

WEB前端基础 — HTML5和CSS3新特性快速参考

51CTO学院

讲师: HELEN

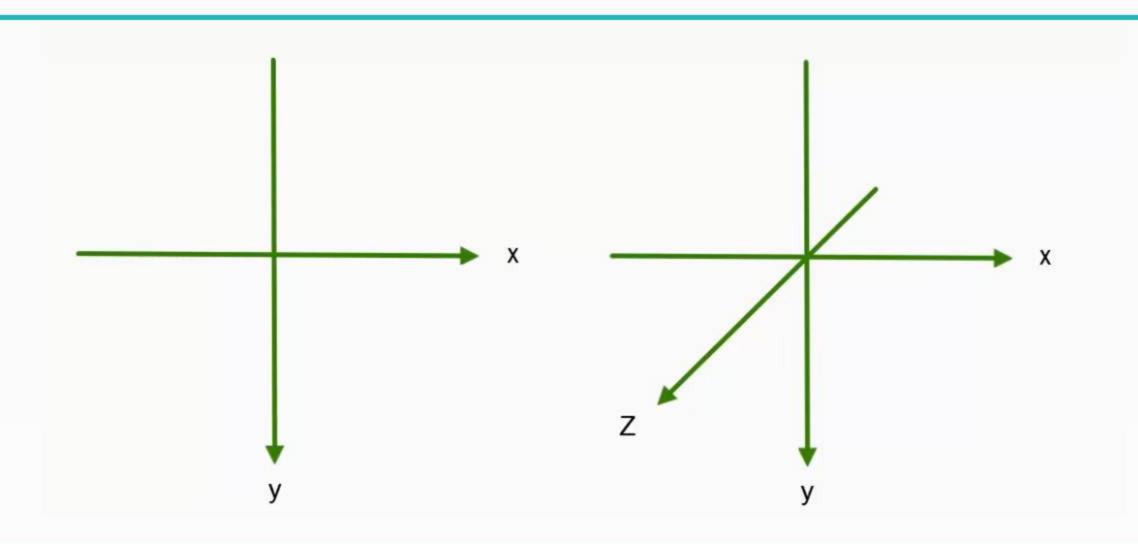




## 第二十六课

3D转换

## 2D空间和3D空间



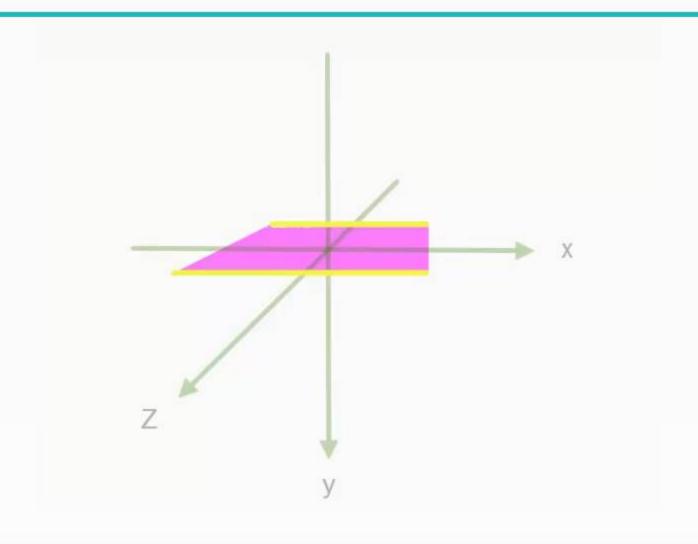
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## 3D转换

可以使用 transform 属性将HTML元素在3D空间内

- 旋转 rotate
- 移动 translate
- 缩放 scale

## 透视



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## 视点



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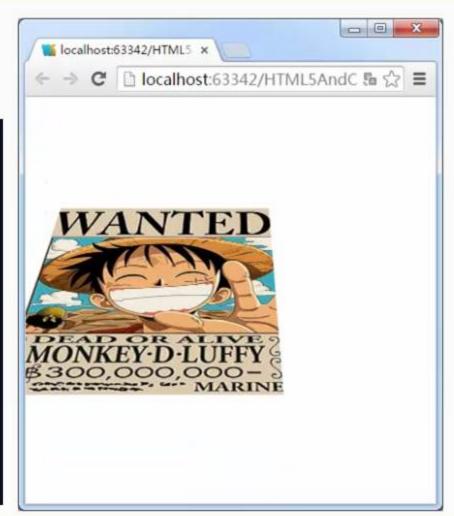
## 一个简单的例子

```
<div>
    <img src="lufei.jpg">
</div>
@-webkit-keyframes rotate {
    100% {transform: rotateX(60deg);}
img{
    -webkit-animation: rotate 2s linear 2s both;
```



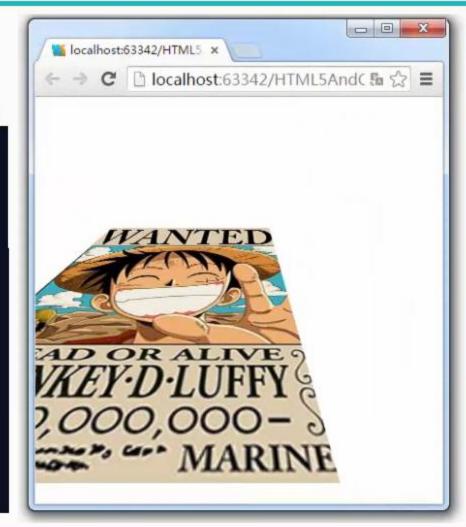
## perspective

```
视点和画面的距离
div {
    perspective: 1000px;
@-webkit-keyframes rotate {
   100% {transform: rotateX(60deg);}
img{
    -webkit-animation: rotate 2s linear 2s both;
```



## perspective

```
div {
    perspective: 300px;
@-webkit-keyframes rotate {
    100% {transform: rotateX(60deg);}
img{
    -webkit-animation: rotate 2s linear 2s both;
```



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## perspective

```
div {
    width: 250px;
    height: 375px;
    perspective: 300px;
@-webkit-keyframes rotate {
    100% {transform: rotateX(60deg);}
img{
    -webkit-animation: rotate 2s linear 2s both;
```



## perspective

```
div {
    width: 250px;
    height: 375px;
    perspective: 300px;
@-webkit-keyframes rotate {
    100% {transform: rotateX(90deg);}
img{
    -webkit-animation: rotate 2s linear 2s both;
```

```
localhost:63342/HTML5 x
← → C localhost:63342/HTML5AndC 5 ☆ =
```

## perspective-origin

```
div {
                           视点的位置
   width: 250px;
    height: 375px;
    perspective: 300px;
    perspective-origin: right top;
@-webkit-keyframes rotate {
    100% {transform: rotateX(90deg);}
img{
    -webkit-animation: rotate 2s linear 2s both;
```



## perspective-origin

值	x (默认值50%)	y ( 可选 默认值50% )	
描述	0,0点是所在元素的左上角		
可能的值	left center right 长度 百分比	top center bottom 长度 百分比	

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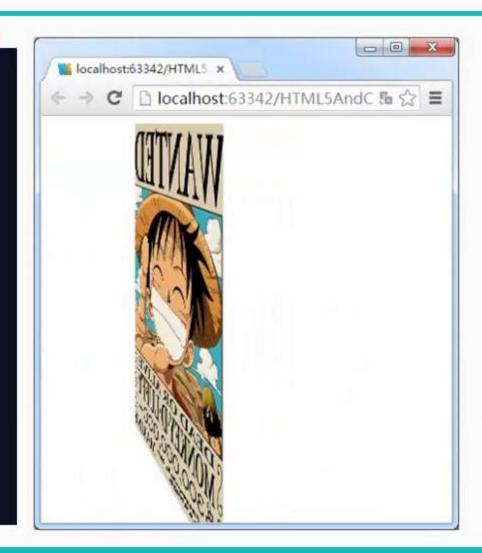
## 3D旋转

#### 转换函数

- rotateX(角度)
- rotateY(角度)
- rotateZ(角度)
- rotate3d(x, y, z, 角度)

## 3D旋转

```
div {
    width: 250px;
    height: 375px;
    perspective: 500px;
    perspective-origin: right top;
@-webkit-keyframes rotate {
    100% {transform: rotateY(360deg);}
img{
    -webkit-animation: rotate 2s linear 2s both;
```



## 3D旋转

```
div {
    width: 250px;
    height: 375px;
    perspective: 500px;
    perspective-origin: right top;
@-webkit-keyframes rotate {
    100% {transform: rotateZ(360deg);}
img{
    -webkit-animation: rotate 2s linear 2s both;
```



## transform-origin

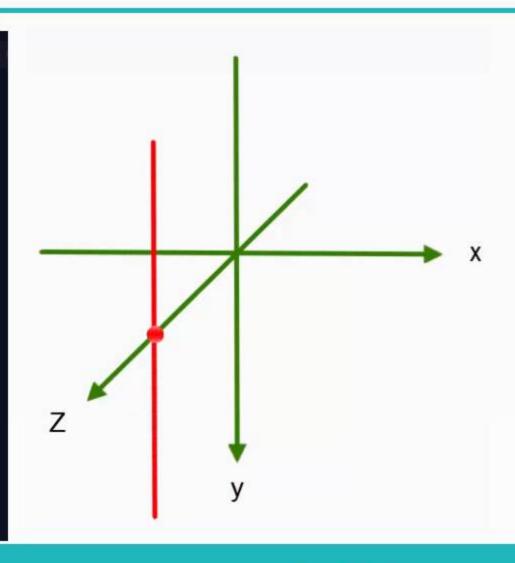
transform-origin: x y z;

值	x (默认值50%)	y ( 可选 默认值50% )	z ( 可选 默认值是0 )
描述	0,0点是所在元素的左上角		
可能的值	left center right 长度 百分比	top center bottom 长度 百分比	长度

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## transform-origin

```
div {
    width: 250px;
    height: 375px;
    perspective: 500px;
    perspective-origin: right top;
@-webkit-keyframes rotate {
    100% {transform: rotateY(360deg);}
}
img{
    -webkit-animation: rotate 2s linear 2s both;
    transform-origin: center center 100px;
```



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## backface-visibility

```
div {
   width: 250px;
   height: 375px;
    perspective: 500px;
    perspective-origin: right top;
@-webkit-keyframes rotate {
    100% {transform: rotateY(360deg);}
        设置元素背面是否见,默认值是visible
img{
    -webkit-animation: rotate 2s linear 2s both;
    transform-or gin: center center 100px;
    backface-visibility: hidden;
```

```
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← → C 🗋 localhost:63342/HTML5AndC 🖫 🏠 🗏
```

## 3D旋转

```
div {
    width: 250px;
    height: 375px;
    perspective: 500px;
    perspective-origin: right top;
                                 单位是px
@-webkit-keyframes rotate {
    100% {transform: rotate3d(1, 1, 1, 360deg);}
img{
    -webkit-animation: rotate 2s linear 2s infinite;
```

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## 3D移动

## 转换函数

- translateX(x)
- translateY(y)
- translateZ(z)
- translate3d(x, y, z)

## 3D移动

```
div {
    width: 250px;
    height: 375px;
    perspective: 500px;
    perspective-origin: right top;
@-webkit-keyframes rotate {
    0% {transform: translateZ(-100px);}
    50% {transform: translateZ(100px);}
    100% {transform: translateZ(-100px);}
img{
    -webkit-animation: rotate 2s linear 2s both infinite;
```



```
div {
                                                                Iocalhost:63342/HTML5 ×
    width: 250px;
                                                               ← → C 🗋 localhost:63342/HTML5AndC 🖫 🗘 🗏
    height: 375px;
    perspective: 500px;
    perspective-origin: right top;
                                 也可以是长度
@-webkit-keyframes rotate {
    50% {transform: translate3d(50%, 50%, 100px);}
    100% {transform: translate3d(0, 0, 0);}
                                            只能是长度
img{
    -webkit-animation: rotate 2s linear 2s both infinite;
```



## 3D缩放

#### 转换函数

- scaleX(z)
- scaleY(y)
- scaleZ(z)
- scale3d(x, y, z)

## 3D缩放

```
Iocalhost:63342/HTML5 x
div {
                                                               ← → C 🕒 localhost:63342/HTML5AndC 🖫 🏠 🛢
    width: 250px;
    height: 375px;
    perspective: 500px;
    perspective-origin: right top;
@-webkit-keyframes rotate {
    100% {transform: scaleZ(5) translateZ(100px);}
                     z轴放大5倍 实际移动了500px
img{
    -webkit-animation: rotate 2s linear 2s both infinite;
```

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## transform-style

值	描述
flat (默认值)	子元素将不保留其 3D 位置。
preserve-3d	子元素将保留其 3D 位置。

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# Thank You!

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