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Web Design and Databases
WD: Class 5: HTML and CSS Part 2

Dr Helen Hastie

Dept of Computer Science

Heriot-Watt University

Some contributions from Head First HTML with CSS and XHTML, O'Reilly

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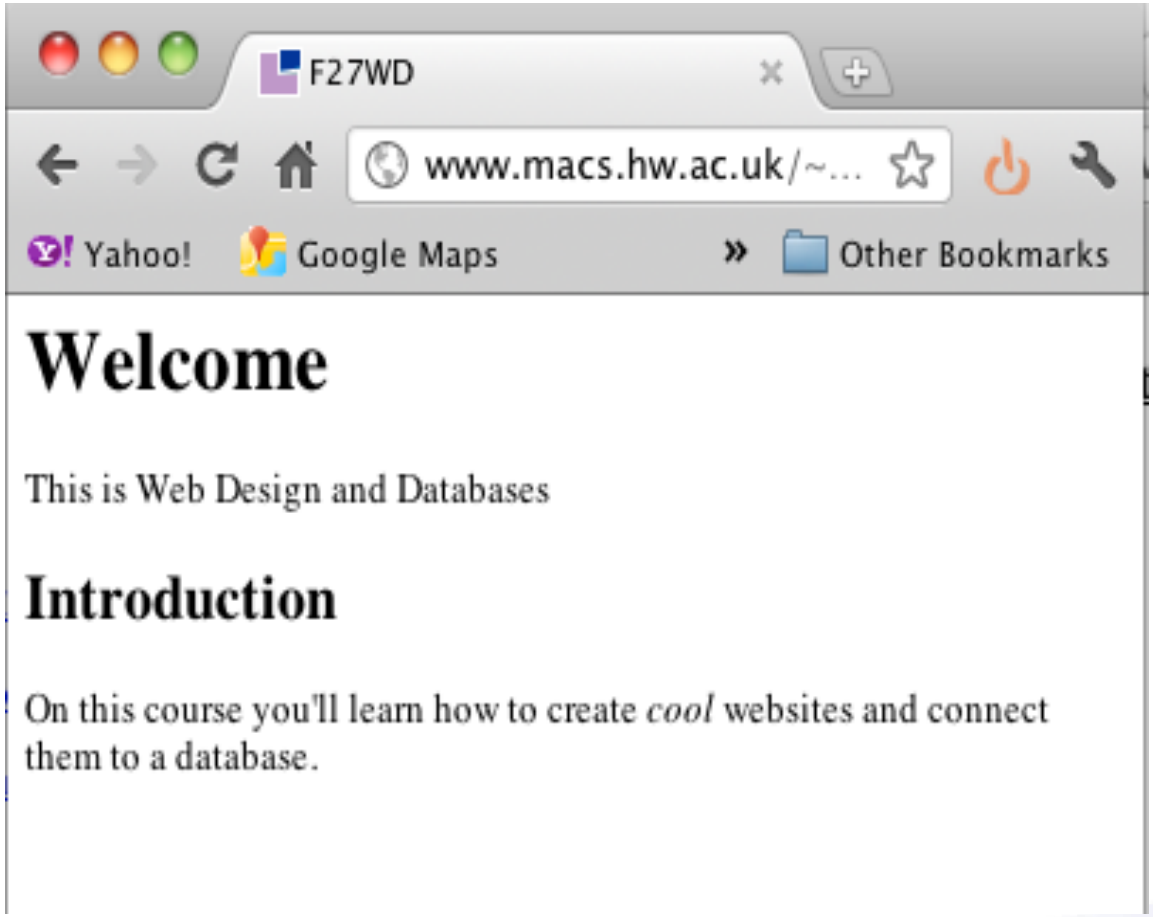
Hmm… I need some style



Homework- bad design

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Home
My Debates
$1800
FONZI ON SPECTER
BAD AMERICAN
MAYBE WE MISSED SOM
RUBY NOT CONNECTED
VIEW JASON BURKE'S BI
BACKYARD PHOTOS
too old to go to prison
DALLAS FBI AGENT ARR
Operation 40
GARY REVEL
Lloyd Jowers deposition
COMMUNIST THREAT
OSWALD'S JESUIT SPEE
EXTRA INFORMATION

THIS WEBSITE CONTAINS OFFICIAL RECORDS FROM THE WARREN COMMISSION'S 26 VOLUMES ALONG WITH THE HSCA VOLUMES AND, THE CHUR

i have made hundreds of testimonies much easier to access

it's all catorgorized and alphabetized ! ! !

just hit the testimony button right near the top of the buttons ! ! !

warren supporters can no longer lie to you ! ! !

Never listen to anyone who does not own their own set of the 26 volumes, especially john McAdams, Tim Brennan,

TODD VAUGHAN, ROB SPENCER, JUSTME, John Corbett and John Deagle along with Jason Burke ! ! !

THE ONLY PROVABLE CRIMES COMMITTED IN DALLAS ON THE WEEKEND OF 11/22/63 WERE THOSE COMMITTED BY THE AUTHORITIES !

Who Killed JFK?

MGBD Parts & Services

Rover P6 Parts Specialist

HOME

PARTS WEBSTORE

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EVENTS

CARS FOR SALE

PRESS & TV

LINKS

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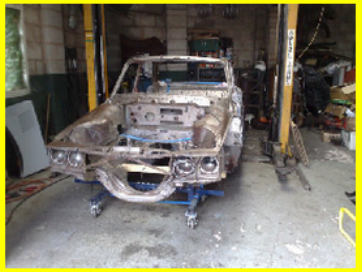
BUYERS GUIDE

MGBD Parts by Mark & Angie Gray

ROVER P6 PARTS

Online Store

Click here



AUTUMN ROAD RUN

SUNDAY 2nd NOVEMBER 2014

CLICK HERE FOR THE PICTURES

MGBD Parts

NEW ARRIVALS

CLICK ON THE IMAGES

MGBD Parts

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Related Links

- Knitted Dresses
- 2 Piece Formal Dresses
- White Dress Suits
- Formal Clothes
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- Wedding Reception Caterers
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- Beach Wedding Photography
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Search Search Ads

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The World's Worst Website

Gratuitous use of frames is a common mistake of web designers.

Many browsers do not support frames. They disrupt the flow of the website and can be difficult to anticipate where a page may appear when a link is clicked.

If you must use frames, use the tag <base target="_blank"> between <head> and </head> to assure links will open in a new window.

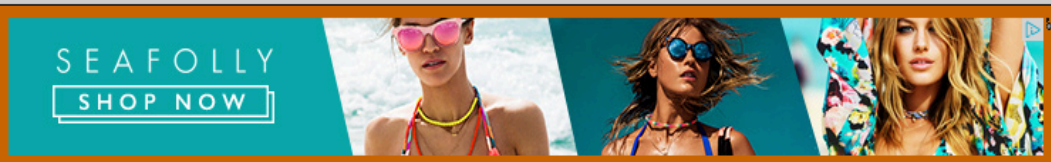
Check out these links to websites whose opinions about frames is self evident:

The "I Hate Frames" Frames Page

Another I Hate Frames Page

The International I Hate Frames Club

Why Frames Suck (Most of the Time)



Welcome To My Website!

Welcome to the World's Worst Website!

This web was designed to graphically demonstrate the most common mistakes made by new Web Page designers.

Where am I and where are the links to other pages?

An easy to use navigation structure is essential to any well designed website! Important information should never be more than 2 clicks away.

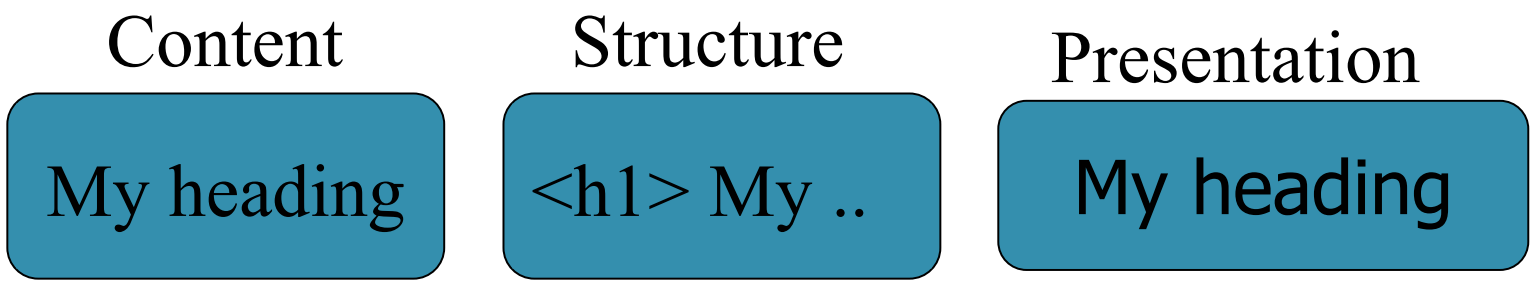
As you can see, this text is difficult to read. There needs to more contrast between the background color and the text color. Here's another example of a poor choice of a background/ text color and size.

Keep your backgrounds simple. White or light colors usually work best. Your background should not compete with the content of the page for the users attention. If you would like to use a background picture, select a picture that uses muted colors or format your picture as a watermark. Select text colors which will contrast well with the background picture.

Constantly running animations can be distracting when used excessively. There should be no more than one animated object in your view at any time. Also in this category are excessive, large, flashing & obnoxious advertisements.

Managing the Presentation: Stylesheets

- HTML markup should be about the structure of a document, not how it should be displayed.
- Should ideally keep control of presentation separate:



Managing the Presentation: Stylesheets

- Browsers have default styles (e.g. white background). To change this, use stylesheets
- CSS stands for Cascading StyleSheets

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We'll be looking at CSS3 which is backwards compatible with CSS2

interior{
color: cream;
material: leather;
}

exterior {
color: pale_blue;
}

Image from mini.co.uk

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

You could also write the rule like this:

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

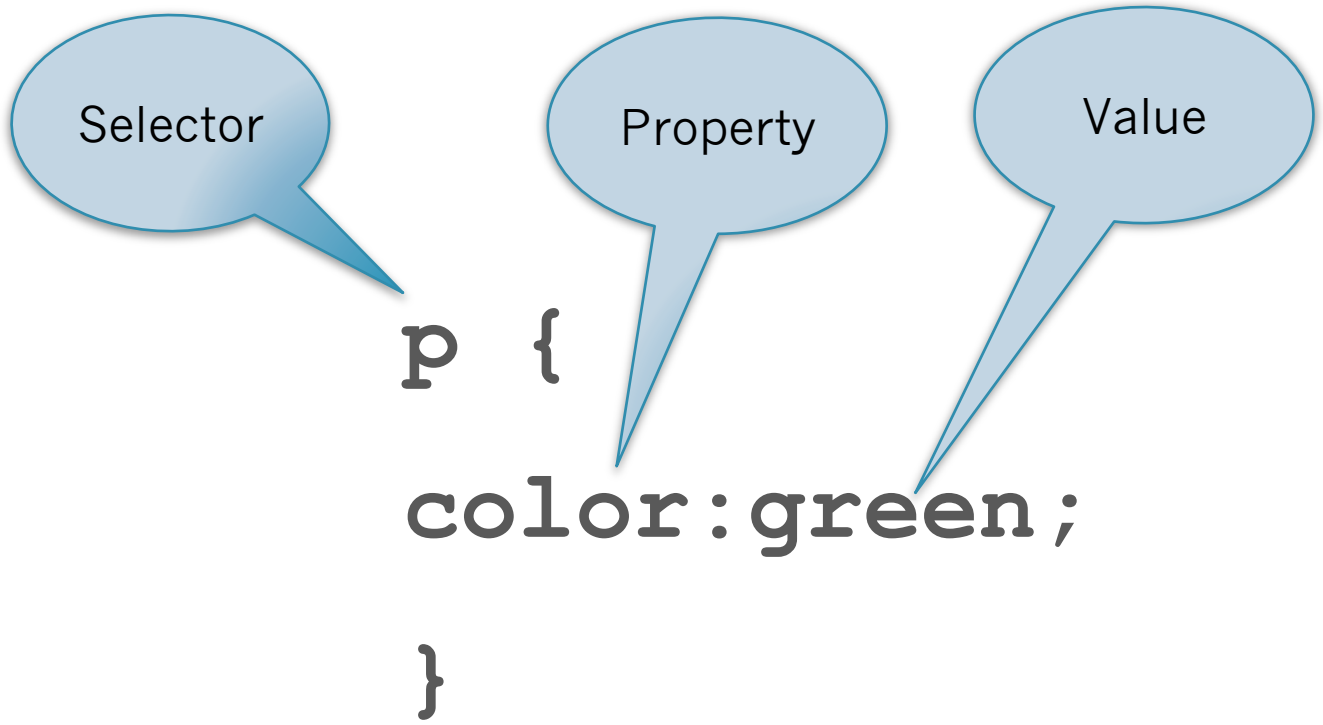
CSS syntax

- CSS is based on simple rules:

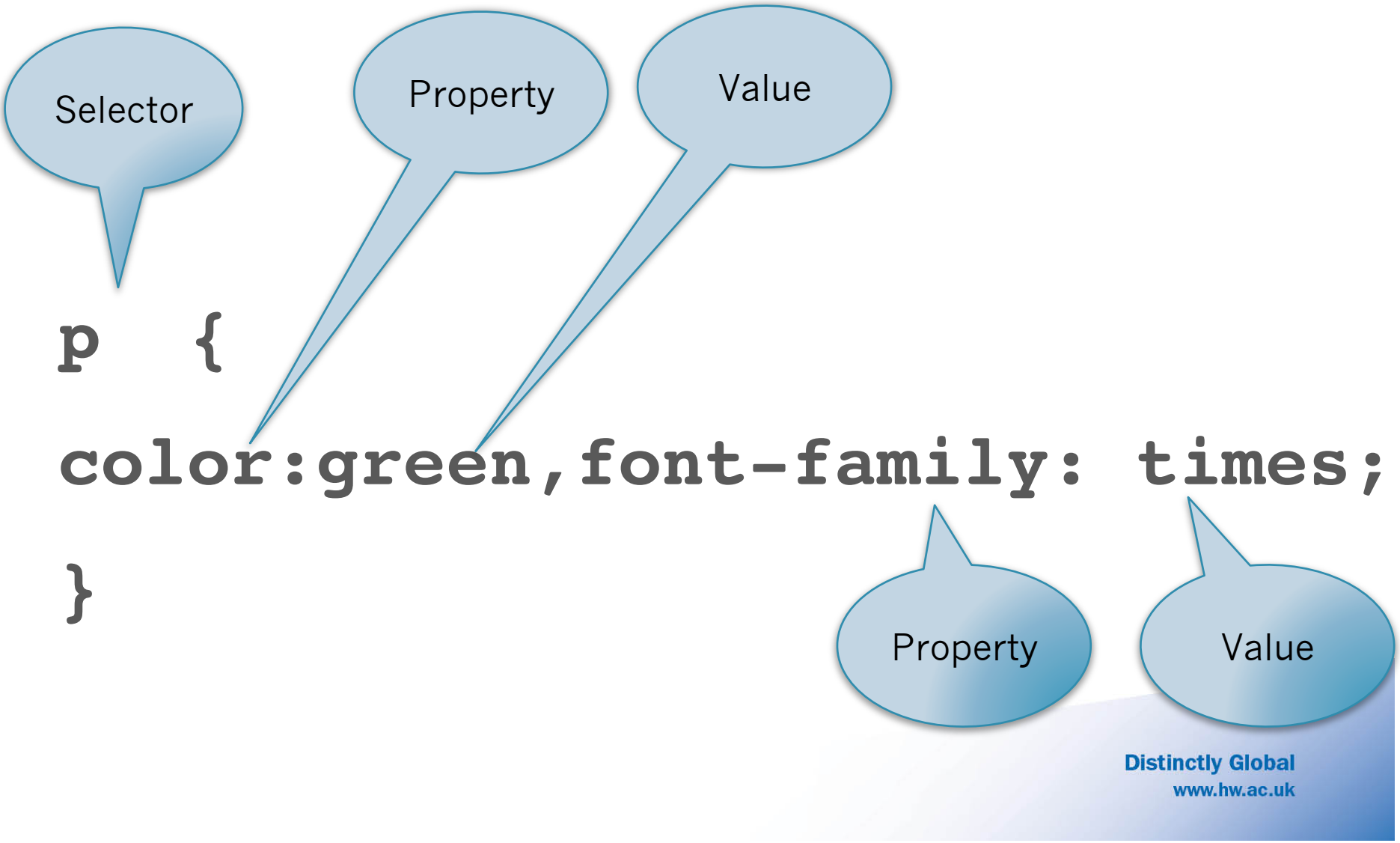
  selector {property: value;}

  E.g. **`p {color:green;}`**

- Selector is (usually) name of the HTML element
  - e.g. **`h1, body, li`**
- Property is something like **`font`** or **`color`** or alignment.
- Value is value you want that property to have, e.g. **`times,green`**


Selector
Property
Value
p {
color:green;
}

More than one property



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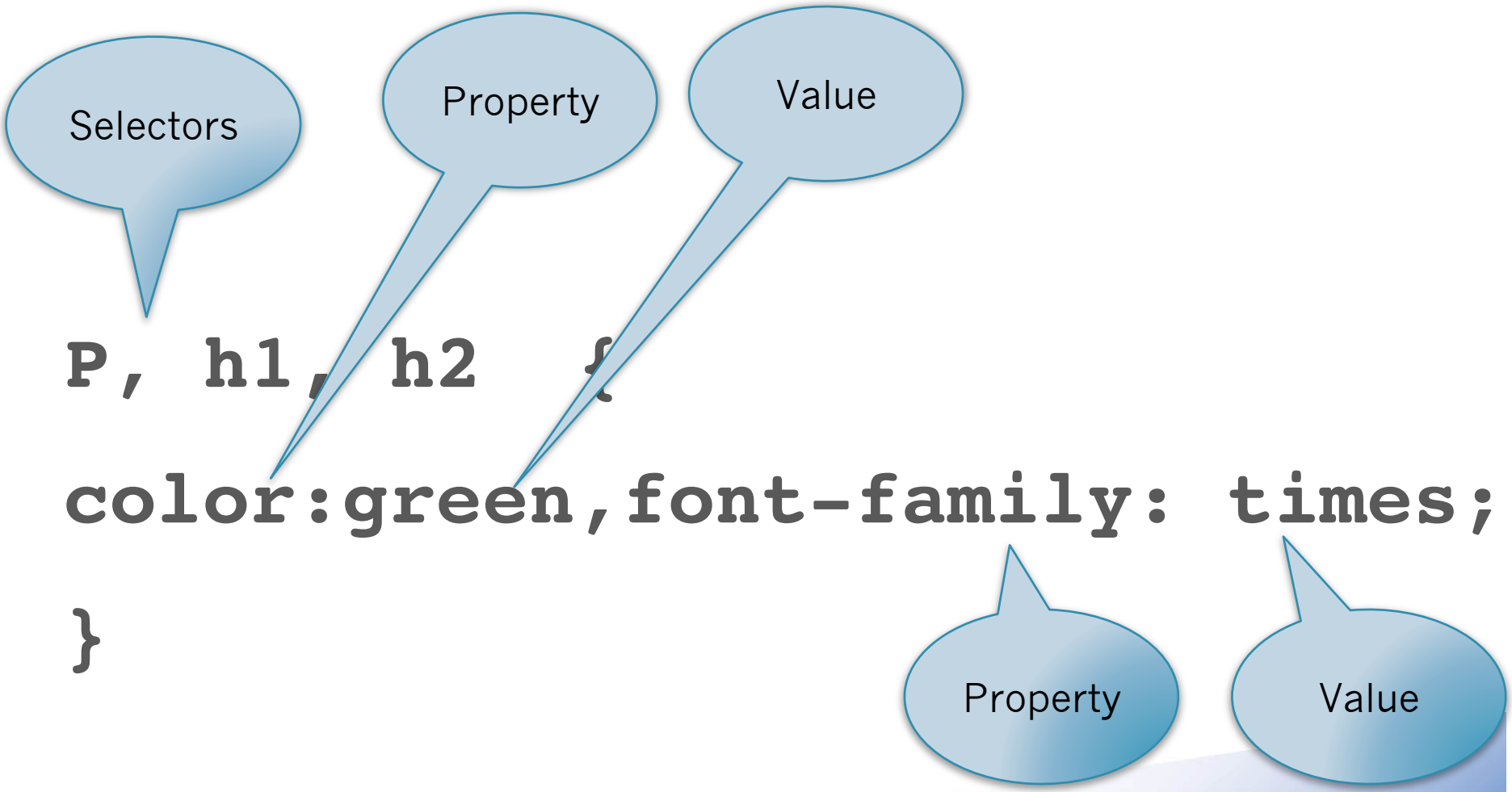
More than one selector



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Let's work through an example: sweet shop website

```
.....
<!--Link to CSS file in stylesheets directory-->
   <link rel="stylesheet" type="text/css" href="stylesheets/sweets.css" />
  </head>

<body>
<h1>SweetStuff Products: Our Lolly Collection</h1>

<h2>Luscious Lime</h2>
    <p class="lime">
      <img src="images/lime_lolly.png" alt="Lime Lolly" />
      Bursting with <em>zing</em>. Our lime lolly is one of our best sellers.
    </p>

<h2>Strawberry Splurge</h2>
    <p class="strawberry">
      <img src="images/strawberry_lolly.png" alt="Strawberry Lolly" />
      A classic lolly bringing memories of strawberries and cream in
    the summer.
    </p>

<h2>OMG Orange</h2>
    <p class="orange">
      <img src="images/orange_lolly.png" alt="Orange Lolly" />
      Super refreshing OMG Orange is an all round favourite.
    </p>

<h2>Fruit Swirl</h2>
    <p class="swirl">
      <img src="images/swirl_lolly.png" alt="Fruit Swirl" />
      Mixing it up with this sumptuous swirl of a lolly.
    </p>
</body>
</html>
```

SweetStuff Products: Our Lolly Col

Luscious Lime

Bursting with zing. Our lime lolly is one of our best sellers

Strawberry Splurge

A classic lolly bringing memories of strawberries and cream in t

OMG Orange

Super refreshing OMG Orange is an all round favourite.

Fruit Swirl

Mixing it up with this sumptuous swirl of a lolly.

```
<!DOCTYPE HTML>
<html>
<head>
  <title>SweetStuff Products</title>
<!--Link to CSS file in stylesheets directory-->
  <link rel="stylesheet" type="text/css" href="stylesheets/sweets.css" />
 </head>
```

sweets.css

```
h1, h2 {
  color:          gray;
  font-family:    sans-serif;
}
h1 {
  border-bottom: 1px solid black;
}
p {
  color:          maroon;
  font-family:    sans-serif;
}
```

SweetStuff Products: Our Lolly Collection

Luscious Lime

Bursting with zing. Our lime lolly is one of our best sellers

Strawberry Splurge

A classic lolly bringing memories of strawberries and cream in the summer.

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Fruit Swirl

```
.....
<!--Link to CSS file in stylesheets directory-->
   <link rel="stylesheet" type="text/css" href="stylesheets/sweets.css" />
  </head>

<body>
<h1>SweetStuff Products: Our Lolly Collection</h1>

<h2>Luscious Lime</h2>
   <p class="lime">
     <img src="images/lime_lolly.png" alt="Lime Lolly" />
     Bursting with <em>zing</em>. Our lime lolly is one of our best sellers.
   </p>

<h2>Strawberry Splurge</h2>
   <p class="strawberry">
     <img src="images/strawberry_lolly.png" alt="Strawberry Lolly" />
     A classic lolly bringing memories of strawberries and cream in
    the summer.
   </p>

<h2>OMG Orange</h2>
   <p class="orange">
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   </p>

<h2>Fruit Swirl</h2>
   <p class="swirl">
     <img src="images/swirl_lolly.png" alt="Fruit Swirl" />
     Mixing it up with this sumptuous swirl of a lolly.
   </p>
</body>
</html>
```

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SweetStuff Products: Our Lolly Collecti

Luscious Lime

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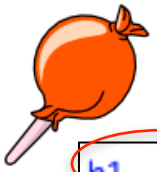
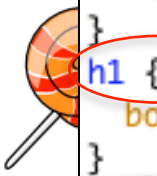
Strawberry Splurge

A classic lolly bringing memories of strawberries and cream in the summe

OMG Orange



Frui



```
h1, h2 {
  color:          gray;
  font-family:    sans-serif;
}
h1 {
  border-bottom: 1px solid black;
}
p {
  color:          maroon;
  font-family:    sans-serif;
}
```

Adding italics and links

```
.....
<!--Link to CSS file in stylesheets directory-->
   <link rel="stylesheet" type="text/css" href="stylesheets/sweets.css" />
  </head>

<body>
<h1>SweetStuff Products: Our Lolly Collection</h1>

<h2>Luscious Lime</h2>
    <p class="lime">
      <img src="images/lime_lolly.png" alt="Lime Lolly" />
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    </p>

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    </p>

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    <p class="orange">
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    </p>

<h2>Fruit Swirl</h2>
    <p class="swirl">
      <img src="images/swirl_lolly.png" alt="Fruit Swirl" />
      Mixing it up with this sumptuous swirl of a lolly.
    </p>
</body>
</html>
```

SweetStuff Products: Our Lolly Co

Luscious Lime

Bursting with *zing*. Our lime lolly is one of our best sellers

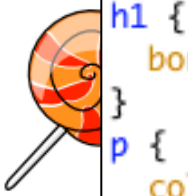
Strawberry Splurge

A classic lolly bringing memories of strawberries and cream in

OMG Orange

ourite.

Fruit



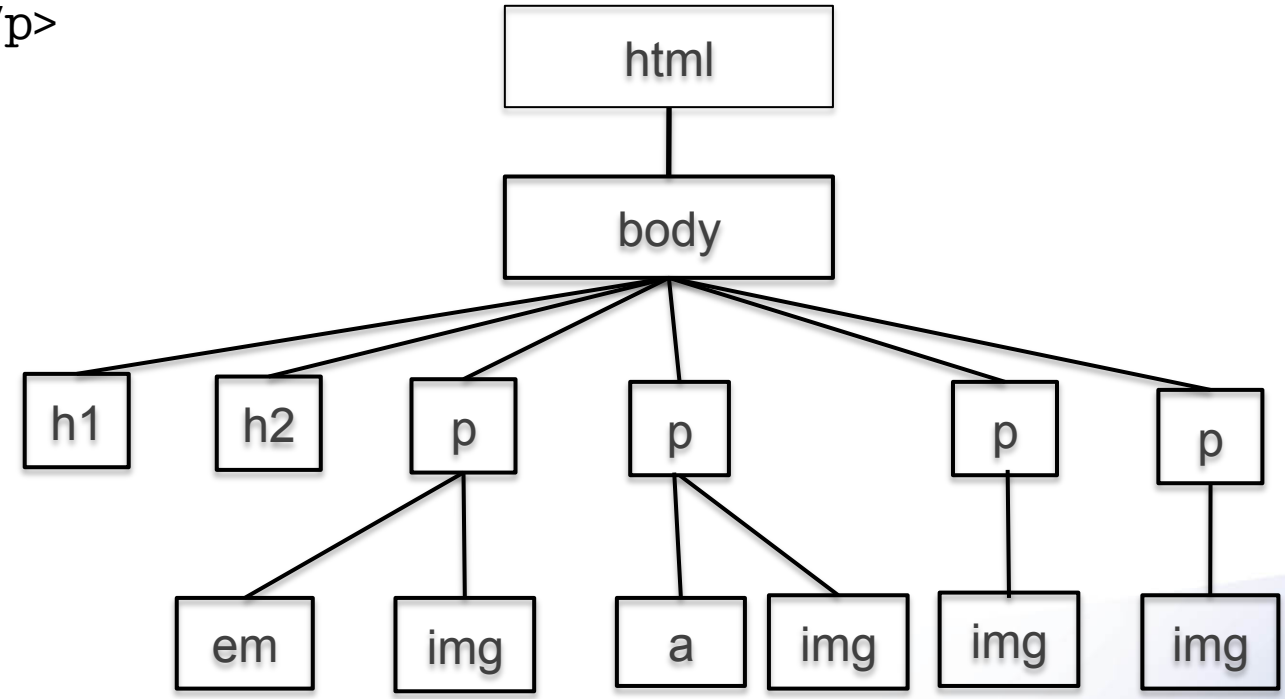
```
h1, h2 {
  color:          gray;
  font-family:    sans-serif;
}
h1 {
  border-bottom: 1px solid black;
}
p {
  color:          maroon;
  font-family:    sans-serif;
}
```

So how do we decide what these look like?

Inheritance

- Elements inside <p> inherit the properties of the <p>. For example:

```
<p>
    <img src="images/lime_lolly.png" alt="Lime Lolly" />
    Bursting with <em>zing</em>. Our lime lolly is one of our best
sellers
  </p>
```



Inheritance

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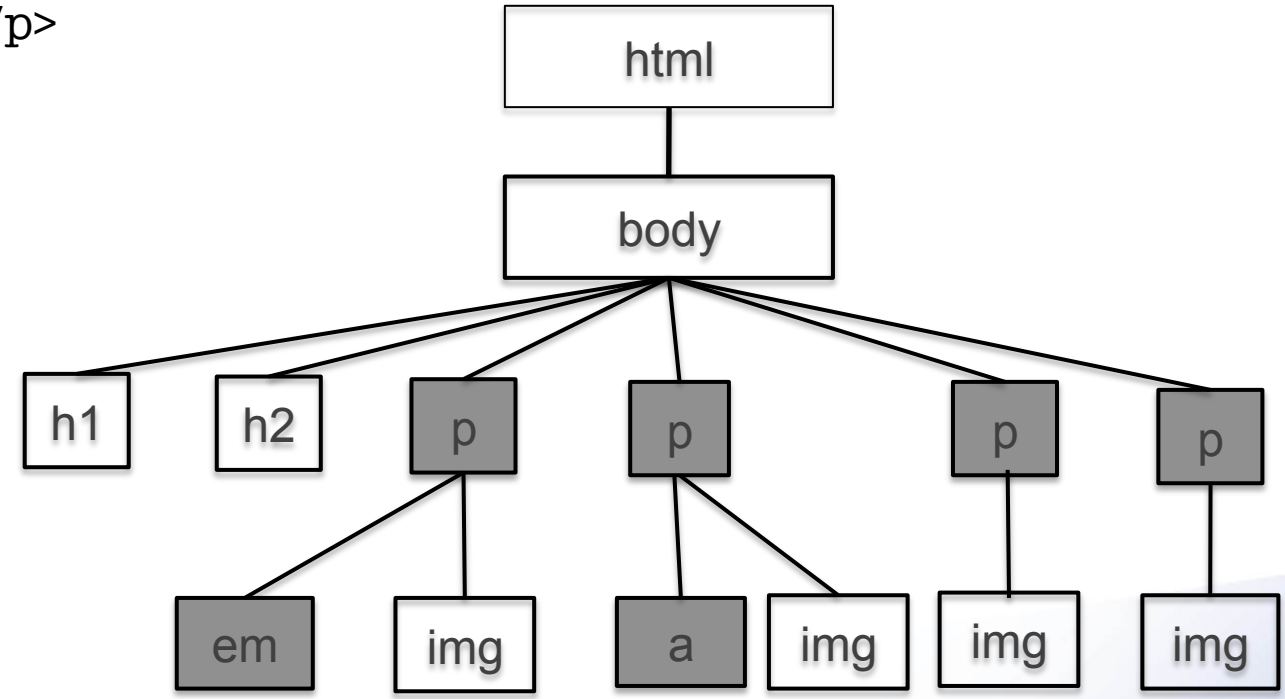
```
<p>
    <img src="images/lime_lolly.png" alt="Lime Lolly" />
    Bursting with <em>zing</em>. Our lime lolly is one of our best
sellers
  </p>
```



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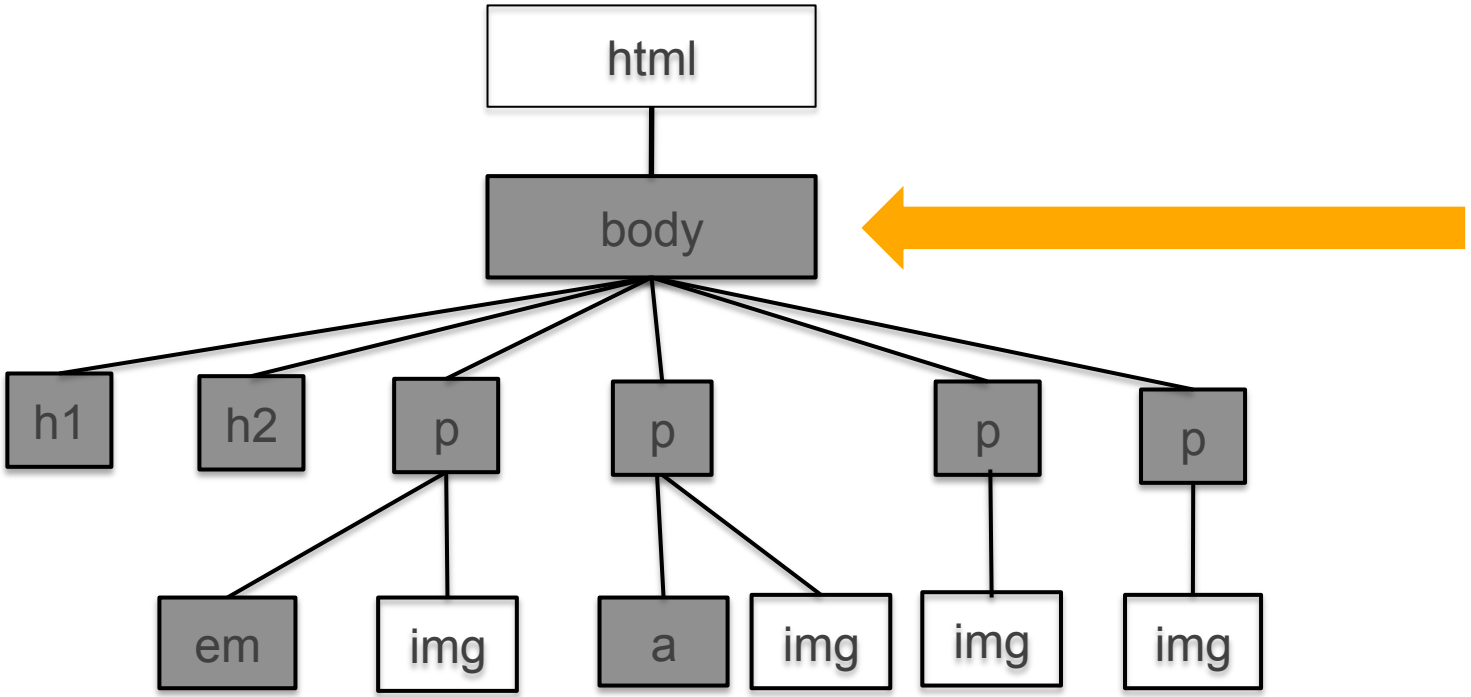
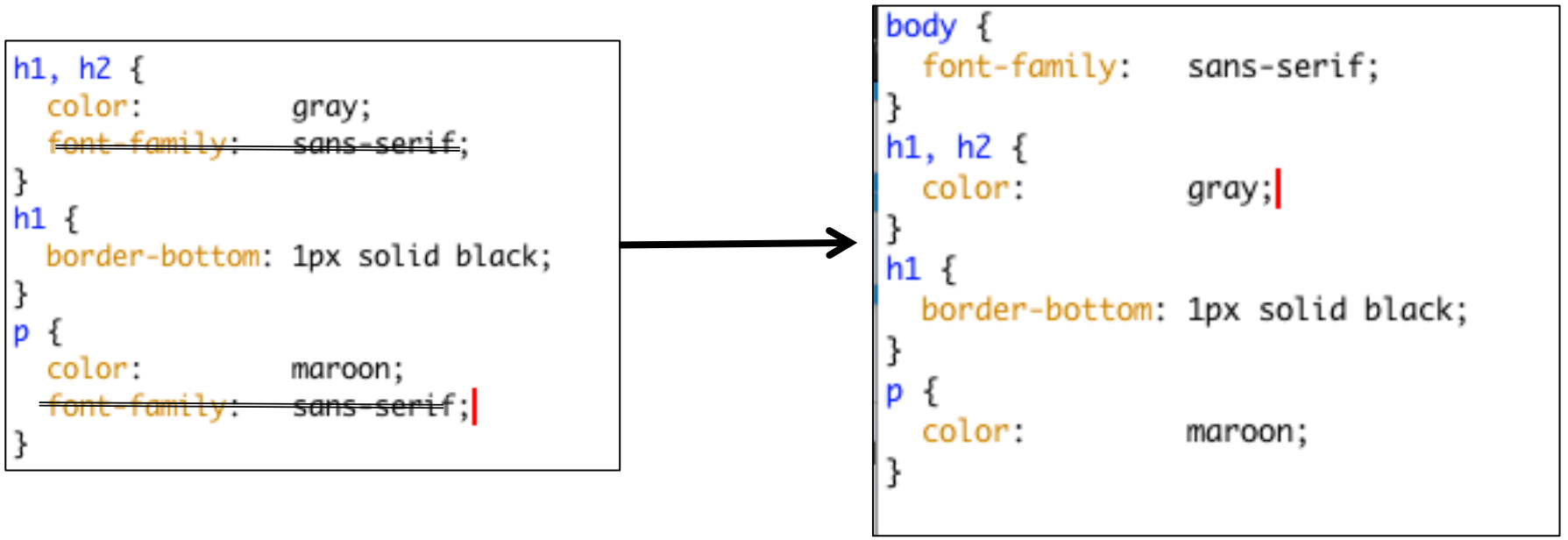
What if we want the same font throughout?

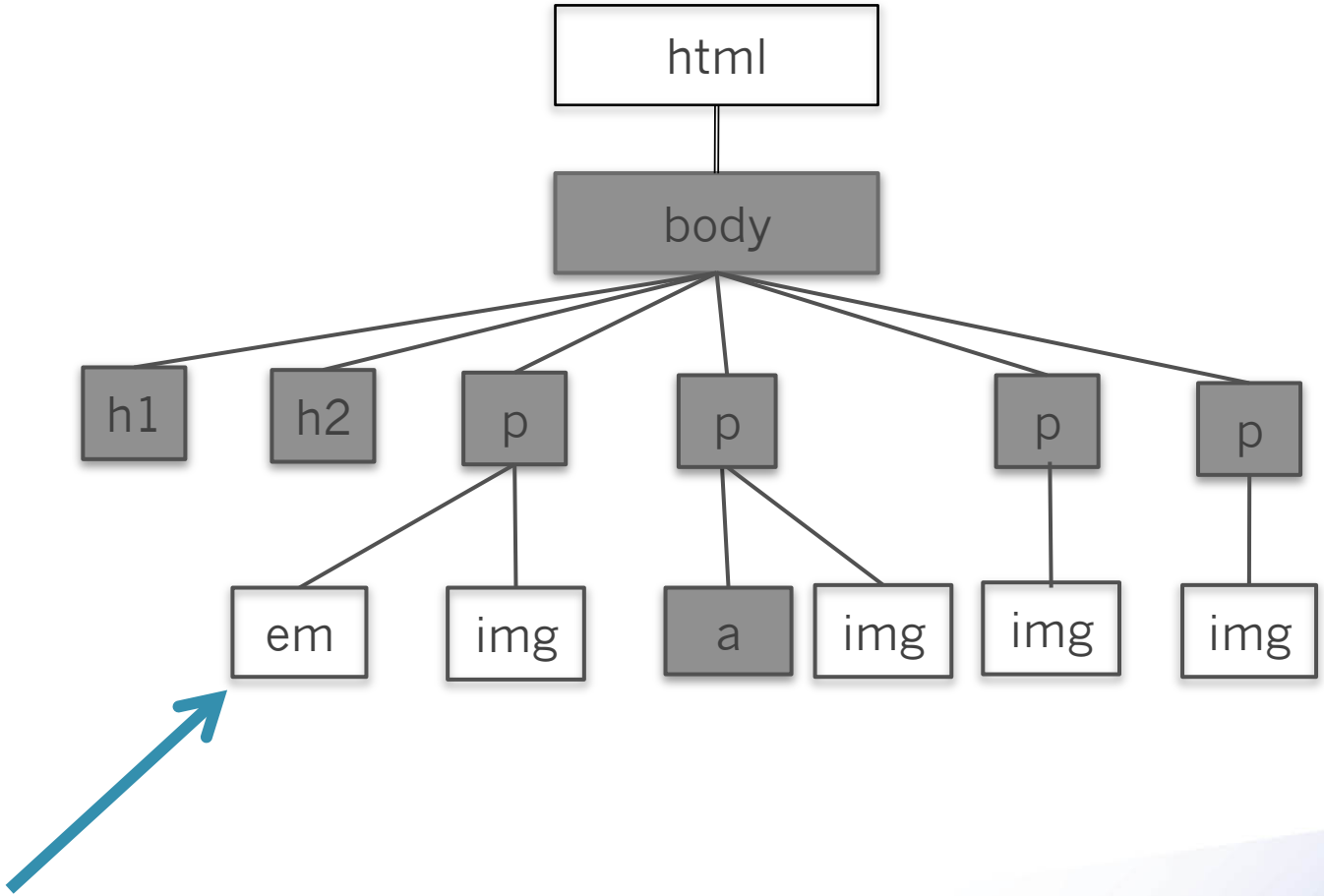
Move the font up the tree



Move the font up the tree



Over-riding Inheritance



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What if we want it to be different?

Override the em font inheritance

```
body {
  font-family:   sans-serif;
}
h1, h2 {
  color:         gray;
}
h1 {
  border-bottom: 1px solid black;
}
p {
  color:         maroon;
}
```

```
body {
    font-family:   sans-serif;
}
h1, h2 {
    color:         gray;
}
h1 {
    border-bottom: 1px solid black;
}
p {
    color:         maroon;
}
em{
    font-family: serif:
}
```

Luscious Lime

Bursting with *zing*. Our lime lolly is one of o

Luscious Lime

Bursting with *zing*. Our lime lolly is one o

Strawberry Splurge

What if we have similar types of content we want to look the same?

SweetStuff Products: Our Lolly Collection

Luscious Lime

Bursting with zing. Our lime lolly is one of our best sellers

Strawberry Splurge

A classic lolly bringing memories of strawberries and cream in the summer.

OMG Orange

Super refreshing OMG Orange is an all round favourite.

Fruit Swirl

Mixing it up with this sumptuous swirl of a lolly.

Adding a Class

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```
<p class="lime">
  <img src="images/lime_lolly.png" alt="Lime Lolly" />
  Bursting with <em>zing</em>. Our lime lolly is one of our best sellers.
</p>
```

```
body {
  font-family:   sans-serif;
}
h1, h2 {
    color:          gray;
}
h1 {
    border-bottom: 1px solid black;
}
p {
    color:          maroon;
}
p.lime {
  color:          green;
}
```

Adding a class

```
body {
  font-family:   sans-serif;
}
h1, h2 {
    color:          gray;
}
h1 {
    border-bottom: 1px solid black;
}
p {
    color:          maroon;
}
p.lime {
  color:          green;
}
```

SweetStuff Products: Our Lolly

Luscious Lime

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Strawberry Splurge

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Adding more classes

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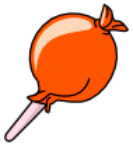
Luscious Lime

Bursting with *zing*. Our lime lolly is one of our best sellers.

Strawberry Splurge

A classic lolly bringing memories of strawberries and cream in the summer.

OMG Orange



Super refreshing OMG Orange is an all round favourite.

Fruit Swirl

Mixing it up with this sumptuous swirl of a lolly.

```
body {
  font-family:   sans-serif;
}
h1, h2 {
    color:         gray;
}
h1 {
    border-bottom: 1px solid black;
}
p {
    color:         maroon;
}
p.lime {
  color:         green;
}
p.strawberry {
  color:         pink;
}
p.orange {
  color:         orange;
}
p.swirl {
  color:         purple;
}
```

Elements can be in more than one class

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HTML

<p class="lime specials">

CSS

```
p.lime {
    color:          green;
}
p.specials {
   font-family:          serif;
}
```

Elements can be in more than one class

What if all have the same property (e.g. color)? Which rule wins?

HTML

<p class="lime strawberry orange swirl”>

CSS

```
p.lime {
    color:          green;
}
p.strawberry {
    color:          pink;
}
p.orange {
    color:          orange;
}
p.swirl {
    color:          purple;
}
```

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Selector rules

- Is there is a CSS rule with that selector?
- If not, is there a parent element with a selector?
- If not, then use the default

Selector rules

- But what about our example? What rule breaks the tie?

  <p class="lime strawberry orange swirl">

- Doesn't matter what order it comes in in the HTML

  <p class="strawberry orange swirl lime">

- It matters about *specificity* in the CSS file…….

How to apply classes

```
p {
    color:          maroon;
}
.lime {
    color:          green;
}
p.lime {
    color:          green;
}
p.strawberry {
    color:          pink;
}
p.orange {
    color:          orange;
}
p.swirl {
    color:          purple;
}
```

This rule selects any <p>

This rule selects all members of lime class so a bit more specific

This rule selects <p> of lime class so a bit more specific again

These rules selects <p> of various class so about the same specificity as above rule

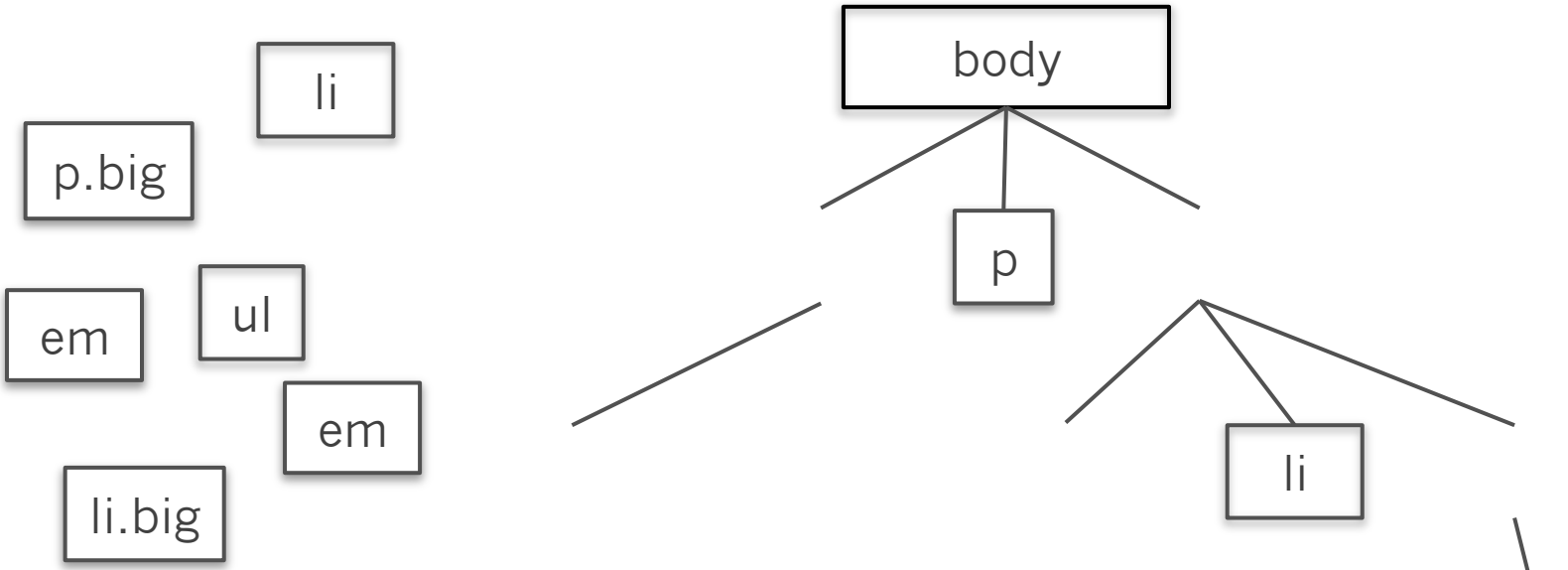
If there still isn't a winner?

```
p {
    color:          maroon;
}
.lime {
  color:          green;
}
p.lime {
  color:          green;
}
p.strawberry {
  color:          pink;
}
p.orange {
  color:          orange;
}
p.swirl {
  color:          purple;
}
```

It's the *last* rule in the CSS that wins and is applied

Add elements to the tree an colour in those affected by .big rule

```
<body>
<p class="big">This is some <em>text</em></p>
<p>This is some text</p>
<ul>
<li class="big">List item</li>
<li>List item</li>
<li>List <em>item</em></li>
</ul>
</body>
```



CSS

```
.big { font-size: 110%; font-weight: bold; }
```

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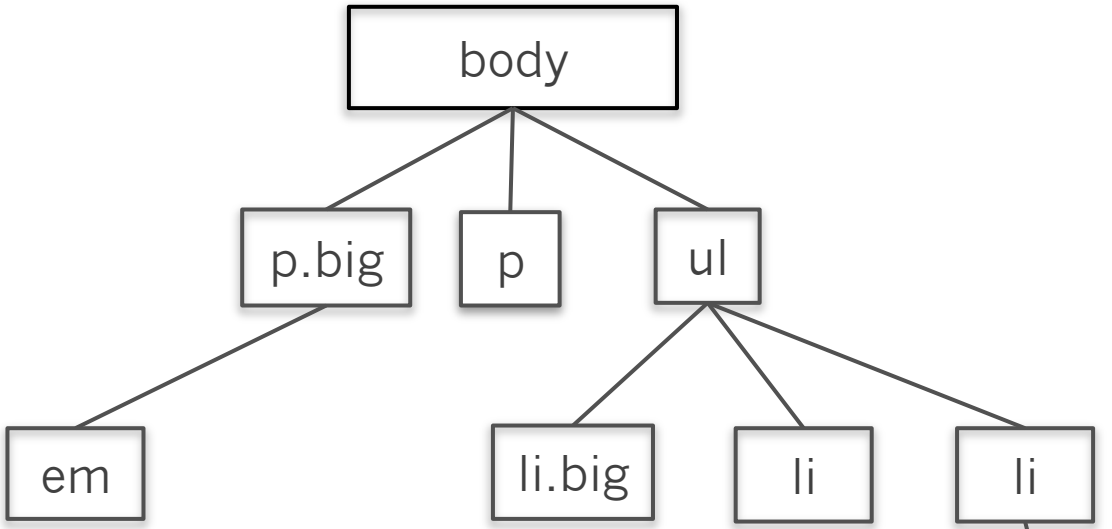
Add elements to the tree an colour in those affected by .big rule

```
<body>
<p class="big">This is some <em>text</em></p>
<p>This is some text</p>
<ul>
<li class="big">List item</li>
<li>List item</li>
<li>List <em>item</em></li>
</ul>
</body>
```

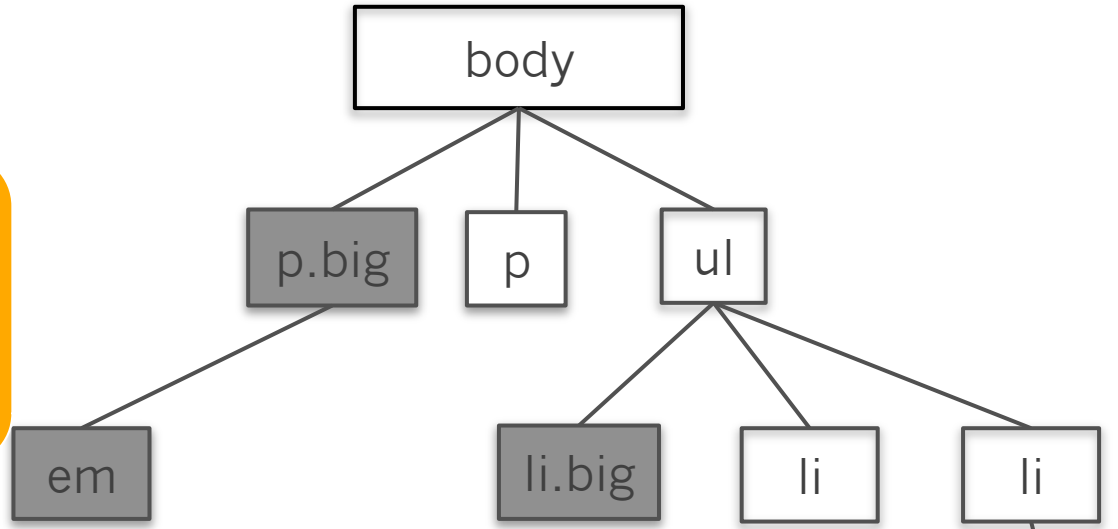


CSS

```
.big { font-size: 110%; font-weight: bold; }
```

HTML: colour in .big

```
<body>
<p class="big">This is some <em>text</em></p>
<p>This is some text</p>
<ul>
<li class="big">List item</li>
<li>List item</li>
<li>List <em>item</em></li>
</ul>
</body>
```

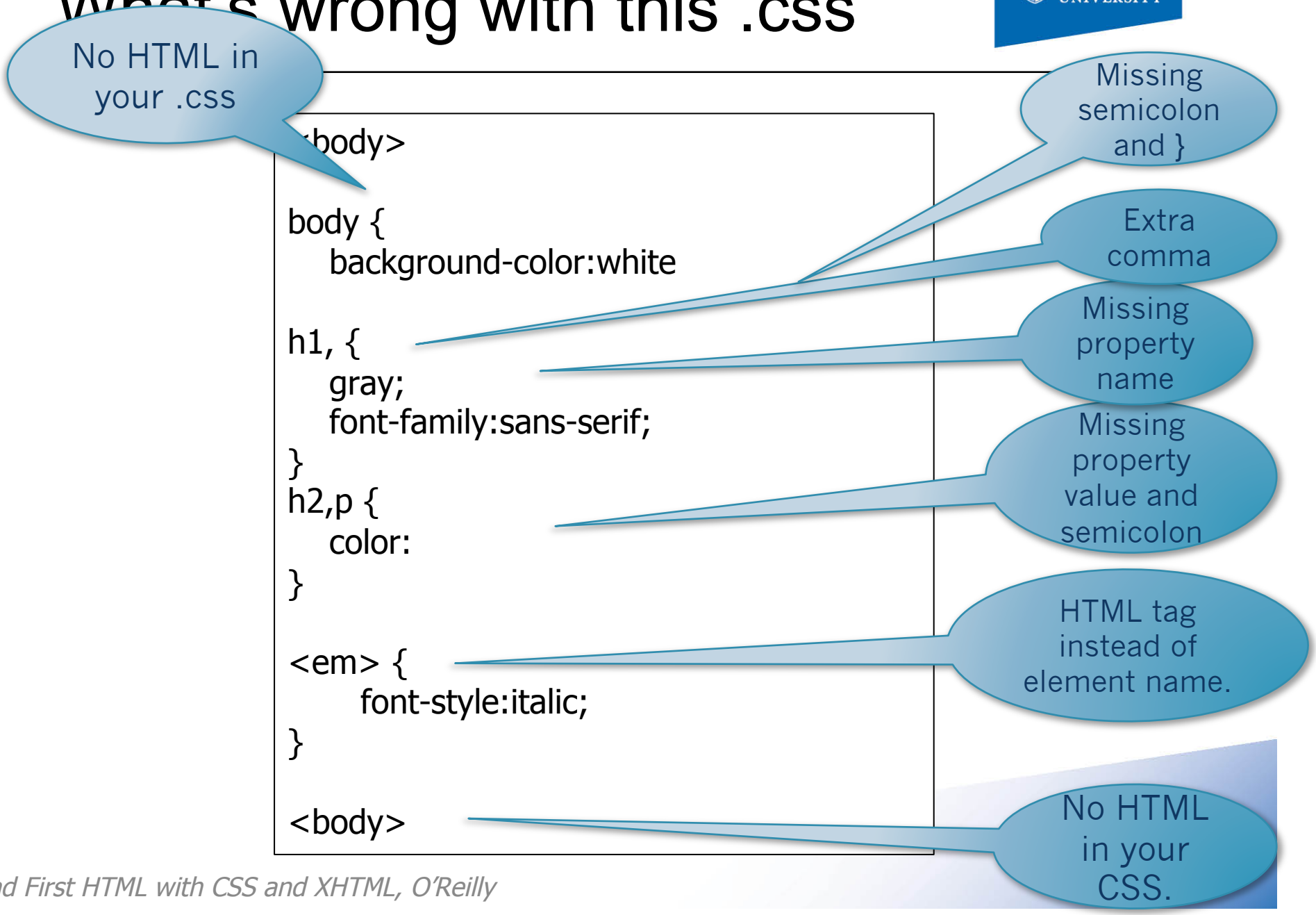


p.big and li.big
*.big → .big

CSS

```
.big { font-size: 110%; font-weight: bold; }
```

What's wrong with this .css



Tables

Also width, height, text-align, padding

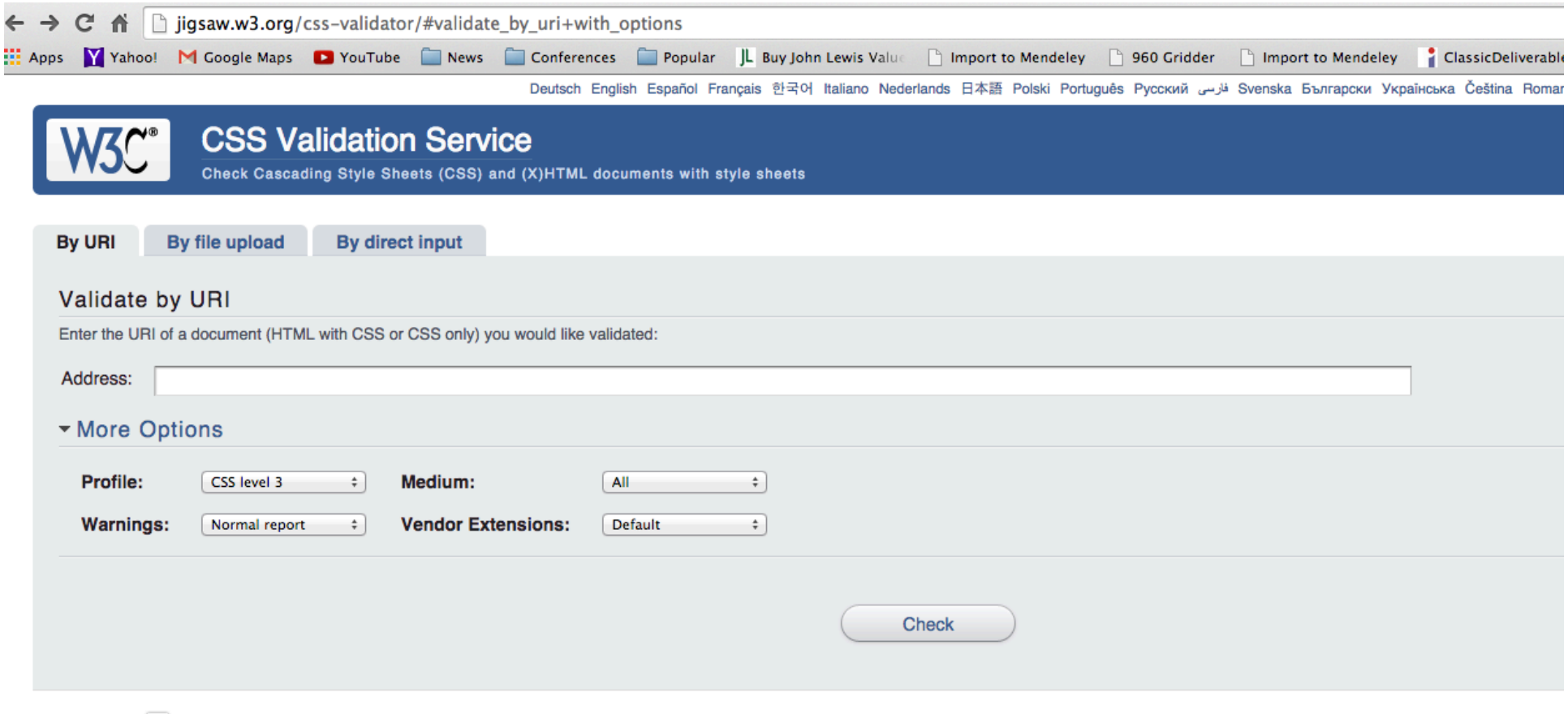
```
<!DOCTYPE html>
<html>
<head>
<style>
table, th, td {
   border: 1px solid black;
}
</style>
</head>
<body>

<table>
 <caption>Caption: A table with not very much in it </caption>
<tr><th>heading1</th>    <th>heading2</th></tr>
 <tr><td>row1 col1 data</td><td>row1 col2 data</td></tr>
 <tr><td>row2 col1 data</td><td>row2 col2 data</td></tr>
 <tr><td>row3 col1 data</td><td>row3 col2 data</td></tr>
</table>

</body>
</html>
```

Caption: A table with not very much in it

heading1	heading2
row1 col1 data	row1 col2 data
row2 col1 data	row2 col2 data
row3 col1 data	row3 col2 data

Validation

- Guess what: you can validate your CSS files too.
- http://jigsaw.w3.org/css-validator/



Comments in CSS

```
/*Set the font for all the descendents of body*/
body {
  font-family:   sans-serif;
}
```

HERIOT WATT UNIVERSITY

Let’s take a break

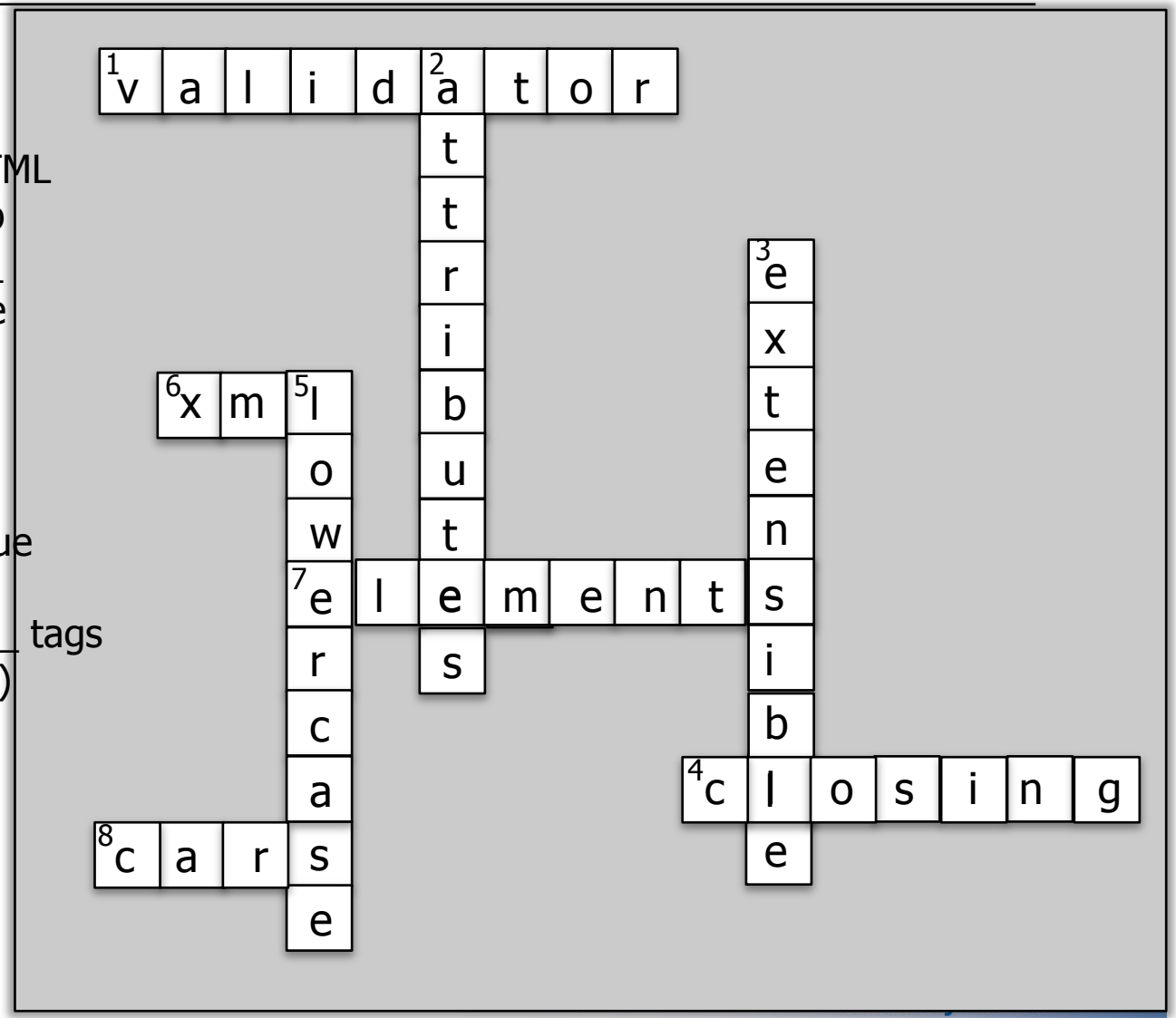
Crossword

Across

1. Used to double check your HTML
6. XHTML is this type of mark-up
7. img is one of the HTML _____
8. We invented an XML language for these

Down

2. These have a name and a value
3. The X in XHTML is for ___
4. It's good practice to have _____ tags
5. In elements are _____ (4,4)



Modified from Head First HTML with CSS and XHTML, O'Reilly

A bit about colours

- http://www.w3schools.com/cssref/css_colornames.asp
- 147 colour names which are supported by browsers
- The 17 standard colours are: aqua, black, blue, fuchsia, gray, grey, green, lime, maroon, navy, olive, purple, red, silver, teal, white, and yellow.

Color Name	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	

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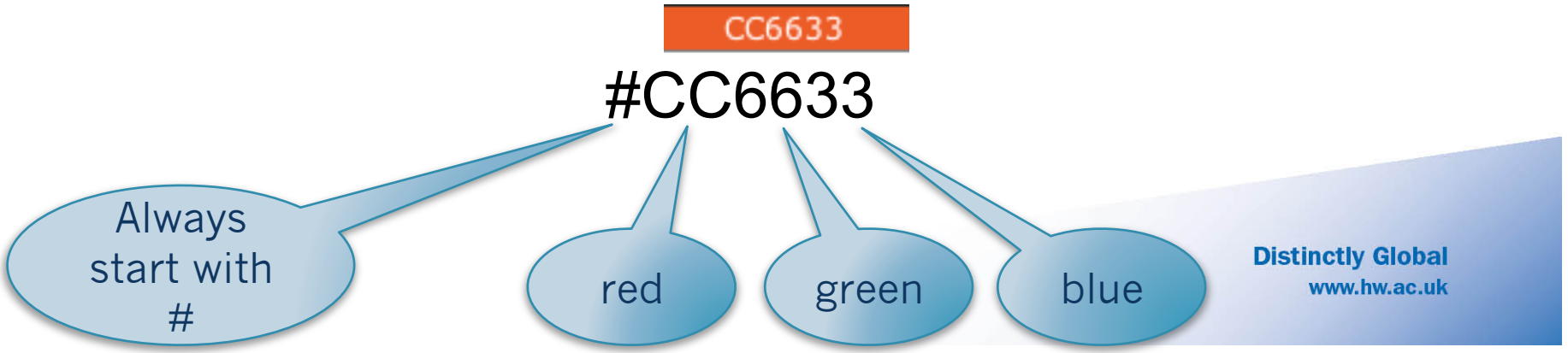
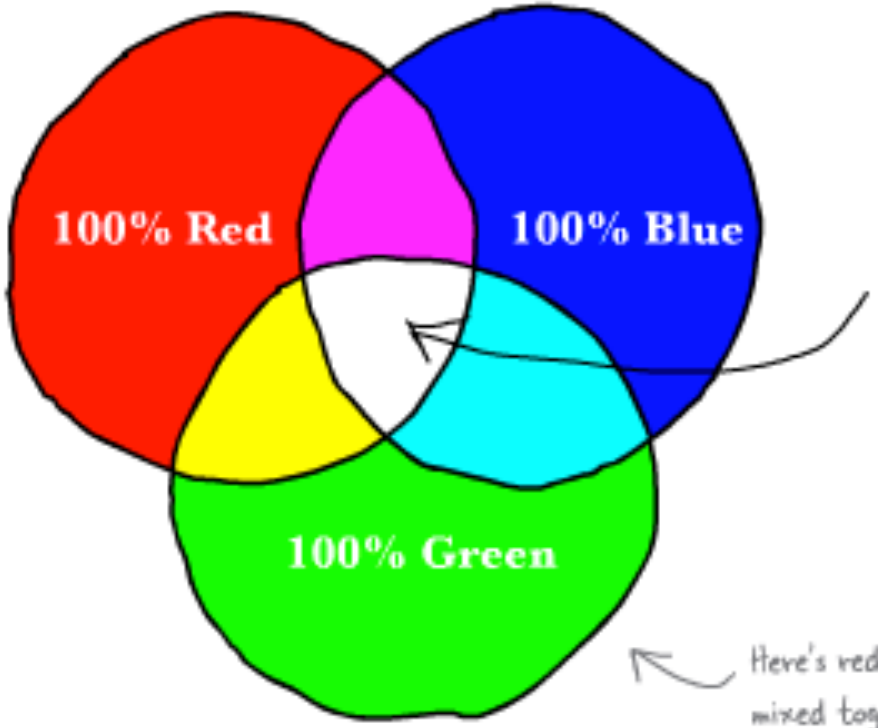
Hex Codes

- 16 million different colours using the Hex code http://www.colorpicker.com
- http://www.w3schools.com/html/

CC0000	CC0033	CC0066	CC0099	CC00CC	CC00FF
CC3300	CC3333	CC3366	CC3399	CC33CC	CC33FF
CC6600	CC6633	CC6666	CC6699	CC66CC	CC66FF
CC9900	CC9933	CC9966	CC9999	CC99CC	CC99FF
CCCC00	CCCC33	CCCC66	CCCC99	CCCCCC	CCCCFF
CCFF00	CCFF33	CCFF66	CCFF99	CCFFCC	CCFFFF



Hex Codes Explained

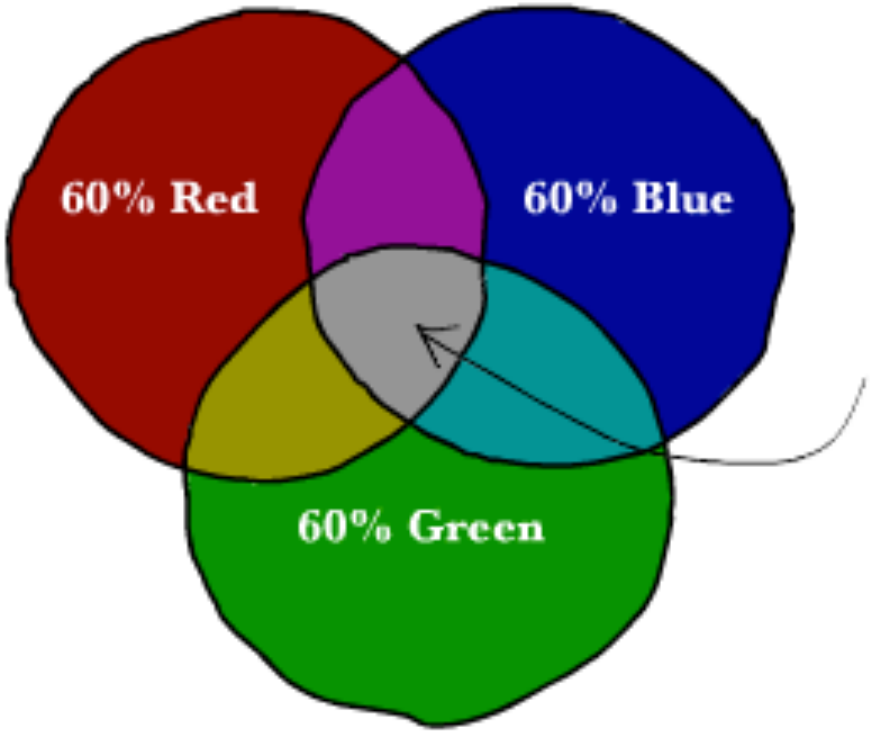


Here's red, green and blue being mixed together. If you look at the center you'll see how they all add up.

Web colors are specified in terms of how much red, green, and blue make up the color. You specify the amount of each color from 0 to 100% and then add them all together to arrive at a final color. For instance if you add 100% red, 100% green, and 100% blue together, you get white. Notice that on a computer screen, mixing together colors results in a lighter color. After all, this is light we're mixing!

Head First HTML with CSS and XHTML, O'Reilly

Hex Codes Explained

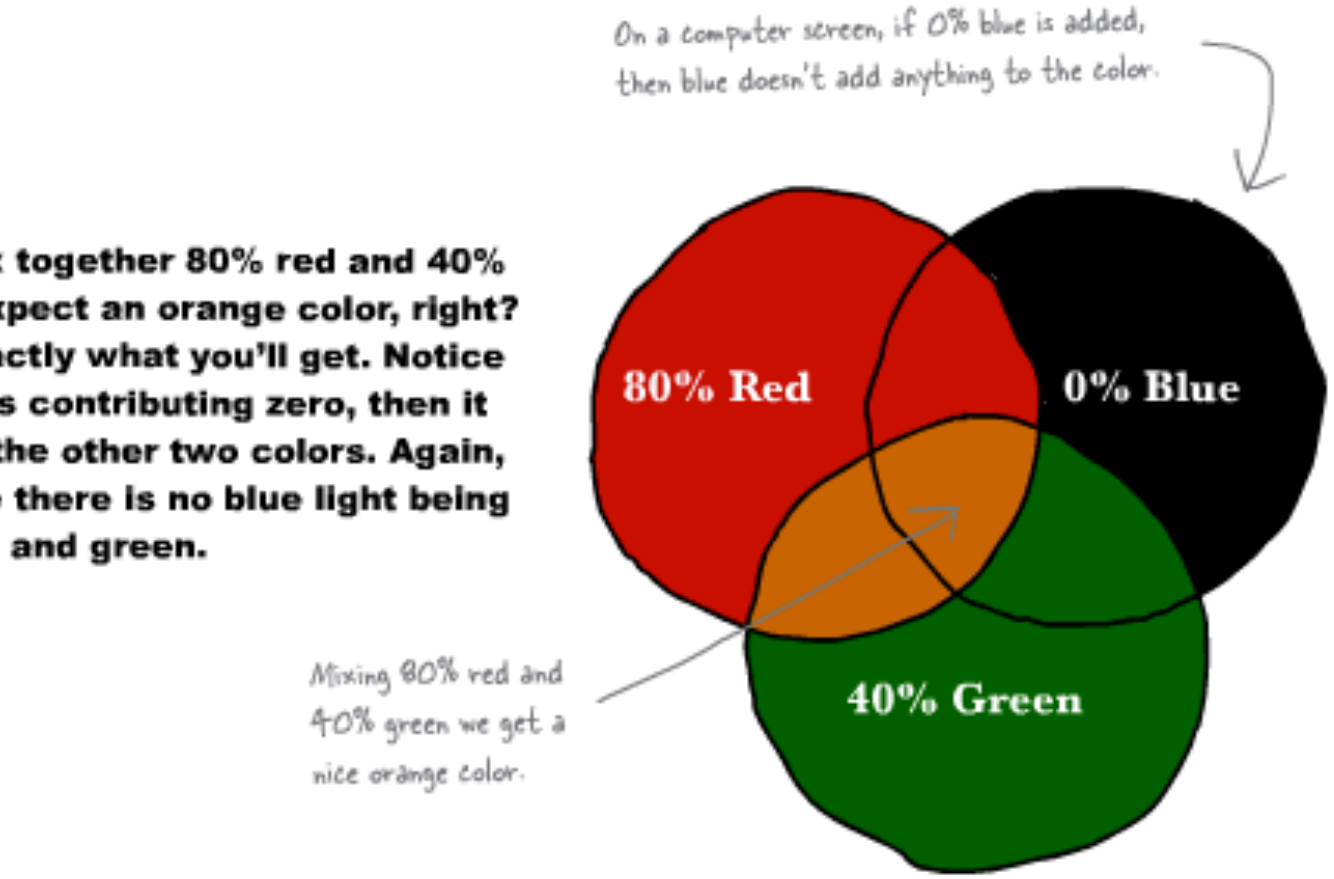


But, if you add, say, only 60% of each component (red, green, and blue) then what would you expect? Less white, right? In other words, you get a gray color, because we're sending equal amount of the three colors, but not as much light to the screen.

Head First HTML with CSS and XHTML, O'Reilly

Hex Codes Explained

Or, say you mix together 80% red and 40% green. You'd expect an orange color, right? Well, that's exactly what you'll get. Notice that if a color is contributing zero, then it doesn't affect the other two colors. Again, this is because there is no blue light being mixed with red and green.



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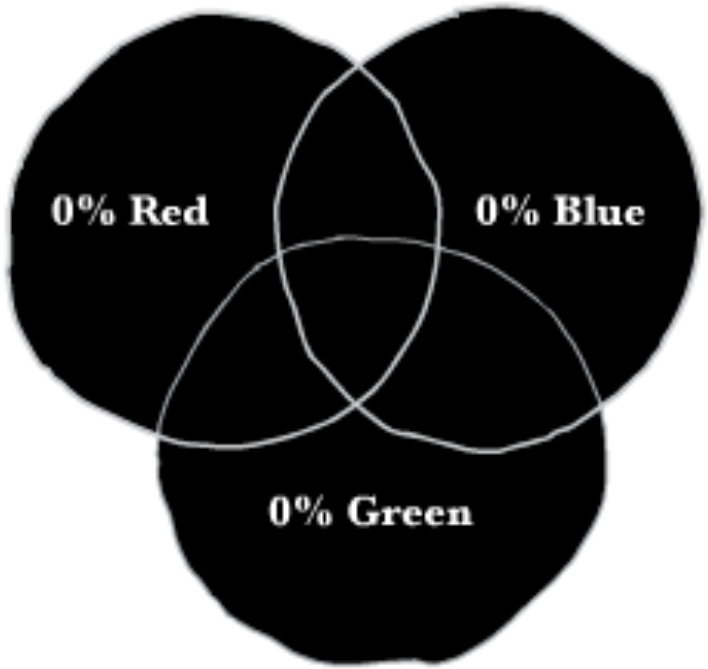
Hex Codes Explained

And what if you mix 0% of red, green, and blue, then what do you get? That means you're sending no light of any kind to the screen, so you get black.



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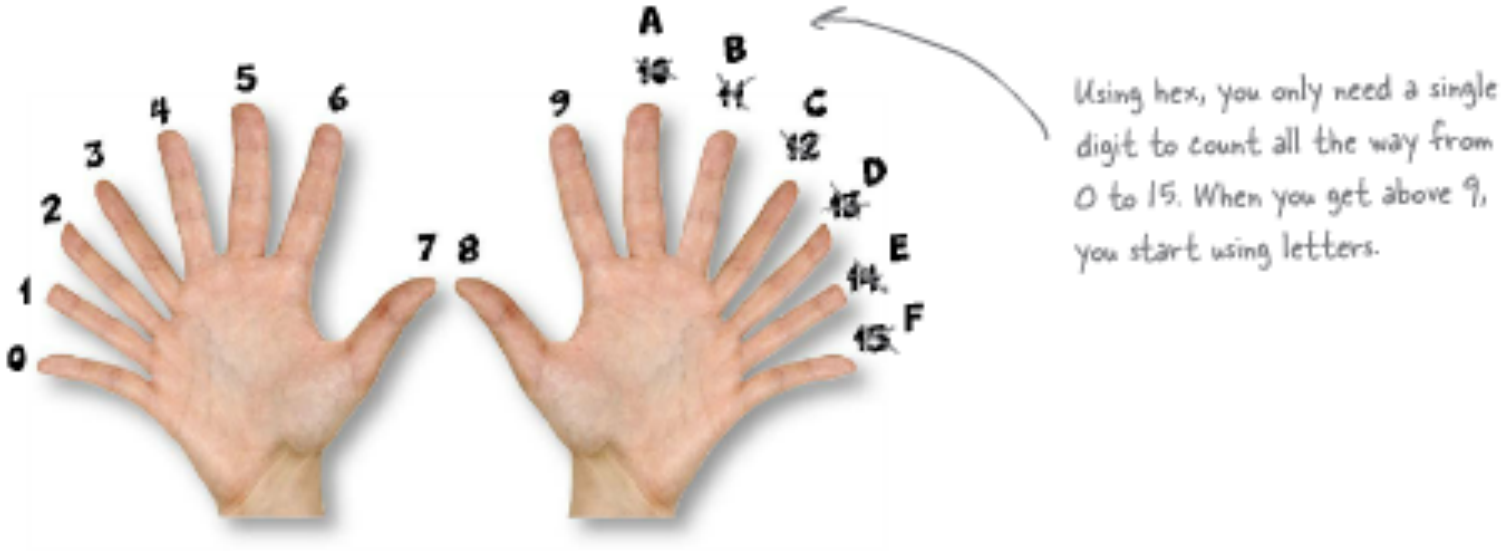
Hex codes continued

- Each character is between 0-15



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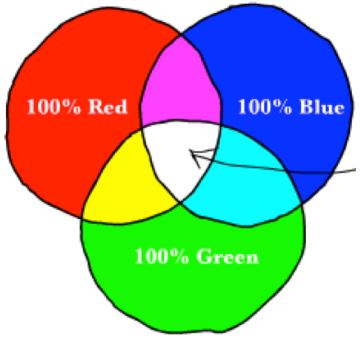
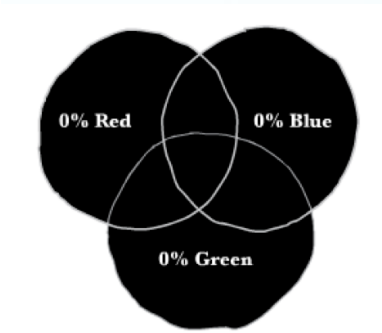
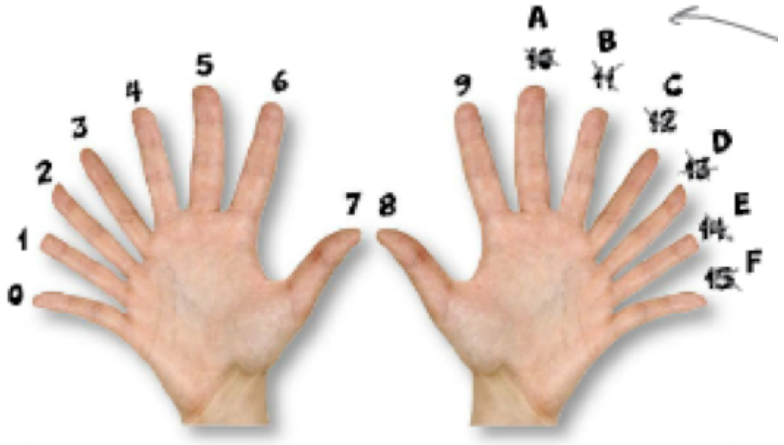
- FFFFFF is white



- 000000 is black





0%

0

100%

255/255

red green blue

#CC6600

CC

Take the right-most number and write down its decimal value.

12

Now take the left-most number and convert it to its decimal value, and also multiply it by 16.

12 * 16 = 192

Finally, add these two numbers together.

192 + 12 = 204

So 204 is the decimal equivalent of CC in hex.

Head First HTML with CSS and XHTML, O'Reilly

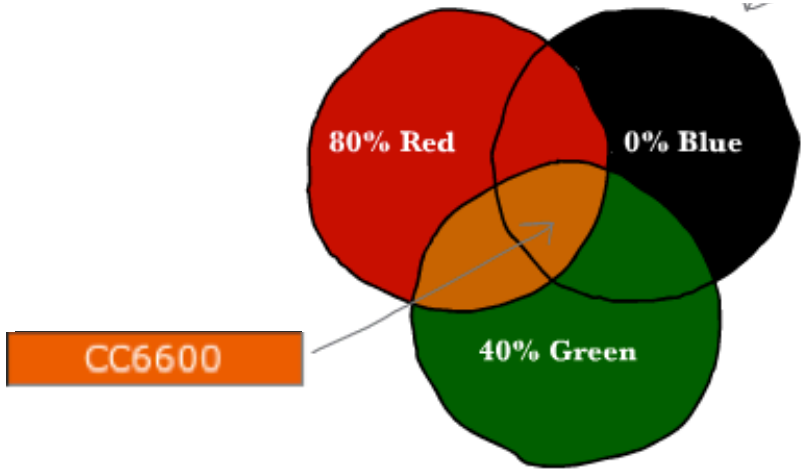
Hex C

(102/255)*100
=40%

(204/255)*
100=80%

CC 66 00

204 102 0



Head First HTML with CSS and XHTML, O'Reilly

Hex code: you try

CC0000	CC0033	CC0066	CC0099	CC00CC	CC00FF
CC3300	CC3333	CC3366	CC3399	CC33CC	CC33FF
CC6600	CC6633	CC6666	CC6699	CC66CC	CC66FF
CC9900	CC9933	CC9966	CC9999	CC99CC	CC99FF
CCCC00	CCCC33	CCCC66	CCCC99	CCCCCC	CCCCFF
CCFF00	CCFF33	CCFF66	CCFF99	CCFFCC	CCFFFF

- CC3399
- RED: CC= 204/255 = 80%
- GREEN: 33 = (3 + (3*16))/255=51/255= 20%
- BLUE: 99 = (9 + (9*16))/255= 153/255 =60%

Other ways you'll see colours

- a HEX value - like "#ff0000"
- an RGB value - like "rgb(255,0,0)"
- a color name - like "red"

Summary

- HTML elements gives structure
- CSS adds style
- Rules can apply to one or more selectors which specify which HTML element to apply rule

```
p, h2 {
color:green,font-family: times;
}
```

- HTML elements can be members of one or more class <p class="lime strawberry orange swirl">
- HTML elements can inherit properties
- How CSS rules are applied is based on specificity and which rules are last in the CSS file
- 3 ways to specify colours

Today's Labs

- Part 1: Your home page in HTML
- Part 2: CSS exercise
- Part 3: Adding style to your homepage

- Next time- Accessibility