

Colors and backgrounds

Web development I: Front-end engineering

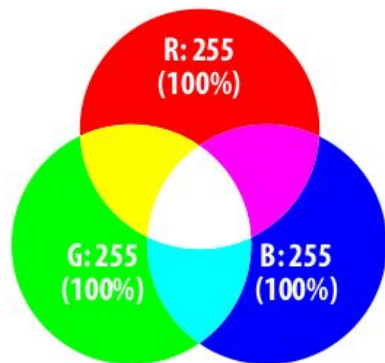
Color names

<https://www.w3.org/wiki/CSS/Properties/color/keywords>

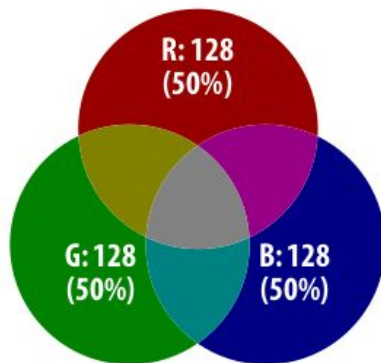
17 standard color names in CSS2.1

140 extended color names in CSS3

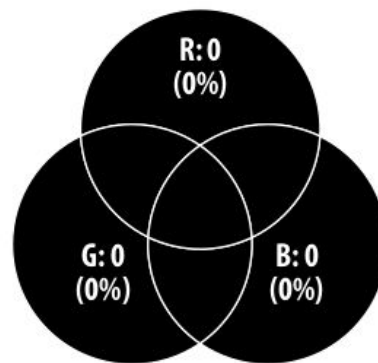
RGB color model



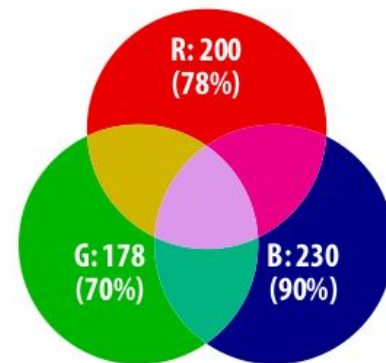
RGB: 255, 255, 255
White



RGB: 128, 128, 128
Gray



RGB: 0, 0, 0
Black



RGB: 200, 178, 230
Pleasant lavender

Why 255?

In true RGB color, 8 bits of information are devoted to each color channel.

8 bits can describe 256 shades ($2^8=256$), so colors are measured on a scale from 0 to 255.

Hexadecimal notation

#RRGGBB

hex RED value hex GREEN value hex BLUE value

Decimal	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Hex	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F

00

sixteens place ones place

The decimal number **32**
is represented as

20
2 sixteens and 0 ones

The decimal number **42**
is represented as

2A
2 sixteens and 10 ones

Playing with RGBa

Playing with RGBa

Playing with RGBa

```
h1 {color: rgba(0, 0, 0, .1);}
```

```
h1 {color: rgba(0, 0, 0, .5);}
```

```
h1 {color: rgba(0, 0, 0, 1);}
```

Opacity

```
h1 {color: green; background: white; opacity: .25;}
```

```
h1 {color: green; background: white; opacity: .5;}
```

```
h1 {color: green; background: white; opacity: 1;}
```

Playing with opacity

opacity: .25

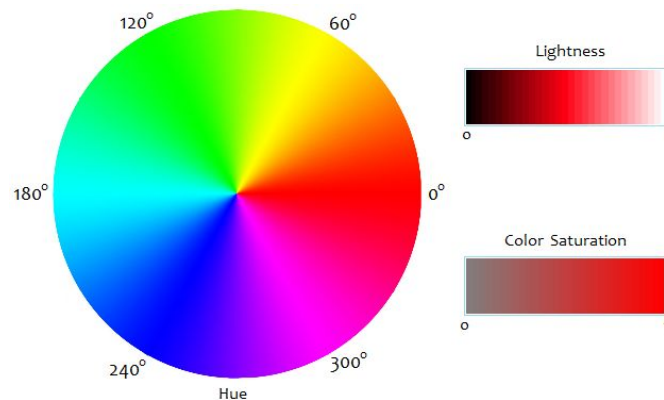
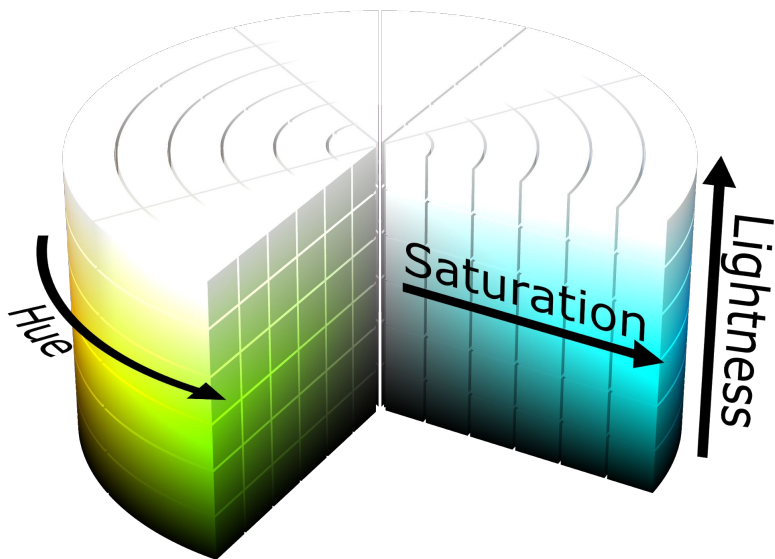
Playing with opacity

opacity: .5

Playing with opacity

opacity: 1

HSL color model



<https://www.w3.org/TR/css-color-3/#hsl-color>

Background Images

`background-image`

URL to image file

`background-repeat`

Tile direction

`background-position`

Position of the origin image

`background-attachment`

Position while scrolling

`background-clip`

How far the image should extend

`background-size`

Resizing properties

`background-origin`

How to count positioning measurements

`background`

Shorthand notation

Shorthand background notation

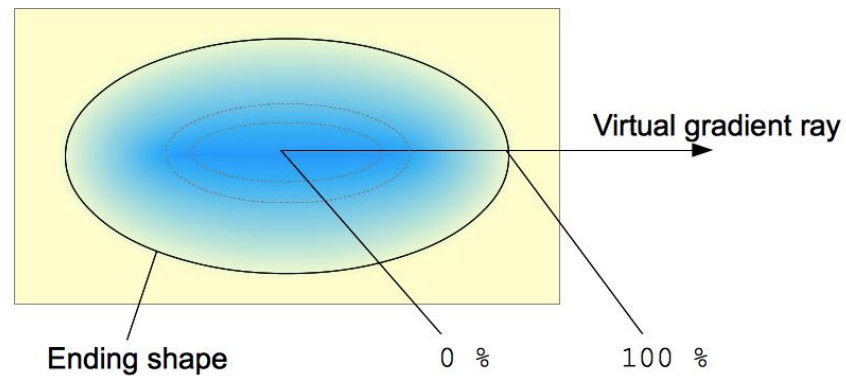
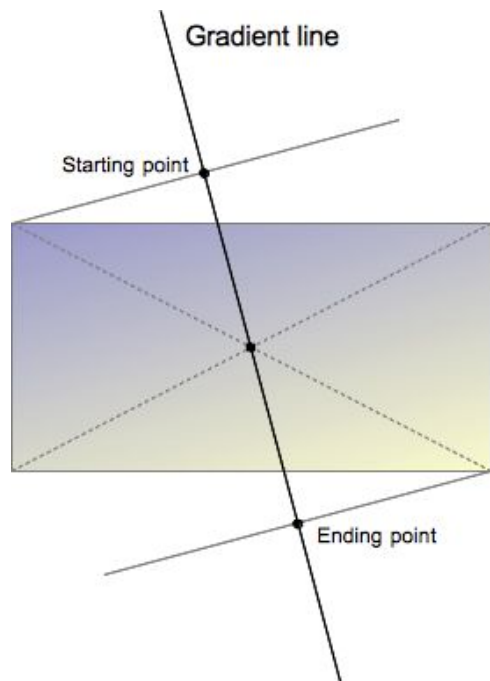
```
body {  
    background-color: white;  
    background-image: url(a.png);  
    background-repeat: no-repeat;  
    background-position: right top;  
    background-attachment: fixed;  
}
```

```
body {  
    background: #d2dc9d url(a.png)  
no-repeat center 100px fixed;  
}
```

Multiple backgrounds

```
body {  
    background-image: url(1.png), url(2.png), url(3.png);  
    background-position: left top, center center, right bottom;  
    background-repeat: no-repeat, no-repeat, no-repeat;  
}
```

Gradients



Linear gradients

[side-or-corner, angle, color-stop, color-hint](#)

`side-or-corner`

Position of the gradient line's starting point

`angle`

Gradient line's angle of direction

`color-stop`

Desired color(s)

`color-hint`

Interpolation hint defining how the gradient progresses between adjacent colors

Radial gradients

position, end-shape, size, color-stop, color-hint

position

Position of the gradient

end-shape

Gradient ending shape

size

Size of the gradient's ending shape

color-stop

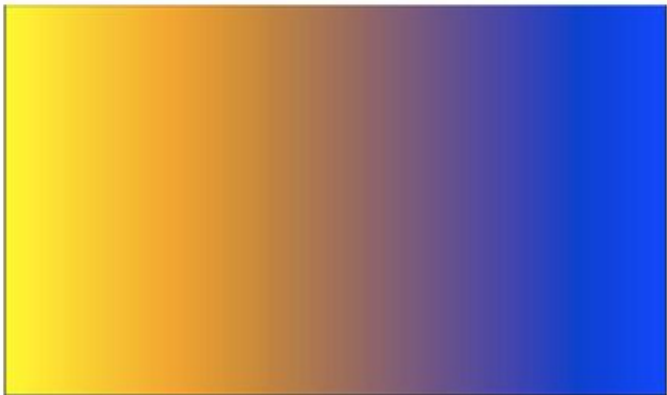
Desired color(s)

color-hint

Interpolation hint defining how the gradient progresses between adjacent colors

Gradients

```
div {  
  background: linear-gradient(90deg,  
    yellow, orange 25%, blue);  
}
```



```
div {  
  background: radial-gradient(circle at  
    center, yellow, green);  
}
```

