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Qt设计工作室手册 > 创建时间轴动画

创建时间轴动画

您可以创建时间轴和基于关键帧的动画，以便通过指定关键帧处的中间值进行线性插值，而不是立即更改为目标值。
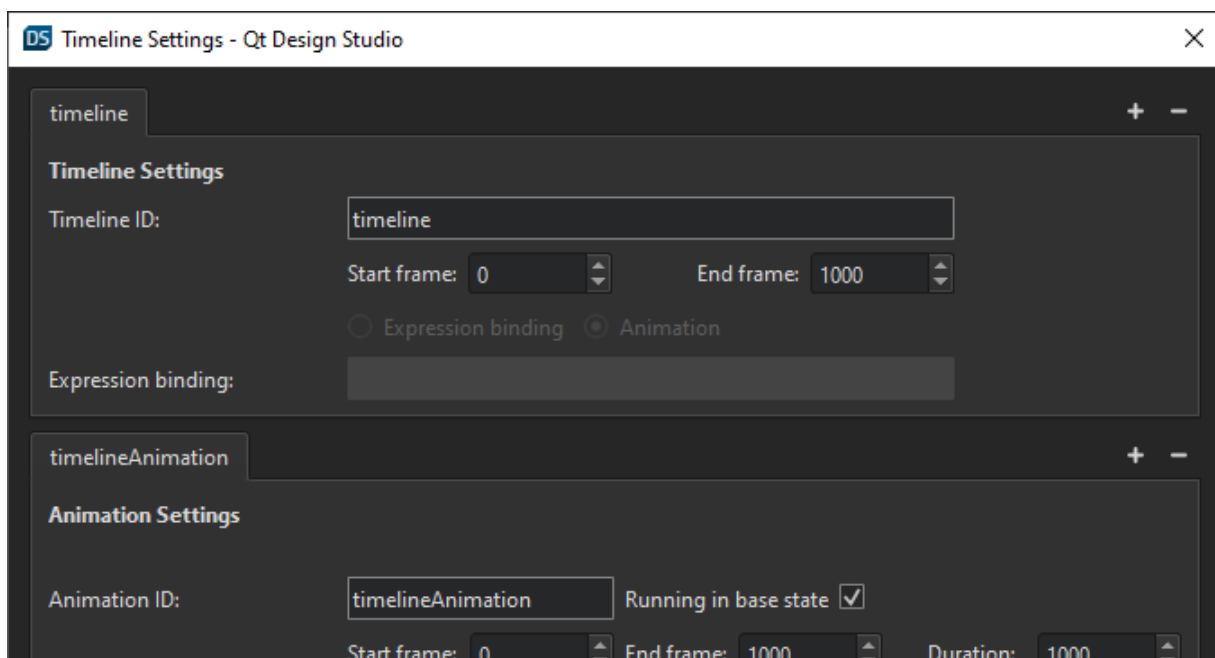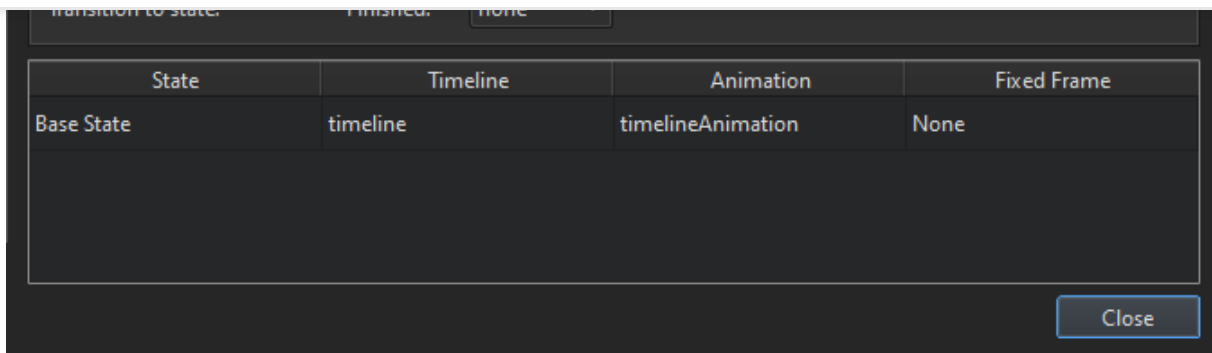
还可以将时间轴绑定到组件（如滑块）的属性值，并以这种方式控制动画。

创建动画

若要创建动画（无论是关键帧动画还是绑定到属性值的动画），首先需要创建时间轴。

创建时间轴

要创建时间轴以对 UI 组件进行动画处理，请执行以下操作：

1. 在"时间轴"视图中，选择＋"（**添加时间轴**）"按钮以指定时间轴的设置，并在"**时间轴设置**"对话框中运行动画。
2. 在"**时间线设置**"选项卡上：

   > 在"**时间线 ID**"字段中，输入描述时间线的 ID。

   > 在"**开始帧**"字段中，设置时间轴的第一帧。允许使用负值。

   > 在"**结束帧**"字段中，设置时间轴的最后一帧。

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State	Timeline	Animation	Fixed Frame
Base State	timeline	timelineAnimation	None

Close

3. 在"**动画设置**"选项卡上：

> 在"**动画 ID**"字段中，输入动画的 ID。

> 自选。选中"**在基本状态下运行**"复选框，以便在应用基本状态时运行动画。清除该复选框可在应用其他某种状态时运行动画。有关更多信息，请参见将动画绑定到状态。

> 在"**开始帧**"字段中，设置动画的第一帧。

> 在"**结束帧**"字段中，设置动画的最后一帧。

> 在"**持续时间**"字段中，设置动画的长度（以毫秒为单位）。

> 自选。选中"**连续**"复选框可无限期地循环播放动画。

> 自选。在"**循环**"字段中，设置运行动画的次数。默认循环数为 1，这意味着必须重新启动动画才能再次查看。

> 自选。选中"**乒乓**"复选框，以便在动画到达结尾时向后播放回开头。

> 自选。在"**已完成**"字段中，选择要在动画完成时转换到的状态。
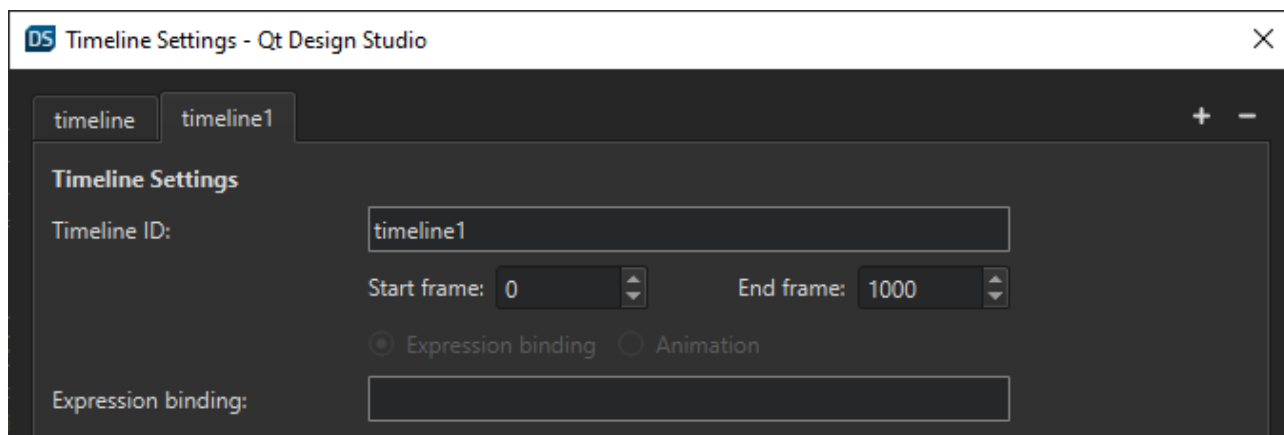
4. 选择"**关闭**"以关闭对话框并保存设置。

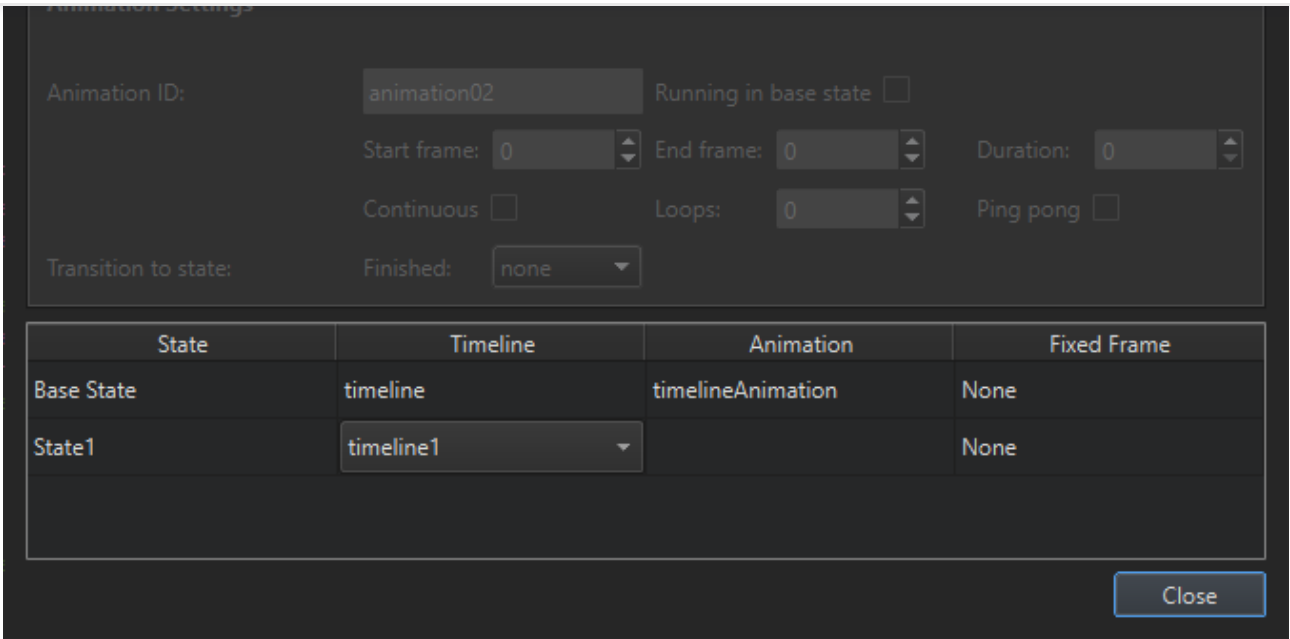现在，通过为时间轴和动画设置设置，您可以设置要进行动画处理的属性的关键帧。

创建其他时间线

您可以创建多个时间线。多个时间线的目的是在不同的状态下使用不同的时间线。

要为第二个状态创建时间线：

1. In **Timeline**, open the **Timeline Settings** dialog.

2. Next to the **Timeline Settings** tab, select ╋ . This creates another timeline.

3. In the table below the **Animation Settings** tab, set the Timeline for the state where you want to use it.

DS Timeline Settings - Qt Design Studio   ×

| timeline | timeline1 | ╋ ─

Timeline Settings

Timeline ID: timeline1

Start frame: 0   End frame: 1000

◉ Expression binding   ○ Animation

Expression binding:

To set the keyframe values for the timeline you created, first select the state in **States** and the timeline is available in **Timelines**.
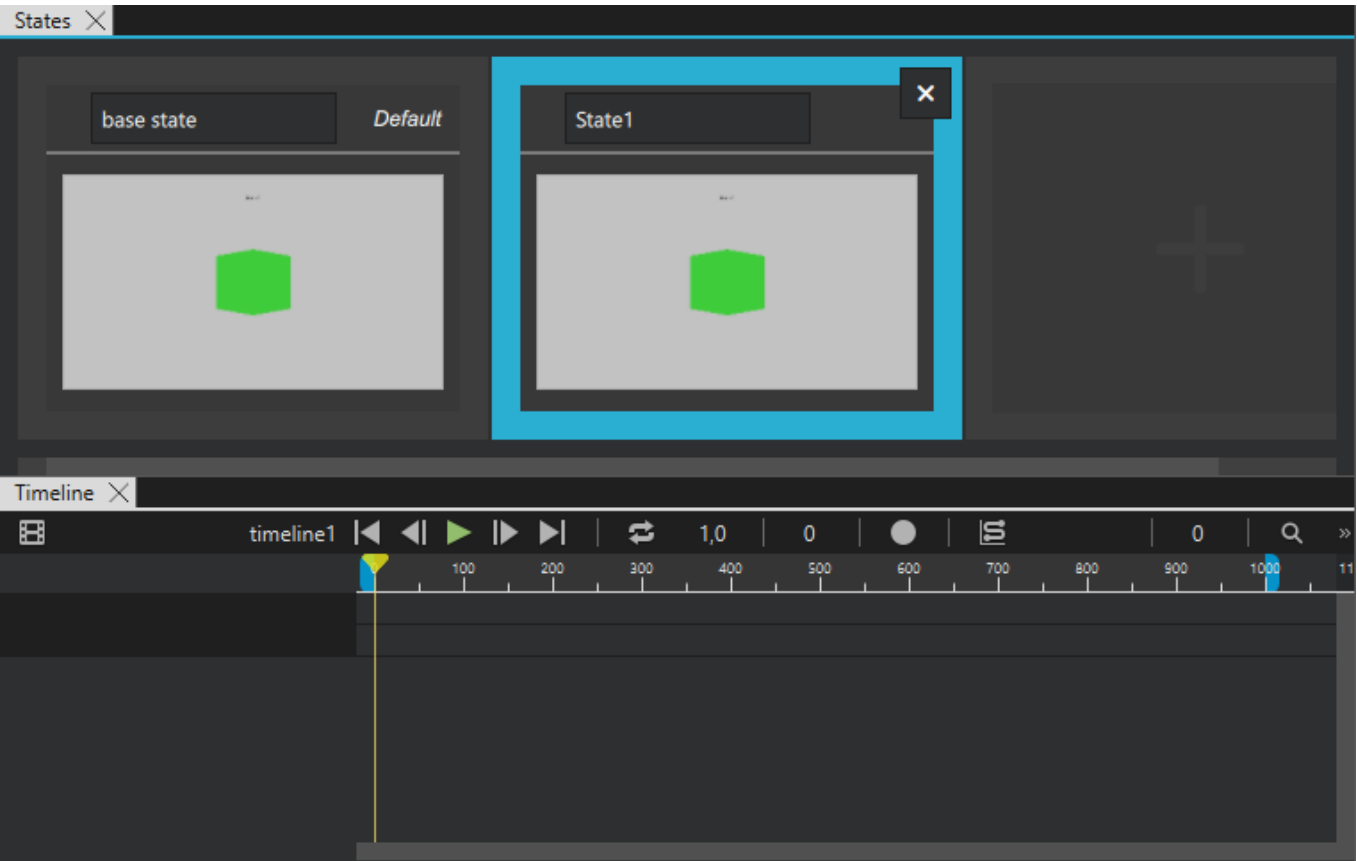

Setting Keyframe Values

When you create a timeline, Qt Design Studio creates one animation for the timeline. You can create as many animations for a timeline as you want. For example, you can create animations to run just a small section of the timeline or to run the timeline backwards.

To animate components in the Timeline view, you set keyframe values for the property to animate. Qt Design Studio automatically adds keyframes between two keyframes and sets their values evenly to create, for example,

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1. In the Navigator view, select the component to animate.

2. In the Properties view, select ⚙ (**Actions**) > **Insert Keyframe** for the property that you want to animate.
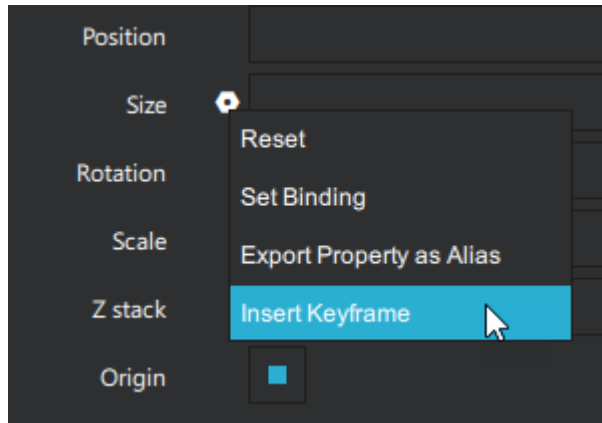
3. In the Timeline view, select the **Per Property Recording** button to start recording property changes.
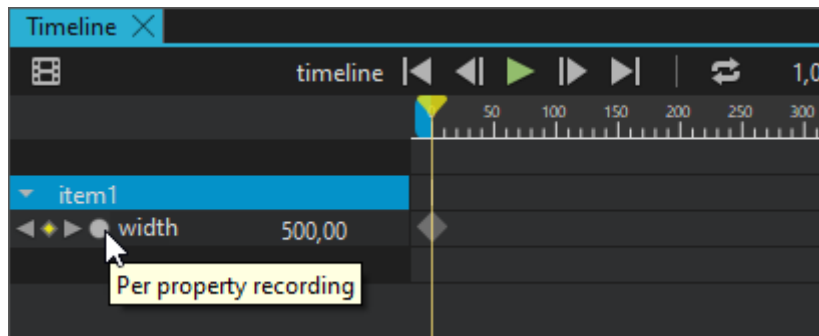
4. Ensure that the playhead is in frame 0 and enter the value of the property in the field next to the property name on the timeline. Press **Enter** to save the value.

5. Move the playhead to another frame on the timeline and specify the value at that frame. For more information, see Navigating in Timeline.

6. When you have specified as many values as you need, select **Per Property Recording** again to stop recording.

Binding a Timeline to a Property

When you bind a timeline to a component property, the animation's current frame is controlled by the value of the property.

In this example, you bind the timeline to a slider component.

With a timeline created and keyframe values set:

1. From **Components**, drag a slider to the **2D** or **Navigator** view.

2. In **Navigator**, select *slider* and in **Properties**, set:

   › **To** to 1000.

   > **Note:** The **From** and **To** values of the slider should match the **Start Frame** and **End Frame** values of the timeline if you want to control the complete animation with the slider.

3. In the **Timeline Settings** dialog, select ▬ next to the **Animation Settings** tab to delete the animation. If you
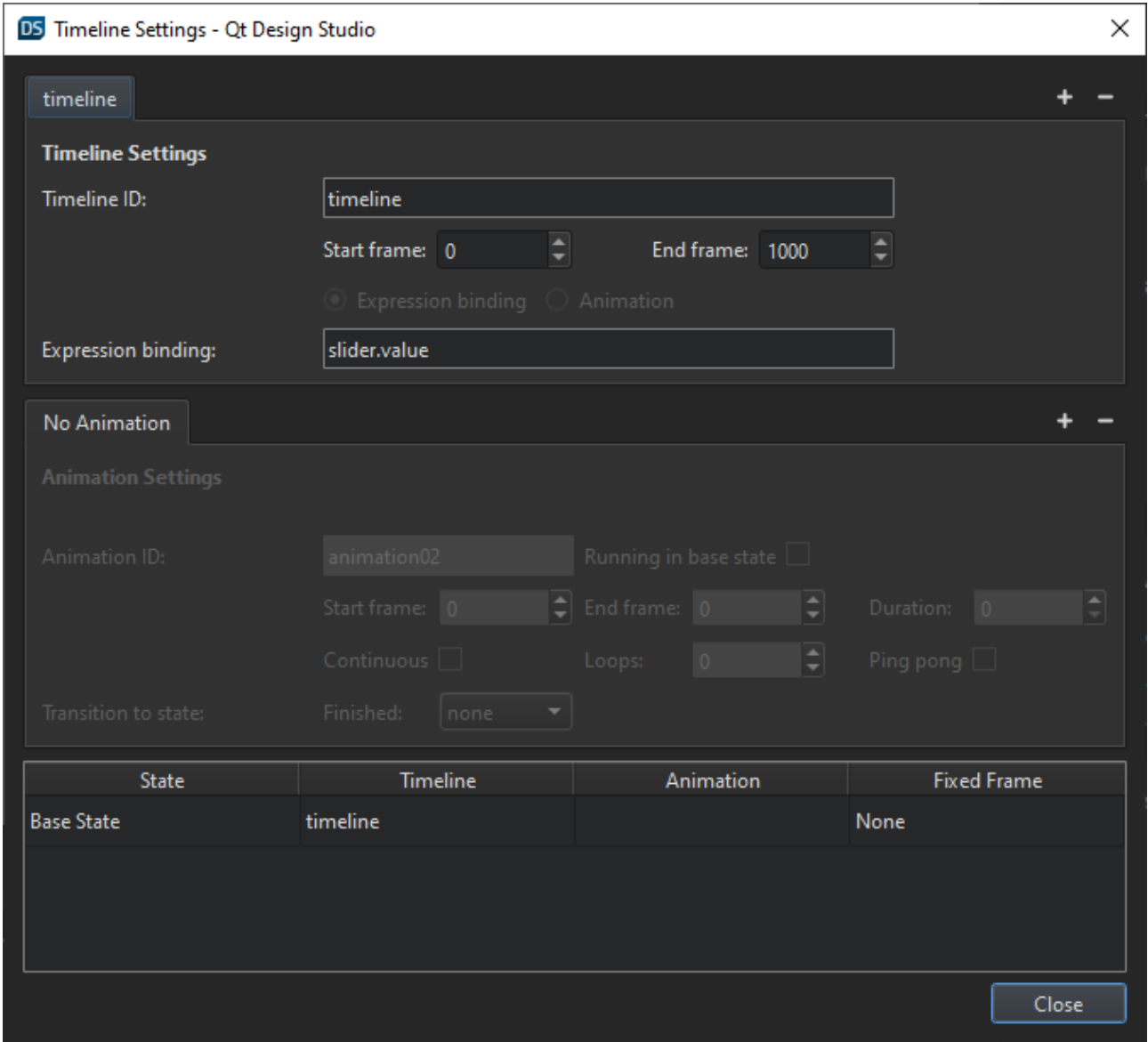
Binding Animations to States

You can bind animations to states, this means that the animation will run when you enter the state.

To bind an animation to a state:

1. In the table at the bottom of the **Timeline Settings** dialog lists:

   > Double-click the value in the **Timeline** field and select the timeline with the animation you want to bind to the state.

   > Double-click the value in the **Animation** field and select the animation you want to bind to the state.

To bind a state to a certain keyframe in an animation without running the animation, set the keyframe in the **Fixed Frame** field.

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Managing Keyframes
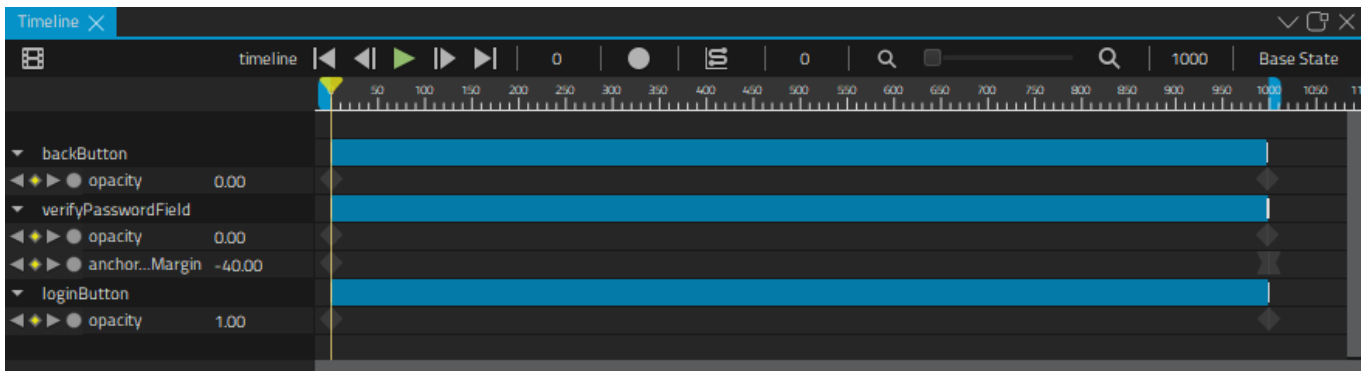
Editing Keyframes

To remove all the changes you recorded for a property, right-click the property name on the timeline and select **Remove Property**.
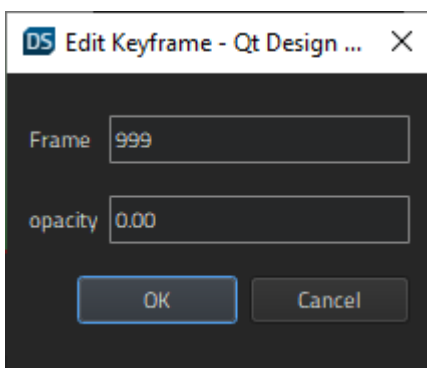
To add keyframes to the keyframe track of a component at the current position of the playhead, right-click the component name on the timeline and select **Add Keyframes at Current Frame**.

Keyframes are marked on the timeline by using markers of different colors and shapes, depending on whether they are active or inactive or whether you have applied easing curves to them.

Editing Keyframe Values

To fine-tune the value of a keyframe, double-click a keyframe marker or right-click it and select **Edit Keyframe** in the context menu.

The **Edit Keyframe** dialog displays the name of the property you are animating and its current value at the frame specified in the **Frame** field. You can change both the keyframe and its value.

Copying Keyframes

You can copy the keyframes from the keyframe track for a component and paste them to the keyframe track of another component.

To copy all keyframes from one track to another one:

1. Right-click the component ID and select **Copy All Keyframes** in the context menu.
2. Right-click the other component ID, and select **Paste Keyframes** in the context menu.

Deleting Keyframes

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To delete all keyframes from the selected component, right-click the component name in **Timeline** and select **Delete All Keyframes** in the context menu.

Viewing the Animation

To preview your animation, do one of the following in the **Timeline** view:

> - Drag the playhead along the timeline.
> - Select ▶ button or press **Space**.

To preview the whole UI, select the ◉ (**Show Live Preview**) button on the canvas toolbar or press **Alt+P**.

Animating Rotation

To animate components that rotate around a central point, you can use the Item component as a parent for the rotating component. Then create a timeline for the Item, and set the rotation property for the start and end keyframes.

Animating Shapes

You can use the **Qt Quick Studio Components** to animate the following shapes:

> - Arc
> - Border
> - Pie
> - Rectangle
> - Triangle

< Introduction to Animation Techniques   Editing Easing Curves >

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