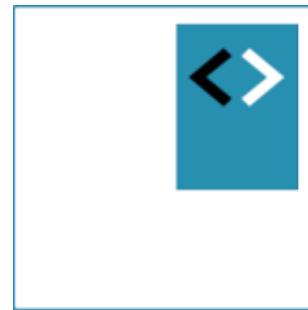




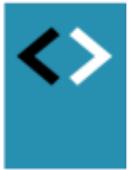
Ministerie van Defensie

HTML, CSS en JavaScript

Module 2 – CSS



Peter Kassenaar – info@kassenaar.com



Kennismaken met css

Pagina's opmaken en vormgeven

- CSS basics
- CSS 3

Doel CSS – pagina's vormgeven

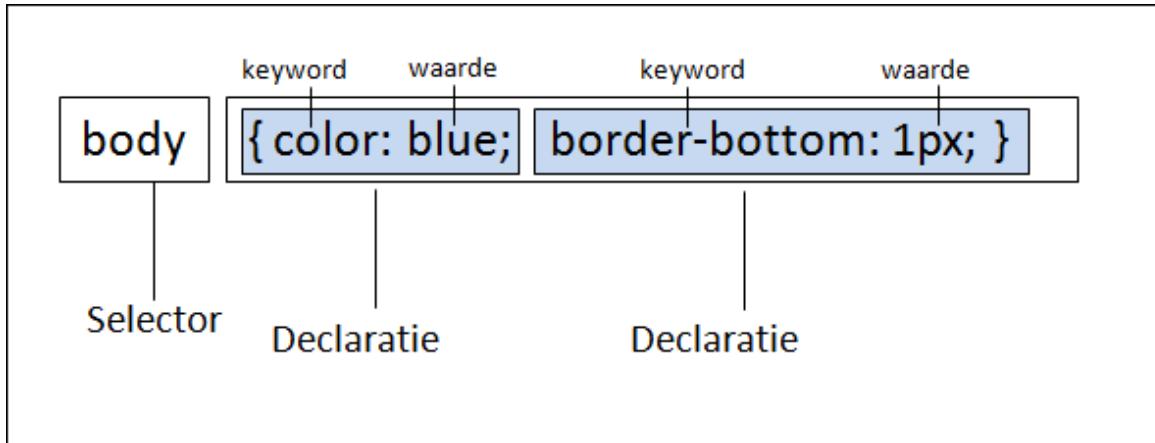
- *CSS – Cascading Style Sheets*
- Alle opmaakmogelijkheden op webpagina's
 - Voor- en achtergrondkleuren
 - Lettertypen, lettergrootte, regelafstand
 - Marges binnen en buiten elementen
 - Kolommen
 - Enzovoort.

Basis syntaxis

```
body{  
    color : #FF99CC;  
    background-color : #FFFFFF;  
    font-family : arial, sans-serif;  
    margin : 10px;  
    padding : 10px;  
}
```

Belangrijke begrippen:

- *selectors* en *declarations*
- *shorthand notation*



Kenmerken:

- selectors worden in kleine letters geschreven.
- De regel staat tussen { ... }
- Elke declaratie heeft een naam (**key**) en een waarde (**value**)
- Key en value worden met een dubbele punt gescheiden
- Elke declaratie wordt afgesloten met puntkomma;
- Een regel mag vele declaraties hebben

Stijlen combineren met HTML

- Embedded stylesheet
 - Binnen <style>...</style> in de header van de pagina
- Linked stylesheet
 - Met <link rel="stylesheet" href="stijlen.css" />
- Voordeel linked stylesheets:
 - Hergebruik
 - Separate ontwikkeling door designer

Enkele basis opmaakstijlen

```
color : #rrggb;  
font-family : lettertypenaam;  
font-size : 14px;  
font-weight : bold | normal;  
text-decoration : underline | none;  
text-align : left | right | center;  
line-height : 20px;
```

Zie ook <http://www.w3schools.com/css/>

CSS Tutorial

CSS HOME

- CSS Introduction
- CSS Syntax
- CSS How To
- CSS Colors
- CSS Backgrounds
- CSS Borders
- CSS Margins
- CSS Padding
- CSS Height/Width
- CSS Box Model
- CSS Outline
- CSS Text
- CSS Fonts
- CSS Icons
- CSS Links
- CSS Lists
- CSS Tables
- CSS Display
- CSS Max-width
- CSS Position
- CSS Overflow
- CSS Float

CSS Tutorial

[◀ Home](#)[Next ▶](#)

CSS is a language that describes the style of an HTML document.

CSS describes how HTML elements should be displayed.

This tutorial will teach you CSS from basic to advanced.

Examples in Each Chapter

This CSS tutorial contains hundreds of CSS examples.

With our online editor, you can edit the CSS, and click on a button to view the result.

CSS Example

```
body {  
    background-color: lightblue;  
}  
  
h1 {
```

Drie typen Selectors

- Elementen

```
<p>Dit is een paragraaf</p>
```

```
p { ... }
```

- Classes

```
<p class="klasseNaam">...</p>
```

```
.klasseNaam { ... }
```

- Id's

```
<p id="idNaam">...</p>
```

```
#idNaam { ... }
```



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Regels voor selectors

- Deel je HTML-document in en bepaal de logische onderdelen.
Benoem deze met een `id` **of** `class`.
- Een `id` moet uniek zijn binnen een pagina. Mag dus maar één keer voorkomen.
- Een `class` mag onbeperkt worden gebruikt.
- Elementen kunnen meerdere classes hebben! Ze vullen elkaar dan aan.

Syntaxis voor selectors

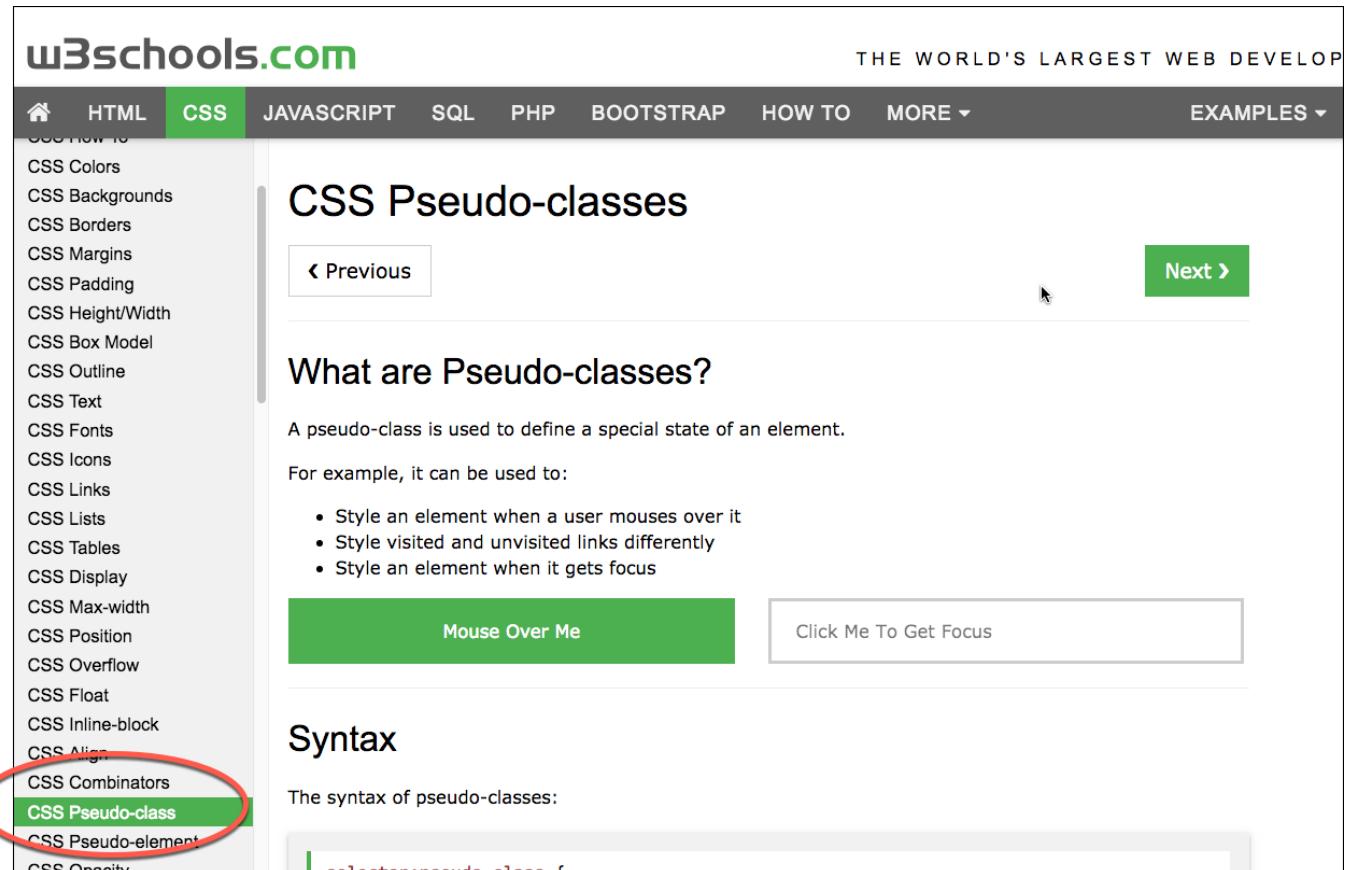
- Namen van selectors mogen alleen letters, cijfers, koppeltekens en underscore bevatten
- Selectornaam mag nooit beginnen met een cijfer
- Selectornaam mag nooit spaties bevatten
- Selectors mogen wel gecombineerd worden!
 - div#content
 - main.links
 - a.extern:hover
 - table#telefoonnummers

Contextual en multiple selectors

- Grottere specificiteit opgeven voor selectors
- Spaties: regel geldt voor elementen-binnen-elementen
 - `ul li a { ... }` geldt alleen voor alle hyperlinks binnen li-tags, binnen een ul-tag
 - `table tr td p { ... }` - geldt alleen voor paragrafen in tabelcellen, in tabelrijen, in tabellen.
- Komma's : regel geldt voor *alle* elementen
 - `h1, h2, h3 { ... }`

Pseudo selector

- Aangegeven met een dubbele punt
- Deze zet je achter de selectornaam.
- Bijvoorbeeld:
 - a:hover



The screenshot shows the w3schools.com website with the URL https://www.w3schools.com/css/css_pseudo_classes.asp. The page title is "CSS Pseudo-classes". On the left, there's a sidebar with various CSS topics. The "CSS Pseudo-class" link is highlighted with a red oval. The main content area starts with the heading "What are Pseudo-classes?". It explains that a pseudo-class is used to define a special state of an element. It lists examples: "Style an element when a user mouses over it", "Style visited and unvisited links differently", and "Style an element when it gets focus". Below this, there are two interactive buttons: a green button labeled "Mouse Over Me" and a white button labeled "Click Me To Get Focus". The syntax section shows the CSS selector syntax: "selector:pseudo-class {".

https://www.w3schools.com/css/css_pseudo_classes.asp

Meer over pseudo selectors



P. 107 en
verder

Meer over selectoren

http://www.w3schools.com/cssref/css_selectors.asp

The screenshot shows the w3schools.com website with the URL http://www.w3schools.com/cssref/css_selectors.asp in red at the top. The page title is "CSS Selector Reference". The left sidebar has a green header "CSS Reference" and lists various CSS topics, with "CSS Selectors" highlighted in green. The main content area starts with a note about browser compatibility and then defines what CSS Selectors are. It includes a table showing examples of CSS selectors.

THE WORLD'S LARGEST WEB DEVELOPER SITE

REFERENCES ▾ EXAMPLES ▾ 🔍

CSS Reference

CSS Reference

CSS Selectors

CSS Functions

CSS Reference Aural

CSS Web Safe Fonts

CSS Animatable

CSS Units

CSS PX-EM Converter

CSS Colors

CSS Color Values

CSS Default Values

CSS3 Browser Support

CSS Entities

CSS Properties

align-content

align-items

align-self

CSS Selector Reference

◀ Previous Next ▶

W3Schools' CSS reference is tested regularly with all major browsers.

CSS Selectors

In CSS, **selectors** are patterns used to select the element(s) you want to style.

Use our [CSS Selector Tester](#) to demonstrate the different selectors.

The "CSS" column indicates in which CSS version the property is defined (CSS1, CSS2, or CSS3).

Selector	Example	Example description	CSS
class	intro	Selects all elements with	1

Basisgroepen stijlen

- Responsive
- Kleuren
- Achtergronden
- Randen
- Witruimtes:
 - Margin
 - Padding
- Hoogte en breedte
- Lettertypen

Responsive

- Gebruik de meta-tag voor Viewport:
- ```
<meta name="viewport"
 content="width=device-width, initial-scale=1">
```
- Uitbreiden? Gebruik Media Queries: bijvoorbeeld:

```
@media screen and (min-width: 480px) {
 body {
 background-color: lightgreen;
 }
}

@media screen and (max-width: 480px) {
 body {
 background-color: #rgb(73, 40, 219);
 }
}
```



p.186

[https://www.w3schools.com/css/css3\\_mediaqueries.asp](https://www.w3schools.com/css/css3_mediaqueries.asp)

# CSS-Kleuren

- Geldige waarden voor kleuren:
- *Naam*: red, blue, green, etc.
  - p { color: red; }
  - [http://www.w3schools.com/colors/colors\\_names.asp](http://www.w3schools.com/colors/colors_names.asp)
- *RGB* waarde voor rood, groen en blauw
  - Waarde ligt tussen 0 - 255
  - p { color: rgb(255, 127, 127) }
- *Hexadecimale* waarde:
  - Waarde ligt tussen 0-9 en A-F
  - p { color: #339966 }
- [http://www.w3schools.com/css/css\\_colors.asp](http://www.w3schools.com/css/css_colors.asp)



# Color gradients samenstellen

## Ultimate CSS Gradient Generator

A powerful Photoshop-like CSS gradient editor from [ColorZilla](#).

For Firefox | For Chrome | Gradient Generator

Presets

Name:

hue/saturation

Stops

Opacity:  Location:

Color: Location:

Sponsor

Preview

Orientation:  Size:  x   IE

CSS

```
/* Permalink - use to edit and share this gradient:
 http://colorzilla.com/gradient-editor/#1e5799+0,7db9e8+100&0.3+0,0+100;Blue+to+Transparent
*/
background: -moz-linear-gradient(top,
 rgba(30,87,153,0.3) 0%, rgba(125,185,232,0) 100%);
/* FF3.6-15 */
background: -webkit-linear-gradient(top,
 rgba(30,87,153,0.3) 0%,rgba(125,185,232,0) 100%);
/* Chrome10-25,Safari5.1-6 */
background: linear-gradient(to bottom,
 rgba(30,87,153,0.3) 0%,rgba(125,185,232,0) 100%);
/* W3C, IE10+, FP16+, Chrome26+, Opera12+, Safari7+
 */
filter: progid:DXImageTransform.Microsoft.gradient(
 startColorstr='#1e5799',
 endColorstr='#007db9e8',GradientType=0); /* IE6-9
 */

```

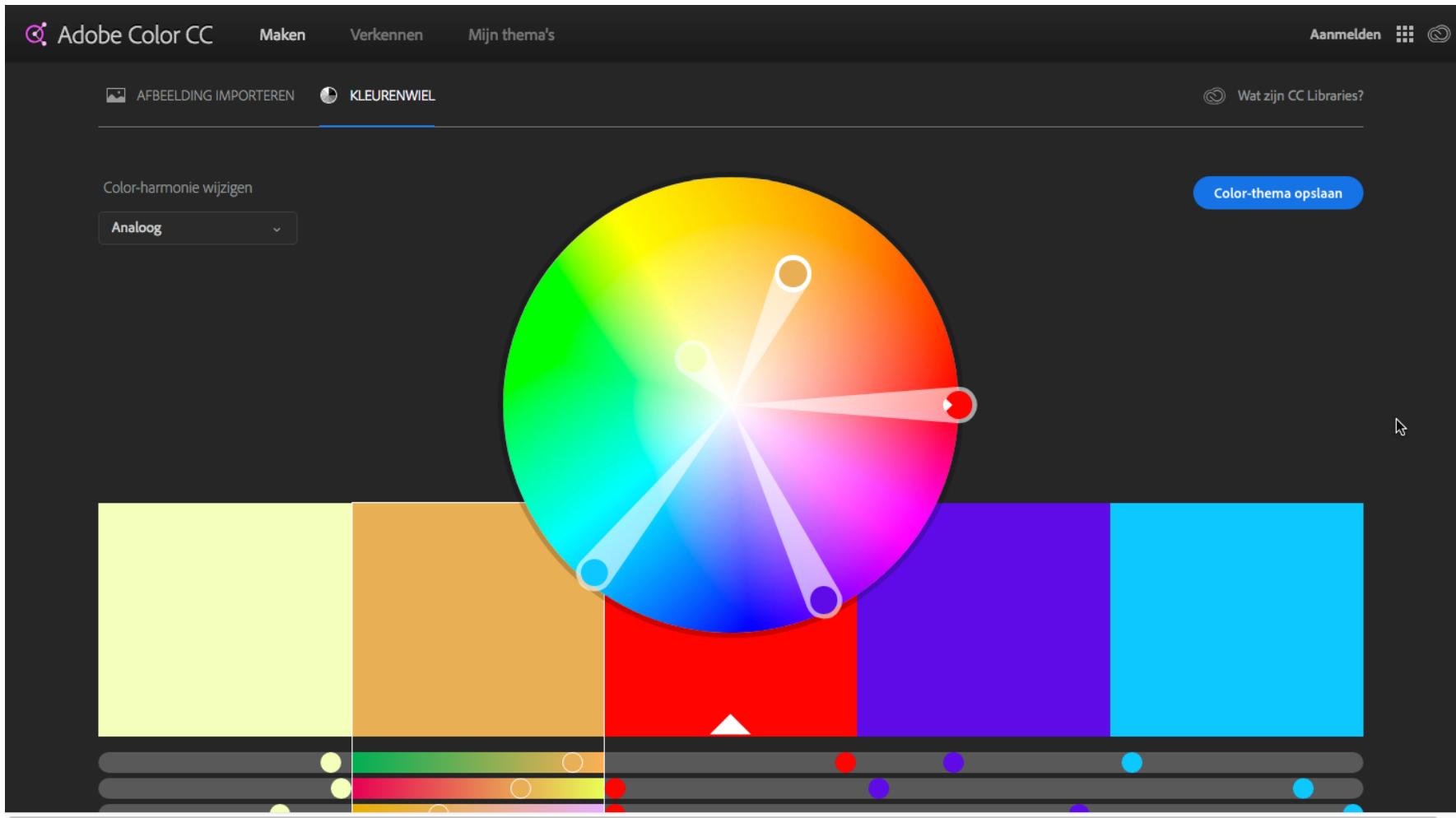
Current gradient has opacity, switching color format to 'rgba'

Color format:   Comments

27K

<http://www.colorzilla.com/gradient-editor/>

# Adobe Color



<https://color.adobe.com/nl/>

# Adobe Capture in de App Store

The screenshot shows the Adobe Capture CC app page in the App Store. At the top, there's a navigation bar with links for Mac, iPad, iPhone, Watch, TV, Music, Support, a search icon, and a shopping cart icon. Below the navigation is a section titled "App Store-preview" with a note: "Deze app is uitsluitend beschikbaar in de App Store voor iOS-apparaten." The main feature is the "Adobe Capture CC" app, which is described as "Middelen maken voor ontwerpers" by "Adobe". It has a rating of #133 in Productiviteit, 4.7 stars from 462 reviews, and is free with in-app purchases. Below the app info are four screenshots labeled "Schermafbeeldingen" showing various features: 1. A library interface with "Beans" and "Coffee Leaf" items. 2. A font selection screen with "Organic" text. 3. A camera viewfinder overlaying a coffee cup image. 4. A pattern creation screen with a green leaf. A cursor arrow is visible on the right side of the page.

<https://itunes.apple.com/nl/app/adobe-capture-cc/id1040200189?mt=8>

# Stylifyme – online tool voor color analysis

The screenshot shows the Stylifyme interface for the website <http://nos.nl>. The main heading is "Stylify Me". Below it, there's a link "About Stylify Me »". A red arrow points to a "Download" button, which is circled in red. The interface is divided into sections: "Background Colours" and "Text Colours", each displaying eight color swatches with their corresponding HEX codes. Below these are sections for "Font", "Size", "Leading", and "Colour", showing the current settings and a preview of the text "The quick brown fox jumps over the lazy dog".

Background Colours

|             |             |             |             |             |             |             |             |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| HEX #ffffff | HEX #cc0000 | HEX #e3e3e3 | HEX #fafbfd | HEX #f1f1f1 | HEX #212121 | HEX #fafafa | HEX #333333 |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|

Text Colours

|             |             |             |             |             |             |             |             |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| HEX #333333 | HEX #e3e3e3 | HEX #999999 | HEX #ffffff | HEX #444444 | HEX #f1f1f1 | HEX #000000 | HEX #cc0000 |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|

Font: 'Helvetica Neue', Arial, sans-serif, normal, 18px, 23.390625px, #333333

Size: 18px

Leading: 23.390625px

Colour: #333333

The quick brown fox jumps over the lazy dog and feels as if he were in :

Font: 'Helvetica Neue', Arial, sans-serif, normal, 29px, 37.4375px, #333333

Size: 29px

Leading: 37.4375px

Colour: #333333

The quick brown fox jumps over the lazy dog

<http://stylifyme.com/?stylify=nos.nl>

[CSS Tutorial](#)[CSS HOME](#)[CSS Introduction](#)[CSS Syntax](#)[CSS How To](#)**CSS Colors**[CSS Backgrounds](#)[CSS Borders](#)[CSS Margins](#)[CSS Padding](#)[CSS Height/Width](#)[CSS Box Model](#)[CSS Outline](#)[CSS Text](#)[CSS Fonts](#)[CSS Icons](#)[CSS Links](#)[CSS Lists](#)[CSS Tables](#)[CSS Display](#)[CSS Max-width](#)[CSS Position](#)[CSS Overflow](#)[CSS Float](#)[CSS Flexbox](#)

# CSS Colors

[◀ Previous](#)[Next ➤](#)

Colors are specified using predefined color names, or RGB, HEX, HSL, RGBA, HSLA values.

## Color Names

In HTML, a color can be specified by using a color name:

[Tomato](#)[Orange](#)[DodgerBlue](#)[MediumSeaGreen](#)[Gray](#)[SlateBlue](#)[Violet](#)[LightGray](#)[Try it Yourself ➤](#)

HTML supports [140 standard color names](#).

# CSS-achtergronden

Achtergrond van een element instellen.

Eigenschappen:

- background-color - kleur voor achtergrond
- background-image - afbeelding voor achtergrond
- background-repeat - herhaling van afbeeldingsachtergrond
- background-attachment - vastzetten of meescrollen achtergrond
- background-position - startpositie van achtergrondafbeelding

[http://www.w3schools.com/css/css\\_background.asp](http://www.w3schools.com/css/css_background.asp)

# CSS-randen

- Rand van een element instellen

- border-style - vaste lijn, stippellijn, dubbele lijn, etc.
- border-width - breedte van de lijn in pixels, procenten, em, etc.
- border-color - kleur van de rand
- border-left|right|top|bottom - één rand instellen
- border-radius - ronde hoeken instellen (=CSS3)

Left Border

```
p {
 border-left: 6px solid red;
 background-color: lightgrey;
}
```

Result:

Some text

# CSS- box model

- Witruimte binnen en buiten het element instellen
- Elementen 'lucht geven' ten opzichte van elkaar
- Volgorde: top right bottom left



# Margin

- Genereert witruimte rondom een element
- In te stellen in pixels, procenten, em, etc.
- Ook voor individuele kanten van een element:
  - margin-top
  - margin-right
  - margin-bottom
  - margin-left

[http://www.w3schools.com/css/css\\_margin.asp](http://www.w3schools.com/css/css_margin.asp)

# Padding

- Genereert witruimte binnen een element (=binnen de rand)
- In te stellen in pixels, procenten, em, etc.
- Ook voor individuele kanten van een element:
  - padding-top
  - padding-right
  - padding-bottom
  - padding-left

[http://www.w3schools.com/css/css\\_margin.asp](http://www.w3schools.com/css/css_margin.asp)

# Hoogte en breedte

- Gebruik `width` en `height` om breedte en hoogte van element in te stellen
- Maateenheden opnieuw percentages, pixels, em, etc.
  - `div { width: 200px; height: 200px; }`
- Minimale en Maximale hoogte en breedte:
  - `min-width`
  - `min-height`
  - `max-width`
  - `max-height`
- [http://www.w3schools.com/css/css\\_dimension.asp](http://www.w3schools.com/css/css_dimension.asp)

# Oefening

- 2 g),
- 2 h),
- 2 i)



p.124 – 141: box model, randen, weergavemodel

# Lettertypen

- Algemene lettertype families
  - serif, sans-serif, monospace
- Als je een lettertype opgeeft, is het instellen van een algemene lettertypefamilie (als laatste) verplicht
- font-family als algemene eigenschap
  - Fallback-systeem: eerst wordt het eerste font gezocht, anders het volgende font, enzovoort.
  - `body { font-family: Arial, Verdana, sans-serif; }`
  - `body { font-family: "Times New Roman", Georgia, serif; }`

[http://www.w3schools.com/css/css\\_font.asp](http://www.w3schools.com/css/css_font.asp)

# Weergave van lettertype

- font-style
  - normal
  - italic
  - oblique ("klein beetje schuin", wordt niet vaak gebruikt)
- font-size
  - pixels, em, percentage
  - Meestal: standaardlettergrootte = 16px/1em
- font-weight
  - Gewicht van het lettertype
  - normal
  - bold
  - Getal van 100 – 900 (niet overal ondersteund)
- font-variant
  - normal
  - small-caps

# Google Web fonts

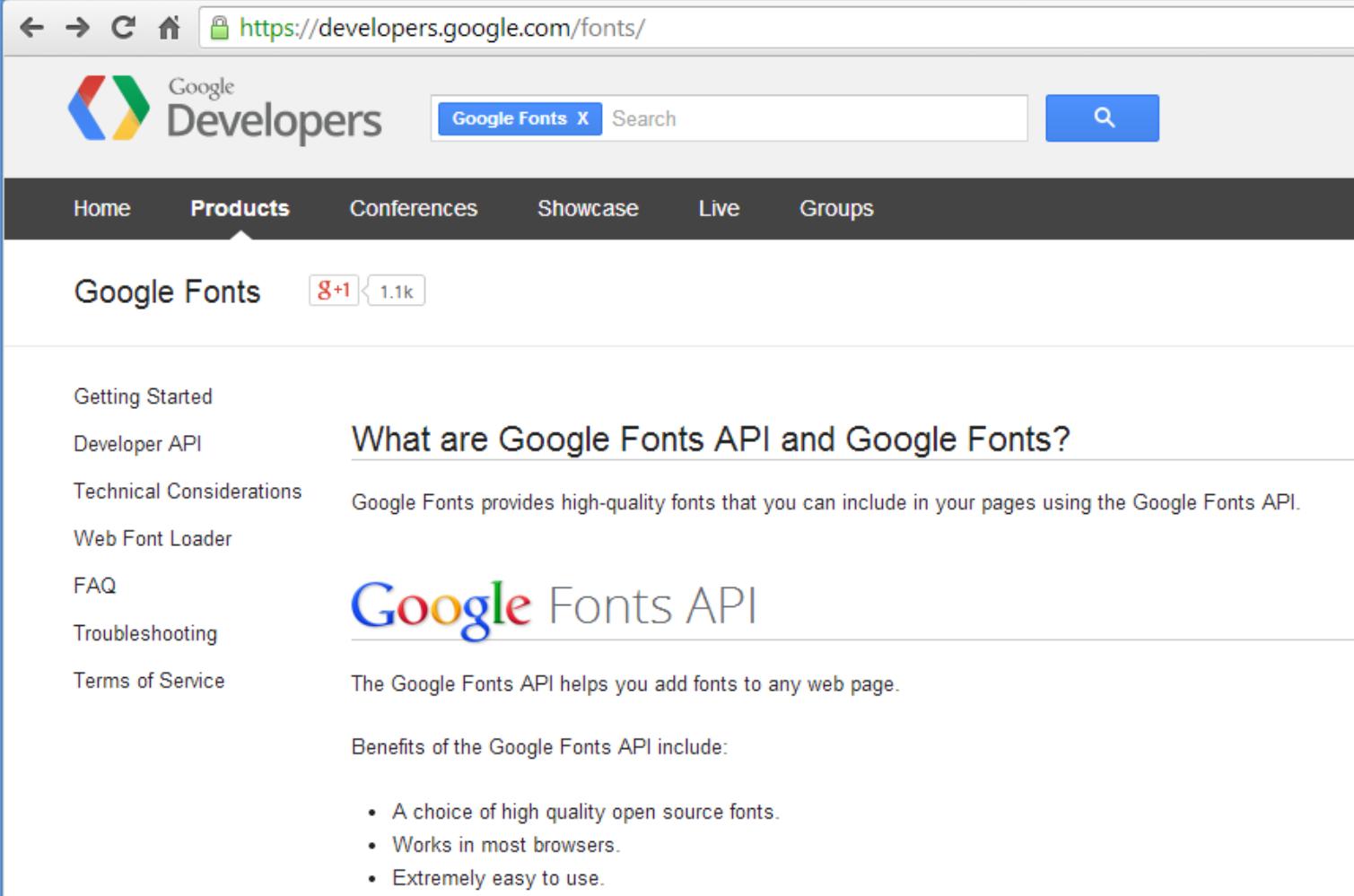
- Doel: meer dan alleen standaardletters Arial, Helvetica, Times, etc.
- Algemene werking, snelste manier:
  - Maak verwijzing naar Google font API
  - Gebruik `font-family` naam in stylesheet

```
1 <html>
2 <head>
3 <link rel="stylesheet" type="text/css" href="http://fonts.googleapis.com/css?family=Tangerine">
4 <style>
5 body {
6 font-family: 'Tangerine', serif;
7 font-size: 96px;
8 }
9 </style>
10 </head>
11 <body>
12 <div>Making the Web Beautiful!</div>
13 </body>
14 </html>

```



# Naslag – Google Fonts API



The screenshot shows a web browser window displaying the Google Fonts API documentation on the Google Developers website. The URL in the address bar is <https://developers.google.com/fonts/>. The page features the Google Developers logo and navigation links for Home, Products (which is currently selected), Conferences, Showcase, Live, and Groups. On the left sidebar, there are links for Getting Started, Developer API, Technical Considerations, Web Font Loader, FAQ, Troubleshooting, and Terms of Service. The main content area is titled "What are Google Fonts API and Google Fonts?" and includes a brief description: "Google Fonts provides high-quality fonts that you can include in your pages using the Google Fonts API." Below this, the "Google Fonts API" logo is displayed, followed by the text: "The Google Fonts API helps you add fonts to any web page." A section titled "Benefits of the Google Fonts API include:" lists three items: "A choice of high quality open source fonts.", "Works in most browsers.", and "Extremely easy to use."

<https://developers.google.com/fonts/>

# **Uitbreider – fonts downloaden**

- Typekit.com of Font Squirrel
    - <http://www.fontsquirrel.com/>
    - <https://typekit.com/>
1. Download font
  2. Maak definitie met @font-face
  3. Gebruik font in andere stijldefinities

 typekit by Adobe

Register Sign in

Tour Pricing Browse Fonts Browse Lists Gallery About Blog Support

# The easiest way to use **REAL FONTS** on your website

Jubilat by Darden Studio and Brandon Grotesque by HVD Fonts

Typekit Enterprise



Unlimited users, unlimited usage, CDN integration, and more.

A snap to set up

We've worked hard to make Typekit easy to use. Add fonts to your website with just one line of code.

Try it for free

Feature Tour Try it for Free

Copyright © 2013 Adobe Systems Incorporated. All rights reserved.  
Terms of Use | Typekit Privacy Policy and Cookies | Developers | @Typekit

Change language: English | Français | 日本語

<https://typekit.com>



<https://typekit.com/>

(vaak: commercieel)

**FONT SQUIRREL**  
100% Free For Commercial Use.

HOME FIND FONTS HOT RECENT WEBFONT GENERATOR FAQ

SEARCH FONTS & FOUNDRIES

**FREE FONT UTOPIA**

Free fonts have met their match. We know how hard it is to find quality freeware that is licensed for commercial work. We've done the hard work, hand-selecting these typefaces and presenting them in an easy-to-use format. Here are some of our favorites:

Source Sans Pro AaBbCcDdEeFfGgHhIi

Source Sans Pro Adobe 12 Styles DOWNLOAD TTF

Sou Unzip e Pro AaBbCcDdEe

Source Sans Pro Adobe 7 Styles DOWNLOAD OTF

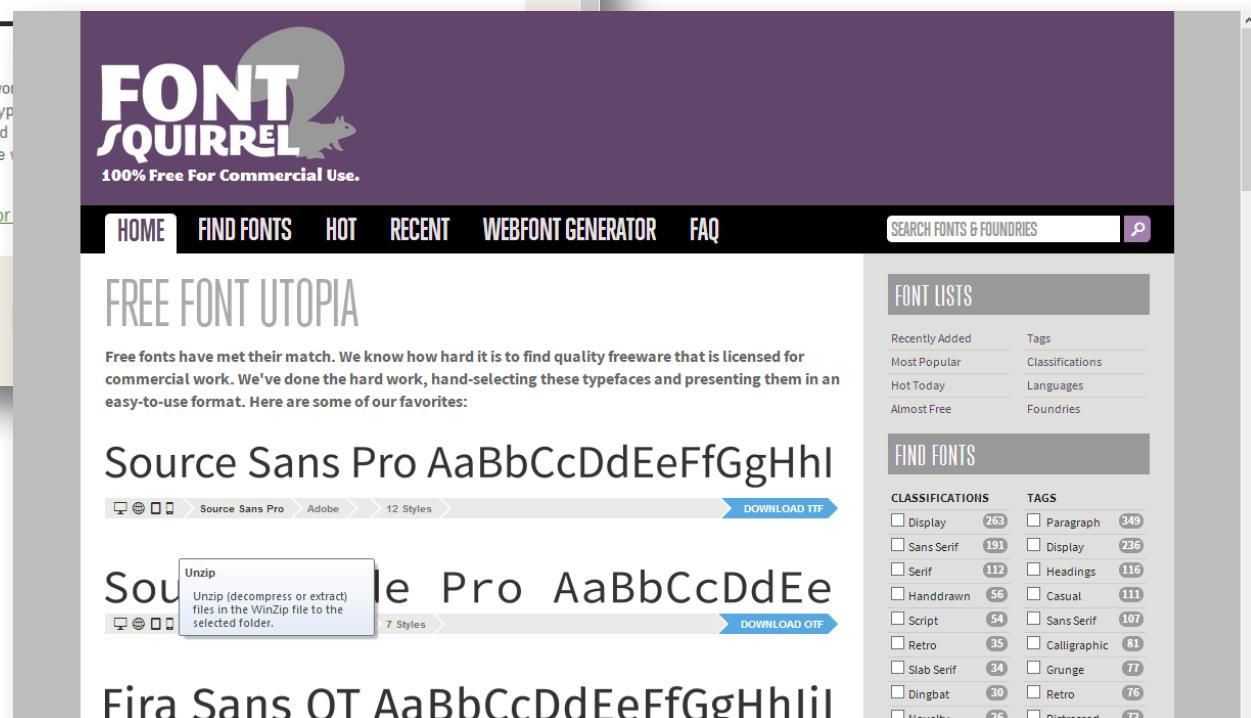
Fira Sans OT AaBbCcDdEeFfGgHhIiJj

**FONT LISTS**

| Recently Added | Tags            |
|----------------|-----------------|
| Most Popular   | Classifications |
| Hot Today      | Languages       |
| Almost Free    | Foundries       |

**FIND FONTS**

| CLASSIFICATIONS                         | TAGS                                     |
|-----------------------------------------|------------------------------------------|
| <input type="checkbox"/> Display 263    | <input type="checkbox"/> Paragraph 349   |
| <input type="checkbox"/> Sans Serif 191 | <input type="checkbox"/> Display 236     |
| <input type="checkbox"/> Serif 112      | <input type="checkbox"/> Headings 116    |
| <input type="checkbox"/> Handrawn 56    | <input type="checkbox"/> Casual 111      |
| <input type="checkbox"/> Script 54      | <input type="checkbox"/> Sans Serif 107  |
| <input type="checkbox"/> Retro 35       | <input type="checkbox"/> Calligraphic 81 |
| <input type="checkbox"/> Slab Serif 34  | <input type="checkbox"/> Grunge 77       |
| <input type="checkbox"/> Dingbat 30     | <input type="checkbox"/> Retro 76        |
| <input type="checkbox"/> Novelty 26     | <input type="checkbox"/> Distressed 73   |



<http://www.fontsquirrel.com/>

(meer open source)

```
1 <html>
2 <head>
3 <style>
4 @font-face {
5 font-family: Aller;
6 src: url(fonts/Aller_Rg.ttf);
7 }
8
9 body {
10 font-family: 'Aller', sans-serif;
11 font-size: 72px;
12 }
13 </style>
14 </head>
15 <body>
16 <div>Font: Aller, van Font Squirrel</div>
17 </body>
18 </html>
19
```

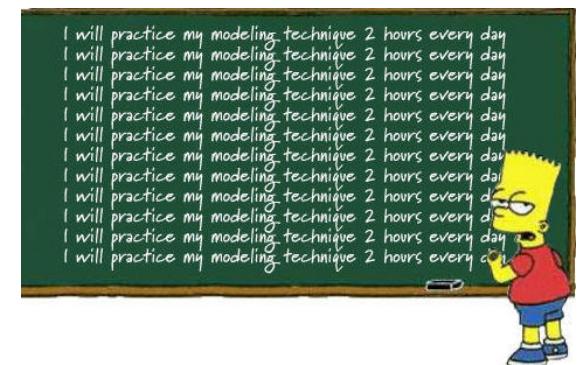


Let op:

- juiste formaat voor browsers (.eot, .woff, .ttf)
- licenties/gebruik

# Oefening

- Maak een pagina waarin je een lettertype rechtstreeks vanaf Google Font API gebruikt
- Download een eigen font bij Typekit of Font Squirrel en gebruik dit in een pagina.
- Gebruik de @font-face syntaxis





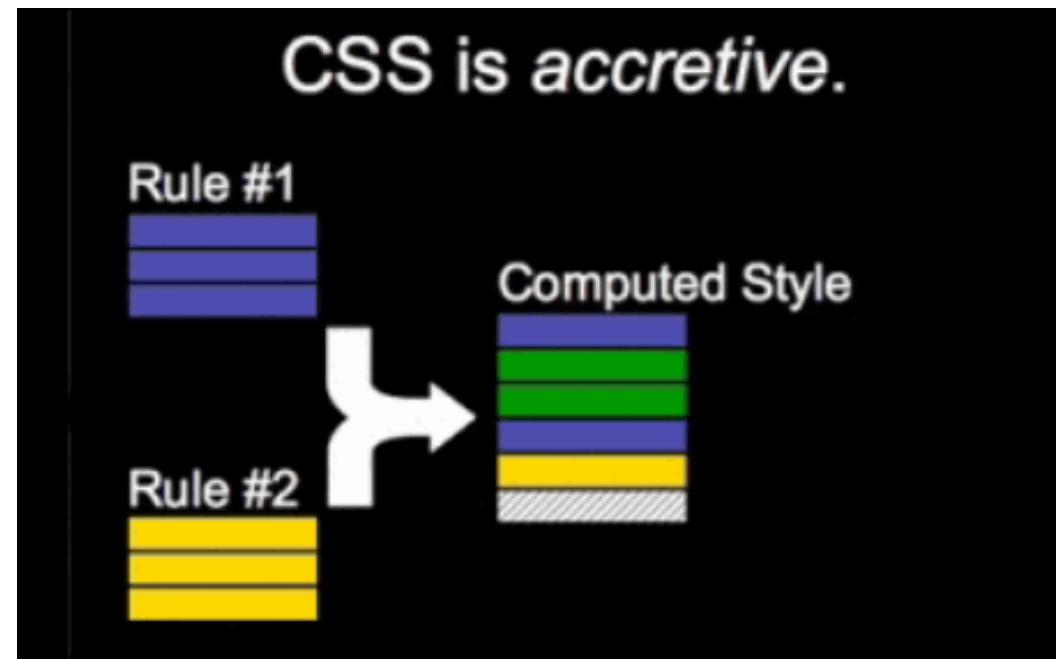
# Meer algemene CSS-kenmerken

Maateenheden, box model, shorthand syntaxis,  
weergavemodel

# **Cascading Style Sheets**

- Bepalen van prioriteit van *aanvullende* of *conflicterende* CSS-regels
- Volgorde?
  1. Linked Stylesheets  
(`<link rel="stylesheet" href="styles.css" />`)
  2. Embedded Stylesheets (`<style>...</style>`)
  3. Inline styles
- Wie wint?
  - Regels kunnen elkaar aanvullen en overrulen
  - 'Last one wins'

Alle definities worden door de browser samengevoegd voordat de uiteindelijke presentatie van het element wordt berekend.



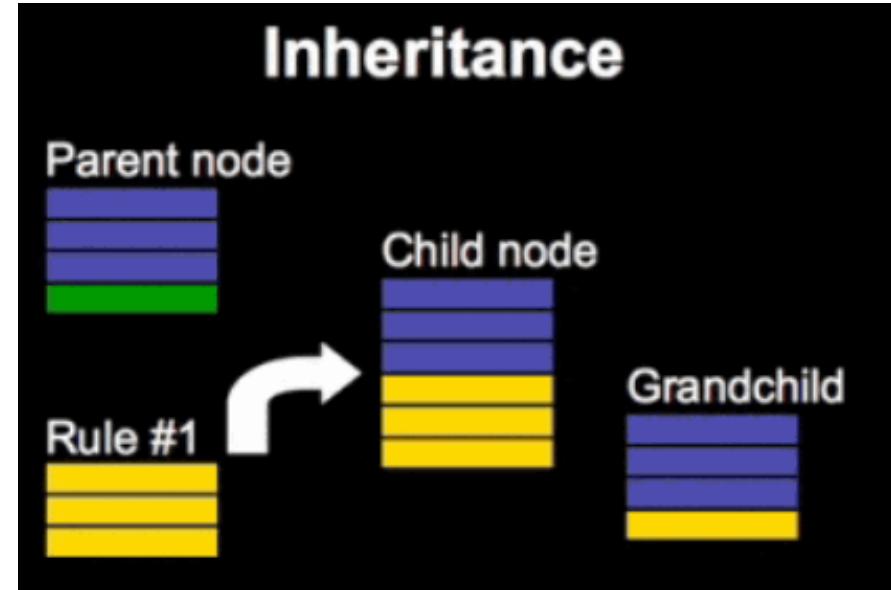
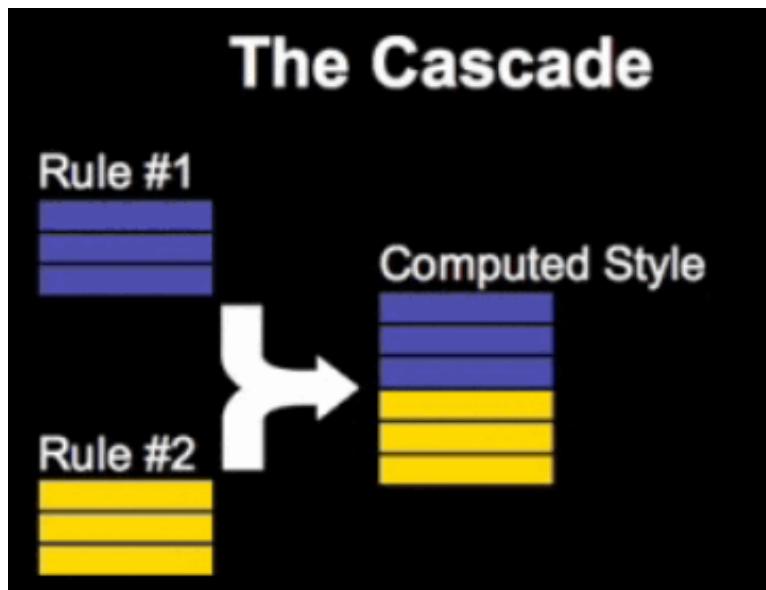
# Twee CSS 'layering models'

## 1. Het **Cascade** (trapsgewijs-) model

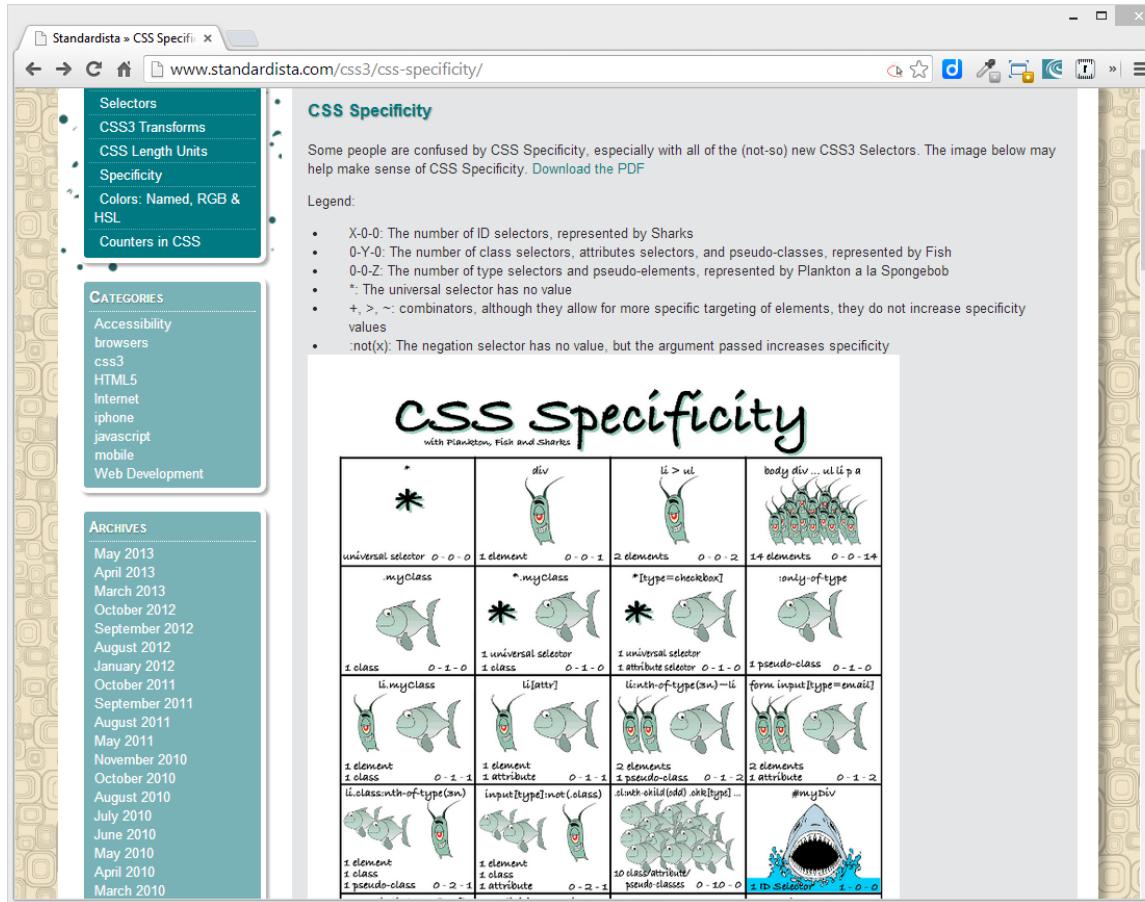
- De regels worden bepaald door hun gewicht en herkomst, zoals vastgelegd in de CSS-definitie (te sturen met aanwijzingen als `!important`)

- 2. Het **Inheritance** (overervings-) model
  - Sommige eigenschappen worden doorgegeven aan onderliggende elementen
  - herdefinitie niet nodig
  - voorkomt redundantie in de code

# Voorbeelden



# Bij twijfel: CSS Specificity rules



<http://www.standardista.com/css3/css-specificity/>

# **Cascade en Inheritance**

**Krachtig**, want: met een beperkt aantal regels kun je vergaande eigenschappen instellen.

**Gevaarlijk**, want: één regel te veel kan de fundering van de complete site veranderen, met soms ongewenste gevolgen...

# Weergave model: block en inline

- Elk element heeft een impliciet weergavemodel
- *Inline level element*
  - element wordt in een regel weergegeven, elementen worden naast elkaar getoond
  - Voorbeelden: <a>, <span>, <em>, <strong>, <img>
- *Block level element*
  - Element wordt als een block weergegeven, met denkbeeldige *surrounding box*.
  - Vaak: automatische witruimte rondom element
  - Voorbeelden: <div>, <h1>...<h6>, <p>, <table>

# Meer kenmerken weergave model

- Block level elementen staan onder elkaar. Nooit naast elkaar (uitzondering - display: inline-block).
- Block level elementen kunnen in elkaar genest worden.
- In een block level element kunnen wel inline level elementen worden opgenomen. Andersom niet.
- Block level elementen zijn niet zichtbaar als ze geen inhoud hebben (i.e. hun hoogte en breedte is 0px).
- Belangrijkste tags
  - **<div>** het standaard block level element
  - **<span>** het standaard inline level element

# Weergavemodel zelf aanpassen

- Eigenschap display
- Om expliciet in te stellen of iets als block of inline-element wordt getoond.
  - display: block
  - display: inline
  - display: inline-block



p.138

# CSS Maateenheden

- Eigenschappen hebben altijd een waarde. Veelgebruikt:
- Keywords: top, left, bottom, right, , auto,
- Getal : 1.5, altijd met decimale punt
- Waarde: px, em, inch, percentage (%), rem, vh, vw
- Aanbeveling responsive design: gebruik percentages of em
- 'em' is 'standaard lettergrootte' (1em =16px, meestal)
- url: url ('img/plaatje.jpg') ; met of zonder '...'
- Kleur: kleurnaam of numerieke waarde : lightblue of #bada55

# Box-issues in CSS

The screenshot shows a web browser displaying the 'Box Sizing' article from CSS-Tricks. The page has a dark header with the 'treehouse' logo and navigation links for BLOG, VIDEOS, ALMANAC, SNIPPETS, FORUMS, and THE LODGE. The main title 'Box Sizing' is centered above a sub-headline 'Published September 10, 2010 by Chris Coyier'. Below the title, there's a text block explaining the box model with a diagram showing a black square with a white 'SQUARESPACE' logo inside. To the right of the text is a green box containing the 'treehouse' logo and a 'Start learning for free' button. The bottom of the page contains a sidebar with a note about quirks mode and a link to the 'Background' section.

The "box model" in CSS works like this:

$$\text{width} + \text{padding} + \text{border} = \text{actual visible/rendered width of box}$$
$$\text{height} + \text{padding} + \text{border} = \text{actual visible/rendered height of box}$$

It's a little weird, but you get used to it. In IE 6 and earlier, when in "quirks mode," the box model was treated differently.

width = actual visible/rendered width of box

<http://css-tricks.com/box-sizing/>

The screenshot shows a web browser displaying the 'A Complete Guide to Flexbox' article from CSS-Tricks. The page has a dark header with the 'treehouse' logo and navigation links for BLOG, VIDEOS, ALMANAC, SNIPPETS, FORUMS, and THE LODGE. The main title 'CSS-TRICKS' is at the top, followed by a sub-headline 'Code Snippets » CSS ». A Complete Guide to Flexbox'. Below the title, there's a note 'LAST UPDATED ON: JUNE 26, 2014'. The main content area starts with a section titled 'Background' with a downward arrow icon. The text explains the purpose of the Flexbox Layout (Flexible Box) module, which aims to provide a more efficient way to lay out, align and distribute space among items in a container, even when their size is unknown and/or dynamic.

The Flexbox Layout (Flexible Box) module (currently a W3C Candidate Recommendation) aims at providing a more efficient way to lay out, align and distribute space among items in a container, even when their size is unknown and/or dynamic (thus the word "flex").

The main idea behind the flex layout is to give the container the ability to alter its items'

<http://css-tricks.com/snippets/css/a-guide-to-flexbox/>

# Shorthand notatie

- Shorthand-notatie: meerdere instellingen combineren op één regel.
- Onderlinge volgorde is vaak belangrijk (maar niet altijd)
- Border
  - Volgorde - border-width, border-style, border-color
  - `div { border: 2px solid black ; }`
- Margin en Padding
  - Volgorde - margin-top, -right, -bottom, -left
  - Ook mogelijk: 4, 3, 2 of 1 waarde opgeven:

If the `margin` property has four values:

- **margin: 25px 50px 75px 100px;**
  - top margin is 25px
  - right margin is 50px
  - bottom margin is 75px
  - left margin is 100px

If the `margin` property has three values:

- **margin: 25px 50px 75px;**
  - top margin is 25px
  - right and left margins are 50px
  - bottom margin is 75px

If the `margin` property has two values:

- **margin: 25px 50px;**
  - top and bottom margins are 25px
  - right and left margins are 50px

If the `margin` property has one value:

- **margin: 25px;**
  - all four margins are 25px

# Shorthand voor lettertypen

- Volgorde ligt vast (en is best complex om te onthouden):
- Je moet minimaal font-size en font-family opgeven bij shorthand notatie voor lettertypen.
- ```
body { font:  
        font-style  
        font-variant  
        font-weight  
        font-size/line-height  
        font-family; }
```
- Bijvoorbeeld:
 - ```
body { font: italic small-caps normal 13px/150% Arial, Helvetica,
 sans-serif; }
```



# CSS lay-outs

Opmaak instellen in rijen, kolommen en zwevende elementen

# Lay-out met CSS: *flow* van elementen

- Normal flow
- Float (zwevend blok)
- Absolute positioning

# CSS-positionering

Elementen ten opzichte van elkaar plaatsen in de pagina

```
p { position: static | relative | absolute; }
```

The screenshot shows a web browser window with the title "Chapter 17 : CSS Positioning". The URL in the address bar is "www.cssbasics.com/css-positioning/". The page content includes a large "CSS BASICS" logo, a "splashpressmedia" watermark, and a promotional banner for New Relic. The main content area is titled "Chapter 17 : CSS Positioning" and discusses the position property. It features a code input field containing "position: value;" and a list of values: static, relative, absolute, and fixed. A note at the bottom says "Now, what does all that mean?".

<http://www.cssbasics.com/css-positioning/>

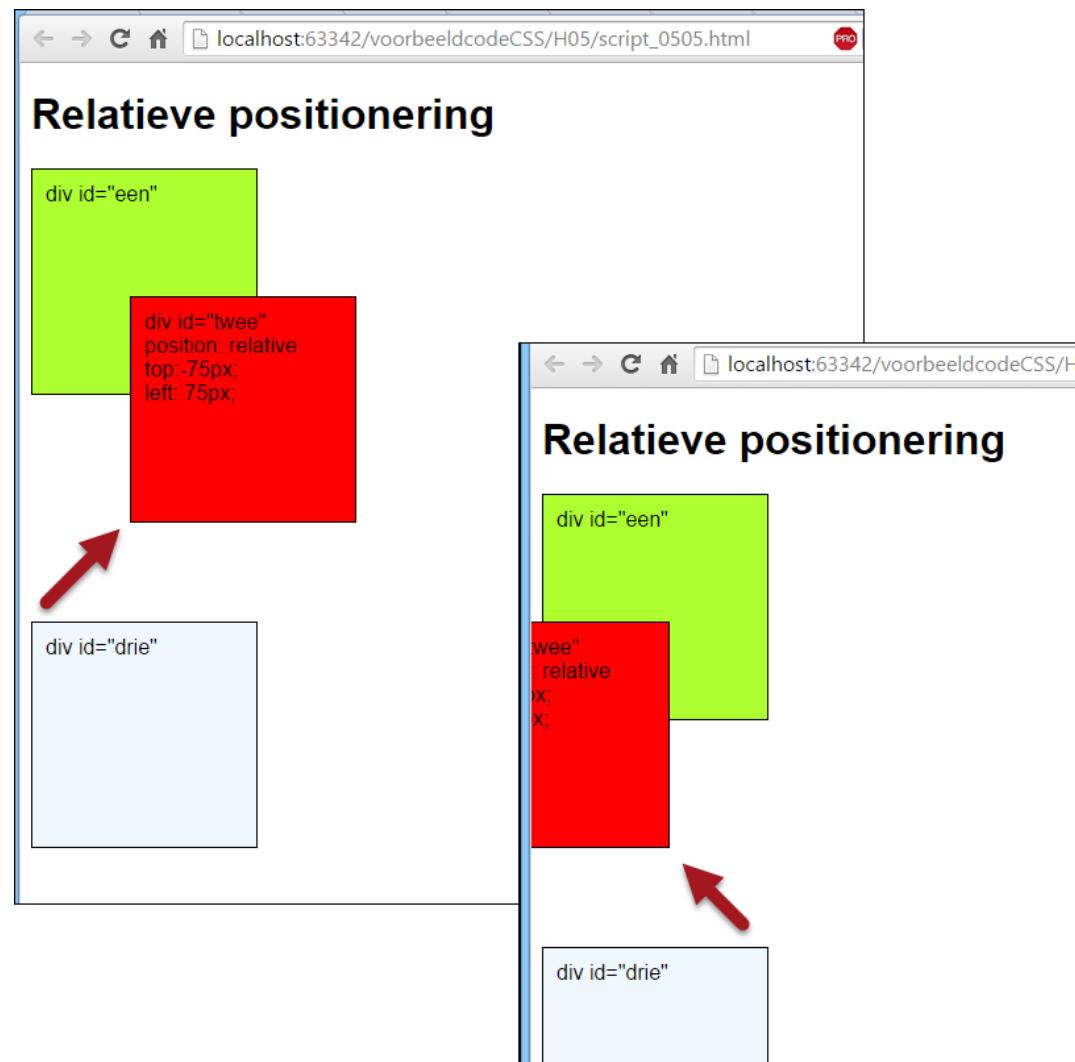
# Containing block

- CSS-box wordt altijd gepositioneerd ten opzichte van het *containing block* (of: parent element)
- position: relative
  - Blok behoud zijn normale flow-positionering en wordt ten opzichte daarvan verschoven
- position: absolute
  - Blok wordt uit de normale flow gelift en geïnjecteerd ten opzichte van containing block.

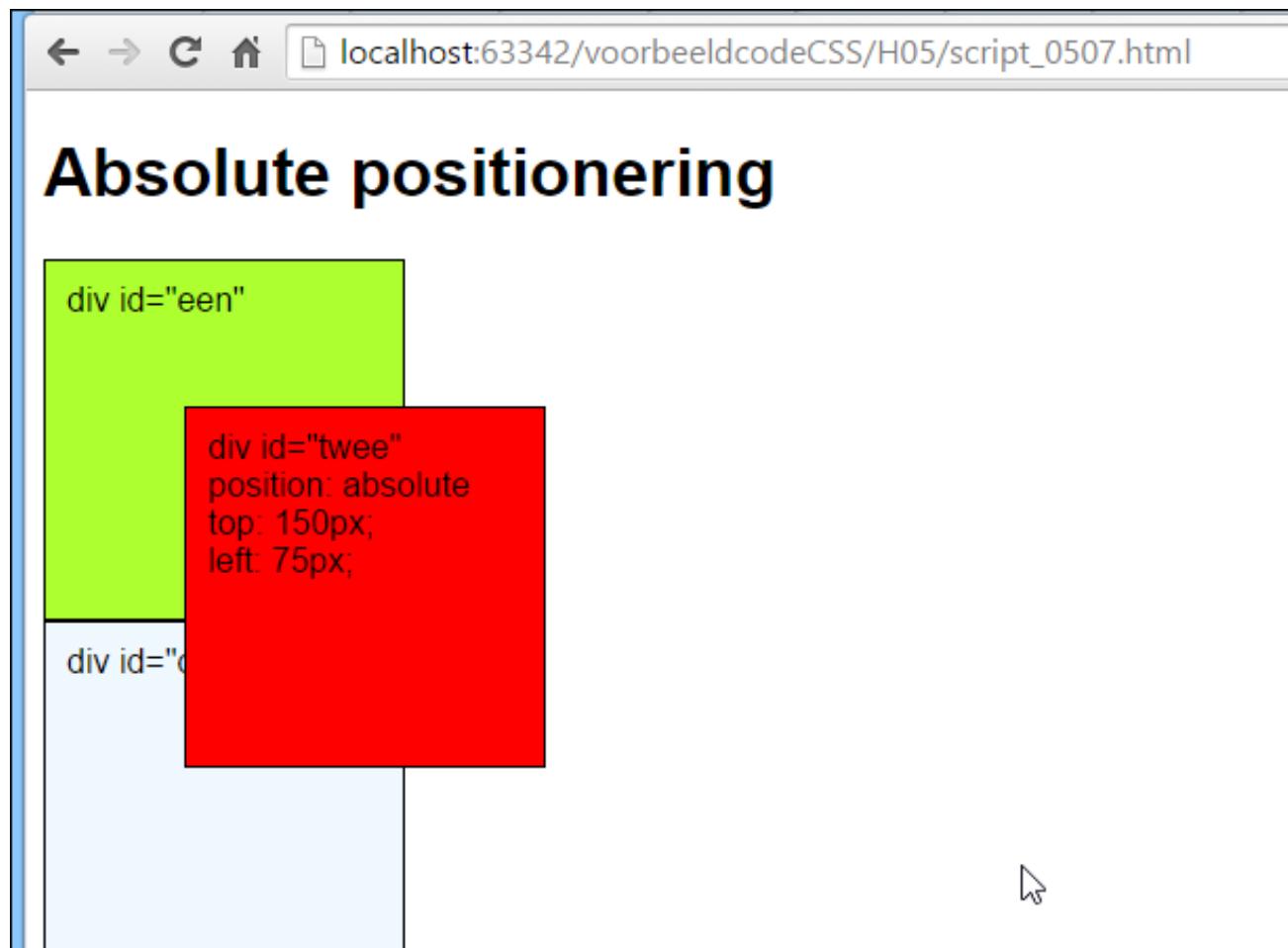


p.145 e.v.

# Relatieve positionering



# Absolute positionering



# Float

- Blok 'zweeft' naar linker- of rechterkant van het containing block
- Eveneens: alleen mogelijk voor block-level elementen
- Geen overlap mogelijk

```
p{
 float: right
}
```

# Float

## Float left|right

div id="een"

div id="drie"

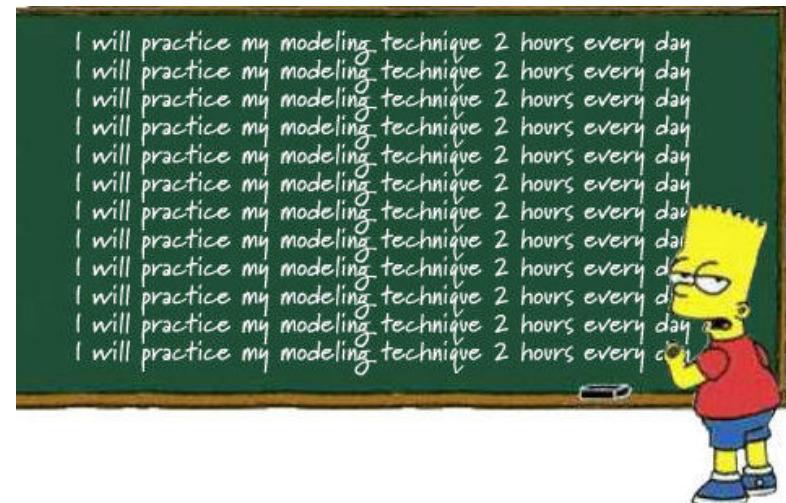
div id="twee"  
float: right;

# Toepassingen

- Kolommen, layouts
- Alle libraries (Bootstrap, ionic, foundation enzovoort)

# Oefening

- Maak een lay-out met weergavemodel en positionering
  - Bijvoorbeeld: drie kolom lay-out
    - float: left | right
  - Absoluut gepositioneerde box binnen een relatief gepositioneerde box
  - Tekst over een afbeelding



# Inhoud

- Enkele onderdelen en kenmerken van CSS(3)
- Google Web Fonts
  - En alternatieven
- Voorbeeld (sticky notes)
- Animations
- oefeningen

# CSS3 – basiskenmerken

- Uitbreiding op CSS2
  - Geen nieuwe syntaxis
- Wel: nieuwe eigenschappen en waarden
  - Properties / values
- Modulaire opbouw
- Mixed support in diverse browsers
  - Knelpunten:
    - pseudo-selectors (`:before`, `:after`, `:first-letter`)
    - browserprefixes (`-moz-`, `-webkit-`)

# CSS 3 modules

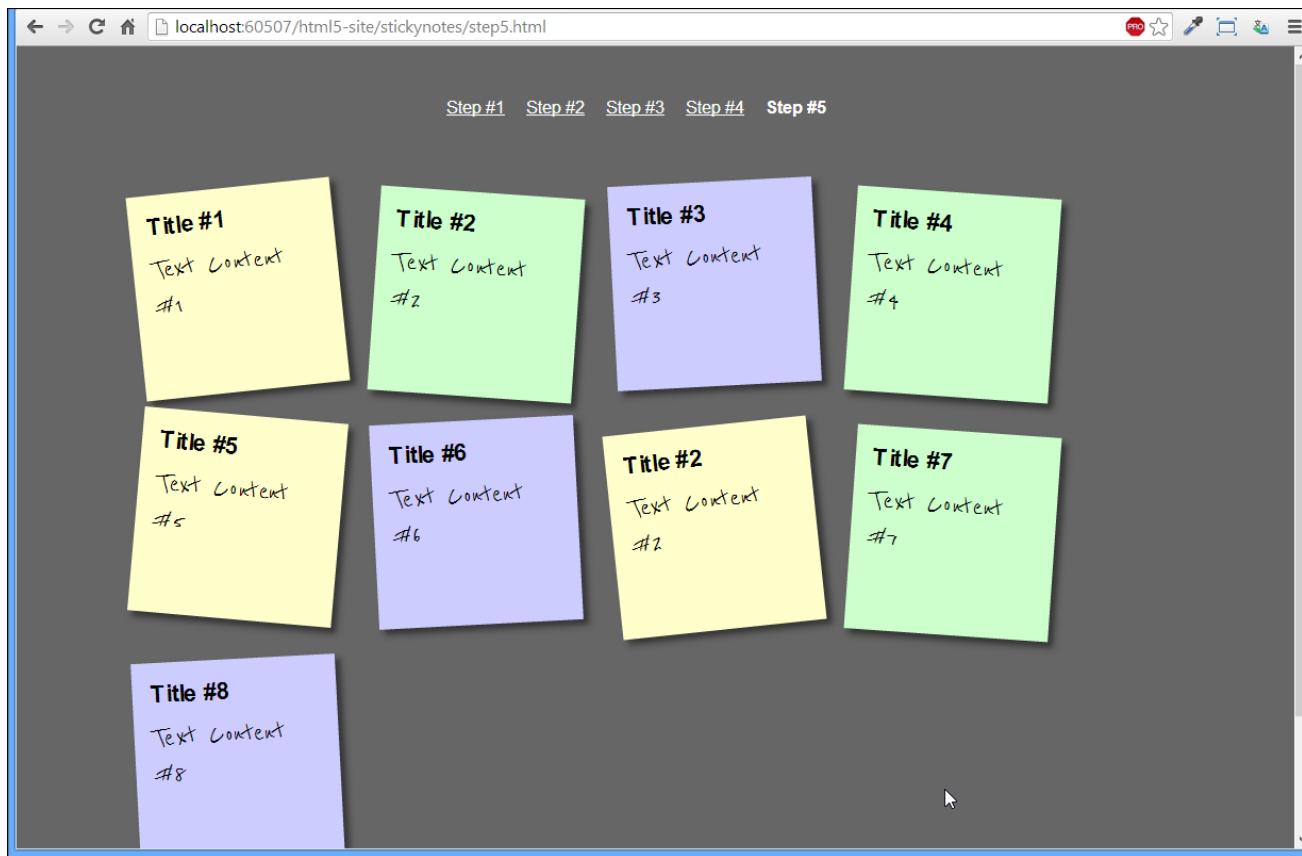


<http://www.css3.info/modules/>

# **CSS 3 – Enkele veelgebruikte properties**

- :nth-child()
- box-shadow
- Transform
  - rotate
  - scale
- border-radius
- Overige

# Sticky notes



<http://net.tutsplus.com/tutorials/html-css-techniques/create-a-sticky-note-effect-in-5-easy-steps-with-css3-and-html5/>

# Box-shadow

- Voegt schaduw toe aan bounding box van element
  - Alternatief : text-shadow
- parameters: h-shadow, v-shadow, blur, color
- Let op browser prefixes

```
40 width:10em;
41 padding:1em;
42 -moz-box-shadow:5px 5px 7px rgba(33,33,33,.1);
43 -webkit-box-shadow: 5px 5px 7px rgba(33,33,33,.7);
44 box-shadow: 5px 5px 7px rgba(33,33,33,.7);
```

# Box-shadow : Formele specs

The screenshot shows a browser window displaying the W3C Editor's Draft page for the 'box-shadow' property. The URL is <http://dev.w3.org/csswg/css-backgrounds/#box-shadow>. The page title is "7.2. Drop Shadows: the 'box-shadow' property". On the left, there is a red vertical bar labeled "W3C Editor's Draft". On the right, there is a summary table for the 'box-shadow' property:

|                 |                                                                                  |
|-----------------|----------------------------------------------------------------------------------|
| Name:           | <b>box-shadow</b>                                                                |
| Value:          | none   <shadow> [ , <shadow> ]*                                                  |
| Initial:        | none                                                                             |
| Applies to:     | all elements                                                                     |
| Inherited:      | no                                                                               |
| Percentages:    | N/A                                                                              |
| Media:          | visual                                                                           |
| Computed value: | any <length> made absolute; any specified color computed; otherwise as specified |
| Animatable:     | as shadow list                                                                   |

Below the table, there is a note about the 'box-shadow' property:

The 'box-shadow' property attaches one or more drop-shadows to the box. The property takes a comma-separated list of shadows, ordered front to back. Each shadow is given as a <shadow>, represented by 2-4 length values, an optional color, and an optional 'inset' keyword. Omitted lengths are 0; omitted colors default to the value of the 'color' property.

<shadow> = inset? && <length>{2,4} && <color>?

The components of each <shadow> are interpreted as follows:

**1st <length>**  
Specifies the **horizontal offset** of the shadow. A positive value draws a shadow that is offset to the right of the box, a negative length to the left.

<http://dev.w3.org/csswg/css-backgrounds/#box-shadow>

# Nth-child()

- Selecteert elk  $n^{\text{de}}$  element van parent
- Niet in Internet Explorer 8 en eerder

## CSS3 :nth-child() Selector

 Complete CSS Selector Reference

### Example

Specify a background color for every p element that is the second child of its parent.

```
p:nth-child(2)
{
background:#ff0000;
}
```

[Try it yourself »](#)

### Definition and Usage

The :nth-child( $n$ ) selector matches every element that is the  $n^{\text{th}}$  child, regardless of type, of its parent element. The value  $n$  can be a number, a keyword, or a formula.

**Tip:** Look at the [:nth-of-type\(\)](#) selector to select the element that is the  $n^{\text{th}}$  child of its parent element, but only if it is of a certain element type.

[http://www.w3schools.com/cssref/sel\\_nth-child.asp](http://www.w3schools.com/cssref/sel_nth-child.asp)

<http://www.w3.org/TR/css3-selectors/#nth-child-pseudo>

W3C Recommendation

### 6.6.5.2. :nth-child() pseudo-class

The `:nth-child( $an+b$ )` pseudo-class notation represents an element that has  $an+b-1$  siblings **before** it in the document tree, of  $n$ , and has a parent element. For values of  $a$  and  $b$  greater than zero, this effectively divides the element's children into groups (taking the remainder), and selecting the  $a^{\text{th}}$  element of each group. For example, this allows the selectors to address every other element to alternate the color of paragraph text in a cycle of four. The  $a$  and  $b$  values must be integers (positive, negative, or zero). The value  $b$  is 1.

In addition to this, `:nth-child()` can take 'odd' and 'even' as arguments instead. 'odd' has the same signification as  $2n+1$ , and 'even' has the same signification as  $2n$ .

The argument to `:nth-child()` must match the grammar below, where `INTEGER` matches the token `[0-9]+` and the rest of the token is matched by the `scanner` in section 10.2:

```
nth
: S* ['-'|'+']? INTEGER? (N) [S* '-'|'+'] S* INTEGER)? |
['-'|'+']? INTEGER | {O}{D}{D} | {E}{V}{E}{N}] S*
```

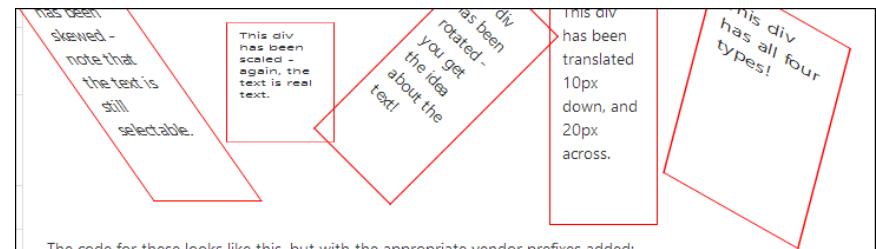
#### Examples:

```
tr:nth-child(2n+1) /* represents every odd row of an HTML table */
tr:nth-child(odd) /* same */
tr:nth-child(2n+0) /* represents every even row of an HTML table */
tr:nth-child(even) /* same */

/* Alternate paragraph colours in CSS */
p:nth-child(4n+1) { color: navy; }
p:nth-child(4n+2) { color: green; }
p:nth-child(4n+3) { color: maroon; }
p:nth-child(4n+4) { color: purple; }
```

# transform

- 2d, roteren om x-as en y-as
- Eigenschap: transform, met waarden
  - skew (graden)
  - scale (percentage)
  - rotate (graden)
  - Combinaties



The code for these looks like this, but with the appropriate vendor prefixes added:

```
#skew {
 transform:skew(35deg);
}
#scale {
 transform:scale(1,0.5);
}
#rotate {
 transform:rotate(45deg);
}
#translate {
 transform:translate(10px, 20px);
}
#rotate-skew-scale-translate {
 transform:skew(30deg) scale(1.1,1.1) rotate(40deg) translate(10px, 20px);
}
```

<http://css3.bradshawenterprises.com/transforms/>

# Transition

- Animaties: voer transformatie uit in een bepaalde tijd, met een bepaald effect

## How to use transitions

If you haven't used transitions before, here's a brief introduction.

On the element you want to have animate, add the following CSS:

```
1. #id_of_element {
2. -webkit-transition: all 1s ease-in-out;
3. -moz-transition: all 1s ease-in-out;
4. -o-transition: all 1s ease-in-out;
5. transition: all 1s ease-in-out;
6. }
```

## Delays

The syntax for a CSS3 transition is of the form:

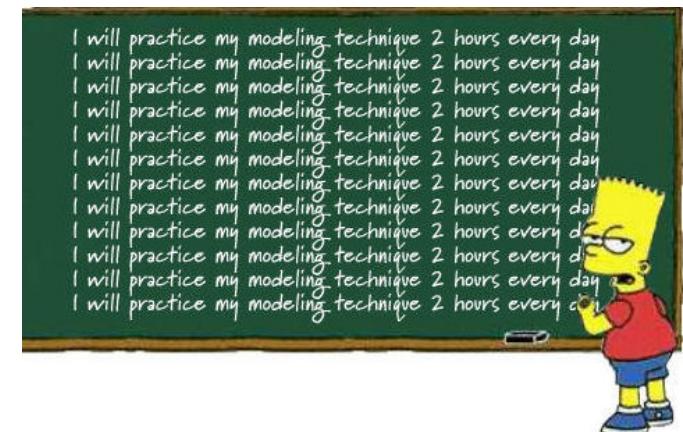
```
transition: [<transition-property> ||
 <transition-duration> ||
 <transition-timing-function> ||
 <transition-delay>]
```

You will notice the final parameter is a delay - this lets you trigger things after an event has occurred. Below is a small demo showing this functionality.

<http://css3.bradshawenterprises.com/transitions/>

# Oefening

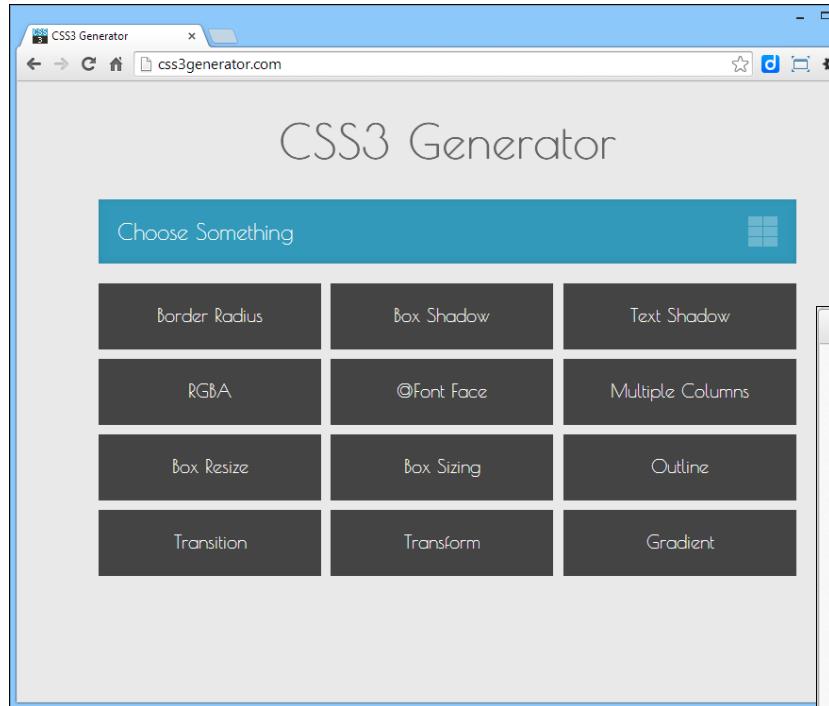
- Bestudeer het Sticky Notes voorbeeld
  - <http://net.tutsplus.com/tutorials/html-css-techniques/create-a-sticky-note-effect-in-5-easy-steps-with-css3-and-html5/>
- Schakel diverse stijlen uit /\* ... \*/ om te zien wat het effect is.
- Maak zelf een pagina met een <div> waarop je CSS3-kenmerken toepast
  - Transition/transform bij :hover
  - Schaduw
  - Lettertype



# Overige

- Veelgebruikte CSS3-technieken
  - Rounded corners
  - Media queries
  - Kleurverlopen: gradients
  - Multiple backgrounds

# Tools



<http://css3generator.com/>

The screenshot shows a web browser window titled "Ultimate CSS Gradient Generator" from "www.colorzilla.com/gradient-editor/". The page has a white background with a navigation bar at the top. Below the bar, there's a "Presets" section showing a grid of color swatches, and a "Preview" section showing a horizontal gradient bar. The main area contains a "Stops" section with two entries: "Opacity" and "Color", each with a color picker, location input, and a "delete" button. Below that is an "Adjustments" section with a "hue/saturation..." button and a "reverse" button. On the right side, there's a large block of CSS code for generating gradients, with options to switch between SCSS and CSS. At the bottom, there are buttons for "Color format: hex", "Comments", "IE9 Support", "Import from image", and "Import from css".

```
background: #1e5799; /* Old browsers */
background: -moz-linear-gradient(top, #1e5799 0%, #2989d8 50%, #207cca 51%, #7db9e8 100%); /* FF3.6+ */
background: -webkit-linear-gradient(left top, left bottom, color-stop(0%,#1e5799), color-stop(50%,#2989d8), color-stop(51%,#207cca), color-stop(100%,#7db9e8)); /* Chrome,Safari4+ */
background: -webkit-linear-gradient(top, #1e5799 0%, #2989d8 50%, #207cca 51%, #7db9e8 100%); /* Chrome10+,Safari5.1+ */
background: -o-linear-gradient(top, #1e5799 0%,#2989d8 50%,#207cca 51%,#7db9e8 100%); /* Opera 11.10+ */
background: -ms-linear-gradient(top, #1e5799 0%,#2989d8 50%,#207cca 51%,#7db9e8 100%); /* IE10+ */
background: linear-gradient(to bottom, #1e5799 0%,#2989d8 50%,#207cca 51%,#7db9e8 100%); /* W3C */
filter: progid:DXImageTransform.Microsoft.gradient(startColorstr='#1e5799', endColorstr='#7db9e8',GradientType=0); /* IE5-9 */
*/
```

<http://www.colorzilla.com/gradient-editor/>

# Enkele inspiratiebronnen

The screenshot shows a web browser window for the URL [www.1stwebdesigner.com/css/45-useful-css3-tutorials-and-techniques/](http://www.1stwebdesigner.com/css/45-useful-css3-tutorials-and-techniques/). The page title is "47 Cool and Useful CSS3 Tutorials and Techniques". The left sidebar has a "Tutorials" section selected, showing categories like Coding, Freebies, Inspiration, Tutorials, Web Design, and WordPress. The main content area discusses the benefits of using CSS3 for web design and lists a collection of 45 tutorials. A thumbnail image at the bottom shows a colorful stack of books.

<http://www.1stwebdesigner.com/css/45-useful-css3-tutorials-and-techniques/>

The screenshot shows a web browser window for the URL [webdesignledger.com/tutorials/20-fresh-css3-tutorials](http://webdesignledger.com/tutorials/20-fresh-css3-tutorials). The title is "How to Create a CSS3 Dropdown Menu [Tutorial]". The top navigation bar includes links for My dashboard, Likes, Views, Uploads, Videos, and Documents. A dropdown menu is open over the "Views" link, showing options for Documents, Messages, and Sign Out. Below the title, there is a brief description of the tutorial and a screenshot of a dark-themed navigation menu with various items like Friends, Videos, Galleries, and Podcasts.

<http://webdesignledger.com/tutorials/20-fresh-css3-tutorials>

<http://css3please.com/>,  
Zelf live oefenen met eigenschappen

The screenshot shows a browser window with two main parts. On the left, a dark-themed CSS rule generator titled "CSS3, please!" displays a snippet of CSS code for creating rounded boxes. The code includes rules for .box\_round, .box\_shadow, and .box\_gradient, targeting various browsers and devices. On the right, the main content area of the CSS-Tricks website features the "CSS-TRICKS" logo and navigation links for HOME, VIDEOS, ALMANAC, SNIPPETS, FORUMS, SHOP, NEWSLETTER, and JOBS. Below the navigation is a search bar and a user profile icon. The main content area displays a blog post titled "WebSlides" by Chris Coyier, dated January 15, 2017. The post discusses a presentation slide creation system and includes a screenshot of the software interface. Another blog post, "Non-Rectangular Headers" by Chris Coyier, dated January 9, 2017, is partially visible below it.

<https://css-tricks.com/>



# **CSS3 animatie met keyframes**

Een uitgebreider en flexibeler alternatief voor transform & rotate

# **CSS3 Animaties met keyframes**

- Animaties bestaan uit twee delen
  1. Een stijl die de animatie beschrijft
  2. Een set keyframes met start, eind en eventueel tussenstappen
- Voorlopig: de browser prefixes gebruiken

-webkit-, -moz-

IE10+ geen problemen

# **De property animation**

- animation-delay
- animation-direction
- animation-duration
- animation-iteration-count
- animation-name
- animation-play-state
- animation-timing-function
- animation-fill-mode

# Stap 1. de stijl maken

```
<style>
#kop{
 /* werkt zo alleen in IE */
 animation-duration: 3s;
 animation-name: slide;
}
</style>
</head>
<body>
 <h1 id="kop">Dit is een geanimeerde koptekst</h1>
</body>
</html>
```

TODO: vendor prefixes toevoegen voor werking in alle browsers

## Stap 2. keyframes toevoegen

```
<style>
#kop{
 /* werkt zo alleen in IE */
 animation-duration: 3s;
 animation-name: slide;
}

@keyframes slide{
 from{
 margin-top: 400px;
 }
 to{
 margin-top: 10px;
 }
}

</style>
```



Ook hier TODO: vendor prefixes toevoegen voor werking in alle browsers

# @keyframes

- Keyframes zijn punten in de animatie waarop iets gebeurd.
- Browser berekent de timing
- Wordt aangegeven in %
  - Alias: 0% = from, 100% = to

# Vendor prefixes

- -o-, -moz- en -webkit-
- De 'officiële' naam wordt als laatste genoemd

```
<style>
 #kop {
 -moz-animation-duration: 3s;
 -o-animation-duration: 3s;
 -webkit-animation-duration: 3s;
 animation-duration: 3s;
 -webkit-animation-name: slide;
 -moz-animation-name: slide;
 -o-animation-name: slide;
 animation-name: slide;
 }

```

# Ook in de @keyframe rule

```
@-webkit-keyframes slide {
 from {
 margin-top: 400px;
 }

 to {
 margin-top: 10px;
 }
}

@-moz-keyframes slide {
 from {
 margin-top: 400px;
 }

 to {
 margin-top: 10px;
 }
}

@keyframes slide {
 from {
 margin-top: 400px;
 }

 to {
 margin-top: 10px;
 }
}
```

Dat wordt dus heel snel, heel veel code...

# Werken met percentages

- Op elk gewenst punt een %-rule invoegen:

```
@keyframes slide{
 from{
 margin-top: 400px;
 }
 75%{ ←
 font-size: 4em;
 }
 to{
 margin-top: 10px;
 }
}
```

# Herhaling toevoegen

- Gebruik animation-iteration-count
  - Aantal keer : nummer invullen
  - Oneindig: infinite

```
/* herhaling */
-moz-animation-iteration-count: 2;
-o-animation-iteration-count: 2;
-webkit-animation-iteration-count: 2;
animation-iteration-count: 2;
```

```
}
```

```
/* herhaling */
-moz-animation-iteration-count: infinite;
-o-animation-iteration-count: infinite;
-webkit-animation-iteration-count: infinite;
animation-iteration-count: infinite;
```

```
}
```

# Animatierichting

- **Property** animation-direction
  - **Waarden:** normal, reverse, alternate, alternate-reverse

```
/* heen-en-weer*/
-moz-animation-direction: alternate;
-o-animation-direction: alternate;
-webkit-animation-direction: alternate;
animation-direction: alternate;
}
```

# Meerdere animaties?

- Kommagescheiden, naam toevoegen
- Definitie verderop plaatsen, net als alle andere @keyframe-rules.

```
/* animation-properties: name */
-moz-animation-name: slidein, down;
-o-animation-name: slidein, down;
-webkit-animation-name: slidein, down;
animation-name: slidein, down;
```



# Meer informatie

The screenshot shows a web browser window displaying the Mozilla Developer Network (MDN) documentation. The title bar reads "Using CSS animations - W". The address bar shows the URL "https://developer.mozilla.org/en-US/docs/Web/Guide/CSS/Using\_CSS\_animations". The MDN logo is in the top left, and the Mozilla logo is in the top right. The page content starts with a heading "Using CSS animations". Below it, a paragraph explains what CSS animations are: "CSS animations make it possible to animate transitions from one CSS style configuration to another. Animations consist of two components, a style describing the CSS animation and a set of keyframes that indicate the start and end states of the animation's style, as well as possible intermediate waypoints along the way." A list of three advantages follows:

1. They're easy to use for simple animations; you can create them without even having to know JavaScript.
2. The animations run well, even under moderate system load. Simple animations can often perform poorly in JavaScript (unless they're well made). The rendering engine can use frame-skipping and other techniques to keep the performance as smooth as possible.
3. Letting the browser control the animation sequence lets the browser optimize performance and efficiency by, for example, reducing the update frequency of animations running in tabs that aren't currently visible.

## Configuring the animation

To create a CSS animation sequence, you style the element you want to animate with the `animation` property or its sub-properties. This lets you configure the timing and duration of the animation, as well as other details of how the animation sequence should progress. This does not configure the actual appearance of the animation, which is done using the `@keyframes` at-rule as described in [Defining the animation sequence using keyframes](#) below.

The sub-properties of the `animation` property are:

- `animation-delay`**  
Configures the delay between the time the element is loaded and the beginning of the animation sequence.

On the right side of the page, there is a sidebar titled "IN THIS ARTICLE" containing a list of links to related topics:

- Configuring the animation
- Defining the animation sequence using keyframes
- Examples
  - Making text slide across the browser window
  - Adding another keyframe
  - Making it repeat
  - Making it move back and forth
- Using animation events
  - Adding the animation event listeners
  - Receiving the events
  - The HTML
- See also

[https://developer.mozilla.org/en-US/docs/Web/Guide/CSS/Using\\_CSS\\_animations](https://developer.mozilla.org/en-US/docs/Web/Guide/CSS/Using_CSS_animations)

animation | CSS-Tricks

css-tricks.com/almanac/properties/a/animation/

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## animation

LAST UPDATED ON: JANUARY 5, 2014

The animation property is used to call and control an `@keyframe` animation. Like this:

**CSS**

```
.element-to-animate {
 animation: NAME-YOUR-ANIMATION 5s infinite;
}
```

Which refers to a keyframe like this:

**CSS**

```
/* keyframe */
@keyframes NAME-YOUR-ANIMATION {
 0% { /* initial state */ }
 100% { /* final state */ }
}
```



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<http://css-tricks.com/almanac/properties/a/animation/>