder path which contains the resources of the custom preloader of the HTML5 output. This option is only available when you use **custom preloader**.
- **Viewport Width/Height**: Define the value of the viewport <meta> tag to control layout on mobile browsers. Select a value from the combo box or enter an integer value for the viewport width/height in pixels. **Device Width/Height** sets the width/height of the output to follow the screen width/height of the device. Choosing **Not Set** excludes any viewport <meta> tag from the document content.
- **AutoFit**: Automatically scale the document without changing the proportion to fit it into the container. This option is also applied to symbol documents.
- **Autoplay**: Automatically play the document when a browser opens, otherwise the document must be called to start using **actions**.
- **Embed System Fonts**: Embed any used system fonts in the HTML5 output using the CSS3 Web Fonts specification. Text will maintain appearance no matter the font installation on end users' computer.
- **Edit HTML**: Open the **HTML Output** editor where you can edit the HTML of the document. Be careful when editing tags wrapped within {$} as these tags will be replaced by program-generated contents. After editing, if you want to go back to the original content, click **Restore Defaults** (the drop-down arrow).
- **Edit CSS**: Open the **CSS Output** editor where you can edit the CSS of the output. After editing, if you want to go back to the original content, click **Restore Defaults** (the drop- down arrow).
- **Alignment**: Decide how the document should be displayed in the browser window. By default, the document is centered horizontally within the browser. This option is also applied to symbol documents.
- **Preloader**: Use either a default or a custom **preloader** as a visual indicator that is displayed when the document is loading.
- **Event Handlers**: Add interactivity to control the behavior of the document.

Previewing Scenes and Projects in Browser

Preview the current scene or the whole project in a browser to test its appearance and behavior.

Previewing scene lets you view a single scene's animation and interactivity. In this mode, you cannot perform any actions navigating to other scenes. Meanwhile, previewing project lets you preview the whole project so that you can review all scenes' animation and interactivity, from the first to the last scene.

To preview the current scene in a browser, do one of the following:

- Press **CTRL+F5**.
- Click the drop-down arrow next to the **Preview** button in the dockable toolbar > **Preview Current Scene in Browser** .
- Click **File** > **Preview Current Scene in Browser** in the main menu.

To preview the whole project, do one of the following:

- Press **F5**.
- Click the drop-down arrow next to the **Preview** button in the dockable toolbar > **Preview Project in Browser** .
- Click **File** > **Preview Project in Browser** in the main menu.

Note: A project will be previewed in only one tab in browser. When you preview the same project in a browser, Saola Animate will close the former tab and open a new tab.

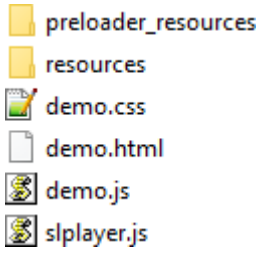
You can also preview your work using the Canvas. Click **Play/Stop** in the **Timeline** pane to play the current scene. Also, drag the Playhead along the timeline to get the same result. Remember that this only plays scene's animation, no interactivity involved.

Exporting Projects to HTML5

Saola Animate exports documents to HTML5. To export, do one of the following:

- Press **CTRL+ALT+E**.
- Click **Export to HTML5** in the dockable toolbar.
- Click **File** > **Export to HTML5** in the main menu.

Once the project is exported to HTML5, it will be stored in a folder with structure as follows. The files are named based on the project title or project name.



- **preloader_resources**: Optional folder which contains all resources inserted into the custom preloader. If the custom preloader doesn't use any external resources such as images, audio, or videos, this folder will not appear.
- **resources**: Folder which contains all resources inserted into the project.
- **demo.css**: Document-specific data which defines the CSS style of the document.
- **demo.html**: HTML document. Open this file to play the project in a browser.
- **demo.js**: Document-specific data which defines all scenes, timelines, elements, and animations of the document.
- **slplayer.js**: The main Saola Animate HTML5 player.

Exporting Projects to Video

Saola Animate can export projects as MP4, WebM, or MKV. You do not need to install a separate FFmpeg executable for the built-in exporter. When Saola finds a valid external FFmpeg executable, it uses that command-line exporter instead. On Windows, if none is found, the **Export Video** dialog shows **Download FFmpeg** next to the output format: click it to download FFmpeg into your user profile, which Saola uses right away. While it downloads, the progress dialog shows the license of that FFmpeg and a link to its source code. When Saola finds FFmpeg, the dialog shows its version in place of the button, followed by (GPL) for a GPL build; point to it to see the path of the FFmpeg executable. Saola also finds a valid FFmpeg executable in PATH when it starts. Encoder availability can differ between these paths and depends on the installed FFmpeg build and hardware.

Review exported video with sound. Interactive input is not retained in video.

For the external FFmpeg path, WebM with Opus audio converts an unsupported selected sample rate (such as 44,100 Hz) to 48,000 Hz. A failed audio preparation step stops export instead of silently producing a video without the intended audio.

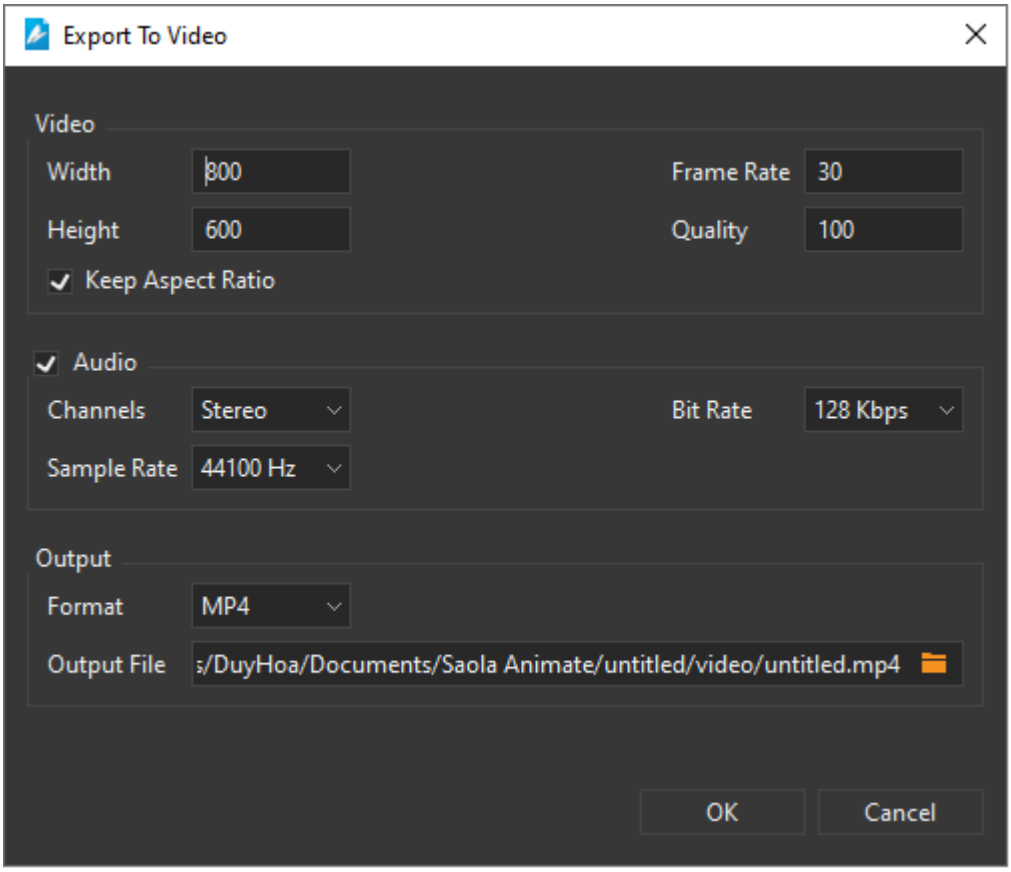
Video duration is the sum of all scene transitions and main timeline durations. Main timelines include triggers, labels, animations, and effects; an explicit timeline duration is retained even without animations.

- If the main timeline doesn't have any animations but you still want the scene to be shown for some time in the video, you can add a **label** to that main timeline. You can also use label to make a scene last longer.
- Actions occurred by user interactions (e.g. a mouse click) will not work in exported videos. However, actions without user control that are fired by **timeline triggers** do. For example, an **interactive timeline** triggered to start in the main timeline will work in the exported video.

To export a project to video, do one of the following:

- Click **Export to Video** in the dockable toolbar.
- Click **File** > **Export to Video** in the main menu.

The following dialog will appear, allowing you to specify the exporting options:



Option	Description
Video	
Width	The width of the exported video.
Height	The height of the exported video.

Keep Aspect Ratio	Selected by default. Clear this check box if you want the height/width to not be automatically calculated upon aspect ratio when changing the width/height respectively.
Frame Rate	Set between 1 and 60 fps (frames per second). A higher frame rate may increase the video size.
Quality	Choose 1-100. Higher values increase quality and file size.
Audio	
Audio	Selected by default. Clear this check box if you want to remove audio from the output.
Channels	Select either **Stereo** or **Mono**.
Sample Rate	Choose 11025, 22050, 44100, or 48000 Hz.
Bit Rate	Applicable to MP4 format. Select from **64**, **96**, **128**, **192**, **256**, and **320** Kbps. The higher the bit rate you select, the better the audio quality is.
Quality	Applicable to WEBM format. Select in the range [1,100]. Higher value, better audio quality, and larger file size.
Output	
Format	Select from **MP4**, **WEBM**, and **MKV** formats.
Output File	Specify the file path and name of the exported video.

Chapter 11: Using Canvas

Use the Canvas to add, arrange, and edit scene elements, and to preview animations.

If the Canvas lags or fails to display elements, right-click it and select **Reload Canvas**.

Rulers

The horizontal and vertical rulers appear along the top and left edge of the Canvas help position elements precisely. To show or hide the rulers, click **View** > **Rulers** in the main menu.

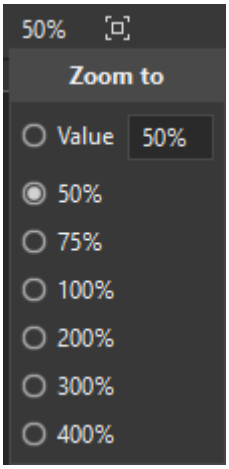


Zooming Canvas In and Out

Zoom the Canvas to view the entire scene or a particular area of it. The minimum value for zooming out is 10% while the maximum value for zooming in is 400%.

There are several ways you can use to zoom the Canvas:

- Hold down **CTRL** and scroll the mouse wheel up to zoom in and scroll the mouse wheel down to zoom out. Alternatively, press **CTRL+(=)** to zoom in and **CTRL+(-)** to zoom out.
- Click the Zoom percentage level at the upper right corner of the application window to open the Zoom drop-down list and choose the zoom level you want.

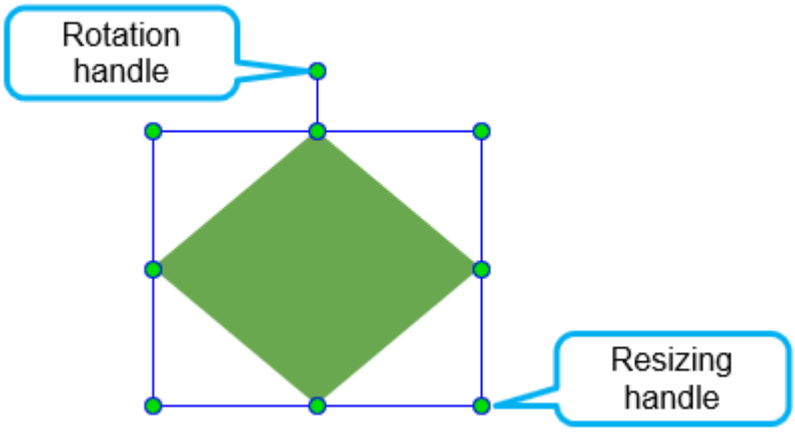


- To scale the Canvas so that it fits into the viewport size, press **CTRL+0** or click the **Fit on Screen** button. The Canvas will zoom in or out automatically to ensure that all scene contents appear in the viewport window

If you zoom in the Canvas too much, it will show horizontal and vertical scroll bars. Just scroll the mouse wheel to scroll the Canvas vertically. Hold down **SHIFT** and scroll the mouse wheel to scroll the Canvas horizontally.

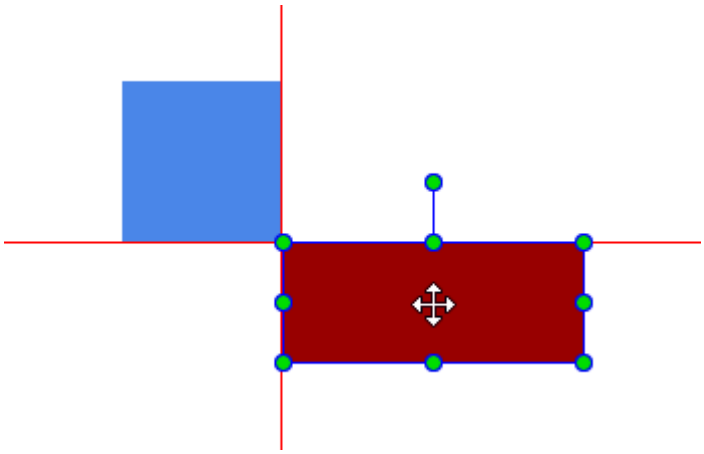
Edit Elements on Canvas

On the Canvas, you can reposition, resize, and rotate an element using the resizing and rotation handles which appear when you select an element.



Snapping on Canvas

Canvas snapping aligns moving or resized elements with the centers and edges of the Canvas or other elements. Red guides show the alignment.



Canvas snapping is enabled by default. To disable this feature, click **View** > **Canvas Snapping**. You can temporarily disable this feature by holding down **CTRL** when moving or resizing elements.

Chapter 12: Using Timeline Pane

Each scene has a main timeline that starts when the scene loads. Additional timelines start through actions. Use actions to play, pause, seek, or change timeline speed and direction.

For more details about commands and shortcuts in the **Timeline** pane, see **Timeline Menu**.

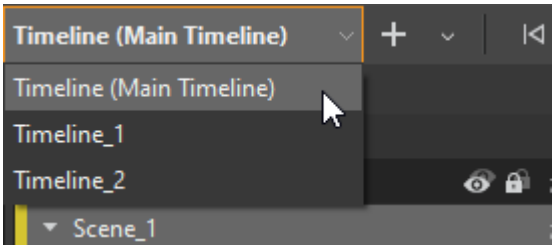
Managing Multiple Timelines

A scene may have multiple timelines, including the main timeline and additional ones. The main timeline starts off automatically when a scene loads. Meanwhile, additional timelines, which also contain animations, don't. Instead, you must use **actions and triggers** to control their playback, such as start, pause, and continue them.

Multiple timelines come into play when you create rich and interactive HTML5 animation. This feature lets you make different animations on different timelines using the same set of elements.

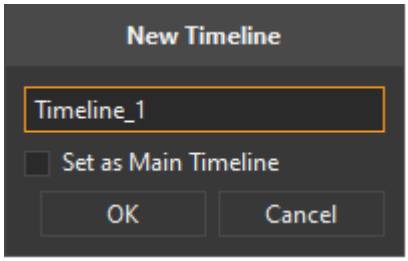
Creating Timelines

The top left of the **Timeline** pane places a set of buttons for managing multiple timelines.



To add a new timeline to a scene, do the following:

1. Click **New Timeline** + to open the **New Timeline** dialog.

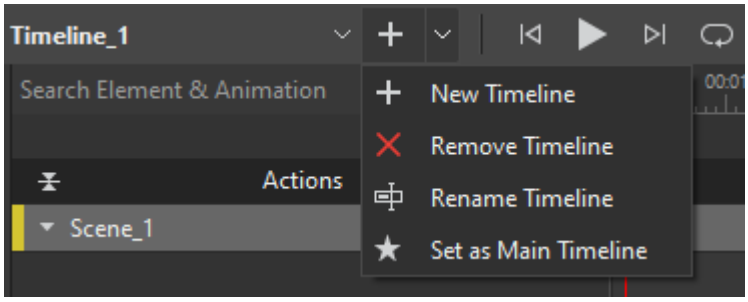


2. Enter a unique name for the new timeline.
3. Select **Set as Main Timeline** if you want the new timeline to act as the main timeline, making it start once the scene loads.
4. Click **OK** to finish.

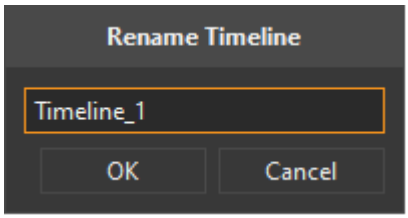
Newly created timelines are directly selected for editing. You can click the **Timeline Selector** to switch between multiple timelines of a scene.

Managing Timelines

After creating a new timeline, you can manage this timeline such as rename, set as main timeline or remove that timeline easily. Simply select a timeline from the **Timeline Selector**. Then, click the drop-down arrow next to the **New Timeline** + button.



- Click **Rename Timeline** to rename it.



- Click **Set as Main Timeline** to make that timeline the main timeline of a scene.
- Click **Remove Timeline** to delete the active timeline. This button becomes available only when a scene has more than one timeline.

Navigating in Timeline

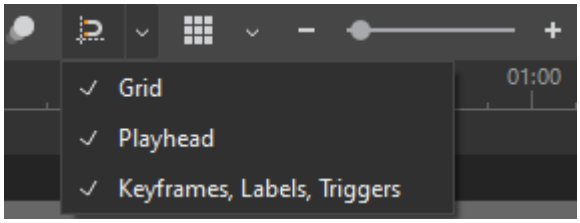
Saola Animate offers many controls to navigate the timeline by moving the Playhead. Do one or more of the following:

- Drag the Playhead to the desired location.
- Click the timeline ruler at the time where you want to move the Playhead. That way, the Playhead will immediately jump to that location.
- Change the time value in the time control (also called the current time indicator). Double-click on time value to make it editable, then scroll the mouse wheel or enter a new value.
- Use shortcuts or the Playback buttons. Press **SPACE BAR** or click **Play/Stop** or to start or stop animation in real time. Press **HOME** or click **Go to Start** to jump to the start of the timeline. And press **END** or click **Go to End** to jump to the end of the animation. Also, click **Loop Playback** to play the animation in a loop.

Snapping in Timeline

Dragging the Playhead along the timeline, you may notice some snapping actions. For example, the Playhead jumps to a keyframe, a trigger, or a particular tick mark on the timeline ruler. Timeline snapping lets you move the Playhead and timeline items such as keyframes, labels, and triggers as you wish. It helps you easily line up keyframes and animation segments on the timeline.

Timeline snapping is turned on by default with three modes:



- **Snap to Grid**: The Playhead and timeline items snap to the grid lines. Grid lines give precise measurements of the timeline by displaying subtle vertical lines at regular intervals. They only appear when you click the **Show Grid** button.
- **Snap to Playhead**: Timeline items snap to the Playhead.
- **Snap to Keyframes, Labels, Triggers**: The Playhead and timeline items snap to the position of timeline items.

Note: When you enable timeline snapping without any modes, the Playhead and timeline items will only snap to special tick marks on the timeline ruler. These tick marks appear depending on the zoom level of the timeline.

Zooming Timeline In and Out

As your animation can be fairly long, you may not be able to see all animation segments on the timeline. In that case, use the Timeline Zoom controls to zoom the timeline in and out to get better view of the animation.

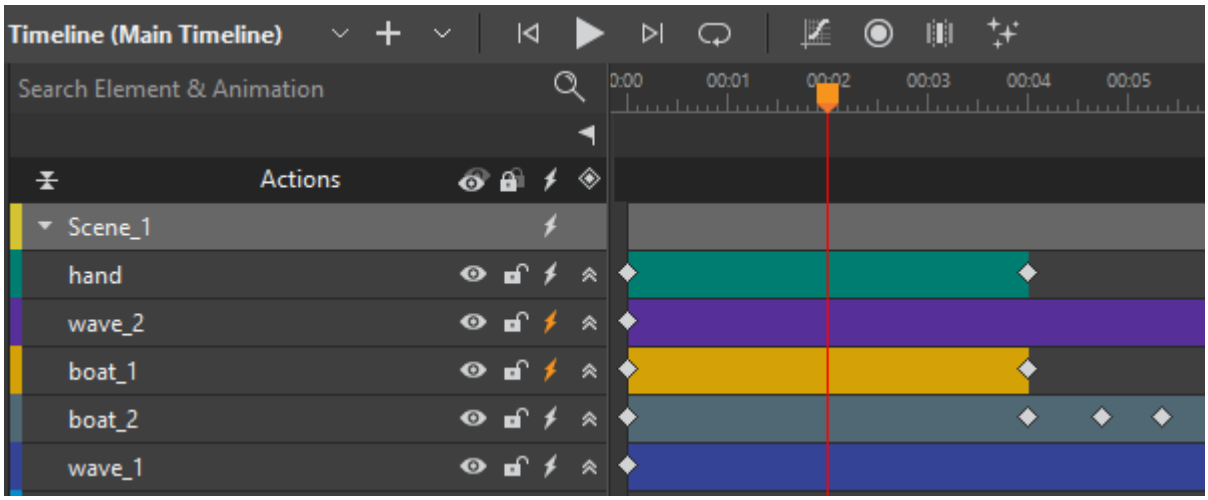


- **Zoom slider**: Drag the slider to the right, toward the **+** button to zoom in. Or, click the **+** button multiple times to zoom in to the level you want. Conversely, drag the slider to the left or click the **–** button to zoom out.
- **Zoom to Fit**: Click to fit the existing animation to the timeline view.

Additionally, you can use the mouse wheel to zoom the timeline. Place the cursor on the timeline, then hold down **CTRL** while scrolling the mouse wheel to zoom in or out.

Managing Timeline View

The **Timeline** pane lists a scene together with its elements and all animated properties. To the left of each element name, there's a small color bar which labels each element and its animation segments with a specific color. That way, Saola Animate helps you quickly identify which animations belong to an element.



Showing and Hiding Element Properties

To hide all animated properties of an element, click the double arrow button at the end of the element lane.

To collapse/expand all children of a group, you can click the triangle button on the left of the group name.

If you want to expand or collapse all elements and their animations at once, click the **Expand/Collapse Lanes** button on the Actions bar.

Filtering Elements

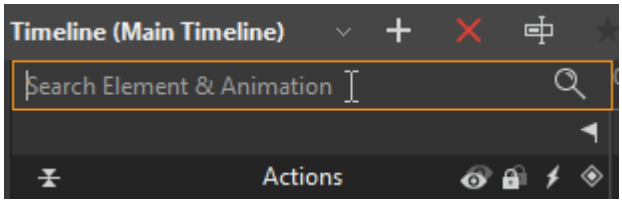
Click **Show Animated Elements Only** to hide elements without animations from the timeline. This does not affect the Canvas.

Searching, Showing, Hiding and Locking Elements

Use the search, visibility, and locking controls in the **Timeline** and **Elements** panes to work with crowded or overlapping elements.

Searching Elements and Animations

Enter an element, animation, or group name in the search box above the **Actions** bar.



Showing and Hiding Elements

Visibility controls show or hide elements on the Canvas while editing; they do not affect the output.

In the **Timeline** or **Elements** pane, notice the **Show/Hide** button next to the element names. An open eye means that an element is visible, whereas an eye with a slash indicates that it is invisible.

To show/hide all elements in a scene at once, click the **Show/Hide All** button on the Actions bar.

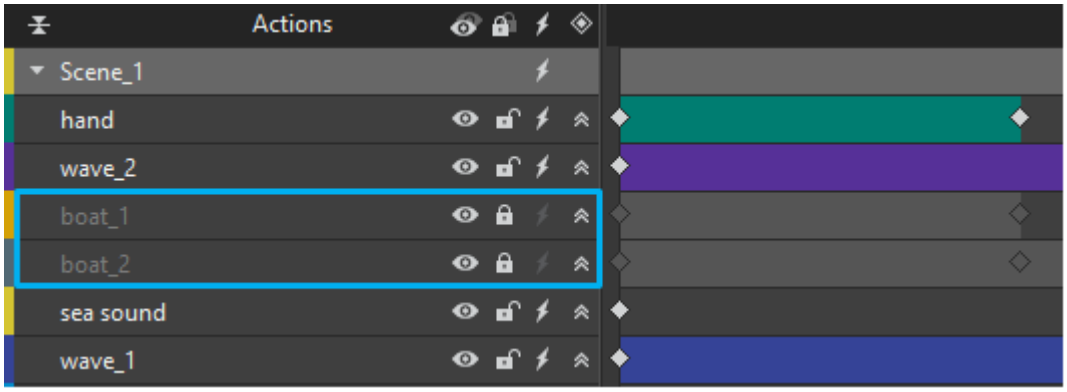
Note:

- When you hide a group, its child elements are also invisible.
- When an element is hidden on the Canvas, it can still be selected and edited from other panes.
- To change output visibility, animate opacity from 0% to 100% to fade in, or 100% to 0% to fade out. Set **Display** to *off* or *on* for an immediate change.

Locking and Unlocking Elements

Locked elements cannot be selected, moved, or edited. Locking does not change their visibility.

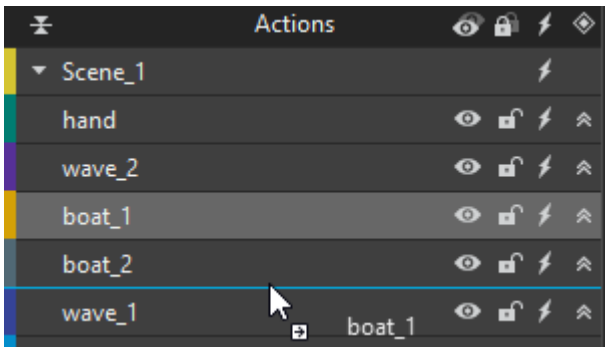
Click **Lock/Unlock** next to **Show/Hide**. An open lock indicates an unlocked element (the default); a closed lock and dimmed names and animations indicate a locked element.



To lock/unlock all elements in a scene at once, click the **Lock/Unlock All** button on the **Actions** bar.

Arranging Elements by Drag-n-Drop

You can drag and drop elements in **Timeline** (and **Elements** pane) to **change their orders** or **their parents**.

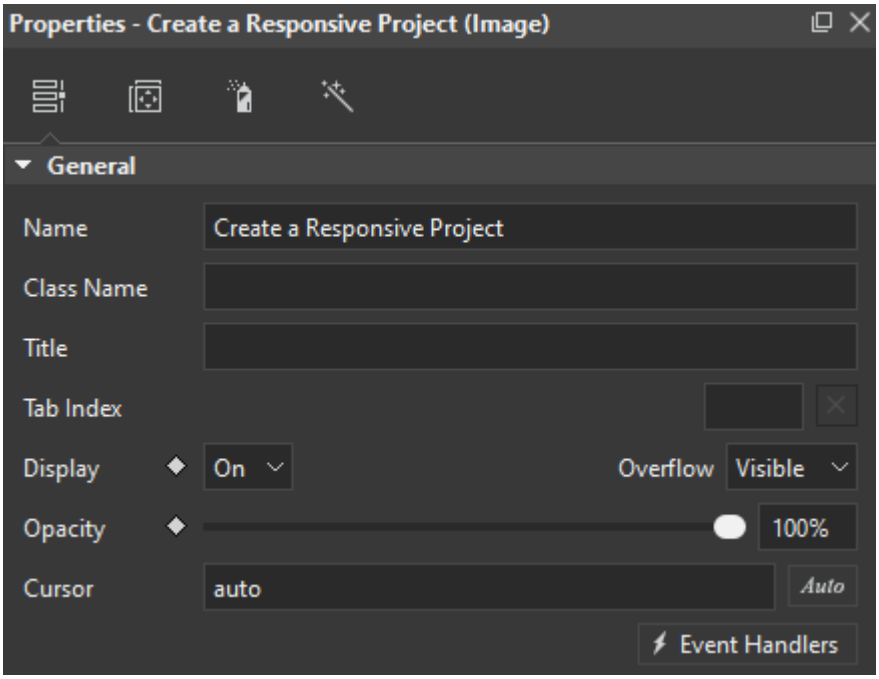


Deleting Elements

To delete an element in the Timeline pane, you can right-click an element lane > **Delete** or press the **DELETE** key on your keyboard. You can also perform these controls in the **Elements** pane.

Chapter 13: Using Properties Pane

Use the **Properties** pane to edit selected elements or scenes. Tabs group related properties; click a section's title bar to expand or collapse it.



Available properties depend on the selection. For example, **Media** appears only for audio and video elements.

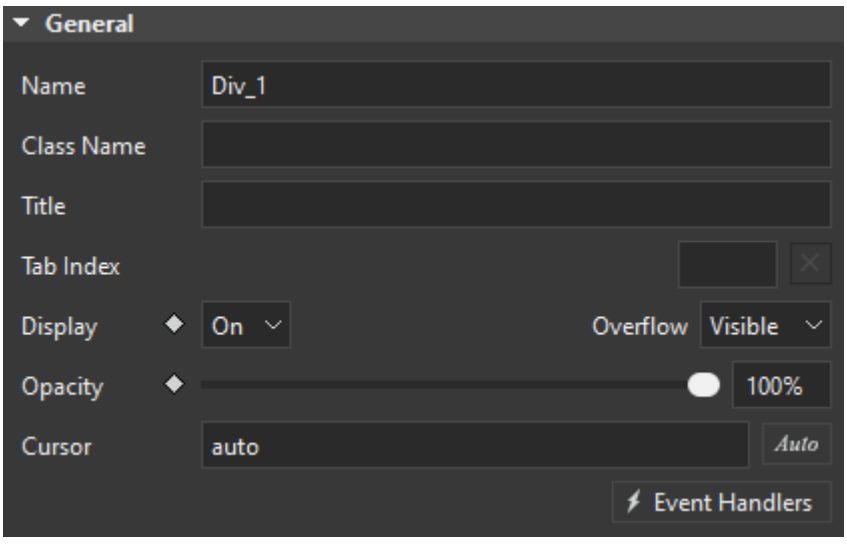
Please note that you can select multiple elements or scenes to change their properties at once.

General Tab

The **General** tab contains **General** section and specific sections for each type of elements such as **Image**, **Media**, **Text**, **Embedded** sections.

General Section

The **General** section displays information about elements and several properties.

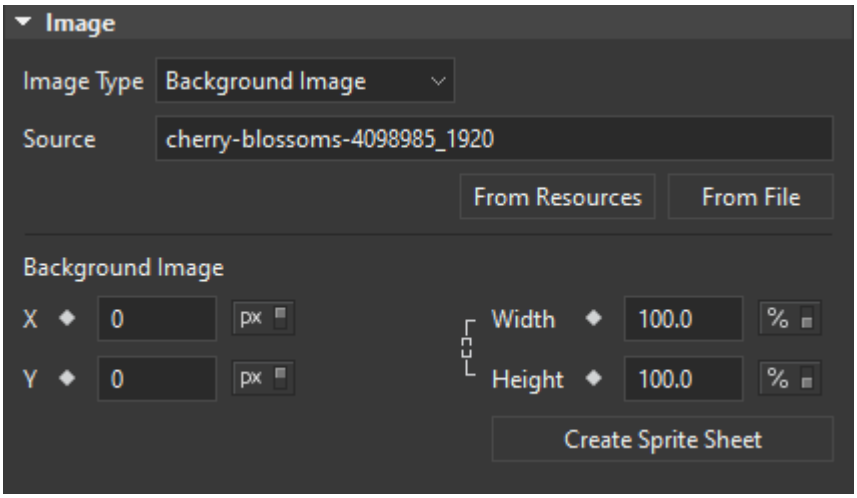


Property	Remark	Animatable
Name	Name of the element. This property can be changed but has to be unique.	No
Class Name	Class name of the element. This property can be used by CSS and JavaScript to perform certain tasks for elements with the specified class name.	No
Title	Title of the element, shown when you hover the mouse over the element in a browser.	No
Tab Index	Indicate if the element can be focused using the **TAB** key. Possible values: • **Empty**: The element is not focusable. • **-1**: The element is focusable by mouse/touch but not be reachable using sequential keyboard navigation. • **0**: The element should be focusable in sequential keyboard navigation, but its order is defined by the document's source order. • **1**: The element should be focusable in sequential keyboard navigation, with its order defined by the value of the number.	No
Display	Set the visibility state of the element. In animation, use the display property to hide or show an element instantly. • **On**: The element appears on the scene or in the output. • **Off**: The element doesn't appear on the scene or in the output.	Yes
Overflow	Determine how the content of the element is displayed if it overflows the element's bounds, and whether a scroll bar should appear. • **Visible**: The overflow isn't clipped; it renders outside the element's box. This is default. • **Hidden**: The overflow is clipped; any content that extends beyond the box will be hidden. • **Scroll**: The overflow is clipped, but a scroll bar is added to view the rest of the content. • **Auto**: If the overflow is clipped, a scroll bar should be added to view the rest of the content.	No

Opacity	Set the opacity (also transparency) of the element in the range [0, 100%]. Lower values make the element more transparent. The opacity property is often used to create fade-in and face-out effects. To change the opacity, drag the opacity slider left or right.	Yes
Cursor	Set which mouse cursor is displayed when the mouse pointer is over an element. The default value is *auto*. 	No

Image Section

The **Image** section is available for **image elements** only to display image-specific properties.

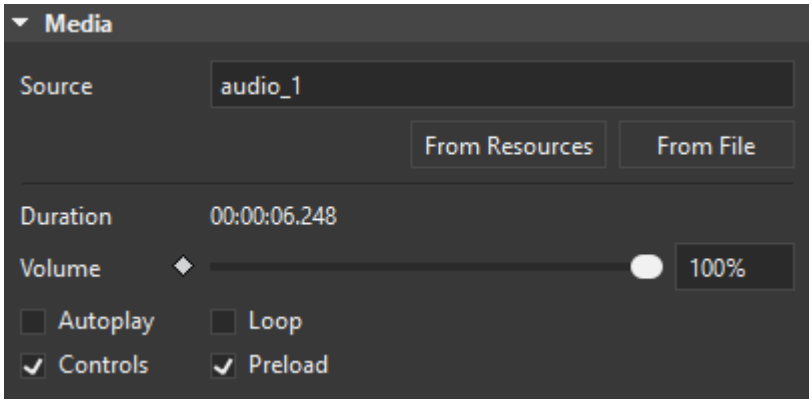


Property	Remark	Animatable
Image Type	Type of the image. Switch among three image types: **Background Image**, **Image (<img>)**, and **Inline SVG**.	No
File Name	Name of the image embedded within the image element.	No
From Resources	Select another image from the **Resources** pane to replace with the current image.	No
From File	Select another image from your computer to replace with the current image.	No

Background Image X, Y	Applicable to **Background Image** type. Set the exact position of the background image.	Yes
Background Image Width, Height	Applicable to **Background Image** type. Set the size of the background image.	Yes
Create Sprite Sheet	Applicable to **Background Image** type. Create **Sprite Sheet Animation**.	No

Media Section

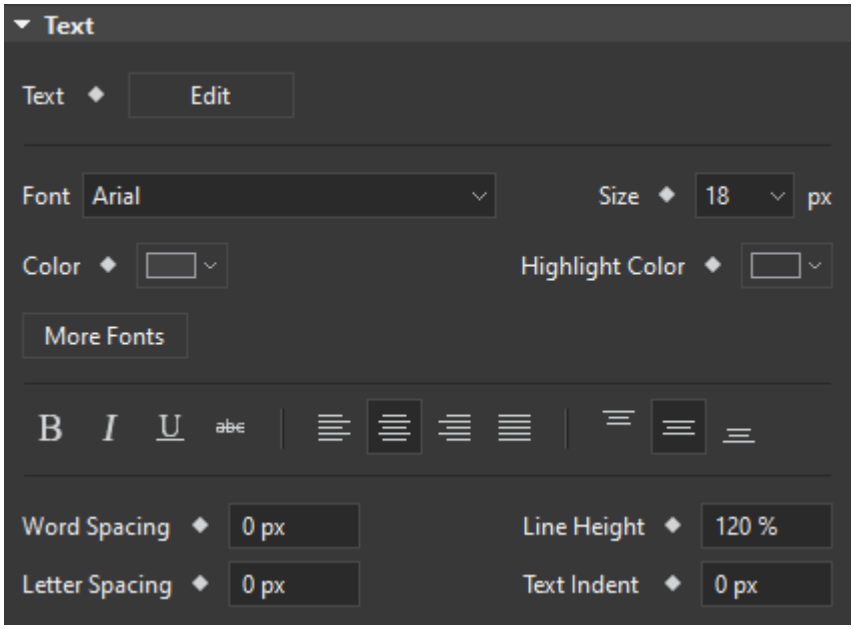
The **Media** section displays information about the audio/video and enables you to define some media options. This section is used for **audio and videos** only.



Property	Remark	Animatable
Source	Name of the audio/video. This property cannot be changed.	No
From Resources	Select another audio/video from the **Resources** pane to replace with the current one.	No
From File	Select another audio/video from your computer to replace with the current one.	No
Edit Speech...	Change the text or voice of audio generated from text and regenerate it. Appears only for such audio. A note above it tells when the text of the linked text element has changed since.	No
Duration	Duration of the audio/video in milliseconds. This property cannot be changed.	No
Volume	Set the volume of the audio/video in the range [0, 100%].	Yes
Autoplay	Allow the audio/video to automatically play on the timeline and desktop browsers.	No
Loop	Make the audio/video replay automatically from the beginning after it finishes.	No
Controls	Display the default player controls for the audio/video.	No
Preload	Preload the audio/video before the document loads.	No

Text Section

The **Text** section allows you to set and animate many text properties such as text size, color, and line height. This section is available for all text-based elements, namely **Text**, **DIVs**, and **Shapes**.

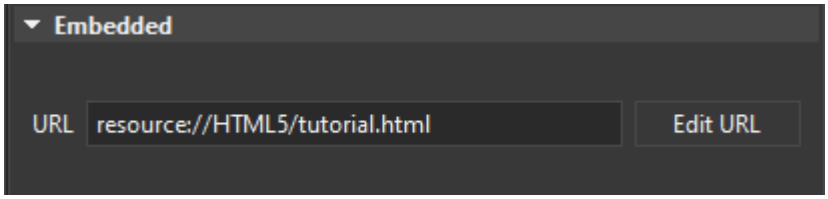


Property	Remark	Animatable
Text	Make a text jump into another text instantly in the same text-based element.	Yes
Edit	Enable the text editing mode in the text-based element.	No
Font	Set the font family of text.	No
Size	Set the font size of text in pixels.	Yes
Color	Set the color of text.	Yes
Highlight Color	Set the highlight color of text.	Yes
More Fonts	Get more Google Fonts	No
Bold	Make the text bold.	No
Italic	Make the text italic.	No
Underline	Underline the text.	No
Strikethrough	Strike the text through.	No
Horizontal Alignment	Align text horizontally. Possible values: **Left**, **Center**, **Right**, and **Justify**.	No
Vertical Alignment	Align text vertically. Possible values: **Top**, **Middle**, and **Bottom**.	No

Subscript/ Superscript	Format the text as subscript/superscript.	No
Word Spacing	Set the space between words in pixels.	Yes
Letter Spacing	Set the space between letters in pixels.	Yes
Line Height	Set the space between lines in percentages, relative to font size value.	Yes
Text Indent	Set the indent of each text block in pixels (paragraph).	Yes

Embedded Section

The **Embedded** section display information about the embedded HTML. It is used for **HTML widgets** only.



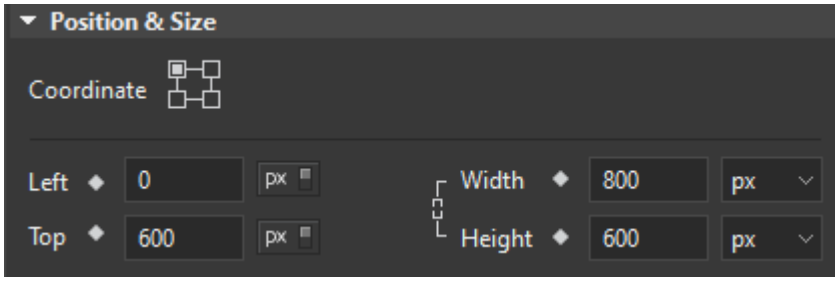
Property	Remark	Animatable
URL	Address of the webpage or HTML package resource displayed within the HTML widget.	No
Edit URL	Applicable to **URL** and **HTML Package** types. Change the content embedded within the HTML widget.	No
Edit HTML	Applicable to **Embed Code** type. Change the embedded code within the HTML widget.	No

Position & Size Tab

The **Position & Size** tab is where you can change geometry and transform properties of selected elements.

Position & Size Section

The **Position & Size** section controls the position and size of element.

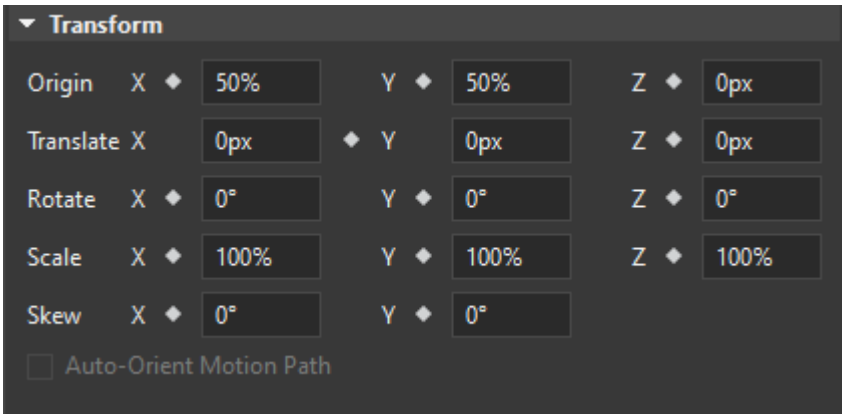


Property	Remark	Animatable
Coordinate	Element position can be one of the following four coordinates: • Relative to top and left (default). • Relative to top and right. • Relative to bottom and right. • Relative to bottom and left. Depending on the position mode, the horizontal position can be Left or Right, the vertical position can be Top or Bottom • **Left/Right**: Set the distance from the left/right edge of the element to the left/right edge of its parent element. If the element doesn't belong to any group, its parent is the scene. The left/right supports both pixel (px) unit and percentage (%) unit. If the unit is percentage, the distance is relative to the width of the parent element. • **Top/Bottom**: Set the distance from the top/bottom edge of the element to the top/bottom edge of its parent element. If the element doesn't belong to any group, its parent is the scene. The top/bottom supports both pixel (px) unit and percentage (%) unit. If the unit is percentage, the distance is relative to the height of the parent element.	Yes

Width, Height	• **Width**: Set the width of the element in pixel (px), percentage (%) or auto unit. If the unit is percentage, the width is relative to the width of the parent element. Auto unit can be used by width or height (not both) to keep the aspect ratio when viewing the output in browsers. • **Height**: Set the height of the element in pixel (px), percentage (%) or auto unit. If the unit is percentage, the height is relative to the height of the parent element. Auto unit can be used by width or height (not both) to keep the aspect ratio when viewing the output in browsers. • **Link width to height** : Maintain the aspect ratio while editing in the editor. In the **responsive** output, maintain the aspect ratio by setting either the width or height unit to percentages (%) and the other unit to **auto**. For example, set the width unit to % and the height unit to auto. That way, the element height will change proportionally with the width while the width responds to window or viewport size changes.	Yes

Transform Section

The **Transform** section allows you to translate, scale, skew, and rotate elements in **three-dimensional space**.



Property	Remark	Animatable
Origin X, Y, Z	Set the origin point around which the element is transformed.	Yes

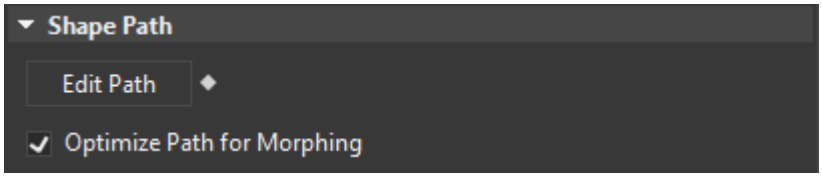
Translate X, Y, Z	Translate the element to a different position relative to the origin. If the element has a **motion path**, Translate X and Translate Y are also coordinate of the current point in the path. Please note that Translate X / Y cannot animate separately but in combination in motion path animation.	Yes
Rotate X, Y, Z	Rotate the element around the corresponding axis. Negative angles make the element rotate counter-clockwise. Rotation is applied to the element in ZYX order, i.e. the element will rotate around the z-axis first, then the y-axis, and finally the x-axis.	Yes
Scale X, Y, Z	Scale the element along the corresponding axis. Please note that a negative Scale X or Scale Y will mirror the element horizontally or vertically, respectively.	Yes
Skew X, Y	Skew the element horizontally or vertically in the range [-60, 60°].	Yes
Auto-Orient Motion Path	Enable/disable motion path auto orientation.	No

Styles Tab

The **Styles** tab allows you to customize shape path for morph animation, border and fill of the element.

Shape Path Section

The **Shape Path** section allows editing path, adding path keyframes, and changing option for path animation. This section is applicable to **Shape** and **Freeform** elements only.



Property	Remark	Animatable
Edit Path	Enable the path editing mode of a **Shape** or a **Freeform** element.	Yes
Optimize Path for Morphing	Set option for morph animation. This check box is selected by default, which helps adjust anchor points between shapes automatically for the best shape morphing. If you clear this check box, you need to manually control over anchor points so as to the number of anchor points in each shape should be equal.	No

Fill Section

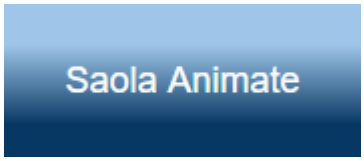
The **Fill** section sets the background fill style of elements. Four possible values: No Fill (1), Solid Fill (2), Gradient Fill (3), and Image Fill (4).



Value	Remark
No Fill	Fill the element with a transparent background (alpha = 0).
Solid Fill	Fill the background with a solid color. **Solid Fill** uses the RGBA color picker. The default alpha (A) is 255. The color is animatable.

Gradient Fill

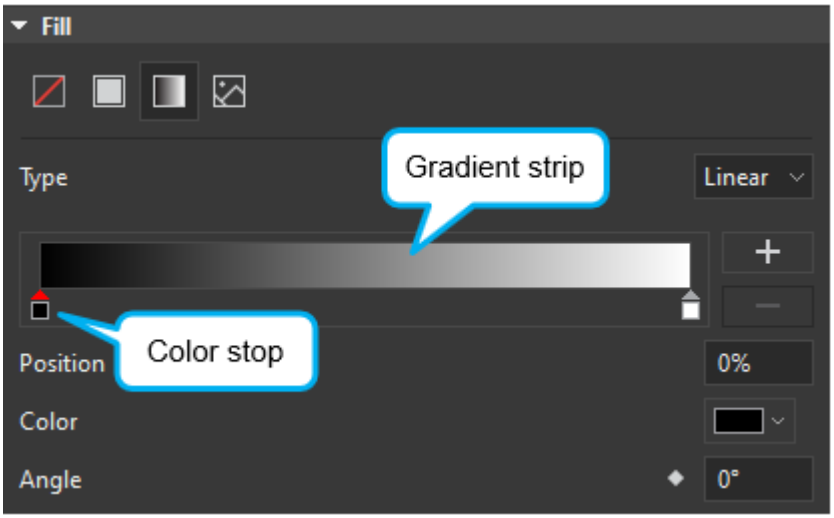
Fill the background with a gradient where two or more colors (with or without alpha transparency) gradually fade into other.



Select either of the two gradient types from the **Type** combo box:

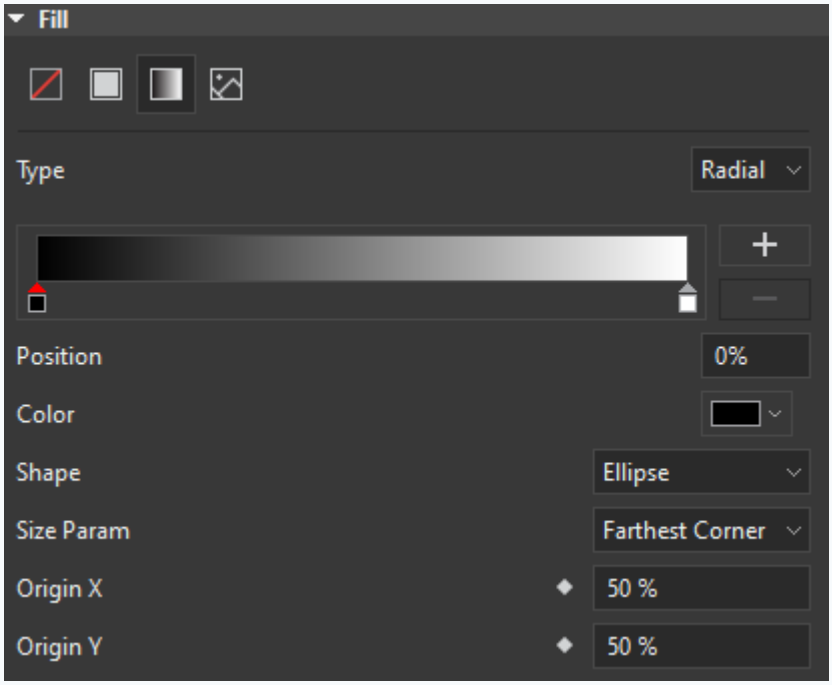
- **Linear gradient** creates a straight progression between two or more colors. A linear gradient can go horizontally (left, right), vertically (up, down), or diagonally.
- **Radial gradient** creates a circular progression between two or more colors. It radiates from its center, either in an ellipse or in a circle.

a. Linear Gradient



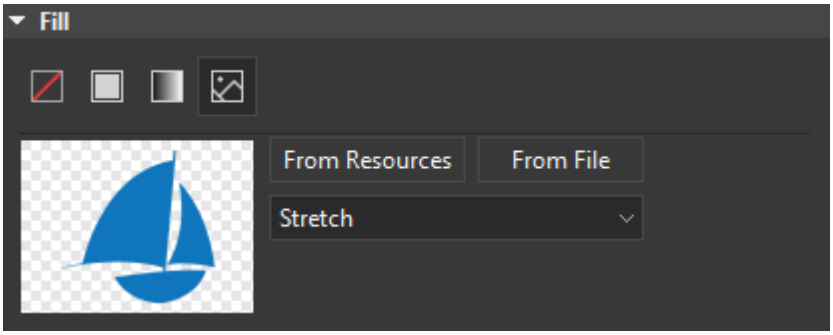
- **Gradient strip**: Show a "live" sample of the gradient. Use it to make changes to the gradient in a visual manner.
- **Color stop**: Each color stop on the strip is a distinct color. The selected color stop has a red triangle at the top. To add a color stop, click on the strip or click **Add** (the plus icon). In contrast, click **Remove** (the minus icon) to remove a selected color stop.
- **Position**: Specify the position of the selected color stop, where you want a color to "start". To change a color stop's position, drag it along the strip or enter a new number in the **Position** text box.
- **Color**: Use the color picker to define a color for the selected color stop (with or without transparency).
- **Angle**: Set the angle of direction for the gradient line. By default, a linear gradient runs vertically from bottom to top with an angle of 0 degree. As the degree increases, the gradient direction rotates clockwise. Negative angles make the gradient run in the counter-clockwise direction.

a. **Radial Gradient**



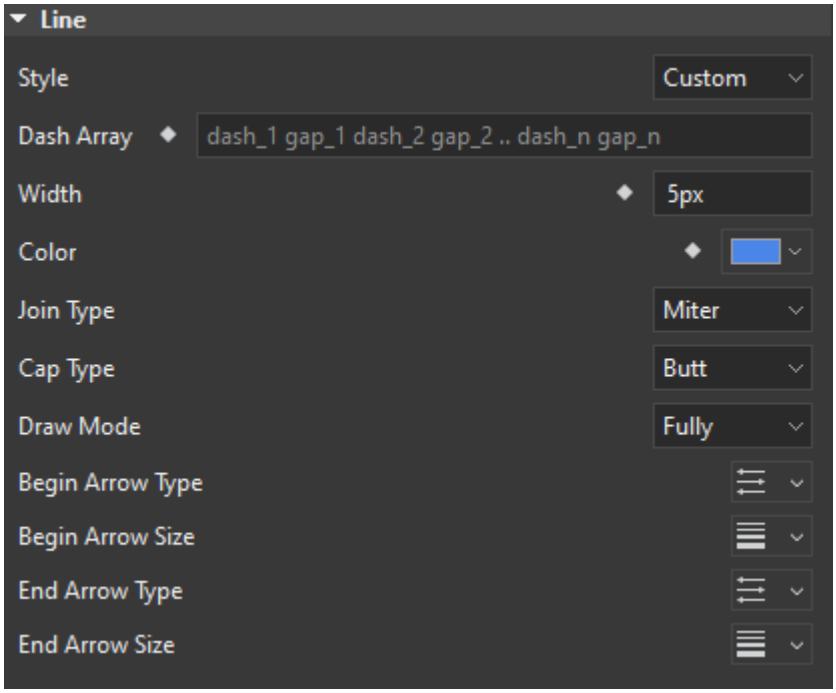
- The **Gradient strip**, **Color stop**, **Position**, and **Color** of radial gradients are much the same as those of linear gradients.
- **Shape**: Define the shape of the gradient. The value can be either ellipse or circle, of which ellipse is the default.
- **Size**: Define the size of the ending shape (the shape where the last color ends). Four possible values:
    - **Farthest Corner**: The gradient ends at the corner that is farthest from the shape's center. This is the default value.
    - **Closest Corner**: The opposite of Farthest corner, where the gradient ends at the corner that is closest to the shape's center.
    - **Farthest Side**: The gradient ends at the side farthest from the shape's center.
    - **Closest Side**: The opposite of Farthest side, where the gradient ends at the side closest to the shape's center.
- **Origin X, Y**: Adjust the location of the center point. For example, Origin X, Y [value: 50%, 50%] sets the gradient in the center (default). Meanwhile, Origin X, Y [value: 0%, 0%] sets the gradient to start at the top left. Animate these properties to create animation where the center point moves from this position to that position.

Note: Rendering of CSS gradients and other effects depends on the browser. Check the exported content in the browsers used by your audience.

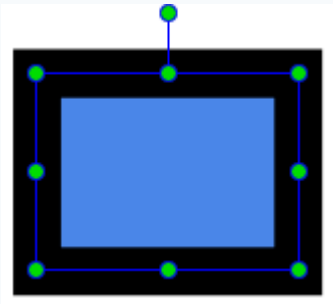
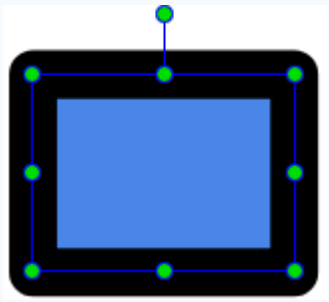
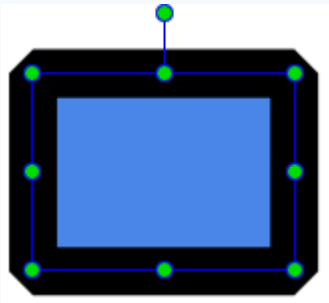
Image Fill	Fill the background with an image. Images can be chosen from the **Resources** pane or from your computer. Five possible fill options:  • **Stretch**: Extend the image to all edges of the container by distorting or shrinking it. Stretch may only work for some abstract images, not the "figurative" ones. This is the default. • **Center**: Center the image inside the container. If the image is smaller than the container, you'll see a transparent area around the edges. Otherwise, you'll see the very center of the image, with the rest outside of view. Choose this for images with the center focus. • **Fit**: Scale the image as large as possible without cropping or stretching so that the whole image is shown. The empty portion of the container is made transparent. • **Tile**: Repeat the same image throughout the background, making multiple tiles of the image. It is meant for small images or patterns. • **Fill**: Scale the image as large as possible without stretching it. If the proportion of the image differs from the container, the image is cropped so that it covers the entire container.

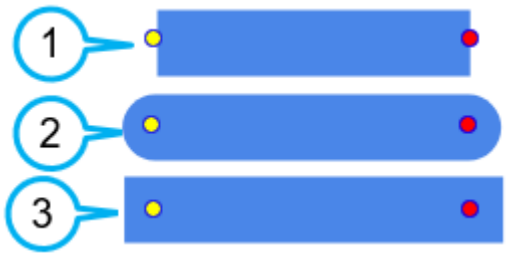
Line Section

The **Line** section defines the line style of elements.



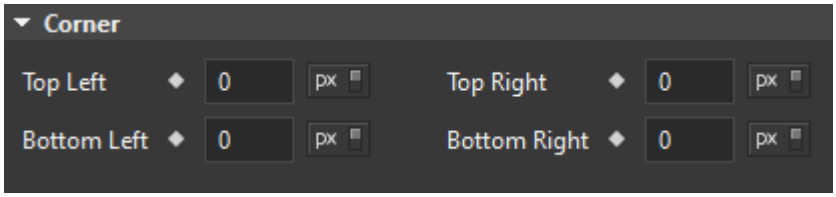
Property	Remark	Animatable
Style	Set the line style of the element. Five possible values: • **None**: No line border is applied. • **Solid**: The line borders are created by solid lines. • **Dotted**: The line borders are created by dot lines. • **Dashed**: The line borders are created by dash lines. • **Custom**: The line borders are created by custom dash array. Applicable to **Shape** and **Freeform** elements only.	No
Dash Array	Applicable to the **Custom** style. A string of dash pattern in which dash and gap are separated by a space.	Yes
Width	Set the width of the line in pixels (px).	Yes
Color	Set the color of the line.	Yes

Join Type	Applicable to **Shape** and **Freeform** elements only. The type of the join where two lines intersect with each other. • **Miter**: The corners where two-lines connects are squared off. It is selected by default.  • **Round**: The corners where two-lines connects are rounded.  • **Bevel**: The corners where two-lines connects are cut off at a 45-degree angle. 	No

Cap Type	Only applicable to an open line of the **Shape** and **Freeform** elements, where you can see the end(s) of a line.  • **Butt** (1): A flat edge is applied to each end of the line at the end point(s). It is selected by default. • **Round** (2): A rounded end cap is added to each end of the line. • **Square** (3): A square end cap is added to each end of the line.	No
Draw Mode	Three possible line drawing modes: • **Full**: Line is fully drawn with no animation at all. • **Partial**: This option allows animating line drawing using the **Line Length** keyframes. The value of the keyframes can be negative or greater than 100%. • **Dashed**: Applicable to the **Dotted**, **Dashed**, and **Custom** styles. This option allows animating dotted or dashed line using the **Dash Offset** keyframes which set the offset from the start point in px. The value of the keyframes can be negative.	Yes
Begin Arrow Type	Set the type of the begin arrow.	No
Begin Arrow Size	Set the size of the begin arrow.	No
End Arrow Type	Set the type of the end arrow.	No
End Arrow Size	Set the size of the end arrow.	No

Corner Section

The **Corner** section is used for **DIVs** only to define the shape of the DIV border.



Property	Remark	Animatable
Top Left	Set the radius of the top-left rounded corner.	Yes

Top Right	Set the radius of the top-right rounded corner.	Yes
Bottom Left	Set the radius of the bottom-left rounded corner.	Yes
Bottom Right	Set the radius of the bottom-right rounded corner.	Yes

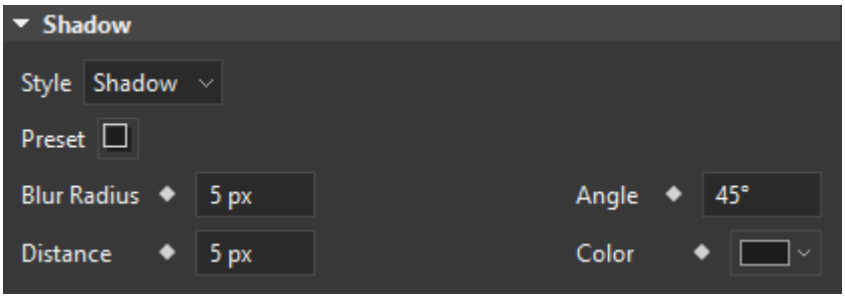
Effects Tab

The **Effects** tab contains sections for editing element's shadow, filter and clip effects. Some types of elements don't have this tab, such as audio elements.

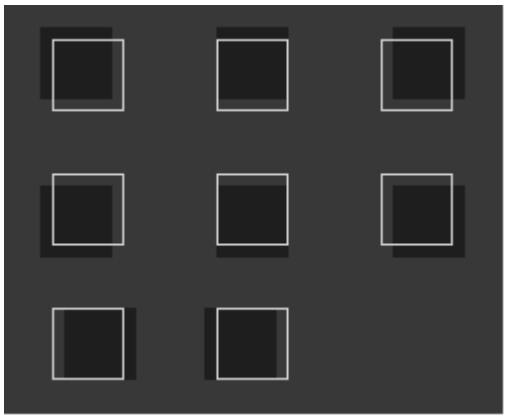
Shadow Section

This section allows you to set the shadow effect of the element. Let's select **Shadow** or

None from **Style** combo box to set or clear the shadow, respectively.



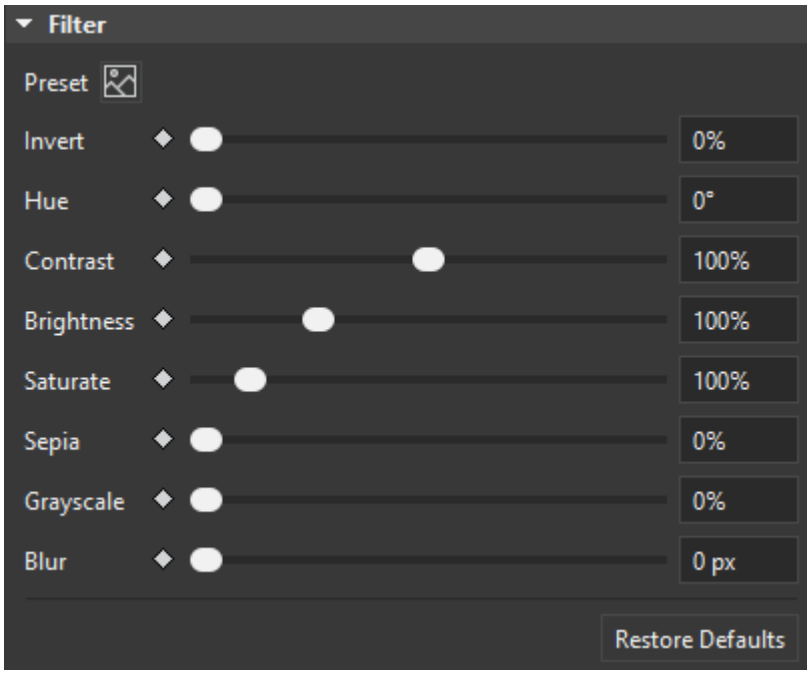
When the **Shadow** style is enabled, you can change the following properties to customize the shadow:

Property	Remark	Animatable
Preset	Provide 8 presets with different angles to quickly change the shadow. 	No
Blur Radius	Set the shadow blurry. The higher the value, the more blurred the shadow.	Yes
Angle	Angle between the shadow and the element. It's measured clockwise, with x-axis as the reference.	Yes
Distance	Distance between the shadow and the element.	Yes

Color	Color of the shadow.	Yes

Filter Section

The **Filter** section is used to apply graphical effects like blur or color shift to an element. In Saola Animate, filter effects are commonly used to adjust the rendering of images.



Property	Remark	Animatable
Preset	Provide 9 presets to quickly apply the filter effect. 	No
Invert	Invert the sample in the input element. A value of 100% is completely inverted. A value 0% leaves the input unchanged.	Yes
Hue	Apply a hue rotation on the element. Unit is degree. Hue rotation is number of degrees around the color circle that the input samples will be adjusted. A value of 0 degree leaves the input unchanged.	Yes

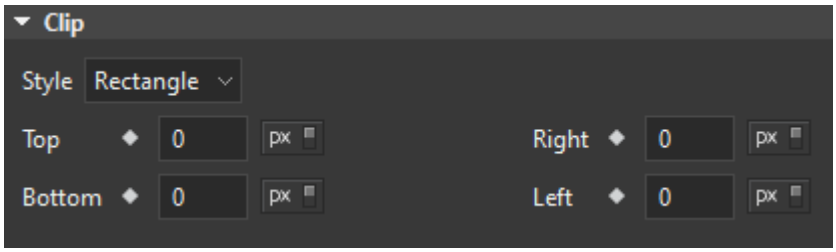
Contrast	Adjust the contrast of the input. By default, contrast value of an element is 100%. 0% is minimum value and the element is completely gray at this.	Yes
Brightness	Brightness is used to make the element more or less bright. Default value is 100%.	Yes
Saturation	Change the color saturation of the element. Unit is percentage and 100% is the default value.	Yes
Sepia	Convert the input element to sepia, giving it a warmer appearance. The value of amount defines the proportion of the conversation. A value of 100% is completely sepia. By default, sepia value is 0%.	Yes
Grayscale	Adjust grayscale of the input element. Default value is 0% and the value of 100% makes the input is completely gray.	Yes
Blur	Apply the Gaussian blur to the input element. The blur value shows how many pixels on the screen blend to each other, larger value will make the input more blur. A value of 0px is the default.	Yes

Note: Filter effects for an element do not work in Canvas if the element, or a lower z-order element has been 3D transformed. Please preview in browsers, or export to HTML5 to see how filter effects are applied in this case.

Clip Section

If you want to specify a specific region of an element to display, this section can help you to do that. Just select the clipping shape in **Style** combo box and adjust related properties as desired. Parts of the element that are inside the clipping shape are shown, while those outsides are hidden.

Rectangle Clipping



Property	Remark	Animatable
Top	Distance from the top edge of the element to the top edge of the clipping rectangle.	Yes
Right	Distance from the right edge of the element to the right edge of the clipping rectangle.	Yes
Bottom	Distance from the bottom edge of the element to the bottom edge of the clipping rectangle.	Yes

Left	Distance from the left edge of the element to the left edge of the clipping rectangle.	Yes

Circle Clipping



Property	Remark	Animatable
Radius	Radius of the clipping circle.	Yes

Oval Clipping



Property	Remark	Animatable
X Radius	Radius of the clipping ellipse along x-axis.	Yes
Y Radius	Radius of the clipping ellipse along y-axis.	Yes

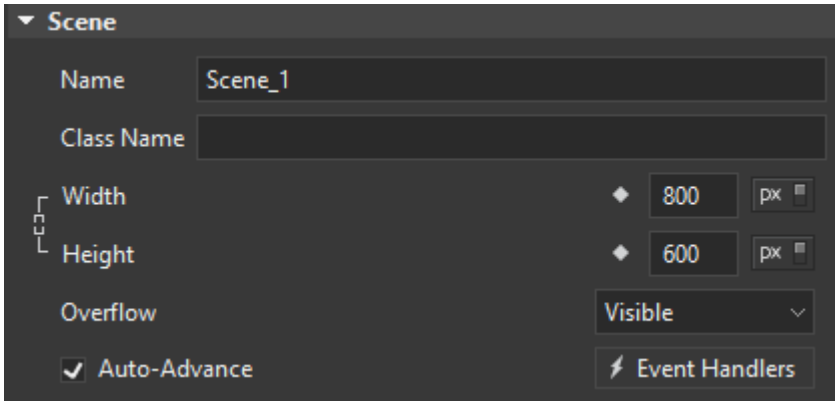
Note: Circle and Oval clipping are not supported by Microsoft Internet Explorer and Microsoft Edge Legacy browsers.

Scene Tab

The **Scene** tab contains specific sections for the scene, including **Scene**, **Perspective**, and **Transition Effects** sections.

Scene Section

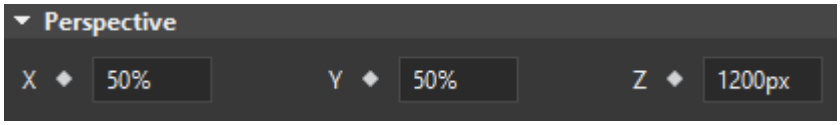
The **Scene** section displays properties related to **scenes**.



Property	Remark	Animatable
Name	Name of the scene. This property can be changed but has to be unique.	No
Class Name	Class name of the scene. This property can be used by CSS and JavaScript to perform certain tasks for scenes with the specified class name.	No
Width, Height	Set the exact width and height of the scene. The size can be a fixed value (in pixels) or relative to the container size (in percentages). To maintain the aspect ratio while editing, select the **Link width to height** check box (the chain icon).	Yes
Overflow	Determine how the content of the scene is displayed if it overflows the scene's box, and whether a scroll bar should appear. • **Visible**: The overflow isn't clipped; it renders outside the scene's box. This is default. • **Hidden**: The overflow is clipped; any content that extends beyond the box will be hidden. • **Scroll**: The overflow is clipped, but a scroll bar is added to view the rest of the content. • **Auto**: If the overflow is clipped, a scroll bar should be added to view the rest of the content.	No
Auto-Advance	Jump to the next scene automatically when the current scene ends. If you disable this feature, use **actions** to jumps to another scene.	No
Event Handlers	Open the **Scene Event Handlers** dialog to control scene events and actions.	No

Perspective Section

This section is used to change the perspective for **3D transformation**.



Property	Remark	Animatable
X, Y, Z	Set the viewing position at which the viewer sees the 3D space.	Yes

Transition Effects Section

The **Transition Effects** section displays properties related to scene transition effects. It helps define transition effects between **scenes**.



Property	Remark	Animatable
Type	Type of the transition effect. Possible values: • **None** (default type, meaning no effect) • **Fade** • **Push**	No
Duration	Duration of the transition in milliseconds.	No
Easing	The timing function that updates the transition by time.	No
Direction	Direction of the Push transition effect. Possible values: From Left, From Top, From Right, From Bottom	No

Chapter 14: Using Resources Pane

The **Resources** pane lists all resources added to a project and provides many controls for managing resources. To show the pane, click **View** > **Resources**. Saola Animate supports the following resource types and extensions:

- **Image**: Image files (*.png, *.jpg, *.jpeg, *.bmp, *.gif, *.svg)
- **Audio**: Audio files (*.mp3, *.wav, *.m4a, *.aac, *.ogg, *.oga)
- **Video**: Video files (*.mp4, *.m4v, *.webm, *.ogv)
- **JavaScript**: JavaScript files (*.js)
- **CSS**: Style sheet files (*.css)
- **HTML**: HTML files (*.html)
- **Symbol**: Saola Animate symbols (*.saolasym)
- **Font**: **Google fonts** added to a project

The **Resources** pane offers control for filtering resource types. Just click the **Resource Type** combo box and select a type you want to see. You can also click the **View Style** combo box to change the view style. Select one of the following views:

- **List**: Each resource appears as a small icon with a label to the right.
- **Small**: Each resource appears as a small icon with a label below it. This is the default view style.
- **Medium**: Each resource appears as a medium icon with a label below it.

Managing Resources

Importing Resources

Simply drag files to the **Resources** pane to import them. Alternatively, in the **Resources** pane, click **Import**  > **From File** and choose the files you want from your computer.

For JavaScript and CSS resources, you can directly import files from URL by clicking **Import** > **From URL** and specify the URL.

After importing resources, you can:

- **Rename resources**: Select a resource and press **F2** on your keyboard, or right-click it and select **Rename**.
- **Preview resources**: You can preview images, audio, and videos. Double-click an image/audio/video or right-click it and select **Preview**. The **Preview** window appears, allowing you to preview the file.
- **Add resources to scene**: Drag multiple resources directly on to the Canvas or right- click them and select **Add to Scene**.

Note: Besides the supported resource types and extensions, Saola Animate lets you import any other file types into your project. These "misc" resources will be exported with the project and stored in the HTML output's resource folder.

Removing Resources

You can delete any resources that aren't in use, meaning that you have to remove all scene elements using a resource before you can delete it from the **Resources** pane. To figure out which resources that aren't actively used, click **Select Unused Resources** . Then, press **DELETE** to remove the

resources you don't want. You can also click **Delete**  in the toolbar or in the context menu to get the same result.

Exporting Resources

You can export one or multiple resources at the same time by clicking **Export** . If you're going to export a single resource, provide the file name for the file before exporting. Otherwise, if you want to export multiple resources, specify the folder path to save the files.

Sorting and Searching Resources

You can sort resources by name, item type, or size in ascending or descending order by clicking **Sort Resources**  in the toolbar**.** Moreover, to find any resource quickly, type its name in the search box.

Editing Symbol Resources

The **Resources** pane holds any symbols you create and import into a project. Double-click a symbol to edit it as a normal project.

Script Resources

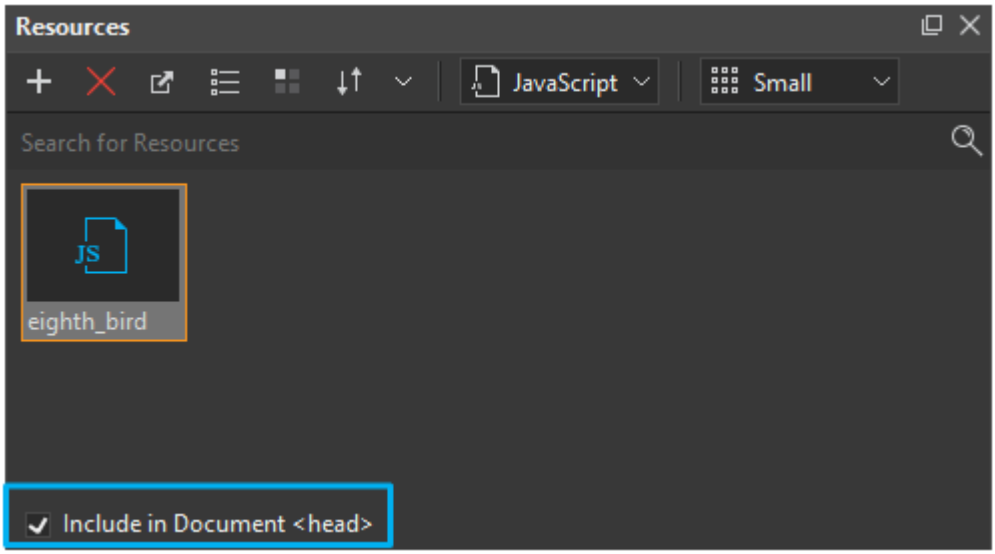
Editing Script Resources

Script resources include JavaScript, CSS, and HTML files. Double-click a script resource to edit it in the script editor. This editor is similar to the **JavaScript Function** editor except that:

- It allows editing multiple script resources at once. Click **Open from Resources**  in the toolbar and choose other resources.
- You can discard all changes and return to the original files at any time by clicking **Restore to Original Files** at the bottom left corner of the editor. Alternatively, right click a script resource and select **Update from Original Files**.

Including JavaScript and CSS in Document <head>

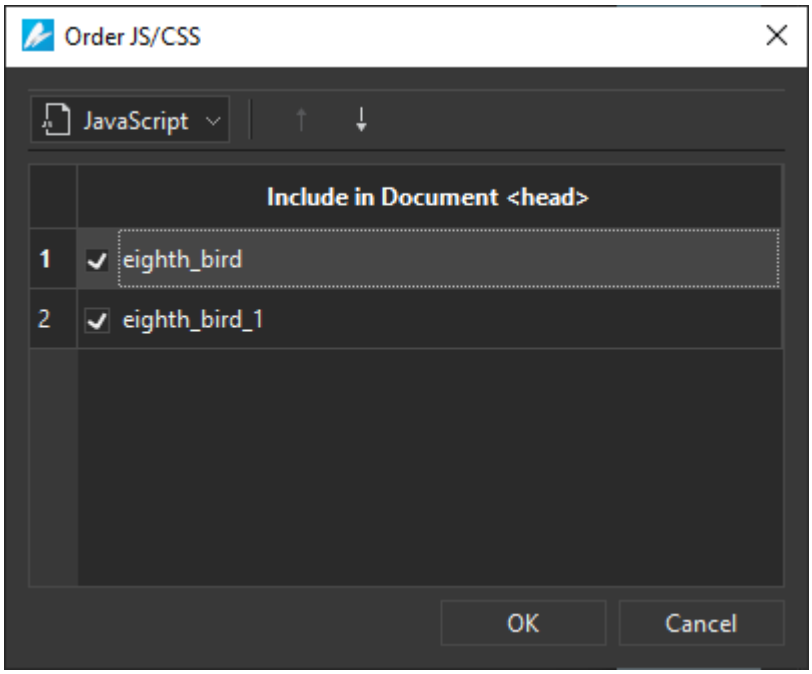
By default, JavaScript and CSS files added to a project are included in the document <head>. To disable this behavior, select the JavaScript or CSS file you don't want to be included in the document header and clear the **Include in Document <head>** check box.



Ordering JavaScript and CSS

The order in which the JavaScript or CSS files are stated matters in many cases. One script may contain dependencies on another script, so you have to make sure the dependent script is called after the other one. Meanwhile, the order of the CSS files determines which ones take precedence. CSS rules that are defined earlier have lower precedence than those defined later, meaning that styles declared later win.

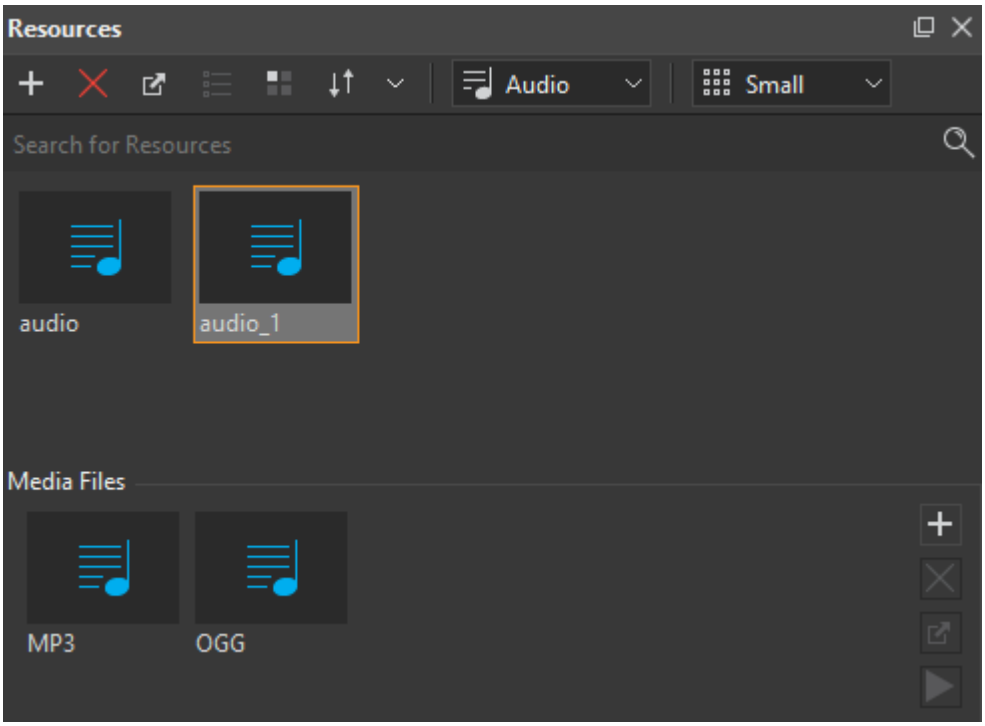
To order JavaScript and CSS resources, click **Order JS/CSS** to open the corresponding dialog. Then, choose the resource type and click the **Move Up** or **Move Down** button to reorder the files. You can also specify whether to include a specific file in the document <head> by selecting the check box next to the file's label.



Resource Groups for Audio and Videos

Adding audio and videos automatically creates an audio and video group to which additional formats can be added. That way, you provide a single audio/video with multiple sources for cross-browser compatibility. A browser can select the most compatible format it supports from a resource group, ignoring the other formats.

In the **Resources** pane, whenever you select an audio or video resource, the **Media Files** widget appears. Using buttons on the right sidebar or in the context menu of the selected format, you can manage multiple sources in a resource group.



Adding Media File into Group

Click **Add media files to the group** to add additional formats to a group. If the group already contains a file of that format, you will be asked whether to replace it.

Removing Media File from Group

Select a format and press **DELETE** or click **Remove media file from group** to remove it from a group. If a group contains only one format, you cannot remove it.

Exporting Selected Media File

Select a format and click **Export selected media file** to export it to file. Provide the file name for the file before exporting.

Previewing Selected Media File

Double-click a format to preview it in the **Preview** window. Alternatively, click **Preview selected media file** in the toolbar or in the context menu.

Editing Speech of Audio Resources

Audio generated from text keeps its text and voice. To change them, right-click the audio resource and select **Edit Speech...**, then click **Regenerate**. See Editing Speech.

Adding, replacing or removing a file in the group of such audio clears its text and voice in the same step, because the audio no longer matches them. **Undo** restores them.

Chapter 15: JavaScript

Project JavaScript runs in browser preview and HTML5 output. Version 4 does not execute project JavaScript in the Canvas or thumbnail context. Use browser preview to test functions, event handlers, and custom-element scripts.

Attach JavaScript functions to events in the Event Handlers dialog. There are two function types:

- **Normal fuctions**: Normal JavaScript functions that can be called in other functions. You can modify the parameters of this function type.
- **Event handler functions**: Functions that are registered with events and have fixed parameters. Event handlers are separated into four types:
- Element event handlers
- Scene event handlers
- Timeline event handlers
- Document event handlers

Creating Functions

Create a new function in the **Functions** pane. If you don't see this pane, click **View** > **Functions**.

1. Click **New Function**  and select the function type you want. The **JavaScript Function** editor appears, allowing you to write the script.
2. Write the script.
3. Click **OK** to apply changes and close the dialog. The function is created and listed in the pane.

Another way to create a new function is from the **Event Handlers** and **Timeline Triggers** dialogs. Do the following:

1. Add the Run JavaScript action.
2. Double-click the Params cell > **Add Function**.

Removing Functions

Select one or more functions and press **DELETE** to remove them. Alternatively, click **Delete** 

in the toolbar.

Renaming Functions

Right-click a function and select **Rename**. Type a new name and press **ENTER** or any elsewhere outside to submit changes. Note that function names must not start with a number.

Sorting and Searching Functions

You can sort functions ordered alphabetically by clicking **Sort Functions**  in the toolbar**.** Moreover, to find any function quickly, type its name in the search box.

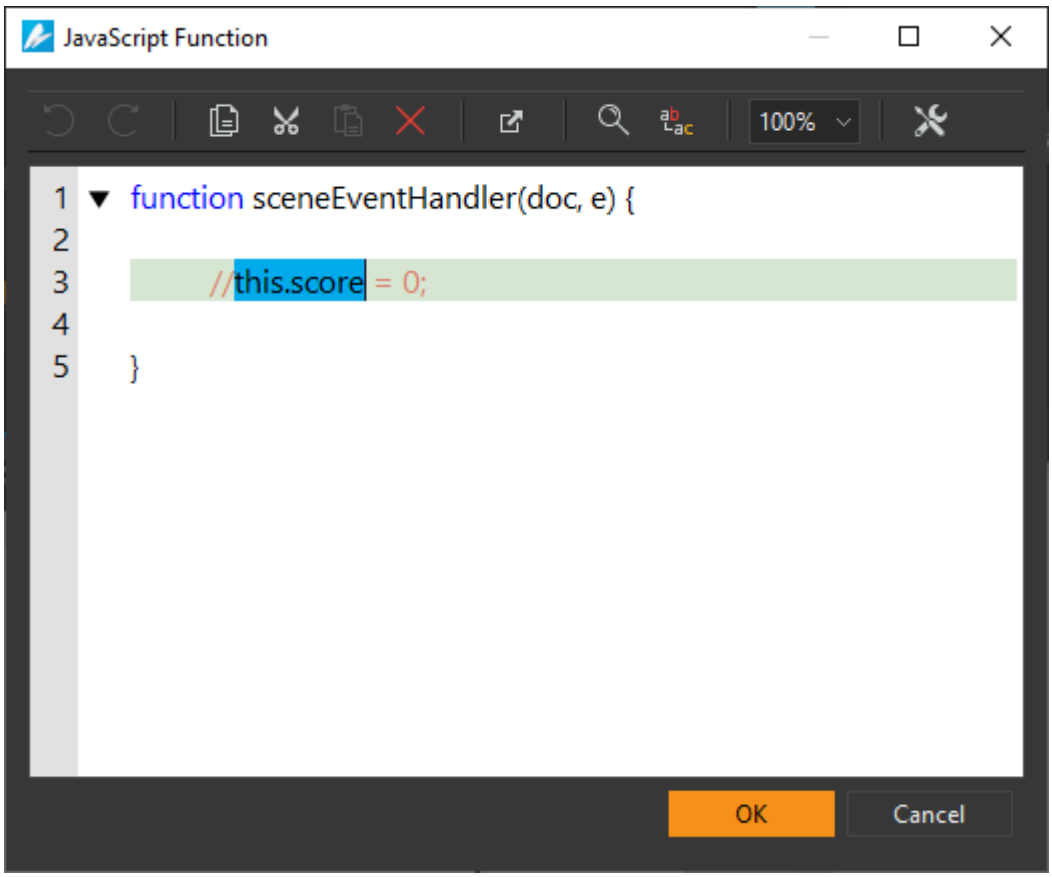
Exporting Functions to JavaScript Files

Select one or more functions > **Export to File** in the toolbar. Then, name the exported file.

Editing Functions

Double-click a function to edit it in the **JavaScript Function** editor. For normal functions, you can edit their names, contents, and parameters. For event handler functions registered with events, you can only edit their names and contents because their parameters are set to fixed.

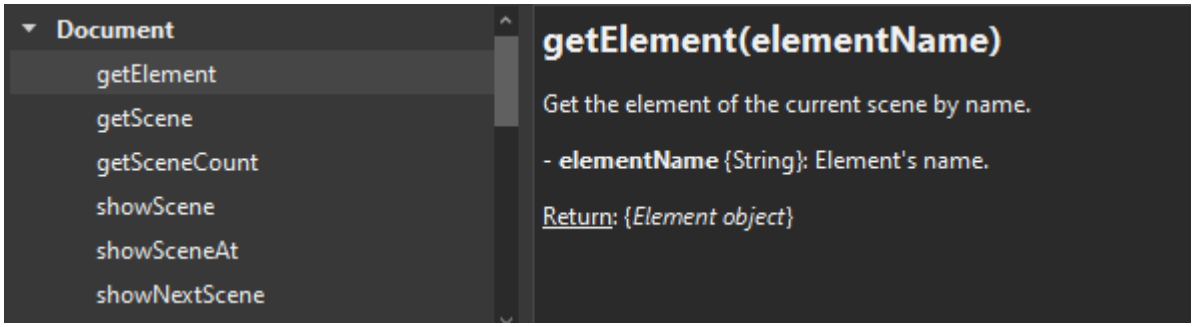
The editor comes with several features that support and speed up the coding process, such as code suggestions, code folding, and line numbers. Toggle these features by clicking **Options** in the toolbar. For more details about the script editor, see **Code Editor Tab** and **Shortcuts for Script Editor**.



Code suggestion is a remarkable feature which predicts the rest of a word or sentence while you are typing. Press the **TAB** key to accept a suggestion, or the **DOWN ARROW** key to select and accept one of the several suggestions. To manually show suggestion, press **CTRL+SPACE** when editing. You can also insert APIs from the **JavaScript API Browser**.

JavaScript APIs

Saola Animate publishes many methods and properties of common element types. Show these methods in the **JavaScript Function** editor by clicking **Options** > **Show API** in the toolbar. These methods are listed with in-app documentation in the pane below the editing area and can be inserted into the editing area quickly by double-clicking.



Document

getElement(elementName)

Get the element of the current scene by name. Params:

-elementName: String. Element's name.

Return: Element object.

getScene()

Get the current scene of the document. Return: Scene object.

getSceneCount()

Get the number of scenes. Return: Number.

showScene(sceneName) Show the scene by name. Params:

- sceneName: String. Scene's name.

Return: Boolean. True if the scene was found, false otherwise.

showSceneAt(index)

Show the scene at the given index. Params:

-index: Number. The index of the scene. The first scene has index 0.

Return: Boolean. True if the scene was found, false otherwise.

showNextScene()

Show the next scene from the current scene.

Return: Boolean. True if the next scene exists, false otherwise.

showPreviousScene()

Show the previous scene from the current scene.

Return: Boolean. True if the previous exists, false otherwise.

getDuration()

Get the total duration (in milliseconds) of all Main Timelines of all scenes and scene transitions.

Return: Number. Duration in milliseconds.

setSpeed(speed)

Set the playback speed of the document. Params:

-speed: Number. The playback speed of the document must be a

positive value (e.g. 0.5, 1). Normal speed: 1. Return: undefined.

getSpeed()

Get the playback speed of the document. Return: Number.

setPlayBackward(backward) Set the playback direction. Params:

- backwards: Boolean. Set the playback to backward if undefined or

true, forward if false. Return: undefined.

isPlayBackward()

Check if the playback direction is backward.

Return: Boolean. True if playing backward, false if playing forward.

play()

Play the mainstream (Main Timeline or scene transition). Return: undefined.

pause()

Pause the mainstream (Main Timeline or scene transition). Return: undefined.

isPlaying()

Check if the mainstream is playing or paused.

Return: Boolean. True if the mainstream is playing, false if paused.

getTimeline(timelineName)

Get the timeline of the current scene by name. If timelineName is undefined, the timeline is the Main Timeline.

Params:

-timelineName: String. Timeline’s name. Return: Timeline object.

Timeline

getDoc()

Get the current document. Return: Document object.

getTimestamp()

Get the current timestamp (in milliseconds), relative to the beginning of the timeline.

Return: Number.

getDuration()

Get the duration (in milliseconds) of the timeline. Media and symbols are not taken into account.

Return: Number.

play(timestamp, speed, backward)

Play the timeline at the given timestamp with speed and playback direction.

Params:

- timestamp: Number/String. Timeline's timestamp or label. Play from the current position if not specified.
- speed: Number. Playback speed. Playback speed. Keep the current speed if this speed is undefined or invalid (<= 0).

- backward: Playback direction. Keep the current direction if undefined, play backward if true, forward if false.

Return: undefined.

pause(timestamp)

Pause the timeline at the given timestamp Params:

- timestamp: Number/String. Timeline's timestamp or label. Pause at the current position if not specified.

Return: undefined.

isPlaying()

Check if the mainstream is playing or paused.

Return: Boolean. True if the mainstream is playing, false if paused.

seek(timestamp)

Seek the timeline to the given timestamp. Params:

- timestamp: Number/String. Timeline's timestamp or label. Return: undefined.

setSpeed(speed)

Set the playback speed. Params:

- speed: Number. Must be a positive value, e.g. 0.5, 1, 2. Return: undefined.

getSpeed()

Get the playback speed. Return: Number.

setPlayBackward(backward) Set the playback direction. Params:

- backward: Boolean. Play backward if undefined or true, forward if

false.

Return: undefined.

isPlayBackward()

Check if the playback direction is backward.

Return: Boolean. True if playing backward, false if playing forward.

Element

getScene()

Get the scene. Return: Scene object.

getDoc()

Get the current document. Return: Document object.

show(show)

Show/Hide the element. Params:

- show: Boolean. Show if true or undefined, hide if false.

Return: undefined.

isVisible()

Get the visibility state.

Return: Boolean.

setCursor(cursor)

Set the cursor for the element, following CSS cursor. Params:

- cursor: String. Follow **CSS Cursor**. Return: undefined.

setPosition(left, top)

Set the position of the element. Params:

- left, top: Number/String. Value of left/top.

Return: undefined. The left/top can be a number (e.g. 50) or a string (e.g. '50px', '50%'). If it is a number, the unit is pixels.

setLeft(left)

Params:

- left: Number/String. Value of left.

Return: undefined. The left can be a number (e.g. 50) or a string (e.g. '50px', '50%'). If it is a number, the unit is pixels.

setTop(top)

Params:

- top: Number/String. Value of right.

Return: undefined. The top can be a number (e.g. 50) or a string (e.g. '50px', '50%'). If it is a number, the unit is pixels.

setRight(right)

Params:

- right: Number/String. Value of right.

Return: undefined. The right can be a number (e.g. 50) or a string (e.g. '50px', '50%'). If it is a number, the unit is pixels.

setBottom(bottom)

Params:

- bottom: Number/String. Value of bottom.

Return: undefined. The bottom can be a number (e.g. 50) or a string (e.g. '50px', '50%'). If it is a number, the unit is pixels.

setSize(width, height)

Params:

- width, height: Number/String. Width/Height of the element.

Return: undefined. The width/height can be a number (e.g. 50) or a string (e.g. '50px', '50%'). If it is a number, the unit is pixels.

setWidth(width)

Params:

- width: Number/String. Width of the element.

Return: undefined. The width can be a number (e.g. 50) or a string (e.g. '50px', '50%'). If it is a number, the unit is pixels.

setHeight(height)

Params:

- height: Number/String. Height of the element.

Return: undefined. The height can be a number (e.g. 50) or a string (e.g. '50px', '50%'). If it is a number, the unit is pixels.

setBorderStyle(border)

Set the border style of the element. Params:

- border: CSS border style value. Possible values: 'none', 'solid',

'dotted', 'dashed'. Return: undefined

setBorderWidth(width)

Set the border width of the element. Params:

- width: Number/String. The width can be a number (e.g. 10) or a string (e.g. '10px', '10%'). If it is a number, the unit is pixels. Return: undefined.

setBorderColor(color)

Set the border color of the element. Params:

- color: String. Name of the color, following CSS color, e.g.

'red', 'rgb(255, 0, 0)'.

Return: undefined.

fillSolid(color)

Fill the background with a solid color. Params:

- color: String. Name of the color, following CSS color, e.g.

'red', 'rgb(255, 0, 0)'.

Return: undefined.

fillNone()

Set the fill style to none.

Return: undefined.

setTitle(title)

Set the title (tooltip) of the element. Params:

- title: String. Title of the element.

Return: undefined.

setText(htmlText)

Set the HTML text. Do not call this method for elements that cannot have text, e.g. image, audio, video, symbol.

Params:

- htmlText: String. Text in HTML format. Return: undefined.

Event

preventDefault()

Prevent default actions of the event. Return: undefined.

stopPropagation()

Stop event propagation. Return: undefined.

stopImmediatePropagation()

Stop event propagation immediately. Return: undefined.

Preloader

getProgress()

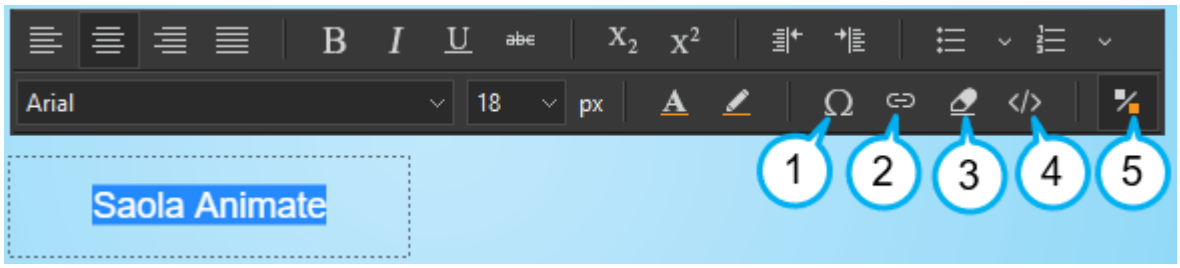
Get the current loading progress, from 0 to 1. Return: Number.

Chapter 16: Using Text Editor

Format text using the **Floating Text Format** toolbar and **Properties** pane.

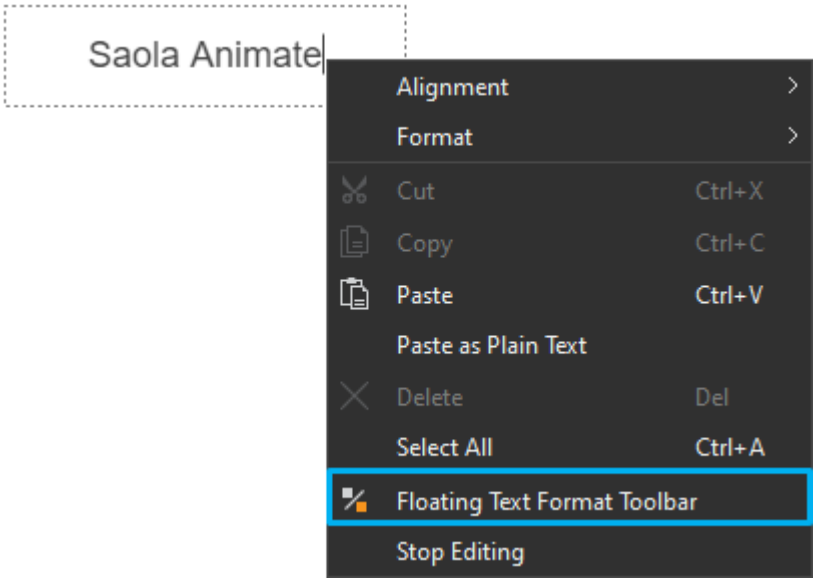
Text can be added to any text-based elements, namely text, DIVs, and shapes. Insert these elements into a scene, then double-click them to open the inline text editor and type text.

To format text, use keyboard shortcuts or commands in the **Floating Text Format** toolbar. You can also set the default text style of elements in the **Properties** pane > **Text** section.



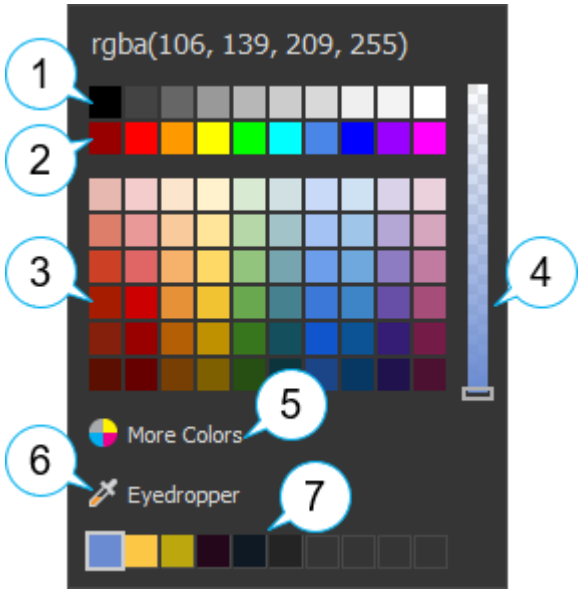
There are some commands and options you need to mind:

1. **Insert Special Character**: Insert a special character.
2. **Insert Link**: Insert a hyperlink into text by specifying both the URL and the anchor text.
3. **Clear Formatting**: Return the selected text to its default formatting.
4. **Edit HTML**: Edit the HTML of the text directly with valid HTML tags and styles.
5. **Floating Text Format Toolbar**: Hide the **Floating Text Format** toolbar. To show it again, right-click the inline text editor > **Floating Text Format Toolbar**.



Chapter 17: Using Color Picker

Use the RGBA color picker for fills, borders, and text. Open it with a **Color** button in the Properties pane or Floating Text Format toolbar.



1. **Grayscale**: Colors ranging from black to white.
2. **Standard colors**: A list of 10 standard colors.
3. **Color shades and tints**: Colors created by adding black and white to standard colors.
4. **Opacity slider**: Adjust the opacity or transparency of a color in the range of 0 to 255. 0 opacity means completely transparent.
5. **More Colors**: Choose a custom color from the Select Color dialog.
6. **Eyedropper**: Pick a color from within the application window.
7. **Recently used colors**: Colors selected by users (by using **More Colors** and

> **Eyedropper** options).

Chapter 18: Event - Action References

Events are occurrences that determine when to trigger an action. When an event is detected, actions fire as a response. Events and actions are controlled in the **Event Handlers** dialog. Open this dialog by clicking the **Event Handlers** buttons which appear as a lightning bolt in many panes.

Events

Event Name	Remark
Element Events	
Mouse Click	Occur when users click an element.
Mouse Double Click	Occur when users double-click an element.
Mouse Down	Occur when users press the mouse button over an element.
Mouse Up	Occur when users release the mouse button over an element.
Mouse Move	Occur when the mouse pointer is moving while it is over an element.
Mouse Enter	Occur when the mouse pointer moves onto an element.
Mouse Leave	Occur when the mouse pointer moves out of an element.
Mouse Over	Occur when the mouse pointer moves onto an element, or onto one of its children.
Mouse Out	Occur when users move the mouse pointer out of an element, or out of one of its children.
Swipe Left	Occur when users swipe over an element from right to left.
Swipe Right	Occur when users swipe over an element in from left to right.
Focus	Occur when an element gets focused.
Scene Events	
Scene Activate	Occur when a scene starts displaying.
Scene Deactivate	Occur right before a scene ends.
Key Down	Occur when users press a keyboard key.
Key Up	Occur when users release a keyboard key.
Scroll	Occur when users scroll a scene. The scroll bar appears when the scene content exceeds the window's borders.
Orientation Change	Occur when users rotate a mobile device vertically or horizontally.

Window Resize	Occur when a browser window is resized.
Element Events	Scene has all element events (Mouse Click, Mouse Over, Mouse Leave, etc.)
Document Events	
Create	Occur right after a document has been created but hasn't displayed any content yet. Users can bind actions to this event to customize the player or change the document's data.
Ready	Occur after the Document Create event, when a document is ready to play but hasn't displayed any content yet, except a preloader (if any).
Destroy	Occur when a document is being removed from page.
Script Error	Occur when errors arise from the functions used in the Run JavaScript action.
Timeline Events	
Update	Occur when the timeline updates itself constantly when the Playhead reaches every tick mark on the timeline.
Play	Occur when the playback of the timeline changes from pause to play.
Pause	Occur when the playback of the timeline changes from play to pause.
Complete	Occur when the timeline plays until the end and stops.
Speed Change	Occur when the playback speed of the timeline changes.
Reverse	Occur when the playback direction of the timeline changes (forward and backward).
Seek	Occur when users seek a specific time in the timeline, causing an instant jump to a new time.
Preloader Events	
Start	Occur when the preloader starts.
Progress	Occur when the preloader is in progress, from start to end.
Complete	Occur when the preloader loads all resources completely.
Item Start	Occur when the preloader starts loading one resource.
Item Complete	Occur when the preloader finishes loading one resource or a load error happens.

Actions

Action Name	Target Object	Parameter	Remark
Timeline Actions			
Start Timeline	Timeline	Direction (Forward, Backward), Speed (%)	Start the playback of the target timeline.
Play Timeline	Timeline	Direction (Forward, Backward), Speed (%)	Resume the playback of the target timeline.
Play Timeline From	Timeline	Direction (Forward, Backward), Time or Timeline Label, Speed (%)	Resume the playback of the target timeline from a specific time or label.
Pause Timeline	Timeline		Pause the playback of the target timeline.
Pause Timeline At	Timeline	Time or Timeline Label	Jump to and pause at a specific time or label in the target timeline.
Toggle Play/Pause Timeline	Timeline		Toggle the playback of the target timeline.
Seek Timeline	Timeline	Time or Timeline Label	Jump to a specific time or label in the target timeline without affecting whether or not the timeline is playing or paused.
Symbol Actions			
Start Symbol	Symbol	Direction (Forward, Backward), Speed (%)	Start the playback of the target symbol.
Play Symbol	Symbol	Direction (Forward, Backward), Speed (%)	Resume the playback of the target symbol.
Play Symbol From	Symbol	Direction (Forward, Backward), Time or Timeline Label, Speed (%)	Resume the playback of the target symbol from a specific time or label.
Pause Symbol	Symbol		Pause the playback of the symbol timeline.

Pause Symbol At	Symbol	Time or Timeline Label	Jump to and pause at a specific time or label on the timeline of the target symbol.
Toggle Play/Pause Symbol	Symbol		Toggle the playback of the target symbol.
Seek Symbol	Symbol	Time or Timeline Label	Jump to a specific time or label on the timeline of the target symbol without affecting whether or not the timeline is playing or paused.
Media Actions			
Start Media	Audio, Video	Speed (%)	Start the playback of the target audio or video.
Play Media	Audio, Video	Speed (%)	Resume the playback of the target audio or video.
Play Media From	Audio, Video	Time, Speed (%)	Resume the playback of the target audio or video from a specific time.
Pause Media	Audio, Video		Pause the playback of the target audio or video.
Pause Media At	Audio, Video	Time	Jump to and pause at a specific time of the target audio or video.
Mute Media	Audio, Video		Mute the target audio or video.
Media Volume	Audio, Video	Volume (%)	Change the volume of the target audio or video.
Toggle Mute/Unmute Media	Audio, Video		Toggle the mute state of the target audio or video.
Mute All Media	None		Mute all audio and video element in a scene.
Toggle Play/Pause Media	Audio, Video		Toggle the playback of the target audio or video.
Seek Media	Audio, Video	Time	Jump to a specific time of the target audio or video without affecting whether or not it is playing or paused.

Play Video Full Screen	Video		Play the target video in full screen, subject to browser permission and user-interaction requirements. Saola uses native iPhone video fullscreen when standard fullscreen is unavailable.
Visibility Actions			
Hide Element	All Element Types		Hide the target element.
Show Element	All Element Types		Show the target element.
Toggle Show/Hide Element	All Element Types		Toggle the visibility state of the target element.
Other Actions			
Jump to Scene	Scene	Transition Type, Duration (ms), Easing, Direction	Change to the target scene.
Go to URL	None	URL, New Window (Yes, No)	Open a webpage in a browser.
Change Text	Div, Text, Shape	Text	Change the text that appears in the target element.
Run JavaScript	None	Function (see **JavaScript**)	Invoke a JavaScript function.

Chapter 19: Customizing Preloader

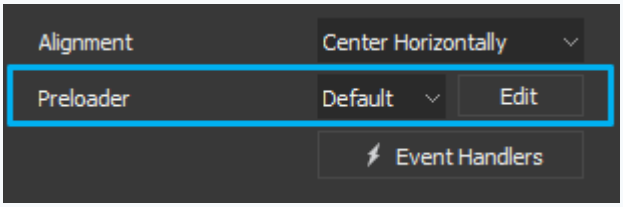
A preloader shows progress while a project downloads.

By default, Saola Animate documents preload all images before showing a scene. To show the loading progress, they display a loading indicator that contains a spinner and a percentage sign.



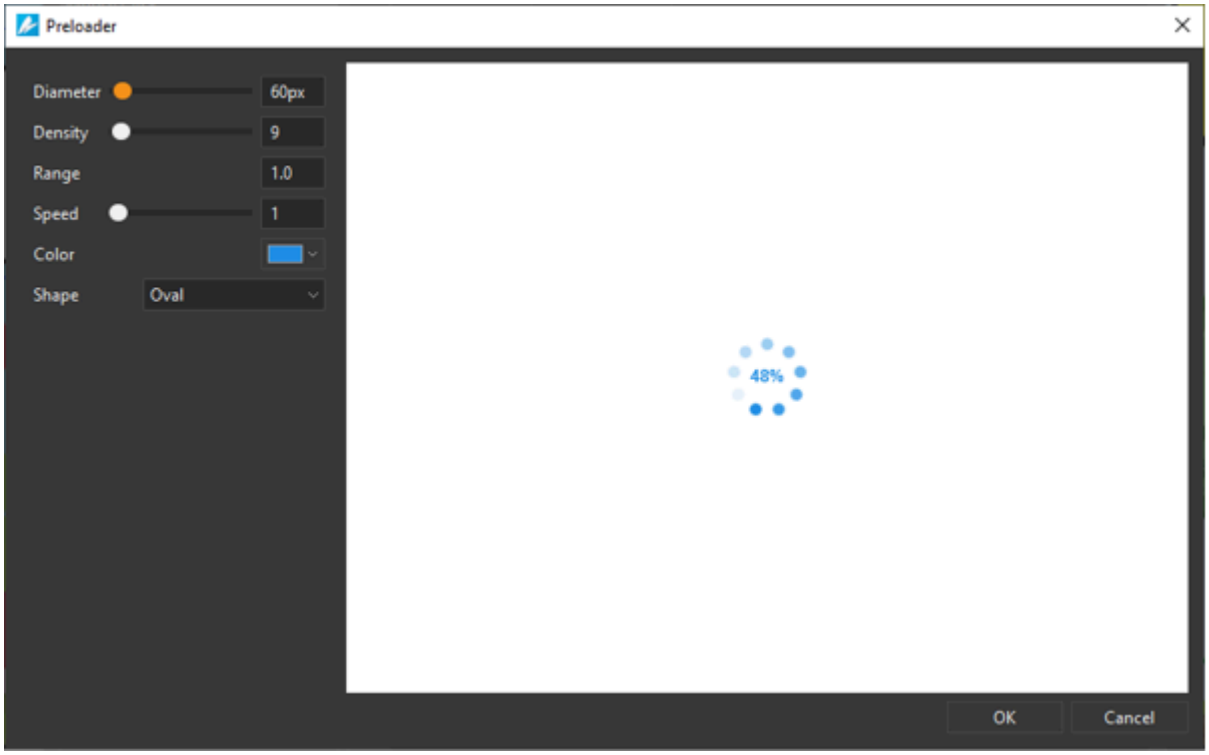
You can customize this loading indicator or create your own loading screen. Do the following:

1. Open the **Document** pane. If you don't see this pane, click **View** > **Document**.
2. Saola Animate offers two preloader types: **Default** and **Custom**. Select either of the two and click **Edit** to modify as you like.



Default Preloader

When you choose Default preloader, the **Loading Indicator** window appears, allowing you to customize the loading indicator. All changes you make are immediately reflected in the preview window.



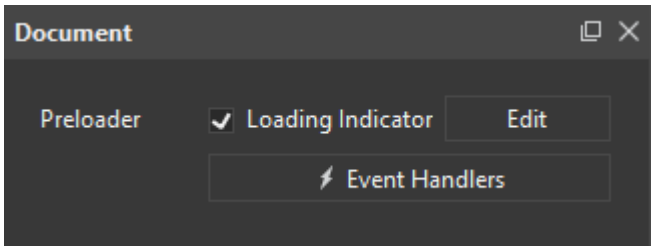
The loading indicator has six editable properties. To adjust their values, you can drag the handle on the slider, scroll the mouse wheel, or enter a new value.

- **Diameter**: Set the diameter of the loading indicator.
- **Density**: Set the number of shapes drawn on the loading indicator.
- **Range**: Set the amount of the modified shapes in percentages. Specifically, it sets what range of the shapes should be scaled and/or faded. The shapes that are out of this range will be scaled and/or faded with a minimum amount only. If the range is 0.1, every shape out of the range will be scaled and/or faded to 10% of the original values. The visually acceptable range value should be between 0.4 and 1.5. The default value is 1.0.
- **Speed**: Set the speed of the loading indicator animation. This value tells the loading indicator how many shapes to skip by each tick.
- **Color**: Set the color of the loading indicator in RGB.
- **Shape**: Set the type of the loading indicator shapes, namely oval, spiral, square, rectangle, and rounded rectangle.

Custom Preloader

When you choose Custom preloader, Saola Animate opens a preloader document where you can create a loading screen of your own. A custom preloader is a document, so you can create animation as normal. You can also use **preloader events** to add interactivity. The custom preloader document will close if you close the main document or if you switch from Custom to Default preloader.

The loading indicator appears by default, but you can clear the **Loading Indicator** check box to turn it off. Of course, you can modify it as normal.



Chapter 20: Menus, Toolbars and Shortcuts

Use these tables to look up commands and default shortcuts. To change shortcuts, see Shortcuts Tab.

File Menu

Command	Icon	Default Shortcut	Remark
New		CTRL+N	Create a new project.
Open Project		CTRL+O	Open an existing project.
Recent Projects			List of recently opened projects.
Save		CTRL+S	Save the current project.
Save As > Project			Save the project under a new name.
Save As > Package		CTRL+SHIFT+P	Save the project to package.
Close		CTRL+F4	Close the current project.
Preview Current Scene in Browser		CTRL+F5	Preview the current scene in a default browser.
Preview Project in Browser		F5	Preview the current project in a default browser.
Export to HTML5		CTRL+ALT+E	Export the current project to HTML5.
Export to Video			Export the current project to video.
Connect AI Agent...			Enable or disable the local MCP server and copy connection details. See Working with AI Agents.
Exit			Close the application.

Edit Menu

Command	Icon	Default Shortcut	Remark
Undo		CTRL+Z	Revert the last actions. If you want to revert many actions at once, click the down arrow next to the button and select the action in the list that you want to undo.

Redo		CTRL+Y	Revert the last “undone” actions. If you want to redo several actions, click the down arrow next to the button and select the action in the list that you want to redo.
Cut		CTRL+X	Remove the selected objects and place them on the Clipboard.
Copy		CTRL+C	Copy the selected objects onto the Clipboard.
Paste		CTRL+V	Paste the contents of the Clipboard at the current location.
Paste Here			Paste the copied elements at the position of the cursor.
Paste with Animation			Paste the copied elements with their existing animations.
Delete		DELETE	Delete the selected objects.
Select All		CTRL+A	Select all objects.
Group		CTRL+G	Group the selected elements together to create a new group element.
Ungroup		CTRL+SHIFT+G	Ungroup a group.
Add to Group			Add more elements to an existing group without nesting group.
Remove from Group			Remove some elements out of a group without ungrouping entire that group.
Layout Group			Adjust a group position and size to fit its children.
Convert to Symbol			Convert the selected elements to a symbol.
Size > Make Same Width			Match the width of all other elements with the width of the reference element.
Size > Make Same Height			Match the height of all other elements with the height of the reference element.
Size > Make Same Size			Match the width and height of all other elements with those of the reference element, respectively.

Alignment > Align Left		SHIFT+L	Align the left side of all other elements with the left of the reference element.
Alignment > Align Right		SHIFT+R	Align the right side of all other elements with the right of the reference element.
Alignment > Align Top		SHIFT+T	Align the top of all other elements with the top of the reference element.
Alignment > Align Bottom		SHIFT+B	Align the bottom of all other elements with the bottom of the reference element.
Alignment > Align Center		SHIFT+E	Align the center of all other elements with the vertical center of the reference element.
Alignment > Align Middle		SHIFT+M	Align the center of all other elements with the horizontal center of the reference element.
Alignment > Distribute Left Edge			Distribute the left edges of the selected elements evenly within the reference element.
Alignment > Distribute Horizontal Center			Distribute the horizontal centers of the selected elements evenly within the reference element.
Alignment > Distribute Right Edge			Distribute the right edges of the selected elements evenly within the reference element.
Alignment > Distribute Top Edge			Distribute the top edges of the selected elements evenly within the reference element.
Alignment > Distribute Vertical Center			Distribute the vertical centers of the selected elements evenly within the reference element.
Alignment > Distribute Bottom Edge			Distribute the bottom edges of the selected elements evenly within the reference element.
Alignment > Space Horizontally			Distribute the selected elements so that the horizontal gaps between them are equal.
Alignment > Space Vertically			Distribute the selected elements so that the vertical gaps between them are equal.

Display Order > Bring to Front			Place the selected element at the very top of the stack.
Display Order > Bring Forward			Send the selected element higher by one level in the stack.
Display Order > Send to Back			Place the selected element at the very bottom of the stack.
Display Order > Send Backward			Send the selected element lower by one level in the stack.
Preferences			View and edit global settings. This command is in the **File** menu on macOS.

Scene Menu

Command	Icon	Default Shortcut	Remark
Blank Scene			Insert a blank scene.
Duplicate Scene			Duplicate the selected scene to a new scene.

Element Menu

Command	Icon	Default Shortcut	Remark
Rectangle Div			Insert a rectangle div.
Rounded Rectangle Div			Insert a rounded rectangle div.
Ellipse Div			Insert an ellipse div.
Text			Insert a text.
HTML Widget			Insert an HTML widget.
Image			Insert an image.
Audio			Insert an audio.
Text to Speech...			Generate narration from text with a cloud voice and insert it.
Video			Insert a video.
Symbol			Insert a symbol.
Custom Element			Insert a custom element.

Shape			Insert a shape. Click the down arrow to choose the shape you want.
Freeform			Insert a freeform.

Timeline Menu

Command	Icon	Default Shortcut	Remark
Play/Stop		SPACE	Switch the control to play or stop the selected action on the timeline, starting from the current position of the Playhead.
Playhead > Go to Start		HOME	Bring the Playhead to the beginning of the timeline.
Playhead > Go to End		END	Bring the Playhead to the end of the animation on the timeline.
Playhead > Go to Time...		CTRL+T	Focus on the time editor in Timeline to change the current time.
Playhead > Next Keyframe		CTRL+UP	Move the Playhead to the next keyframe.
Playhead > Previous Keyframe		CTRL+DOWN	Move the Playhead to the previous keyframe.
Playhead > Next Big Tick Mark		CTRL+RIGHT	Move the Playhead to the next timestamp in second.
Playhead > Previous Big Tick Mark		CTRL+LEFT	Move the Playhead to the previous timestamp in second.
Playhead > Next Medium Tick Mark			Move the Playhead to the next timestamp in half a second.
Playhead > Previous Medium Tick Mark			Move the Playhead to the previous timestamp in half a second.
Playhead > Next Small Tick Mark		RIGHT	Move the Playhead to the next timestamp in millisecond.
Playhead > Previous Small Tick Mark		LEFT	Move the Playhead to the previous timestamp in millisecond.
Playhead > Next Grid Line			Move the Playhead to the next grid line. **Grid lines** give precise measurements of the timeline by displaying subtle vertical lines at regular intervals.
Playhead > Previous Grid Line			Move the Playhead to the previous grid line. **Grid lines** give precise measurements of the timeline by displaying subtle vertical lines at regular intervals.

Loop Playback			The animation will be played endlessly (in a loop). When the Playhead reaches the end of the animation, it will return to the beginning and continue playing.
Auto-Keyframe Mode		K	Automatically generate keyframes when creating animations.
Auto-Keyframe Range		R	Automatically generate keyframe ranges when creating animations.
Effect			Insert preset effect for the element.
Add Keyframe			Create a property keyframe for the selected element.
Insert Label		ALT+L	Insert a label at the Playhead position.
Insert Trigger		ALT+T	Insert a trigger at the Playhead position.
Event Handlers			Open the Timeline Event Handlers.
Create Transition		CTRL+SHIFT+T	Create transitions for an animation segments that don't have transitions.
Remove Transition		SHIFT+DEL	Remove transitions from animation segments.
Invert Animation Segment			Swap the starting and ending keyframes of an animation segment.
Show Animated Elements Only			Hide elements which don't have property animations.
Snapping		ALT+;	Snap the Playhead, keyframes, labels, and triggers to each other or to particular tick marks on the timeline. Snapping helps easily line up keyframes and animation segments on the timeline. Three snapping modes available: Grid, Playhead, and Keyframes, Labels, Triggers.
Snap To > Grid			The Playhead and timeline items snap to the grid lines which only appear when you click the **Show Grid** button.
Snap To > Playhead			The keyframes, labels, triggers snap to the Playhead.
Snap To > Keyframes, Labels, Triggers			The Playhead and timeline items snap to the position of timeline items.

Show Grid			Show grid lines on the timeline. Grid lines give precise measurements of the timeline by displaying subtle vertical lines at regular intervals.
Grid			Use the Grid submenu to set the time increments, such as half-second, quarter second, and 24 fps.
Zoom In			Expand the time scale to see more details.
Zoom Out			Reduce the time scale of the timeline.
Zoom to Fit			Fit the existing animation to the timeline view.
Expand/Collapse All		CTRL+SHIFT+.	Expand or collapse all animated properties of elements.

View Menu

Command	Icon	Default Shortcut	Remark
Language			Choose the language of the user interface.
Theme			Choose the theme of the user interface. See Changing Theme.
Rulers			Show/hide the rulers on the Canvas.
Canvas Snapping			Turn canvas snapping on/off.
Zoom > Zoom Level			Set the zoom level of the Canvas.
Zoom > Fit on Screen			Set the scene content to fit into the viewport size.
Toolbars > File			Show/hide the **File** toolbar.
Toolbars > Edit			Show/hide the **Edit** toolbar.
Toolbars > Insert			Show/hide the **Insert** toolbar.
Toolbars > Modify			Show/hide the **Modify** toolbar.
Properties			Show/hide the **Properties** pane.
Scenes			Show/hide the **Scenes** pane.
Document			Show/hide the **Document** pane.
Timeline			Show/hide the **Timeline** pane.
Elements			Show/hide the **Elements** pane.

Resources			Show/hide the **Resources** pane.
Functions			Show/hide the **Functions** pane.
Breakpoints			Show/hide the **Breakpoints** pane.
Reset Pane Layout			Return all panes to their default position, size, and visibility.

Help Menu

Command	Icon	Default Shortcut	Remark
About			Provide information about the current version.
Help Contents		F1	Launch the **Help** file.
Video Tutorials			Open the Saola Animate video tutorials.
Online Demos			Open the Saola Animate online demos.
Report a Problem			Open **Support Questions** category on **Atomi Community**.
Provide a Suggestion			Open **Feature Requests** category on **Atomi Community**.
Check for Updates			By default, Saola Animate periodically checks for updates when it starts. Disable this feature by opening **Preferences** (Edit menu on Windows; File menu on macOS) > **General**, and under **Editing and Integration** clear **Automatically check for updates**.
Activate License / Deactivate License			Activate using a product key, or deactivate the current license.
Manage License Activation			Open **Saola Animate License Activation Management** webpage for you to manage your license activation.

Dockable Toolbar

The **Dockable Toolbar**, below the main menu, provides shortcuts to common commands.

Floating Text Format Toolbar

The **Floating Text Format** toolbar appears when you edit text inline. It provides necessary commands for formatting text.

Command	Icon	Default Shortcut	Remark
Font Name			Change the font of the selected text.
Add fonts			Add Google fonts to a document.
Font Size			Change the size of the selected text.
Align Left		CTRL+L	Align the selected text left.
Center		CTRL+E	Center the selected text.
Align Right		CTRL+R	Align the selected text right.
Justify		CTRL+J	Justify the selected text.
Bold		CTRL+B	Make the selected text bold.
Italic		CTRL+I	Make the selected text italic.
Underline		CTRL+U	Underline the selected text.
Strikethrough			Strike the selected text through.
Subscript		CTRL+=	Format the selected text as subscript.
Superscript		CTRL+SHIFT+=	Format the selected text as superscript.
Decrease Indent			Move the selected text closer to the margin.
Increase Indent			Move the selected text father away from the margin.
Bullets			Create a bulleted list.
Numbering			Create a numbered list.
Text Color			Change the text color of the selected text.
Highlight Color			Highlight the selected text.
Insert Special Character			Insert a special character into the text.
Insert Link			Insert a hyperlink into text.

Clear Formatting			Return the selected text to its default formatting.
Edit HTML			Edit the HTML of the text.
Floating Text Format Toolbar			Show/hide the **Floating Text Format** toolbar when editing text.

Shortcuts for Script Editor

Command	Icon	Default Shortcut	Remark
Undo		CTRL+Z	Revert the last actions.
Redo		CTRL+Y	Revert the last "undone" actions.
Copy		CTRL+C	Copy the selected items onto the Clipboard.
Cut		CTRL+X	Remove the selected items and place them on the Clipboard.
Paste		CTRL+V	Paste the contents of the Clipboard at the current location.
Delete		DELETE	Delete the selected items.
Export to File			Export the current function to file.
Search		CTRL+F	Display the Find search box where you can find specific text.
Replace		CTRL+H	Display the Find search box where you can replace specific text.
Zoom In/Out		CTRL+Mouse Wheel Up/Down	Expand/reduce the text size.
Options			Show/hide editor features and access the **Preferences** dialog > **Code Editor tab**.

Chapter 21: Customizing Saola Animate

Changing Language

Version 4 adds **Vietnamese** alongside English, German, Spanish, French, Italian, Polish, and Russian. This manual uses English command labels.

On first launch, Saola uses the system language when a matching translation is available; otherwise it uses English. If you prefer another language, click **View** > **Language** and select another language. The change will apply the next time you open the application.

Another way to customize the display language is using the **Preferences** dialog. Do the following steps:

1. Open **Edit > Preferences** on Windows or **File > Preferences** on macOS.
2. In the **General** tab, select the appropriate language in the **Language** drop-down list.
3. Click **Apply** to submit changes.

Changing Theme

Saola Animate offers two dark themes. **Dark**, the default, has an orange accent; **Royal Blue** has navy surfaces with a blue accent. To change the theme, click **View** > **Theme** and select a theme, or select it in the **Theme** drop-down list of the **Preferences** dialog and click **Apply**. The theme changes immediately, without restarting the application or closing open projects.

A theme changes only the appearance of the application. Your project's colors, thumbnails, preview, and exported output stay the same.

Customizing User Interface

Showing and Hiding Panes and Toolbars

Click the **View** menu and do one of the following:

- Show or hide four toolbars on the dockable toolbar, namely **File**, **Edit**, **Insert**, and **Modify**. In the **View** menu > **Toolbars**.
- Show or hide many panes, such as **Properties**, **Scenes**, **Document** and **Timeline**.

Alternatively, right-click the dockable toolbar to toggle toolbars and panes. Active items have a check mark next to their labels. Also, you can click the **Close** button at the top-right corner of a pane to close it.

Saola Animate saves the project settings when you close a project. The next time you open the application, the settings of the last saved project will automatically apply to the new one.

Changing Pane Location

Drag panes except the **Timeline** pane from their current location by dragging their title bar. Alternatively, click the **Float**  button at the top right corner of a pane to undock it. After undocking a pane, you have three available options:

- Make the pane free-floating anywhere on the screen, even outside the application window.

- Dock the pane in a highlighted drop zone. Just drag and bring it to the edge of the window and release the mouse button over a drop zone. The pane will be docked into place.
- Add the pane to a tabbed group which contains several panes sharing the same drop zone. To change the pane order in a group, drag the pane left or right by its tab. To remove the pane from a group and make it free-floating, drag it outside the group by its title bar or its **Float** button.

Changing Pane Size

Changing pane size is useful when you want to make the Canvas larger or want to view more of the information that appears in a pane.

- To resize a docked pane, move the pointer over the left or right edge of the pane (for vertical panes) or over the top edge of the pane (for horizontal panes). When the pointer turns into a resize pointer, drag the boundary to resize the pane to the dimensions you want.
- To resize a floating pane, hover over any edge or corner of the pane until the pointer turns into a resize pointer. Then, drag the boundary until the pane is the width/height you want.

Resetting Pane Layout

To return all panes to their default position, size, and visibility, click **View** > **Reset Pane Layout**. Toolbars stay as they are.

Customizing Preferences

Use the **Preferences** dialog to set how you want Saola Animate to operate. To open the dialog, select **Edit > Preferences** on Windows or **File > Preferences** on macOS. The dialog has four tabs, each tab serves a different category.

Tab	Category
General	General options applicable to the entire application.
Shortcuts	Shortcuts used for various operations.
Code Editor	Options to customize the JavaScript Function editor.
Voices	Accounts of the cloud voices that generate speech from text.

General Tab

The **General** tab is the first tab in the **Preferences** dialog where you can set a few preferences for how Saola Animate works.

Appearance

Select a **Language** and restart Saola to apply it. See Changing Language for available languages and first-launch behavior.

Select a **Theme** and click **Apply**; the theme changes immediately. See Changing Theme.

On Windows, select an **Interface Text Size** to scale the text of the interface. **Use Windows setting** follows the **Text size** setting of Windows; 100%, 110%, 125%, and 150% are fixed sizes. The new size takes effect the next time you start Saola. The Canvas and exported content do not change.

Projects

By default, all new projects are stored in the Documents folder. You are allowed to change the default project location by entering a new location in the **Default Location** text box. You can navigate to a location using the **Browse**  button.

Choose a different folder for an individual project in Creating Projects.

Next to **Backup**, select **Create a backup every** and set the interval in minutes. Auto-backup is enabled at five-minute intervals by default; see Project Backup and Recovery.

Editing and Integration

Paste vector graphics as freeform shapes is selected by default, so pasted SVG paths become freeforms that you can morph.

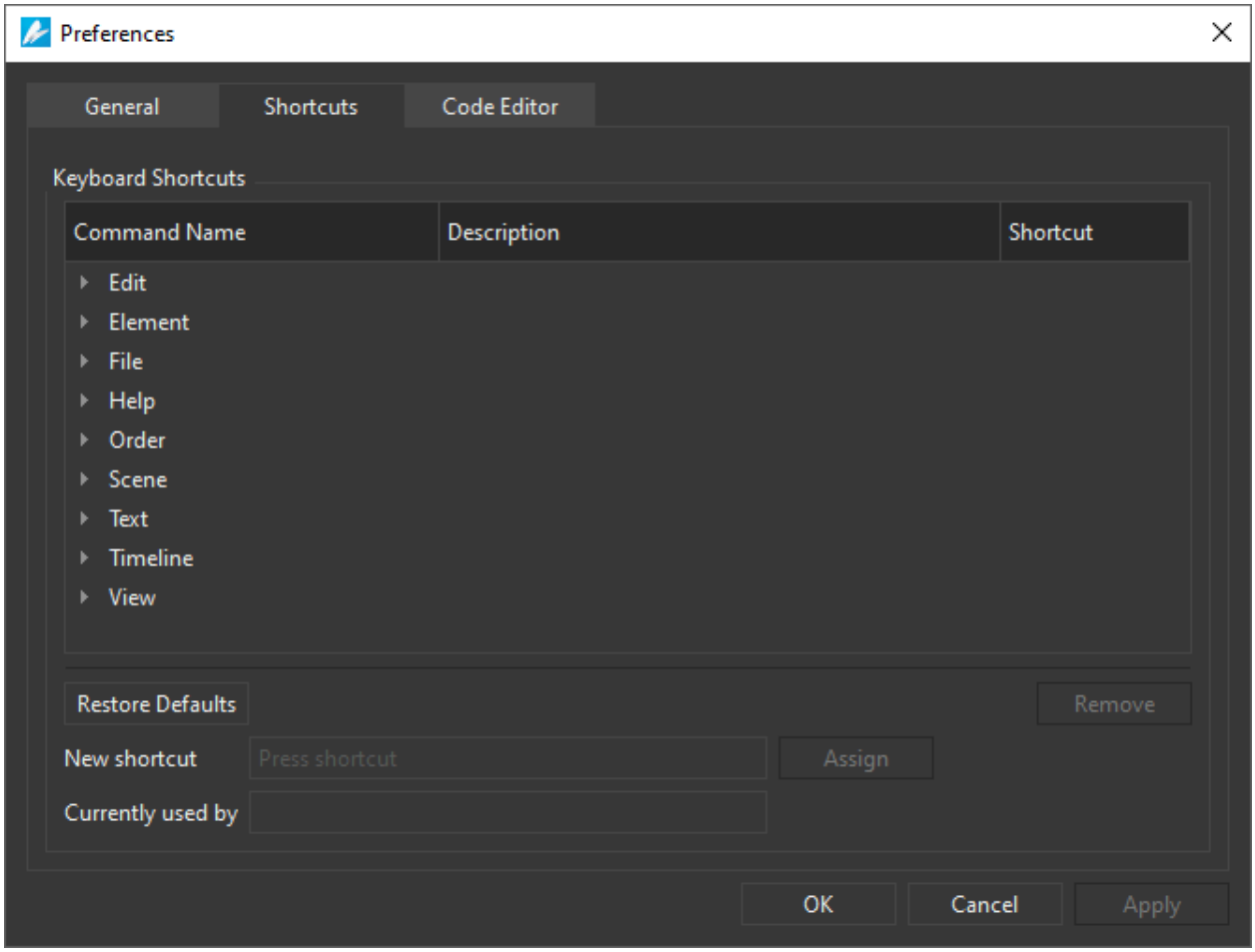
Automatically check for updates makes Saola Animate check for updates when it starts. This is selected by default.

Allow AI agents on this computer to connect (MCP server) is off by default. Select it and click **Apply** or **OK** to enable the server; clear it to stop the server. Connected AI agents can open, edit, save, and export projects. This is the same setting controlled by **File > Connect AI Agent...**. See Working with AI Agents.

Shortcuts Tab

The **Shortcuts** tab shows all keyboard shortcuts in Saola Animate. You can assign shortcuts to commands or remove any shortcuts you don't want.

Expand a command group with its triangle. The **Shortcut** column shows each command's current shortcuts.



Assigning Shortcuts

1. Select a command or item that you want to assign a shortcut.
2. Click inside the **New shortcut** text box and press the combination of keys you want to assign.
3. Notice the **Currently used by** text box to see if the combination of keys is already assigned to a command or item. If it is in use, press a different combination.
4. Click the **Assign** button to assign the new shortcut.
5. Click **Apply** to submit changes.

Assigning a shortcut already in use removes it from its previous command.

Removing Shortcuts

1. Select a command or item that you want to remove its shortcut.
2. Click the **Remove** button.
3. Click **Apply** to submit changes.

You can go back to the original settings at any time by clicking **Restore Defaults**.

Code Editor Tab

Use **Code Editor** to configure the JavaScript editor. Click **Restore Defaults** to reset its settings.

General Settings

- **Code Suggestions**: Provide suggestions when you type into the editing area.
- **Bracket Matching**: Highlight matching sets of brackets.

- **Code Folding**: Allow collapsing or folding the display of a block of code.
- **Line Numbers**: Display line numbers along the side of the code.
- **Line Wrap**: Wrap the code so that each line fits in the viewable window.
- **Show API**: Show a list of APIs in the pane below the editing area.

Syntax Highlighting

Customize syntax highlighting preferences by clicking the color rectangle next to each element and changing the color. All changes are immediately reflected in the preview editor on the right. The default colors suit both themes, and the editor colors stay the same when you switch themes.

Voices Tab

Use **Voices** to set up the providers that convert text to speech: ElevenLabs, Azure AI Speech and Amazon Polly. Each provider needs an account of your own, and the provider bills each generation according to your plan with it, including previews and generations that you cancel or that time out. See the pricing page of each provider.

Saola keeps keys in the credential store of this computer (Windows Credential Manager or the macOS keychain), never in projects or settings files. Regions are not secret and are kept in the settings.

Provider	Fields
ElevenLabs	**API Key**: an API key that you create in your ElevenLabs account.
Azure AI Speech	**API Key**: a key of your Speech resource in the Azure portal. **Region**: the region of that resource, such as `eastus`.
Amazon Polly	**Access Key ID** and **Secret Access Key**: an access key of an IAM user. **Region**: an AWS region where Amazon Polly is available, such as `us-east-1`.

Fill in the fields of a provider, then click **Apply** or **OK** to save them. Click **Test** to check the fields by listing the voices of the provider; a successful test shows how many voices are available. Click **Remove** to delete the saved credentials of the provider from this computer. To remove them, you can also clear every field of the provider and click **Apply**. If only some fields of a provider are filled in, Saola saves nothing and asks you to complete or clear them.

For Amazon Polly, create an IAM user only for Saola and give it only the permissions it needs:

1. Sign in to the AWS Management Console and open the IAM console.
2. Choose **Users**, then **Create user**. On the **Set permissions** page, give the user only the AWS managed policy **AmazonPollyReadOnlyAccess**, which allows listing voices and generating speech, and nothing outside Amazon Polly.
3. Open the user, select its **Security credentials** tab, and click **Create access key**.
4. Copy the access key ID and the secret access key into the **Voices** tab.

If the credential store cannot be read or written, Saola shows the cause and does not keep the keys anywhere else.

Chapter 22: Working with AI Agents

The optional MCP (Model Context Protocol) server lets an external AI client inspect and edit projects or export HTML5. Saola and the client or its connector must run on the same computer.

The server is off by default. Your chosen AI client manages its account and service charges separately.

The Saola Animate Plugin

Saola installs a plugin for Claude Code, Codex, and the ChatGPT desktop app in the `resources/mcp/marketplace` folder of the installation. The plugin includes its own connector, so it needs no additional runtime such as Node.js. It connects the client to the server by itself and adds skills that guide the AI agent through creating animations, adding motion and interactions, adding custom code, building responsive layouts, editing existing projects, and adding voice-over.

Connecting a Client

1. Open **File > Connect AI Agent...**.
2. Click **Turn On**. The dialog shows **MCP server is on** and a tab for each client.
3. Select your client's tab and follow the steps in the table below; **Copy** copies the tab's commands or file path. The **Gemini CLI** and **Other** tabs show the current server URL and token; the other tabs need neither.
4. Connect from the client and ask it to inspect the current project before making changes. If no project is open, create one in Saola first.

Tab	Setup
Claude Code	Run the commands once in a terminal. They install the Saola Animate plugin from the Saola installation. Start a new Claude Code session afterwards.
Claude Desktop	Install the Saola Animate extension: go to **Settings > Desktop app**, click **Manage** next to **Extensions**, click **Advanced settings > Install Extension...**, and select the file shown in the tab. The extension finds the server by itself, so it needs no URL or token.
ChatGPT / Codex	ChatGPT desktop app: click **Open in ChatGPT**. ChatGPT shows the Saola Animate plugin page; click **Install plugin**, then start a new chat and choose **On your computer**. If ChatGPT opens without that page, click **Open in ChatGPT** again. Codex: run the commands once in a terminal instead, then start a new session. Both ways install the Saola Animate plugin from the Saola installation. ChatGPT on the web cannot reach this computer.
Gemini CLI	Run the command once in a terminal.
Other	Enter the **Server URL** in your client's MCP configuration and supply the **Header** value as an HTTP header.

You can also connect Claude Code, Codex, or the ChatGPT desktop app with the **Other** tab details instead of the plugin. These clients then have the Saola tools but not the skills. Replace `<URL>` and `<token>` with the **Server URL** and **Auth Token** values:

- Claude Code: run `claude mcp add -s user --transport http saola-animate <URL> --header "Authorization: Bearer <token>"`.
- Codex and the ChatGPT desktop app: add the following to `~/.codex/config.toml` (in the ChatGPT desktop app, **Settings > Configuration > Open config.toml**), then restart the client.

```
[mcp_servers.saola-animate]
url = "<URL>"
http_headers = { Authorization = "Bearer <token>" }
```

Use a client with local Streamable HTTP MCP and bearer authentication, directly or through a local connector. Cloud-only connectors cannot reach this computer. Follow the setup instructions for your client version.

To change the port, edit **Preferred port**, click **Save**, then turn the server off and on. **0 (automatic)** selects an available port. If the preferred port is in use when the server starts, Saola uses another port, and the dialog says so. Update the URL in clients set up with the **Gemini CLI** or **Other** tab details. The plugin and the Claude Desktop extension need no update.

After installing a new version of Saola, start a new session in Claude Code, which reads the plugin from the Saola installation. In Codex, run `codex plugin add saola-animate@saola-animate` to update the plugin, then start a new session.

Keep the token private. Check your AI client's data-sharing settings before giving it access to confidential projects.

Creating and Reviewing Content

Work on a copy of an existing project while trying a new client. Give a small, concrete request, for example:

> In the open project, add a text element that says Welcome. Animate its horizontal position over two seconds. Leave the project open so I can inspect it before saving.

The agent works in the layout and symbol that are current in Saola, as you do. While a breakpoint layout is selected, its edits override that layout only; while you edit a symbol, they change the symbol.

Inspect the elements, keyframes, and timeline. A single editing operation can change several properties together; **Undo** and **Redo** restore those changes together. Saving and exporting files are separate operations.

Preview the project in a browser and check any exported HTML5. Confirm that the animation or interaction matches your request.

Saola does not stop a request to ask you: the agent asks you in its own chat before it replaces a file, converts an old project, or closes a project with unsaved changes. After an interrupted request, inspect the project before retrying to avoid duplicate edits.

Adding Voice-Over with an AI Agent

An AI agent can narrate your scenes, guided by the plugin's voice-over skill. The agent agrees on a script and a voice with you, generates the speech with a text-to-speech service connected to the same client, adds each take to the project as an audio element that starts on its beat, and makes each scene long enough for its narration. It can also use audio files that you already have.

To connect ElevenLabs as the text-to-speech service:

- Claude Desktop: add a custom connector with the URL `https://api.elevenlabs.io/v1/mcp`, then sign in to ElevenLabs when asked. On the Pro and Max plans, go to **Customize > Connectors**, click **+ Add > Add custom connector**, enter a name and the URL, and follow the dialog to **Add**. Menu names differ between plans and versions; follow Claude's help on custom connectors.
- Claude Code: run `claude mcp add -s user --transport http elevenlabs https://api.elevenlabs.io/v1/mcp`, then run `/mcp` and sign in to ElevenLabs.
- ElevenLabs accounts in a data residency region use that region's URL from the ElevenLabs documentation.

Then give a request such as:

> In the open project, add a voice-over to each scene. Show me the script for each scene first. Use a calm female voice in English, start each sentence when its element appears, and make each scene long enough for its narration.

ElevenLabs bills each generation to your ElevenLabs account, including takes you do not keep. The agent generates speech only after you agree on the script and voice, and generates a take again only when you ask. The links that ElevenLabs returns expire soon, so the agent adds each take to the project right away; the project keeps its own copy.

The agent cannot hear the result. Preview the project in a browser (**File > Preview Project in Browser**) and listen to each scene. Browsers may hold or mute sound until you click the page, so a piece that must speak without a click needs a start button.

Turning the Server Off

Open **File > Connect AI Agent...** and click **Turn Off**. Saola closes the server. You can also open **Preferences** from **Edit** on Windows or **File** on macOS, select **General**, and under **Editing and Integration** clear **Allow AI agents on this computer to connect (MCP server)**, then click **Apply** or **OK**. Selecting the checkbox enables the server again.

Once enabled, the server starts with Saola until you turn it off. Closing the connection dialog does not stop it.

Troubleshooting

Symptom	What to check
Connection refused	Saola is running, the server is on, and the client uses the current URL. The server accepts connections on this computer only.
Authentication error	Copy the current token again and check the `Authorization: Bearer` header.
A cloud connector cannot connect	Use a client or connector running locally with local HTTP MCP support.
The plugin's tools are missing or fail to start	Start a new session. If they are still missing, connect with the **Other** tab details as described above.

Saola tools are listed twice	The client has both the plugin and an earlier manual setup. Remove the earlier entry, for example with `claude mcp remove saola-animate -s user` in Claude Code or the `[mcp_servers.saola-animate]` section in `~/.codex/config.toml`.
A tool reports that a dialog is open	Complete or cancel the dialog in Saola, then inspect the project before retrying.
A tool reports that Saola Animate is not available	The plugin and the Claude Desktop extension list the Saola tools while Saola is closed, but run them only in Saola. Open Saola, choose **File > Connect AI Agent...**, and turn on the server.
A tool reports that Saola is busy	Another tool call or a video export is still running. Wait until it ends, then retry.
A generated take cannot be added because its link has expired	Ask the agent to generate that take again. The new generation is billed again.
Saola tools stop working in Claude Code after you update Saola	Setup closes the connection to Saola. Run `/mcp` and reconnect `saola-animate`, or start a new session.
The result looks wrong	Inspect the edited objects and timeline, use Undo where appropriate, and give a smaller request. Verify the browser output separately.