Table of Contents

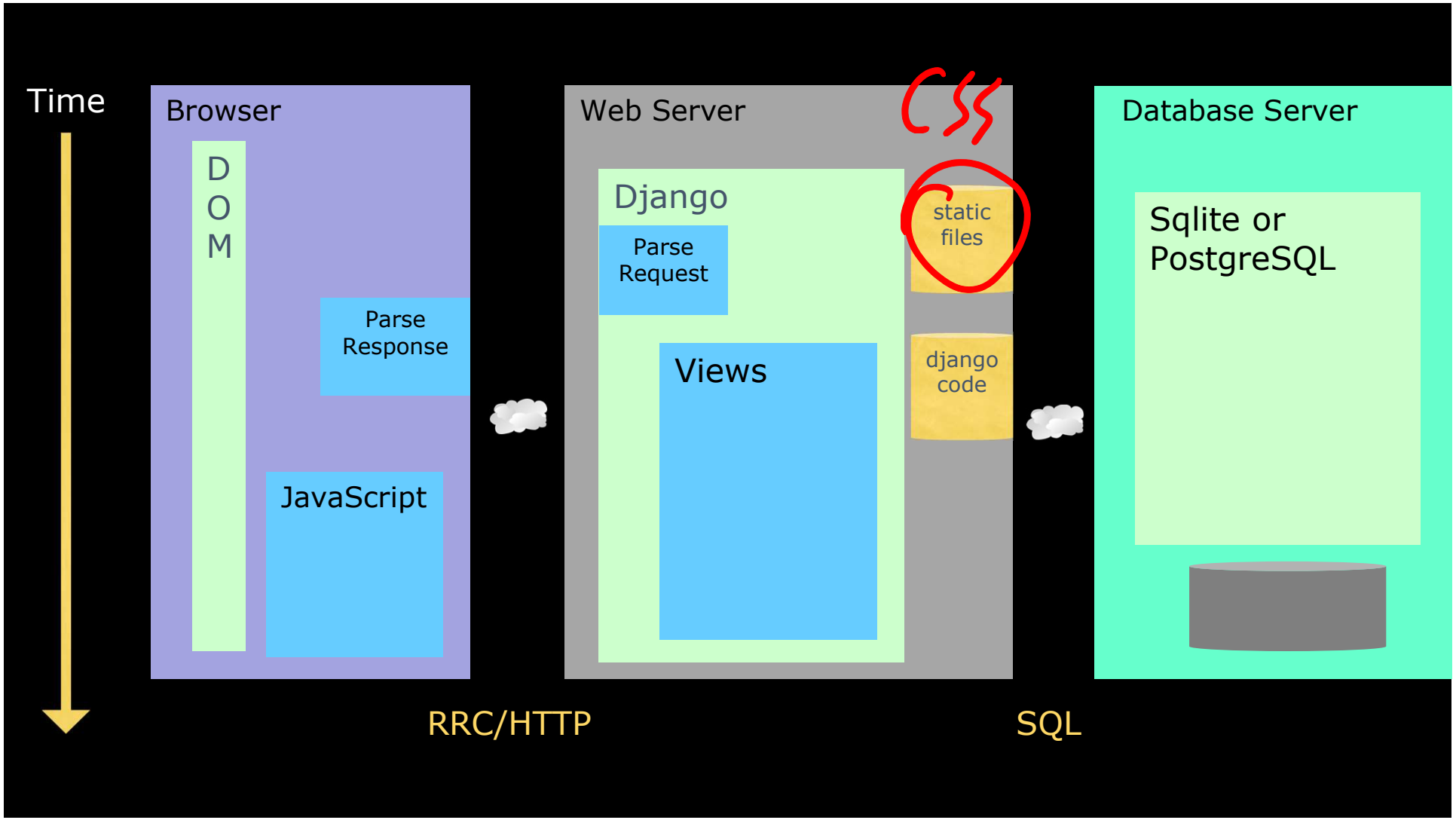
This slide deck consists of slides used in 3 lecture videos in Week 4. Below is a list of shortcut hyperlinks for you to jump into specific sections.

- (page 2) Week 4: WA4E/CSS - Cascading Style Sheets (Part 1)
- (page 13) Week 4: WA4E/CSS - Cascading Style Sheets (Part 2)
- (page 24) Week 4: WA4E/CSS - Cascading Style Sheets (Part 3)

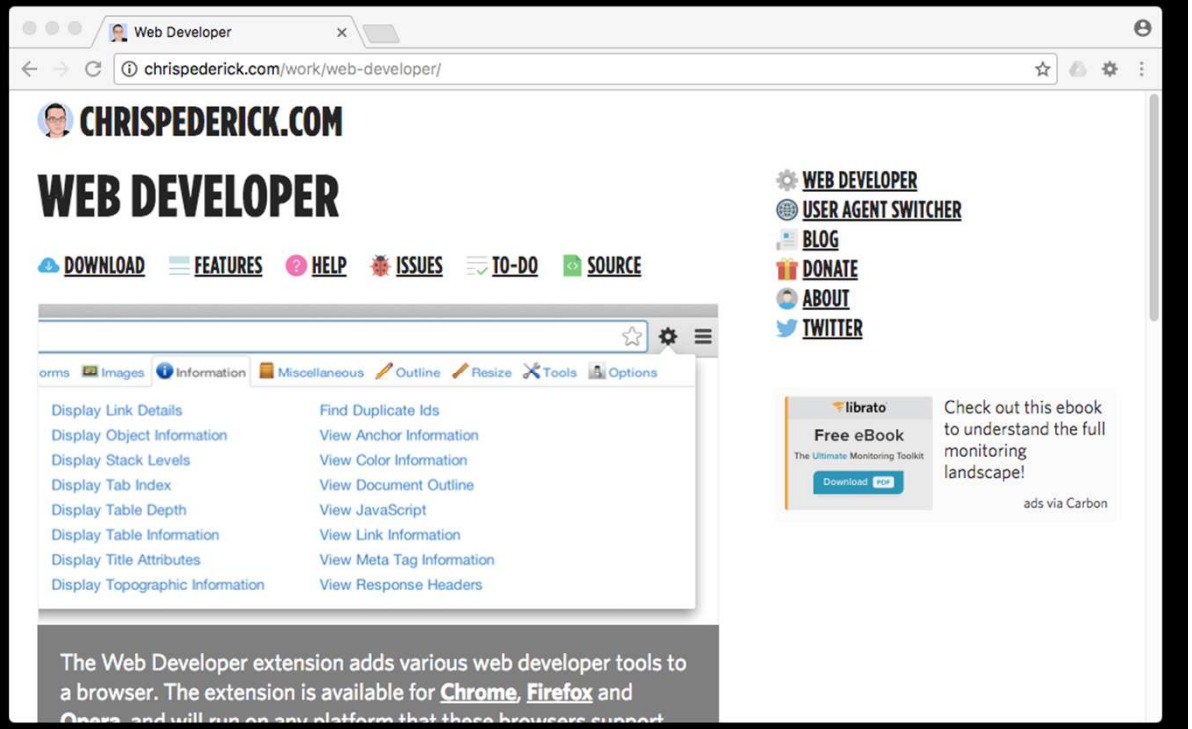
Cascading Style Sheets

- Charles Severance
- www.dj4e.com

https://www.dj4e.com/code/css.zip


Time
Browser
DOM
Parse Response
JavaScript
Web Server
Django
Parse Request
Views
CSS
static files
django code
Database Server
Sqlite or PostgreSQL
RRC/HTTP
SQL

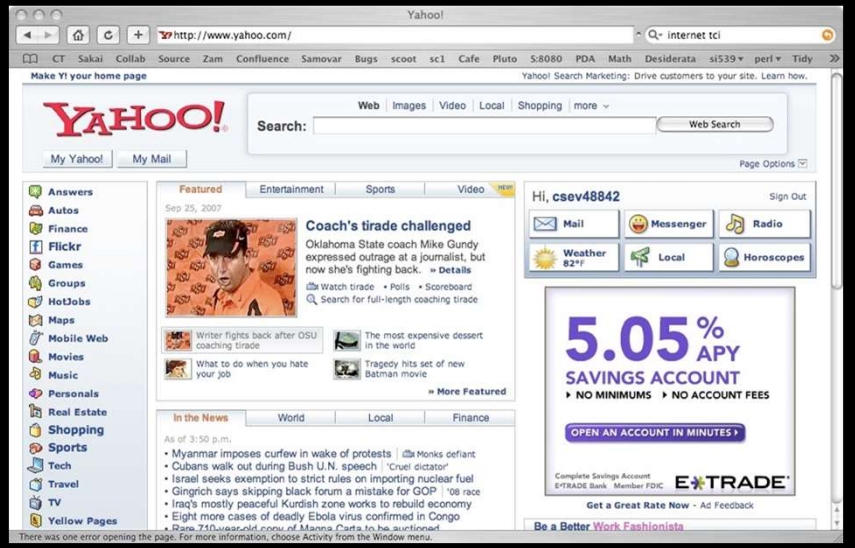
More than Developer Console



http://chrispederick.com/work/web-developer/

1996

HTML has evolved a *lot* over the years - as computers and networks have gotten faster

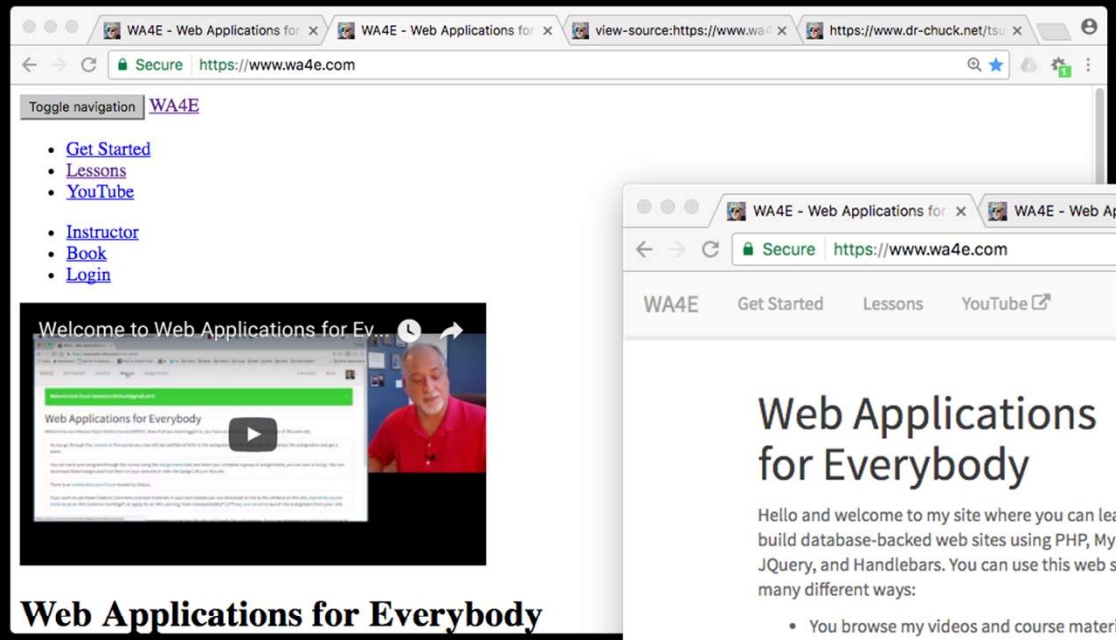


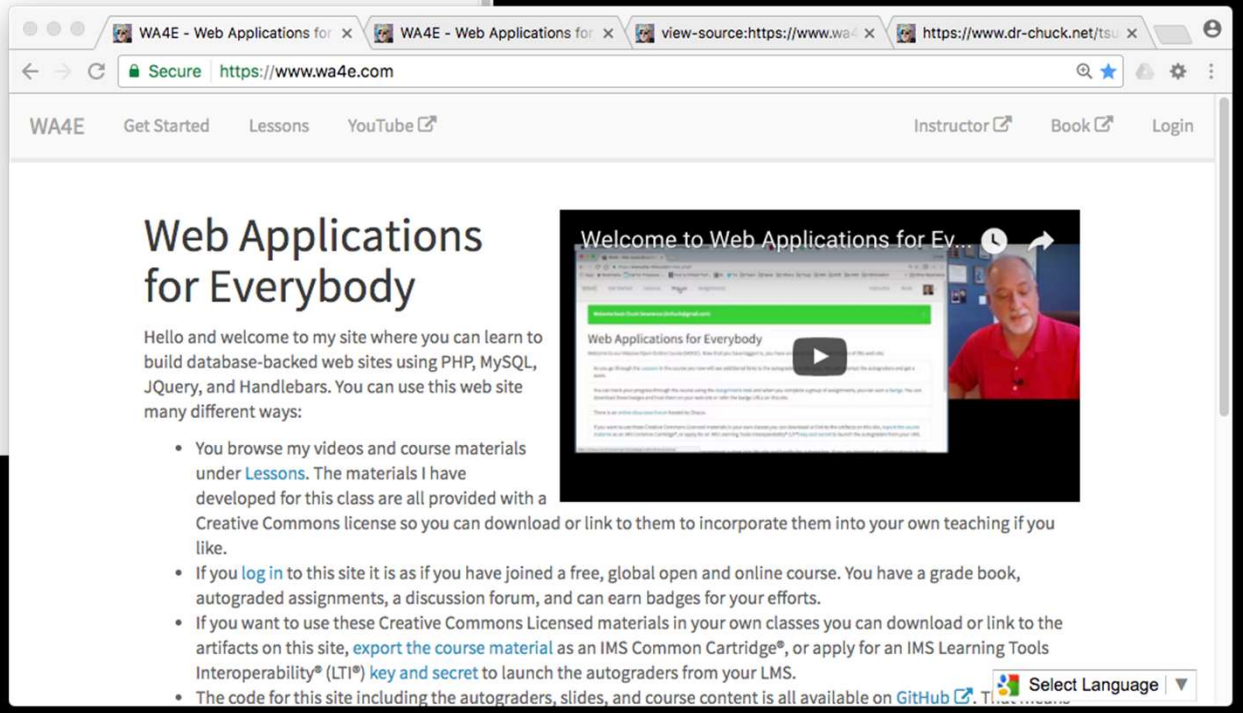
2007

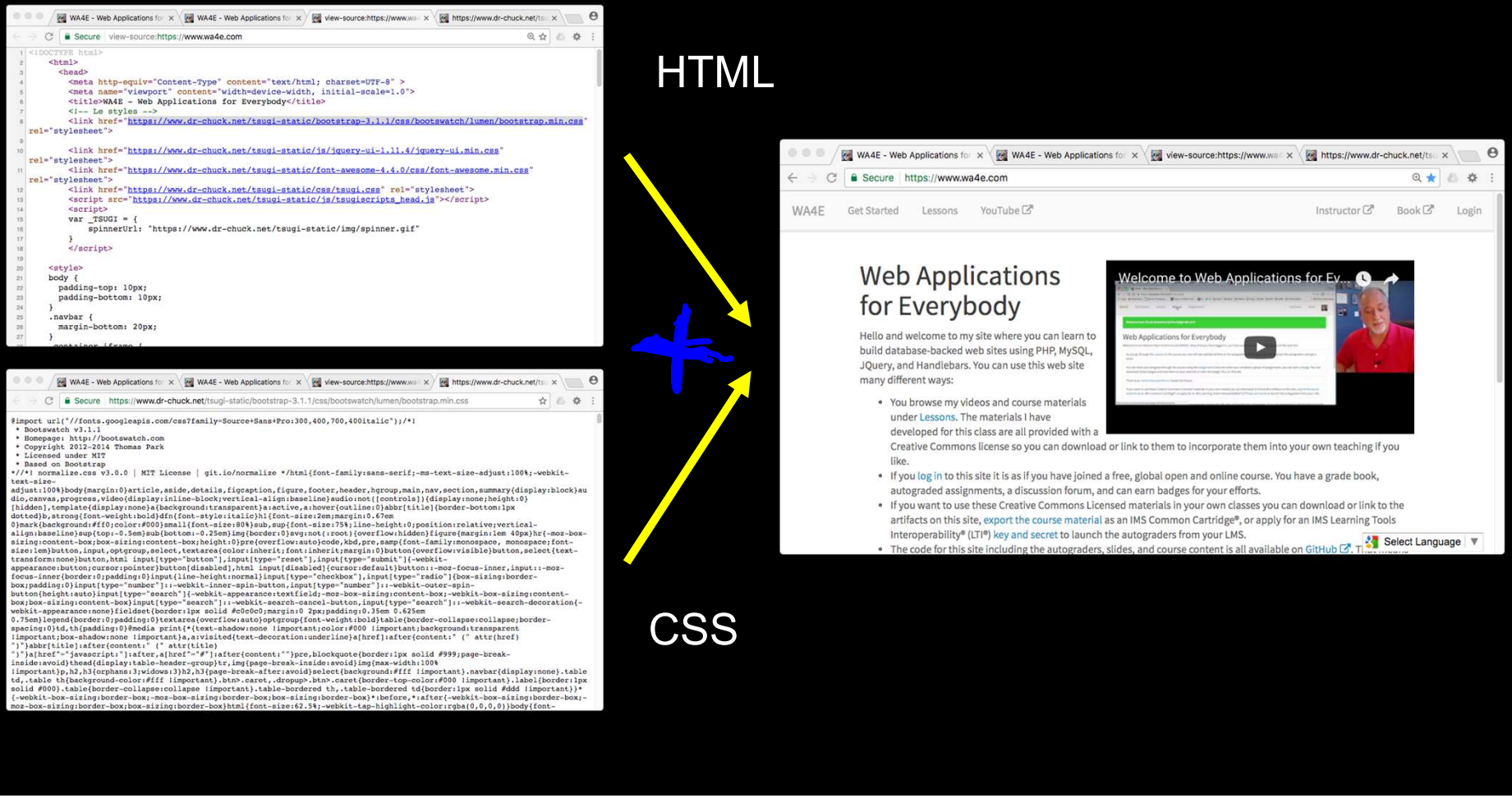
Without CSS

with the progamm

With CSS






HTML
CSS
WA4E - Web Applications for Everybody
Secure https://www.wa4e.com
WA4E
Get Started
Lessons
YouTube
Instructor
Book
Login
Web Applications for Everybody
Hello and welcome to my site where you can learn to build database-backed web sites using PHP, MySQL, JQuery, and Handlebars. You can use this web site many different ways:
Select Language

Separation of Concerns / Specialization

Developer

```
<html>
<head>
  <title>Including CSS From a File</title>
  <link type="text/css" rel="stylesheet" href="rules.css">
</head>
<body>
<h1>A Header</h1>
<p>
By putting the CSS rules into a separate file,
it can be included in many different web pages
with a single "link" tag, usually in the
"head" of the document.
</p>
```

Designer

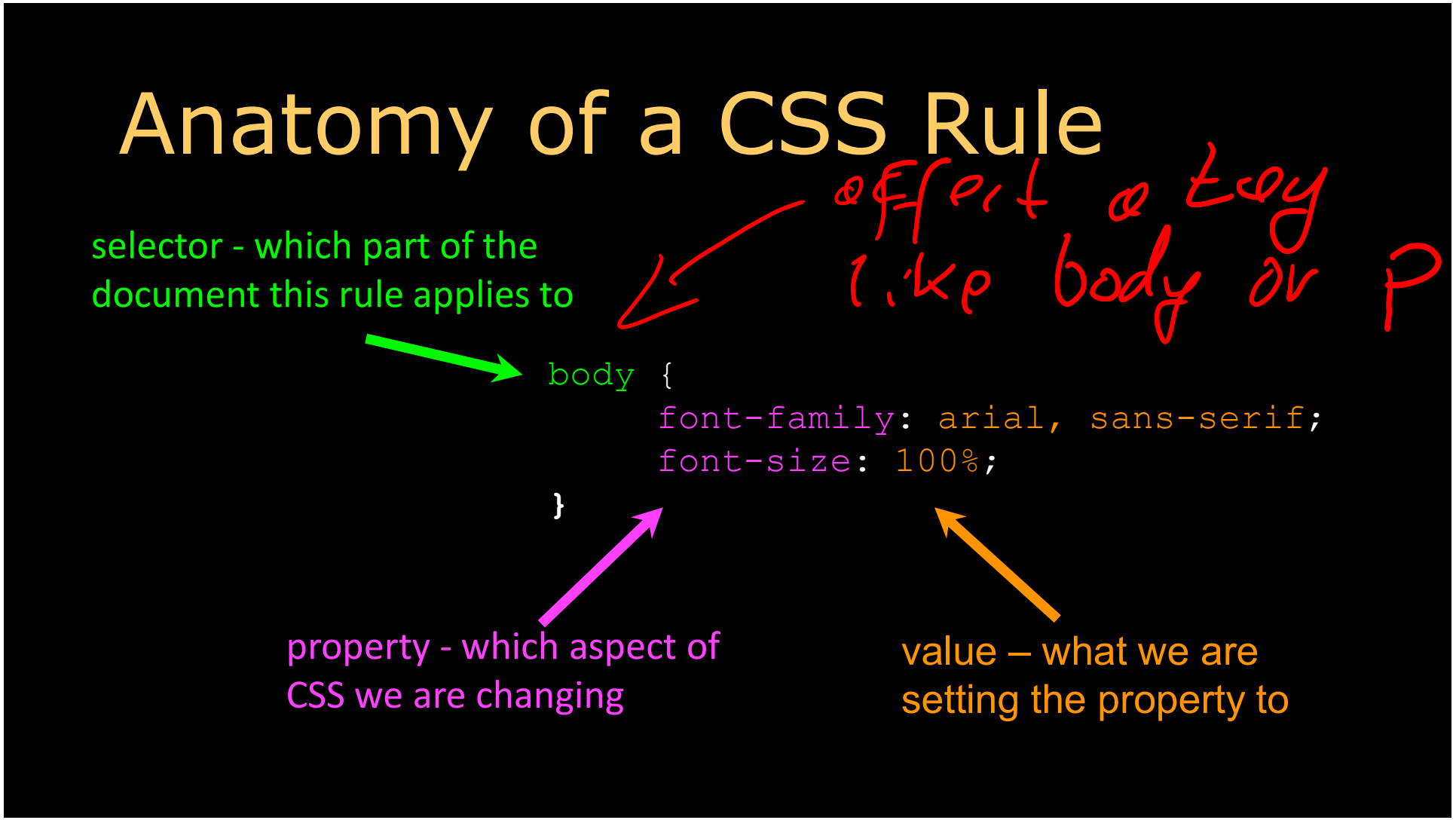
```
body {
  font-family: arial, sans-serif;
}
h1 {
  color: blue;
}
p {
  border-style: solid;
  border-color: red;
  border-width: 5px;
}
a {
  color: green;
  background-color: lightgray;
  text-decoration: none;
}
```

CSS Syntax

- CSS Syntax is very different than HTML.
- CSS is a set of “rules” which in include a “selector” and one or more “properties” and “values” as well as some punctuation...

```
body {
    font-family: arial, sans-serif;
}
```

Anatomy of a CSS Rule



CSS CHEAT SHEET

Shorthand*

background
border
border-bottom
border-left
border-right
border-top
font
list-style
margin
padding

Comments

/* Comment */

Pseudo Selectors

:hover
:active
:focus
:link
:visited
:first-line
:first-letter

Media Types

all
braille
embossed
handheld
print
projection
screen
speech
tty
tv

Units

Length %
em
pt

SYNTAX

Syntax

selector {property: value;}

External Style Sheet

<link rel="stylesheet" type="text/css" href="style.css" />

Internal Style

<style type="text/css">
selector {property: value;}
</style>

Inline Style

<tag style="property: value">

GENERAL

Class	String preceded by a period
ID	String preceded by a hash mark
div	Formats structure or block of text
span	Inline formatting
color	Foreground color
cursor	Appearance of the cursor
display	block; inline; list-item; none
overflow	How content overflowing its box is handled visible, hidden, scroll, auto
visibility	visible, hidden

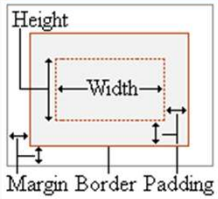
FONT

font-style	Italic, normal
font-variant	normal, small-caps
font-weight	bold, normal, lighter, bolder, integer (100-900)
font-size	Size of the font
font-family	Specific font(s) to be used

TEXT

letter-spacing	Space between letters
line-height	Vertical distance between baselines

BOX MODEL



height; width; margin-top; margin-right; margin-bottom; margin-left; padding-top; padding-right; padding-bottom; padding-left;

BORDER

border-width	Width of the border
border-style	dashed; dotted; double; groove; inset; outset; ridge; solid; none
border-color	Color of the border

POSITION

clear	Any floating elements around the element? both, left, right, none
float	Floats to a specified side left, right, none
left	The left position of an element auto, length values (pt, in, cm, px)
top	The top position of an element auto, length values (pt, in, cm, px)
position	static, relative, absolute
z-index	Element above or below overlapping elements? auto, integer (higher numbers on top)

BACKGROUND

background-color	Background color
background-image	Background image

http://www.lesliefranke.com/files/reference/csscheatsheet.html

Partial List of CSS Properties

color
background-color
visibility (visible/hidden)
font-family (arial, sans-serif)
font-size
font-style (italic, normal)
font-weight (bold, normal)
text-align
vertical-align
text-transform (lowercase, etc)

text-decoration
border-width
border-style
border-color
margin
border
padding
float (left, right, none)
left / top
position (static, relative, absolute)
z-index

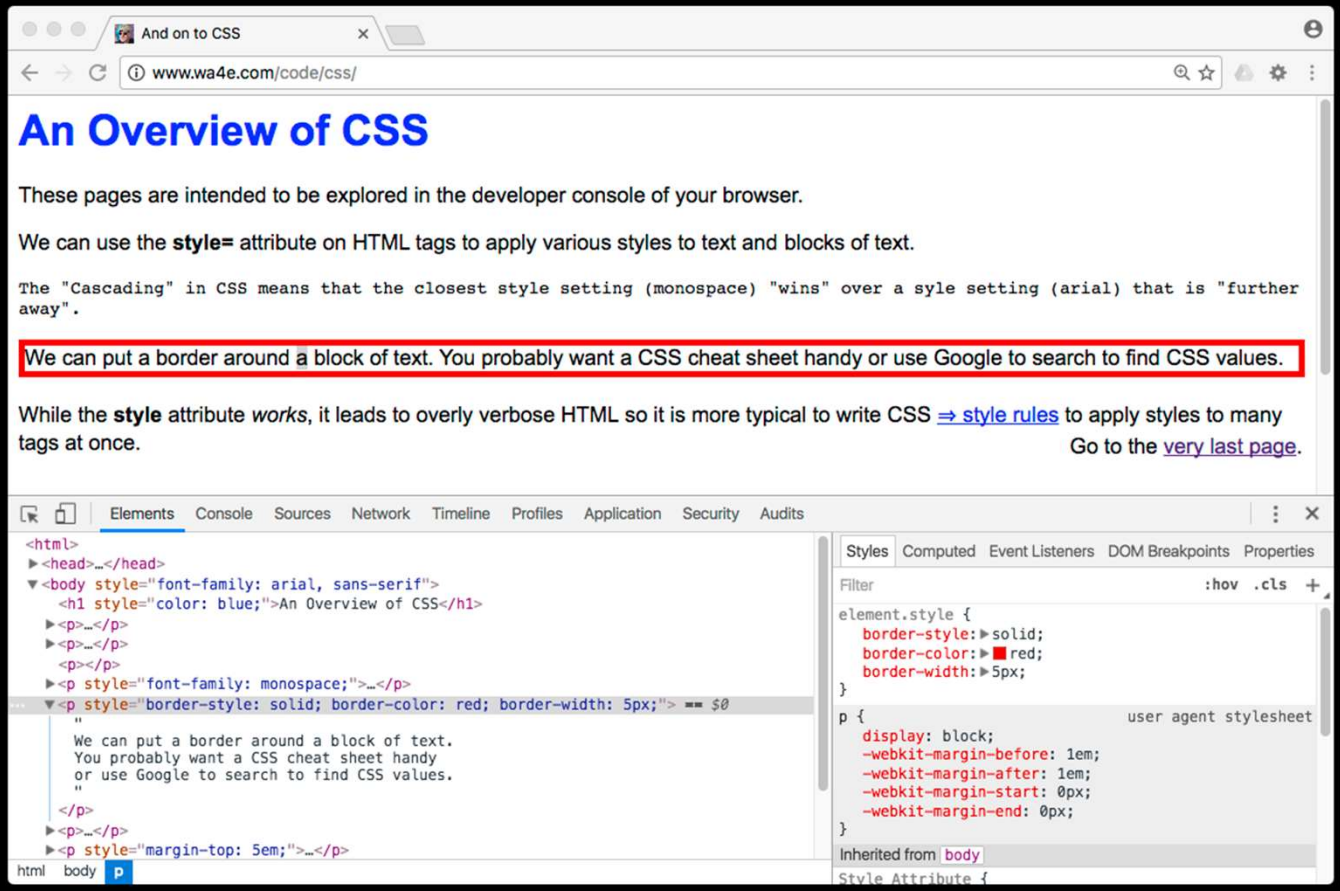
http://www.lesliefranke.com/files/reference/csscheatsheet.html

Using CSS in HTML

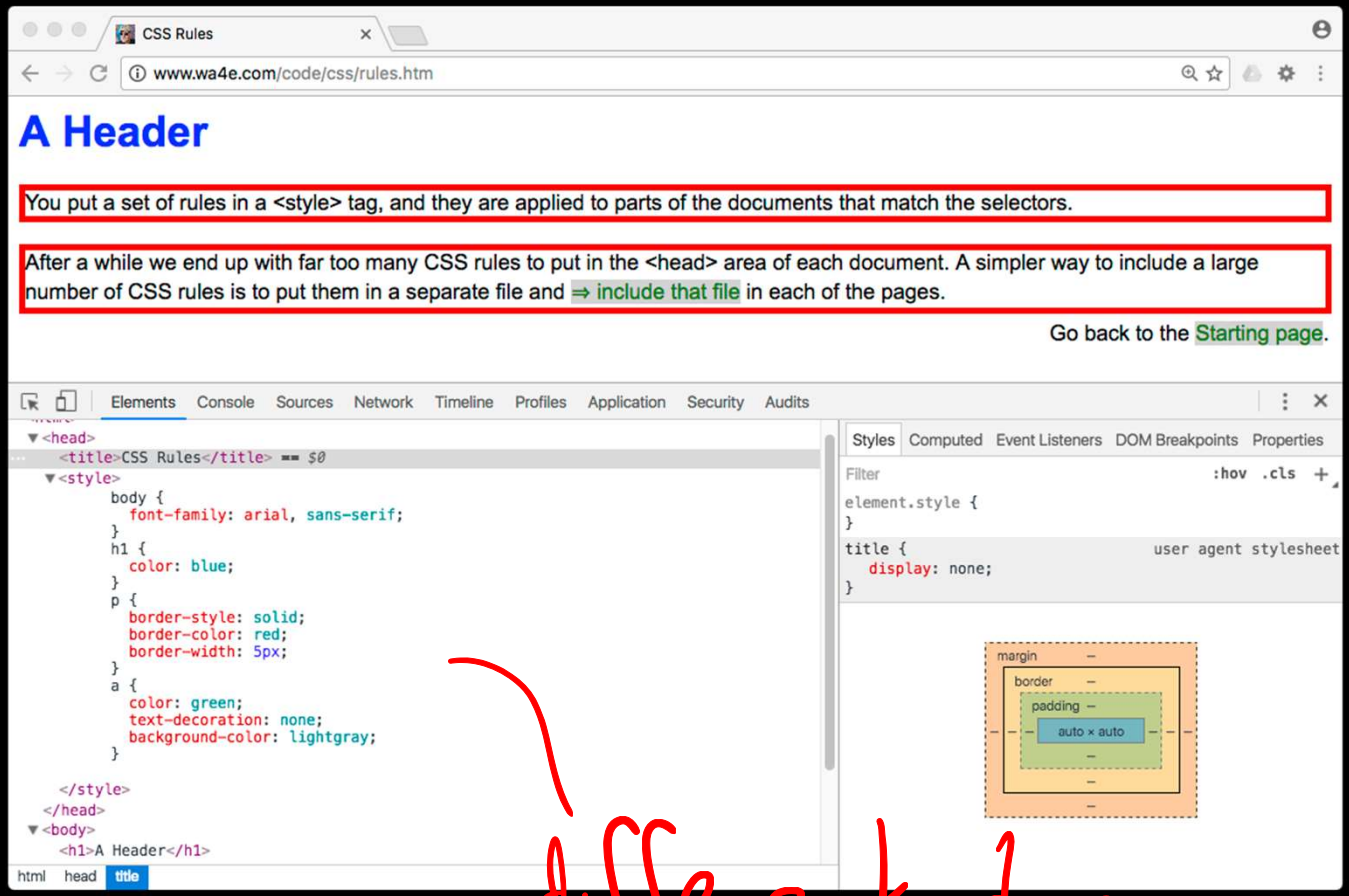
Applying CSS to our HTML

- Inline - right on an HTML tag, using the style= attribute
- An embedded style sheet in the <head> of the document
- As an external style sheet in a separate file

3 ways



Style in a tag
(closer = higher priority

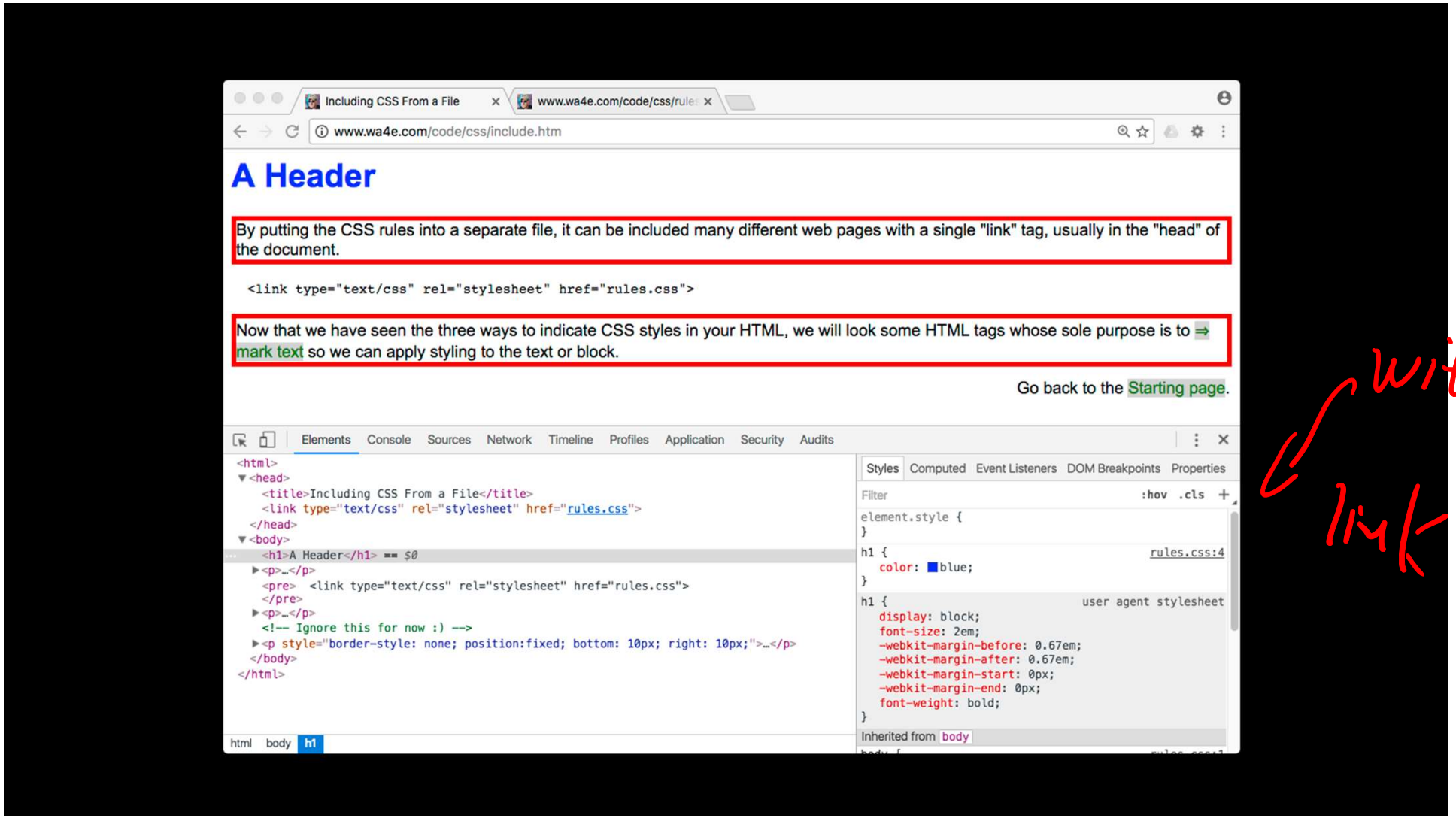

CSS Rules
www.wa4e.com/code/css/rules.htm
A Header
You put a set of rules in a <style> tag, and they are applied to parts of the documents that match the selectors.
After a while we end up with far too many CSS rules to put in the <head> area of each document. A simpler way to include a large number of CSS rules is to put them in a separate file and ⇒ include that file in each of the pages.
Go back to the Starting page.
Elements Console Sources Network Timeline Profiles Application Security Audits
<head>
<title>CSS Rules</title> == $0
<style>
body { font-family: arial, sans-serif; }
h1 { color: blue; }
p { border-style: solid; border-color: red; border-width: 5px; }
a { color: green; text-decoration: none; background-color: lightgray; }
</style>
</head>
<body>
<h1>A Header</h1>
html head title
Styles Computed Event Listeners DOM Breakpoints Properties
Filter :hov .cls +
element.style { }
title { user agent stylesheet
display: none;
}
margin
border
padding
auto × auto
different tags

```
<html>
<head>
  <title>Including CSS From a File</title>
  <link type="text/css" rel="stylesheet" href="rules.css">
</head>
<body>
<h1>A Header</h1>
```

link

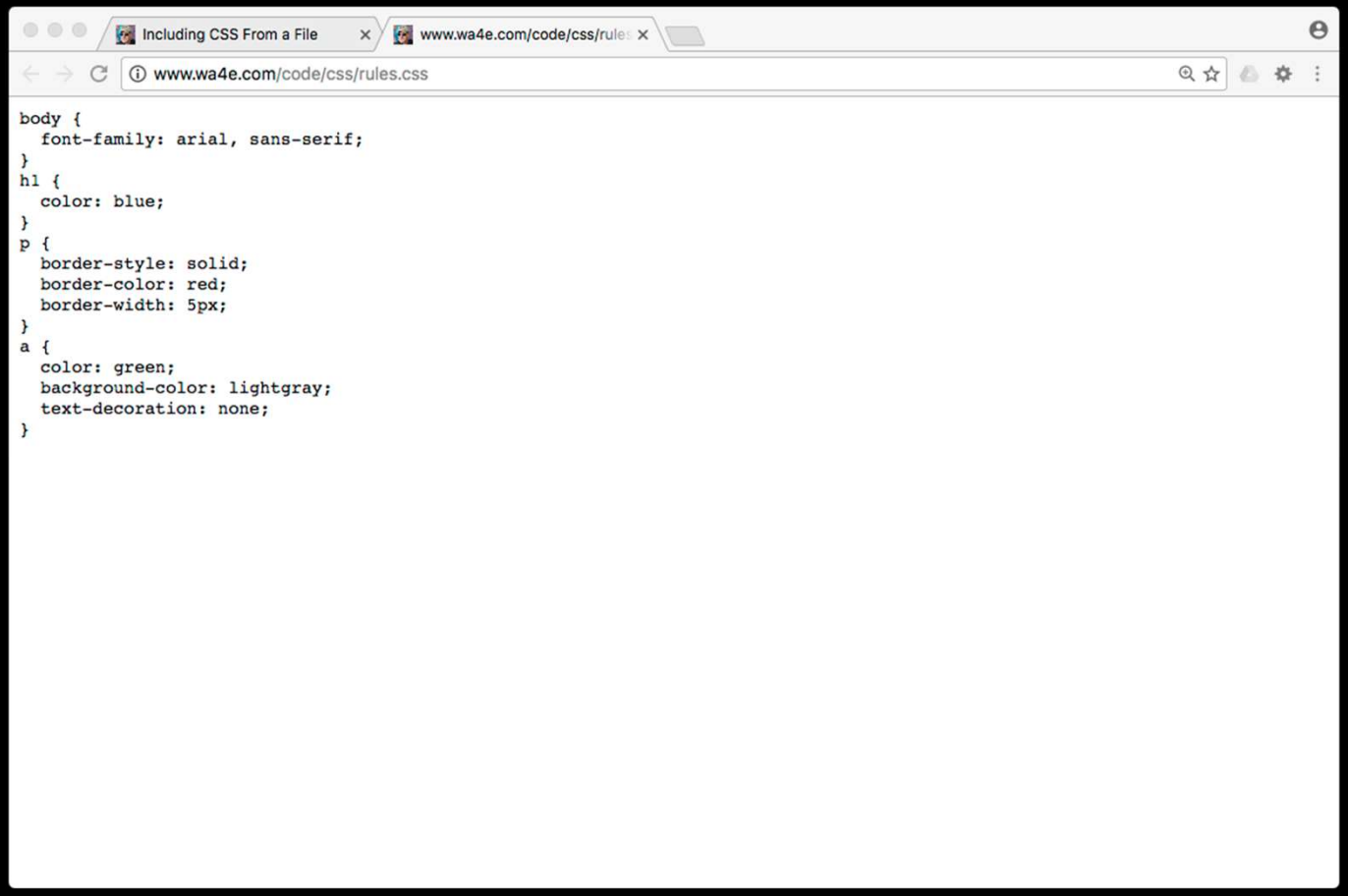
```
csev $ ls -l
total 32
-rw-r--r--  1 csev  staff   44 Dec 19 06:06 rules.css
-rw-r--r--  1 csev  staff  679 Dec 19 06:07 index.htm
-rw-r--r--  1 csev  staff  883 Dec 19 05:59 include.htm
-rw-r--r--  1 csev  staff  679 Dec 19 05:59 colors.htm
csev $
```

Same ordner / folder



with link

you use all 3 together.


Including CSS From a File
www.wa4e.com/code/css/rules
www.wa4e.com/code/css/rules.css
body {
font-family: arial, sans-serif;
}
h1 {
color: blue;
}
p {
border-style: solid;
border-color: red;
border-width: 5px;
}
a {
color: green;
background-color: lightgray;
text-decoration: none;
}

span and div Tags

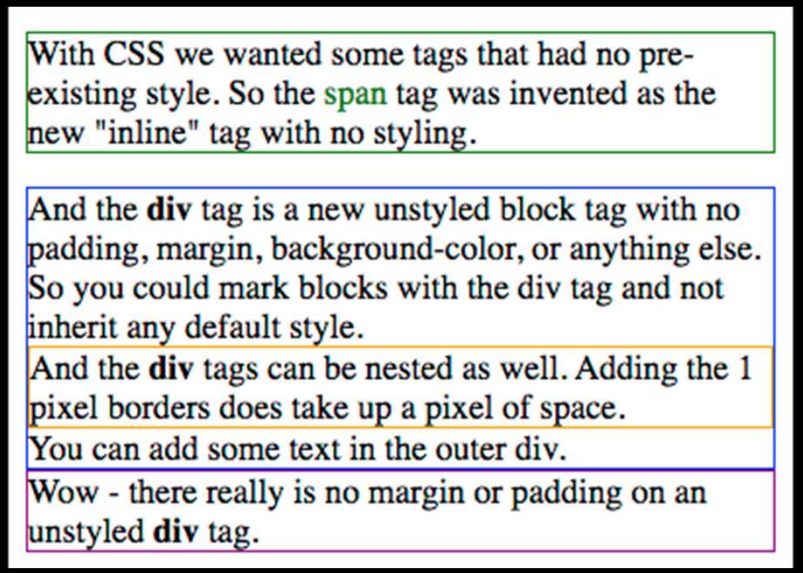
no style

```
<p style="border: 1px green solid;">
With CSS we wanted some tags that had no pre-existing style. So the <span
style="color: green;">span</span> tag was invented as the new "inline" tag
with no styling.
</p>
<div style="border: 1px blue solid;">
And the <strong>div</strong> tag is a new unstyled block tag with no
padding, margin, background-color, or anything else. So you could mark
blocks with the div tag and not inherit any default style.
<div style="border: 1px orange solid;">
And the <strong>div</strong> tags can be nested as well. Adding the 1-pixel
borders does take up a pixel of space.
</div>
You can add some text in the outer div.
</div>
```

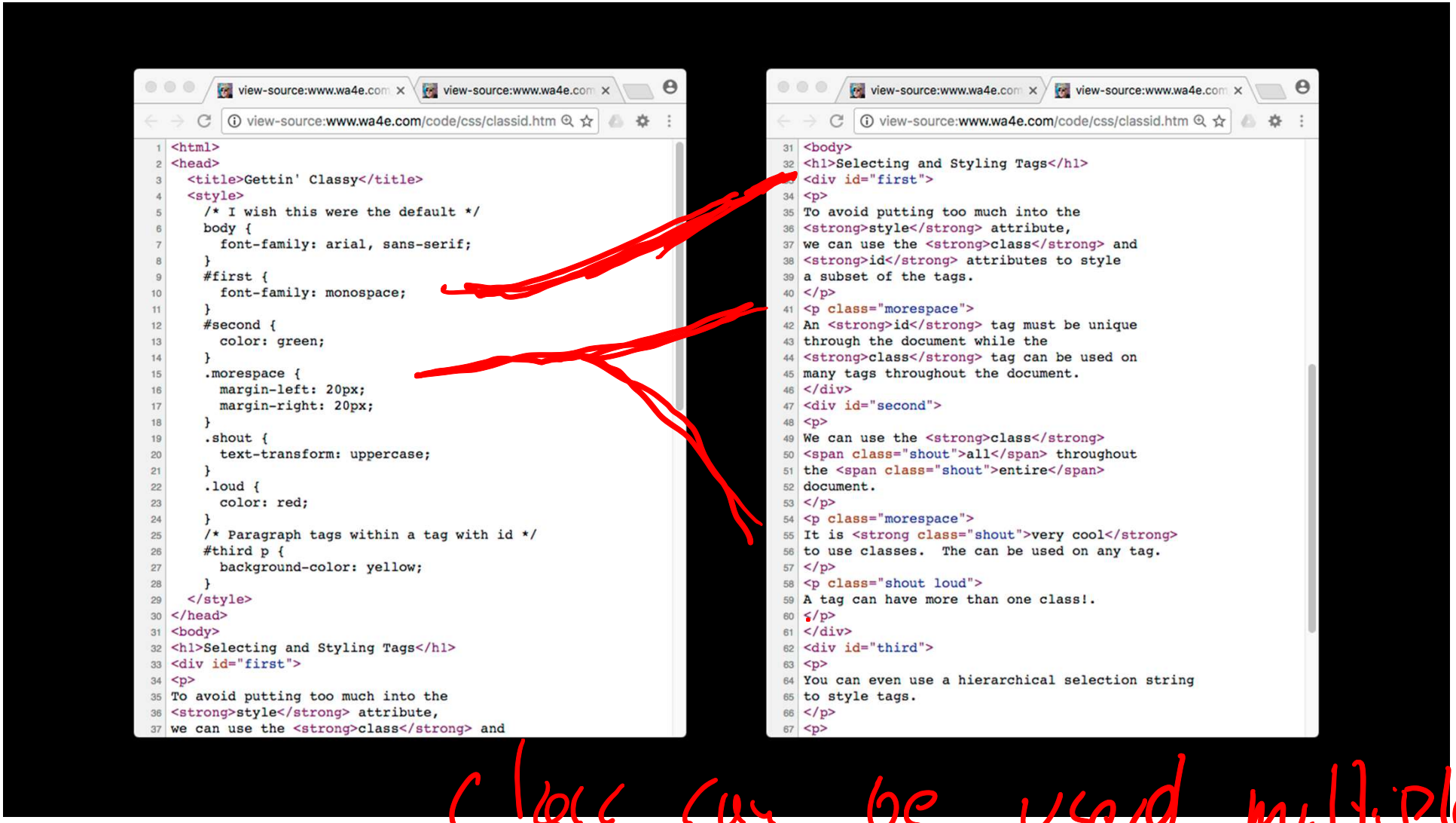
div in div

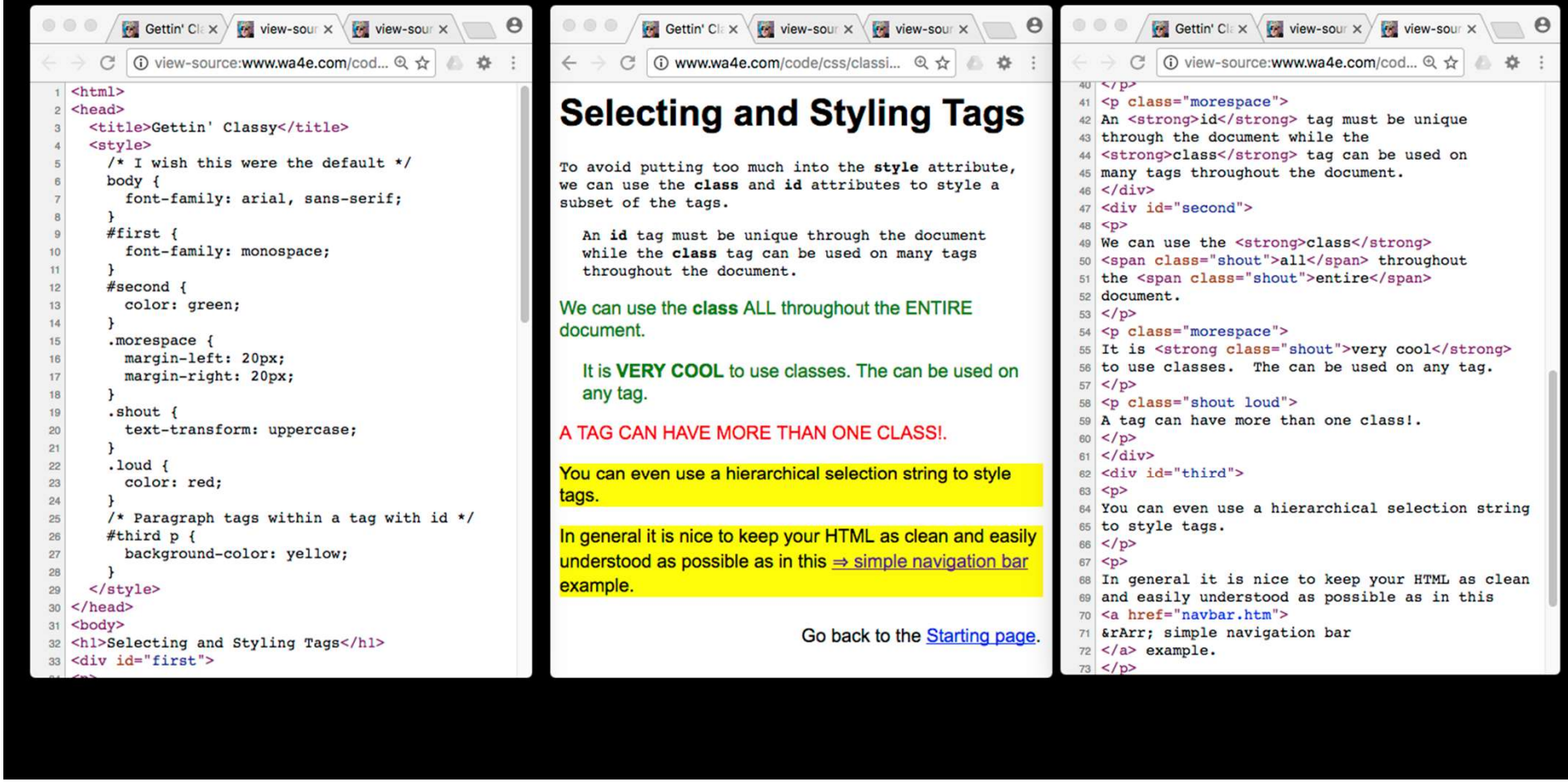
divs have nothing to do with blocks

```
<p style="border: 1px green solid;">
With CSS we wanted some tags that had no pre-existing
Style. So the <span style="color: green;">span</span>
tag was invented as the new "inline" tag with no styling.
</p>
<div style="border: 1px blue solid;">
And the <strong>div</strong> tag is a new unstyled
block tag with no padding, margin, background-color,
or anything else. So you could mark blocks with
the div tag and not inherit any default style.
<div style="border: 1px orange solid;">
And the <strong>div</strong> tags can be nested as well.
Adding the 1-pixel borders does take up a pixel of space.
</div>
You can add some text in the outer div.
</div>
```

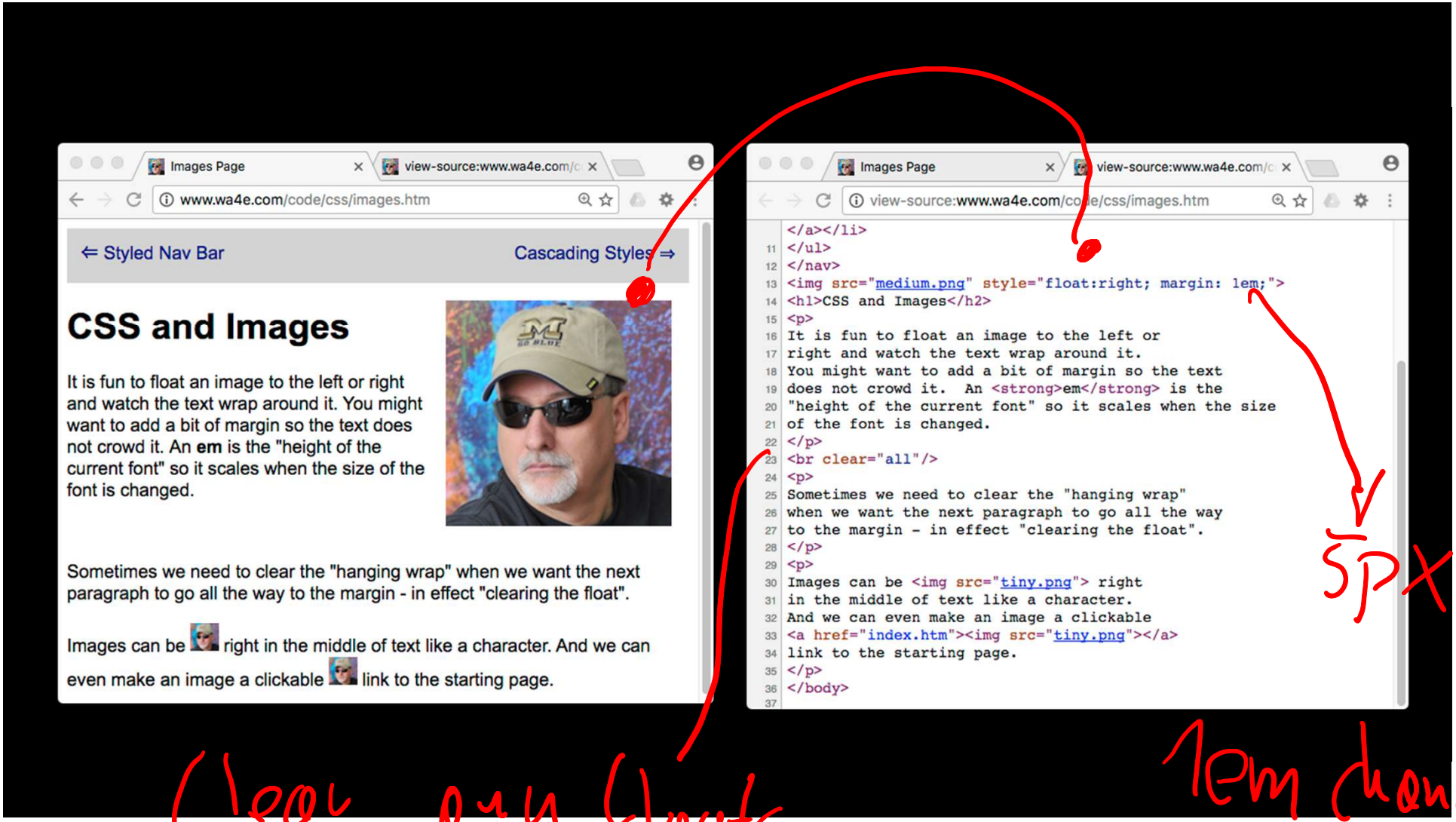


p makes space around itself


view-source:www.wa4e.com
view-source:www.wa4e.com/code/css/classid.htm
1 <html>
2 <head>
3 <title>Gettin' Classy</title>
4 <style>
5 /* I wish this were the default */
6 body {
7 font-family: arial, sans-serif;
8 }
9 #first {
10 font-family: monospace;
11 }
12 #second {
13 color: green;
14 }
15 .morespace {
16 margin-left: 20px;
17 margin-right: 20px;
18 }
19 .shout {
20 text-transform: uppercase;
21 }
22 .loud {
23 color: red;
24 }
25 /* Paragraph tags within a tag with id */
26 #third p {
27 background-color: yellow;
28 }
29 </style>
30 </head>
31 <body>
32 <h1>Selecting and Styling Tags</h1>
33
34
35 To avoid putting too much into the
36 style attribute,
37 we can use the class and
31 <body>
32 <h1>Selecting and Styling Tags</h1>
33
34
35 To avoid putting too much into the
36 style attribute,
37 we can use the class and
38 id attributes to style
39 a subset of the tags.
40
41
42 An id tag must be unique
43 through the document while the
44 class tag can be used on
45 many tags throughout the document.
46
47
48
49 We can use the class
50 all throughout
51 the entire
52 document.
53
54
55 It is very cool
56 to use classes. The can be used on any tag.
57
58
59 A tag can have more than one class!.
60
61
62
63
64 You can even use a hierarchical selection string
65 to style tags.
66
67
Class can be used multiple times
id for divs?


Gettin' Cl
view-sour
view-sour
view-source:www.wa4e.com/cod...
1 <html>
2 <head>
3 <title>Gettin' Classy</title>
4 <style>
5 /* I wish this were the default */
6 body {
7 font-family: arial, sans-serif;
8 }
9 #first {
10 font-family: monospace;
11 }
12 #second {
13 color: green;
14 }
15 .morespace {
16 margin-left: 20px;
17 margin-right: 20px;
18 }
19 .shout {
20 text-transform: uppercase;
21 }
22 .loud {
23 color: red;
24 }
25 /* Paragraph tags within a tag with id */
26 #third p {
27 background-color: yellow;
28 }
29 </style>
30 </head>
31 <body>
32 <h1>Selecting and Styling Tags</h1>
33
Gettin' Cl
view-sour
view-sour
www.wa4e.com/code/css/classi...
Selecting and Styling Tags
To avoid putting too much into the style attribute, we can use the class and id attributes to style a subset of the tags.
An id tag must be unique through the document while the class tag can be used on many tags throughout the document.
We can use the class ALL throughout the ENTIRE document.
It is VERY COOL to use classes. The can be used on any tag.
A TAG CAN HAVE MORE THAN ONE CLASS!.
You can even use a hierarchical selection string to style tags.
In general it is nice to keep your HTML as clean and easily understood as possible as in this ⇒ simple navigation bar example.
Go back to the Starting page.
Gettin' Cl
view-sour
view-sour
view-source:www.wa4e.com/cod...
41
42 An id tag must be unique
43 through the document while the
44 class tag can be used on
45 many tags throughout the document.
46
47
48
49 We can use the class
50 all throughout
51 the entire
52 document.
53
54
55 It is very cool
56 to use classes. The can be used on any tag.
57
58
59 A tag can have more than one class!.
60
61
62
63
64 You can even use a hierarchical selection string
65 to style tags.
66
67
68 In general it is nice to keep your HTML as clean
69 and easily understood as possible as in this
70 <a href="navbar.htm">
71 ⇒ simple navigation bar
72 </a> example.
73

Images, Colors, and Fonts


Images Page
view-source:www.wa4e.com/c
www.wa4e.com/code/css/images.htm
⇐ Styled Nav Bar
Cascading Styles ⇒
CSS and Images
It is fun to float an image to the left or right and watch the text wrap around it. You might want to add a bit of margin so the text does not crowd it. An em is the "height of the current font" so it scales when the size of the font is changed.
Sometimes we need to clear the "hanging wrap" when we want the next paragraph to go all the way to the margin - in effect "clearing the float".
Images can be right in the middle of text like a character. And we can even make an image a clickable link to the starting page.
Images Page
view-source:www.wa4e.com/code/css/images.htm
</a></li>
</ul>
</nav>
<img src="medium.png" style="float:right; margin: 1em;">
<h1>CSS and Images</h2>

It is fun to float an image to the left or
right and watch the text wrap around it.
You might want to add a bit of margin so the text
does not crowd it. An em is the
"height of the current font" so it scales when the size
of the font is changed.

<br clear="all"/>

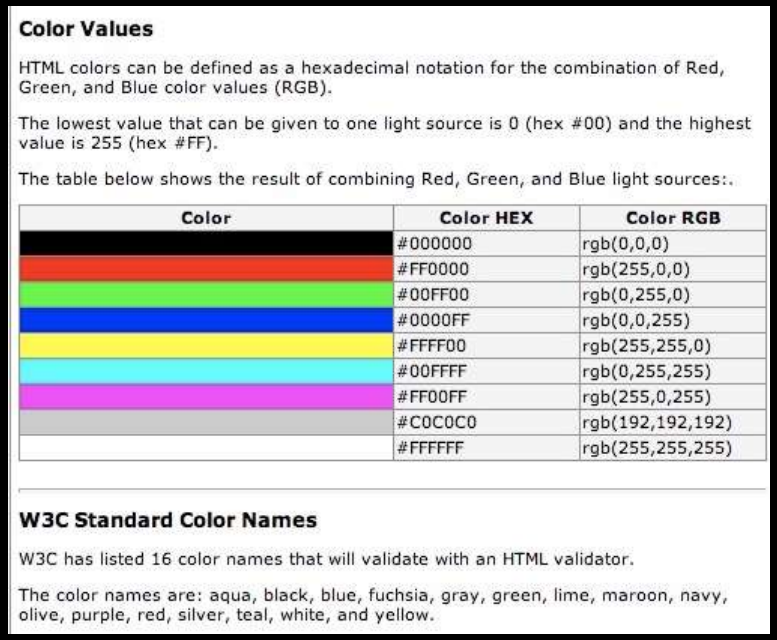
Sometimes we need to clear the "hanging wrap"
when we want the next paragraph to go all the way
to the margin - in effect "clearing the float".

Images can be <img src="tiny.png"> right
in the middle of text like a character.
And we can even make an image a clickable
<a href="index.htm"><img src="tiny.png"></a>
link to the starting page.

</body>
clear any floats
1em changes with font

Color Names

- W3C has listed 16 official color names that will validate with an HTML validator.
- The color names are: aqua, black, blue, fuchsia, gray, green, lime, maroon, navy, olive, purple, red, silver, teal, white, and yellow.



Color Values

HTML colors can be defined as a hexadecimal notation for the combination of Red, Green, and Blue color values (RGB).

The lowest value that can be given to one light source is 0 (hex #00) and the highest value is 255 (hex #FF).

The table below shows the result of combining Red, Green, and Blue light sources:.

Color	Color HEX	Color RGB
	#000000	rgb(0,0,0)
	#FF0000	rgb(255,0,0)
	#00FF00	rgb(0,255,0)
	#0000FF	rgb(0,0,255)
	#FFFF00	rgb(255,255,0)
	#00FFFF	rgb(0,255,255)
	#FF00FF	rgb(255,0,255)
	#C0C0C0	rgb(192,192,192)
	#FFFFFF	rgb(255,255,255)

W3C Standard Color Names

W3C has listed 16 color names that will validate with an HTML validator.

The color names are: aqua, black, blue, fuchsia, gray, green, lime, maroon, navy, olive, purple, red, silver, teal, white, and yellow.

http://www.w3schools.com/html/html_colors.asp

testing of divs with red border

Advanced Colors...

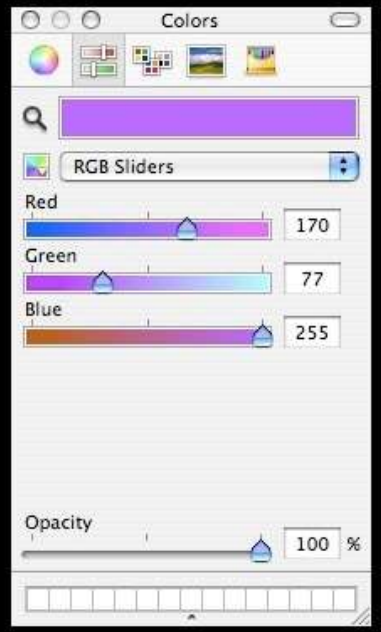
RGB

Three numbers, Red, Green, and Blue - each from 00 - FF (Hexidecimal)

```
#ffffff  = white
#000000 = black
 #ff0000 = red
#00ff00 = green
 #0000ff = blue
```

#e2edff

Color Name	Color HEX	Color
AliceBlue	#F0F8FF	
AntiqueWhite	#FAEBD7	
Aqua	#00FFFF	
Aquamarine	#7FFFD4	
Azure	#F0FFFF	
Beige	#F5F5DC	
Bisque	#FFE4C4	
Black	#000000	
BlanchedAlmond	#FFEBCD	
Blue	#0000FF	
BlueViolet	#8A2BE2	
Brown	#A52A2A	



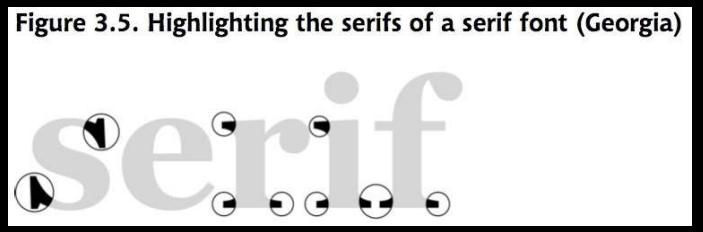
Web-safe colors

http://www.w3schools.com/css/css_colornames.asp

Fonts

Comic Sans

- Default fonts are ugly and they have serifs - which make them harder to read on a screen
- So the first thing I usually want to do is override the fonts in my document
- And I want to do this everywhere



Fonts

```
body {
 font-family: "Trebuchet MS", Helvetica, Arial, sans-serif;
 font-size: x-large;
}
```

Fallback fonts: serif, sans-serif, monospace, cursive, and fantasy

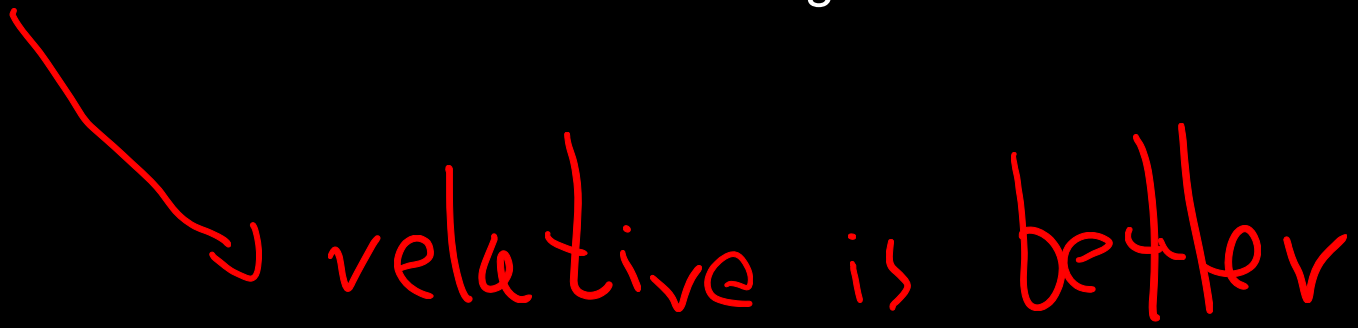
Font Factors

font-size:
xx-small
x-small
small
medium
large
x-large
xx-large
14px

font-weight: bold or normal

font-style: normal or italic

text-decoration: none, underline, overline, or line-through



Styling for Links

Post-Click:

Hello there my name is Chuck.

Go ahead and click on here.

Browser default styling for links is downright ugly!

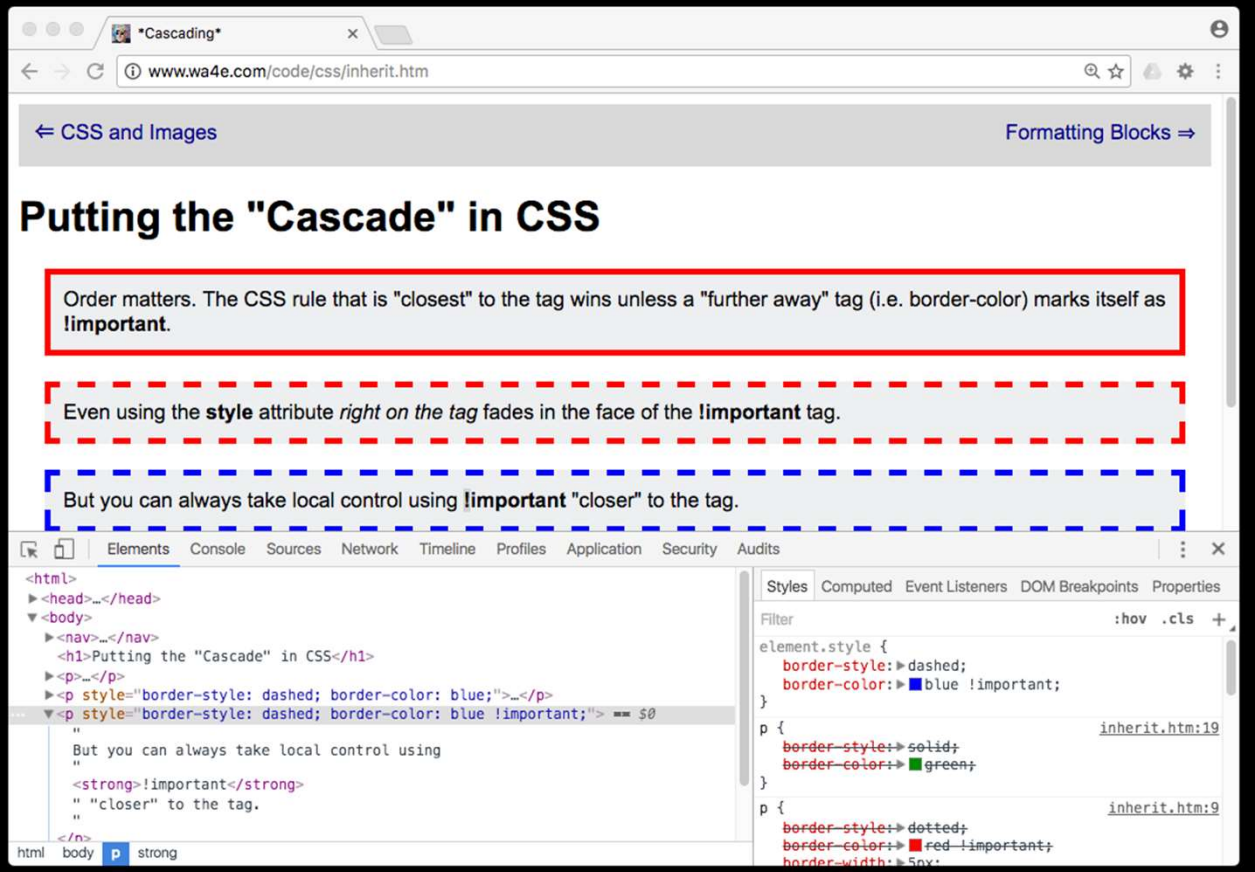
```
a {
 font-weight: bold;
}
a:link {
  color: black;
}
a:visited {
 color: gray;
}
a:hover {
 text-decoration: none;
 color: white;
 background-color: navy;
}
a:active {
 color: aqua;
 background-color: navy;
}
```

Styling Links

link - before a visit
visited - after it has been visited
hover - when your mouse is over it but you have not clicked
active - you have clicked it and you have not yet seen the new page

Many More Samples

dj4e.com



CSS Summary

- CSS layout is its own art and science.
- CSS basics are well established and well supported in all modern browsers.
- Site layout and markup is further evolving - mostly to make it increasingly possible to support desktop-like experiences on the web and mobile.
- These innovations will naturally cause incompatibilities - which make things interesting and frustrating at times.

Acknowledgements / Contributions

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