

Web Animation

CSS Animations

- ▶ CSS Animations allow you to animate elements on a web site overtime and without the use of JavaScript.
- ▶ Think of CSS animations as a more advanced form of CSS transitions with more fine grained control

When to Use CSS Animations

- ▶ A web site should function without animations
 - ▶ Have a static fallback or fallback to JavaScript animations for older browser support
- ▶ CSS animations work well on mobile where they are well supported on the major mobile browsers of modern smartphone devices
- ▶ Great for UI enhancements

CSS Animation – Browser Support



IE10+



Firefox 5+



Chrome 4+



Safari 4+



Opera 12+

moz vendor prefix only
required for supporting
Firefox prior to version 16

webkit vendor
prefix required

Running CSS Animations

- ▶ Without JavaScript CSS animations are limited to running on page load and on a few browser events that CSS listens for (hover, focus, active)
- ▶ Combined with a few lines of JavaScript we can run CSS animations on any browser event

CSS Animation Syntax

- ▶ CSS animations are written in two parts
 - ▶ The first part describes how the animation will run
 - ▶ The second part describes what CSS changes will occur at various keyframes

```
.ball {  
  animation: drop 2s ease-in 2s 2 alternate both;  
}  
  
@keyframes drop {  
  0% { top: 0; }  
  100% { top: 270px; }  
}
```

Describes how
the animation
will run

Describes what
CSS styles will be
affected at
various
keyframes

CSS Animation Syntax (Shorthand)

```
.ball {  
  animation: drop 2s ease-in 2s 2 alternate both;  
}
```

Animation name
(made up by
developer)

Animation
duration

Animation
timing
function

Animation
delay

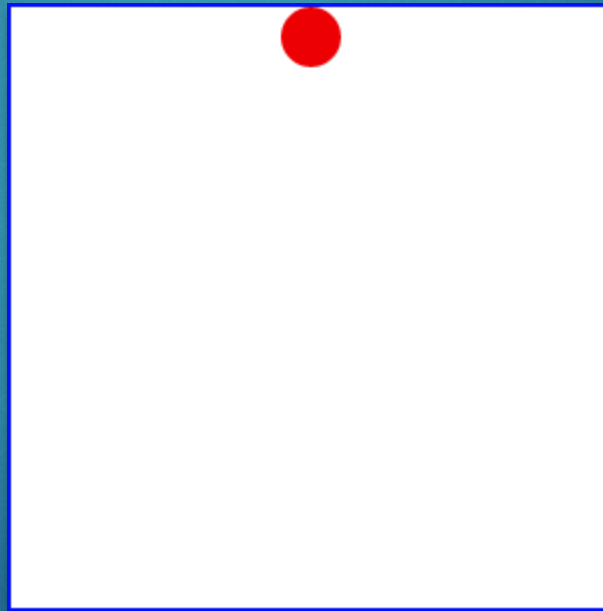
Animation
iteration
count

Animation
direction

Animation
fill mode

In Class Exercise

- ▶ Recreate this animation using CSS animation code



CSS Animation Delay

- ▶ Delays the start of the animation from when the animation is activated
- ▶ A negative delay can be set
 - ▶ This causes the animation to start part way into the keyframes instead of starting at the beginning of the key frames

```
.ball_02 {  
  animation: drop 2s ease-in 3s 2 alternate both;  
}
```

Animation delay



CSS Animation Iteration

- ▶ Determines the number of times an animation will run
- ▶ The value can be a number or the word infinite (which means the animation will run continuously)

```
.ball_02 {  
  animation: drop 2s ease-in 3s 2 alternate both;  
}
```



Animation iteration

CSS Animation Direction

- ▶ Determines the order of how the keyframes of an animation will run
- ▶ Four possible values
 - ▶ normal (default) – animation will from the first frame for each iteration
 - ▶ reverse – animation run from the last frame to the first frame for each iteration
 - ▶ alternate – animation will run from the first frame on the first iteration then will run from the last iteration for the second iteration. This pattern continues for subsequent iterations
 - ▶ alternate-reverse – similar pattern to alternate except the animation starts by running in the reverse direction

CSS Animation Direction

```
.ball_02 {  
  animation: drop 2s ease-in 3s 2 alternate both;  
}
```

Animation direction



CSS Animation Fill Mode

- ▶ Determines how CSS styles are applied before the start and after the end of the animation
- ▶ Four possible values
 - ▶ none (default) – no CSS keyframe styles applied
 - ▶ forwards – element will keep the CSS styles from the last frame of the animation
 - ▶ backwards – element will take on the CSS styles of the first frame of the animation
 - ▶ both – element will take on CSS styles from both the start of the animation and the end of the animation

CSS Animation Fill Mode

```
.ball_02 {  
  animation: drop 2s ease-in 3s 2 alternate both;  
}
```

Animation fill mode

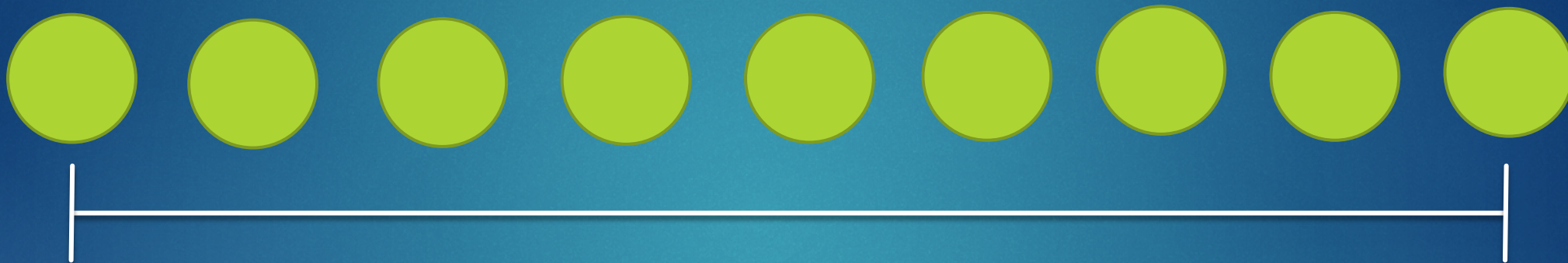


CSS Animation Easing

- ▶ Determines how speed is distributed across the duration of an animation¹
- ▶ Can be set with keywords
 - ▶ ease
 - ▶ ease-in
 - ▶ ease-in-out
 - ▶ linear
- ▶ Or can be set using a cubic-bezier curve
- ▶ Easing can be set independently inside individual keyframes

CSS Animation Easing

linear



ease-in

