

Transitions, transforms, and animation

Web development I: Front-end engineering

Transition basics

`transition-property`

Which CSS property to change

`transition-duration`

How long it should take

`transition-timing-function`

How it should accelerate

`transition-delay`

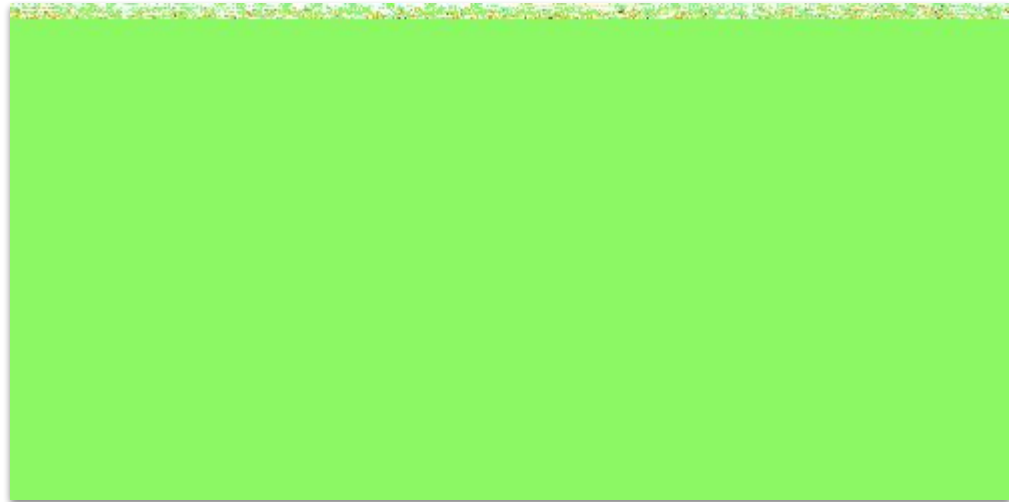
How long it waits before starting

`transition`

Shorthand notation

Transitions

transition-timing-function: ease |
linear | ease-in | ease-out |
ease-in-out | step-start | step-end |
steps | cubic-bezier



Applying multiple transitions

```
{  
  ...  
  transition-property: background-color, color, letter-spacing;  
  transition-duration: 0.3s, 800ms, 0.3s;  
  transition-timing-function: ease-out, ease-in, ease-out;  
  ...  
}
```

CSS transforms

`rotate`

`translate`, `translateX`, `translateY`

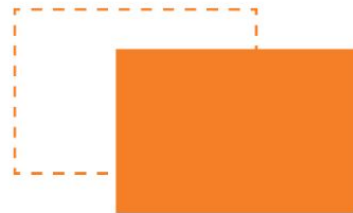
`scale`, `scaleX`, `scaleY`

`skew`, `skewX`, `skewY`

`perspective`



rotate



translate



scale



skew

CSS transforms

```
img {  
  transform: rotate(-10deg);  
}
```



CSS transforms

transform-origin: percentage | length |
left | center | right | top | bottom



`transform-origin: 100% 100%;`



`transform-origin: 400px 0;`

CSS transforms

```
img {  
  transform: translate(5px, 5px);  
}
```



transform: translate(90px, 60px);



transform: translate(-5%, -25%);

CSS transforms

```
img {  
  transform: scale(2, .5);  
}
```



transform: scale(.75);



transform: scale(1.5, .5);

CSS transforms

```
img {  
  transform: skew(15deg, 30deg);  
}
```



transform: *skewY*(30deg);



transform: *skew*(15deg, 30deg);

Applying multiple transforms

```
img:hover, img:focus {  
    transform: scale(1.5)  
    rotate(-5deg) translate(50px, 30px);  
}
```

Normal state

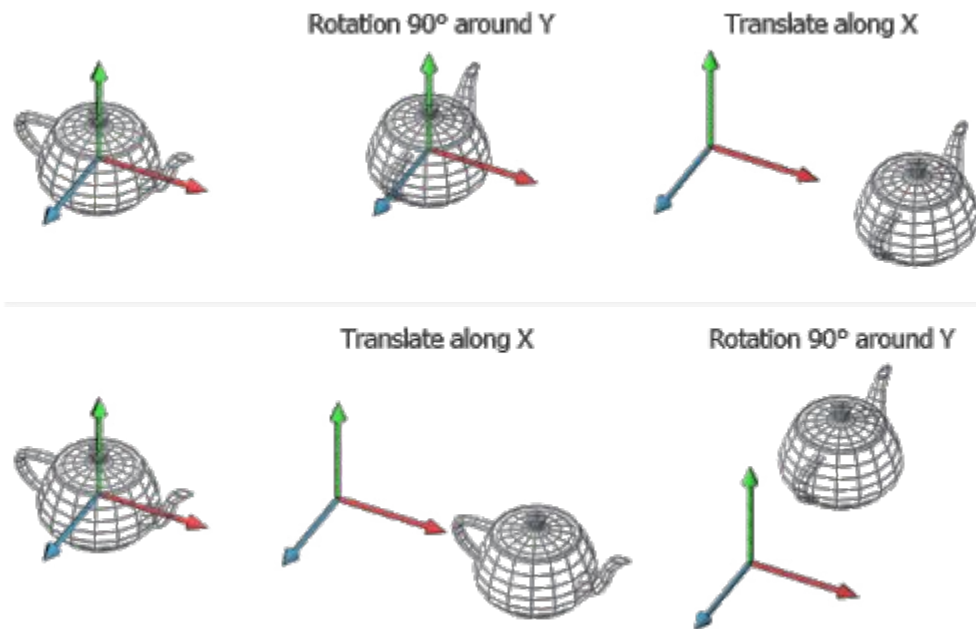


:hover, :focus
(rotate, translate, and scale applied)



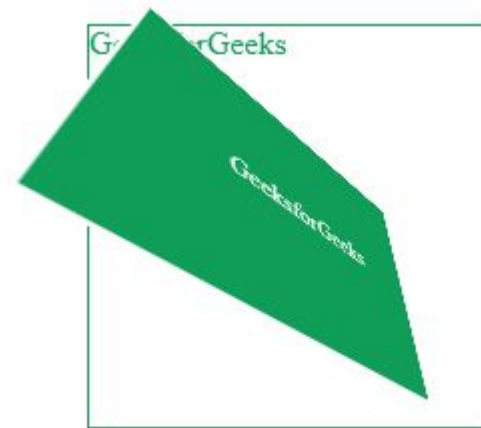
CSS transforms

Some operations are not commutative



CSS transforms

perspective: length | none | initial | inherit



Keyframe animation

```
@keyframes colors {  
  0% { background-color: red; }  
  20% { background-color: orange; }  
  40% { background-color: yellow; }  
  60% { background-color: green; }  
  80% { background-color: blue; }  
  100% { background-color: purple; }  
}
```



Animation properties

`animation-name`

Custom animation name

`animation-duration`

How long it should take

`animation-timing-function`

How it should accelerate

`animation-delay`

How long it waits before starting

`animation-iteration-count`

How many times it should repeat

`animation-direction`

Play forward, in reverse, or back and forth

`animation-play-state`

Whether it should be running or paused

`animation-fill-mode`

How to apply styles before and after execution

Shorthand notation

```
#magic {  
    animation-name: colors;  
    animation-duration: 5s;  
    animation-timing-function: linear;  
    animation-iteration-count: infinite;  
    animation-direction: alternate;  
}
```

```
#magic {  
    animation: colors 5s linear  
infinite alternate;  
}
```