

# CSS Animations

## Topics Covered

- Keyframes
- Animation
  - animation-name
  - animation-duration
  - animation-delay
  - animation-direction

## Topics in Detail:

### CSS Animators

- CSS Animations is a technique used to **change** the **appearance** and **behavior** of various elements in web pages.
- It will control the elements by changing their motions or display.
- It has **replaced** the animation created by **Flash** and **JavaScript**.
- The animation is created using the **@keyframe** rule.
- It has two parts,
  - **CSS Properties** (describe the animation of the elements)
  - **keyframes** (specific **time intervals** at which the animations have to occur)
- When the animation is created in the **@keyframe** rule, it must have a **selector** otherwise, the animation will have **no effect**.

### @keyframe

- Keyframes are the **foundation** of CSS Animations.
- It will control the **intermediate steps** in a CSS animation sequence.
- It defines the display of animation at the corresponding stages in the whole duration.

### Animation Properties

- animation-name
- animation-duration
- animation-delay
- animation-direction
- animation-iteration-count
- animation-timing-function
- animation-fill-mode

### animation-name:

- It is used to describe the name of the **@keyframe** that has the CSS animation sequence.
- Syntax: **animation-name: animation \_name;**

### animation-duration:

- It specifies the **time duration** of the animation to complete **one** cycle.
- If animation-duration is **not mentioned**, **no animation** will occur because the **default** value is **0 seconds**.
- We can specify animation-duration by using the keywords "**from**" and "**to**" (which represents 0% (start) and 100% (complete)). Instead, we can also use **percent**.

### animation-delay:

- It specifies the **delay** when the animation should start.
- It allows **Negative** values. If using negative values, the animation will be playing as if it has started **already** before *N* seconds.

### animation-iteration-count:

- It specifies the **number of times** an animation should run.
- If we specify the animation-iteration-count value as **infinite**, the animation will repeat **indefinitely**.

### animation-direction:

- It specifies the direction of the animation

Values	Description
normal (default)	The animation is played <b>forward</b>
reverse	The animation is played in the <b>reverse</b> direction i.e. backward
alternate	The animation is played forwards first, and then backward
alternate-reverse	The animation is played backward first, and then forwards

### animation-timing-function:

- It is used to specify the **speed curve** of the animation.

Values	Description
ease (default)	The animation starts slowly, then fast, and then finally ends slowly
linear	The animation plays with the same speed from start to end
ease-in	The animation plays with a slow start
ease-out	The animation plays with a slow end
ease-in-out	The animation starts and ends slowly
cubic-bezier(n,n,n,n)	Lets you define your own values in a cubic-bezier function

### animation-fill-mode:

- CSS animations **will not** affect an element before the first keyframe is played or after the last keyframe is played. This behavior can be **overridden** by the **animation-fill-mode** property.
- It is used to specify the **style** for the element when the animation is **not playing**.

Values	Description
none (default)	The animation <b>will not</b> apply any styles to the element before or after it is executing
forwards	The element will retain the style values that are set by the <b>last keyframe</b> (depends on <b>animation-direction</b> and <b>animation-iteration-count</b> )
backwards	The element will get the style values that are set by the <b>first keyframe</b> (depends on <b>animation-direction</b> ), and retain this during the <b>animation-delay</b> period
both	The animation will follow the rules for <b>both forwards</b> and <b>backwards</b> , extending the animation properties in both directions

### animation-play-state:

- This allows you to **play/pause** the animation.

### Animation Shorthand Property:

- A **shorthand property** for setting all the animation properties.
- The properties should be in the following order
- Syntax:  
***animation: [animation-name] [animation-duration] [animation-timing-function] [animation delay] [animation-iteration-count] [animation-direction] [animation-fill-mode] [animation-play-state];***

- Example: Without shorthand property:

```
div {  
  animation-name: example;  
  animation-duration: 5s;  
  animation-timing-function: linear;  
  animation-delay: 2s;  
  animation-iteration-count: infinite;  
  animation-direction: alternate;  
}
```

- Example: With shorthand property:

```
div {  
  animation: example 5s linear 2s infinite alternate;  
}
```