

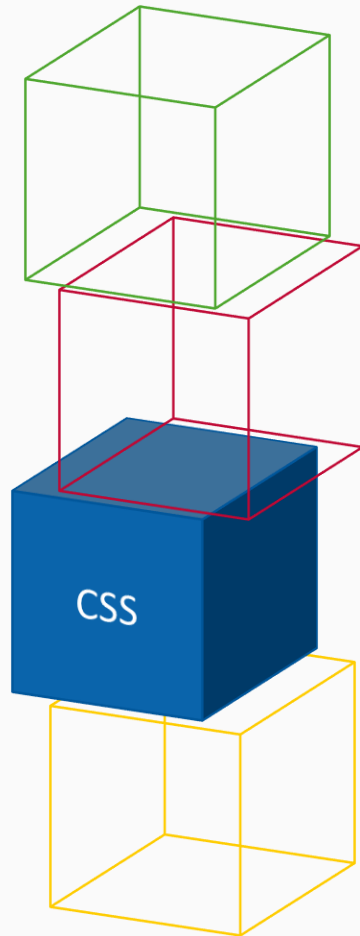
Hoorcollege 2

CSS & responsive webdesign

Informatie-uitwisseling: Web
Jeroen Ooge



Bouwblokken voor webdesign



PHP (*Hypertext Preprocessor*)
genereert websites dynamisch

JavaScript
programmeert het gedrag van websites

CSS (*Cascading Style Sheets*)
specificeert de opmaak van websites

HTML (*HyperText Markup Language*)
definieert de inhoud van websites

SVG (*Scalable Vector Graphics*) afbeeldingen



CSS steekt HTML in een mooi jasje

Welcome to My Homepage

Use the menu to select different Stylesheets

- Stylesheet 1
- Stylesheet 2
- Stylesheet 3
- Stylesheet 4
- No Stylesheet

Same Page Different Stylesheets

This is a demonstration of how different stylesheets can change the layout of your HTML page. You can change the layout of this page by selecting different stylesheets in the menu, or by selecting one of the following links:

[Stylesheet1](#), [Stylesheet2](#), [Stylesheet3](#), [Stylesheet4](#).

No Styles

This page uses DIV elements to group different sections of the HTML page. Click here to see how the page looks like with no stylesheet:

[No Stylesheet](#).

Side-Bar

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Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat. Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto odio dignissim qui blandit praesent luptatum zzril delenit augue duis dolore te feugait nulla facilisi.

HTML



HTML+CSS



Welcome to My Homepage

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Stylesheet 1

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Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat. Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto odio dignissim qui blandit praesent luptatum zzril delenit augue dui dolore te feugait nulla facilisi.

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Stylesheet 1

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Stylesheet 3

Stylesheet 4

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Side-Bar

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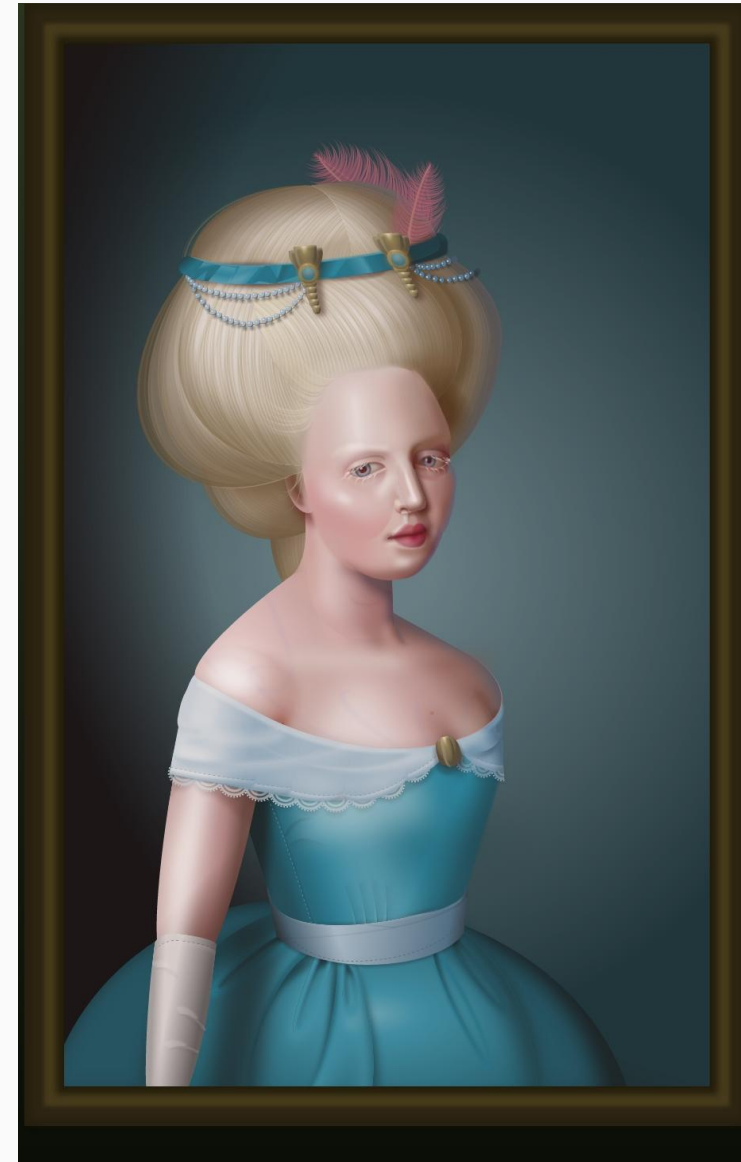
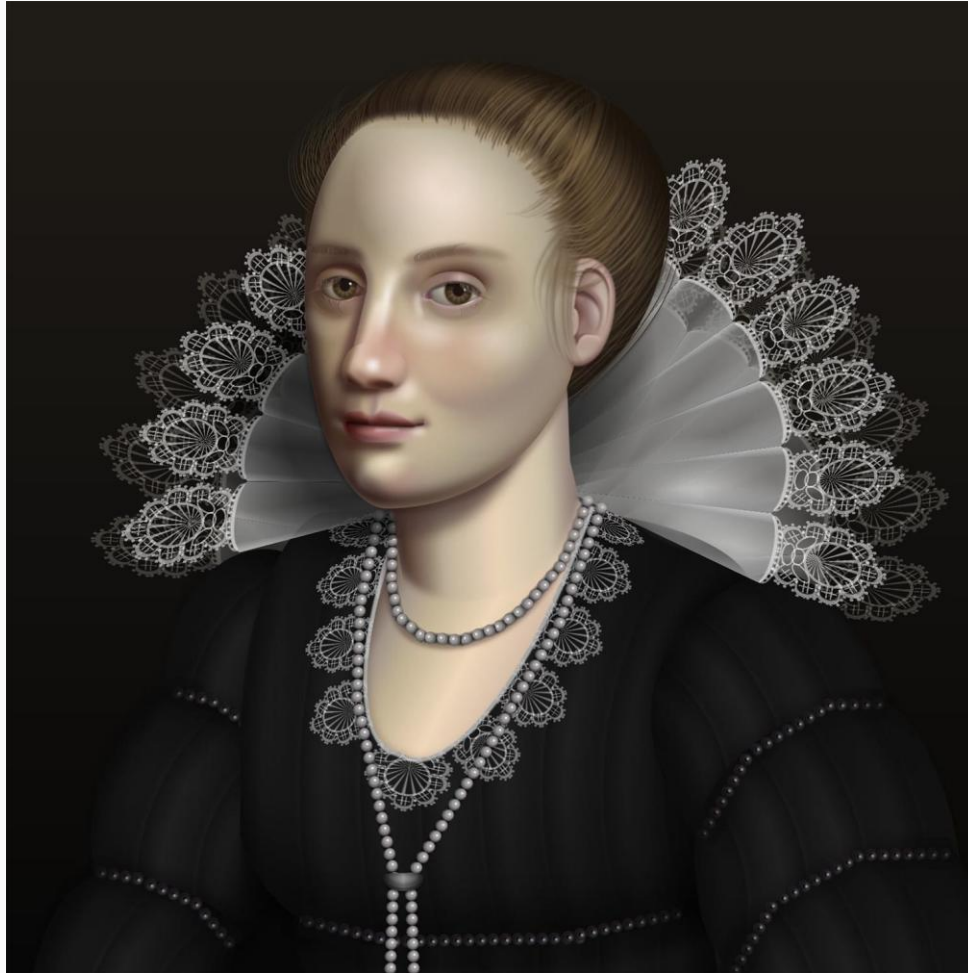
No Styles

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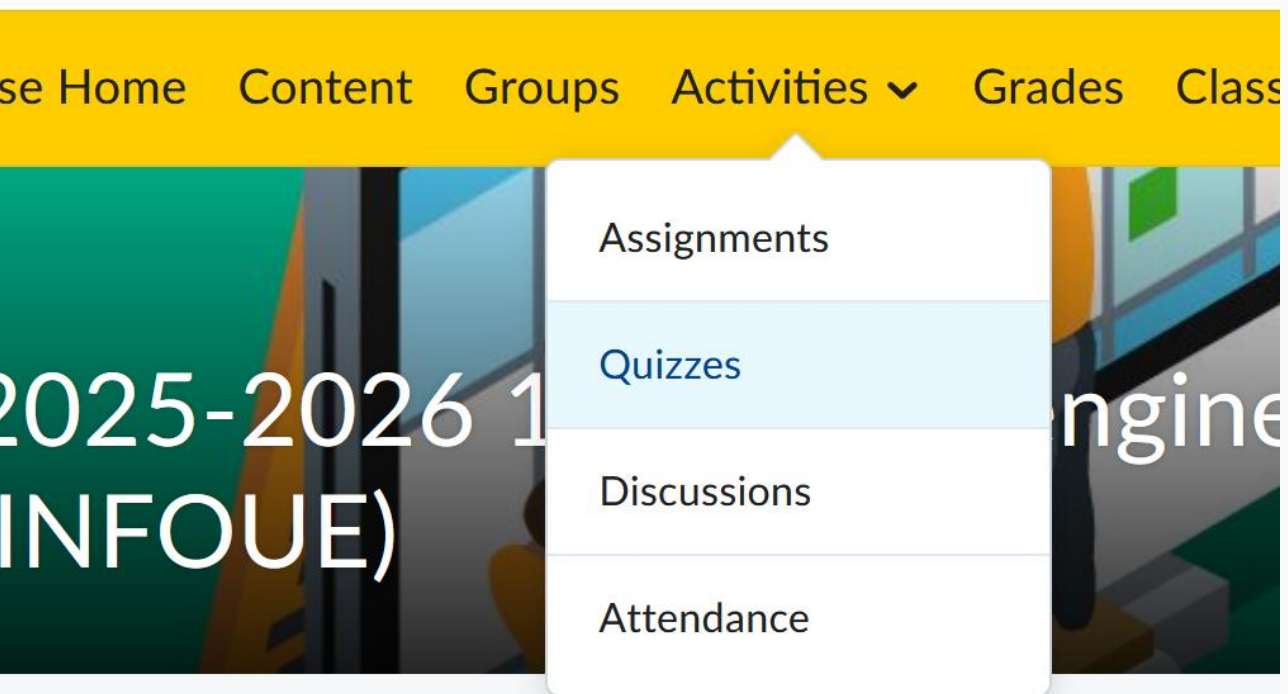
[No Stylesheet](#).

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Kunst met CSS



Hoe goed zijn
jullie al met CSS?



Hoorcollege 2

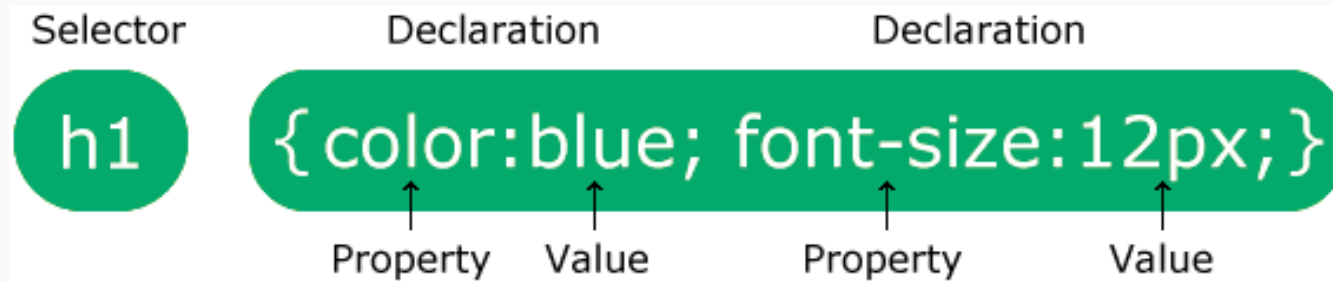
CSS & responsive webdesign

1. Basisconcepten voor CSS
2. Kleuren op het Web
3. Responsive webdesign
4. Geavanceerdere CSS

Stel gerust vragen



Syntax voor CSS



```
h1 {  
    color: blue;  
    font-size: 12px;  
}
```

- De **selector** geeft aan welk HTML-element je wilt opmaken
- De **property** geeft aan welke eigenschap van het HTML-element je opmaakt
- De **value** geeft de gewenste waarde aan de property

Eenvoudige selectors

Element selector: selecteer alle elementen met de gegeven starttag

ID selector: selecteer het element met de gegeven unieke ID

Class selector: selecteer alle elementen met de gegeven klasse

HTML

```
<p>CSS</p>
```

CSS

```
p { color: red }
```

Output

CSS

HTML

```
<p id="naam">is</p>
```

CSS

```
#naam { color: green }
```

is

HTML

```
<p class="klasse">cool</p>
```

CSS

```
.klasse { color: blue }
```

cool

Properties

- Er bestaan erg veel properties die je kunt aanpassen
- Je leert ze door te oefenen en initieel veel op te zoeken

Properties voor tekst

Property	Description	Example
<u>font-size</u>	Specifies the font size of text	12pt, larger, 150%, 1.5em
<u>font-style</u>	Specifies the font style for text	normal, italics, oblique
<u>color</u>	Sets the color of text	red, yellow, rgb(212,120,20)
<u>font-weight</u>	Specifies the weight of a font	normal, bold, 600, lighter
<u>text-align</u>	Specifies the horizontal alignment of text	left, right, center, justify
<u>line-height</u>	Specifies the line height	normal, 1.2em, 120%

Properties

Property	Description	Example
background-color	Sets the background color	<code>red, rgb(212,120,20)</code>
background-image	Sets the background image	<code>url("spider.gif")</code>
border	Specify border width, style and color	<code>1px solid black</code>
border-radius	Sets all the four border-*-radius properties for rounded corners	<code>0.25rem, 4px</code>
max-width	Defines the maximum width	<code>100px, 80%</code>
min-width	Sets the minimum width	<code>100px, 80%</code>
width	Sets the width of an element	<code>100px, 80%</code>
position	Specifies the type of positioning	<code>relative, absolute, fixed</code>

Background

Borders

Size

Position

CSS inline inlezen

index.html

```
<html>
  <body>
    <p style="color: red;">CSS</p>
  </body>
</html>
```

Output

CSS

Deze code is slecht leesbaar en moeilijk te onderhouden



CSS intern inlezen

index.html

```
<html>
  <head>
    <style>
      p {
        color: red
      }
    </style>
  </head>

  <body>
    <p>CSS</p>
  </body>
</html>
```

Output

CSS

Niet elegant om HTML en CSS te mengen, niet goed bij trage verbindingen



CSS extern inlezen

index.html

```
<html>
  <head>
    <link rel="stylesheet" type="text/css" href="naam.css">
  </head>

  <body>
    <p>CSS</p>
  </body>
</html>
```

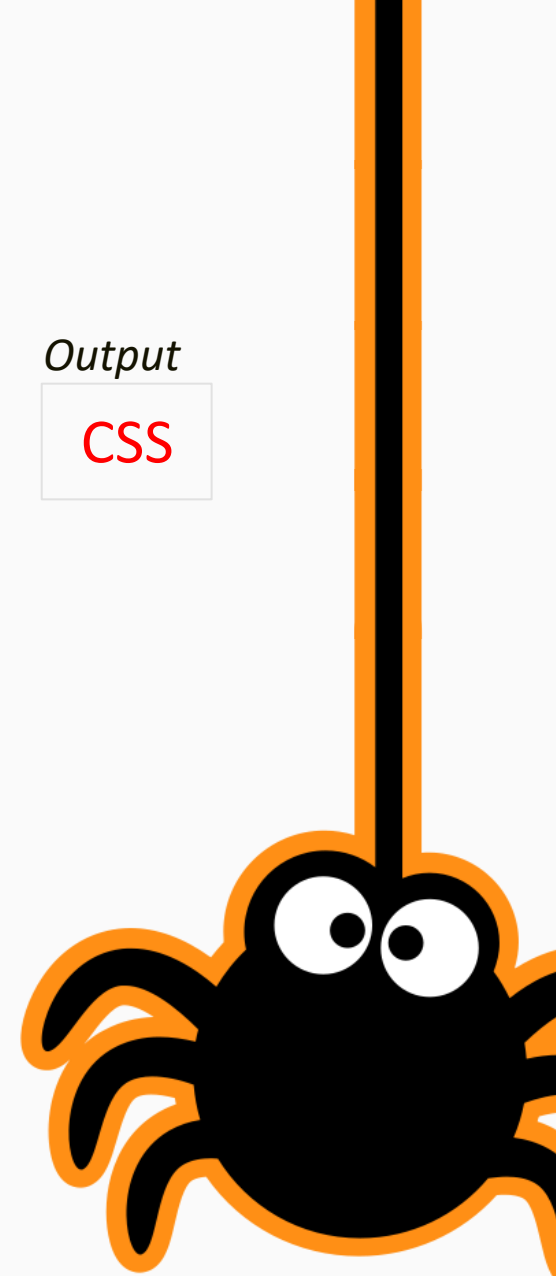
naam.css

```
p {
  color: red;
}
```

Output

CSS

Dit is elegant,
robuust en efficiënt
voor zoekmachines



Box-model



HTML-elementen zijn rechthoeken die je kunt opmaken:

- **Border** = rand
- **Padding** = witruimte binnen de rand
- **Margin** = witruimte buiten de rand

Standaard wordt de padding bij de hoogte en breedte van de content geteld met `box-sizing: content-box`.

Gemakkelijker is werken o.b.v. de rand: `* { box-sizing: border-box; }`

Tijd voor een demo!

Hoorcollege 2

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Stel gerust vragen



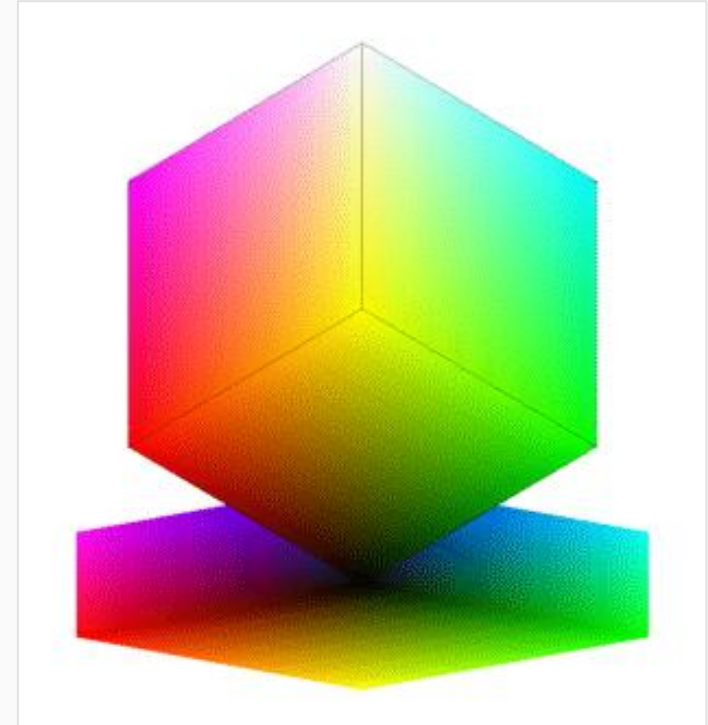
Ingebouwde kleurnamen

AliceBlue #F0F8FF	AntiqueWhite #FAEBD7
Aquamarine #7FFFD4	Azure #F0FFFF

AliceBlue #F0F8FF	AntiqueWhite #FAEBD7	Aqua #00FFFF	LightSalmon #FFB6C1	LightSeaGreen #20B2AA	LightSkyBlue #ADD8E6
Aquamarine #7FFFD4	Azure #F0FFFF	Beige #F5F5DC	LightSteelBlue #B0C4DE	LightSlateGray #778888	LightSlateBlue #6677AA
Bisque #FFE4C4	Black #000000	BlanchedAlmond #FFDAB9	LightYellow #FFFFE0	Linea #00FF00	LightGreen #90EE90
Blue #0000FF	BlueViolet #6A5ACD	Brown #A52A2A	Lincoln #D3D3D3	Maroon #800000	Maroon #800000
BurlyWood #DEB887	CadetBlue #66CCEE	Chartreuse #7FFF00	MediumAquamarine #7FFFD4	MediumBlue #0000CD	MediumOrchid #8A2BE2
Chocolate #D2691E	Coral #FF7F50	CornflowerBlue #6495ED	MediumPurple #8A2BE2	MediumSeaGreen #3CB371	MediumSlateBlue #7E57C2
CornSilk #FFFACD	Crimson #DC143C	Cyan #00CED1	MediumSpringGreen #00FFB3	MediumTurquoise #4682B4	MediumVioletRed #D81B60
DarkBlue #00008B	DarkCyan #008B8B	DarkGoldenRod #DAA520	MidnightBlue #191970	MinCream #F5F5DC	MistyRose #F080F0
DarkGray #696969	DarkGreen #006400	DarkGreen #006400	Moccasin #F5DEB3	NavajoWhite #FFDAB9	Navy #000080
DarkKhaki #8FBC8F	DarkMagenta #800080	DarkOliveGreen #6B8E23	Olive #808000	Olive #808000	Olive #808000
DarkOrange #FF8C00	DarkOrchid #800080	DarkRed #8B0000	Orange #FF8C00	OrangeRed #FF4500	Orchid #8A2BE2
DarkSalmon #FFA07A	DarkSeaGreen #2F4F4F	DarkSlateBlue #2F4F4F	PaleGoldenrod #FAFAD2	PaleGreen #90EE90	PaleTurquoise #AFEEEE
DarkSlateGray #2F4F4F	DarkSlateGray #2F4F4F	DarkTurquoise #20B2AA	PaleVioletRed #D8BFD8	PapayaWhip #FFDAB9	PeachPuff #FFDAB9
DarkViolet #800080	DeepPink #FF1493	DeepSkyBlue #00CED1	Pink #FFB6C1	Plum #DDA0DD	Plum #DDA0DD
DimGray #696969	DimGray #696969	DodgerBlue #1E90FF	PowderBlue #B0E0E6	Purple #800080	RebeccaPurple #660066
FireBrick #CD5C5C	FloralWhite #FFFAF0	ForestGreen #228B22	Red #FF0000	RosyBrown #D8BFD8	RoyalBlue #4169E1
Fuchsia #FF00FF	Gainsboro #D3D3D3	GhostWhite #F0F8FF	SaddleBrown #8B4513	Salmor #FF4500	SandyBrown #F4A460
Gold #FFD700	Goldenrod #DAA520	Gray #808080	SeaGreen #20B2AA	SeaShell #FFF5EE	Senna #FF8C00
Gray #808080	Green #008000	GreenYellow #ADFF2F	Silver #C0C0C0	SkyBlue #87CEEB	SlateBlue #6A5ACD
HoneyDew #90EE90	HotPink #FF1493	IndianRed #CD5C5C	StateGray #A9A9A9	StateGray #A9A9A9	Snow #FFFAFA
Indigo #4B0082	Ivory #FFFFE0	Khaki #F0E68C	SpringGreen #00FF00	SeaBlue #4682B4	Tan #D2B48C
Lavender #E6E6FA	LavenderBlush #FFF0F5	LightGreen #90EE90	Teal #008080	Thistle #D8BFD8	Tomato #FF6347
LemonChiffon #FFFACD	LightBlue #ADD8E6	LightCoral #F08080	Turquoise #40E0D0	Violet #8A2BE2	Wheat #F5DEB3
LightCyan #E0FFFF	LightGoldenrodYellow #FAFAD2	LightGray #D3D3D3	White #FFFFFF	WhiteSmoke #F5F5DC	Yellow #FFFF00
LightGray #D3D3D3	LightGreen #90EE90	LightPink #FFB6C1	YellowGreen #9ACD32		

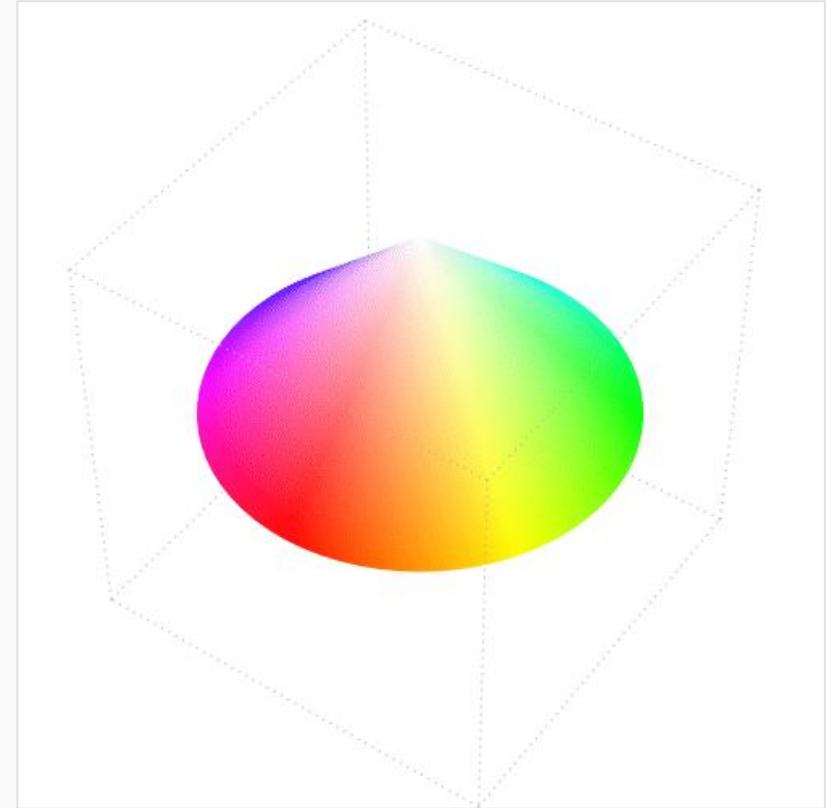
RGB en HEX

- **RGB** maakt kleuren door **rood** (R), **groen** (G) en **blauw** (B) additief te combineren
- Waardes tussen 0 en 256: `rgb(0, 0, 0)` is zwart en `rgb(256, 256, 256)` is wit
- **HEX** is een verkorte hexadecimale notatie voor RGB (0, ..., 16 = 0, ..., 9, A, ..., F)
- Waardes tussen `#000000` (zwart) en `#FFFFFF` (wit)



HSL

- Alternatief kleurenmodel o.b.v. hue (H), saturation (S) en lightness (L)
- **Voordeel:** intuïtiever, “rekenen” is gemakkelijker en transparantie is mogelijk met `rgba` (A = alpha)



Hex #FFCD00 RGB 255, 205, 0 HSL 48, 100, 50 OKLCH 0.87, 0.18, 91



Analogous

FF4D00

FFCD00

B3FF00

#FFCD00 Hex

Random palette Export colors

Color Harmonies

Analogous Export

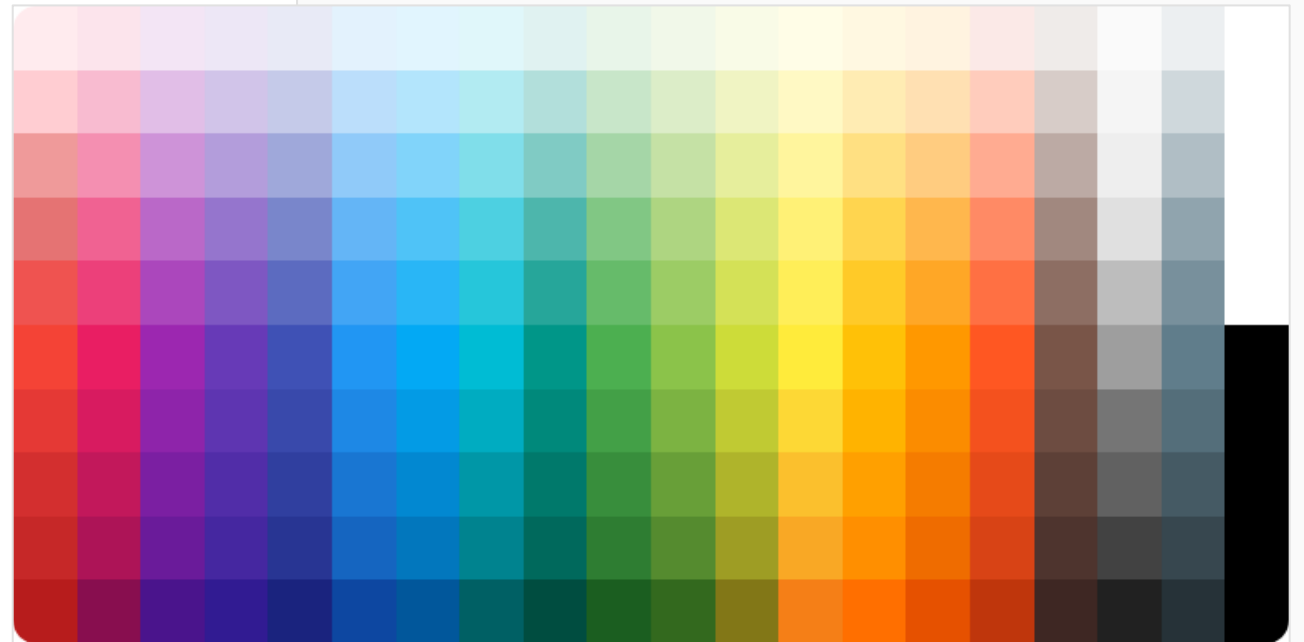
Complementary Export

Split Complementary Export

Triadic Export

Tetradic Export

Square Export

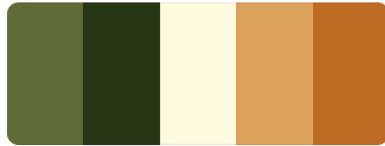


Material Design Color Chart

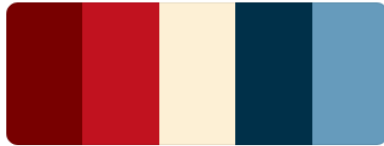
Material design is a visual language and design system developed by Google with an almost flat style and vibrant color schemes.

Full chart →

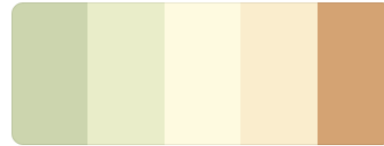
Search with colors, topics, styles or hex values...



Olive Garden Feast ♡ 98.8K 👁 ⋮



Fiery Ocean ♡ 35.9K 👁 ⋮



Golden Summer Fields ♡ 85.8K 👁 ⋮



Autumn Harvest ♡ 23.3K 👁 ⋮



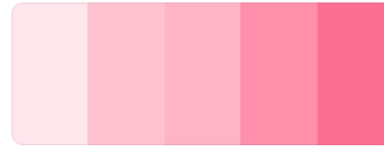
Pastel Dreamland Adventure ♡ 89K 👁 ⋮



Deep Sea ♡ 28K 👁 ⋮



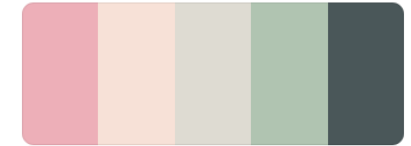
Refreshing Summer Fun ♡ 68.6K 👁 ⋮



Soft Pink Delight ♡ 23.7K 👁 ⋮



Soft Lavender ♡ 46.1K 👁 ⋮



Earthy Tones ♡ 20.2K 👁 ⋮



Ocean Blue Serenity ♡ 41.4K 👁 ⋮



Warm Neutral Tones ♡ 17.2K 👁 ⋮



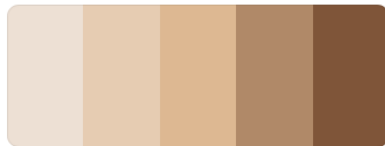
Meadow Green ♡ 17.5K 👁 ⋮



Fiery Red Sunset ♡ 28.7K 👁 ⋮



Ocean Breeze ♡ 29.1K 👁 ⋮



Cozy Cinnamon Latte ♡ 1,353 👁 ⋮



Fiery Palette ♡ 28K 👁 ⋮



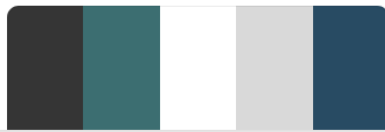
Fresh Greens ♡ 23.5K 👁 ⋮



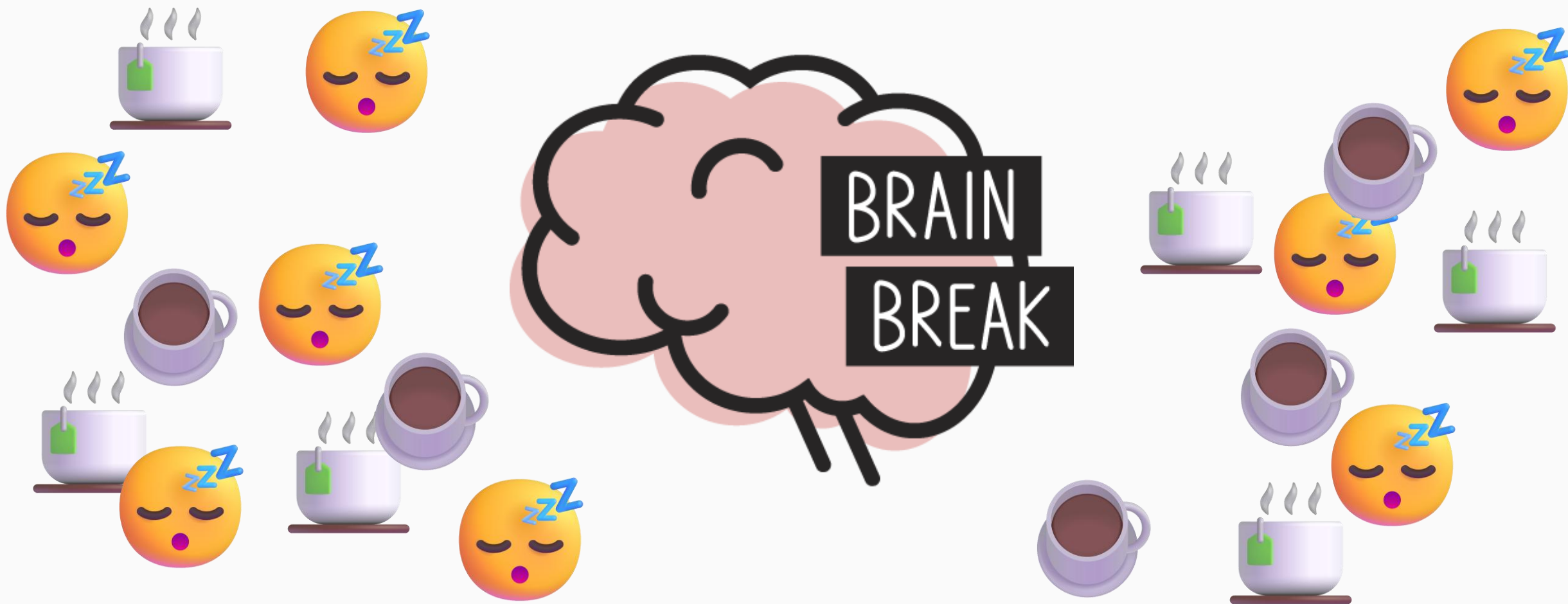
Summer Ocean Breeze ♡ 79.6K 👁 ⋮



Earthy Forest Hues ♡ 49.7K 👁 ⋮



Tijd voor een demo!



Hoorcollege 2

CSS & responsive webdesign

1. Basisconcepten voor CSS
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Stel gerust vragen



Responsive CSS



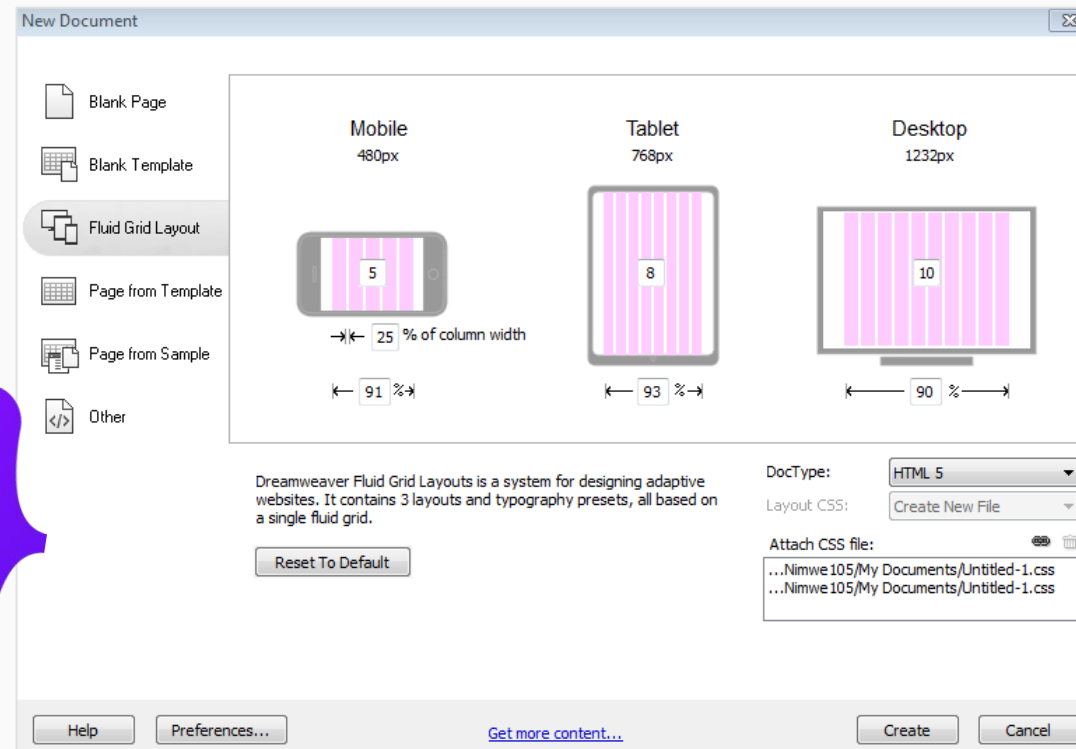
Verschillende designs voor alle toestellen?!

name	phys. width	phys. height	CSS width	CSS height	pixel ratio
Apple iPhone 6	750	1334	375	667	2
Apple iPhone 5	640	1136	320	568	2
Apple iPhone 4	640	960	320	480	2
Apple iPhone 3	320	480	320	480	1
Apple iPod Touch	640	1136	320	568	2
OnePlus One	1080	1920	360	640	3
LG G3	1440	2560	360	640	4
LG Optimus G	768	1280	384	640	2
Samsung Galaxy Note 2	720	1280	360	640	2
Samsung Galaxy Note	800	1280	400	640	2
Samsung Galaxy S5	1080	1920	360	640	3
Samsung Galaxy S4	1080	1920	360	640	3



Kant-en-klare oplossingen

- **Frameworks** zoals Bootstrap, Skeleton, Foundation, Goldilocks...
- **Templates** zoals aangeboden in Dreamweaver, W3.CSS...



Media queries

HTML

```
<meta name="viewport" content="width=device-width; initial-scale=1.0">
```

CSS

```
@media only screen and (min-width : 120px) and (max-width : 360px) {  
    background-color: green;  
    color: yellow;  
    font-family: Arial, sans-serif;  
}
```

CSS flexbox

Efficiënt elementen **1-dimensionaal** verdelen in een container



HTML

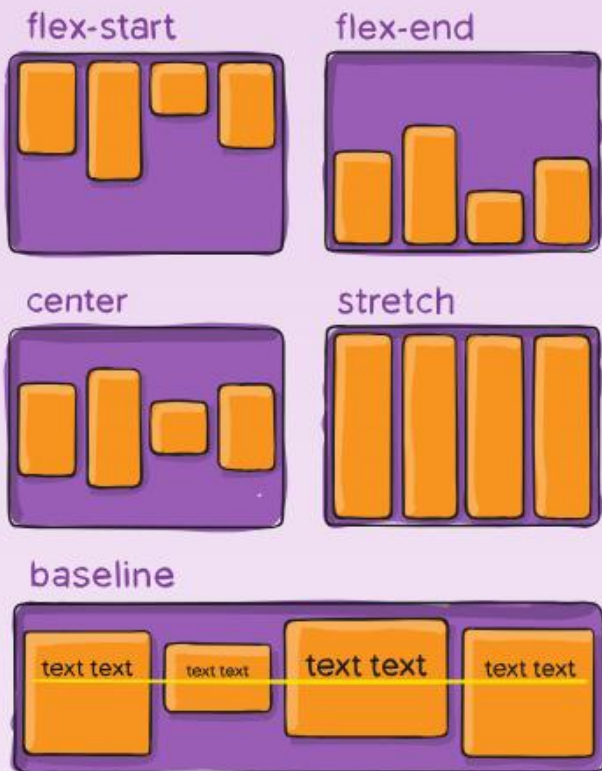
```
<div class="container">
  <div class="item item-1"> </div>
  <div class="item item-2"> </div>
  <div class="item item-3"> </div>
</div>
```

CSS

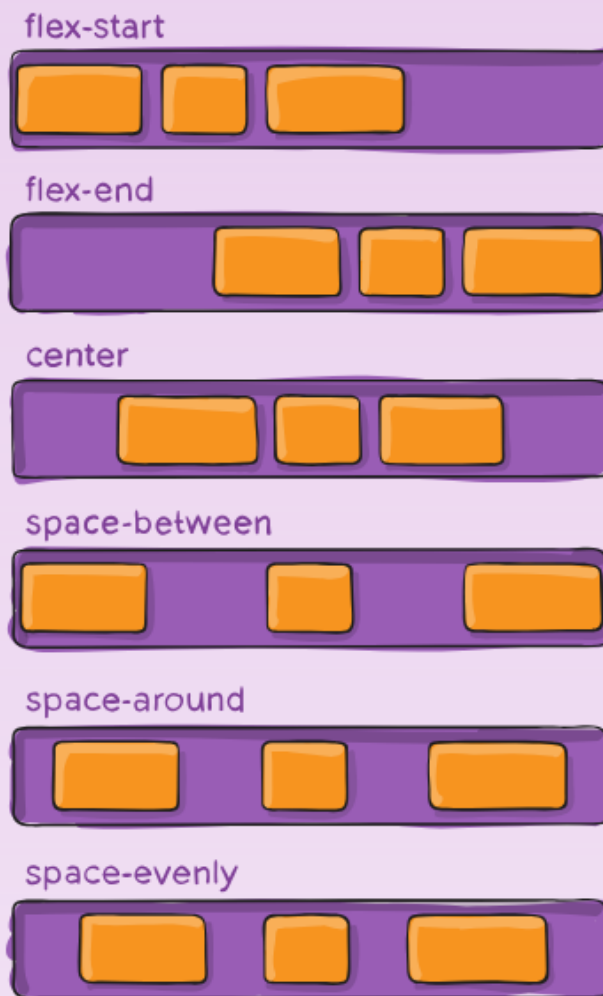
```
.container {
  display: flex;
}
```


CSS flexbox

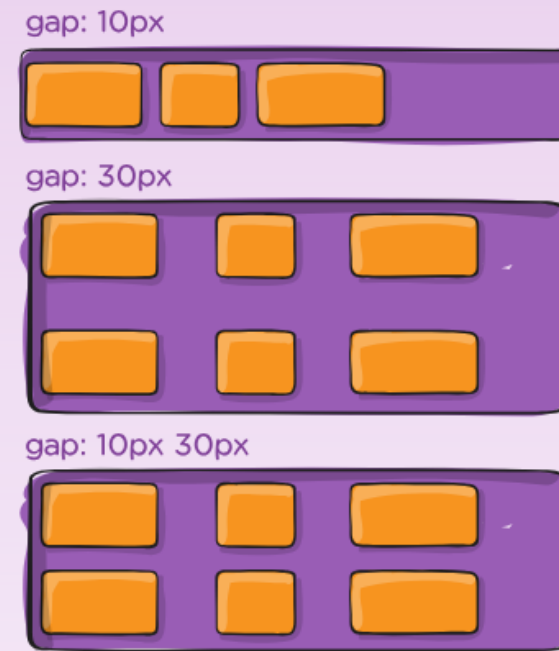
align-items



justify-content

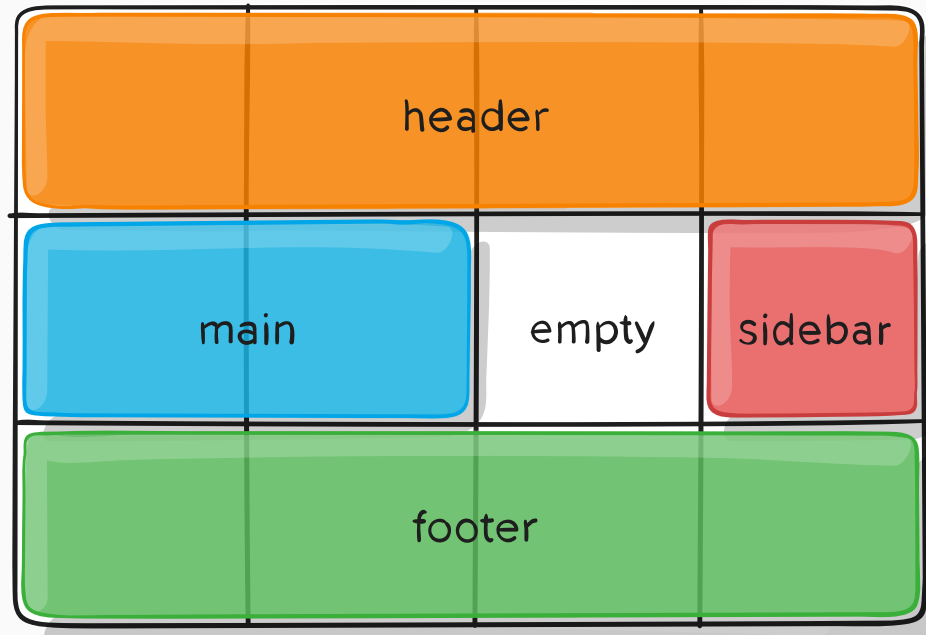


gap, row-gap, column-gap



CSS grid

Efficiënt elementen **2-dimensionaal** verdelen in een container



HTML

```
<div class="container">
  <div class="item item-1"> </div>
  <div class="item item-2"> </div>
  <div class="item item-3"> </div>
</div>
```

CSS

```
.container {
  display: grid;
}
```

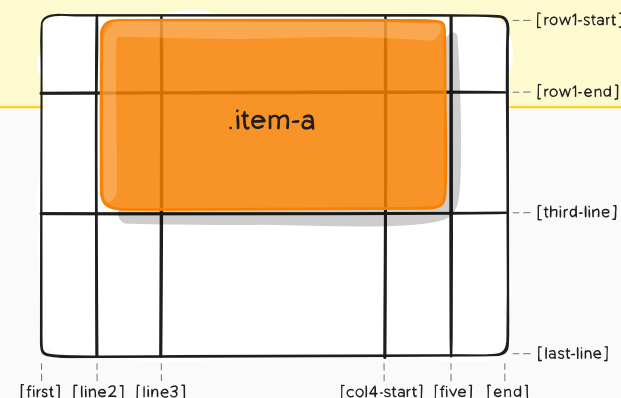
CSS grid

CSS voor container

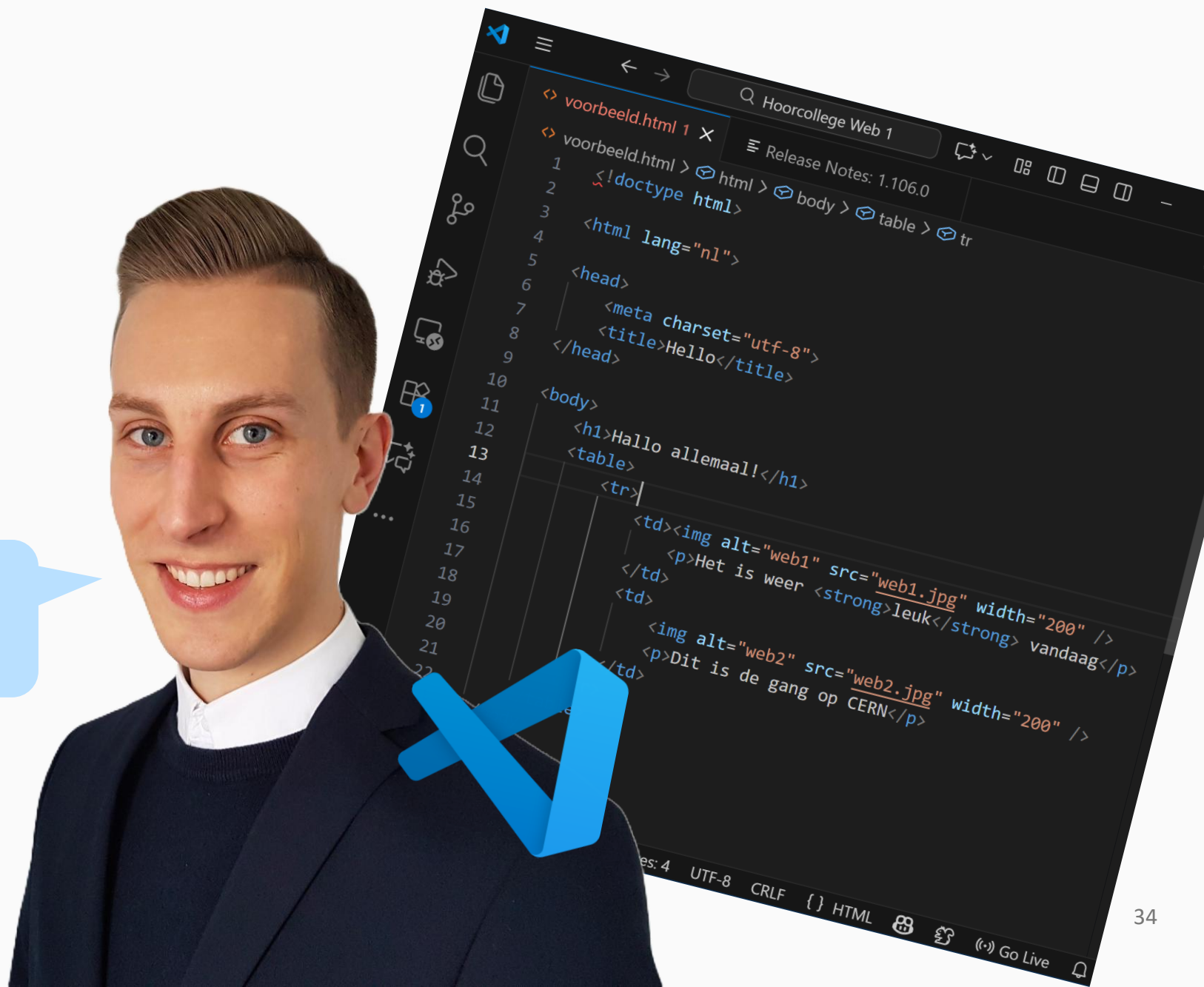
```
.container {  
  grid-template-columns: ... ...;  
  /* e.g.  
    1fr 1fr  
    minmax(10px, 1fr) 3fr  
    repeat(5, 1fr)  
    50px auto 100px 1fr  
  */  
  grid-template-rows: ... ...;  
  /* e.g.  
    min-content 1fr min-content  
    100px 1fr max-content  
  */  
}
```

CSS voor item(s)

```
.item {  
  grid-column: <start> / <end>;  
  /*  
  grid-column: <start> / span <N>;  
  */  
  grid-row: <start> / <end>;  
  /*  
  grid-row: <start> / span <N>;  
  */  
}
```



Tijd voor een demo!



Hoorcollege 2

CSS & responsive webdesign

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Stel gerust vragen



Expertconsultatie

Vraag wat je altijd al wilde weten over HTML en CSS



Meer selectors

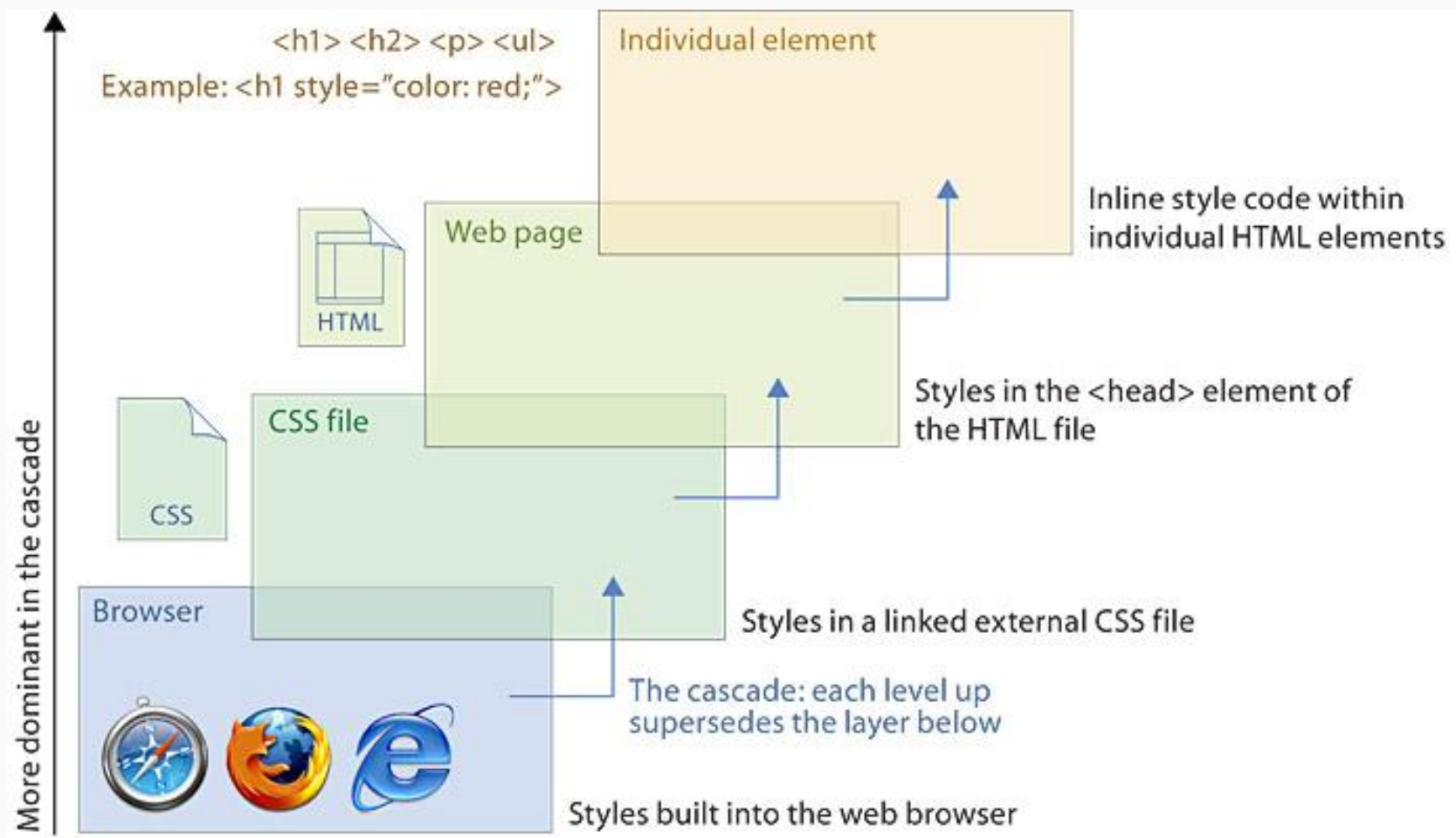
Combinator selectors

Pseudo-class selectors

Attribute selectors

Selector	Description
<u>selector1 selector2</u>	Select all descendants of selector1 that match selector2
<u>selector:hover</u>	Styles an link on mouse over
<u>selector:link</u>	Styles unvisited links
<u>selector:first-child</u>	Matches an element that is the first child of another element
<u>selector[attribute=value]</u>	Select elements with a specific attribute with an exact value

Cascade: “voorrangsregels” voor CSS



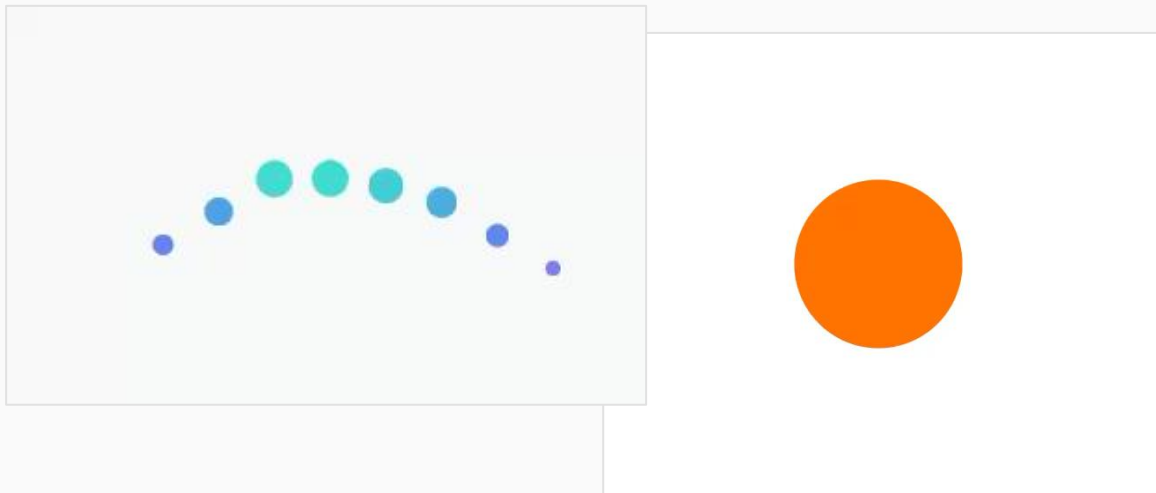
Specificity

Selector	Example	Description	Weight
Inline styles	<code><h1 style="color: pink;"></code>	Highest priority, will override all other selectors	
Id selectors	<code>#navbar</code>	Second highest priority	1-0-0
Classes, attribute selectors and pseudo-classes	<code>.test, [type="text"], :hover</code>	Third highest priority	0-1-0
Elements and pseudo-elements	<code>h1, ::before, ::after</code>	Low priority	0-0-1
Universal selector and :where()	<code>*, where()</code>	No priority	0-0-0

Transities en animaties

Transities: geleidelijk de waarden van bepaalde properties veranderen

Animaties: verander meerdere properties tegelijkertijd met “keyframes”



```
@keyframes myAnimation {  
  0%    {background-color: red;}  
  25%   {background-color: yellow;}  
  100%  {background-color: green;}  
}  
  
div {  
  width: 100px;  
  height: 100px;  
  background-color: red;  
  animation-name: myAnimation;  
  animation-duration: 4s;  
}
```

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

<https://coolcssanimation.com>

<https://developer.mozilla.org/en-US/docs/Web/CSS/Guides/Animations/Using>

https://www.w3schools.com/css/css3_transitions.asp

Web fonts

The screenshot shows the Google Fonts website. On the left is a sidebar with navigation links: Fonts, Noto, Icons, Knowledge, and FAQ. The main area displays a list of font families, each with a preview of the text "Everyone has the right to freedom of thought, conscience and religion; th". The font families shown are Roboto, Stack Sans Text, Stack Sans Headline, Open Sans, and Stack Sans Notch. Each font family is accompanied by its variable axes and the designer's name. A filter button is visible at the top left of the font list. The top of the page includes a search bar and a "Sort by Trending" dropdown.

Embed code in the <head> of your html

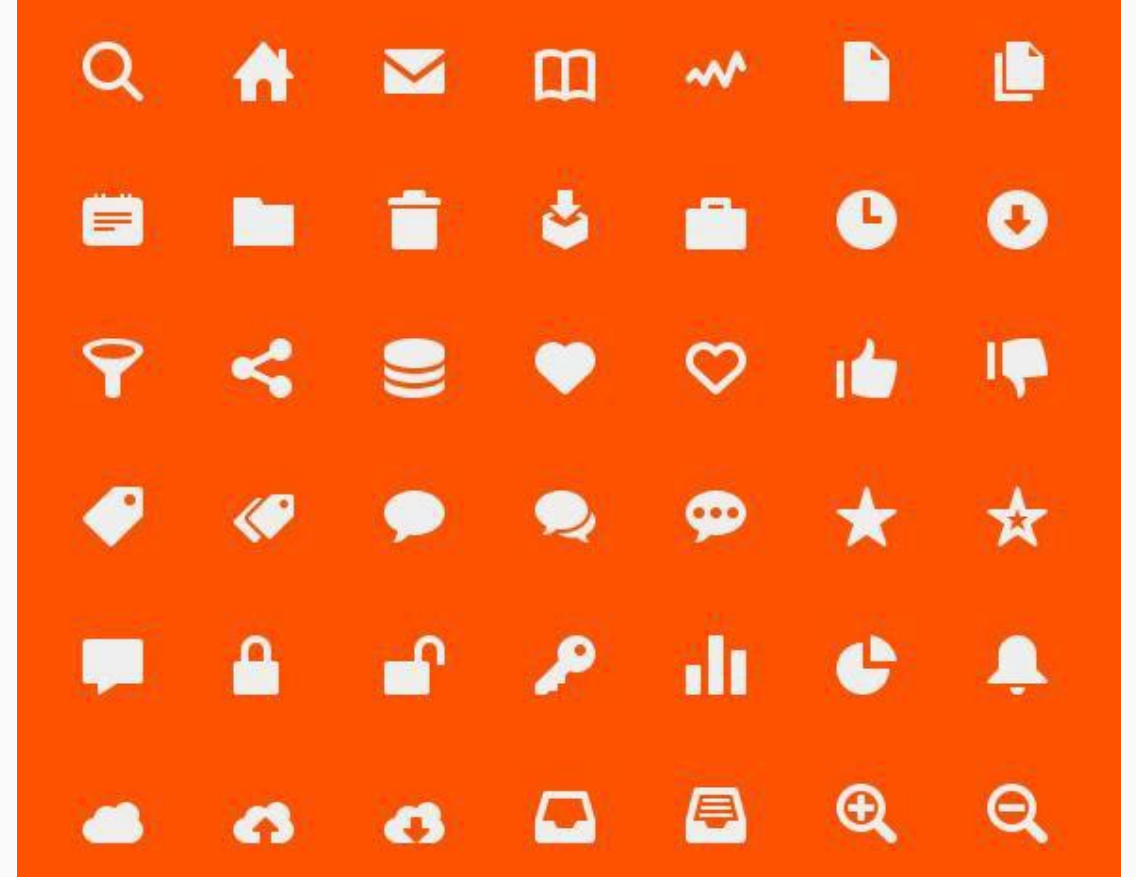
```
<link rel="preconnect" href="https://fonts.goo
<link rel="preconnect" href="https://fonts.gst
<link href="https://fonts.googleapis.com/css2?
00;1,400..900&family=Poppins:ital,wght@0,100;0
0;1,400;1,500;1,600;1,700;1,800;1,900&family=R
t">
```

Noto Color Emoji: CSS class

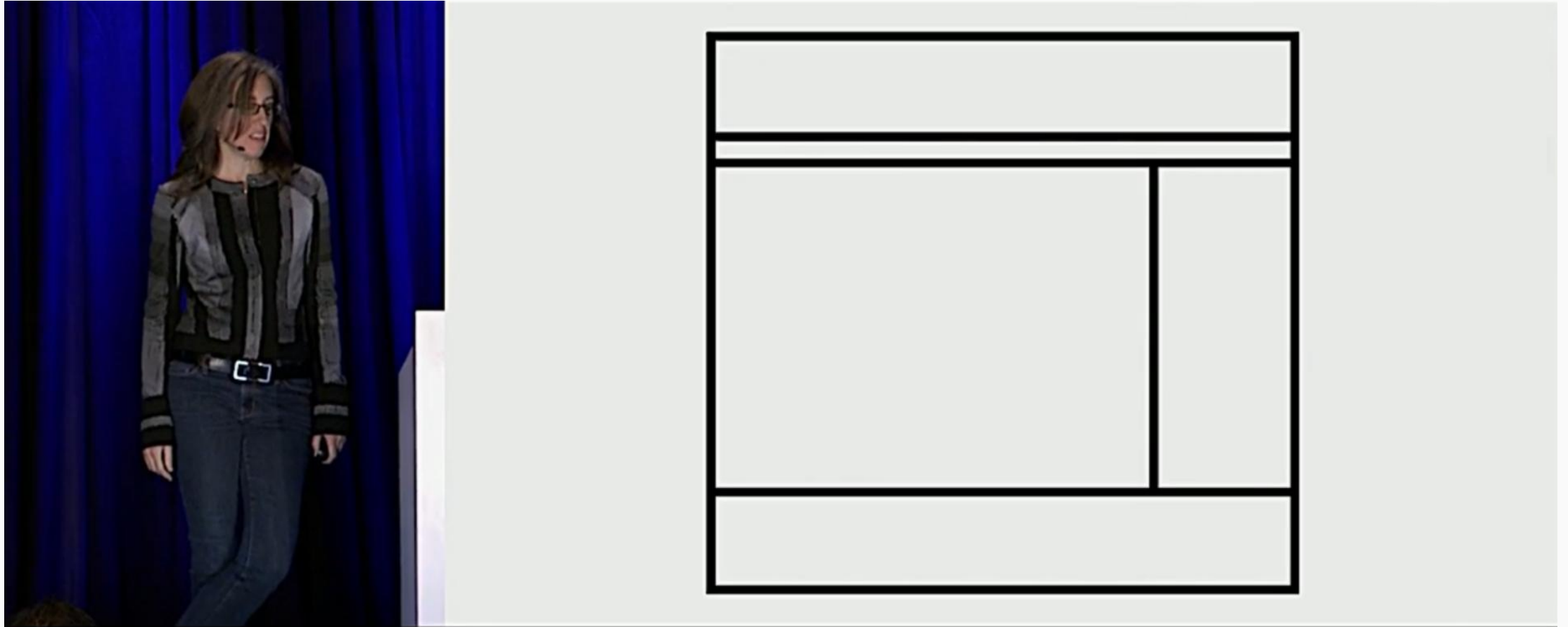
```
.noto-color-emoji-regular {
  font-family: "Noto Color Emoji", sans-serif;
  font-weight: 400;
  font-style: normal;
}
```

Icon fonts

Laden meestal sneller en zijn scherper
dan afbeeldingen

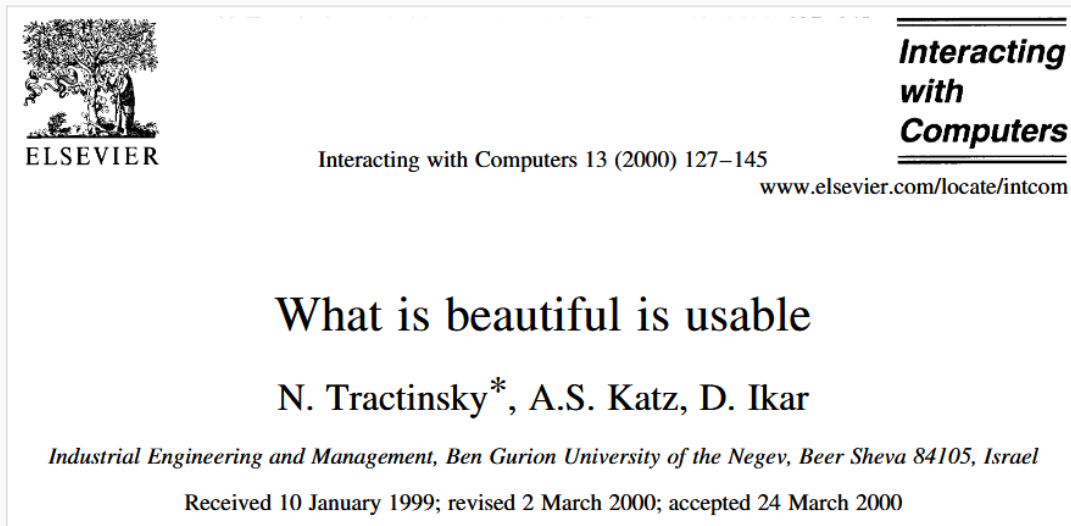


Conclusie: ga voor origineel webdesign



Conclusie: “with power comes responsibility”

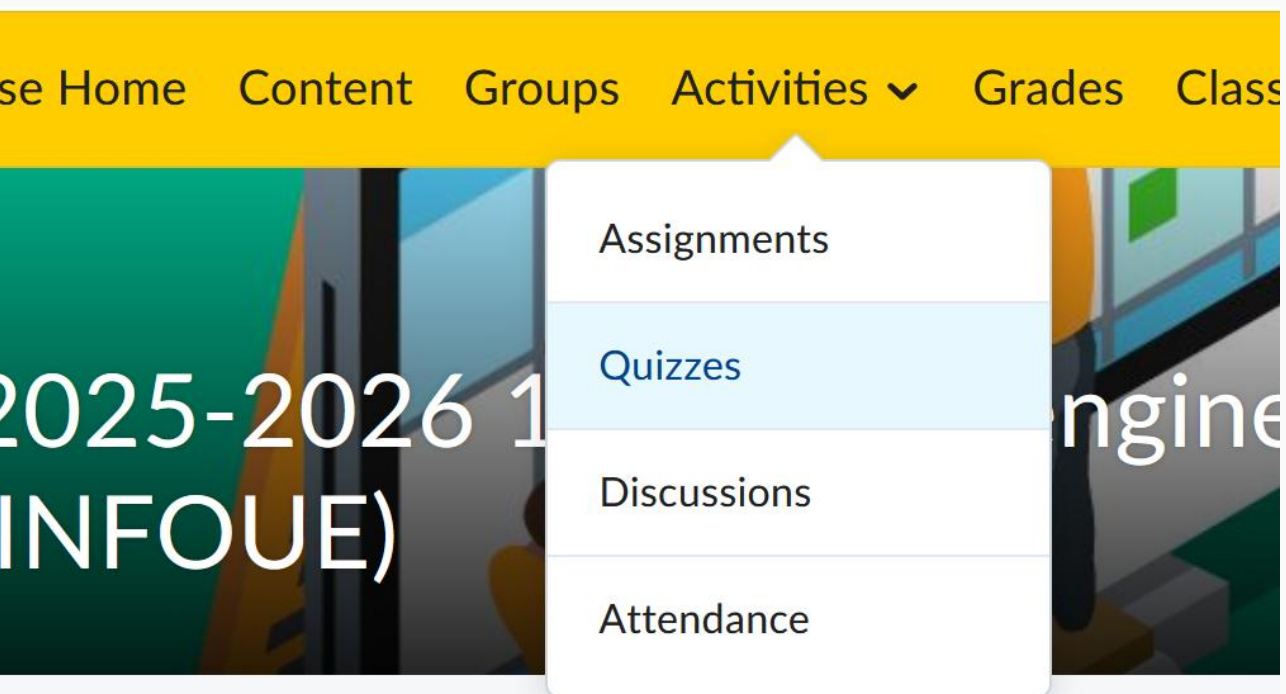
- Esthetiek beïnvloedt de user experience, maar mag nooit interfereren met het doel en de functionaliteit van websites
- Hou bij grafisch ontwerp rekening met usability en accessibility
vb. typische structuur van webpagina's, toegankelijke knoppen ...



Meer over usability
en user experience
in het vak INFOUE!



Wat webben we
vandaag geleerd?



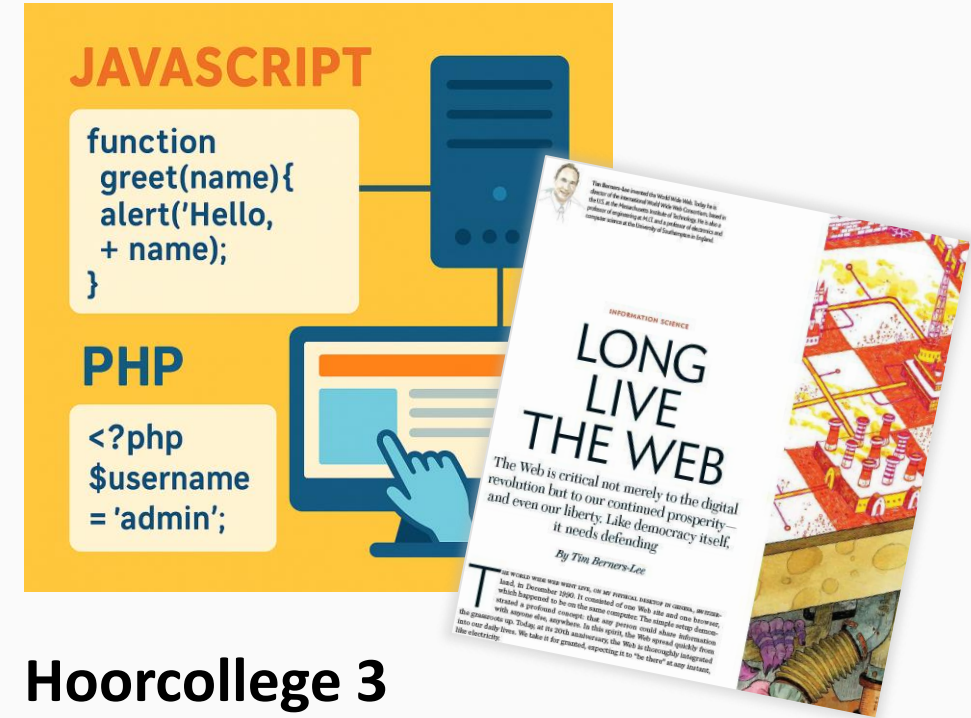
Volgende keer JS en PHP



Hoorcollege 1
Het Web & HTML



Hoorcollege 2
CSS & responsive
webdesign



Hoorcollege 3
JavaScript & PHP

Credits

Inhoud deels geïnspireerd op slides van Christof van Nimwegen

<https://www.w3schools.com/css>

<https://developer.mozilla.org/en-US/docs/Web/CSS>

<https://css-tricks.com>