Session 6

Working with CSS3 Transitions and Animations

Session Overview

In this session, you will be able to:

- Use and apply CSS3 transitions in HTML
- Use and apply CSS3 animations into HTML by using the @keyframes rule and the animation properties

CSS3 Transitions

- Interactivity is one of the important aspects of animation.
- Earlier, a combination of HTML, CSS, and JavaScript were used to animate objects on the Web.
- In 2007, Apple introduced the CSS transition, which later became a proprietary feature of Safari, called as CSS animation.
- The representatives from Apple and Mozilla began adding this CSS transition module to the CSS Level 3 specification, which was closely modeled on what Apple had already added to webkit and moz.

CSS3 Transitions

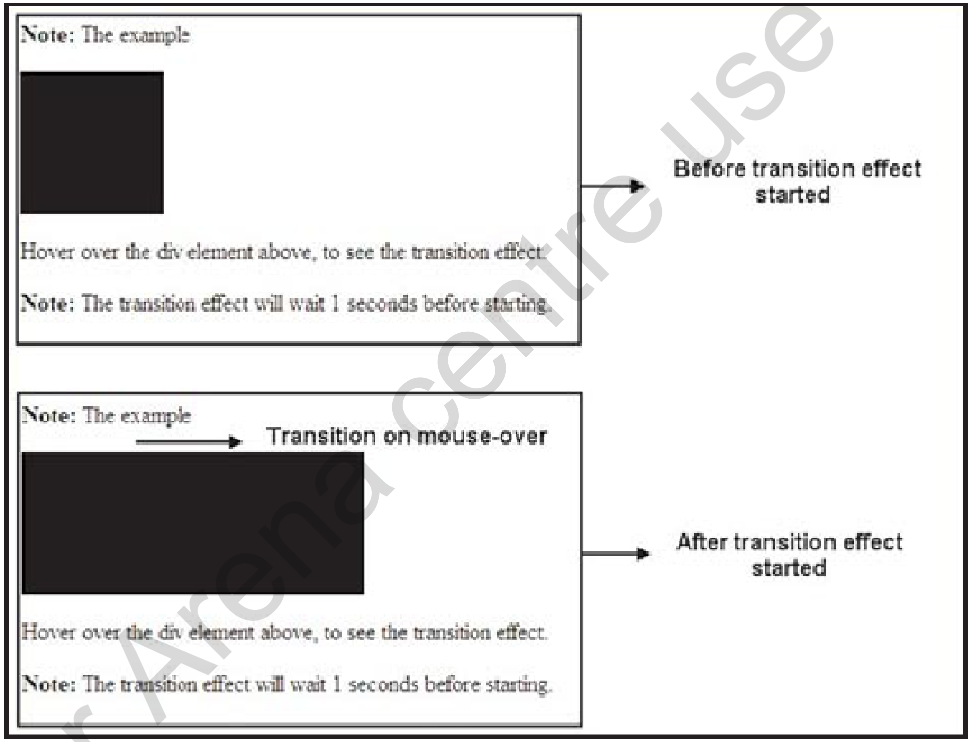
All the browsers do not support CSS3 transitions. Following is the list of browsers that support CSS3 transitions:

- Apple Safari 3.1 and later versions, which require the prefix –webkit-
- Google Chrome which requires the prefix –webkit-
- Mozilla Firefox 3.7 alpha and later versions, which require the prefix –moz-
- Opera 10.5x and later versions, which require the prefix –o-

CSS3 Transitions

- Presently, Internet Explorer 9 does not support the CSS3 transitions.
- For the functioning of CSS transitions, the two required specifications are as follows:
    - The CSS property that needs the effect
    - The duration of the effect

CSS3 Transitions



Note: The example

Hover over the div element above, to see the transition effect.

Note: The transition effect will wait 1 seconds before starting.

Note: The example

Hover over the div element above, to see the transition effect.

Note: The transition effect will wait 1 seconds before starting.

Before transition effect started
Transition on mouse-over
After transition effect started

Output of all Transition Properties

CSS3 Animation

CSS3 animations can animate transitions of one CSS style configuration to another. The two components of an animation are as follows:

- The animation style describing the animation.
- The keyframes set that specifies the start and end states of the animation's CSS style and possible intermediate waypoints along the way.

CSS3 Animation

The three advantages of CSS3 animations over script-based animation techniques are as follows:

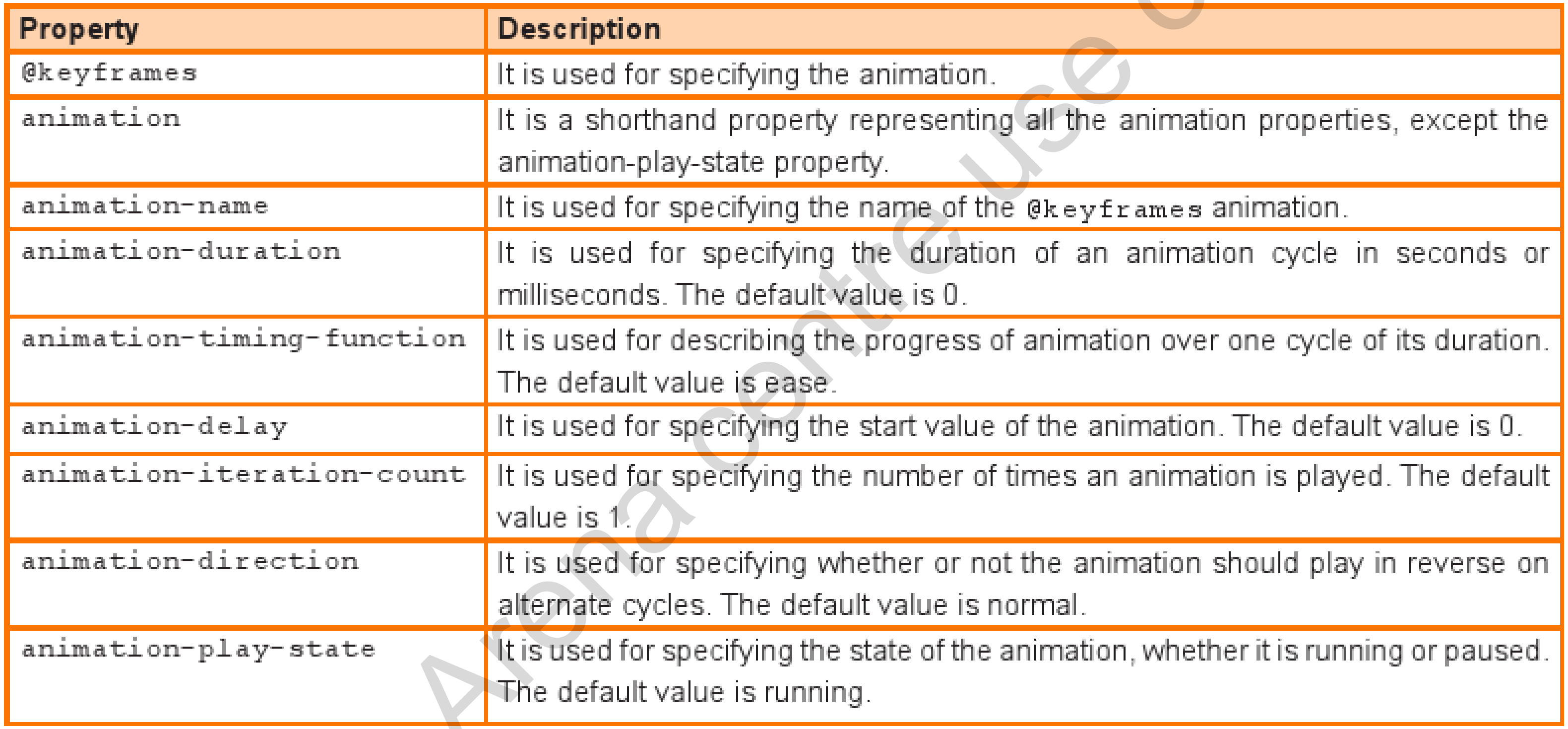
- Easy to use and anybody can create them, even in the absence of in-depth knowledge about JavaScript.
- Executes well even under reasonable system load, because simple animations perform poorly in JavaScript making the rendering engine to use the frame-skipping techniques for smooth flow of animation.
- Allows the browser to control the animation sequence, optimize performance and efficiency by reducing the update frequency of animations, executing in tabs that are not currently visible.

Configuring the Animation

- A CSS animation sequence can be created by styling the element with the animation property.
- This property can be used to configure the timing, duration, and sequence of the animation. @keyframes rule defines the appearance of the animation.
- It is used to describe the rendering of the element in the animation sequence.

Configuring the Animation

2-4

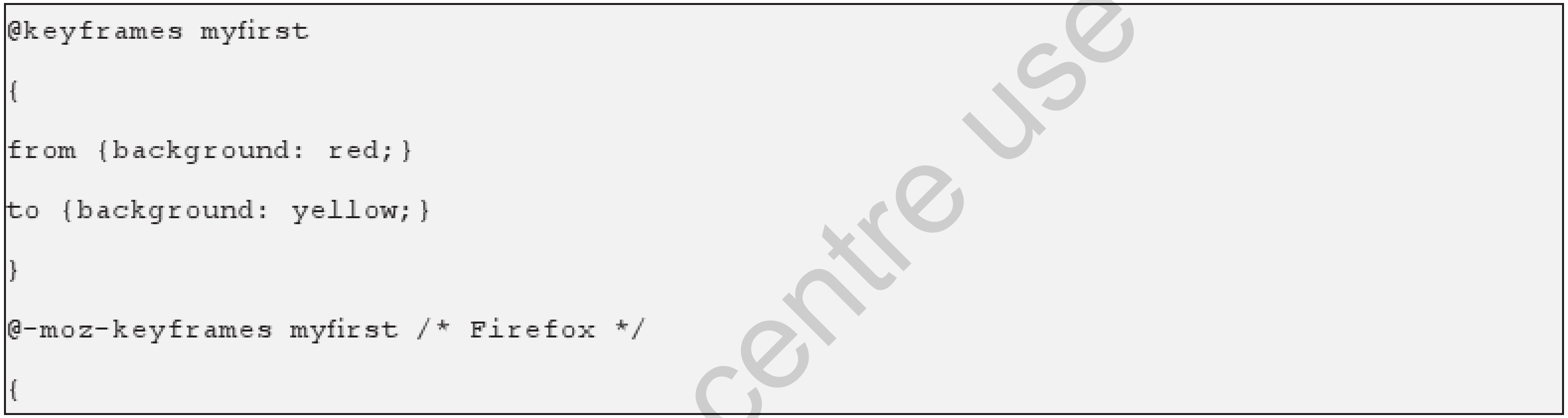


Property	Description
`@keyframes`	It is used for specifying the animation.
`animation`	It is a shorthand property representing all the animation properties, except the animation-play-state property.
`animation-name`	It is used for specifying the name of the `@keyframes` animation.
`animation-duration`	It is used for specifying the duration of an animation cycle in seconds or milliseconds. The default value is 0.
`animation-timing-function`	It is used for describing the progress of animation over one cycle of its duration. The default value is ease.
`animation-delay`	It is used for specifying the start value of the animation. The default value is 0.
`animation-iteration-count`	It is used for specifying the number of times an animation is played. The default value is 1.
`animation-direction`	It is used for specifying whether or not the animation should play in reverse on alternate cycles. The default value is normal.
`animation-play-state`	It is used for specifying the state of the animation, whether it is running or paused. The default value is running.

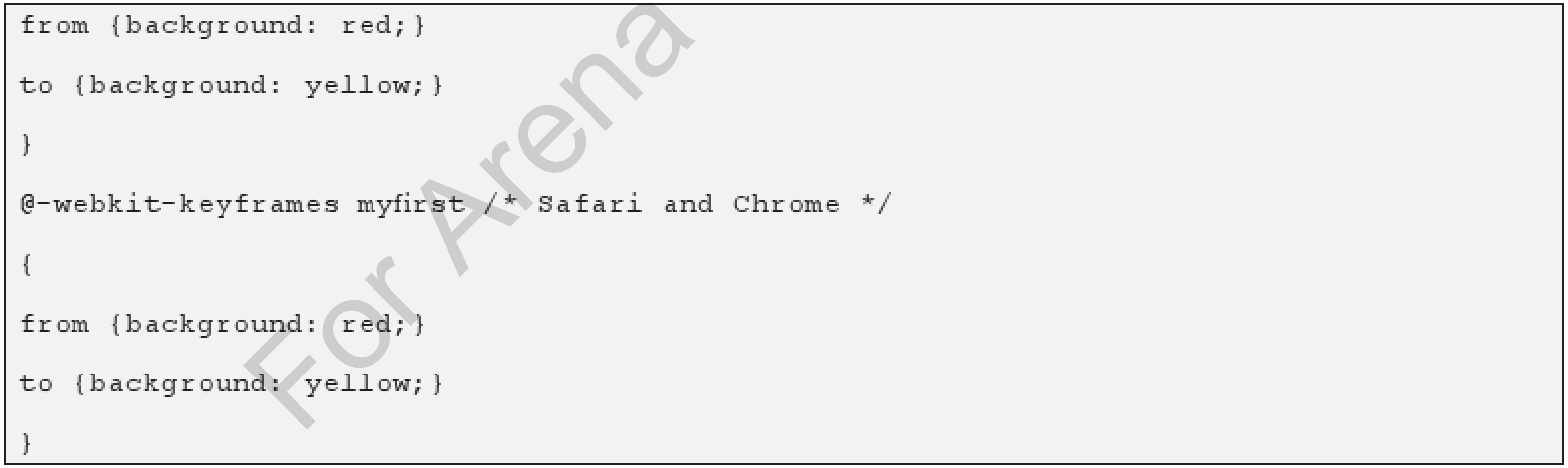
@keyframe Rules and Animation Properties

Configuring the Animation

The syntax for @keyframes is as follows:



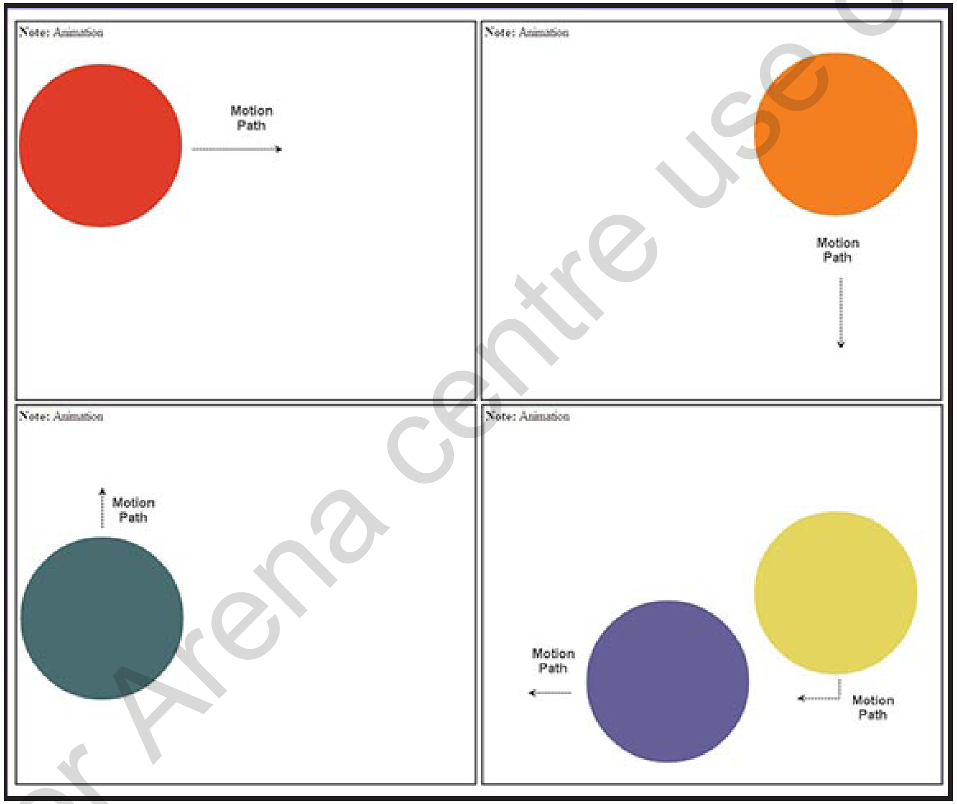
```
@keyframes myfirst
{
from {background: red;}
to {background: yellow;}
}
@-moz-keyframes myfirst /* Firefox */
{
```



```
from {background: red;}
to {background: yellow;}
}
@-webkit-keyframes myfirst /* Safari and Chrome */
{
from {background: red;}
to {background: yellow;}
}
```

Configuring the Animation

4-4



Output of @keyframe Rule and Animation Properties

Summary

- Earlier, a combination of HTML, CSS, and JavaScript were used to animate objects on the Web.
- In 2007, Apple introduced the CSS transition, which later became a proprietary feature of Safari, called as CSS animation.
- However, not all the browsers support CSS3 transitions. Internet Explorer 9 is one of them.
- For the functioning of CSS transitions, the two required specifications are as follows:
  - The CSS property that needs the effect
  - The duration of the effect
- CSS3 animations can animate transitions of one CSS style configuration to another.

Summary

2-2

- *@keyframes* rule defines the appearance of the animation.
- Animation styles can be used to configure the timing, duration, and sequence of the animation.
- The various properties of an animation are animation-name, animation-duration, animation-timing-function, animation-iteration-count, animation-direction, and animation-play-state. The shorthand property for the same is animation.