Animation in CSS

Overview

CSS Animation property is used to create animation on the webpage. It can be used as a replacement for animation created by Flash and JavaScript. An animation lets an element gradually change from **one style to another.**

Animation can change as many CSS properties, as many times.

Property	Description
@keyframes	Used to specify the animation.
animation-name	It specifies the name of @keyframes animation.
animation-duration	It specifies the time duration taken by the animation to complete one cycle.
animation-delay	It specifies when the animation will start.
animation-iteration-count	It specifies the number of times the animation should be played.
animation-direction	It specifies if or not the animation should play in reserve on an alternate cycle.
animation-timing-function	It specifies the speed curve of the animation.
animation	This is a shorthand property, used for setting all the properties, except the animation-play-state and the animation-fill- mode property.
animation-play-state	It specifies if the animation is running or paused.

@keyframes rule

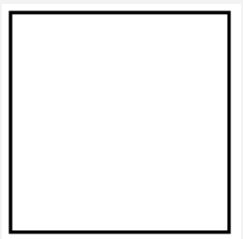
Animation is created with a specific name and then its functionality is described using the **@keyframes rule.** We need to mention the animation **from and to.**
Let's take an example where a square div changes its shape to a circle.

HTML :
```
<div>  </div>
```

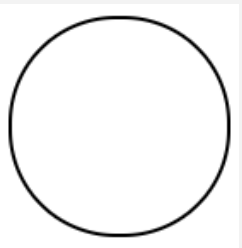
CSS :
```
div{
        height: 100px;
        width: 100px;
        border:2px solid black ;
        animation-name: sample ;
        animation-duration: 5s ;
}

@keyframes sample{
        from{border-radius: 0;}
        to{border-radius: 50%;}
 }
```

Before :



After :



NOTE : If the animation-duration property is not specified, no animation will occur, because the default value is 0 seconds and animation occurring for 0 seconds means no animation.

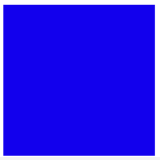
Animation at stages

In the above example, we transformed a square to a circle with animation that you cannot see in this doc but you must try the code in your editor and see the results on the browser. We can also make multiple changes in animation with time

Let's see that with an example where the animation duration is 3 seconds and at each second colour of the div changes.

```
CSS :       div {
                width: 100px;
                height: 100px;
                background-color: red;
                animation-name: sample;
                animation-duration: 3s;
            }

            @keyframes sample {
                0%   {background-color: red;}
                50%  {background-color: blue;}
                100% {background-color: green;}
            }
```

1st second : 	2nd second: 	3rd second: 

animation-iteration-count

This property specifies the number of times animation should play.

In the below example the square changes to circle 3 times just like a loop.

```
HTML :      <div>  </div>
CSS :       div{
                height: 100px;
                width: 100px;
                border:2px solid black ;
                animation-name: sample ;
                animation-duration: 5s ;
                animation-iteration-count: 3 ;
            }

            @keyframes sample{
                from{border-radius: 0;}
                to{border-radius: 50%;}
             }
```

Animation direction

This property specifies if or not the animation should play in reserve on an alternate cycle or normally.

- **normal** : Animation is played as normal **(Default)**
- **reverse** : Animation is played in the reverse direction (backwards)
- **alternate** : Animation is played forwards first, then backwards
- **alternate-reverse** : The animation is played backwards first, then forwards

In the below example technically square should have been converted into a circle but after applying the property **"animation-direction : reverse",** the circle is converted to a sqaure.

CSS :

```
div{
        height: 100px;
        width: 100px;
        border:2px solid black ;
        animation-name: sample ;
        animation-duration: 5s ;
        animation-direction : reverse ;
}

@keyframes sample{
        from{border-radius: 0;}
        to{border-radius: 50%;}
 }
```

Animation timing function

This property specifies the speed curve of the animation. It is the same as the transition timing function.

- **ease** : Animation with a slow start, then fast, then end slowly (**Default**)
- **linear** : Animation with the same speed from start to end
- **ease-in** : Animation with a slow start
- **ease-out** : Animation with a slow end
- **ease-in-out** - Animation with a slow start and end
- **cubic-bezier(n,n,n,n)** : Define own values in a cubic-bezier function

Animation Shorthand Property

Example :