



# User Manual

## Saola Animate

version 1.0

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# Welcome To Saola Animate

## Have Fun Creating Interactive Web Content

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Saola Animate is the complete solution for creating animated and interactive HTML5 animations for web, digital publishing, advertising, and more. The application's focus is twofold:

- ❖ Make animation design as efficient and enjoyable as possible.
- ❖ Enable users to produce the best possible animated content.

## About This Documentation

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This documentation is designed both as a course in using Saola Animate and as an ongoing reference while you are working with the application. You can skim it quickly for reference, and refer to it for additional information whenever you need.

## Get Started - New Users

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- ❖ Study the [Overview](#) <sup>5</sup> to familiarize yourself with the basics of the application.
- ❖ Visit the Q&A Community or email us to get help and more information about the application.

# Chapter 1: Overview

Saola Animate is an advanced application for designing and building HTML5 web content using an integrated visual and JavaScript source code interface. With Saola, you can create smooth animations and impressive visual effects using many types of elements and interactions. You can do almost everything in an intuitive editor with no coding required.

Once you are done creating your content, you can export your final document with clean human-readable HTML5, CSS3, and JavaScript. Saola outputs have flexible layout that works well on any platform or device. Saola also allows you to import and export packaged elements as Symbols that are useful for sharing identical elements across multiple projects or at different positions in the same project.

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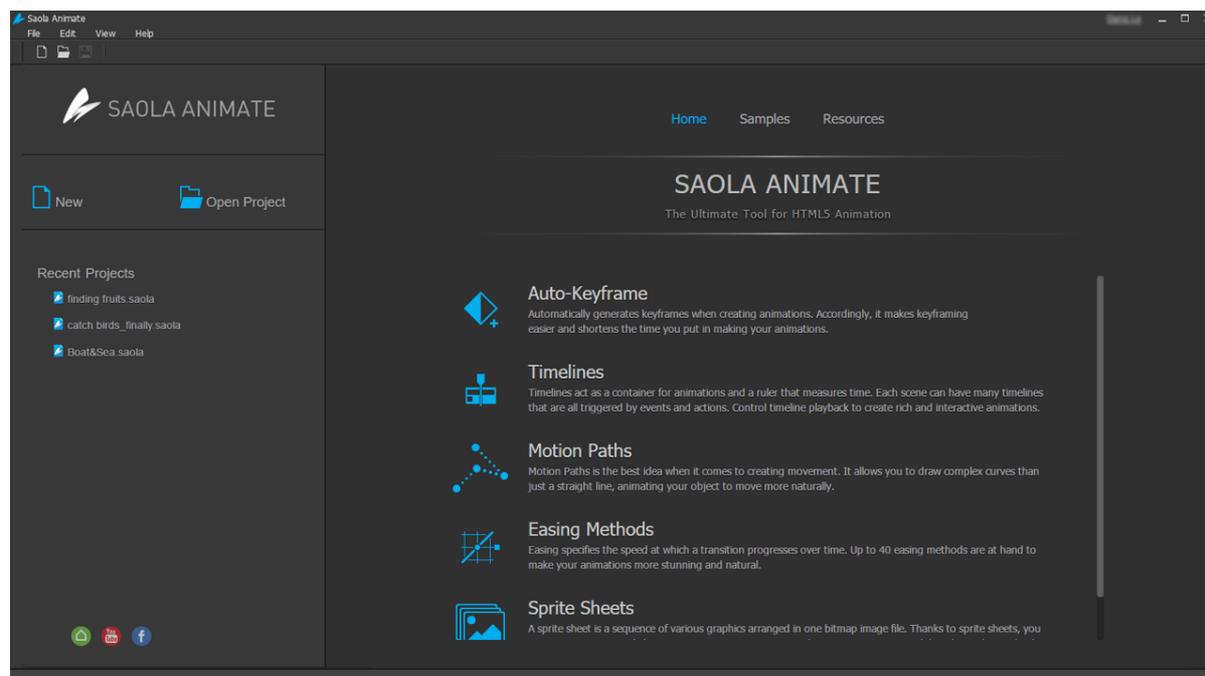
In this chapter, you will find the following:

- ❖ [User Interface](#)<sup>[6]</sup>
- ❖ [System Requirements](#)<sup>[8]</sup>
- ❖ [Common Editing Commands](#)<sup>[9]</sup>
- ❖ [Quick Start Guide](#)<sup>[10]</sup>

# User Interface

## Welcome Screen

The Welcome Screen is the first thing you see when launching Saola Animate. This screen is also displayed when no project opens. The Welcome Screen allows quick access to a number of common tasks and links to many useful samples, demos and other resources.



To the left side of the Welcome Screen, there are two sections: Quick Start and Recent Projects (if any).

- ❖ The **Quick Start** provides menus and buttons to perform tasks as follows:
  - Use the **New** command to create a new project.
  - Use the **Open Project** command to open an existing project.
  - Click **Edit > Preferences** to customize the default application settings.
  - Click **View > Language** to change the display language in Saola.
  - Click **Help** to open the documentation, access information about the current version, check for updates, and open your account webpage where you can update your profile and manage your subscriptions.
- ❖ The **Recent Projects** shows a list of projects you have recently been working with. You can do either of the following:
  - To open a project in the list, click a project or right-click and select **Open**.

- To remove a project from the list, right-click it and select **Remove from List**.
- To open the containing folder of a project, right-click it and select **Show in Folder**.

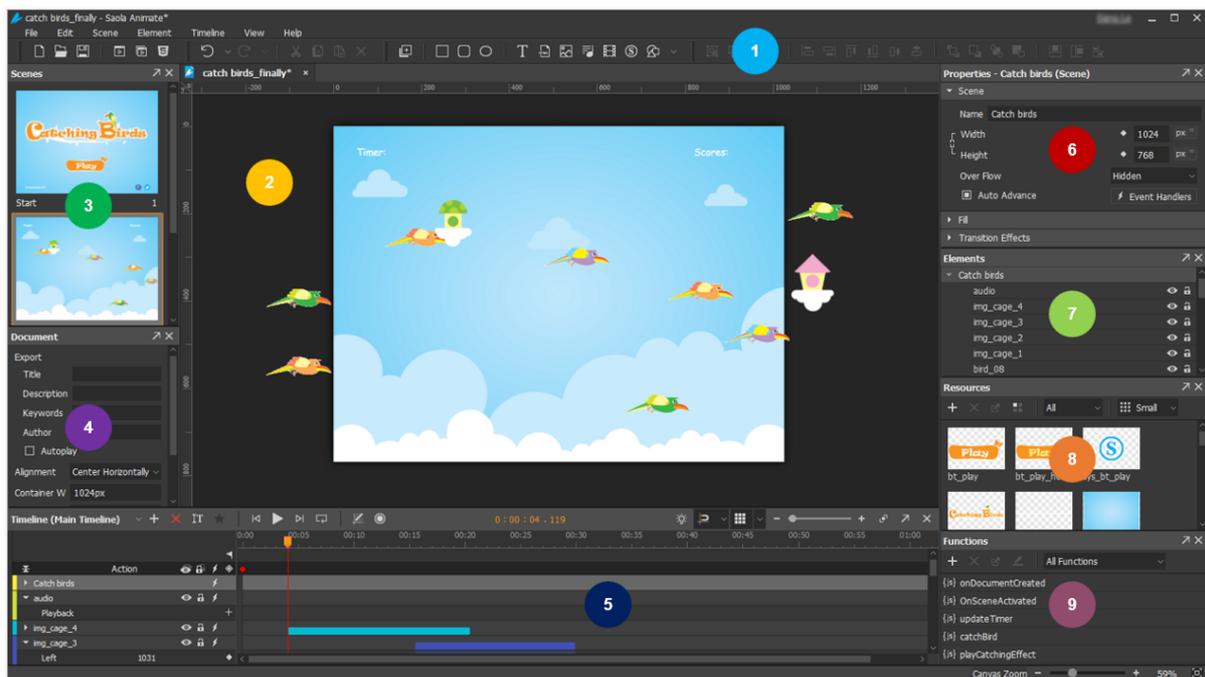
In the center of the Welcome Screen, there are three tabs: Home, Samples, and Resources.

- ❖ The **Home** tab shows outstanding features which boost your creativity.
- ❖ The **Samples** tab shows a list of Saola samples.
- ❖ The **Resources** tab provides links to Saola Animate Homepage, YouTube Channel, Q&A Community, and Online Demos.

Down in the bottom left corner, there are three buttons that take you directly to the Homepage, YouTube Channel, and Facebook Fanpage of Saola Animate.

## Workspace

Saola provides a customizable workspace with a large work area for editing content. The central area is surrounded by a toolbar, a timeline, and a set of panes. The panes can be grouped in tabs, and you can float any pane or pane group to a different location in the workspace or to the desktop. Panes can also be resized both vertically and horizontally.



1. The [Main Toolbar](#)<sup>[118]</sup> provides quick access to tools for many of the most common tasks in Saola Animate.
2. The [Canvas](#)<sup>[71]</sup> is the main work area in the center of the application. This area is not only a place where you can add, modify, and arrange the elements of your projects but it is also where you can view the results of your work.

3. The Scenes pane displays thumbnails of available scenes in the project. You can click each of the scenes to view the scene individually and edit it if needed.
4. The Document pane provides quick access to view, enter, and edit document properties.
5. The [Timeline pane](#)<sup>[72]</sup> contains information about your animations, as represented over time. Each scene has a Main Timeline which automatically starts when the scene loads. For more complex documents, scenes can have multiple timelines to satisfy a large amount of elements, animations, and interactivity.
6. The [Properties pane](#)<sup>[76]</sup> displays the properties of the selected element and provides editable text fields, lists, and other controls to adjust and fine-tune element properties. If multiple elements are selected, you can adjust the mutual properties of the elements.
7. The Elements pane displays all elements included in the project. You can select, lock elements, or change their visibility in this pane. You can also use the pane to open the Event Handlers dialog box for each element.
8. The [Resources pane](#)<sup>[91]</sup> displays all resource files in the project including those which are in use and those which are not. The pane also holds any symbol you have created, allowing you to edit existing symbols.
9. The [Functions pane](#)<sup>[94]</sup> displays all JavaScript functions in the project. You can add and edit many JavaScript APIs to control various aspects of a document in this pane.

You can create a custom workspace by showing, hiding, moving, docking, floating, and resizing all panes that best suits your preferences and working style. See [Customizing User Interface](#)<sup>[132]</sup> for more details. The [display language](#)<sup>[131]</sup> and some other [preferences settings](#)<sup>[133]</sup> are also customizable to fit your needs.

## System Requirements

For Saola Animate, the following considerations apply:

- ❖ Operating system: Windows 7/8/8.1/10 (64-bit only).
- ❖ Processor: Intel Pentium 4 or later.
- ❖ Memory: 4 GB or larger.
- ❖ Internet connection: Required.

## Common Editing Commands

You are probably familiar with several common editing commands (cut, copy, paste, delete, undo, and redo) in Office or other applications. In Saola Animate, these editing commands are also used, allowing you edit many types of items. These commands are available for objects such as elements, scenes, keyframes, animation segments, and labels, etc.



### ***Cut***

The **Cut** command removes the selected items and places them on the Clipboard. Select **Edit > Cut** from the context menu to remove the selected items.

Toolbar shortcut: . Keyboard shortcut: **CTRL+X**.

### ***Copy***

While cutting a selection removes the selection from scene, copying a selection leaves the original in place. To copy items, select one or more items, and then select **Edit > Copy** from the menu bar to copy the selected items to the Clipboard.

Toolbar shortcut: . Keyboard shortcut: **CTRL+C**.

### ***Paste***

The **Paste** command inserts the contents of the Clipboard at the current location. You can paste the Clipboard's contents back to any open Saola project by selecting **Edit > Paste** from the menu bar.

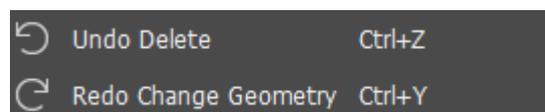
Toolbar shortcut: . Keyboard shortcut: **CTRL+V**.

### ***Delete***

Delete the currently selected items by selecting **Edit > Delete** from the menu bar.

Toolbar shortcut: . Keyboard shortcut: **DELETE**.

The **Undo** command reverts the last change made to the document while the **Redo** reverts the last **Undo** operation. In the **Edit** menu, these two commands are usually followed by the name of the last command performed.



## **Undo**

To undo the most recent action, select **Edit > Undo** from the menu bar. If you want to return back to more than one action, click the down arrow next to the **Undo** button on the toolbar and select the actions in the list.

Toolbar shortcut: . Keyboard shortcut: **CTRL+Z**.

## **Redo**

To redo the most recent action that you have already undone, select **Edit > Redo** from the menu bar. If you want to redo several actions, click the down arrow next to the **Redo** button on the toolbar and select the actions in the list. Note that the **Redo** button is only available after you have undone an action.

Toolbar shortcut: . Keyboard shortcut: **CTRL+Y**.

## **Quick Start Guide**

After familiarizing yourself with the basics of the application, you can try to create your very first project. This section walks you through common steps to make your lively and interactive animation.

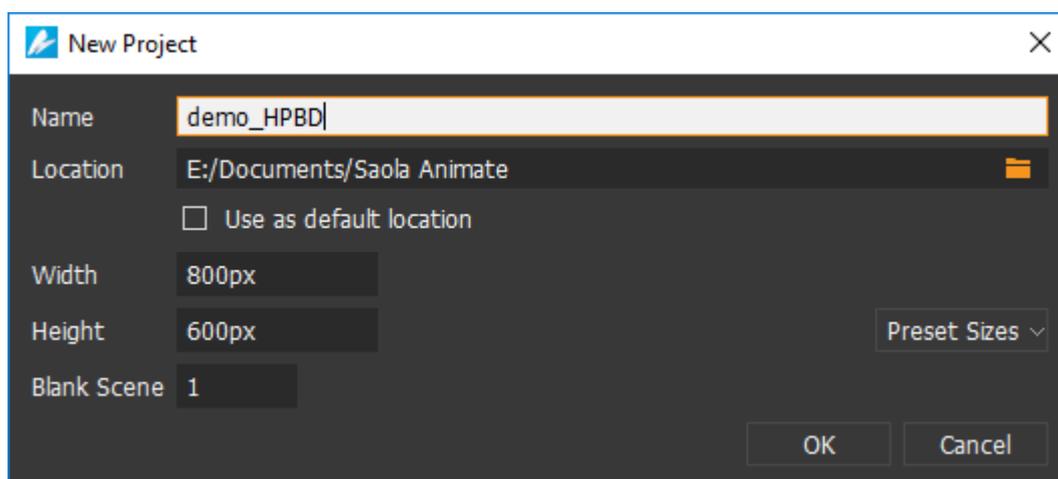
Suppose that it is your friend's birthday and you want to surprise him with an online gift box. The gift box gradually appears on screen, arousing his curiosity. Then he clicks the box and a bunch of balloons flies in. At the same time, the melody of the Happy Birthday song starts playing with joy. This must be an amazing birthday gift to your friend, and you can even change the content to fit the gift to other special occasions.

(link)

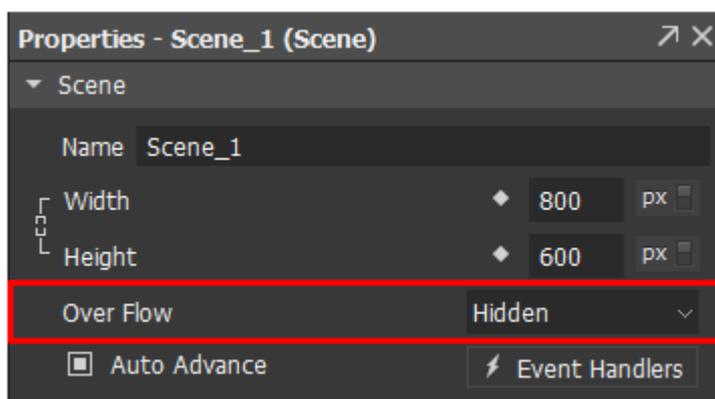
To create a series of enjoyable animations like that, the first thing to do is to prepare the content for your animation, namely images and audio, and then you create a Saola project. After that, import the content into the project and create animations and interactions. The final step is to preview and export your work. See below for details about each step.

**Step 1: Prepare contents**

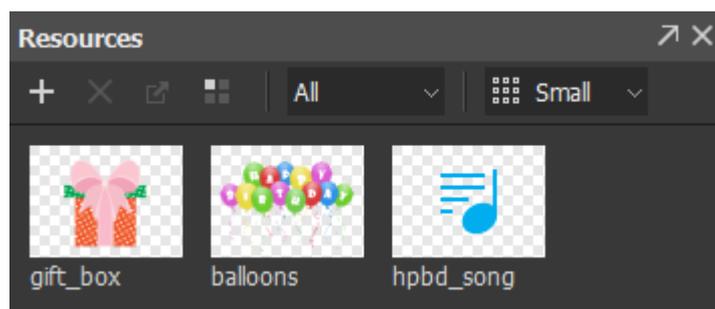
Content Name	Illustration
gift_box 240x180 px	
balloons 800x600 px	
hpbd_song	Happy Birthday song (audio)

**Step 2: Create a new project**

1. Open Saola Animate.
2. Click the **New** button on the Welcome Screen or on the toolbar, or select **File > New** from the menu bar.
3. Fill required information in the dialog box, and then click **OK** to submit.
4. Select a scene. In the **Properties** pane, notice Overflow property. Set the value to Hidden.

**Step 3: Import contents into project**

1. In the **Resources** pane, click the **Import**  button.
2. Import all resource files into the pane.

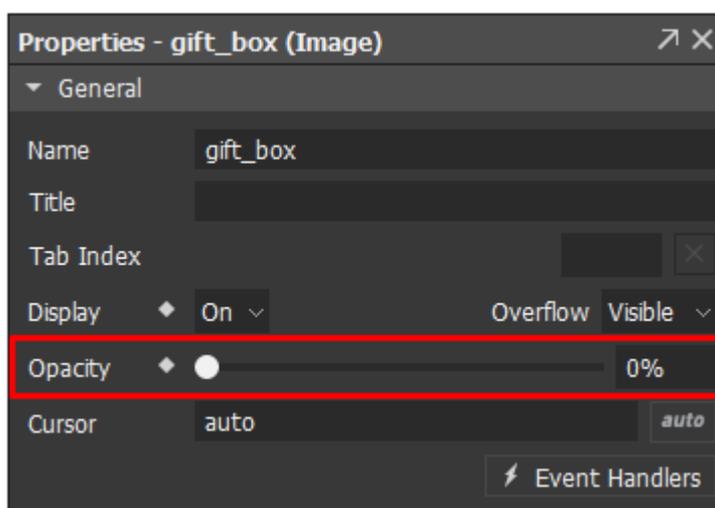


## Step 4: Create animations

### 1. Gift box

In the first 2 seconds, the gift box gradually appears on screen with the Opacity property animated.

1. Drag the gift\_box resource from the **Resources** pane onto the Canvas, position the box in the center of the scene by using [Canvas Snapping](#)<sup>[71]</sup>.
2. In the **Properties** pane, add keyframes for the Opacity property, set the value to 0% (when the Playhead is at 0:00).



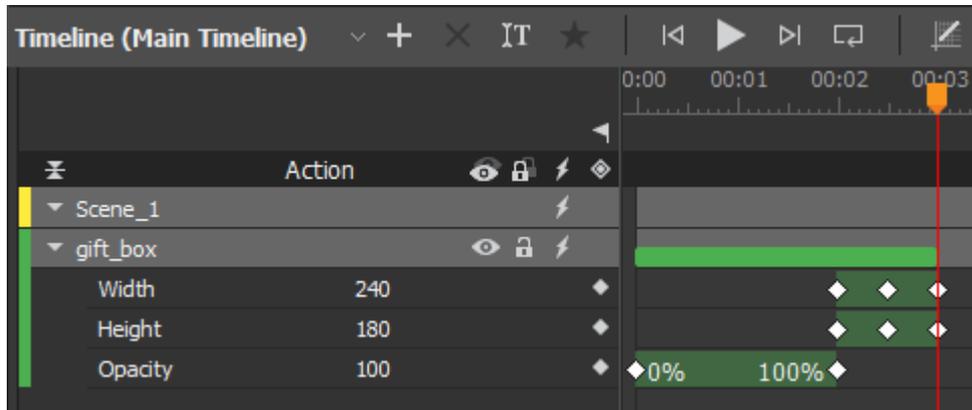
3. On the Timeline, position the Playhead to 00:02.00, and add another keyframe for the Opacity property, set the value to 100%.

Now move to the Width and Height properties.

1. Add two keyframes for the Width and Height properties.
2. Move the Playhead to 00:02.50.
3. Add two keyframes for the same properties, then enter a new width. The height of the element will change accordingly as they are linked together.

4. Move the Playhead to 00:03 and make the element back to its original size.

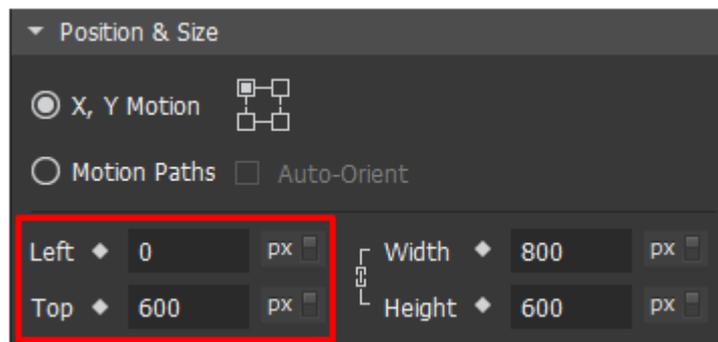
The animation bar of the gift box element:



## 2. Balloons

In the first 3 seconds, a bunch of balloons is placed outside the scene. You cannot see it as the Overflow property of the scene is set to Hidden. In the next 5 seconds, the balloons fly into the screen from the bottom with the Top property animated, and then stand right in the center of the screen, replacing the gift box which is hidden by the event and actions at that time.

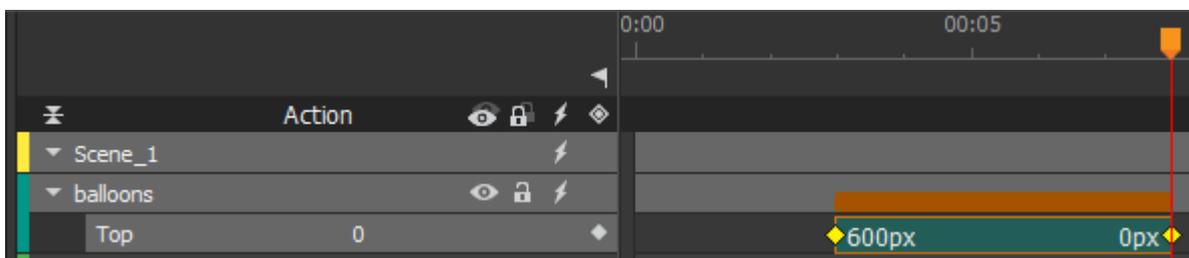
1. Drag the balloons resource from the **Resources** pane onto the Canvas, position the balloons outside the scene with [left: 0px; top: 600px].



2. When the Playhead is at 00:03.00, add a keyframe for the Top property.
3. Move the Playhead to 00:08.00, add another keyframe for the Top property.
4. On the Canvas, position the balloons element in the center of the scene [left: 0px; top: 0px].
5. In the **Timeline** pane, click **Easing** > OutElastic. Easing method will smooth the transition and make it more natural.



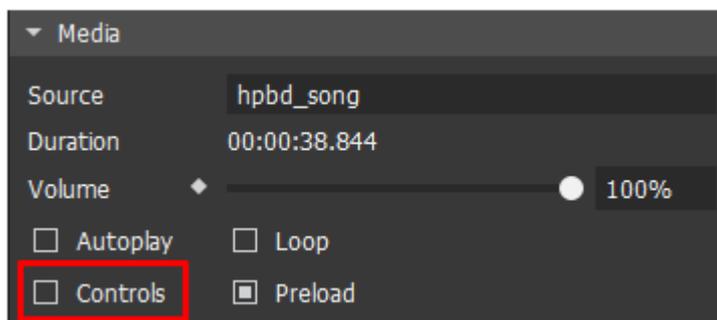
The animation bar of the balloons element:



### 3. Happy Birthday Song

The player controls of the audio is hidden. The mouse click event at 00:03.00 triggers its playback from start. Any mouse click on the balloons also toggles the playback of the audio track.

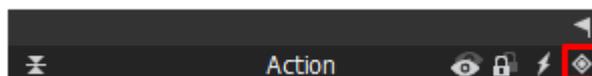
1. Drag the `hpbd_song` resource from the **Resources** pane onto the Canvas.
2. Click **Properties > Media**, cancel the selection of the Controls attribute.



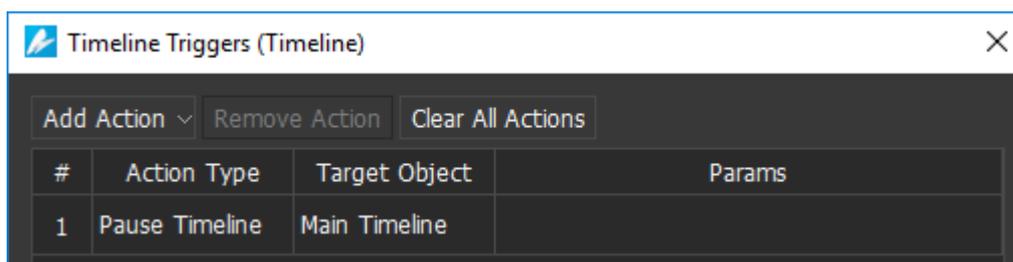
#### **Step 5: Add a timeline trigger**

Add a timeline trigger at 00:03.00 to pause the timeline so that all the animations beyond this point of time will not be shown until a mouse click event is detected.

1. Position the Playhead to 00:03.00.
2. In the **Timeline** pane, click the **Insert Trigger** button.



3. In the **Timeline Triggers** dialog box, click **Add Action > Timeline > Pause Timeline > Main Timeline** (as target).



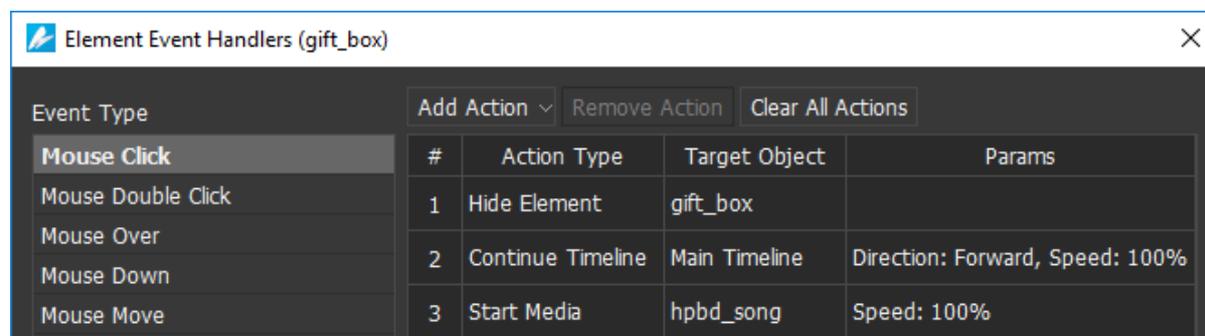
### Step 6: Add events & actions

When a mouse click on the gift box is detected, three actions will be provided as a response, which are to hide the gift box, to continue the timeline, and to play the song. The second event is a mouse click on the balloons. Chances are you want to pause the song for a while, so you need to add event and action to toggle the playback of the audio.

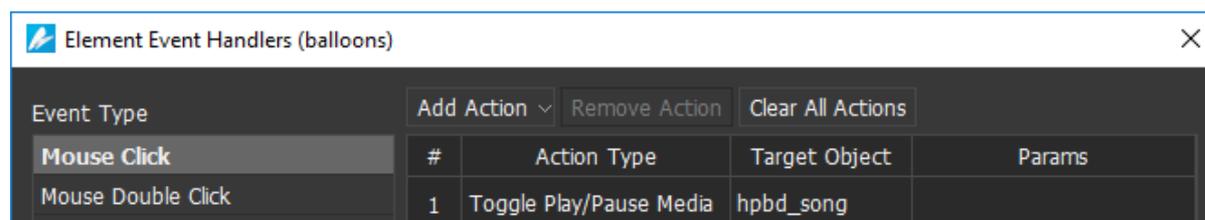
1. Click the **Open Event Handlers** button of the gift box element.



2. In the **Element Event Handlers** dialog box, select Mouse Click event in the event list. Click **Add Action**, add three actions as follows:
  - Hide/Show > Hide Element > gift\_box (as target).
  - Timeline > Continue Timeline (as target).
  - Media > Start Media > hpbd\_song (as target).



3. Click the **Open Event Handlers** button of the balloons element.
4. In the **Element Event Handlers** dialog box, select Mouse Click event. Click **Add Action**, select Media > Toggle Play/Pause Media, leave hpbd\_song as target.



Event Type	#	Action Type	Target Object	Params
Mouse Click	1	Toggle Play/Pause Media	hpbd_song	
Mouse Double Click				

## Step 7: Preview & Export project

### 1. Preview

Do either of the following:

- ❖ Click the **Preview Current Scene in Browser**  button on the toolbar, or select **File > Preview Current Scene in Browser** from the menu bar.
- ❖ Click the **Preview Project in Browser**  button on the toolbar, or select **File > Preview Project in Browser** from the menu bar.

### 2. Export to HTML5

1. Click the **Export to HTML5**  button on the toolbar, or select **File > Export to HTML5** from the menu bar.
2. Click the **Export** button.

## Chapter 2: Creating Projects

Creating a project is the first and most basic thing you need to do when working with Saola Animate.

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In this chapter, you will find the following:

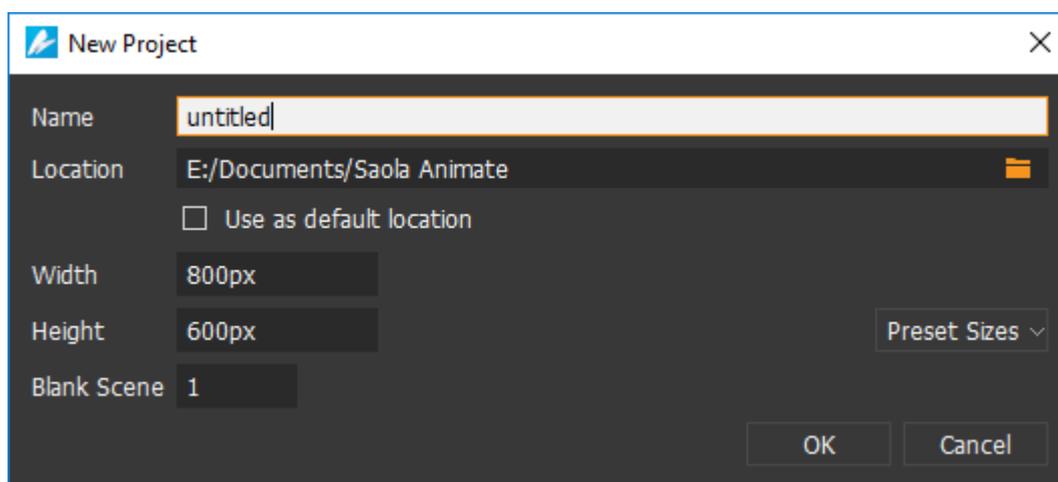
- ❖ [Creating, Opening & Saving Projects](#)<sup>[18]</sup>
- ❖ [Flexible Layout](#)<sup>[20]</sup>
- ❖ [Working With Scenes](#)<sup>[20]</sup>
- ❖ [Project Backup & Recovery](#)<sup>[22]</sup>

### Creating, Opening & Saving Projects

Saola Animate stores a project in a folder whose name is the name of the project itself. Saola also supports packaging project files into a package file (\*.saolapack) for faster and easier sharing.

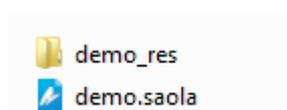
#### *To create a new project*

Click the **New**  button on the toolbar or select **File > New** from the menu bar. The **New Project** dialog box appears as shown below. Fill required information, and then click **OK** to submit.



- ❖ **Name:** Name of the project.
- ❖ **Location:** Location of the project. Once the project is successfully created, the project folder will be named according to the project title. Enter a location where you want to place your project, choose an existing location from the list, or navigate to a location using the **Browse**  button. If you want to make a location to be default every time you create a new project, check the **Use as default location** check box.
- ❖ **Width & Height:** Size of the container in which the document is embedded. You can click the **Preset Sizes** box and select any of the preset sizes in the drop-down list to save time and ensure consistency when creating similar projects. The size is editable afterward through the **Document** pane. See [Updating Document Properties](#)<sup>[67]</sup> for more details.
- ❖ **Blank Scene:** Number of blank scenes you would like to create. You can insert new scenes at any time later. The scene size, by default, is the size of the above-mentioned container.

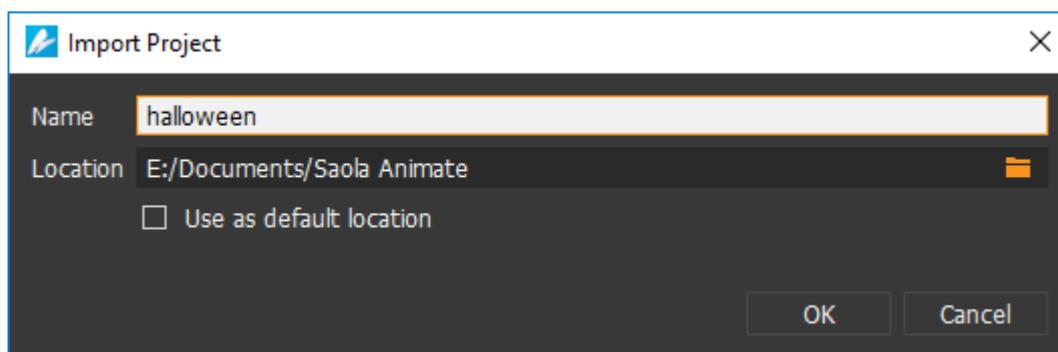
Once the project is created, it will be stored in a folder with structure as shown below:



- ❖ demo.saola: Manifest file that stores information and data of the project.
- ❖ demo\_res: Folder that contains all resource files (image, media...) that will be inserted into project during editing.

### **To open a project**

- ❖ To open an existing project: Click the **Open Project**  button on the toolbar or select **File > Open Project** from the menu bar, and then select the project file (*.saola*). You can also open a project by double-clicking the manifest file. If a project has already opened, Saola will switch to the tab showing this project.
- ❖ To import project from a package file: Click the **Open Project**  button on the toolbar or select **File > Open Project** from the menu bar, and then select the package file (*.saolapack*). A dialog box appears to provide information of the project.



### To save a project

- ❖ Save a project: Simply click the **Save**  button on the toolbar or select **File > Save** from the menu bar.
- ❖ Save a project as other project: Select **File > Save As > Other Project** from the menu bar. Fill required information of a new project in the dialog box.
- ❖ Save a project as package: Select **File > Save As > Package** from the menu bar. Enter file name of a package file in the dialog box.

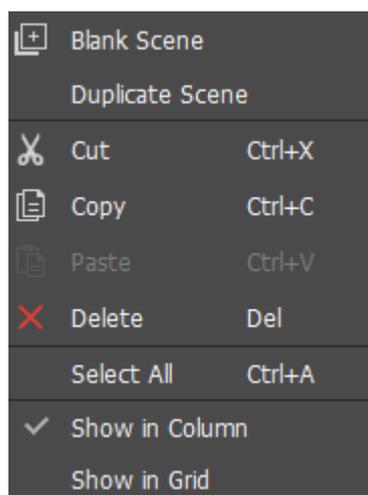
## Flexible Layout

Saola Animate supports flexible layout. The size of a scene can be set to be relative to the container size, which means that the change of the container size leads to that of the scene. The size of an element can be relative to its parent size. The position of an element can also be based on the top/bottom, or the left/right border of its parent element. To make the size of the element/scene relative to its parent/container size, set percentage (%) as a size unit. Otherwise, use pixel (px) as a fixed-size unit.



## Working With Scenes

In Saola Animate, scenes are shown and managed in the **Scenes** pane. Commands for managing scenes can be accessed from the [Scene menu](#)<sup>122</sup>, the toolbar, or from the context menu as shown below. You can select to edit multiple scenes at once by holding down the **CTRL** key while clicking the scenes.



## Inserting Scenes

### *To insert a new blank scene*

Do either of the following to insert a new blank scene:

- ❖ Click the **Blank Scene**  button on the toolbar.
- ❖ Click **Scene > Blank Scene** from the menu bar.
- ❖ Right-click a scene and select **Blank Scene** from the context menu.

A new scene will be inserted below the last selected scene. Its size and background property will be inherited from the last selected scene.

You can customize the number and size of blank scenes when you create a new project. See [Creating, Opening & Saving Projects](#)<sup>[18]</sup> for more details.

### *To duplicate a scene*

You can duplicate a selected scene to create a copy. That way, the new scene copies all aspects of the current one and will be inserted below it. This command is available when there is only one selected scene. Right-click a scene and select **Duplicate Scene** from the context menu, or select **Scene > Duplicate Scene** from the menu bar.

### *To copy & paste a scene*

Scenes can be copied and pasted inside a current project or from/to another project. If scenes are copied through projects, all resources and user-defined functions used in these scenes will also be copied.

To cut, copy, paste, or delete scenes, use the buttons on the toolbar or in the context menu of the selected scenes, or simply press keyboard shortcuts assigned to these commands.

Note that you can use these commands for more than one selected scene at a time. In case of pasting copied scenes, new scenes will be inserted below the last selected one.

## Displaying Scene Thumbnails

You can select two different view modes, namely Column and Grid, to display scene thumbnails.

- ❖ **Show in Column:** Right-click any position in the **Scenes** pane, and select **Show in Column**. When you resize the **Scenes** pane, the size of scene thumbnails also changes to fit the available width.
- ❖ **Show in Grid:** Right-click any position in the **Scenes** pane, and select **Show in Grid**. The scene thumbnails are uniformly sized and displayed in grid.

## Editing Scene Properties

Scene properties can be edited from the **Properties** pane as shown above. You can edit properties of multiple scenes simultaneously; however, some unique properties such as scene name are not allowed to edit when you select multiple scenes. Below is a list of scene properties:

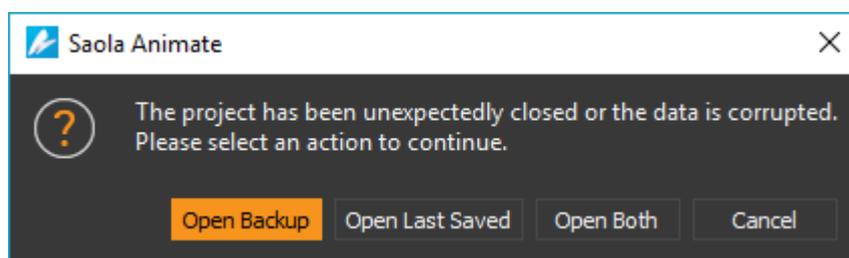
- ❖ **Name:** Name of a scene that cannot be duplicated with other scenes of the same project.
- ❖ **Size:** Size of a scene that can be a fixed value (in pixels) or relative to the container size (in percentages).
- ❖ **Overflow:** Specify how content of a scene should be displayed if it extends beyond the bounds of the scene.
- ❖ **Auto Advance:** Jump to the next scene automatically when the current scene ends.
- ❖ **Transition Effects:** Movements from one scene to another. A transition effect is defined by type, duration, and timing function.

For more details about scene properties, see [Scene section<sup>\[89\]</sup>](#) & [Transition Effects section<sup>\[90\]</sup>](#).

## Project Backup & Recovery

Saola supports **Auto Backup** feature. If the application closes unexpectedly and work has not been saved, you will be asked to restore the unsaved project the next time you open it. Saola also automatically creates backup for each project after a timeout. You can turn this

feature on/off or change the backup timeout in the **Preferences** dialog box (See **Customize Preferences** > [General Tab](#)<sup>[134]</sup>).



When you open a project after an accidental closure or crash, a dialog box appears as shown above. There are four options for you to choose:

- ❖ **Open Backup:** The application will open the backup version of the project. When editing this version, if you save your changes, this version will overwrite the last saved version.
- ❖ **Open Last Saved:** The application will open the last saved version of the project. The backup version will be deleted immediately.
- ❖ **Open Both:** Both backup and last saved version are opened 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: Inserting & Editing Elements

Elements are objects in a scene. They can be div, text, image, audio, video, symbol, or shape. See [Elements](#)<sup>[109]</sup> for details about each type of elements.

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In this chapter, you will find the following:

- ❖ [Inserting Elements](#)<sup>[24]</sup>
- ❖ [Selecting Elements](#)<sup>[25]</sup>
- ❖ [Arranging Elements](#)<sup>[26]</sup>
- ❖ [Editing Element Properties](#)<sup>[30]</sup>
- ❖ [Adding Text To Elements](#)<sup>[32]</sup>

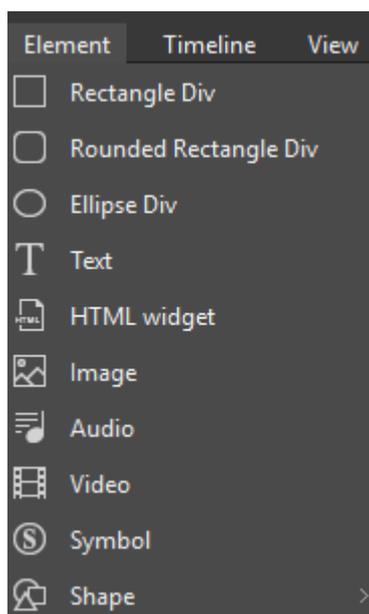
## Inserting Elements

### *To insert an element*

Click the button of an element type on the toolbar to insert that element into a scene:



You can also insert elements by selecting element types from the **Element** menu:



After clicking the commands to insert elements:

- ❖ For div/shape elements: Click and drag the mouse on the Canvas to define the position and size of a new element. When you release the mouse button, a new element will be inserted.
- ❖ For image/audio/video/symbol elements: Select files from the dialog box and a new element will be inserted. For these element types, you can insert elements by dragging resource files directly from the file systems or from the **Resources** pane onto the Canvas. Use [playback animations](#)<sup>109</sup> to control the playback of audio/video/symbol elements.
- ❖ For text elements: A text element is created in the center of the screen with a placeholder text. The position and size of a text element can be modified afterward.

### ***To copy & paste an element***

Commands for cutting, copying, and pasting elements can be found in the **Edit** menu on the menu bar, or on the toolbar, or from the context menu of the selected elements. You can also use [keyboard shortcuts](#)<sup>[120]</sup> to edit faster.

Elements can also be copied and pasted across scenes or documents. To copy elements, select one or more elements and select **Copy** from the context menu. To paste the copied elements, right-click on the Canvas and select **Paste** from the context menu. There are three options to paste elements:

- ❖ **Paste**: Insert the copied elements without animation. 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**: New elements will be placed at the position of the cursor.
- ❖ **Paste with Animation**: Insert the copied elements with animation.

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.

## **Selecting Elements**

Elements of a scene 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 is also selected in the **Elements** pane and the **Timeline** pane.

### ***To select an element on Canvas***

- ❖ Select a single element by clicking it.
- ❖ Select multiple elements by a rubber-band selector: Click on scene, and then drag mouse, a rubber-band selector appears. 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 the **CTRL** key, and then click elements you want. At the same time, element selection is turned on. You can use this feature to cancel the selection of one or more elements.
- ❖ If elements stay in a group, select the group first, and then click child elements to select them.

### ***To select an element in Elements pane***

Elements in the **Elements** pane are displayed in a tree view. You can select elements by clicking the tree item, and cancel the selection by holding down the **CTRL** key and click each of the items. If an element belongs to a group, when you select it, the group is selected too.

### ***To select an element in Timeline pane***

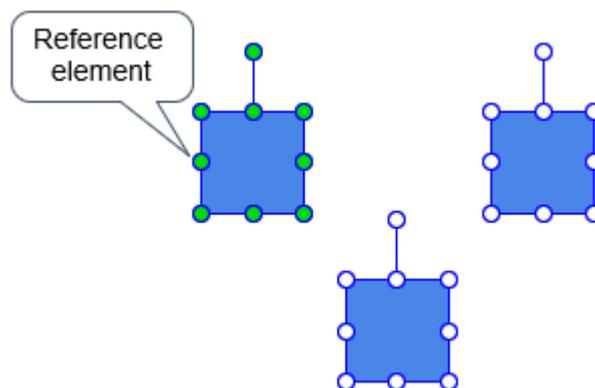
Selecting elements in the **Timeline** pane is the same as that in the **Elements** pane. In the **Timeline** pane, you can also select an element by clicking its keyframes or animations. Note that the **Timeline** pane only allows you to select and edit but not delete elements.

## Arranging Elements

Saola Animate provides the Arrangement commands to help you refine the position and size of elements relatively to each other. You can access these tools via toolbar, menu bar, or from the context menu of the Canvas.



These Arrangement commands become available when you select two or more elements of the same parent, that is, they must be contained in the same group (or scene). The last selected element is the reference element. This element is specified by green handles rather than by white handles like other elements. You can click one of the currently selected elements (without holding the **CTRL** key) to set it as a reference element.



## Aligning Elements With Reference Element

Saola provides a row of Alignment commands to align elements with a reference element. There are both vertical and horizontal align options. All of the commands place the selected elements with respect to the reference element. This element stays fixed at the same position while all other elements move to align with it.

To set alignment, select at least two elements that have the same parent, and then click an **Alignment** tool on the toolbar, or select **Edit > Alignment** from the menu bar.

Command	Icon	Remark
Align Left		The left side of all elements will get aligned with the left of the reference element. Their vertical position will not be affected.
Align Right		The right side of all elements will get aligned with the right of the reference element. Their vertical position will not be affected.
Align Top		The top of all elements will get aligned vertically with the top of the reference element. Their horizontal position will not be affected.
Align Bottom		The bottom of all elements will get aligned vertically with the bottom of the reference element. Their horizontal position will not be affected.
Align Center		The center of all elements will get aligned vertically with the center of the reference element. Their horizontal position will not be affected.
Align Middle		The center of all elements will get aligned with the center of the reference element. Their vertical position will not be affected.

## Resizing Elements To Reference Element

In addition to Alignment commands, Saola Animate offers Sizing commands to quickly resize elements. These commands work on a group of elements and resize all other elements with respect to the reference one. To use these commands, click **Edit > Size** from the menu bar, or select **Arrange > Size** from the context menu.

Command	Icon	Remark
Make Same Width		The width of all other elements is adjusted to match the width of the reference element.

Command	Icon	Remark
Make Same Height		The height of all other elements is adjusted to match the height of the reference element.
Make Same Size		Both height and width of all other elements are adjusted to match the height and width of the reference element, respectively.

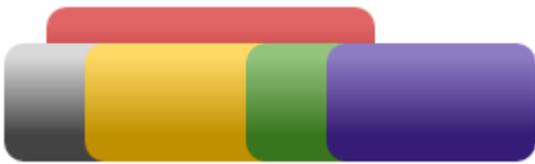
## Setting Z-Order Of Elements

When elements overlap, z-order determines which one covers the other. In Saola Animate, you can change the stacking order of elements by clicking the Display Order commands on the toolbar, or selecting **Edit > Display Order** from the menu bar. These commands help you set the z-order of elements even when they do not overlap each other. For example, there are five shapes in the following order:



Change the z-order of the red shape by Display Order commands. Results are shown in the following table:

Command	Icon	Remark
Bring to Front		
Bring Forward		

Command	Icon	Remark
Send to Back		
Send Backward		

## Grouping Elements

Imagine you want to create a moving animated car with a body and four wheels, so you need to make several elements moving simultaneously. The best way to animate multiple elements at the same way together is to group them first. That way, selected elements act as one element and you only have to apply your animation effect once.



### *To group elements*

Select all the elements that you want to animate together then click the **Group**  button on the toolbar, or right-click the selected elements and select **Group** from the context menu. Grouped items appear under and at the next indent level compared to their group name in the **Elements** pane. All moving animations of selected elements will be converted to new coordinate systems of a new parent.

### *To ungroup a group*

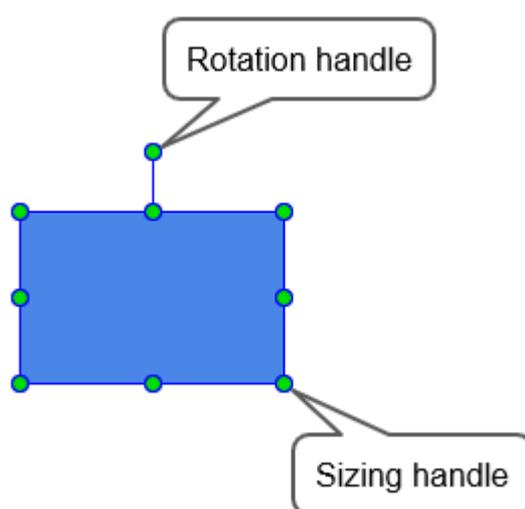
Select a group and then click the **Ungroup**  button on the toolbar, or right-click the group and then select **Ungroup** from the context menu.

## Editing Element Properties

Properties of an element are all displayed on the Canvas, but not all of them could be edited directly from here. The **Properties** pane shows values of all properties and users can edit them here. Saola Animate allows editing multiple elements at the same time if they are all selected.

### **From Canvas**

An inserted element is often not the right size, or in the right position, so you may need to resize or move it. To change the size, position, or rotation of an element, use the handles surrounding this element. These handles appear when you click the element and disappear when you click else where on the Canvas.

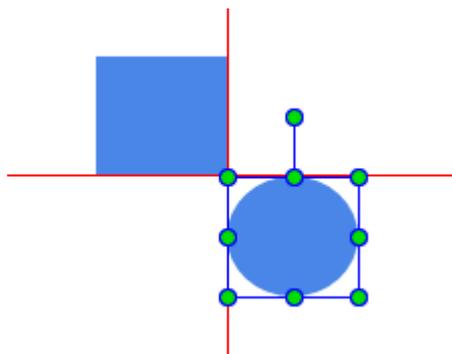


- ❖ **To resize an element:** Use the sizing handles. Point the mouse to any sizing handle so that the pointer turns into a bidirectional resize pointer (a two-way arrow). Click and drag the sizing handle away from the center of the element to make it larger, or toward the center of the element to make it smaller.
- ❖ **To rotate an element:** Use the rotation handle. Point the mouse to the rotation handle so that the pointer changes to a pointing hand. Click and drag the rotation handle in the direction that you want to rotate the element.
- ❖ **To move an element:** Point the mouse to the element or single-click the element so that the pointer changes to a four-way arrow, indicating that you are about to move the element. Drag the element to the new position and release the mouse button to drop the element. You can repeat the action until you place the element right at your desired spot.

When there are more than one selected element, if one element is resized, rotated, or moved, all other elements are also be resized, rotated, or moved. Besides, be careful not to double-click an element as this action enables you to edit the content of

the element by opening the inline text editor. If this happens by mistake, click any elsewhere on the Canvas to cancel the editing process and start over.

When you edit elements on the Canvas, elements can be snapped to a special position or to the edge/center of other elements. To automatically align elements with one another and the Canvas, use the Canvas Snapping tool. To turn Canvas Snapping on/off, select **View > Canvas Snapping** from the menu bar. This tool can be temporarily disabled by holding down the **CTRL** key when you resize or move elements.



### ***From Properties Pane***

If an element is selected, its property values will be displayed in the **Properties** pane. The **Properties** pane has many sections, and each section shows a group of properties. For example, the **Transform** section displays geometric information for any selected element, including values for position, size, shearing, and rotation.

Property values are shown in some UI control types (spin box, slider, text field, etc.) depending on the type of properties. When multiple elements are selected, there are two cases:

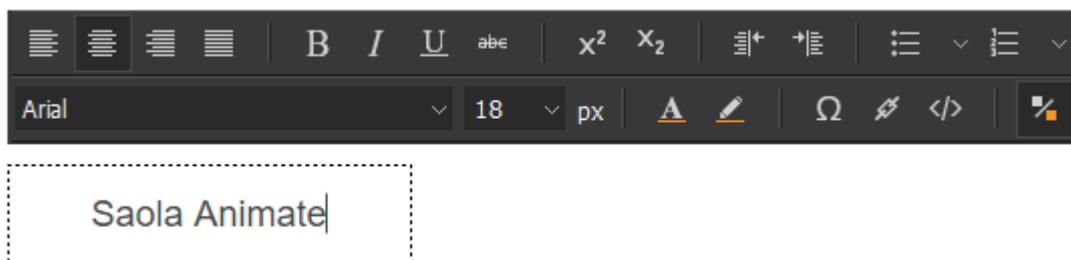
- ❖ If a property is unique (e.g. name), the control shows that that property is disabled. It will be enabled if there is only one selected element.
- ❖ If a property is not unique, the control will be enabled, but it only displays a value if the property values of elements are equal to each other. Otherwise, the control will not display any value, but you can still focus and edit to make changes to the value (and make it equal).

See [Using Properties Pane](#)<sup>[76]</sup> for details about each property.

## Adding Text To Elements

If an element can contain text, double-click its body or right-click it and select **Edit Text** from the context menu to start editing text with the inline text editor. To stop editing text, click anywhere outside or select **Stop Editing** from the context menu. Below is a list of element types that can contain text:

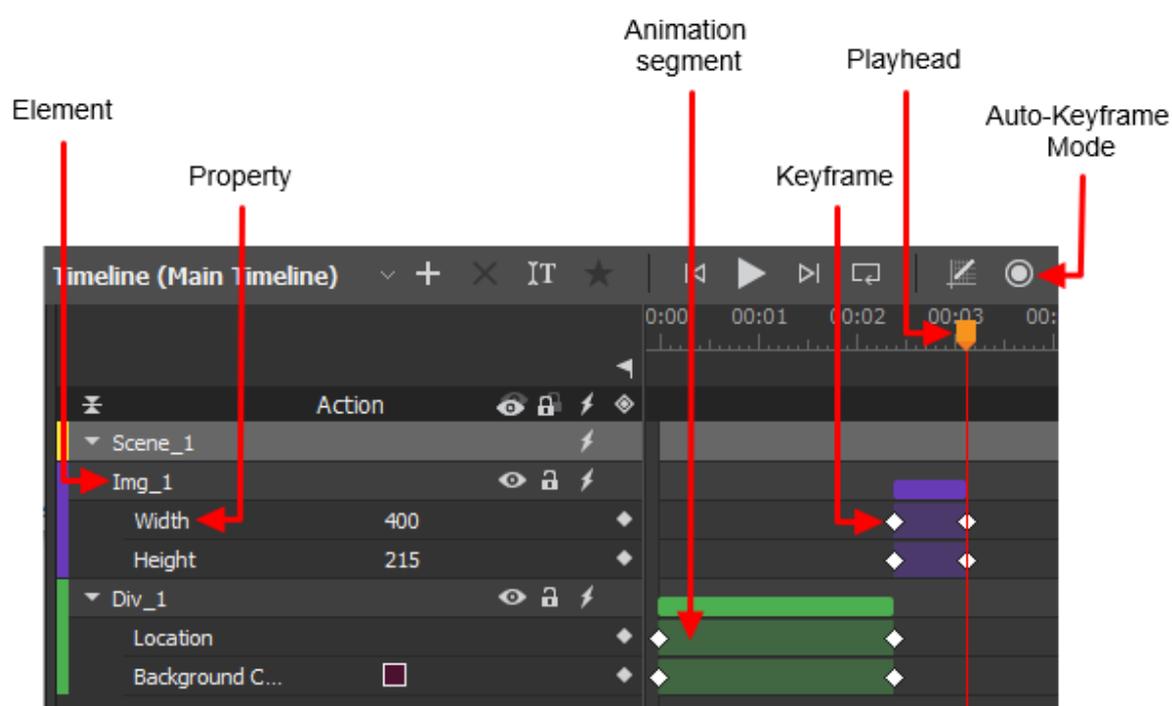
- ❖ Text element.
- ❖ Div element.
- ❖ Shape element.



Read more about editing text in [Using Text Editor](#)<sup>106</sup>.

## Chapter 4: Creating Animations

Saola Animate lets you create stunning HTML5 animations and interactive content. Creating animations is the most important and exciting part of the application. In Saola Animate, you mostly use three panes to create your animations: **Elements**, **Timeline**, and **Properties**. You can add, view, and edit all animations on the Timeline. Think of it as a container for animations and a ruler that measures time in your animations.



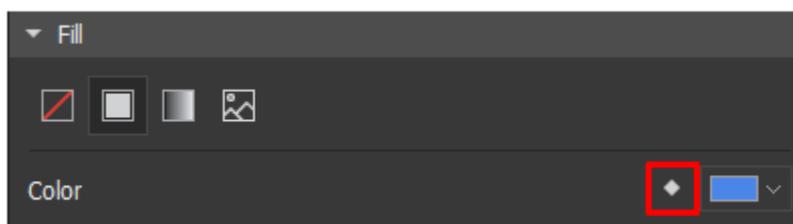
In this chapter, you will find the following:

- ❖ [Keyframes](#)<sup>[34]</sup>
- ❖ [Auto-Keyframe Mode](#)<sup>[35]</sup>
- ❖ [Animations](#)<sup>[35]</sup>
- ❖ [Easing](#)<sup>[38]</sup>
- ❖ [Motion Paths](#)<sup>[52]</sup>
- ❖ [Sprite Sheet Animations](#)<sup>[56]</sup>

## Keyframes

In Saola Animate, you can animate elements by adding keyframes on the Timeline. A keyframe is a diamond marker on the Timeline that defines a property value at a specific time. Keyframes are used to set parameters for motion, effects, and many other properties that change over time. There are several ways you can choose to add keyframes at the position of the Playhead.

### *To add a keyframe from Properties pane*

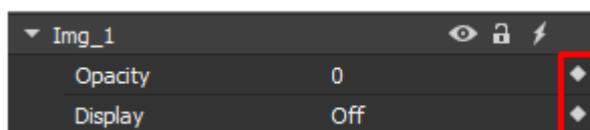


In the **Properties** pane, you can use a small diamond next to most of the property values to add keyframes. Select an element, position the Playhead to your desired point of time on the Timeline, and click the keyframe diamond to manually insert a keyframe for that property. Then position the Playhead to a different point of time, 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.

### *To add a keyframe from Timeline menu*

Select an element, position the Playhead to your desired point of time on the Timeline, and select **Timeline > Add Keyframe** from the menu bar. Select the type of keyframe you want to add to the current Playhead position.

### *To add a keyframe with Add Keyframe button*



In the **Timeline** pane, each element can have several properties animated which appear grouped beneath an element name. Notice that next to any property there is always a keyframe diamond representing the **Add Keyframe** button. You can click these buttons to add new keyframes at the position of the Playhead for that specific property.

### *To add a keyframe from context menu*

Select an element, position the Playhead to your desired point of time on the Timeline, and select **Add Keyframe** from the context menu by right-clicking the element's Timeline.

### To add a keyframe in Auto-Keyframe mode

Turn **Auto-Keyframe Mode** on and Saola Animate will automatically add keyframes at the current time when you modify a property. For more details about this feature, see [Auto-Keyframe Mode](#)<sup>[35]</sup>.

## Auto-Keyframe Mode

Auto-Keyframe Mode allows automatically generating keyframes when creating animations. By default, this mode is turned off and you need to insert keyframes manually. To turn Auto-Keyframe Mode on, choose **Auto-Keyframe Mode** from the **Timeline** pane menu or press the **K** key.



When you work with elements on the Canvas, or change properties in the **Properties** pane, the animations of elements will be changed or remain the same depending on the two following cases:

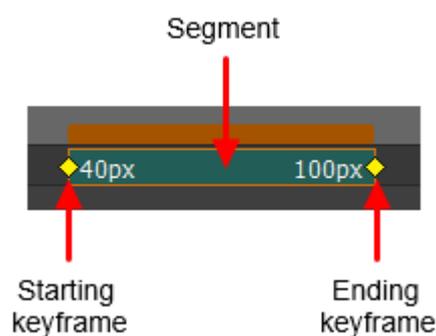
On	Off
<p>If there is no keyframe at the current time cursor, a new keyframe is created corresponding with the changed property on the current Timeline at the current time.</p> <p>If there exists a keyframe at the current cursor, its value will be changed to one of the corresponding changed properties.</p>	<p>If there is no keyframe at the current timestamp, all the keyframes will be changed as long as the value of the element is changed.</p> <p>If there exists a keyframe at current timestamp, its value will be changed to the one of the corresponding changed properties.</p>

## Animations

Animations are composed of two keyframes which define the starting and ending values of a property animation. There are two terms you need to mind:

- ❖ An *animation segment* is the change between two keyframes - in other words, a segment defines the way a certain property changes. A segment can have a transition or not.
- ❖ A *transition* allows an element to gradually change from one state to another over the course of time. Hence, if there is no transition in an animation segment, there will be

an instant change in the property value when the Playhead reaches the ending keyframe of the animation segment.



## Animation Segments

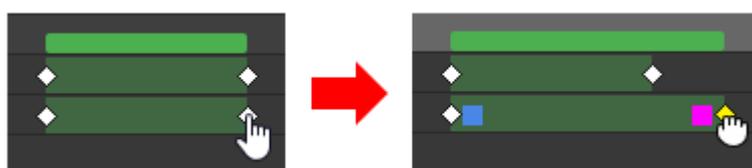
### ***To adjust the timing of a segment***

Drag an element animation bar or a property animation bar left and right along the Timeline. If you want to change all the properties simultaneously, select the element animation bar to select all properties of the element. Then, you can drag the bar along the Timeline to change the timing.



### ***To adjust the duration of a segment***

You can change the length of the segment to run your animation effect at a speed that faster or slower, that is, you need to create a longer segment to make a slower animation.



To adjust the duration of a segment, simply hover over the starting or ending keyframe of that segment until the pointer changes to a pointing hand, indicating that adjustments are possible. Then, click and drag the starting or ending keyframe along the Timeline to adjust the duration. If an animation has the same starting and ending keyframes, the animation duration is 0 and the animation is displayed as a special keyframe  on the Timeline.

### ***To copy & paste a segment***

You can copy an animation segment and paste it on the Timeline of the same or of another element. That way, you copy both the starting and ending keyframes and the transition between them to the Clipboard.

1. Click an animation segment on the Timeline. An orange border appears to indicate that that segment is selected. If you want to select multiple segments at the same time, hold down the **CTRL** key and click the segments.
2. Select **Edit > Copy** from the menu bar or press **CTRL+C** to copy the segments to the Clipboard. You can also cut the segments from the element by selecting **Edit > Cut** from the menu bar or pressing **CTRL+X**. If you want to copy the segments to another element, select that element on the Canvas or in the **Timeline** pane.
3. Move the Playhead to the position where you want the copied segments to start.
4. Select **Edit > Paste** from the menu bar or press **CTRL+V** to paste the segments on the Timeline.

## Transitions

Suppose that there is an element of which the Left property is animated. The Left property of that element has an animation segment with a starting keyframe [time: 1s, value: 50px] and an ending keyframe [time: 5s, value: 100px].

A transition between the two keyframes makes that element slowly move from one to another position over the course of 5 seconds. Without any transition, the Left value will always be 50px at greater or equal 1s until the current time is greater or equal 5s, the Left value will immediately change to 100px, meaning that the element instantly jumps to a new position when the current time is equal 5s.

### ***To create a transition***

With any animation segment selected, right-click and select **Create Transition** from the context menu to make an element gradually change from one state to another over the course of time.

### ***To remove a transition***

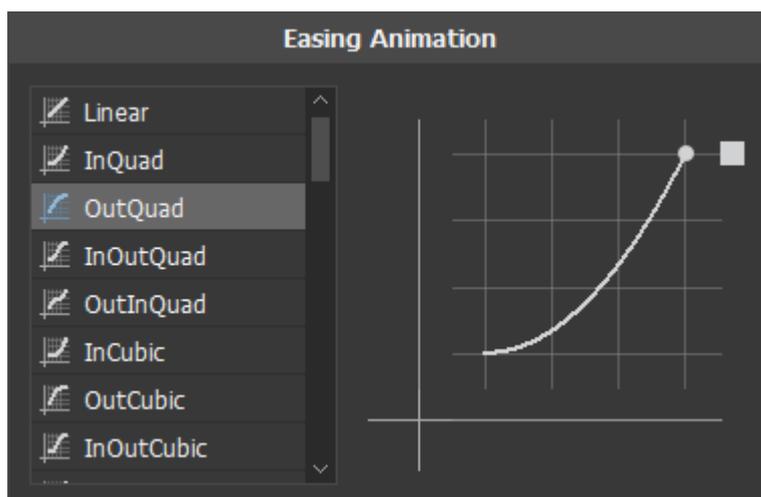
With any animation segment selected, right-click and select **Remove Transition** from the context menu to create an instant change in the property value when the Playhead reaches the ending keyframe of the animation segment.

### ***To invert an animation segment***

With any animation segment selected, right-click and select **Invert Animation Segment** from the context menu to swap the starting and ending keyframes of an animation segment. This action puts the starting keyframe in the position of the ending keyframe and vice versa.

## Easing

The motion in nature is rarely plain and linear from one point to another. In reality, when moving, things almost never move at a constant speed, or in other words, they tend to accelerate or decelerate. In Saola Animate, you can create a smooth transition effect by adding the right easing method, which specifies the speed at which a transition progresses over time. For example, you can use easing to create an animation showing a ball bouncing down the stairs.

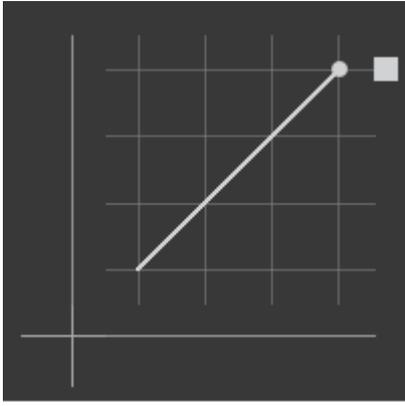
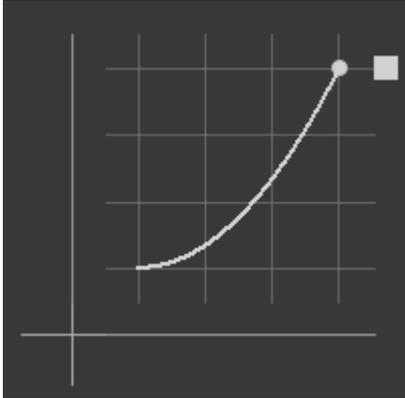
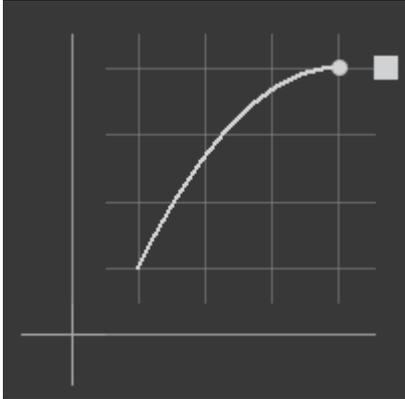


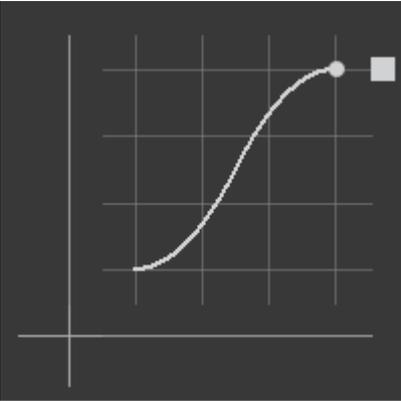
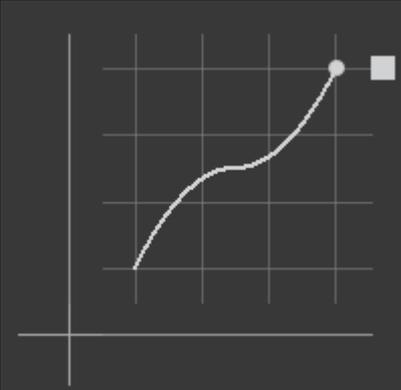
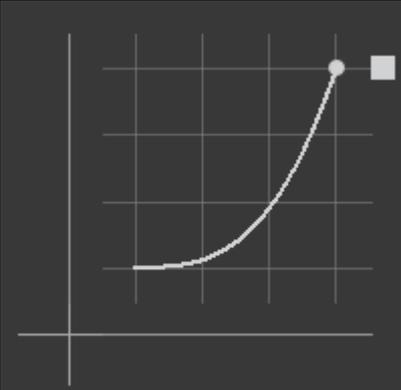
There is a wide range of easing methods within Saola Animate:

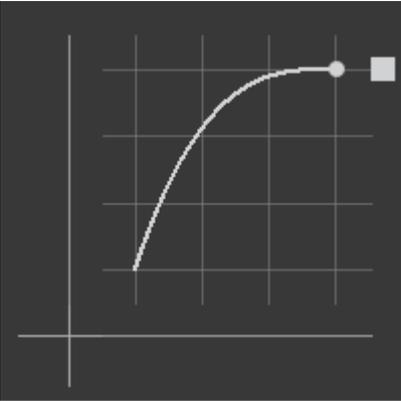
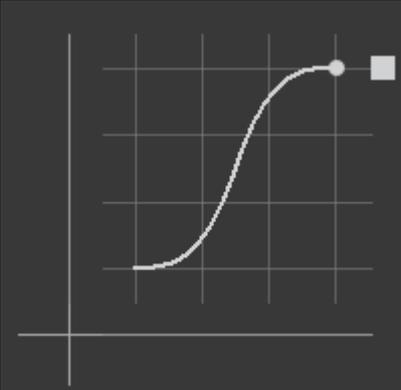
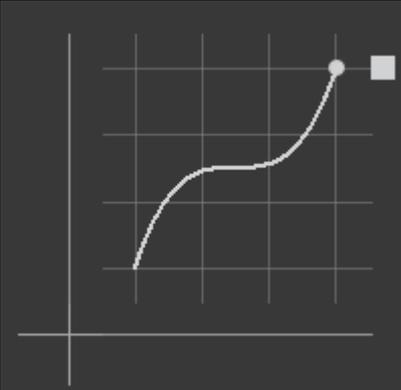
- ❖ The default is Linear, which progresses at a constant speed throughout the movement.
- ❖ Some other families are smooth curves, such as Cubic, Circ, etc.
- ❖ The Elastic family simulates inertia in the easing, making elastic curves.
- ❖ The Back family starts by moving the object a little backward before moving it forward.
- ❖ The Bounce family simulates the motion of an object bouncing.

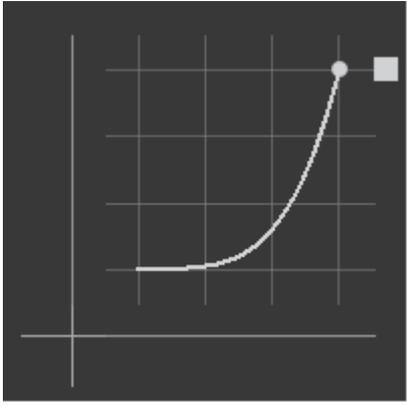
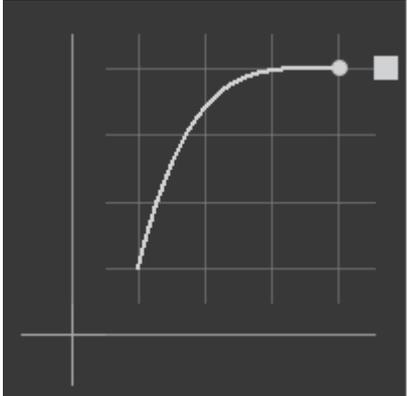
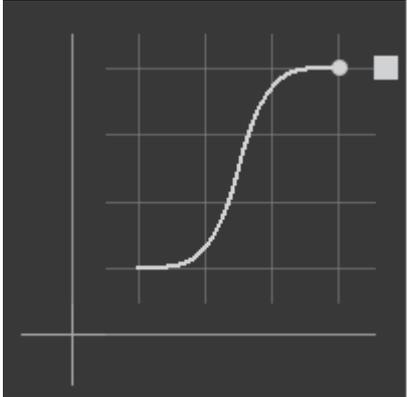
Each family, except Linear, has four variants: ease in, ease out, ease in-out, and ease out-in.

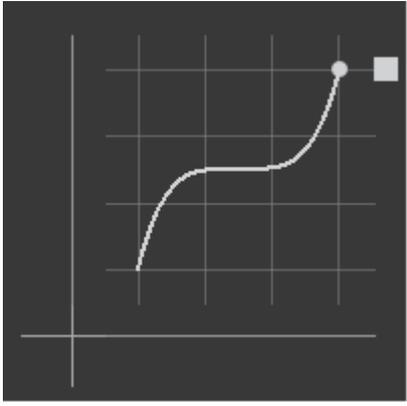
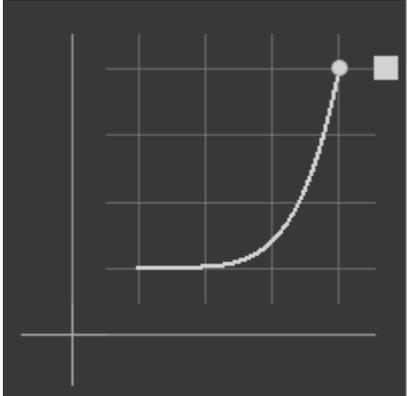
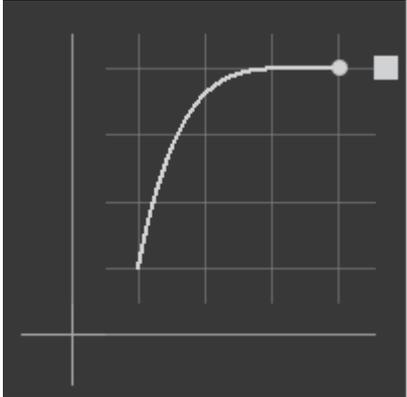
- ❖ Ease in and ease out are exact opposites. Ease in starts slow and accelerates at the end while ease out starts fast and decelerates at the end.
- ❖ Ease in-out and ease out-in are the two opposite combinations of ease in and ease out. Ease in-out starts and ends slow, but it is fast in the middle, whereas ease out-in starts and ends fast, but it is slow in the middle.

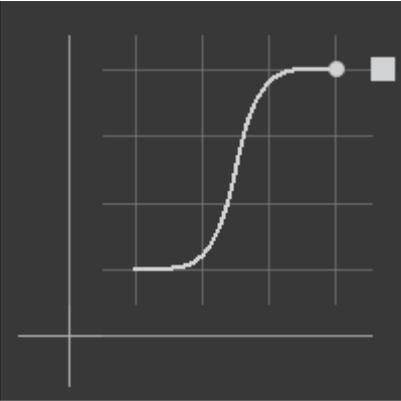
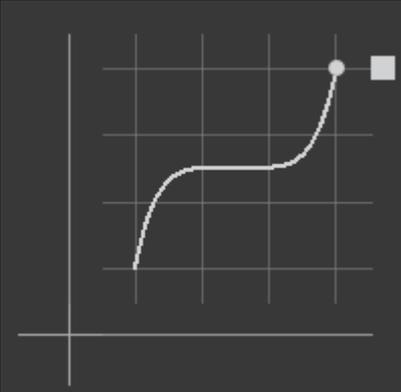
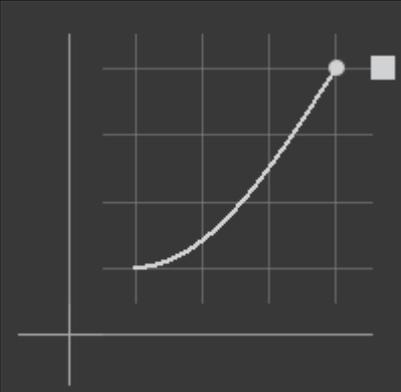
Constant	Illustration	Remark
Linear		<p>Easing curve for a linear(<math>t</math>) function: velocity is constant.</p>
InQuad		<p>Easing curve for a quadratic (<math>t^2</math>) function: accelerating from zero velocity.</p>
OutQuad		<p>Easing curve for a quadratic (<math>t^2</math>) function: decelerating to zero velocity.</p>

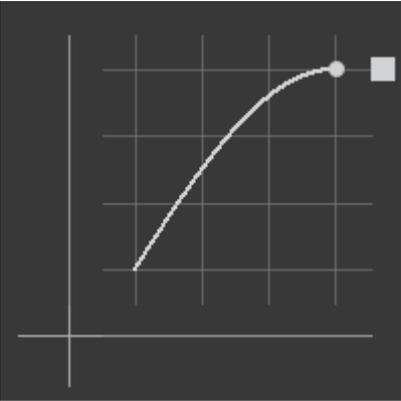
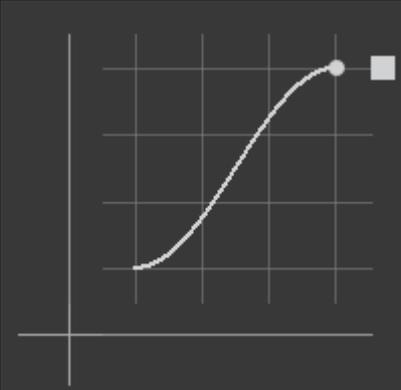
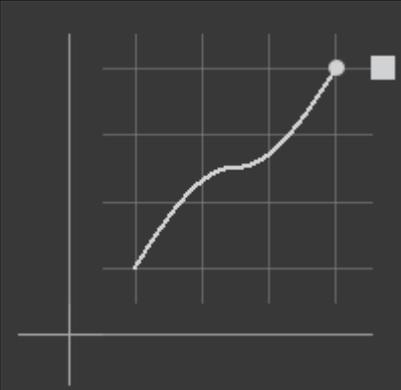
Constant	Illustration	Remark
InOutQuad		Easing curve for a quadratic ( $t^2$ ) function: acceleration until halfway, and then deceleration.
OutInQuad		Easing curve for a quadratic ( $t^2$ ) function: deceleration until halfway, and then acceleration.
InCubic		Easing curve for a cubic ( $t^3$ ) function: accelerating from zero velocity.

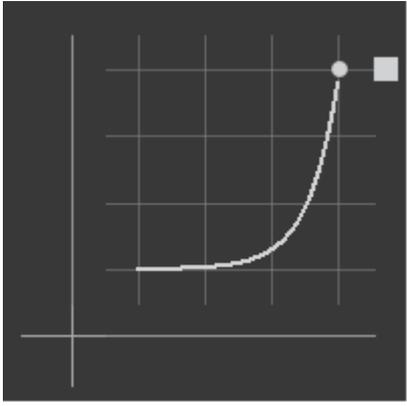
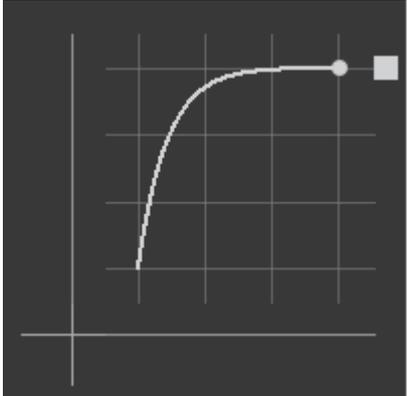
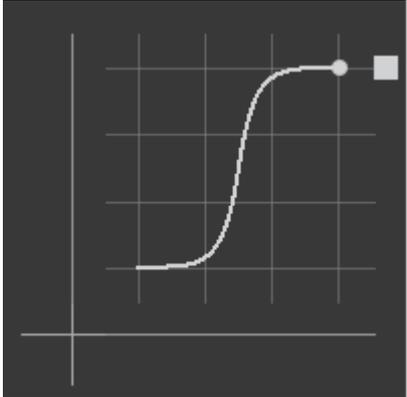
Constant	Illustration	Remark
OutCubic		Easing curve for a cubic ( $t^3$ ) function: decelerating to zero velocity.
InOutCubic		Easing curve for a cubic ( $t^3$ ) function: acceleration until halfway, and then deceleration.
OutInCubic		Easing curve for a cubic ( $t^3$ ) function: deceleration until halfway, then acceleration.

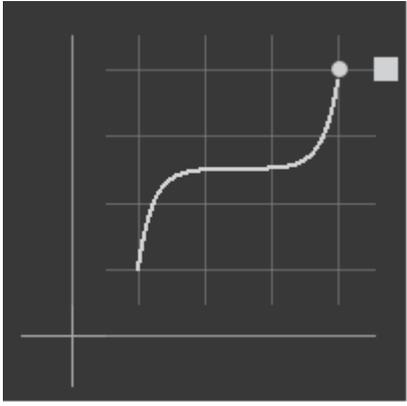
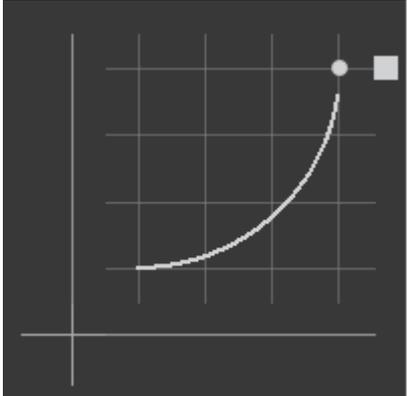
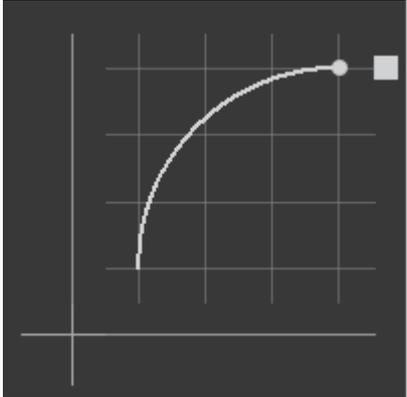
Constant	Illustration	Remark
InQuart	 <p>The illustration shows a graph with a grid. A white curve starts at the origin (0,0) and curves upwards with an increasing slope, ending at a point marked with a white dot and a grey square. This represents a quartic function where the object starts at zero velocity and accelerates as it moves.</p>	<p>Easing curve for a quartic (<math>t^4</math>) function: accelerating from zero velocity.</p>
OutQuart	 <p>The illustration shows a graph with a grid. A white curve starts at a point on the y-axis and curves downwards with a decreasing slope, ending at a point marked with a white dot and a grey square. This represents a quartic function where the object starts with a high velocity and decelerates to zero velocity.</p>	<p>Easing curve for a quartic (<math>t^4</math>) function: decelerating to zero velocity.</p>
InOutQuart	 <p>The illustration shows a graph with a grid. A white curve starts at a point on the y-axis, curves upwards with an increasing slope until it reaches the halfway point, and then curves downwards with a decreasing slope, ending at a point marked with a white dot and a grey square. This represents a quartic function that accelerates until halfway and then decelerates.</p>	<p>Easing curve for a quartic (<math>t^4</math>) function: acceleration until halfway, and then deceleration.</p>

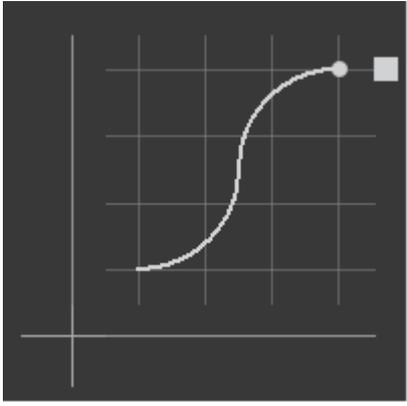
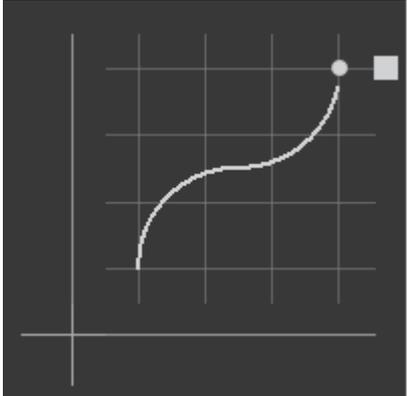
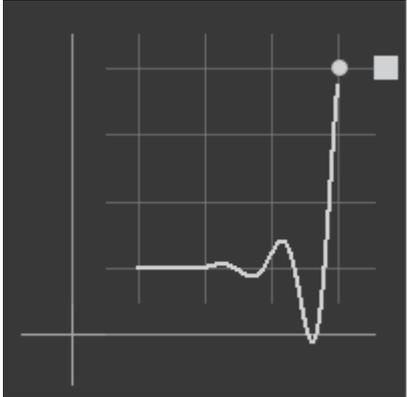
Constant	Illustration	Remark
OutInQuart		Easing curve for a quartic ( $t^4$ ) function: deceleration until halfway, and then acceleration.
InQuint		Easing curve for a quintic ( $t^5$ ) easing in: accelerating from zero velocity.
OutQuint		Easing curve for a quintic ( $t^5$ ) function: decelerating to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

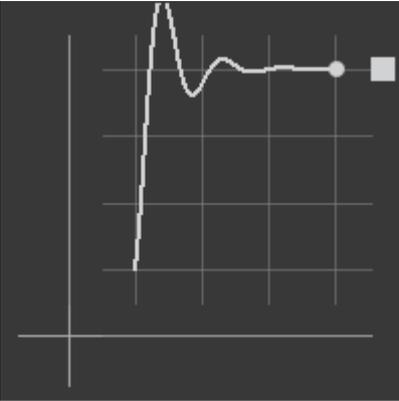
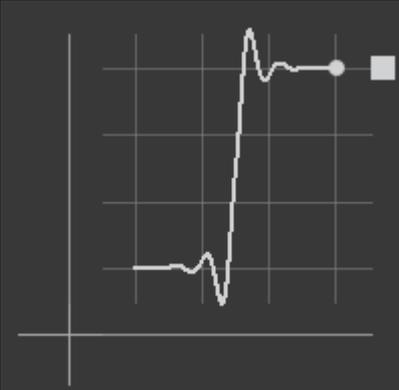
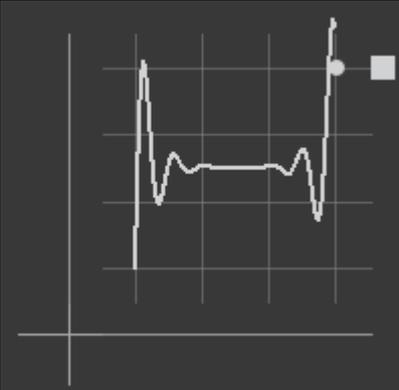
Constant	Illustration	Remark
InOutQuint		Easing curve for a quintic ( $t^5$ ) function: acceleration until halfway, and then deceleration.
OutInQuint		Easing curve for a quintic ( $t^5$ ) function: deceleration until halfway, and then acceleration
InSine		Easing curve for a sinusoidal ( $\sin(t)$ ) function: accelerating from zero velocity.

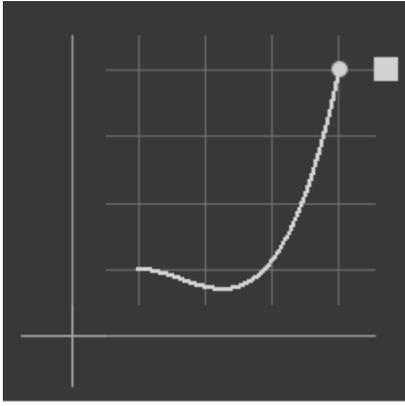
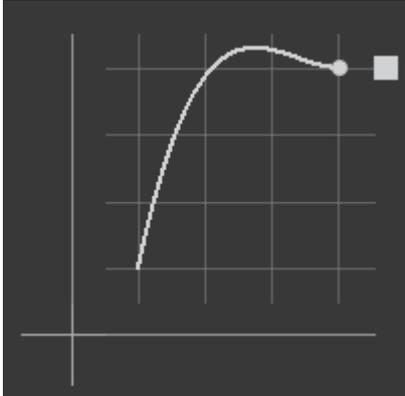
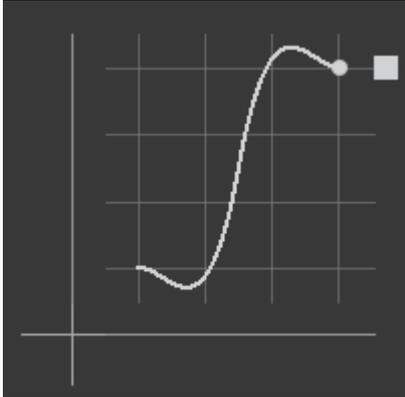
Constant	Illustration	Remark
OutSine		<p>Easing curve for a sinusoidal (sin(t)) function: decelerating from zero velocity.</p>
InOutSine		<p>Easing curve for a sinusoidal (sin(t)) function: acceleration until halfway, and then deceleration.</p>
OutInSine		<p>Easing curve for a sinusoidal (sin(t)) function: deceleration until halfway, and then acceleration.</p>

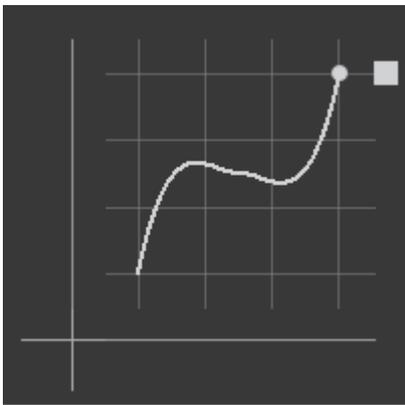
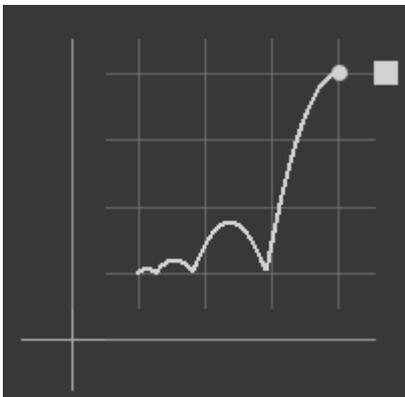
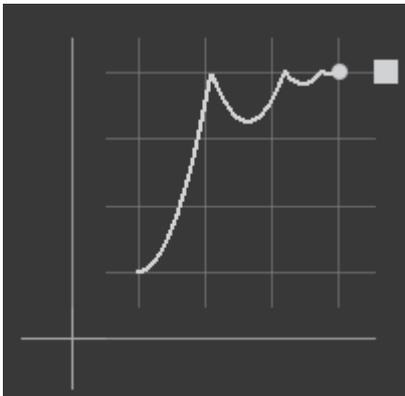
Constant	Illustration	Remark
InExpo	 <p>The illustration shows a graph with a grid. A white curve starts at the origin (0,0) and remains flat for a short period before curving upwards exponentially. A grey square is positioned at the end of the curve, representing the final value of the animation.</p>	<p>Easing curve for an exponential (<math>2^t</math>) function: accelerating from zero velocity.</p>
OutExpo	 <p>The illustration shows a graph with a grid. A white curve starts at a low value on the y-axis and rises steeply, then levels off as it approaches a grey square at the end of the curve, representing deceleration.</p>	<p>Easing curve for an exponential (<math>2^t</math>) function: decelerating from zero velocity.</p>
InOutExpo	 <p>The illustration shows a graph with a grid. A white curve starts at a low value, rises steeply to a peak at the halfway point, and then curves back down to level off at a grey square at the end of the curve.</p>	<p>Easing curve for an exponential (<math>2^t</math>) function: acceleration until halfway, and then deceleration.</p>

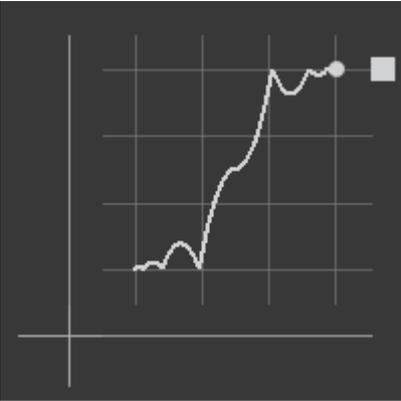
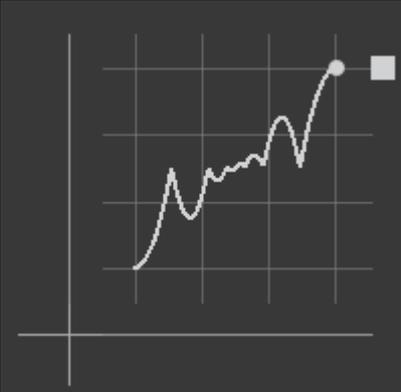
Constant	Illustration	Remark
OutInExpo		<p>Easing curve for an exponential (<math>2^t</math>) function: deceleration until halfway, and then acceleration.</p>
InCirc		<p>Easing curve for a circular (<math>\sqrt{1-t^2}</math>) function: accelerating from zero velocity.</p>
OutCirc		<p>Easing curve for a circular (<math>\sqrt{1-t^2}</math>) function: decelerating from zero velocity.</p>

Constant	Illustration	Remark
InOutCirc		<p>Easing curve for a circular (<math>\sqrt{1-t^2}</math>) function: acceleration until halfway, and then deceleration.</p>
OutInCirc		<p>Easing curve for a circular (<math>\sqrt{1-t^2}</math>) function: deceleration until halfway, and then acceleration.</p>
InElastic		<p>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.</p>

Constant	Illustration	Remark
OutElastic	 <p>The graph shows a white line on a black grid. The line starts at the origin (0,0), rises steeply to a peak, then oscillates with decreasing amplitude as it approaches a grey square at the end of the horizontal axis. The curve is characteristic of an exponentially decaying sine wave.</p>	<p>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.</p>
InOutElastic	 <p>The graph shows a white line on a black grid. The line starts at zero, rises to a peak, then falls to a trough, and finally rises to a grey square at the end of the horizontal axis. The curve is characteristic of an exponentially decaying sine wave with a phase shift.</p>	<p>Easing curve for an elastic (exponentially decaying sine wave) function: acceleration until halfway, and then deceleration.</p>
OutInElastic	 <p>The graph shows a white line on a black grid. The line starts at zero, falls to a trough, then rises to a peak, and finally falls to a grey square at the end of the horizontal axis. The curve is characteristic of an exponentially decaying sine wave with a phase shift.</p>	<p>Easing curve for an elastic (exponentially decaying sine wave) function: deceleration until halfway, and then acceleration.</p>

Constant	Illustration	Remark
InBack		<p>Easing curve for a back                      (overshooting cubic function: <math>(s+1)^3 - s^2t</math>) easing in: accelerating from zero velocity.</p>
OutBack		<p>Easing curve for a back                      (overshooting cubic function: <math>(s+1)^3 - s^2t</math>) easing out: decelerating to zero velocity.</p>
InOutBack		<p>Easing curve for a back                      (overshooting cubic function: <math>(s+1)^3 - s^2t</math>) easing in/out: acceleration until halfway, and then deceleration.</p>

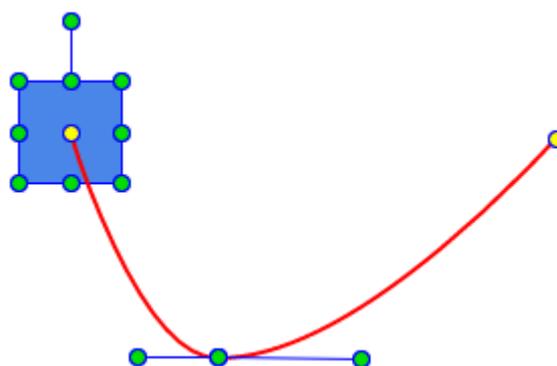
Constant	Illustration	Remark
OutInBack		<p>Easing curve for a back (overshooting cubic easing: <math>(s+1) * t^3 - s * t^2</math>) easing out/in: deceleration until halfway, and then acceleration.</p>
InBounce		<p>Easing curve for a bounce (exponentially decaying parabolic bounce) function: accelerating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

Constant	Illustration	Remark
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

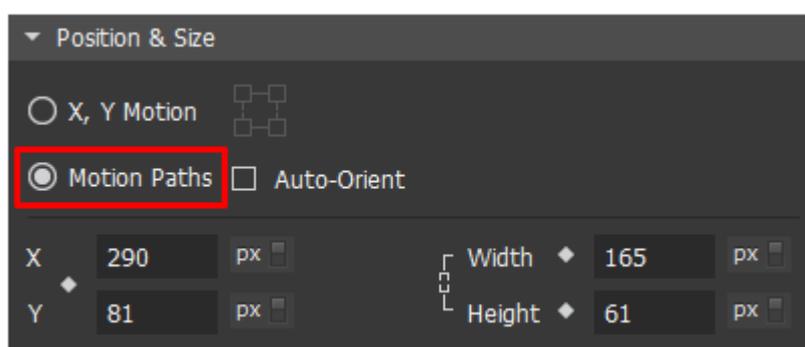
Elements can be animated moving along more complex curves than just a straight line by using motion paths. Thus, motion paths allow you to imitate real movements that cannot be achieved with linear motion.

A motion path is a curved animation between two or more points. You can modify a motion path by changing existing keyframes or adding new ones.



## Creating Motion Paths

To animate element position using motion paths, in the **Properties** pane, switch from **X, Y Motion** to **Motion Paths**. This action removes all animations of X/Y/Left/Top/Right/Bottom property of an element.



To create a motion path, the first thing to do is to create a basic motion path with two keyframes.

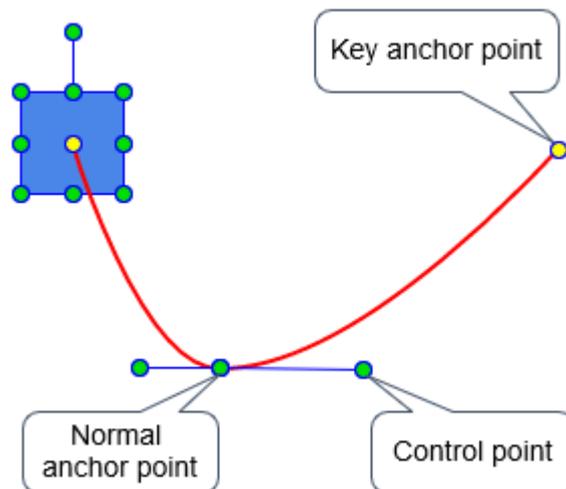
1. Add a Location keyframe at the desired starting time. A Location keyframe can be added in many ways. See [Keyframes](#)<sup>[34]</sup> for more details.
2. Drag the Playhead to the desired ending time of your animation, and add another Location keyframe with different value. You can repeat this step many times to create a path with many points.

With these above steps, a motion path is created but it is still a straight line between points. You can edit the motion path by adding and modifying its anchor points.

## Editing Motion Paths

Editing a motion path is actually working with its anchor points. Anchor points are circle points on motion paths 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 that do not have associated keyframes on the Timeline. Normal anchor points define the path that element will move along between key anchor points. Each normal anchor point has two blue handles with a control point at their ends.



### **To create an anchor point**

- ❖ To create a key anchor point, add a Location keyframe to the animation segment at your desired point of time. Location keyframes represent two separate motion paths. You can add a Location keyframe to split a path into two, or delete a Location keyframe between two paths to create a contiguous path.
- ❖ To create a normal anchor point, hover over a motion path until the pointer turns into a pointing hand, and then click and drag the path as desired.

### **To adjust a control point**

- ❖ With any anchor point selected, its control points appear to help you adjust the path between two anchor points. Drag the control points to modify the motion path.
- ❖ If the control point and the 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 the **ALT** key and then click the mouse.

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

### ***To delete an anchor point***

Hold down the **SHIFT** key, and then click an anchor point to delete it. If you delete a key anchor point, either of the following cases happens:

- ❖ The key anchor point is the first/last point of the motion path: The associated Location keyframe on the Timeline will be deleted if there is no anchor point between this point and the next/previous key anchor point. Otherwise, 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 motion path: The associated Location keyframe will be deleted.

### ***To rotate a motion path***

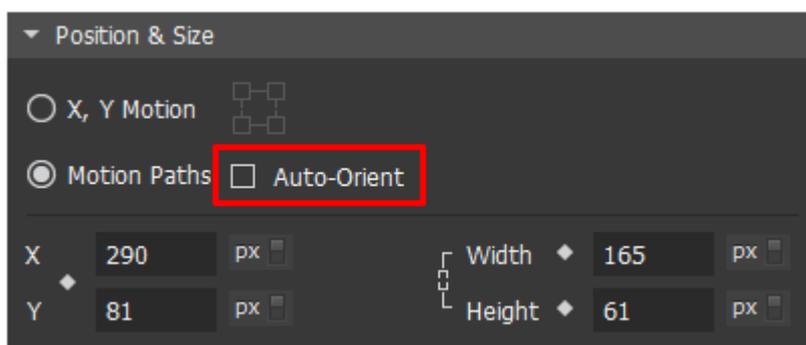
Hold down the **ALT** key; then click and drag any point on the path. The motion path will be rotated around the element's transformation-origin point.

### ***To move a motion path***

Hold down the **CTRL** key; then click and drag any point on the path.

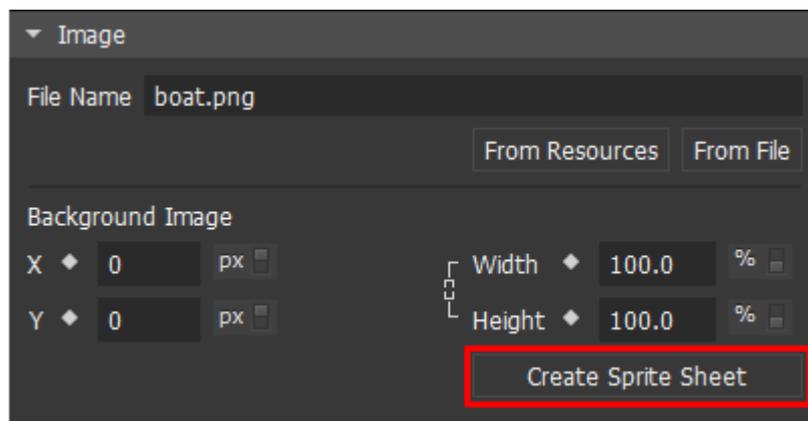
## **Auto-Orientation**

Imagine you want to create an animated car moving along a rough road. As the road is not a straight line, you need to use a motion path to move the car along the road. However, even with a motion path, the car's movement still sounds unnatural as it does not orient along the direction of the path. To solve this problem, use the **Auto-Orient** attribute to make elements automatically orient along the direction of the motion path.



## Sprite Sheet Animations

Sprite sheets are commonly used in games and storybooks. A sprite sheet is an image file containing several smaller graphics in a tiled grid arrangement. By combining several graphics into a single file, you can create an animated character representing one (or several) animation sequence while only needing to load a single file.



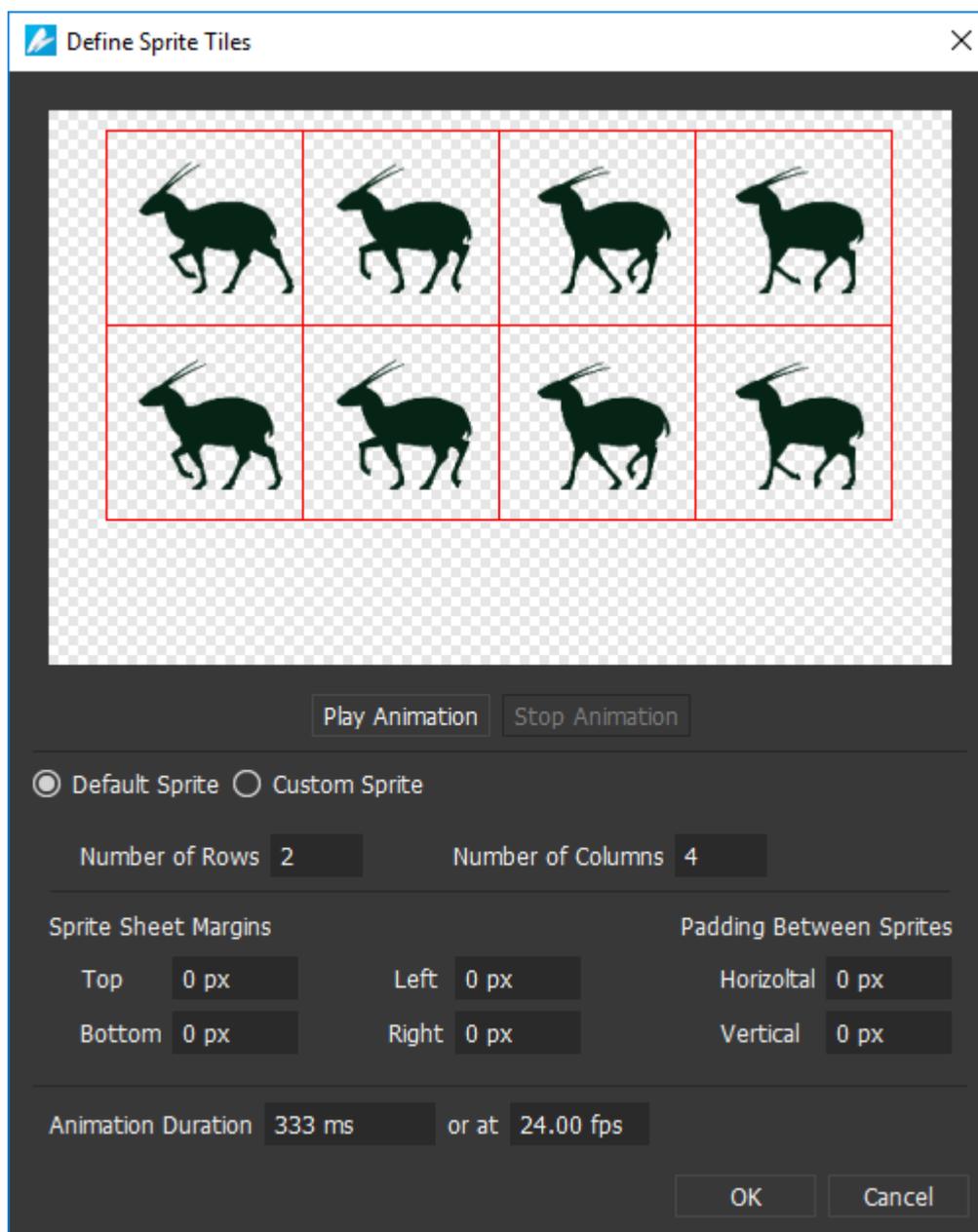
To create sprite sheets, select an image on the Canvas, and then click **Properties > Image > Creating Sprite Sheets**. Saola Animate offers two modes to define sprite types: Default Sprite and Custom Sprite.

- ❖ Use **Default Sprite** to generate frames automatically if you have a uniform sprite sheet that is a grid of equally sized rectangles.
- ❖ Use **Custom Sprite** to generate frames manually if you have a sprite sheet of which images are packed together in different sizes.

### Default Sprite

To use the Default Sprite mode, ensure that:

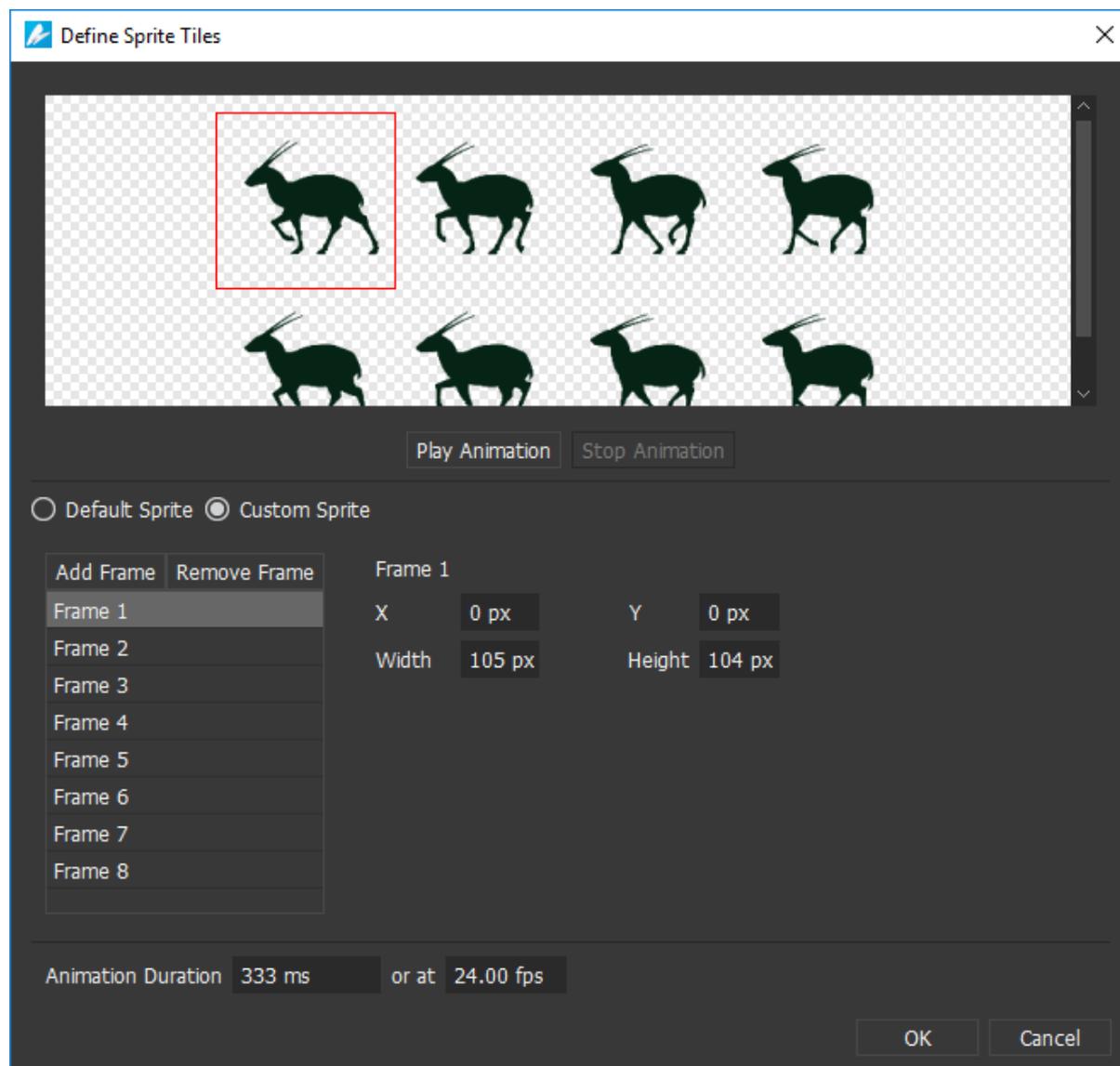
- ❖ The images in the sprite sheet are of equal dimensions.
- ❖ The padding between the images is uniform.



1. Specify the number of rows and columns, sprite sheet margins [top, left, bottom, right], and padding between sprites.
2. Specify the animation duration in milliseconds or at FPS. By default, FPS is set to 24.
3. Click **Play Animation** to preview.
4. 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.



1. Click the **Add Frame** button to add a frame.
2. Specify frame properties (x, y, width, height), and then modify the position and size of a frame in boxes, or drag and resize the frame rectangle in the preview window.
3. Specify the animation duration in milliseconds or at FPS. By default, FPS is set to 24.
4. Click **Play Animation** to preview.
5. Click **OK** to create frames.

## Chapter 5: Adding Interactivity

Saola Animate allows you to create HTML5 web content that is not only animated but also interactive. You can make many things happen with a single mouse click or finger swipe. Interactivity is a great way to gain and keep audience's attention and interest as it gives them interactive control over their experience. With Saola Animate, you can use events, actions, and triggers to add interactivity to your project.

**Events** are things that trigger actions - in other words, when an event is detected, one or more actions are provided as a response. For example, when you click a menu button (event), more options will expand in a drop-down list (action). Events are typically user-generated, such as a mouse click or a key press; however, some events can occur automatically without user actions. For example, the point when a preloader starts loading or when it is completed. There are five types of events available in Saola Animate: element, scene, document, timeline, and preloader events.

**Actions** are always paired with events, that is, they occur in response to events. For example, when you click a link in a document, a new browser tab or window automatically open or you jump to another part of the document. More than one action can be triggered when an event occurs. Saola Animate offers users many types of actions: timeline, symbol, media, visibility, etc.

**Triggers** are actions that are placed along the Timeline. Triggers are executed automatically when the Playhead reaches them on the Timeline. One trigger can associate with many different actions and you can have multiple triggers along the Timeline. Note that triggers perform actions at specific point without user control.

For more details about types of events and actions, see [Events - Actions](#)<sup>[110]</sup>.

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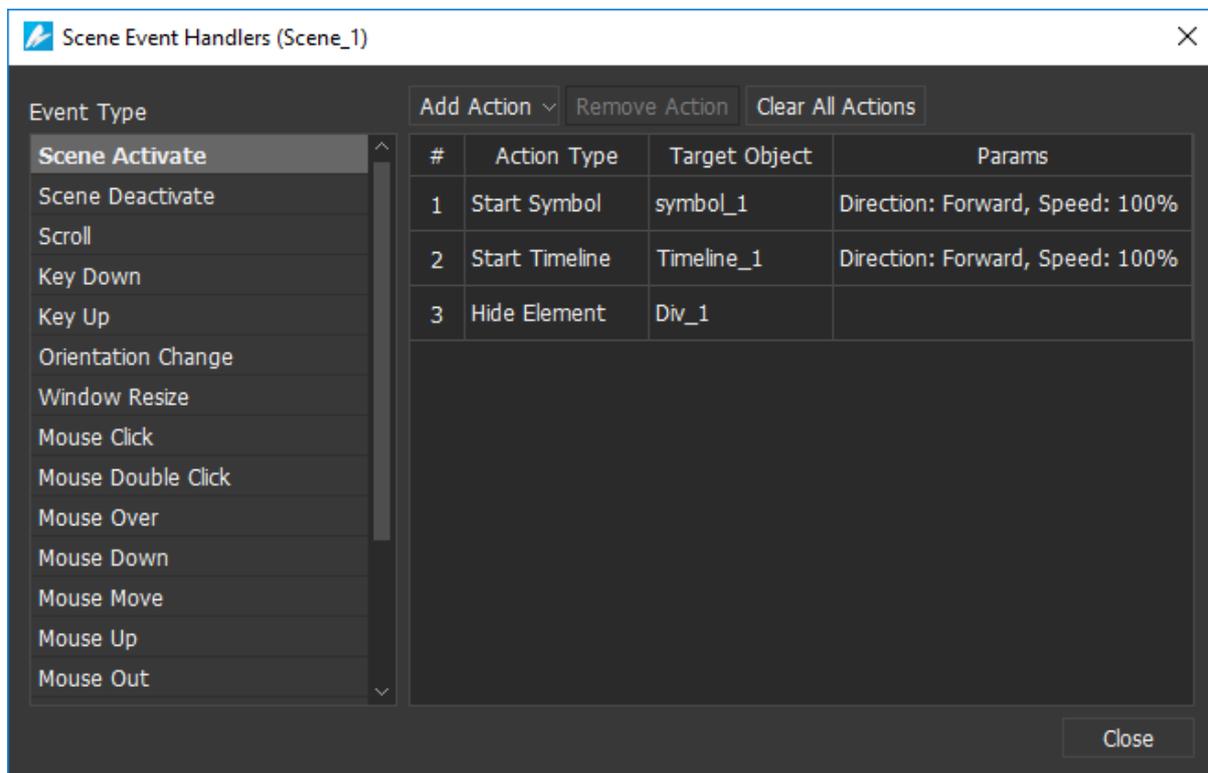
In this chapter, you will find the following:

- ❖ [Event Handlers](#)<sup>[60]</sup>
- ❖ [Timeline Triggers](#)<sup>[62]</sup>

## Event Handlers

Saola Animate allows you to add and edit events and actions in the **Event Handlers** dialog box. Element, scene, document, timeline, and preloader objects can have actions registered with events. You can open the **Event Handlers** dialog box by clicking the **Open Event Handlers**  button. This button can be found next to element/scene name in the **Timeline** pane, in the first section of the **Properties** pane or in the context menu when you right-click a scene or the Canvas.

The **Event Handlers** dialog box has user interface as shown below. The left side is a list of event types associated with object types (element/scene/document...). The right side is a list of all actions registered with the selected event. You can add an action, remove a single action, or clear all actions by using three buttons at the top bar of the dialog box. Some certain actions require a target object or parameters. Action type, target object, and parameters can be adjusted by double-clicking the table cell.



### To add an action

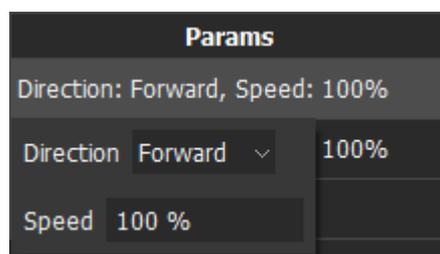
1. Select an event type in the **Event Type** list.
2. Click the **Add Action** button, select an action type.



#	Action Type	Target Object
1	Start Symbol	symbol_1
2	Start Timeline	Timeline_1
3	Hide Element	Div_1
		Div_1
		Text_1
		symbol_1
		Img_1

### To edit a parameter

1. Double-click the params cell.
2. Edit values in the **Parameters** editor. An action can have no parameters.



### To remove an action

1. Select an action cell.
2. Click the **Remove** button to remove a single selected action.

### To remove all actions

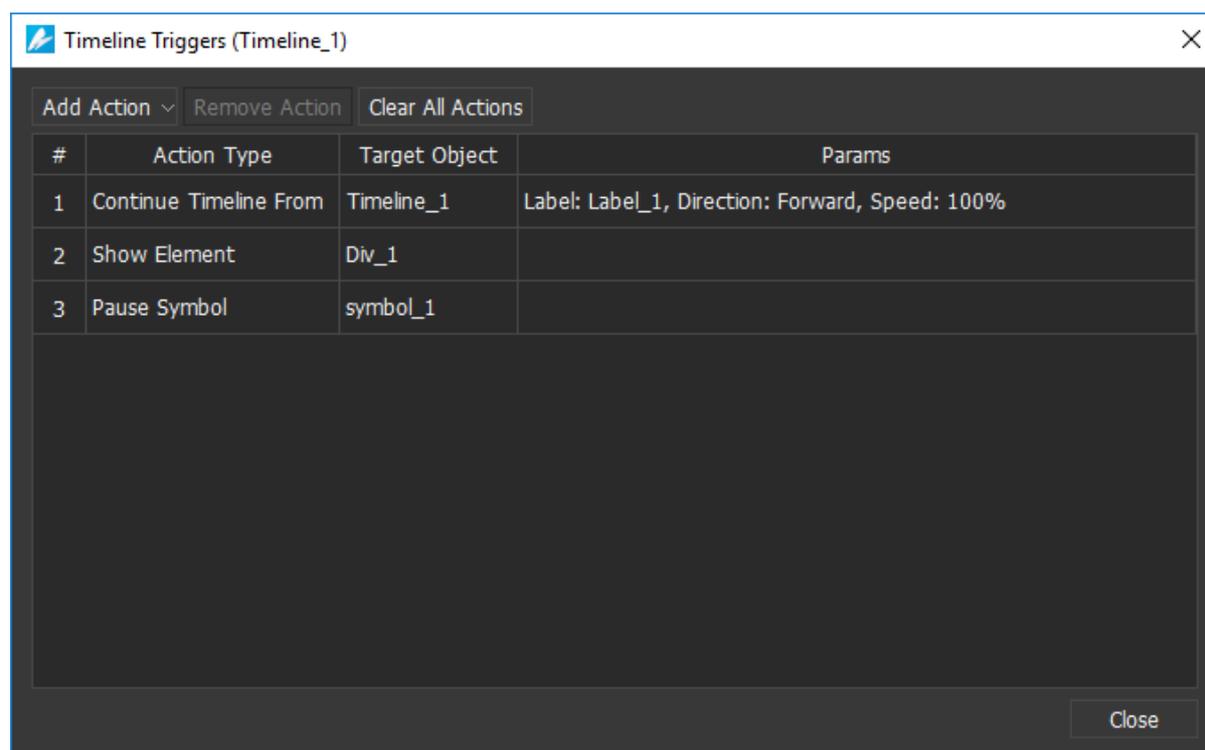
Click the **Clear Actions** button to remove all actions associated with an event.

## Timeline Triggers

Timeline triggers automatically perform actions when the Playhead reach them on the Timeline. When adding timeline triggers, you can immediately choosing an action to perform. You can manage triggers through the **Timeline Triggers** dialog box. To open this dialog box, do either of the following:

- ❖ Click **Timeline > Insert Trigger** from the menu bar.
- ❖ Click the **Insert Trigger**  button on the Actions bar of the **Timeline** pane.

The **Timeline Triggers** dialog box has user interface as shown below. In general, this dialog box is similar to the **Event Handlers** dialog box except the fact that it does not have the Event Type list on the left side. You can add a trigger, remove a single trigger, or clear all triggers by using three buttons at the top bar of the dialog box. Most of the actions to manage timeline triggers such as changing action types, changing target objects, editing parameters of actions, and removing actions are the same as those in the **Event Handlers** dialog box. See [Event Handlers](#)<sup>[60]</sup> for more details.



### **To add a timeline trigger**

1. Drag the Playhead along the Timeline to the point you want to add a trigger.
2. Select **Timeline > Insert Trigger** from the menu bar or click the **Insert Trigger**  button in the **Timeline** pane. A trigger appears as a red diamond at the position of the Playhead.

### **To edit a timeline trigger**

1. Double-click the trigger icon on the Timeline.
2. Edit the action type, target object, and parameters of an action (see [Event Handlers](#)<sup>[60]</sup> for more details).

### **To move a timeline trigger**

Click and drag the trigger icon along the Timeline to a new position. The actions registered with that trigger will be executed when the Playhead reaches a new time.

**To copy & paste a timeline trigger**

1. Select a trigger. You can select more than one trigger by holding down the **CTRL** key while clicking.
2. Press **CTRL+C** or right-click and select **Copy** from the context menu.
3. Position the Playhead to the point you want to place the copied triggers.
4. Press **CTRL+V** or right-click and select **Paste** from the context menu.

**To remove a timeline trigger**

1. Select a trigger. You can select more than one trigger by holding down the **CTRL** key while clicking.
2. Press the **DELETE** key or right-click and select **Delete** from the context menu.

## Chapter 6: Using Symbols

Symbols are a powerful resource allowing you to easily reuse elements, scenes, timelines, and animations. Symbols contain their own elements, scenes, timelines, and actions that can be triggered independently from the scene. There are two concepts of symbol that you need to mind: *symbol* and *symbol element*. Symbol elements are elements in which the symbol is embedded. Thus, many symbol elements can use the same symbols, and if the content of a symbol is changed, the content displayed by a symbol element is changed too.

Symbols are useful for sharing identical elements across multiple scenes or at different positions in the same scene. For example, you can create a piece of animation, convert it to a symbol, and then use it in a larger animation. To create a symbol, you can convert from elements or import symbol files from the file system. You can also export symbols to files for reusing or sharing.

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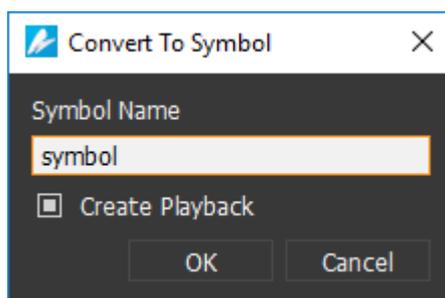
In this chapter, you will find the following:

- ❖ [Converting Elements To Symbols](#) <sup>65</sup>
- ❖ [Editing Symbols](#) <sup>65</sup>
- ❖ [Importing & Exporting Symbols](#) <sup>66</sup>

## Converting Elements To Symbols

To convert elements to symbols, do as follows:

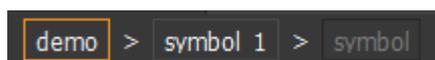
1. Select one or many elements of the same parent.
2. Click the **Convert to Symbol**  button on the toolbar or select from the context menu.
3. In the dialog box, type a unique name for the new symbol.



4. If you do not want to create the playback animation of the symbol at this time, clear the **Create Playback** check box.

## Editing Symbols

If a scene contains one symbol element of the symbol, simply double-click the element. Otherwise, double-click the symbol in the **Resources** pane. Now the editor displays the content of the symbol which resembles other documents with scenes, timelines, etc.



Take a look at the top of the Canvas. There is a stack of buttons displaying a stack of symbols being edited. The first one is the main document while the last one is the symbol you are working on. Click these buttons to navigate to the parent symbols.

To stop editing a symbol, double-click any elsewhere on the Canvas. This action stops editing the symbol and navigate to the parent symbol. After you are done editing the symbol, all symbol elements of the symbol will be changed.

## Importing & Exporting Symbols

To import a symbol file and create a symbol element on a scene, do either of the following:

- ❖ Drag and drop symbol files onto the Canvas.
- ❖ Click the **Symbol**  button on the toolbar and select a symbol file from Explorer.
- ❖ Click **Element > Symbol** from the context menu of the Canvas, and then select a symbol file from Explorer.

To import & export a symbol from the **Resources** pane, see [Using Resources Pane](#)<sup>[91]</sup>.

Note that when importing a symbol from the **Resources** pane, all resources which are used in this symbol will be imported into the current project. These resources become the resources of the project, not that of the symbol.

## Chapter 7: Previewing & Exporting Projects

After creating and editing a project, it is important to preview your project before exporting it to HTML5. This chapter covers previewing your Saola project on local browser and exporting your project to the web.

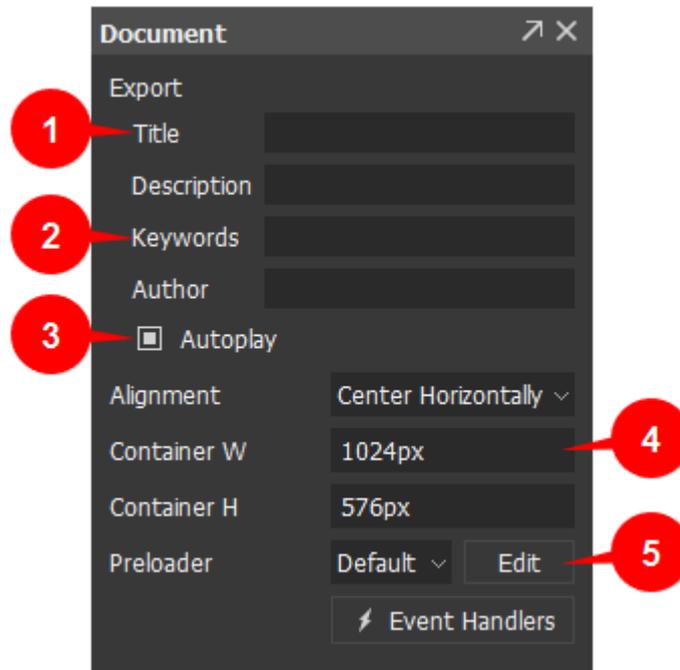
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In this chapter, you will find the following:

- ❖ [Updating Document Properties](#)<sup>[67]</sup>
- ❖ [Previewing Scene & Project In Browser](#)<sup>[68]</sup>
- ❖ [Exporting Project To HTML5](#)<sup>[68]</sup>
- ❖ [Embedding HTML5 Output In Webpage](#)<sup>[70]</sup>

## Updating Document Properties

A Saola document includes one or more scenes. Once property values of a document are set, they will directly affect the appearance or behavior of scenes as well as their timelines or elements. Document properties can be edited in the **Document** pane.



The following properties can be set in the **Document** pane:

1. **Title** exports its content in the <title> tag. The <title> tag is required in all HTML documents and it defines the title of the document. The <title> element:
  - ❖ Define a title in the browser toolbar.
  - ❖ Provide a title for the page when it is added to favorites.
  - ❖ Display a title for the page in search-engine results.
2. **Description**, **keywords**, and **author** describe metadata in HTML documents. Metadata is often used in the content of the <meta> tag. Metadata will not be displayed on the page but will be machine parable.
3. If the **Autoplay** option is turned on, the document will automatically start playing as you open a web browser. Otherwise, it must be called to start via an event and an action. You can edit the document events and actions by clicking the **Event Handlers** button.
4. **Alignment**, **container width** and **height** of the document are all customizable.

5. If your project is complex and graphics-intensive with many resource files, it may take a few seconds for the files to be transferred to the user's browser. It is when you need to use a **preloader** to indicate that the content is being loaded. For more details about preloader, see [Customizing Preloader](#)<sup>[116]</sup>.



## Previewing Scene & Project In Browser

Previewing a project during and after the editing process allows you to review your work and notice the changes that are required. That way, you can be sure of the final output that you get. Saola supports two modes to preview your work before exporting a project.

### *To preview the current scene in default browser*

Saola allows you to preview the current scene in default browser without having to export it. Do either of the following:

- ❖ Click the **Preview Current Scene in Browser**  button on the toolbar.
- ❖ Click **File > Preview Current Scene in Browser** from the menu bar.

### *To preview the whole project in default browser*

Do either of the following to preview the whole project:

- ❖ Click the **Preview Project in Browser**  button on the toolbar.
- ❖ Click **File > Preview Project in Browser** from the menu bar.

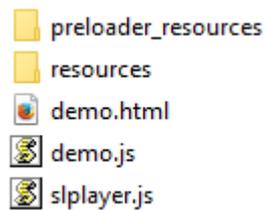
## Exporting Project To HTML5

### *To export a project to HTML5*

Once you have completed a project, the last step is to export it to HTML5. From that, you can view your animations via browsers or embed it into websites or applications.

1. Click the **Export to HTML5**  button on the toolbar or select **File > Export to HTML5** from the menu bar.
2. Click the **Export** button.

Once the project is exported to HTML5, it will be stored in a folder with structure as shown below:



- ❖ preloader\_resources: Optional folder that contains all resource files (image/media...) that are inserted into project to customize the preloader. If there is no custom preloader or no resource file inserted to modify the custom preloader, this folder will not appear.
- ❖ resources: Folder that contains all resource files (image/media...) that are inserted into project during editing.
- ❖ demo.html: HTML document that is named after the project title. Open this file to play the project on a webpage.
- ❖ demo.js: Document data named after the project title that defines all scenes, timelines, elements, and animations for the document.
- ❖ splayer.js: The main Saola Animate HTML5 Player.

### ***Browser compatibility for HTML5 outputs***

Saola Animate is compatible with:

- ❖ Chrome 4+
- ❖ Firefox 3.5+
- ❖ IE 9+
- ❖ Edge
- ❖ Safari 3.1+
- ❖ Opera 11.5+

Newer version of browsers are required for some features including:

- ❖ Gradient Fill: Chrome 10+, Firefox 3.6+, IE 10+, Safari 5.1+, Opera 12.1+.
- ❖ Audio/Video: Firefox 11+, Safari 4+ (Note that users still have to use compatible formats that a browser supports.)

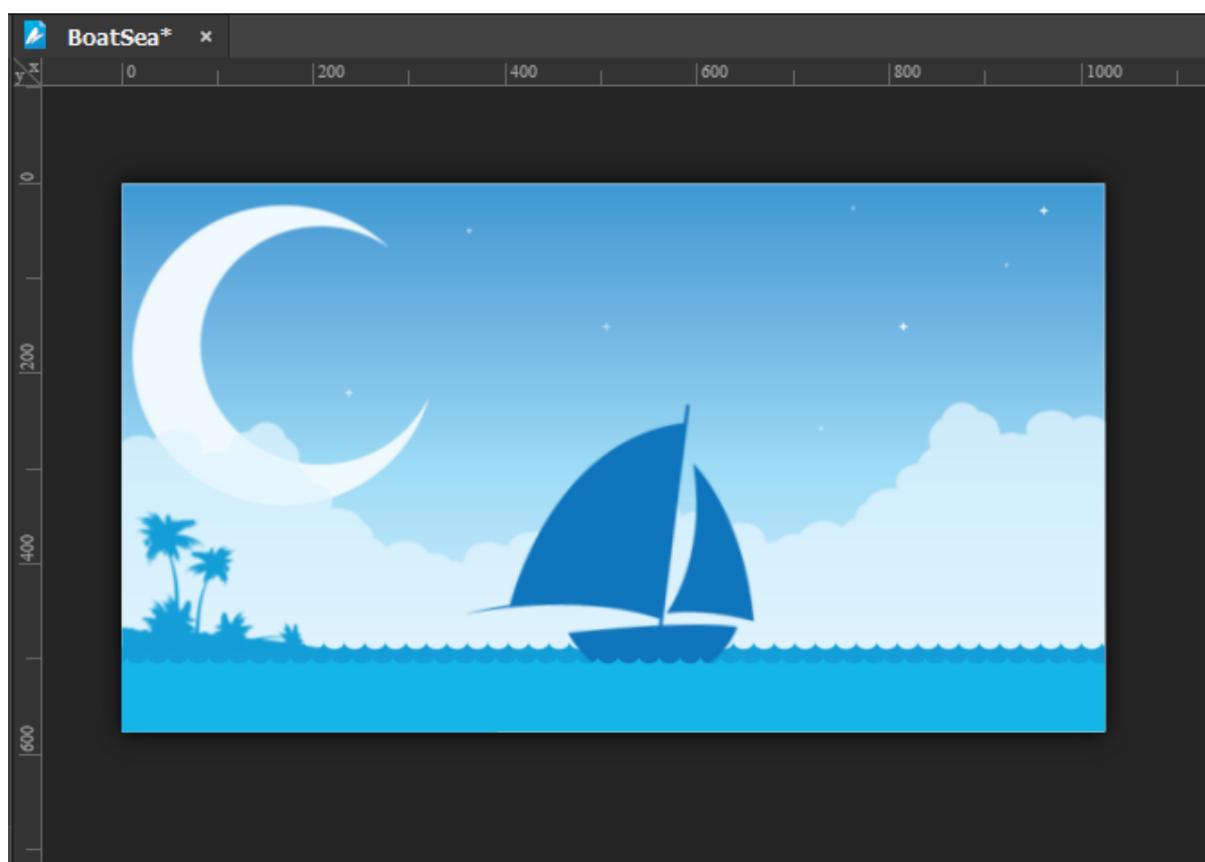
Saola Animate HTML5 Player checks if a browser supports a specific feature or not. In cases where a browser does not support a feature, to keep the output compatible, it will fall back on

less advanced options. For example, if a browser does not support Gradient Fill, it will automatically use Solid Fill. If it cannot find a fallback, the feature will not work on that browser.

## **Embedding HTML5 Output In Webpage**

## Chapter 8: Using Canvas

The Canvas is the main work area in the center of the application. This area is not only a place where you can add, modify, and arrange the elements of your projects but it is also where you can view the results of your work. This is a WYSIWYG editor (*what you see is what you get*), meaning that everything you see on the Canvas closely resembles its appearance when previewed or exported to HTML5.



The Canvas has horizontal and vertical rulers and a scene editor. Canvas can be customized to fit your needs with the following options:

- ❖ **Ruler:** Rulers can help you precisely position elements on the Canvas. Select **View > Ruler** from the menu bar or from the context menu of the Canvas to turn rulers on/off. A check mark next to the option indicates that it is currently enabled.
- ❖ **Canvas Snapping:** When you edit elements on the Canvas, elements can be snapped to a special position on the Canvas or to the edge/center of other elements. To automatically align elements with one another and with the Canvas, use the

**Canvas Snapping** tool. This tool can be temporarily disabled by holding down the **CTRL** key when you resize or move elements.

- ❖ **Zoom In/Out:** Hold down the **CTRL** and scroll the mouse wheel or use the zoom control to zoom the Canvas in or out. You can also select any zoom value you want in the **Zoom to** box.
- ❖ **Fit on Screen:** Click the  button to set the scene contents fit to the viewport size. The Canvas will zoom in/out automatically to ensure that all scene contents appear in the viewport window. Manually zooming the Canvas will turn off this feature.

You can also zoom the Canvas in or out using the buttons at the bottom right of the application window.



## Chapter 9: Using Timeline Pane

The Timeline shows a visual representation of the timing of all elements in a scene. Each scene has a Main Timeline which automatically starts when the scene loads. For more complex documents, scenes can have more than one timeline to satisfy a large amount of elements, animations, and interactivity. Timelines can be made to play, pause, seek, or change playback speed and direction to create rich and interactive animations.

For more details about commands and shortcuts in the **Timeline** pane, see [Timeline Menu](#)<sup>[123]</sup>.

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In this chapter, you will find the following:

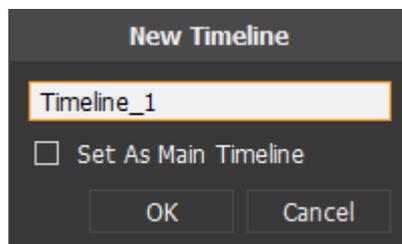
- ❖ [Multiple Timelines](#)<sup>[72]</sup>
- ❖ [Timeline Lables](#)<sup>[74]</sup>
- ❖ [Visibility & Locking](#)<sup>[75]</sup>

### Multiple Timelines

In Saola, each scene has at least one timeline - the Main Timeline which automatically starts when the scene loads. You can create other timelines that are triggered by events and actions. Multiple Timelines come in handy when you have a same set of elements within a

scene but animate them on separate timelines and create interactivity to invoke those timelines.

### **To add a timeline**

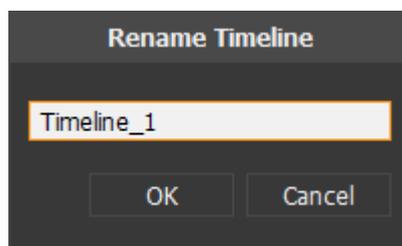


1. Click the **New Timeline**  button.
2. Enter a unique name and click the **OK** button to finish.
3. Check the **Set as Main Timeline** check box if you want the new timeline to act as the Main Timeline of a scene, indicating that it will automatically start when the scene loads.

### **To remove a timeline**

Click the **Remove Timeline**  button to remove the currently selected timeline. This button only becomes available when there is more than one timeline of a scene.

### **To rename a timeline**



1. Click the **Rename Timeline**  button.
2. Enter a unique name in the dialog and click the **OK** button to submit changes.

### **To set a timeline as Main Timeline**

Click the **Set as Main Timeline**  button to set any timeline as the Main Timeline of a scene. That way, the timeline's playback will start when the scene first loads.

## Timeline Lables

You can add labels to the timeline to mark important points that you want to refer to later. Labels prove highly useful when you add triggers and actions to control your animation.

Labels appear below the time markers and right above the Actions bar, giving you the benefit of both a word and a number.



### **To add a label**

1. Drag the Playhead to a special point on the Timeline that you want to mark.
2. Click the **Insert Label**  button to add a label at the position of the Playhead. A label appears with default name such as Label\_1, Label\_2, etc.
3. Rename a label right at that time or afterward.

### **To rename a label**

1. Double-click a label.
2. Enter a new name.

### **To copy & paste a label**

1. Select one or more labels by holding down the **CTRL** key while clicking.
2. Press **CTRL+C** to copy the selected labels.
3. Press **CTRL+V** to insert the copied labels into the current position of the Playhead.

### **To delete a label**

1. Select one or more labels.
2. Once they are all highlighted, press the **DELETE** key or select **Delete** from the context menu.

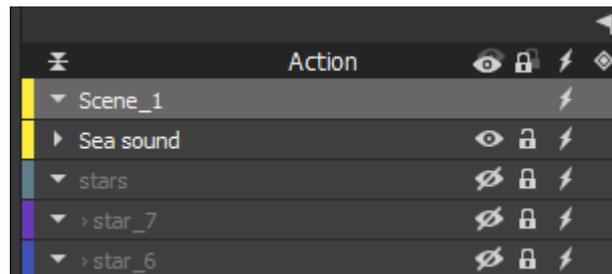
### **To move a label**

Click and drag one or more labels to a new spot.

## Visibility & Locking

You can use the Visibility and Locking controls to hide or fix certain elements to focus on others. These controls are accessible from the **Timeline** and **Elements** panes.

The visibility and locking state of elements are turned on by default, indicated by an open eye  and an open lock  buttons. These states are synchronized among panes, meaning that if an element is invisible in the **Timeline** pane, it is also invisible in the **Elements** pane.



### Visibility

The Visibility state decides whether or not to display elements in a scene while editing. Even if you turn Visibility off and you cannot see an element on the Canvas, you can still select it from the **Timeline** pane or the **Elements** pane and work on it. This control is best used to help you focus on the target element without being distracted by other elements around it.

- ❖ Turn Visibility state on/off by clicking the eye button next to the element name.
- ❖ An open eye  means that an element is visible, whereas an eye with a slash  indicates that it is currently invisible.
- ❖ You can turn on/off Visibility state of all elements in a scene at once by clicking the master eye  button on the Actions bar.

Note that when you turn an element off, its child elements are also invisible.

Do not mistake the Visibility control with the Display property in the **Properties** pane. The Display property decides whether or not to display elements in the browser, allowing you to make an element suddenly appear or disappear during an animation. Meanwhile, the Visibility control is only an interface feature within Saola that helps you work with many elements. It does not affect the HTML5 output you get after you export the project.

### Locking

When you work with multiple elements, chances are you move an element by accident and need to hit the **Undo** button to revert the last change. In that case, use the Locking control to fix individual elements so that you do not accidentally move or edit them, and they still remain visible with the Visibility state on.

- ❖ Turn Locking state on/off by clicking the lock button next to the element name.
- ❖ An open lock  suggests that you can edit an element, while a closed lock  indicates that you cannot select or edit it.
- ❖ Click the master lock  button on the Actions bar if you want to lock/unlock all elements in a scene at once.

## Chapter 10: Using Properties Pane

The **Properties** pane displays the properties of selected elements and provides editable text fields, lists, and other controls to adjust and fine-tune element properties. Located on the right-hand side of the application, the **Properties** pane has many sections, and each section shows a group of properties.

You can expand and collapse sections as needed by clicking on its title bar. When you collapse a section, its contents are hidden but not deleted. Expand the section to see the contents again. If multiple elements are selected, a section is only shown if all selected elements have its properties.

The **Properties** pane constantly updates itself depending on the type of the selected element. Some properties are consistent and appear despite what type of elements you select, whereas other properties are specific to a certain type of elements. For example, the **Corner** section is only available for Div elements.

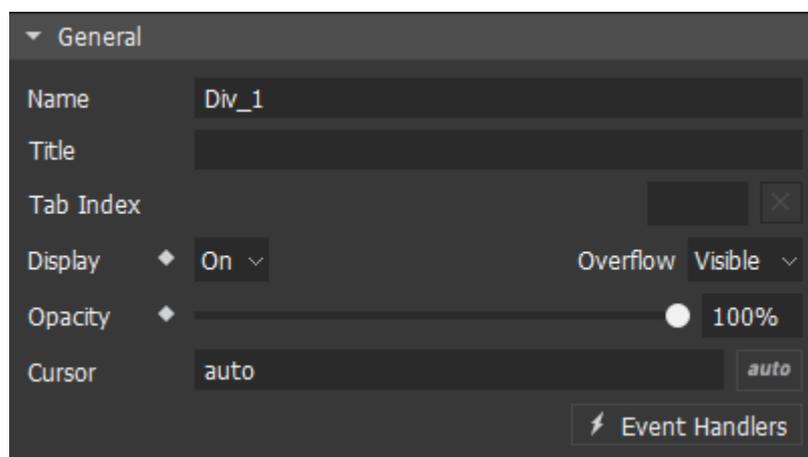
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In this chapter, you will find the following:

- ❖ [General Section](#) <sup>[77]</sup>
- ❖ [Position & Size Section](#) <sup>[79]</sup>
- ❖ [Transform Section](#) <sup>[81]</sup>
- ❖ [Fill Section](#) <sup>[81]</sup>
- ❖ [Border Section](#) <sup>[84]</sup>
- ❖ [Corner Section](#) <sup>[85]</sup>
- ❖ [Text Section](#) <sup>[86]</sup>

## General Section

The **General** section contains information about elements' name, title, and tab index. Here you can animate the Display and Opacity properties of an element and set which type of cursor is displayed when you point at the element.



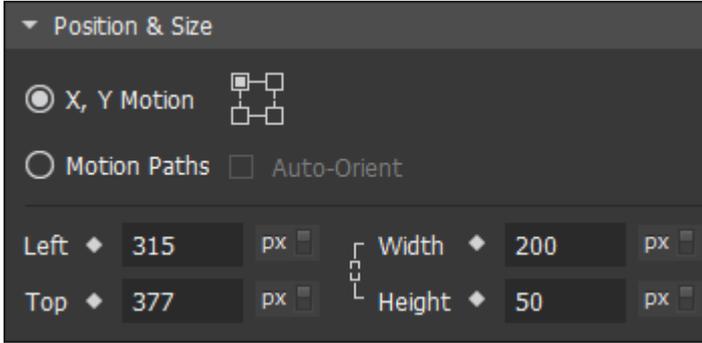
Property	Remark	Animatable
Name	Name of the selected element. This property can be changed but has to be unique.	No
Title	Title of the selected element. When you hover over the element on the browser, the title will be shown.	No
Tab Index	Organize the Tab order of elements on browsers. Four possible values: <ul style="list-style-type: none"> <li>❖ &lt; -1: No focus.</li> <li>❖ = -1: The element is only focused if you click it.</li> <li>❖ = 0: The element is focused after the browser focuses everything which is not of the document.</li> <li>❖ &gt; 1: The element is focused in order when you use the <b>TAB</b> key.</li> </ul>	No
Display	Set the visibility of the element.	Yes

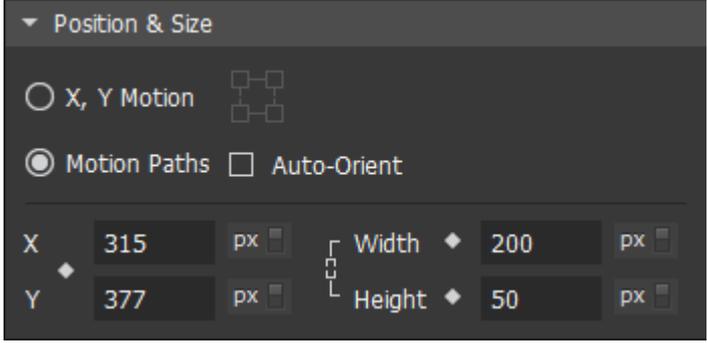
Property	Remark	Animatable
	<ul style="list-style-type: none"> <li>❖ On: The element appears on the scene or in export.</li> <li>❖ Off: The element does not appear on the scene or in export.</li> </ul> <p>In animations, display property is used to hide or show an element instantly.</p>	
Overflow	<p>Determine how the content of the selected element is displayed if it overflows the element's bounds, and whether a scroll bar should appear.</p> <ul style="list-style-type: none"> <li>❖ Visible: The overflow is not clipped; it renders outside the element's box. This is default.</li> <li>❖ Hidden: The overflow is clipped; any content that extends beyond the box will be hidden.</li> <li>❖ Scroll: The overflow is clipped, but a scroll bar is added to view the rest of the content.</li> <li>❖ Auto: If overflow is clipped, a scroll bar should be added to view the rest of the content.</li> </ul>	No
Opacity	<p>Set opacity (also known as transparency) of the element in the range [0, 100%]. A lower value makes the element more transparent.</p> <p>To change the opacity, drag the opacity slider to increase or decrease opacity as you wish. Opacity property is often used to create fade-in or fade-out effects.</p>	Yes
Cursor	<p>Set which type of cursor is displayed when you point at the element. The default value is Auto.</p>	No

Property	Remark	Animatable
		

## Position & Size Section

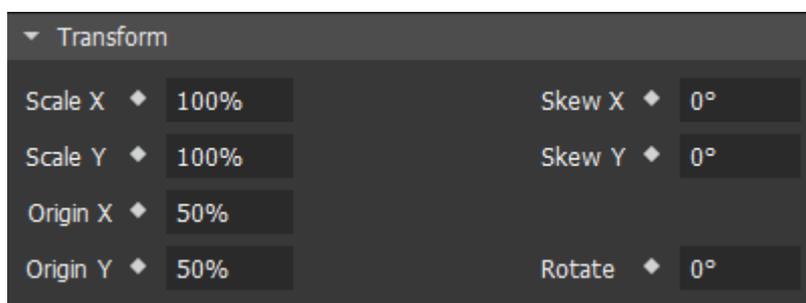
The **Position & Size** section controls elements' Position and Size properties.

Property	Remark	Animatable
X, Y Motion	<p>By default, the selected elements move in the X, Y Motion mode with X and Y transition.</p>  <p>Change element position &amp; size by relative positions:</p> <ul style="list-style-type: none"> <li>❖  Relative to Top &amp; Left (default).</li> <li>❖  Relative to Top &amp; Right.</li> <li>❖  Relative to Bottom &amp; Right.</li> <li>❖  Relative to Bottom &amp; Left.</li> </ul>	Yes

Property	Remark	Animatable
	If Relative to Top & Right or Relative to Bottom & Right or Relative to Bottom & Left is chosen, Motion Paths mode will be turned off.	
Motion Paths	<p>If the Motion Paths mode is selected, the Auto-Orient check box will be enabled.</p>  <ul style="list-style-type: none"> <li>❖ Auto-Orient: The element rotates with the orientation of motion paths.</li> <li>❖ X, Y (px, %): Set the exact position for the selected elements in motion paths.</li> </ul>	Yes
Width, Height	Set the exact width and height for the selected elements. To set width and height dependently, check the <b>Link width to height</b>  button.	Yes

## Transform Section

The **Transform** section displays geometric information for the selected element, including values for position, size, shearing, and rotation.

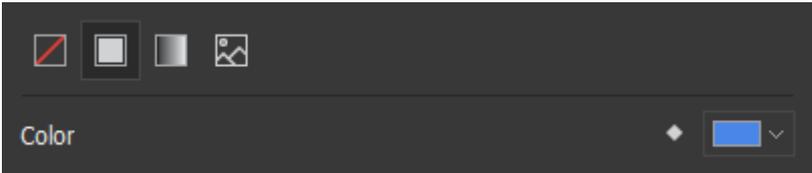
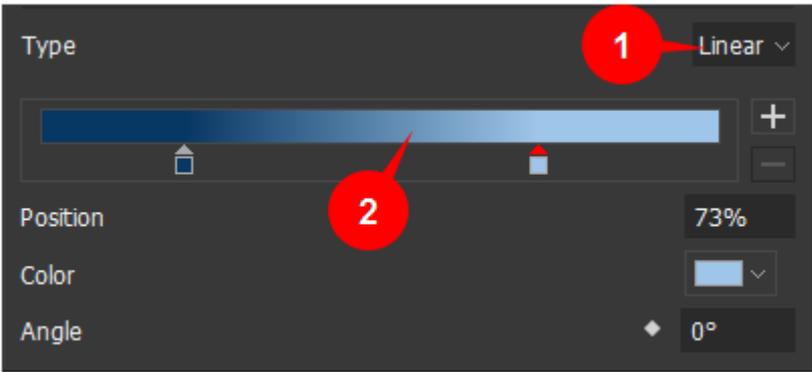


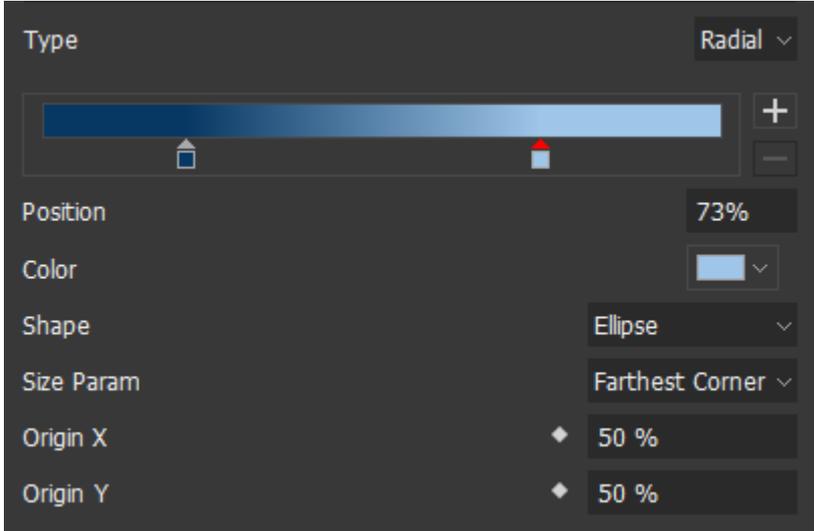
Property	Remark	Animatable
Scale X, Y	Scale the selected elements horizontally or vertically in the range [0, 100%].	Yes
Skew X, Y	Skew the selected elements horizontally or vertically. The skew angle is in the range [-60, 60°].	Yes
Origin X, Y	Set the transformation-origin point around which the selected elements rotate in the range [0, 100%].	Yes
Rotate	Rotate the selected elements. If this property has negative value, the selected elements will rotate counter-clockwise.	Yes

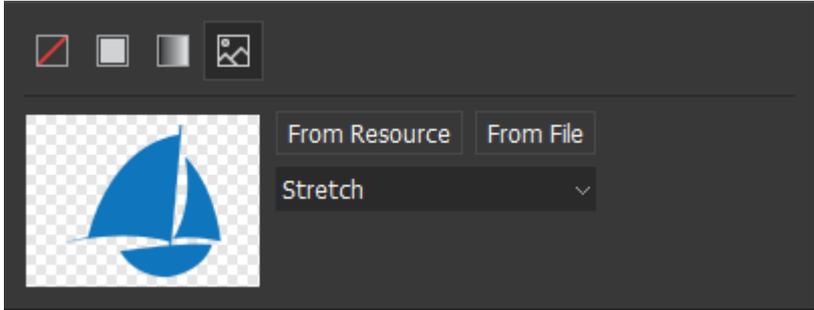
## Fill Section

The **Fill** section shows the Fill property, which sets the background style of the selected elements. Four Fill values are available:

Value	Remark
None	The background is transparent (alpha = 0).

Value	Remark
	
<p>Solid Fill</p>	<p>Fill the background with a color. The format of color is R, G, B, A. Default alpha (A) = 255. The color can be animated.</p> 
<p>Gradient Fill</p>	<p>Fill the background with two or more colors (with or without alpha transparency) to create a multicolor fill in which one color gradually changes into another color.</p> <div style="text-align: center; margin: 20px 0;">  </div> <p>The actual controls adjusted to create this particular gradient are shown below:</p>  <p>The Gradient Strip (2) is at the heart of the controls showing a “live” sample of the gradient. You can make changes to the strip in a visual manner.</p>

Value	Remark
	<p>Choose between Linear and Radial gradient using the Gradient Type drop-down list (1).</p> <p>In <i>Linear</i> gradient, the shades vary in a straight direction (horizontal or vertical).</p> <ul style="list-style-type: none"> <li>• Position: Specify the position of a specific color along the gradient strip.</li> <li>• Angle: Set the angle of direction for the gradient. The angle is formed between the horizontal line and the gradient line.</li> </ul> <p>In <i>Radial</i> gradient, the shades are in concentric circles starting from a central focal point.</p>  <ul style="list-style-type: none"> <li>• Position: Specify the position of a specific color along the gradient strip.</li> <li>• Shape: Define whether the shape is circle or ellipse. The default value is ellipse.</li> <li>• Size Param: Define the size of the ending shape. Four possible values: <ul style="list-style-type: none"> <li>▪ Closest-side: The gradient's ending shape meets the side of the box closest to its center (for circles) or meets both the vertical and horizontal sides closest to the center (for ellipses).</li> </ul> </li> </ul>

Value	Remark
	<ul style="list-style-type: none"> <li>▪ Farthest-side: Similar to closest-side, except the ending shape is sized to meet the side of the box farthest from its center (or vertical and horizontal sides).</li> <li>▪ Closest-corner: The gradient's ending shape is sized so it exactly meets the closest corner of the box from its center.</li> <li>▪ Farthest-corner: The gradient's ending shape is sized so it exactly meets the farthest corner of the box from its center.</li> <li>• Origin X, Y: Adjust the location of the focal point such as top, bottom, center, and left. For example, Origin X, Y [value: 50%, 50%] sets the gradient at the center while Origin X, Y [value: 0%, 0%] sets the gradient to start at the top left.</li> </ul>
Image Fill	 <p>Images can be chosen from <b>Resources</b> (see <a href="#">Using Resources Pane</a><sup>[91]</sup>) or from the file system. Five position options are available: Stretch, Center, Fit, Tile, and Fill.</p>

## Border Section

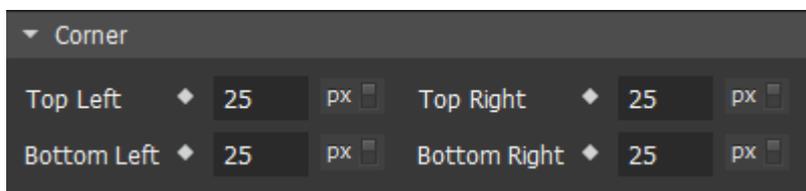
The **Border** section defines the border style of the selected elements.



Property	Remark	Animatable
Style	Set the border style of the selected elements. Four possible values: <ul style="list-style-type: none"> <li>❖ None</li> <li>❖ Solid </li> <li>❖ Dotted </li> <li>❖ Dashed </li> </ul>	No
Width	Set the border width of the selected elements in pixels (px).	Yes
Color	Set the border color of the selected elements.	Yes

## Corner Section

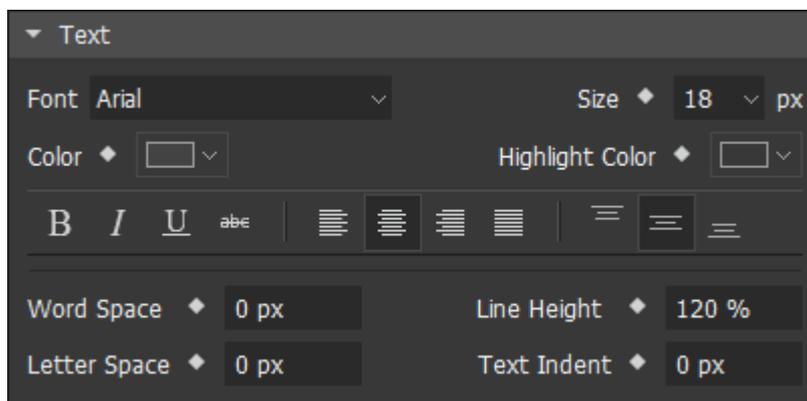
The **Corner** section is used for only Div elements to define the shape of the Div elements' border.



Property	Remark	Animatable
Top Left	Set the border top-left radius.	Yes
Top Right	Set the border top-right radius.	Yes
Bottom Left	Set the border bottom-left radius.	Yes
Bottom Right	Set the border bottom-right radius.	Yes

## Text Section

The **Text** section allows you to set and animate many text properties such as text size, color, line height, etc. This section is available for all types of elements except media (audio and video), symbol, and group elements.

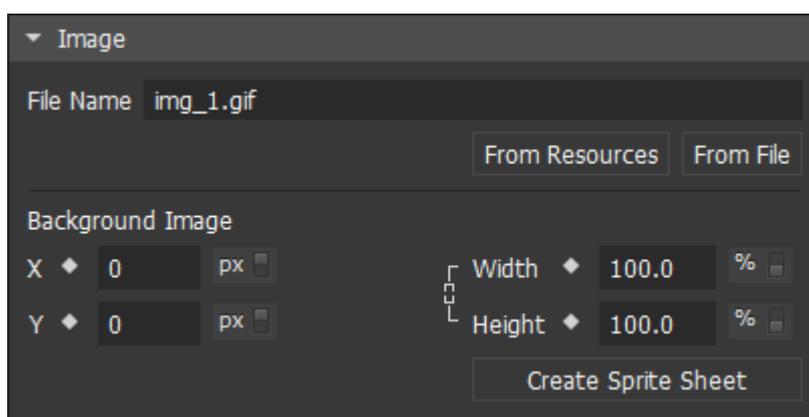


Property	Remark	Animatable
Font	Font family of text elements.	No
Size	Font size of text elements, in pixels.	Yes
Color	Text color of text elements.	Yes
Highlight Color	Highlight color of text content.	Yes
Bold/ Italic/ Underline/ Strikethrough	Set the bold/ italic/ underline/ strikethrough style of text content.	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
Superscript/ Subscript	Format the selected text as superscript/subscript.	No
Word Spacing	Space between words, in pixels. Set to 0 by default.	Yes

Property	Remark	Animatable
Letter Spacing	Space between letters, in pixels. Set to 0 by default.	Yes
Line Height	Space between lines, in percentages, relative to font size value. Set to 120% by default.	Yes
Text Indent	The indent of each text block in pixels (paragraph). Set to 0 by default.	Yes

## Image Section

The **Image** section allows you to change the image within an image element, animate the background image, and create sprite sheet animation.

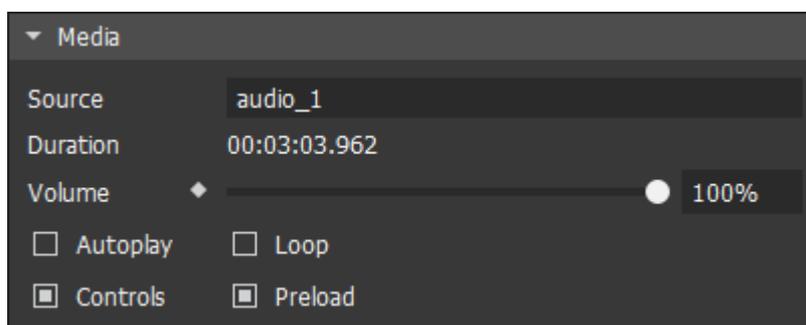


Property	Remark	Animatable
File Name	Name of the image within the selected image element.	No
From Resources	Select another image resource from the <b>Resources</b> pane to change the image within the selected image element.	No
From File	Select another image file from the file system to change the image within the selected image element.	No
Background Image X, Y	Set the exact position for the background image within the selected image element.	Yes

Property	Remark	Animatable
Background Image Width, Height	Set the size for the background image within the selected image element.	Yes
Create Sprite Sheet	Click to create <a href="#">Sprite Sheet Animations</a> <sup>[56]</sup> .	No

## Media Section

The **Media** section displays information of the media file and allows you to define media playback options.

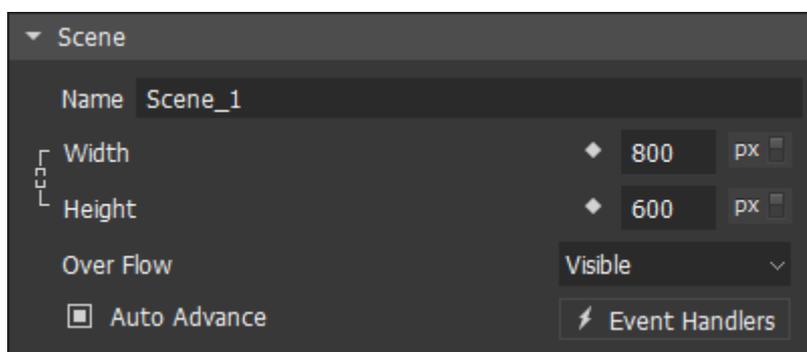


Property	Remark	Animatable
Source	Name of the media file. This property cannot be changed.	No
Duration	Duration of the media file in milliseconds. This property cannot be changed.	No
Volume	Set the volume of the media in the range [0, 100%].	Yes
Autoplay	Allow the media file to automatically play on the Timeline and desktop browsers.	No
Loop	Make the media file replay automatically from the beginning after it finishes playing.	No

Property	Remark	Animatable
Controls	Display the media controls for the media file. This property is selected by default for audio file.	No
Preload	Preload the media file before the document loads. This property is selected by default.	No

## Scene Section

The **Scene** section appears when you select a scene. It shows several properties of scenes.



Property	Remark	Animatable
Name	Name of the selected scene. This property can be changed but has to be unique.	No
Width, Height	Set the exact width and height for the selected scenes. The size can be a fixed value (in pixels) or relative to the container size (in percentages). To set width and height dependently, check the <b>Link width to height</b>  button.	Yes
Over Flow	Determine how the content of the selected scene is displayed if it overflows the scene's box, and whether a scroll bar should appear.  ❖ Visible: The overflow is not clipped; it renders outside the scene's box. This is default.	No

Property	Remark	Animatable
	<ul style="list-style-type: none"> <li>❖ Hidden: The overflow is clipped; any content that extends beyond the box will be hidden.</li> <li>❖ Scroll: The overflow is clipped, but a scroll bar is added to view the rest of the content.</li> <li>❖ Auto: If overflow is clipped, a scroll bar should be added to view the rest of the content.</li> </ul>	
Auto Advance	Jump to the next scene automatically when the current scene ends.	No
Event Handlers	Open the <b>Scene Event Handlers</b> dialog box.	No

## Transition Effects Section

The **Transition Effects** section appears when you select a scene. It helps to define transition effects between scenes.

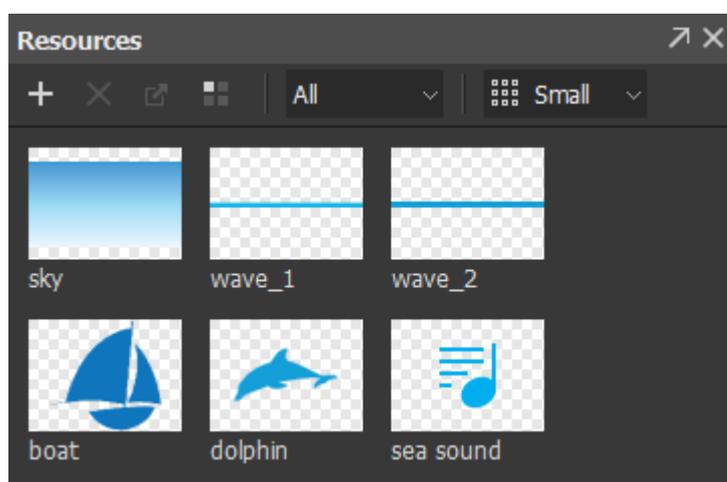


Property	Remark	Animatable
Type	Type of the transition effect. Possible values: None (default type, meaning that the scene simply goes away and the next one appears), Fade, and Push.	No
Duration	Duration of the transition in milliseconds.	No
Easing	The timing function that updates the transition by time. Set to Linear by default.	No

Property	Remark	Animatable
Direction	Direction of the Push transition effect. Possible values: From Left, From Top, From Right, and From Bottom.	No

## Chapter 11: Using Resources Pane

The **Resources** pane lists all resources that are available in the open project. To show the pane, click **View > Resources**. The **Resources** pane has a toolbar with a view list to view resources and common commands to manage resources.



### **To change view style of Resources pane**

Click the **View Style** drop-down list, and then select the view style you want. Three view styles are available:

- ❖ List: Display resources as a list with small icons and text on the right of icons. Each row contains only one resource file.
- ❖ Small: Display resources as small icons and text under icons. Each row can contain more than one resource file. This is the default view style.
- ❖ Medium: Display resources as medium icons and text under icons. Each row can contain more than one resource file.

### **To filter a specified resource type**

Click the **Resource Type** drop-down list, and then select the type you want. Currently, Saola Animate supports the following resource types & extensions:

- ❖ Image: jpg, jpeg, png, gif, bmp, svg.
  - ❖ Audio: mp3, wav, m4a, aac, oga, ogg.
  - ❖ Video: mp4, webm, ogv.
  - ❖ Symbol: sym.
- 

In this chapter, you will find the following:

- ❖ [Managing Resources](#)<sup>[92]</sup>
- ❖ [Media Group Resource](#)<sup>[93]</sup>

## Managing Resources

In the **Resources** pane, use buttons on the toolbar or in the context menu of selected resources to manage resources. The states of commands on the toolbar or in the context menu depend on the selected resources.

### *To import a file into Resources pane*

In Saola Animate, you can prepare files in advance by importing files into the **Resources** pane. Do either of the following:

- ❖ Click the **Import resources from files**  button on the toolbar or select from the context menu. Then select resource files from the dialog box, and click the **Open** button.
- ❖ Simply drag and drop files from the file system into the pane.

### *To delete a file from Resources pane*

1. Select resource files that you want to delete. Make sure that they are not being used by clicking the **Selected unused resources**  button. Any resource file that is in used cannot be deleted.
2. Click the **Delete**  button on the toolbar or select from the context menu. You can also press the **DELETE** key to get the same result.

### *To export a resource to file*

1. Select resources that you want to export.

2. Click the **Export**  button on the toolbar or in the context menu. If multiple resource files are selected, you have to select the folder to export resources to. Otherwise, you have to provide exported file name to export resource files.

### ***To select unused resources***

You can find unused resources by clicking the **Select Unused Resources**  button on the toolbar or in the context menu. That way all resources that are not in use will be selected (with an orange border). Then you can remove those unused resources if needed.

### ***To preview a resource***

Double-click the resource icon or select **Preview** from the context menu. A **Preview** window appears allowing you to preview the resource file.

### ***To add a resource to scene***

Do either of the following:

- ❖ Right-click one or more resources and select **Add To Scene** from the context menu.
- ❖ Drag one or more resources from the pane onto a scene.

### ***To rename a resource***

1. Select a resource to rename.
2. Select **Rename** from the context menu or use keyboard shortcut. (The **F2** key is default.)

### ***To edit a symbol resource***

Double-click a symbol resource. Then you can edit the symbol as a normal project.

## **Media Group Resource**

Saola Animate supports native HTML5 audio/video with the audio/video element, letting audio and video tracks play with no plug-in required. However, as different browsers do not support the same media formats, Saola also supports multiple source files feature for the best cross-browser consistency. Users can group multiple audio/video files with different formats into a media group.

Files in a media group can be managed in the widget appearing when users select a media resource (audio/video). Users can add, remove, export, or preview media files by using tools on the right side bar of the widget or in the context menu.



### ***To add a media file to group***

1. Click the **Add**  button on the toolbar or in the context menu.
2. Select a media file from your computer. If the file format has already existed in the group, you will be asked to overwrite it.

### ***To remove a media file from group***

1. Select a media file to remove.
2. Click the **Remove**  button on the toolbar or in the context menu. If a group contains only one media file, it cannot be deleted.

### ***To export a media file***

1. Select a media file as desired.
2. Click the **Export**  button on the toolbar or in the context menu.

### ***To preview a media file***

Double-click a media file or click the **Preview**  button on the toolbar or in the context menu. A **Preview** window appears allowing you to preview the media file.

## **Chapter 12: JavaScript**

Saola Animate exports content to document using a combination of HTML5, CSS3, and JavaScript. Users can register a JavaScript function with an event in the **Event Handlers** dialog box. There are two main types of functions in Saola:

- ❖ **Normal functions:** A normal JavaScript function that can be called in other functions. Users can modify the parameters of this function type.

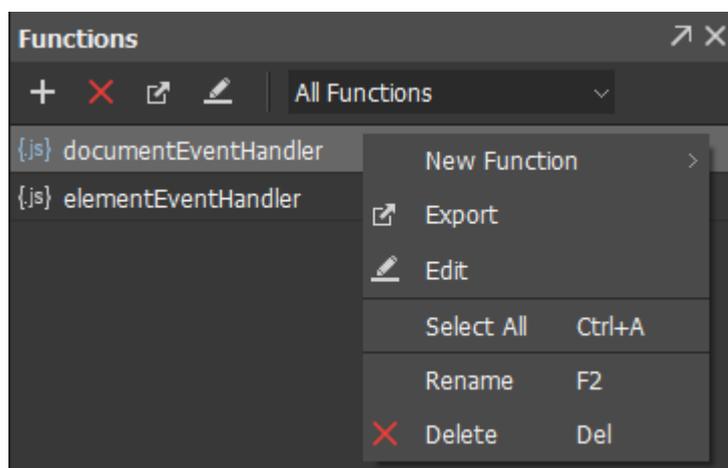
- ❖ Event handler functions: Functions that are registered with events and have fixed parameters. Event handlers are separated into five types:
    - Document Event Handlers
    - Scene Event Handlers
    - Timeline Event Handlers
    - Element Event Handlers
    - Preloader Event Handlers
- 

In this chapter, you will find the following:

- ❖ [Managing Functions](#) <sup>95</sup>
- ❖ [Editing Functions](#) <sup>96</sup>
- ❖ [JavaScript APIs](#) <sup>98</sup>

## Managing Functions

Saola provides a pane to manage functions and a code editor to edit functions. Same as resources, users can add, edit, remove, export, or rename functions. When exporting functions, all selected functions will be exported into one file with a name provided by users. The **Functions** pane has user interface as shown below:



### To create a new function

1. Select the **New Function**  button on the toolbar or from the context menu.
2. Select the function type of the new function.

**To delete a function from library**

1. Select one or more functions.
2. Select the **Delete**  button on the toolbar or from the context menu, or press the **DELETE** key.

**To export a function to JavaScript file**

1. Select one or more functions, and then select the **Export**  button on the toolbar or from the context menu.
2. Provide file name to export.

**To edit a function**

Double-click a function or select the **Edit**  button on the toolbar or from the context menu.

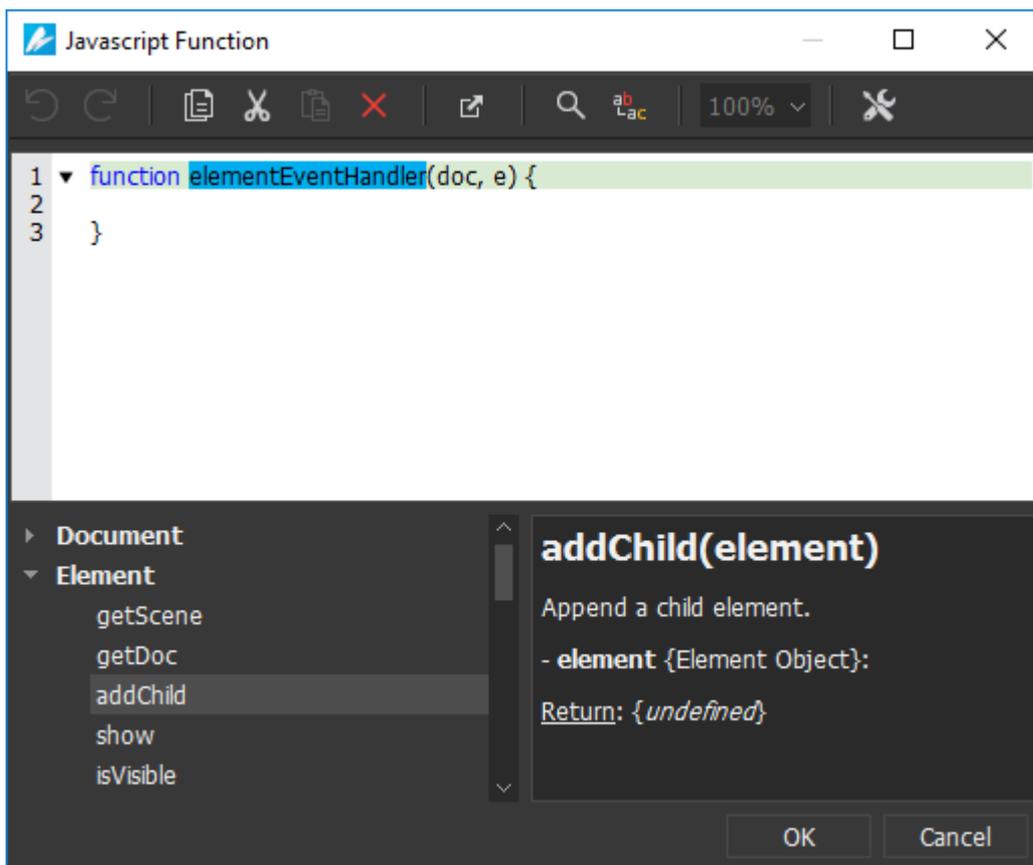
**To rename a function**

1. Select a function, and then select **Rename** from the context menu.
2. Type a new name and press **OK** to submit change.

## Editing Functions

To create or edit a function, Saola provides a powerful JavaScript editor. The editor supports intelligent features that speed up the process of coding such as text highlighting, auto suggestion, bracket matching, code folding, line number, and line wrap.

For normal functions, you can edit their name, content, and parameters. For event handler functions which are registered with events, you can only edit their name and content as their parameters are set to fixed.



Auto suggestion is a remarkable feature of the code editor. When you turn this feature on, it will predict the rest of a word or sentence while you are typing. You can 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 the combination of **CTRL** and **SPACE** when editing. You can also insert API from the [JavaScript API Browser](#)<sup>[98]</sup> of the code editor.

- ❖ To clear function content: Select **Function > Clear Content** from the context menu.
- ❖ To focus on function name: Select **Function > Edit Name** from the context menu.
- ❖ To turn auto suggestion on/off: Select **Editor > Code Suggestion** from the context menu or on the toolbar.
- ❖ To show/hide line number: Select **Editor > Show Line Number** from the context menu or on the toolbar.
- ❖ To turn bracket matching on/off: Select **Editor > Bracket Matching** from the context menu or on the toolbar.
- ❖ To turn code folding on/off: Select **Editor > Code Folding** from the context menu or on the toolbar.
- ❖ To turn line wrap on/off: Select **Editor > Line Wrap** from the context menu or on the toolbar.

You can customize the code editor through **Preferences > Code Editor**, such as turning features on/off or adjusting the color of components. There are two ways to access the **Code Editor** dialog box:

- ❖ Select **Edit > Preferences** from the menu bar, and then switch to the **Code Editor** tab.
- ❖ From the **JavaScript Function** dialog box, click the **Options**  button and select **More Options**.

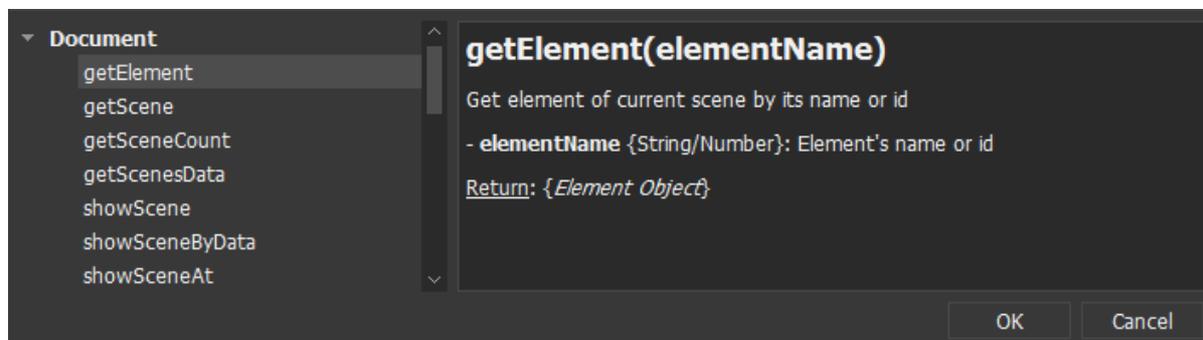
For details about customizing the **Code Editor** dialog box, see [Code Editor Tab](#)<sup>136</sup>.

Keyboard shortcuts are available when editing JavaScript code. See [Shortcuts For Code Editor](#)<sup>130</sup>.

## JavaScript APIs

Saola Animate publishes some methods and properties of common element types. These methods are listed in the pane below the editing area in the **JavaScript Function** dialog box.

When selecting a method or property, its information is displayed on the right side of the pane. The methods can be inserted into the editing area quickly by double-clicking it or dragging and dropping it into the editing area.



## 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 the 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 0 index.

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 play backward, false if 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. Do not take media and symbols 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 ( $\leq 0$ ).
- 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 timeline to timestamp.

Params:

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

Return: undefined.

**setSpeed(speed)**

Set the playback speed.

Params:

- speed: Number. Must be 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 play backward, false if 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 number (e.g. 50) or string (e.g. '50px', '50%'). If the left/top is number, the unit is pixel.

### **setLeft(left)**

Params:

- left: Number/String. Value of left.

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

### **setTop(top)**

Params:

- top: Number/String. Value of right.

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

### **setRight(right)**

Params:

- right: Number/String. Value of right.

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

### **setBottom(bottom)**

Params:

- bottom: Number/String. Value of bottom.

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

### **setSize(width, height)**

Params:

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

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

### **setWidth(width)**

Params:

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

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

**setHeight(height)**

Params:

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

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

**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 number (e.g. 10) or string (e.g. '10px', '10%'). If the width is number, the unit is pixel.

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 nofill.

Return: undefined.

**setTitle(title)**

Set the tittle (tooltip) for the element.

Params:

- title: String. Title of the element.

Return: undefined.

### **setText(htmlText)**

Set html text. Do not call this method for elements that can't 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()**

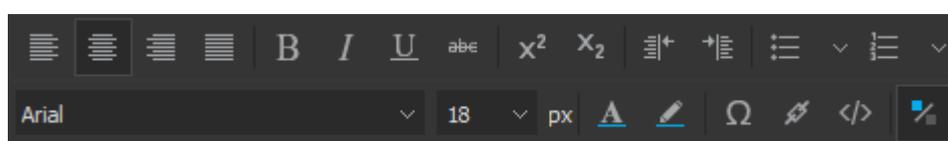
Get the current loading progress, from 0 - 1.

Return: Number.

## Chapter 13: Using Text Editor

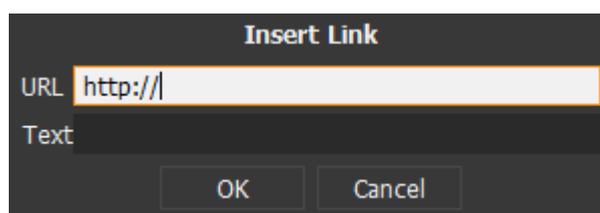
Saola Animate provides tools to help you edit rich text faster. These tools are always updated with the current format of the text cursor and stay in two widgets: the **Text Formatting** toolbar and the **Properties** pane.

With any selected element that can contain text, double-click an element to open the inline text editor. The **Text Formatting** toolbar appears as shown below. For more details about this toolbar, see [Text Formatting Toolbar](#)<sup>[128]</sup>.

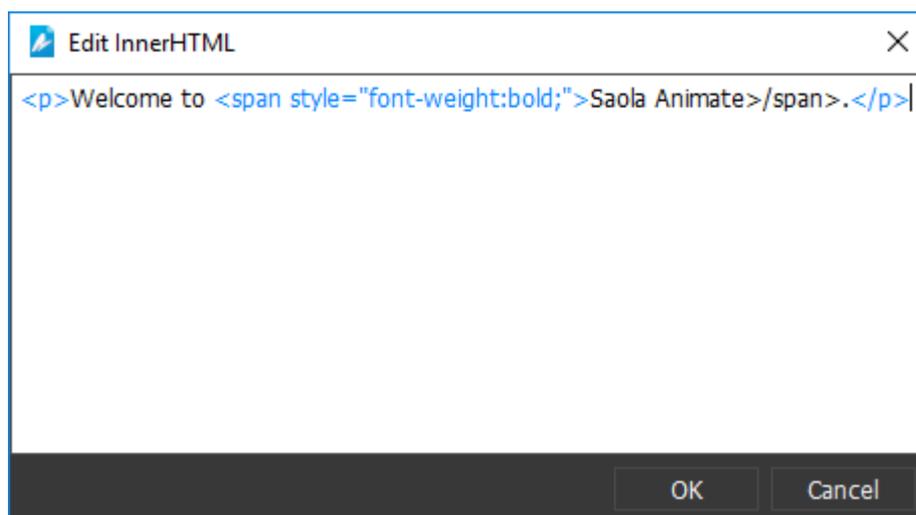


There are some commands and options that you need to mind:

- ❖ **Insert Special Chars:** To insert a special character, click the **Insert Special Chars**  button on the toolbar. A dialog box appears with a list of available special characters. Click to select the character you want.
- ❖ **Insert Link:** To insert a hyperlink into text, click the **Insert Link**  button on the toolbar. In the dialog box, enter the address and display text of the hyperlink, and then click the **OK** button to submit.



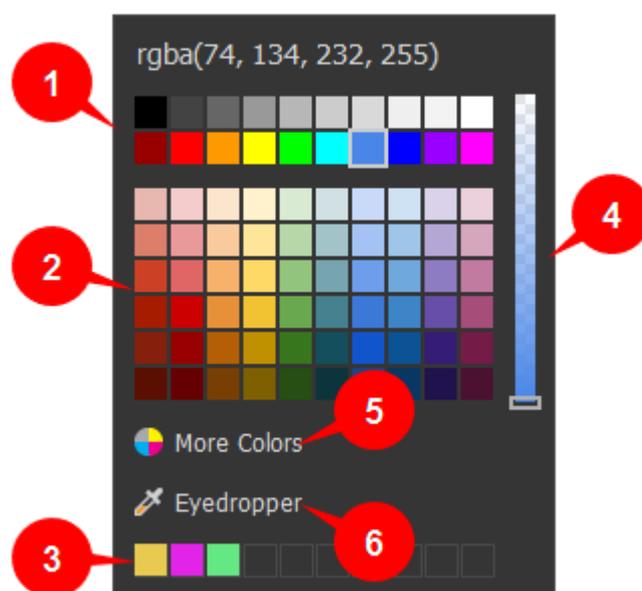
- ❖ **Edit HTML:** You can directly edit the text element's HTML by clicking the **Edit HTML** button on the **Text Formatting** toolbar. A dialog box appears with basic styles for HTML code. Edit HTML code and click the **OK** button to submit changes. Note that the HTML code is filtered and only valid tags and styles could be used.



- ❖ Show/Hide Text Formatting toolbar: Click the **Show/Hide Floating Tools**  button on the toolbar or select from the context menu. When editing text, you can also use [keyboard shortcuts](#)  to edit faster.

## Chapter 14: Using Color Picker

With the color picker, you can adjust strokes, fill shapes with color, change shapes' color, or highlight text. You can open the color picker by clicking the rectangle next to any **Color** or **Highlight Color** property in the **Properties** pane or in the **Text Formatting** toolbar.



1. **Standard Colors:** Include a color range from black to white and standard colors.
2. **Themes Colors:** Available colors that Saola Animate offers users to select. Users could not make change to standard colors.
3. **Customized Colors:** If the value of the selected color does not equal that of the standard color, it will be added to Customized Colors.
4. **Opacity Slider:** Allow users to change the opacity of the color. Opacity has value from 0 to 1. If the value of Opacity Slider is 0, the selected color is transparent.
5. **More Colors:** Click to select more colors from a wide array of color choices. These colors also are not changed even if you apply a different theme or color scheme to the document.
6. **Eyedropper:** Click to pick a color from anywhere on the screen.

## Chapter 15: Elements

There are many types of elements that you can insert into a scene. All types of elements have the same basic properties such as name, cursor, overflow, position, size, transformation, etc. Some specific properties only belong to some element types. See [Using Properties Pane](#)<sup>[76]</sup> for details about element properties and how to animate them.

Type	Remark	Property
Div	Elements that are displayed as a HTML <div> element. There are three pre-defined shapes of div elements that can be inserted directly into a scene: Ellipse, Rounded Rectangle & Rectangle. The shape of div is flexible and can be edited by adjusting the <a href="#">Corner property</a> <sup>[85]</sup> .	Fill, Border, Corner, Text
Text	Elements that display text in a scene. Text can be edited inline.	Fill, Border, Text
Image	Elements that show an image in a scene. You can create a sprite sheet animation using an image element.	Fill, Border, Image
Audio & Video	Elements that show an audio/video in a scene. You can add playback animations to control media playback. For audio, video, and symbol elements, five playback animations are available: <ul style="list-style-type: none"> <li>❖ Start: Plays the media file from the beginning.</li> <li>❖ Continue: Continues the media file from the point it has already paused.</li> <li>❖ Continue From: Allows you to specify the time point you want to play the media file from.</li> <li>❖ Pause: Allows you to pause the media file from the current position of the Playhead.</li> <li>❖ Pause At: Allows you to jump to a certain time point of the media file.</li> </ul>	Media

Type	Remark	Property
Shape	Elements that are the same as div, but have border and background using SVG images. Shapes have many types.	Fill, Border, Text
Symbol	Elements that display a symbol in a scene. Many symbol elements can use the same symbol resource. Symbols can have background or border. The size of the element is the container size of the symbol displayed inside it.	
Group	Elements that contain other elements as children.	Fill, Border

## Chapter 16: Events – Actions

Events are occurrences that trigger actions. When an event is detected, you provide an action as a response. The **Event Handlers** dialog box controls all events and actions you add to your document. You can open this dialog box by clicking the **Event Handlers**  button. This button can be found next to element/scene name in the **Timeline** pane, in the context menu of **Scenes** and **Canvas**, or in the **Properties** pane.

---

In this chapter, you will find the following:

- ❖ [Event List](#)  111
- ❖ [Action List](#)  113

## Events

Event Name	Remark
<b>Element Events</b>	
Mouse Click	The event occurs when the user clicks an element.
Mouse Double Click	The event occurs when the user double-clicks an element.
Mouse Over	The event occurs when the pointer moves onto an element, or onto one of its children.
Mouse Down	The event occurs when the user presses a mouse button over an element.
Mouse Move	The event occurs when the pointer is moving while it is over an element.
Mouse Up	The event occurs when the user releases a mouse button over an element.
Mouse Out	The event occurs when the user moves the pointer out of an element, or out of one of its children.
Mouse Enter	The event occurs when the pointer moves onto an element.
Mouse Leave	The event occurs when the pointer moves out of an element.
Focus	The event occurs when an element gets focused.
Swipe Left	The event occurs when the user swipes over an element in the left direction.
Swipe Right	The event occurs when the user swipes over an element in the right direction.
<b>Scene Events</b>	
Scene Activate	The event occurs when the scene has been activated.
Scene Deactivate	The event occurs when the scene has been deactivated.

<b>Event Name</b>	<b>Remark</b>
Scroll	The event occurs when the scroll bar of the scene is being scrolled.
Key Down	The event occurs when the user presses a key.
Key Up	The event occurs when the user releases a key.
Orientation Change	The event occurs when the user rotates the mobile device vertically or horizontally.
Resize	The event occurs when the scene is resized.
Events Inherited From Elements	Scene has all events of an element: mouse click, mouse enter, etc.
<b>Document Events</b>	
Create	The event occurs when the document has been created.
Ready	The event occurs when the document is ready.
Destroy	The event occurs when the document has been destroyed.
Scene Events	Document has all events of mouse, keyboard, orientation... same as scene.
<b>Timeline Events</b>	
Update	The event occurs when the Timeline is updating.
Play	The event occurs when the Timeline changes state from pause to play.
Complete	The event occurs when the Timeline plays until the end and stops.
Speed Change	The event occurs when the Timeline speed changes.
Pause	The event occurs when the Timeline changes state from play to pause.

Event Name	Remark
Seek	The event occurs when the Timeline is sought.
Reverse	The event occurs when the Timeline direction changes (forward and backward).
Preloader Events	
Start	The event occurs when the preloader starts.
Progress	The event occurs when the preloader is in progress.
Complete	The event occurs when the preloader is completed.
Item Start	The event occurs when a resource of the preloader starts loading.
Item Complete	The event occurs when a resource of the preloader has finished loading or a load error happens.

## Actions

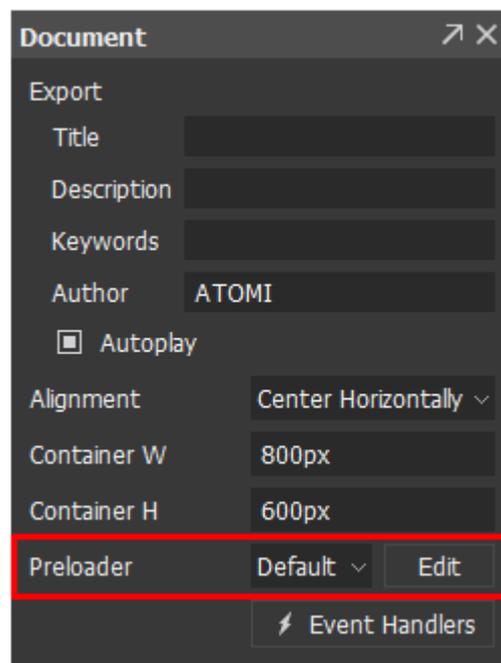
Action Name	Target Object	Parameter
Timeline Actions		
Start Timeline	Timeline	Direction (Forward, Backward), Speed (%)
Continue Timeline	Timeline	Direction (Forward, Backward), Speed (%)
Continue Timeline From	Timeline	Direction (Forward, Backward), Time or Timeline Label, Speed (%)
Pause Timeline	Timeline	
Pause Timeline At	Timeline	Time or Timeline Label

Toggle Play/Pause Timeline	Timeline	
Seek Timeline	Timeline	Time or Timeline Label
<b>Symbol Actions</b>		
Start Symbol	Symbol	Direction (Forward, Backward), Speed (%)
Continue Symbol	Symbol	Direction (Forward, Backward), Speed (%)
Continue Symbol From	Symbol	Direction (Forward, Backward), Time or Timeline Label, Speed (%)
Pause Symbol	Symbol	
Pause Symbol At	Symbol	Time or Timeline Label
Toggle Play/Pause Symbol	Symbol	
Seek Symbol	Symbol	Time or Timeline Label
<b>Media Actions</b>		
Start Media	Audio, Video	Speed (%)
Continue Media	Audio, Video	Speed (%)
Continue Media From	Audio, Video	Time, Speed (%)
Pause Media	Audio, Video	
Pause Media At	Audio, Video	Time
Mute Media	Audio, Video	
Media Volume	Audio, Video	Volume (%)
Toggle Mute Media	Audio, Video	

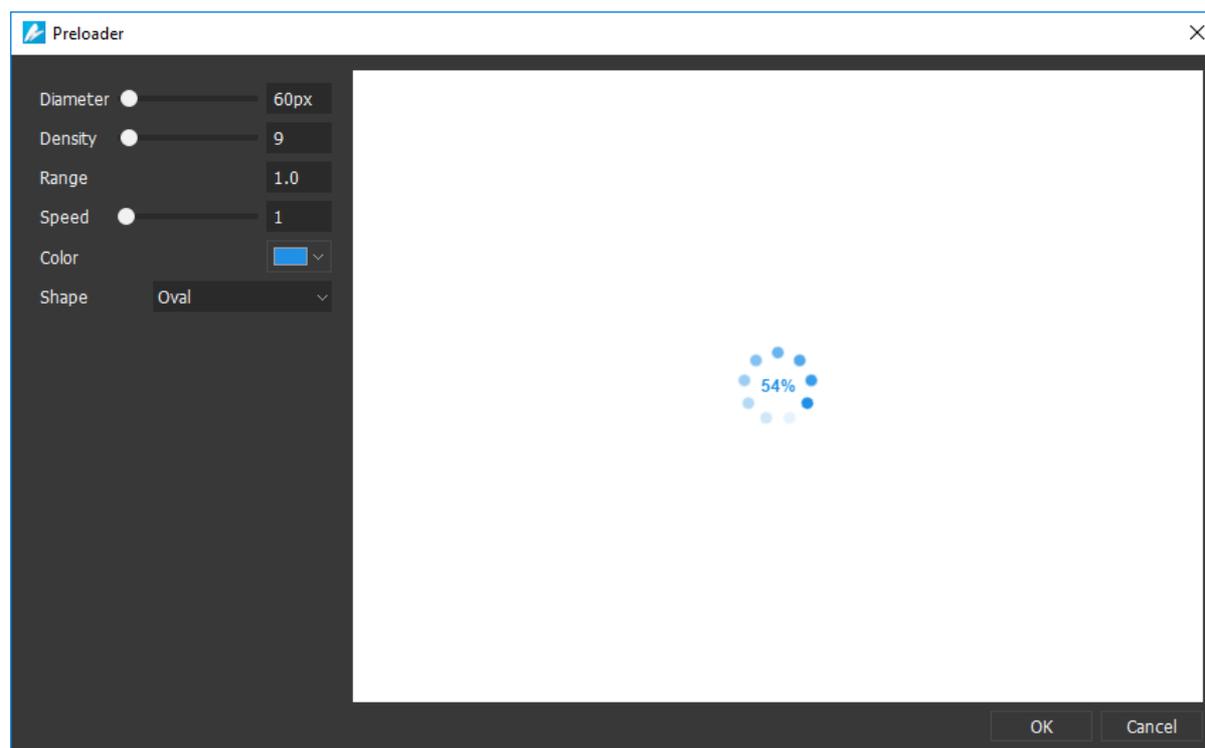
Mute All Media	None	
Toggle Play/Pause Media	Audio, Video	
Seek Media	Audio, Video	Time
Play Video Full Screen	Video	
<b>Visibility Actions</b>		
Hide Element	All Element Types	
Show Element	All Element Types	
Toggle Hide/Show Element	All Element Types	
<b>Other Actions</b>		
Jump To Scene	Scene	Transition Type, Duration (ms), Easing Type, Direction
Go To URL	None	URL, New Window (True, False)
Change Text	Div, Shape, Text	Text
Run JavaScript	None	Function (see <a href="#">JavaScript</a> <sup>[94]</sup> )

## Chapter 17: Customizing Preloader

When your animation loads from a web server, images, media files, and all other components will need to be transferred to the user's browser. If your project is complex and graphics-intensive, it may take a few seconds to download. It is when you need to use a preloader to indicate that the content is being loaded.



By default, Saola documents use a default loader that contains only a loading indicator shown when resources are being loaded. To edit the loading indicator, click the **Edit** button to open the **Preloader** dialog box. You can modify many attributes of the loading indicator, all changes are immediately reflected in the preview pane.

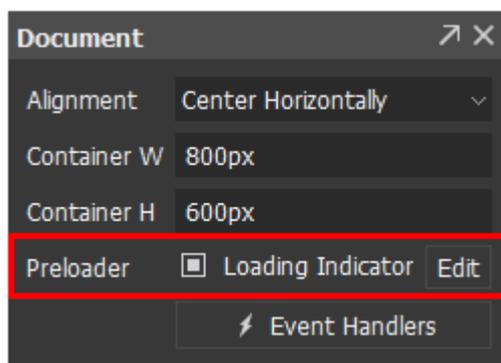


- ❖ **Diameter:** Set the diameter of the loader. The default value is 60 pixels.
- ❖ **Density:** Set the number of shapes drawn on the loader. The default value is 9.
- ❖ **Range:** Set the amount of the modified shapes in percent. With this value the user can set what range of the shapes should be scaled and/or faded. The shapes that are out of this range will be scaled and/or faded with a minimum amount only. This minimum amount is 0.1 which means every shape which is out of the range is 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 loader animation. This value tells the loader how many shapes to skip by each tick. The default value is 1.
- ❖ **Color:** Set the color of the loader in RGB. The default value is blue.
- ❖ **Shape:** Set the type of the loader shapes. The acceptable values are oval, spiral, square, rectangle, and rounded rectangle. The default value is oval.

If the default loader does not meet your needs, that is, you want to add text, images, audio, or animations to customize it, select **Custom** from the **Preloader** drop-down list.

A custom preloader is a project, so you can edit it like any normal Saola project. Custom preloader project will be closed if you close the main project or if you switch from Custom loader to Default loader.

The loading indicator is turned on by default, but you can turn it off if you want. To turn the loading indicator on/off, select/clear the **Loading Indicator** check box.



## Chapter 18: Menus, Toolbars & Shortcuts

In this Appendix, the menus, toolbar buttons, and default keyboard shortcuts are listed. Note that Saola Animate allows you to customize all keyboard shortcuts.

In Saola Animate, Main Menu is a set of menus at the top of the application window containing seven drop-down menus. These menus allow you to interact with the content of the application in many different ways. For example, the **File** menu provides commands to create a new project, open an existing one, etc.

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In this chapter, you will find the following:

- ❖ [File Menu](#)<sup>119</sup>
- ❖ [Edit Menu](#)<sup>120</sup>
- ❖ [Scene Menu](#)<sup>122</sup>
- ❖ [Element Menu](#)<sup>122</sup>
- ❖ [Timeline Menu](#)<sup>123</sup>
- ❖ [View Menu](#)<sup>126</sup>
- ❖ [Help Menu](#)<sup>127</sup>
- ❖ [Text Formatting Toolbar](#)<sup>128</sup>
- ❖ [Shortcuts For Code Editor](#)<sup>130</sup>

## File Menu

The **File** menu controls major events such as creating a new project, opening an existing project, previewing scene and project in browser, etc.

Command	Icon	Default Shortcut	Remark
New		CTRL+N	Create a new project.
Open Project		CTRL+O	Open an existing project.
Open Recent Projects			List of recently open projects.
Save		CTRL+S	Save the current project.
Save As Other Project			Save the project under a new name.
Save As Package		CTRL+SHIFT+P	Save the project to a package.
Close		CTRL+F4	Close the current project.
Preview Current Scene In Browser		CTRL+ALT+S	Preview the current scene in default browser.
Preview Project In Browser		CTRL+ALT+P	Preview the current project in default browser.
Export to HTML5		CTRL+ALT+E	Export the current project to HTML5.
Exit			Close the Saola Animate application.

## Edit Menu

The **Edit** menu allows you to arrange elements on the Canvas. From here, you can also create new symbols.

Command	Icon	Default Shortcut	Remark
Undo		CTRL+Z	Reverse the last actions.
Redo		CTRL+Y	Reverse the last “undo” actions.
Cut		CTRL+X	Cut the selected objects.
Copy		CTRL+C	Copy the selected objects.
Paste		CTRL+V	Paste the selected objects.
Paste with Animation			Paste elements with animation.
Delete		DELETE	Delete the selected objects.
Select All		CTRL+A	Select all objects.
Group		CTRL+G	Group selected elements to be children of a new created element (the group element).
Ungroup		CTRL+SHIFT+G	Ungroup the grouped elements.
Convert to Symbol			Convert the selected elements to symbol.
Size > Make Same Width			Make the width of all other objects match the width of the reference object.
Size > Make Same Height			Make the height of all other objects match the height of the reference

Command	Icon	Default Shortcut	Remark
			object.
Size > Make Same Size			Make the size of all other objects match the size of the reference object, respectively.
Alignment > Alight Left		SHIFT+L	The left side of all objects will get aligned with the left of the reference object. Their vertical position will not be affected.
Alignment > Alight Right		SHIFT+R	The right side of all objects will get aligned with the right of the reference object. Their vertical position will not be affected.
Alignment > Alight Top		SHIFT+T	The top of all objects will get aligned vertically with the top of the reference object. Their horizontal position will not be affected.
Alignment > Alight Bottom		SHIFT+B	The bottom of all objects will get aligned vertically with the bottom of the reference object. Their horizontal position will not be affected.
Alignment > Alight Center		SHIFT+E	The center of all objects will get aligned vertically with the center of the reference object. Their horizontal position will not be affected.
Alignment > Alight Middle		SHIFT+M	The center of all objects will get aligned with the center of the reference object. Their vertical position will not be affected.
Display Order > Bring to Front			Place the selected object at the very top of the stack.

Command	Icon	Default Shortcut	Remark
Display Order > Bring Forward			Send the selected object higher by one level in the stack.
Display Order > Send to Back			Place the selected object at the very bottom of the stack.
Display Order > Send Backward			Send the selected object lower by one level in the stack.
Preferences			View and edit the global settings.

## Scene Menu

The **Scene** menu helps you insert a new blank scene or duplicate a selected scene.

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

## Element Menu

The **Element** menu lists all types of elements you can insert into a Saola project.

Command	Icon	Default Shortcut	Remark
Rectangle Div			Insert a rectangle div.
Rounded Rectangle Div			Insert a rounded rectangle div.

Command	Icon	Default Shortcut	Remark
Ellipse Div			Insert an ellipse div.
Text			Insert a text.
HTML widget			Insert a HTML widget.
Image			Insert an image.
Audio			Insert an audio.
Video			Insert a video.
Symbol			Insert a symbol.
Shape			Insert a shape.

## Timeline Menu

The **Timeline** menu lets you control the timeline and animations while working in Saola. From here, you can play/stop animation playback, add keyframes, animations, triggers, and labels, etc.

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.
Go to Start		HOME	Restore the Playhead to the beginning position on the Timeline.

Command	Icon	Default Shortcut	Remark
Go to End		END	Bring the Playhead to the ending position of the range on the Timeline.
Loop Playback			The range will be played endlessly (in a loop). When the Playhead reaches the end of the range, it will return to the beginning and continue playing.
Auto-Keyframe Mode		K	Automatically generate keyframes when creating animations.
Add Keyframe			Add a keyframe corresponding to the selected object.
Insert Label		ALT+L	Insert a label at the Playhead position on the Timeline.
Insert Trigger		ALT+T	Insert a trigger at the Playhead position on the Timeline.
Open Event Handlers			Open the Event Handlers form corresponding to the selected object.
Create Transition		CTRL+SHIFT+T	Create new property transition for an animation segment that does not have transition.
Remove Transition		SHIFT+DEL	Remove property transition of an animation segment.
Invert Animation Segment			Swap the starting and ending keyframes of animation segments.
Only Show Animated Element			Show/Hide elements which does not have property animation.
Snapping		ALT+;	Turn snapping on/off. As you drag the Playhead around, you may notice some snapping actions. For example, the Playhead jumps to a particular tick mark

Command	Icon	Default Shortcut	Remark
			on the Timeline ruler or jumps to a keyframe. You may want to change multiple properties at a single point in time, meaning that you should turn Snap To option on most of the time. To fine-tune snapping behaviors, you can choose what the Playhead snaps to. Three choices available: Grid, Playhead, and Keyframes, Labels, Triggers.
Snap To > Grid			The Playhead, keyframes, labels, triggers snap to the grid lines displayed when you turn on the grid.
Snap To > Playhead			The keyframes, labels, triggers snap to Playhead position on the Timeline.
Snap To > Keyframes, Labels, Triggers			The keyframes, labels, triggers snap to their own position on the Timeline or the Playhead snaps to items' position.
Show Grid			Show/Hide grid lines on the Timeline. Grid is used to help users divide time into little pieces by displaying subtle vertical lines along the Timeline at regular intervals.
Grid			Use the Grid submenu to set the time increments. You can choose many increments such as half-second, quarter second, or 24 frames per second.
Zoom Out		-	Reduce the time scale of the Timeline.
Zoom In		=	Expand the time scale and see more details.

Command	Icon	Default Shortcut	Remark
Zoom to Fit		\	Animation bars is fitted based on the Timeline view horizontal size.
Expand/Collapse Lanes		CTRL+SHIFT+.	Show/Hide all properties under all elements.

## View Menu

The **View** menu gives you access to customize the workspace. From here, you can change the display language, show/hide various toolbars and panes, etc.

Command	Icon	Default Shortcut	Remark
Language			Choose the language of the user interface.
Ruler			Show/Hide the rulers.
Canvas Snap			Turn canvas snapping on/off.
Zoom > Zoom In			Expand the Canvas scale.
Zoom > Zoom Out			Reduce the Canvas scale.
Zoom > Zoom Level			Set the zoom level for the Canvas.
Zoom > Fit on Screen			Set the scene content fit to the viewport size.
Toolbars > Files			Show/Hide icons of the Files group on the toolbar.
Toolbars > Edit			Show/Hide icons of the Edit group on the toolbar.

Command	Icon	Default Shortcut	Remark
Toolbars > Insert			Show/Hide icons of the Insert group on the toolbar.
Toolbars > Modify			Show/Hide icons of the Modify group on the 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.

## Help Menu

The **Help** menu allows you to access the Saola documentation and provides information about the current version.

Command	Icon	Default Shortcut	Remark
Help Contents		F1	Launch the Help file.
About			Provide information about the current version.
Check Updates...			Saola will periodically check for updates when started. This feature is selected by default. To turn this feature on/off, go

Command	Icon	Default Shortcut	Remark
			to Preferences > General > Auto Updates.
My Account			Open your account webpage where you can update your profile, manage your subscriptions, etc.
Sign Out			Sign out of your account.

## Text Formatting Toolbar

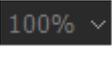
The **Text Formatting** toolbar appears when you insert or edit text with the inline text editor. The toolbar provides necessary commands to format text style, insert special characters, hyperlink, etc.

Command	Icon	Default Shortcut	Remark
Font Name			Change the font of the selected text or objects.
Font Size			Change the size of the selected text or objects.
Align Text Left		CTRL+L	Align the selected text, or the text in the selected objects left.
Align Text Center		CTRL+E	Align the selected text, or the text in the selected objects center.
Align Text Right		CTRL+R	Align the selected text, or the text in the selected objects right.
Align Text Justify		CTRL+J	Align the selected text, or the text in the selected objects justified.
Bold		CTRL+B	Make the selected text, or the text in the selected objects bold.

Command	Icon	Default Shortcut	Remark
Italic		CTRL+I	Make the selected text, or the text in the selected objects italic.
Underline		CTRL+U	Underline the selected text, or the text in the selected objects.
Strikethrough			Strikethrough the selected text, or the text in the selected objects.
Superscript		CTRL+SHIFT+=	Format the selected text as superscript.
Subscript		CTRL+=	Format the selected text as subscript.
Outdent			Increase the indent of the selected text.
Indent			Decrease the indent of the selected text.
Insert Unordered List			Create a bulleted list.
Insert Ordered List			Create a numbered list.
Foreground Color			Change the text color of the selected text or objects.
Highlight Color			Highlight the selected text, or the text in the selected objects.
Insert Special Chars			Insert special characters to the text.
Insert Link			Link the selected text to a webpage.
Edit HTML			Edit the content of HTML to the text.

Command	Icon	Default Shortcut	Remark
Show/Hide Floating Tools			Show/Hide the Text Formatting toolbar when editing text.

## Shortcuts For Code Editor

Command	Icon	Default Shortcut	Remark
Undo		CTRL+Z	Reverse the last actions.
Redo		CTRL+Y	Reverse the last “undo” actions.
Copy		CTRL+C	Copy the selected text.
Cut		CTRL+X	Cut the selected text.
Paste		CTRL+V	Paste the selected text.
Delete		DELETE	Delete the selected text.
Export To File			Export the current function to file.
Search		CTRL+F	Display the Find search box. If there is no current Find criteria, place the word under your cursor in the Find box.
Replace		CTRL+H	Display the Find search box where you can replace the specified text.
Zoom In/Out		CTRL+Mouse Wheel Up/Down	Expand/Reduce the text size.

Command	Icon	Default Shortcut	Remark
Options			Show/Hide editor features and access the Code Editor settings.

## Chapter 19: Customizing Saola Animate

You can customize some aspects of Saola Animate to suit your particular needs.

In this chapter, you will find the following:

- ❖ [Changing Language](#) <sup>131</sup>
- ❖ [Customizing User Interface](#) <sup>132</sup>
- ❖ [Customizing Preferences](#) <sup>133</sup>

### Changing Language

By default, the display language in Saola Animate is set to English (United States). If you want to choose another language, click **View > Language**, and then select your desired language from the drop-down list. Your change will be applied the next time you open the application.



Another way to customize the display language is to use the **Preferences** dialog box. Do the following steps:

1. Click **Edit > Preferences**  to open the **Preferences** dialog box.
2. In the **General** tab, select the appropriate language in the **Language** drop-down list.
3. Click **Apply** to submit changes.

## Customizing User Interface

### *To show/hide panes & toolbar*

Though the [View menu](#)<sup>126</sup>, you can make the following changes:

- ❖ View/hide toolbars (File, Edit, Insert, and Modify).
- ❖ View/hide various panes (Properties, Scenes, Document, etc.).

Saola saves the project settings when you close the project. The next time you open the application, the settings of the last saved project will be automatically applied to the new one.

### *To change pane location*

In Saola, the location and size of all panes are customizable. Each pane has two small buttons in the top right corner. Use the **Undock**  button to move panes and the **Close**  button to close panes when needed.

You can dock panes together, move them into or out of groups, and undock them so that they float above the application window. Drag a pane from its current location by its title bar or its **Undock** button. Note that for the **Timeline** pane, you can only undock it by clicking the **Undock** button.

As you drag a pane, a highlighted drop zone appears indicating that you can dock the pane onto that area. Remember not to release the mouse button until you find the location you want to place the pane.

As you drag the pane, you have three available options:

- ❖ Dock the pane in the highlighted drop zones that appear on screen. By choosing a drop zone, you determine not only where the pane is inserted but also whether it docks or groups with other panes.
- ❖ Drag the pane at the top, bottom, or in between other panes so that they stand together on one edge of the Canvas. If two or more panes are placed in the same drop zone, they will be stacked into a tabbed group.

To change the tab order, drag a pane left or right by its tab. To remove a pane from the group and make it free-floating, drag it outside the group by its title bar or its **Undock** button.

- ❖ Make the pane free-floating by dragging it to an area that is not a drop zone. The floating pane allows you to position it anywhere on the screen, even outside the application window.

### *To change pane size*

You can change the size of the panes that appear in Saola. This is useful when you want to make your work area larger by reducing the pane size, or when you want to view more of the information that appears in a pane by increasing its size.

- ❖ 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 bidirectional 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 bidirectional resize pointer, and then drag the boundary until the pane is the width/height you want.

## Customizing Preferences

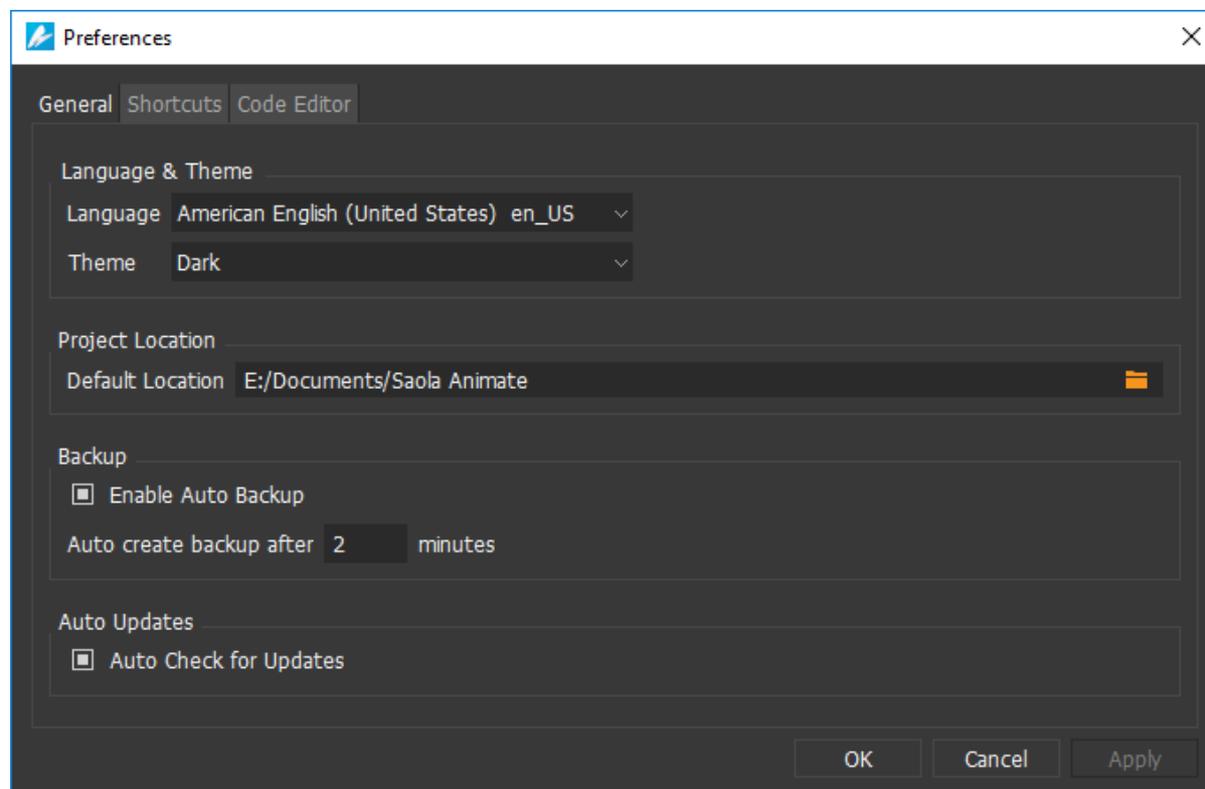
Use the **Preferences** dialog box to set how you want Saola Animate to operate. To open this dialog box, select **Edit > Preferences**  from the menu bar.

The **Preferences** dialog box appears having three tabs, and each serves a different category. Select the relevant tab to customize the relevant settings.

Tab	Category
General	General options applicable to the entire application.
Shortcuts	Shortcuts used for various operations.
Code Editor	Features and colors in the JavaScript Function form.

## General Tab

The **General** tab is the first tab in the **Preferences** dialog box. In this tab, you can set a few preferences for how Saola Animate works.



### **Language & Theme**

By default, the display language in Saola is set to English (United States). To change the language, select a new language from the **Language** drop-down list. The language change will be applied the next time the application starts.

In terms of **Theme**, in this version Saola Animate only offers a Dark theme. Other theme options will be updated in the next versions.

### **Project Location**

The default project location is your Documents folder; however, you can always choose where to save your Saola projects at any time. To change the default project location, enter your desired location in the **Default Location** box, or navigate to a location using the **Browse**  button.

Note that no matter which default location you choose, you still can select the project location you want each time you create a project. See [Creating, Opening & Saving Projects](#)<sup>[18]</sup> for more details.

## Backup

Auto Backup feature allows you to recover your work if anything happens when you are working with Saola Animate. To turn this feature on/off, select/clear the **Enable Auto Backup** check box.

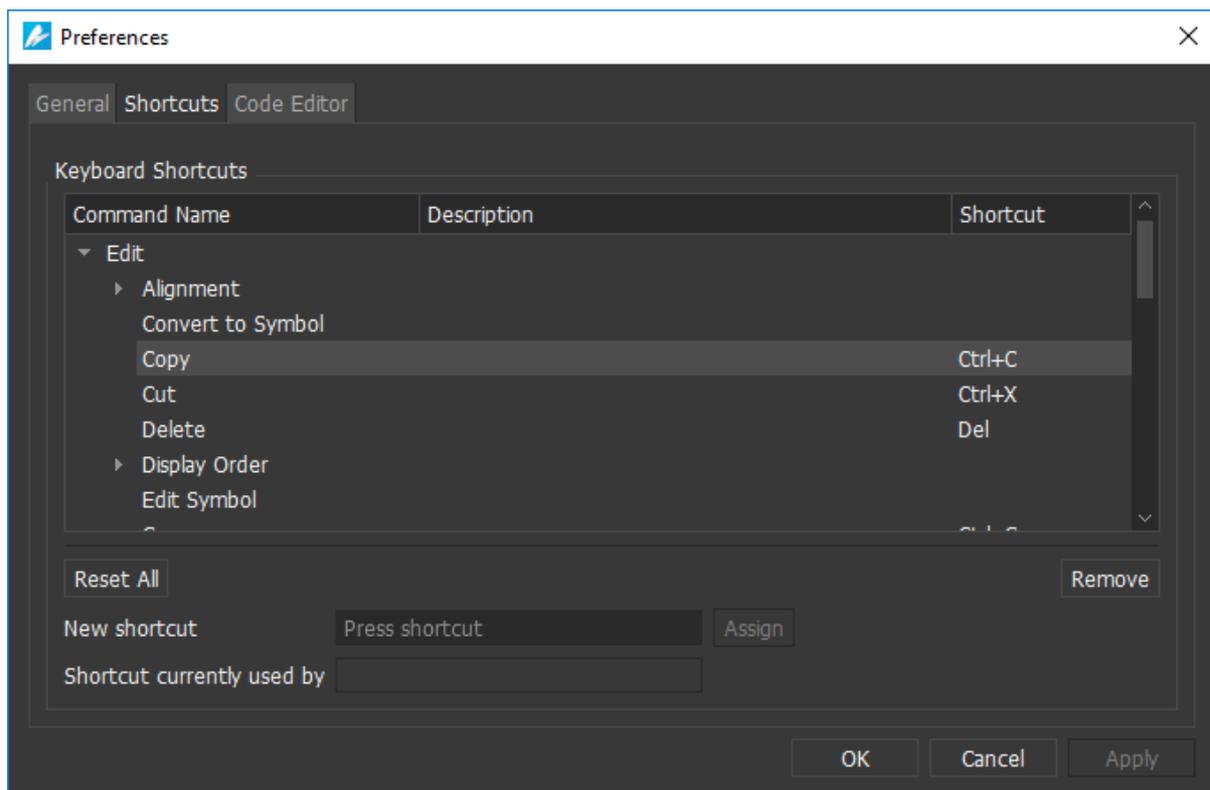
By default, backup is made available and set to automatically save changes to your work every 2 minutes. You can shorten or lengthen this interval as desired by simply entering a new interval (in minutes) in the text box.

## Auto Updates

Saola will periodically check for updates when started. This feature is selected by default. To turn this feature on/off, select/clear the **Auto Check for Updates** check box.

## Shortcuts Tab

The **Shortcuts** tab shows all keyboard shortcuts in Saola Animate. You can assign keyboard shortcuts to commands or remove any keyboard shortcuts you do not want.



All major commands in Saola are grouped functionally in a hierarchical tree. The tree consists of nodes; each node contains a group of related commands. To expand any node to list the commands or other items that it contains, click the arrow on the left of it. Any

keyboard shortcuts that are currently assigned to a command or item will be shown in the **Shortcut** column.

### ***To assign keyboard shortcuts***

1. Select a command or item that you want to assign a keyboard shortcut.
2. Click inside the **New Shortcut** box, and then press the combination of keys that you want to assign.
3. Look at the **Current used by box** to see if the combination of keys is already assigned to a command or item. If the combination is already used, press a different combination.
4. Click **Assign** to assign the new keyboard shortcut.
5. Click **Apply** to submit changes.

### ***To remove keyboard shortcuts***

1. Select a command or item that you want to remove a keyboard shortcut.
2. Click the **Remove** button.
3. Click **Apply** to submit changes.

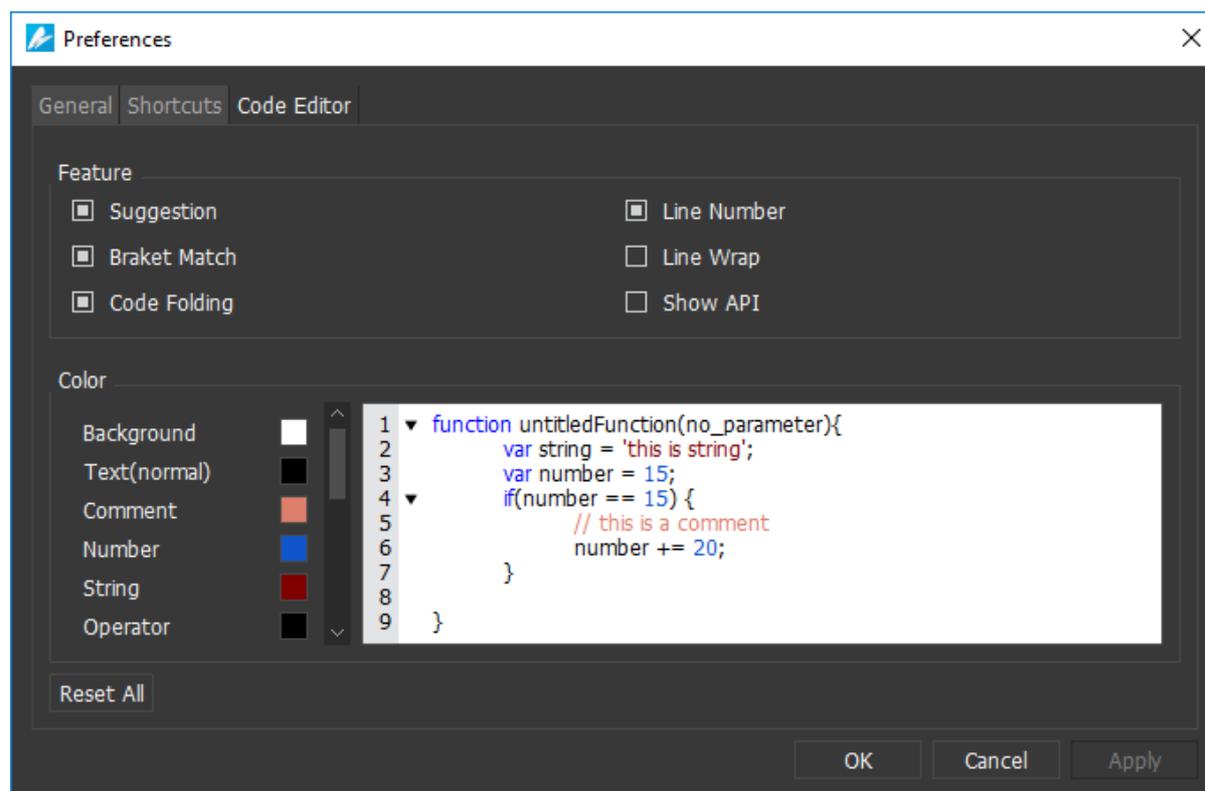
When you assign keyboard shortcuts, you can reassign a combination of keys if you want; however, in that case you can no longer use the combination for its original purpose.

*Example:* Select the **Copy** command in the tree view, and then press **CTRL+A** in the **New Shortcut** box. The combination of **CTRL** and **A** is automatically captured and displayed. In fact, Saola Animate detects that this keyboard shortcut is currently used by the **Select All** command.

Now you have two options: Either try another keyboard shortcut (and repeat the cycle), or press the **Assign** button to reassign the **CTRL+A** keyboard shortcut to the **Copy** command. If you choose the second option, this keyboard shortcut will no longer be assigned to the **Select All** command. You can restore the default settings by clicking the **Reset All** button.

## **Code Editor Tab**

Saola Animate offers you a feature-rich editor for code writing and editing. To customize the code editor's features and component colors, in the **Preferences** dialog box, switch to the **Code Editor** tab.



## Features

- ❖ To show/hide auto suggestion: Select the **Suggestion** check box.
- ❖ To turn bracket matching on/off: Select the **Bracket Matching** check box.
- ❖ To turn code folding on/off: Select the **Code Folding** check box.
- ❖ To turn line number on/off: Select the **Line Number** check box.
- ❖ To turn line wrap on/off: Select the **Line Wrap** check box.
- ❖ To show/hide API: Select the **Show API** check box.

## Colors

- ❖ To change the color of the editor components:
  - Click the color rectangle next to the component in the component list, and then select a color in the color picker.
  - All changes you make are immediately reflected in the preview editor on the right side.
- ❖ To reset the code editor to its default settings, click the **Reset All** button.
- ❖ Click **Apply** to submit changes.