Cascading Style Sheet (CSS)

Md. Faruk Hosen
Lecturer, Dept. of CIS, DIU

Presentation Plan

Agenda

- □Know about CSS
- □Know basic of CSS
- □Use CSS in web.
- □Finally use CSS to build web pages

BASIC Features of CSS

Lesson 1

Lesson 2

Lesson 3

1

Introduction to CSS

History of CSS

- CSS was proposed in 1994 as a web styling language. To helps solve some of the problems HTML 4.
- There were other styling languages proposed at this time, such as Style Sheets for HTML and JSSS but CSS won.
- CSS2 became the recommendation in 1998 by W3C
- CSS3 was started in 1998 but it has never been completed. Some parts are still being developed and some components work on some browsers.

What is CSS?

#CSS stands for Cascading Style Sheets

#Styles - define how to display HTML elements

#Styles are normally stored in Style Sheets

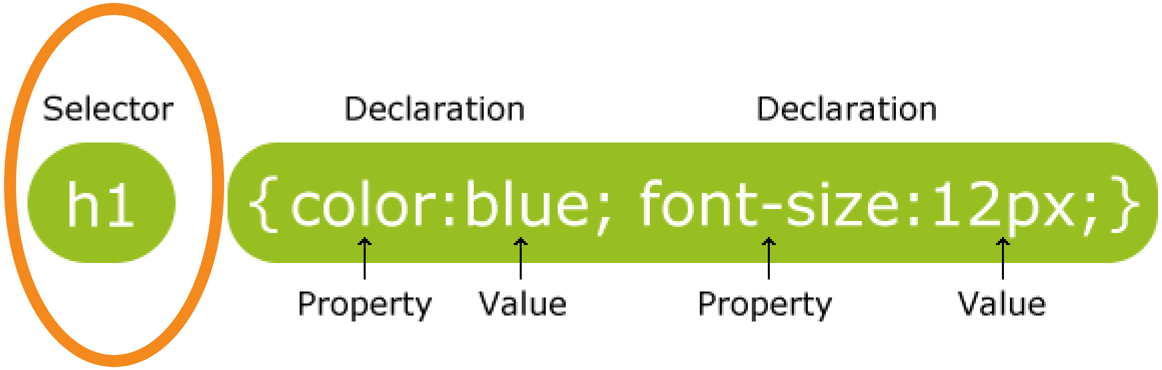
The CSS syntax is made up of 5 parts:

- selector
- property/value
- declaration
- declaration block
- curly braces

We will explore each part in the next slides.

❖ Selector

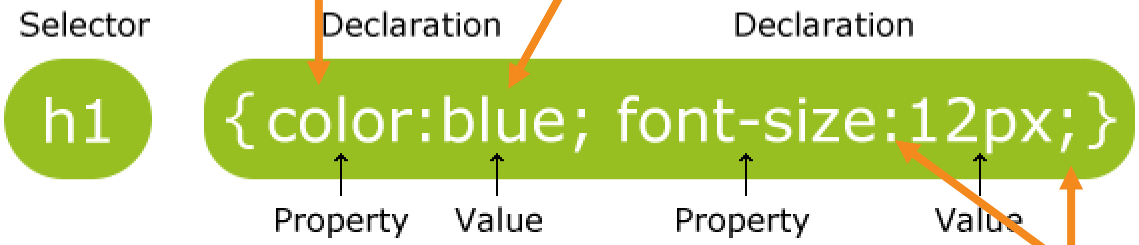
Definition: identifies the HTML elements that the rule will be applied to, identified by the actual element name, e.g. <body>, or by other means such as **class** attribute values.



*The selector is normally the HTML element you want to style

Property & Value

Definition: The property is the style attribute you want to change. Each property has a value.



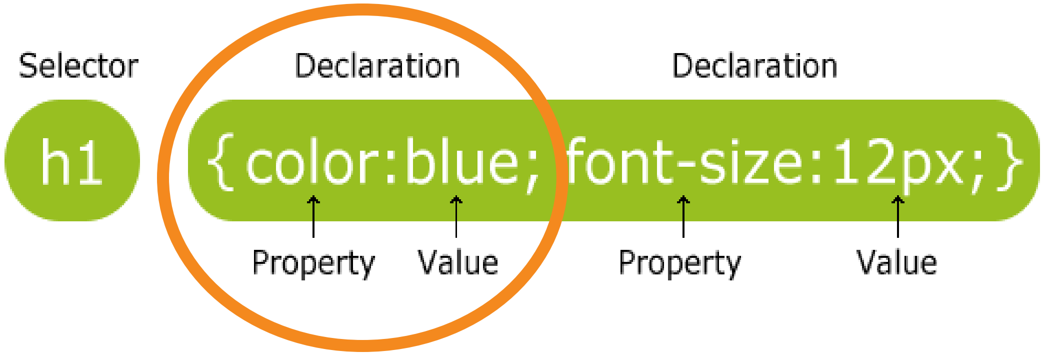
```
h1 {color:blue; font-size:12px;}
```

*Properties are separated from their respective values by **colons :**

*Pairs are separated from each other by **semicolons ;**

Declaration

Definition: Each CSS line that includes property and value



Selector

Declaration

Declaration

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

Property

Value

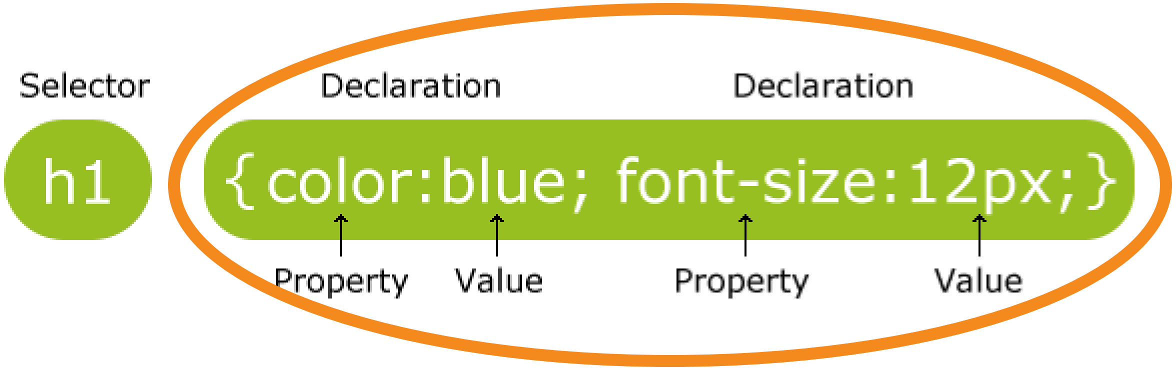
Property

Value

*Each declaration consists of a property and a value.

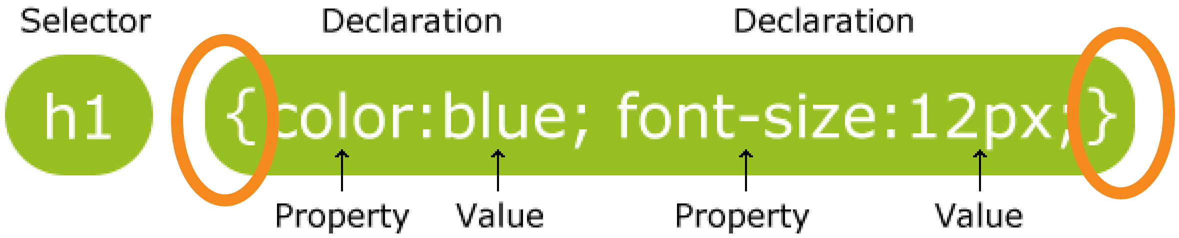
Declaration Block

Definition: multiple declaration lines including the curly braces



Curly Braces

Definition: the curly braces contain the properties of the element you want to manipulate, and the values that you want to change them to. The curly braces plus their content is called a declaration block.



Let’s Create Our First CSS Page

```
<html>
<head>
	<style type="text/css">
	    p {color:red; text-align:center;}
	</style>
</head>

<body>
	<p>Hello World!</p>
	<p>This paragraph is styled with CSS.</p>
</body>
</html>
```

- Save Your File as css-myfirstpage.html into a new folder called CSS

Class and id Selectors

- In addition to setting a style for a HTML element, CSS allows you to specify your own selectors called "id" and "class".

id - The id selector is used to specify a style for a single, unique element.

- The id selector uses the id attribute of the HTML element, and is defined with a "#".

- The style rule below will be applied to the element with id="para1":
- **#para1 {text-align:center;color:red;}**

Class and id Selectors

Class - The class selector is used to specify a style for a group of elements. Unlike the id selector, the class selector is most often used on several elements.

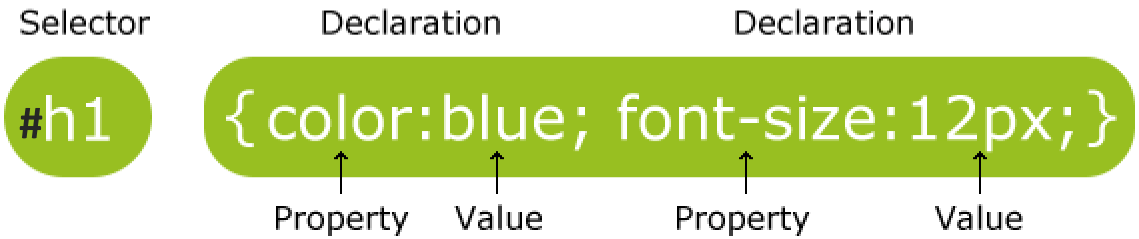
- This allows you to set a particular style for any HTML elements with the same class.

- The class selector uses the HTML class attribute, and is defined with a "."

- In the example below, all HTML elements with class="center" will be center-aligned:
- **.center {text-align:center;}**

Class and id Selectors

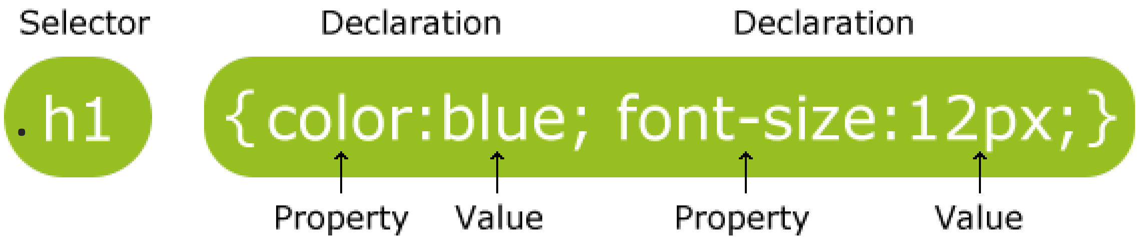
– In the image below what is the h1 selector an ID or a Class?



Selector Declaration Declaration

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

Property Value Property Value



Selector Declaration Declaration

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

Property Value Property Value

Let’s Create A CSS Page that uses “id”

```
<html>
<head>
<style type="text/css">
#para1
{
text-align:center;
color:red;
}
</style>
</head>

<body>
<p id="para1">Hello World!</p>
<p>This paragraph is not affected by the style.</p>
</body>
</html>
```

- Save Your File as css-id.html into a your folder called CSS.

Let’s Create A CSS Page that uses “class”

```
<html>
<head>
<style type="text/css">
.center
{
text-align:center;
}
</style>
</head>

<body>
<h1 class="center">Center-aligned heading</h1>
<p class="center">Center-aligned paragraph.</p>
</body>
</html>
```

- Save Your File as css-class.html into a your folder called CSS.

Comments

- Comments are used to explain your code, and may help you when you edit the source code at a later date. Comments are ignored by browsers.

- You add comments by enclosing them in

/* and */

- Comments can span several lines, and the browser will ignore these lines.

- **Example:**

- /* This is a basic comment it will not appear on the page*/

/* starts the comment

*/ is the end of the comment

```
/*This is a comment*/
    p{ text-align:center; color:black; font-family:arial;}
```

How CSS is Applied to A Web Page

- CSS is applied to a web page using three different methods:
  - Inline style
  - Internal style sheet
  - External style sheet

How CSS is Applied to A Web Page

- Inline CSS
- Applies styles directly to the elements by adding declarations into the style
- For Example:

<p style=“color: red;”> This is a simple paragraph and the inline style makes it red.</p>

How CSS is Applied to A Web Page

Internal Style Sheet

- Applies styles to HTML by placing the CSS rules inside the tag <style> inside the document tag <head>.
- For Example:

```
<head>
<title>my page</title>
<style type=“text/css”>
p{color:red}
</style>
</head>
<body>
<p>this is a simple paragraph
</p>
</body>
```

How CSS is Applied to A Web Page

External CSS

- Applies styles as a separate file with a .css extension. The file is then referenced from inside the <head> element by a link to the file.
- For Example:

```
<head>
<title>my external style sheet page</title>
<link rel=“style sheet” type=“text/css” href=“my-external-stylesheet.css”>
<body>
<p>this is a simple paragraph</p>
</body>
```

- You can create an external style sheet in your text editor.

How CSS is Applied to A Web Page

- What style sheet is best?
- Web developers rarely use inline CSS. Since they prefer to not mix content with presentation. And it is not efficient since you have to declare the style individually for every component.

- Internal and External style sheets are more popular because you can style multiple elements with one rule.

- External style sheets are best because they allow you to save all the style information on a separate file from the content. You can then modify a style for a site and it will update all of the pages in a site.

Colors and Formatting in CSS

- CSS Colors
- In the previous lesson you have seen a few CSS styles that included color like: <p style="color: red;">
- There are a few ways that you can set colors in CSS:

Keywords, Hex values, RGB, HSL(a)

Colors and Formatting in CSS

- CSS Colors: Keywords
- Using the keywords like: red, fuchsia, yellow, blue, green you can specify what color you would like the CSS rule to display.
- For example:
- p{color:red}
- h2{color:yellow}
- There are 17 of these keyword colors you can use in CSS.

Colors and Formatting in CSS

Keyword Color	Hex
aqua	#00ffff
black	#000000
blue	#0000ff
fuchsia	#ff00ff
gray	#808080
green	#008000
lime	#00ff00
maroon	#800000
navy	#000080
olive	#808000
orange (added in CSS 2.1)	#ffa500
purple	#800080
red	#ff0000
silver	#c0c0c0
teal	#008080
white	#ffffff
yellow	#ffff00

CSS Using Color

```
<html>
<body>

<p style="background-color:#FFF111">
Color set by using hex value
</p>

<p style="background-color:rgb(0,255,0);">
Color set by using rgb value
</p>

<p style="background-color:red">
Color set by using color name
</p>

</body>
</html>
```

- Save Your File as css-color.html into your folder called CSS

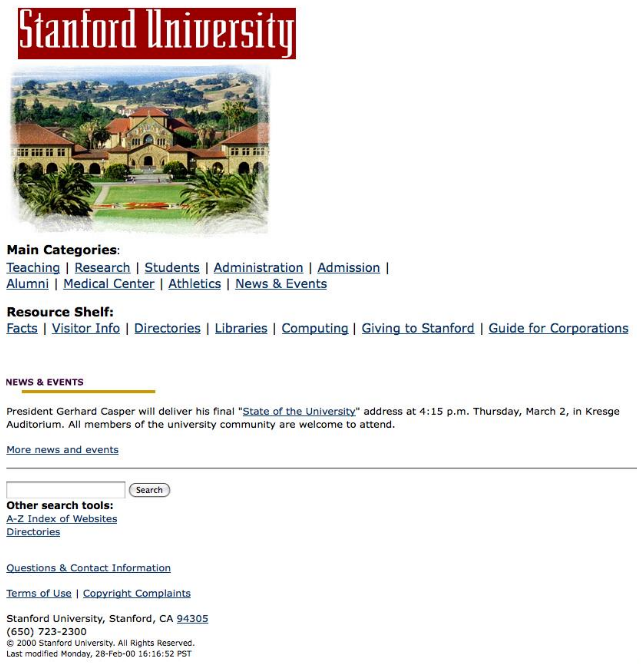
Lesson 2

CSS3

implementing the new features

Brief history… 1997-2001

- Content: HTML 4.01
- Presentation: CSS1



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NEWS & EVENTS

President Gerhard Casper will deliver his final "State of the University" address at 4:15 p.m. Thursday, March 2, in Kresge Auditorium. All members of the university community are welcome to attend.

More news and events

Other search tools:
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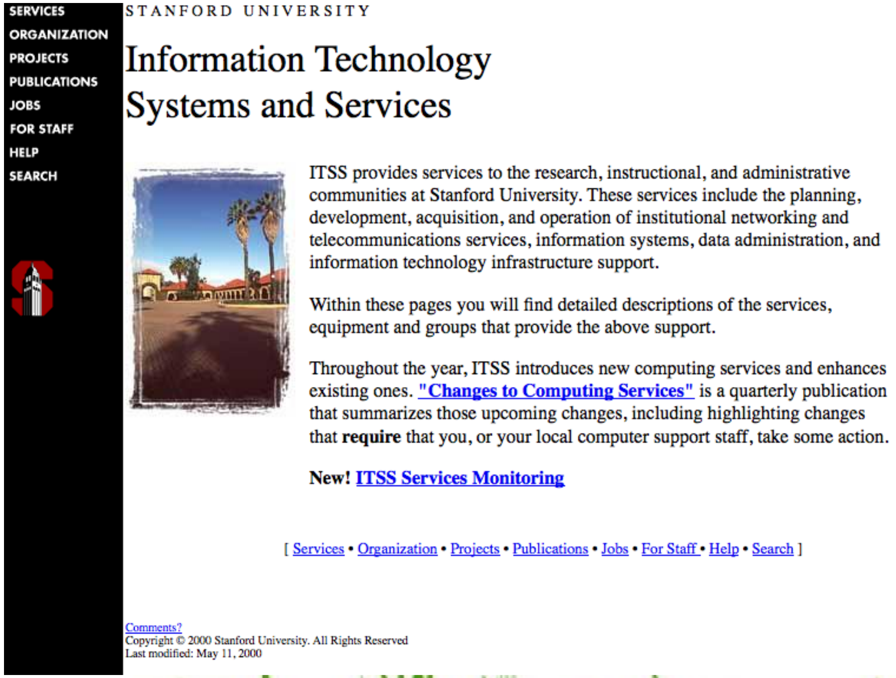

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Information Technology
Systems and Services

ITSS provides services to the research, instructional, and administrative communities at Stanford University. These services include the planning, development, acquisition, and operation of institutional networking and telecommunications services, information systems, data administration, and information technology infrastructure support.

Within these pages you will find detailed descriptions of the services, equipment and groups that provide the above support.

Throughout the year, ITSS introduces new computing services and enhances existing ones. "Changes to Computing Services" is a quarterly publication that summarizes those upcoming changes, including highlighting changes that **require** that you, or your local computer support staff, take some action.

New! ITSS Services Monitoring

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Comments?
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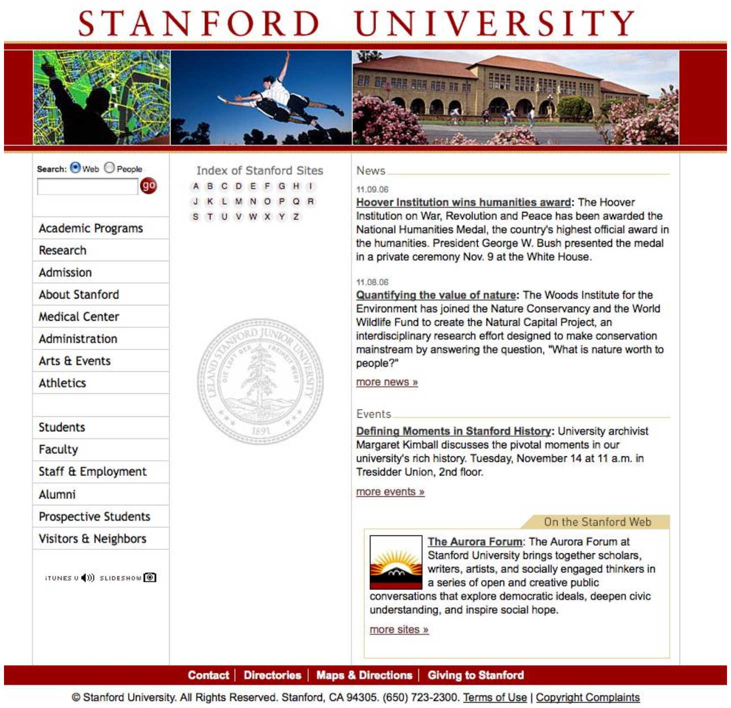
Brief history… 2001-2006

- Content: XHTML 1
- Presentation: CSS2



News

11.09.06

Hoover Institution wins humanities award: The Hoover Institution on War, Revolution and Peace has been awarded the National Humanities Medal, the country's highest official award in the humanities. President George W. Bush presented the medal in a private ceremony Nov. 9 at the White House.

11.08.06

Quantifying the value of nature: The Woods Institute for the Environment has joined the Nature Conservancy and the World Wildlife Fund to create the Natural Capital Project, an interdisciplinary research effort designed to make conservation mainstream by answering the question, "What is nature worth to people?"

more news »

Events

Defining Moments in Stanford History: University archivist Margaret Kimball discusses the pivotal moments in our university's rich history. Tuesday, November 14 at 11 a.m. in Tresidder Union, 2nd floor.

more events »

On the Stanford Web

The Aurora Forum: The Aurora Forum at Stanford University brings together scholars, writers, artists, and socially engaged thinkers in a series of open and creative public conversations that explore democratic ideals, deepen civic understanding, and inspire social hope.

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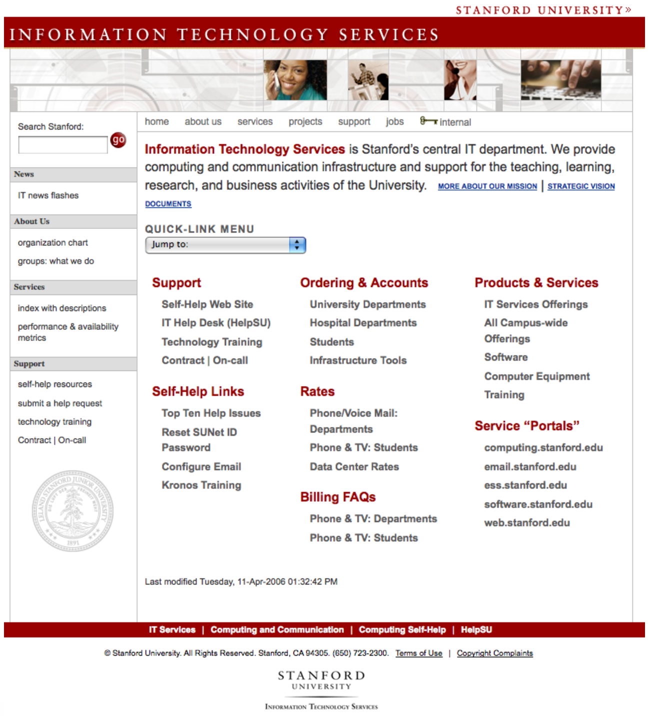

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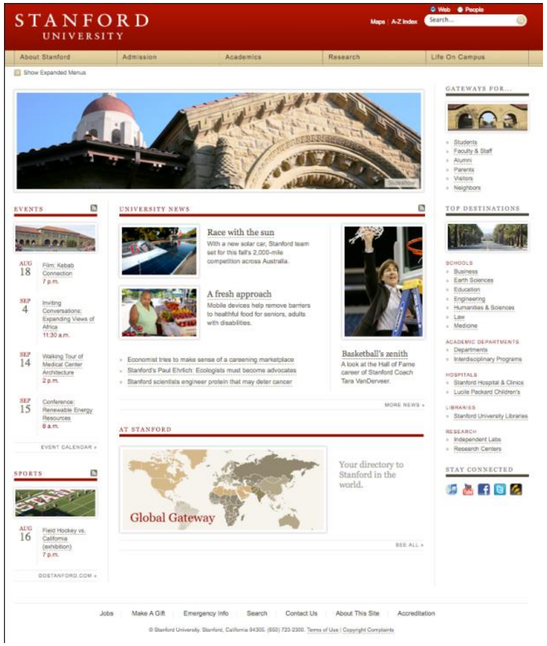
INFORMATION TECHNOLOGY SERVICES

Brief history... 2007-present

- Content: HTML5
- Presentation: CSS3



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EVENTS

AUG 18 Film: Kebab Connection
7 p.m.

SEP 4 Inviting Conversations: Expanding Views of Africa
11:30 a.m.

SEP 14 Walking Tour of Medical Center Architecture
2 p.m.

SEP 15 Conference: Renewable Energy Resources
8 a.m.

EVENT CALENDAR »

UNIVERSITY NEWS

Race with the sun
With a new solar car, Stanford team set for this fall's 2,000-mile competition across Australia.

A fresh approach
Mobile devices help remove barriers to healthful food for seniors, adults with disabilities.

Basketball's zenith
A look at the Hall of Fame career of Stanford Coach Tara VanDerveer.

- Economist tries to make sense of a careening marketplace
- Stanford's Paul Ehrlich: Ecologists must become advocates
- Stanford scientists engineer protein that may deter cancer

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AUG 16 Field Hockey vs. California (exhibition)
7 p.m.

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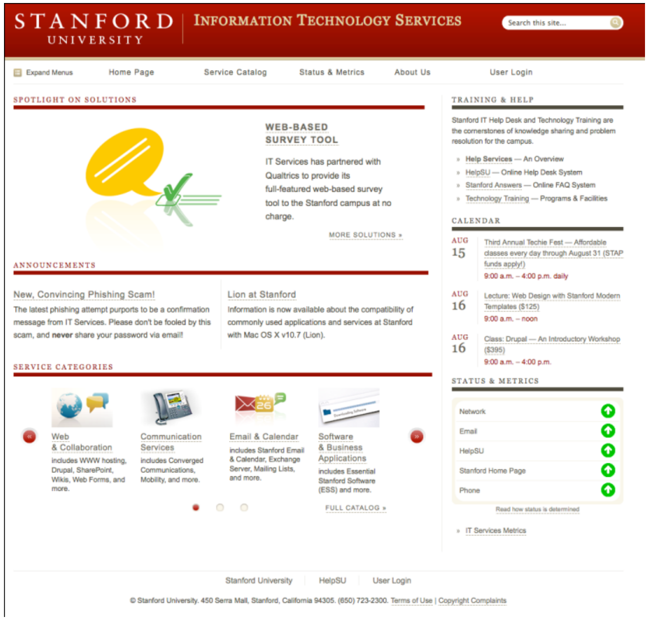

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SPOTLIGHT ON SOLUTIONS

WEB-BASED SURVEY TOOL

IT Services has partnered with Qualtrics to provide its full-featured web-based survey tool to the Stanford campus at no charge.

MORE SOLUTIONS »

ANNOUNCEMENTS

New, Convincing Phishing Scam!
The latest phishing attempt purports to be a confirmation message from IT Services. Please don't be fooled by this scam, and **never** share your password via email!

Lion at Stanford
Information is now available about the compatibility of commonly used applications and services at Stanford with Mac OS X v10.7 (Lion).

SERVICE CATEGORIES

Web & Collaboration
includes WWW hosting, Drupal, SharePoint, Wikis, Web Forms, and more.

Communication Services
includes Converged Communications, Mobility, and more.

Email & Calendar
includes Stanford Email & Calendar, Exchange Server, Mailing Lists, and more.

Software & Business Applications
includes Essential Stanford Software (ESS) and more.

FULL CATALOG »

TRAINING & HELP

Stanford IT Help Desk and Technology Training are the cornerstones of knowledge sharing and problem resolution for the campus.

- Help Services — An Overview
- HelpSU — Online Help Desk System
- Stanford Answers — Online FAQ System
- Technology Training — Programs & Facilities

CALENDAR

AUG 15 Third Annual Techie Fest — Affordable classes every day through August 31 (STAP funds apply!)
9:00 a.m. – 4:00 p.m. daily

AUG 16 Lecture: Web Design with Stanford Modern Templates ($125)
9:00 a.m. – noon

AUG 16 Class: Drupal — An Introductory Workshop ($395)
9:00 a.m. – 4:00 p.m.

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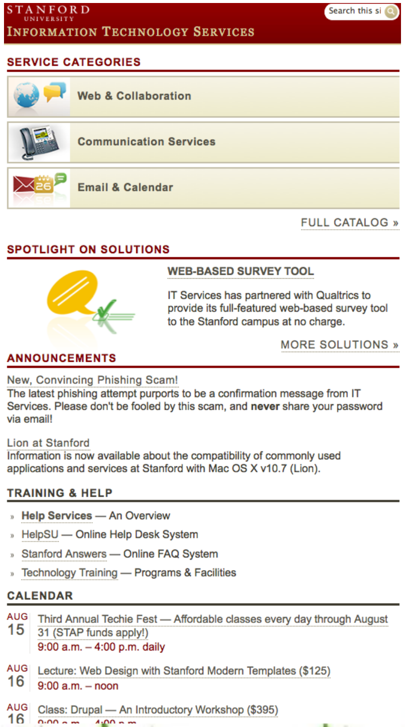

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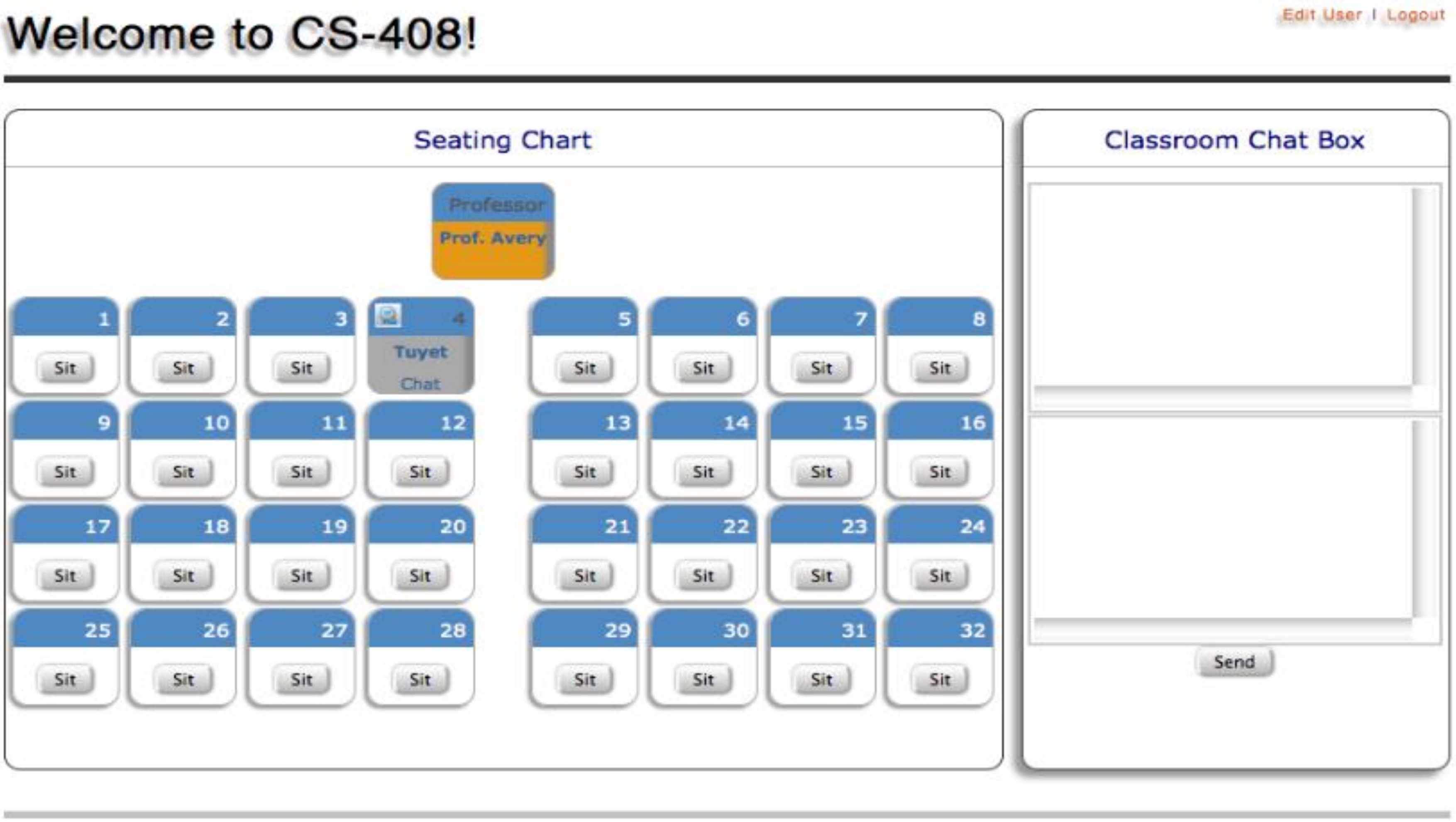
New properties! (and some new property groups!)

CSS Property Groups:

- Animation
- Background
- Border and outline
- Box
- Color
- Content Paged Media
- Dimension
- Flexible Box
- Font
- Generated content
- Grid
- Hyperlink
- Linebox
- List
- Margin
- Marquee
- Multi-column
- Padding
- Paged Media
- Positioning
- Print
- Ruby
- Speech
- Table
- Text
- 2D/3D Transform
- Transition
- User-interface

Seating Chart with CSS3



Talk Outline

1. **Create Rounded Corners**
2. Drop Shadow
3. Create Gradient Buttons
4. Multiple background images
5. Multi-Column Layout
6. Transform
7. Transition

Create Rounded Corners

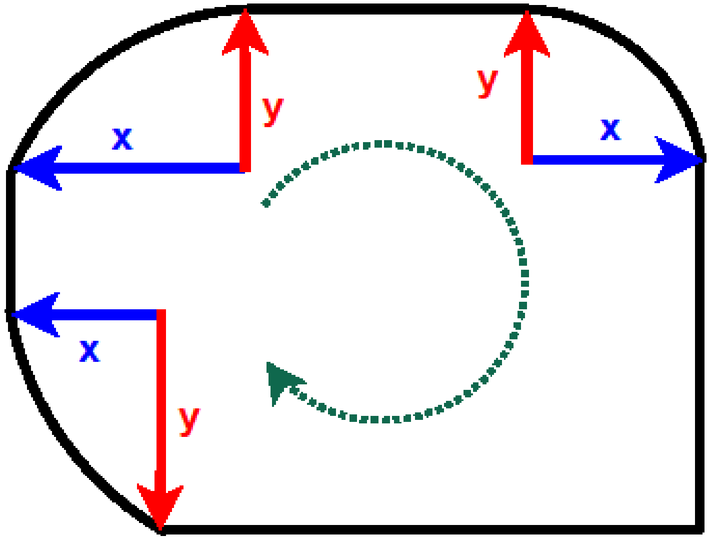
border -*-*-radius: [**x**] [**y**]?

x = **horizontal** radius [<*length*> | <*%*>]

y = **vertical** radius [<*length*> | <*%*>]

border-top-left radius: x y;

border-top-right-radius: x y;



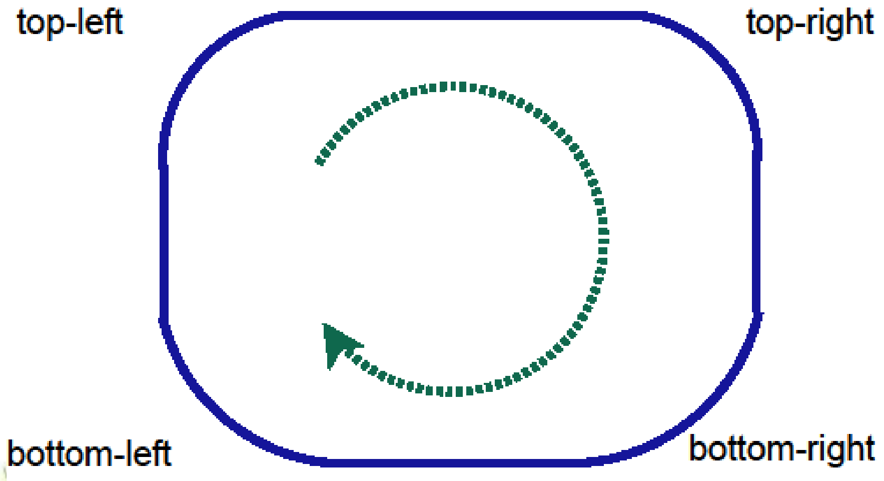
border-bottom-left-radius: x y;

border-bottom-right-radius: 0;

Create Rounded Corners

border-radius: [x] {1,4} [/ [y] {1,4}]?

border-radius: 5px 10px 10px 10px / 10px 10px 5px 5px;
border-radius: 5px 10px / 10px;
border radius: 10px;



Create Rounded Corners

W3C Specification	Mozilla Implementation
border-radius	-moz-border-radius
border-top-left-radius	-moz-border-radius-topleft
border-top-right-radius	-moz-border-radius-topright
border-bottom-right-radius	-moz-border-radius-bottomright
border-bottom-left-radius	-moz-border-radius-bottomleft

Create Rounded Corners

- Safari and Chrome:
  - V3.0: use **-webkit-** prefix

Talk Outline

1. Create Rounded Corners
2. **Drop Shadow**
3. Create Gradient Buttons
4. Multiple background images
5. Multi-Column Layout
6. Transform
7. Transition

Drop Shadow

text-shadow: **x** **y** **b** **color**

- **x** = horizontal offset
  - **x** < 0: left of the text
  - **x** > 0: right of the text
- **y** = vertical offset
  - **y** < 0: above the text
  - **y** > 0: below the text
- **b** = blur radius

Drop Shadow

box-shadow: **x y b color**

Examples:

```
-webkit-box-shadow: -3px 3px 3px #999999;
-moz-box-shadow: -3px 3px 3px #999999;
text-shadow: -4px 4px 3px #999999;
```

Create Gradient Buttons

- rgba(r, g, b, opacity)
- background:-webkit-gradient(linear,0% 0%,0% 100%, from(rgba(255,255,255,1)),to(rgba(185,185,185,1)));
- background:-moz-linear-gradient(top,rgba(255,255,255,1), rgba(185,185,185,1));

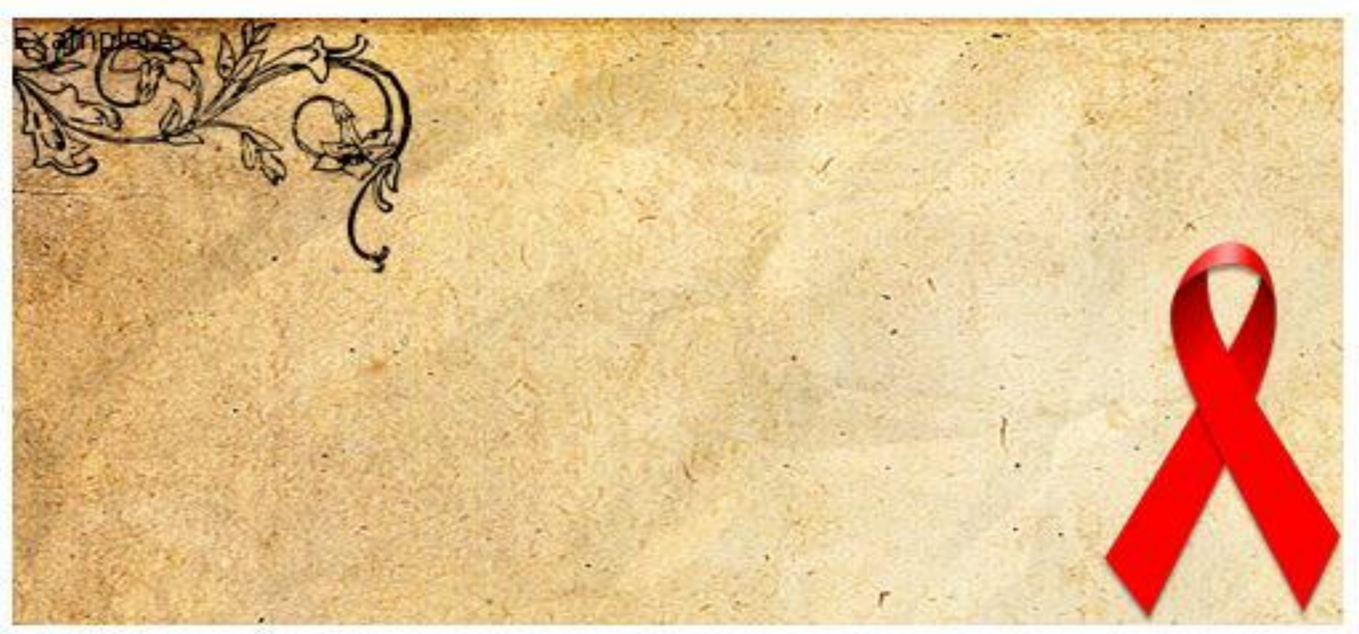
Talk Outline

1. Create Rounded Corners
2. Drop Shadow
3. Create Gradient Buttons
4. **Multiple background images**
5. Multi-Column Layout
6. Transform
7. Transition

Multiple background images

```
background:
<image> <position> <size> <repeat> <attachment> <box>,
<image> <position> <size> <repeat> <attachment> <box>,
<image> <position> <size> <repeat> <attachment> <box>,
<image> <position> <size> <repeat> <attachment> <box> <color>;
                              OR
background-image: <image>, <image>, <image>, <image>;
background-repeat: <repeat>, <repeat>, <repeat>,<repeat>;
background-position: <position>, <position>, <position>,<position>;
/* plus any background attachment and/or box properties as needed */
```

```
#example {
    width: 500px;
    height: 250px;
    background-image: url(decoration.png), url(ribbon.png),
    url(old_paper.jpg);
    background-repeat: no-repeat;
    background-position: left top, right bottom, left top;
    }
```

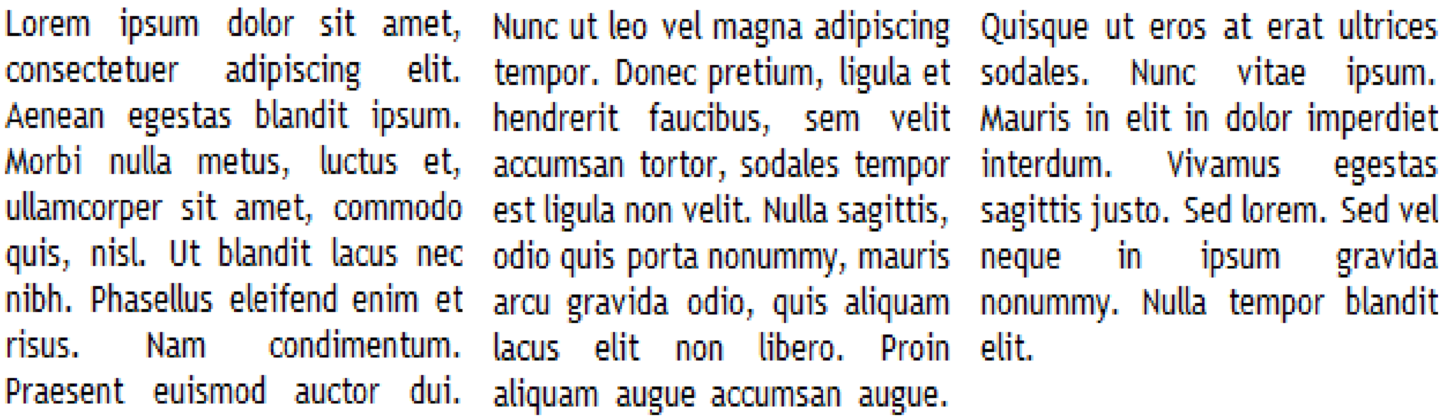


Talk Outline

1. Create Rounded Corners
2. Drop Shadow
3. Create Gradient Buttons
4. Multiple background images
5. **Multi-Column Layout**
6. Transform
7. Transition

Multi-Column Layout

```
#multi-column {
/* For Mozilla: */
    -moz-column-width: 13em;
    -moz-column-gap: 1em;
 /* For WebKit: */
    -webkit-column-width: 13em;
    -webkit-column-gap: 1em;
}
```



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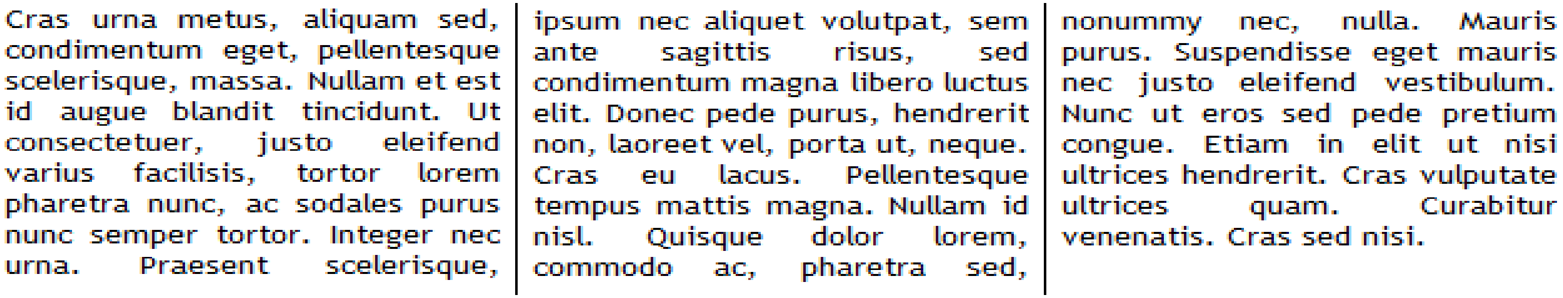
Multi-Column Layout

```
#multi-column {
     -moz-column-count: 3;
    -moz-column-gap: 1em;
    -moz-column-rule: 1px solid black;
    -webkit-column-count: 3;
    -webkit-column-gap: 1em;
    -webkit-column-rule: 1px solid black;
}
```



Cras urna metus, aliquam sed, condimentum eget, pellentesque scelerisque, massa. Nullam et est id augue blandit tincidunt. Ut consectetuer, justo eleifend varius facilisis, tortor lorem pharetra nunc, ac sodales purus nunc semper tortor. Integer nec urna. Praesent scelerisque, ipsum nec aliquet volutpat, sem ante sagittis risus, sed condimentum magna libero luctus elit. Donec pede purus, hendrerit non, laoreet vel, porta ut, neque. Cras eu lacus. Pellentesque tempus mattis magna. Nullam id nisl. Quisque dolor lorem, commodo ac, pharetra sed, nonummy nec, nulla. Mauris purus. Suspendisse eget mauris nec justo eleifend vestibulum. Nunc ut eros sed pede pretium congue. Etiam in elit ut nisi ultrices hendrerit. Cras vulputate ultrices quam. Curabitur venenatis. Cras sed nisi.

Lesson 3

The Basis of CSS layout

- The 3 core concepts to understand about CSS layout are:
  1. The CSS box model
  2. Floating
  3. Positioning
- Together, these 3 concepts control the way elements are arranged and displayed on a page.

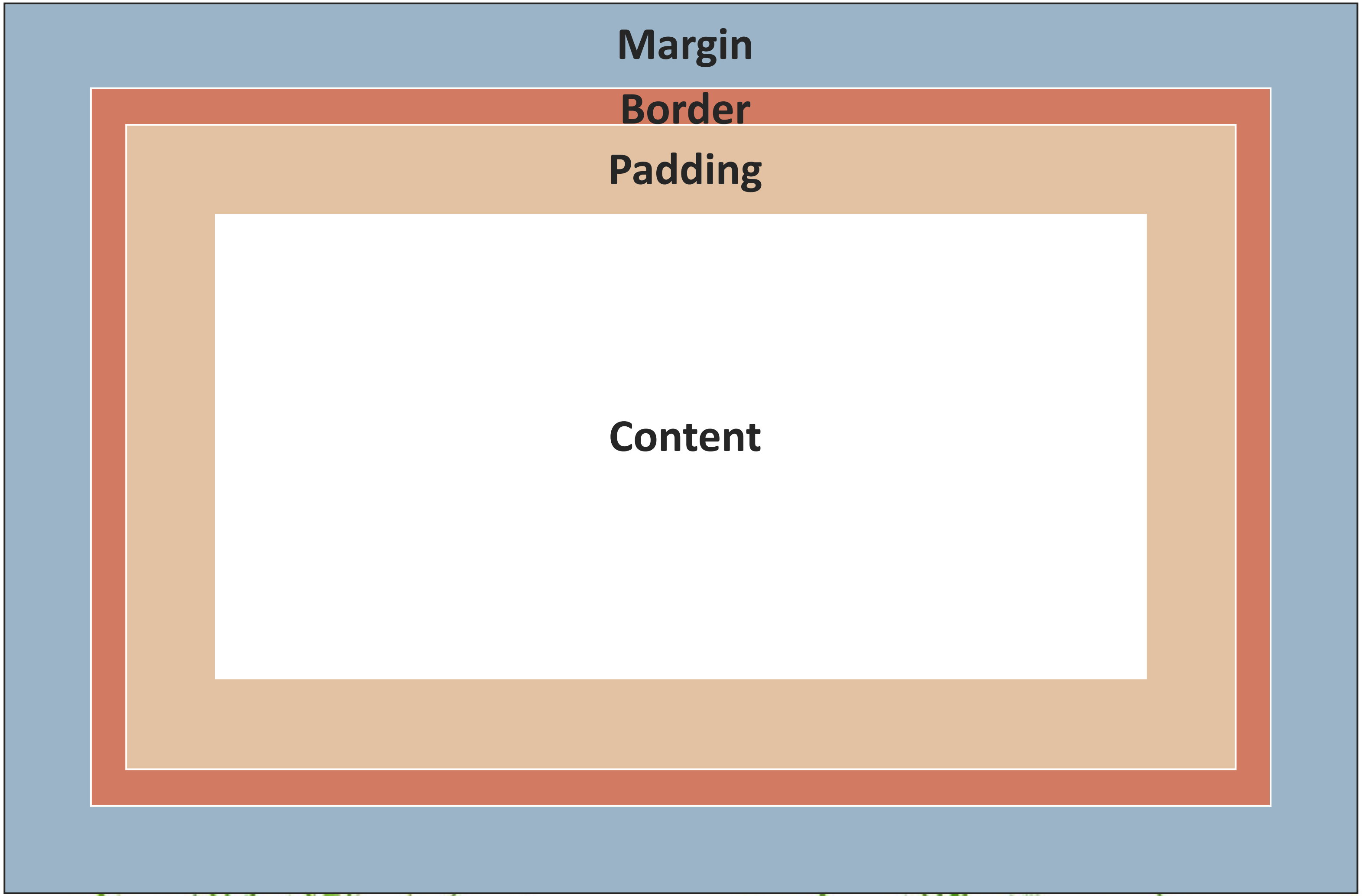
The CSS Box Model

- Every block element in CSS is effectively inside a box, and can have margins, padding and borders applied to it.
- Box widths can be specified in absolute values (e.g. px) or in relative values, usually:
  - **em** - width values relative to the size of the font in ems
  - **percentage** - width values relative the containing box's content region
- The root (or top-most) element's containing box is effectively the browser window.

The CSS Box Model

- Every CSS box is divided into regions, consisting of:
    1. Content
    2. Padding
    3. Border
    4. Margins

The CSS Box Model



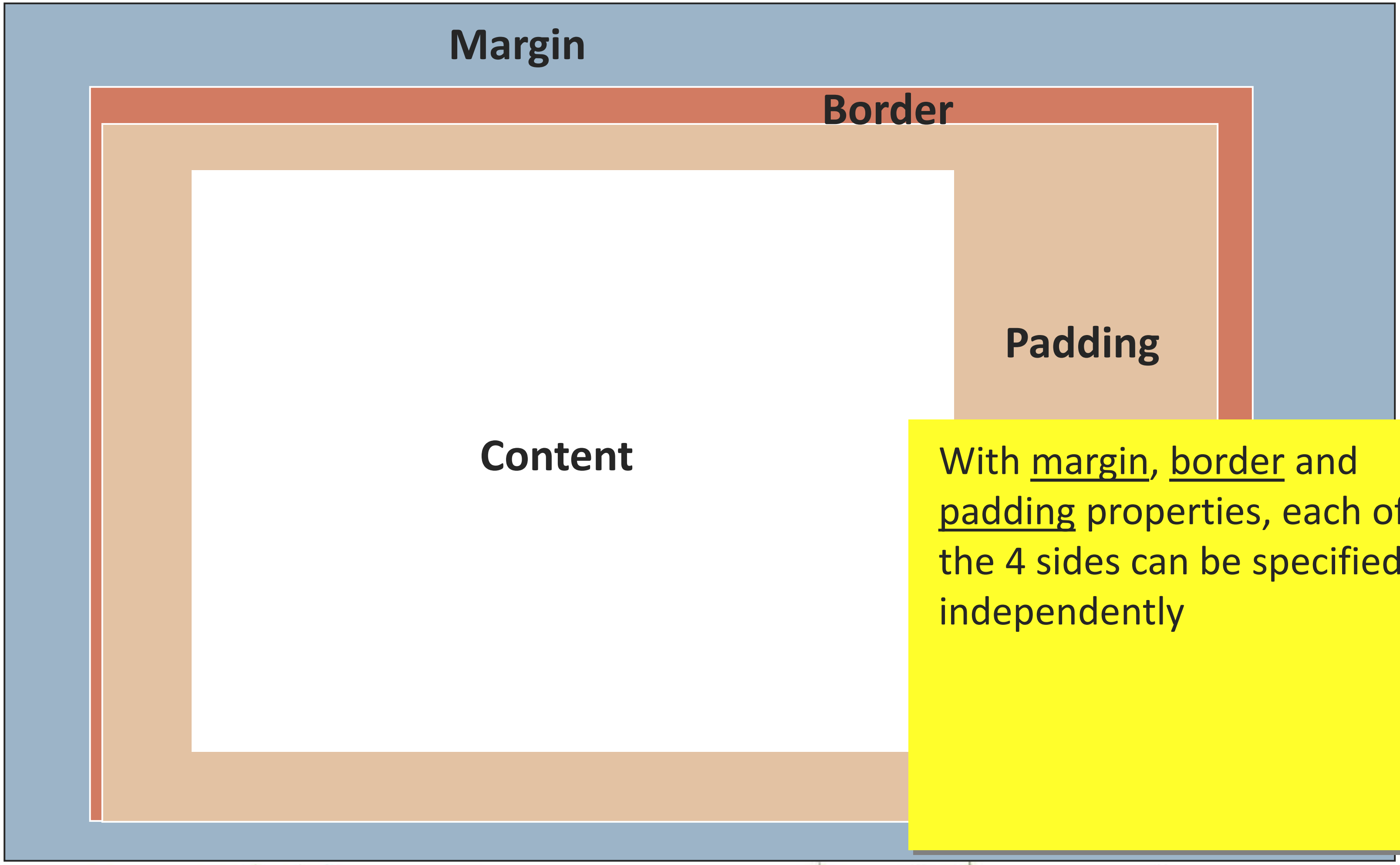
Margin

Border

Padding

Content

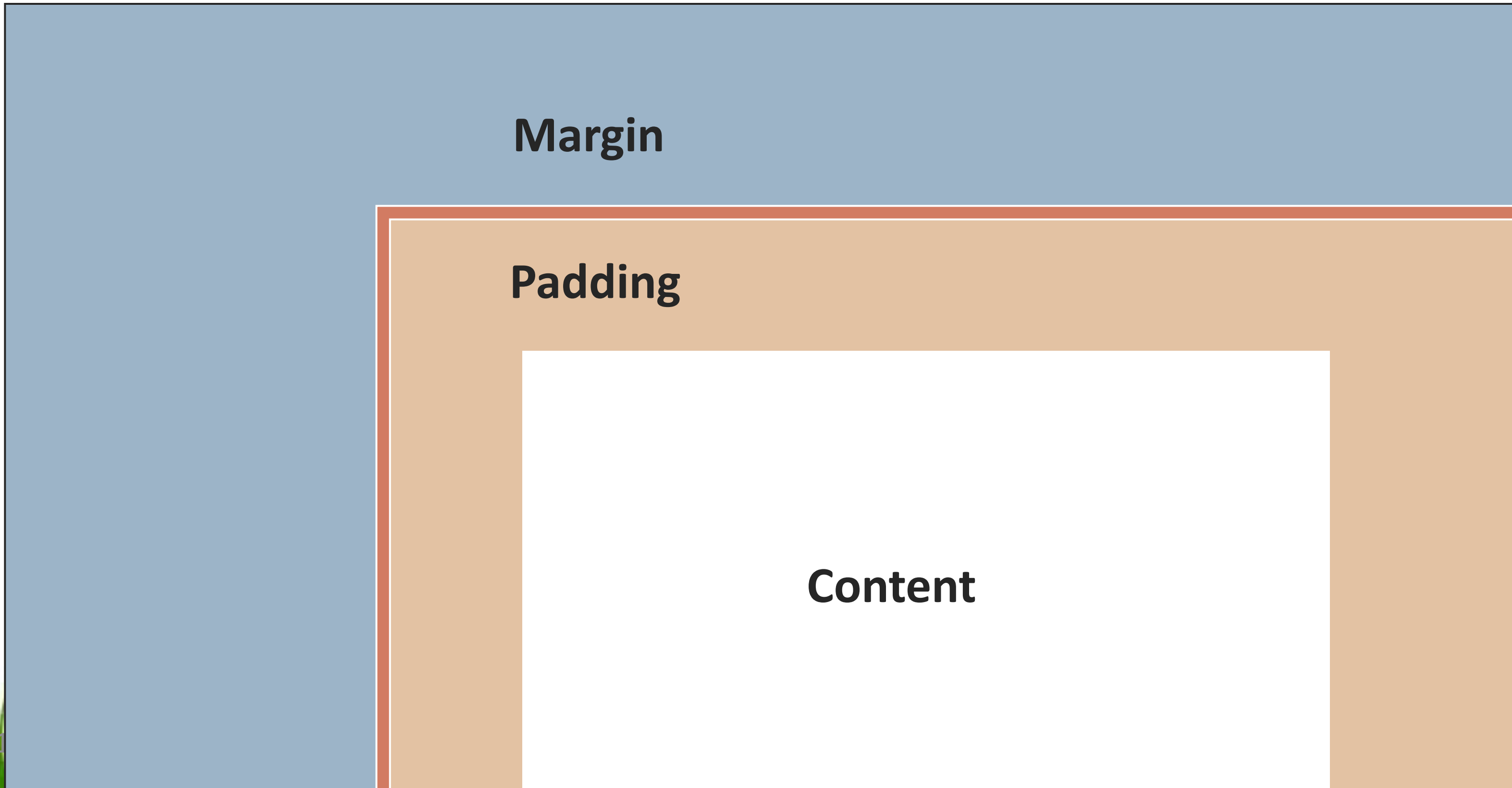
The CSS Box Model



With margin, border and padding properties, each of the 4 sides can be specified independently

Margins & Padding

- Margins and Padding may seem similar at first glance. But each has its own effect on content, particularly on any backgrounds assigned to block and div elements.



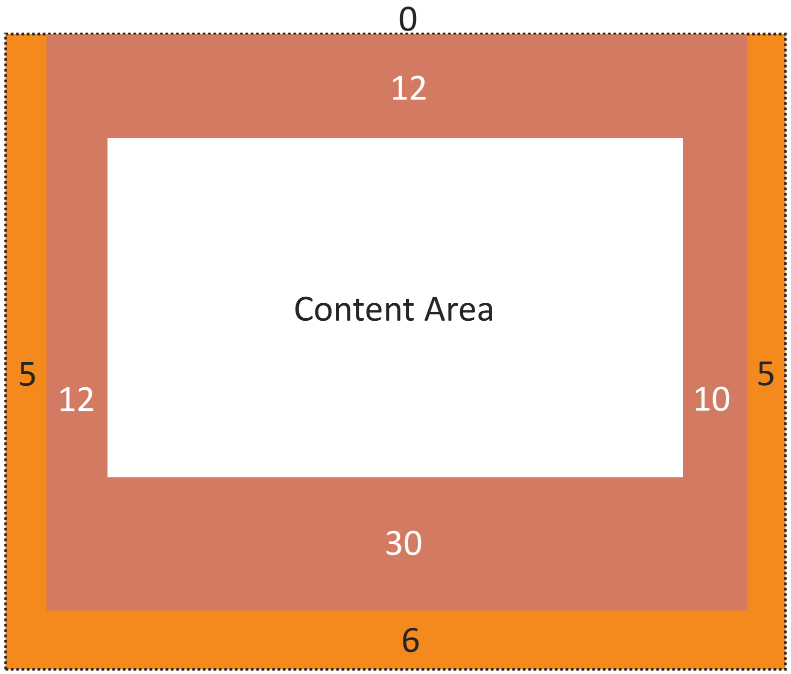
Margin

Padding

Content

CSS Shorthand: Margin & Padding

- For margin and padding (and others), CSS provides a number of shorthand properties that can save on writing lines and lines of code. Instead of writing this:
-
```
#container {
        margin-top: 0;
        margin-right: 5px;
        margin-bottom: 6px;
        margin-left: 5px;
        padding-top: 20px;
        padding-right: 10px;
        padding-bottom: 30px;
        padding-left: 12px;
}
```

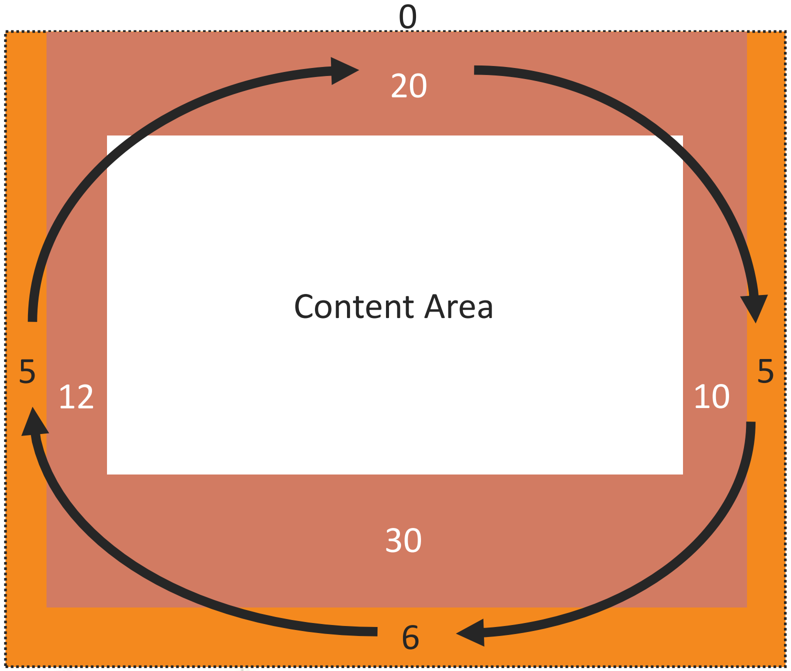


CSS Shorthand: Margin & Padding

- …Its much easier to write this:
- #container {

```
        padding: 20px 10px 30px 12px;
        margin: 0px 5px 6px 5px;
}
```

- The sequence order is always clockwise, starting from the top

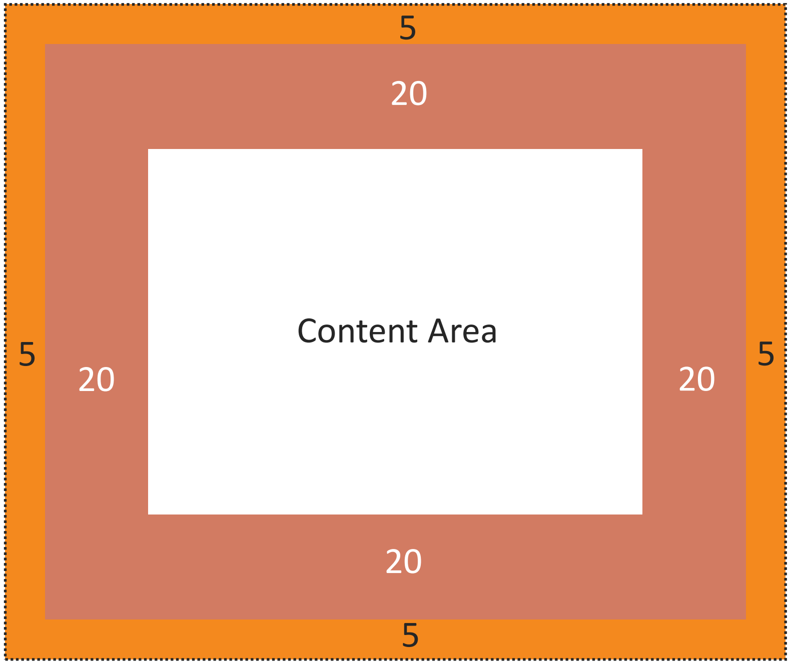


CSS Shorthand: Margin and Padding

- You can also apply just <u>one</u> value, example:
- #container {

```
        padding: 20px;
        margin: 5px;
}
```

- Which will apply the value specified equally on all 4 sides

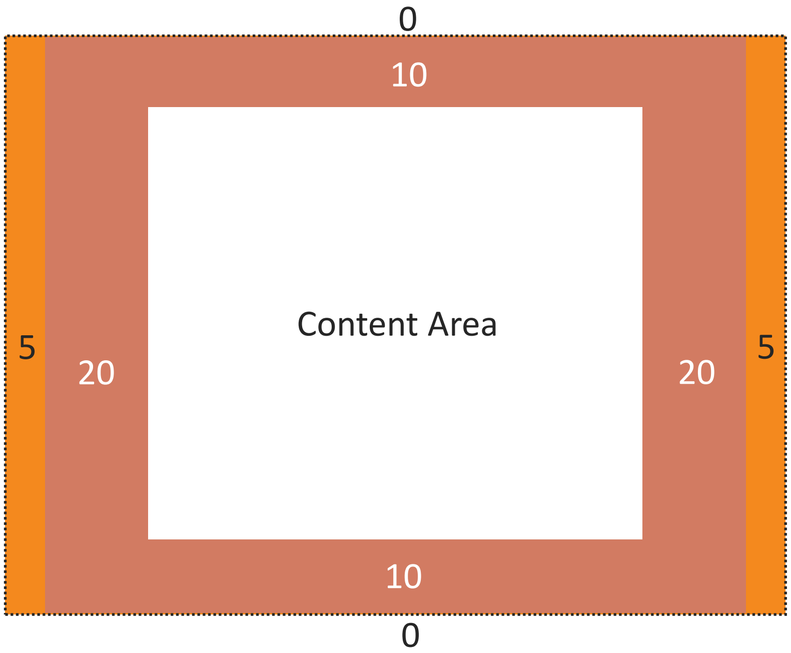


CSS Shorthand: Margin and Padding

- And you can apply two values, example:

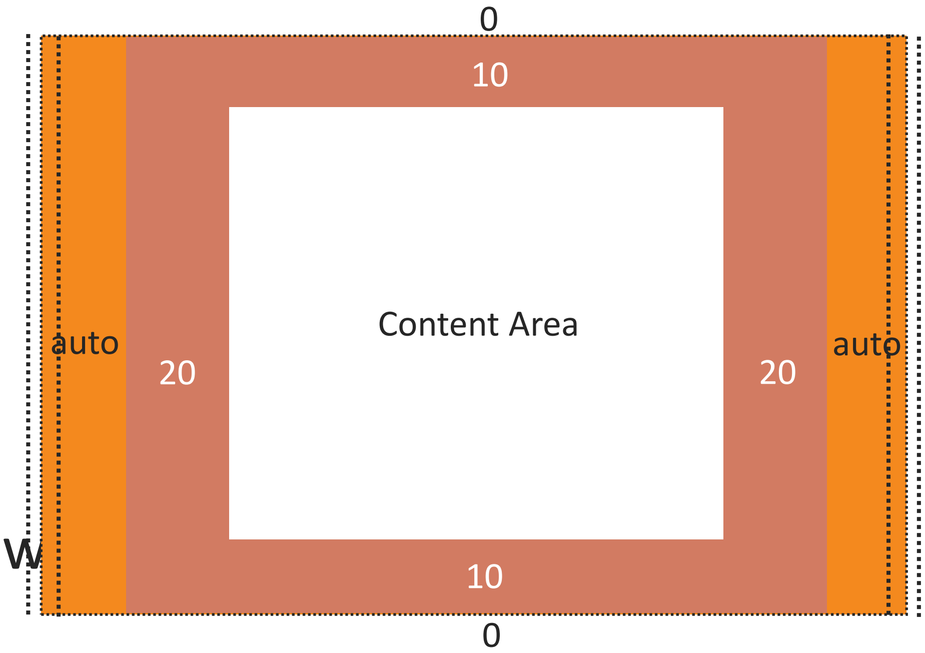
```
#container {
        padding: 10px 20px;
        margin: 0px 5px;
}
```

- The first value is applied to the top and bottom
- The second value is applied to the left and right



CSS Shorthand: Margin and Padding: auto

- A useful value to remember is ‘auto’:
- #container {
          padding: 10px 20px;
          margin: 0px auto;
  }
- Usually applied to the left & right areas of the margin property, auto is useful for centering a block container element in the browser window

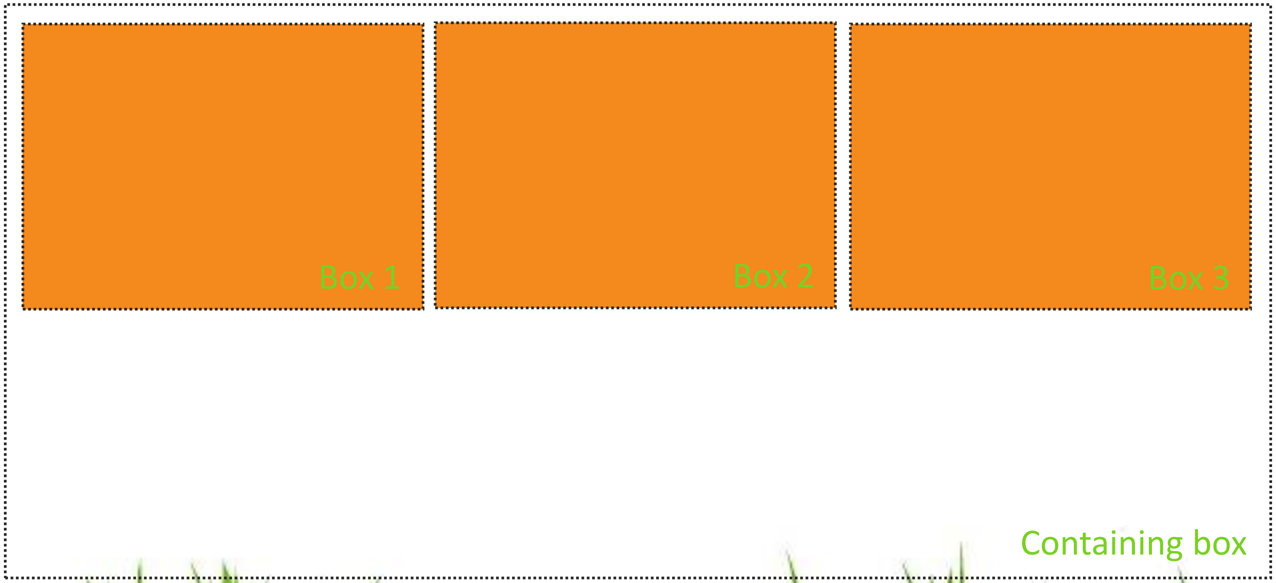


CSS Positioning

- The third core concept to understand in CSS layout (after the ‘box model’ and ‘floats’), is positioning.
- There are two types of positioning that can be applied to CSS boxes:
- **• Relative Positioning**
  • Absolute Positioning
- Understanding the differences between the two is difficult at first, but important!

CSS Positioning: Relative Positioning

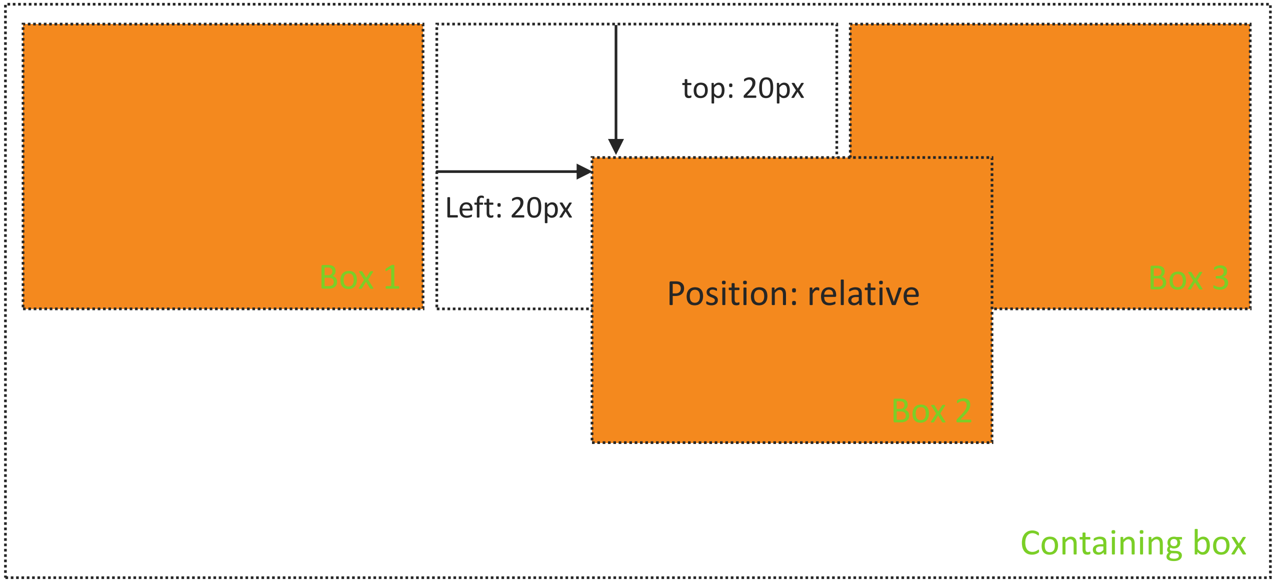
- A relatively positioned element will stay exactly where it is, in relation to the normal flow.
- You can then offset its position "relative" to its starting point in the normal flow:



CSS Positioning: Relative Positioning

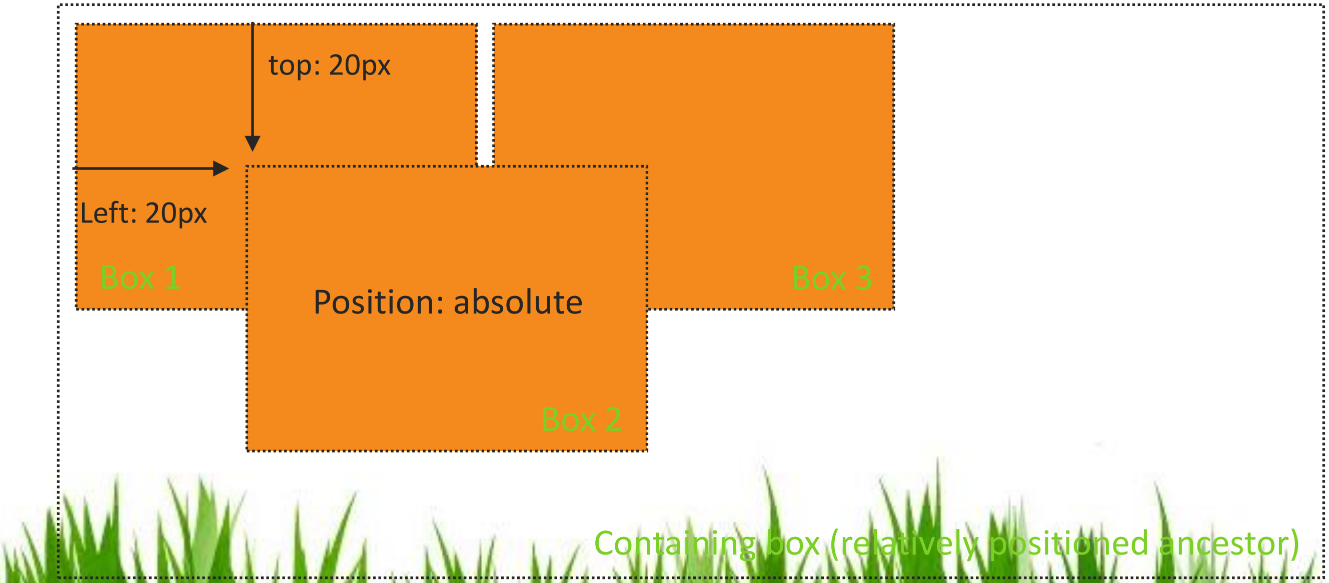
- In this example, **box 2** is offset 20px, top and left. The result is the box is offset 20px from its original position in the normal flow. Box 2 may overlap other boxes in the flow, but other boxes still recognise its original position in the flow.

```
#myBox {
    position: relative;
    left: 20px;
    top: 20px;
}
```



CSS Positioning: Absolute Positioning

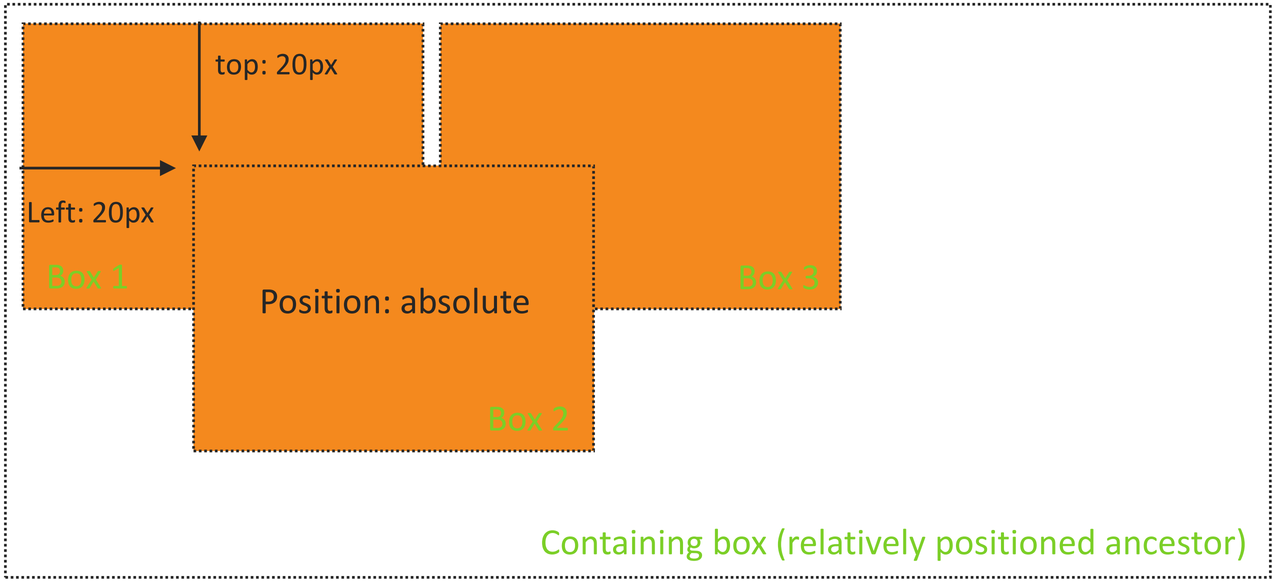
- An absolutely positioned box is taken out of the normal flow, and positioned in relation to its nearest positioned ancestor (i.e. its containing box).
- If there is no ancestor box, it will be positioned in relation to the initial containing block, usually the browser window.



CSS Positioning: Absolute Positioning

- An absolutely positioned box can be offset from its initial position inside the containing block, but other boxes within the block (and still within the normal flow) act as if the box wasn’t there.

```
#myBox {
    position: absolute;
    left: 20px;
    top: 20px;
}
```



CSS Positioning: Fixed Positioning

- Fixed Positioning is a sub-category of Absolute Positioning
- Allows the creation of floating elements that are always fixed in the same position in the browser window, while the rest of the content scrolls as normal
- (rather like the effect of fixed background attachments)
- PROBLEM: fixed positioning is not supported in IE5 and IE6(!), but can be made to work with javascript for those browsers

Background Images in CSS: Fixed Position

- Background images will normally scroll with the containing box, and the rest of the page
- But they can also be “fixed”, staying in the same position in the layout, while the rest of the content scrolls.

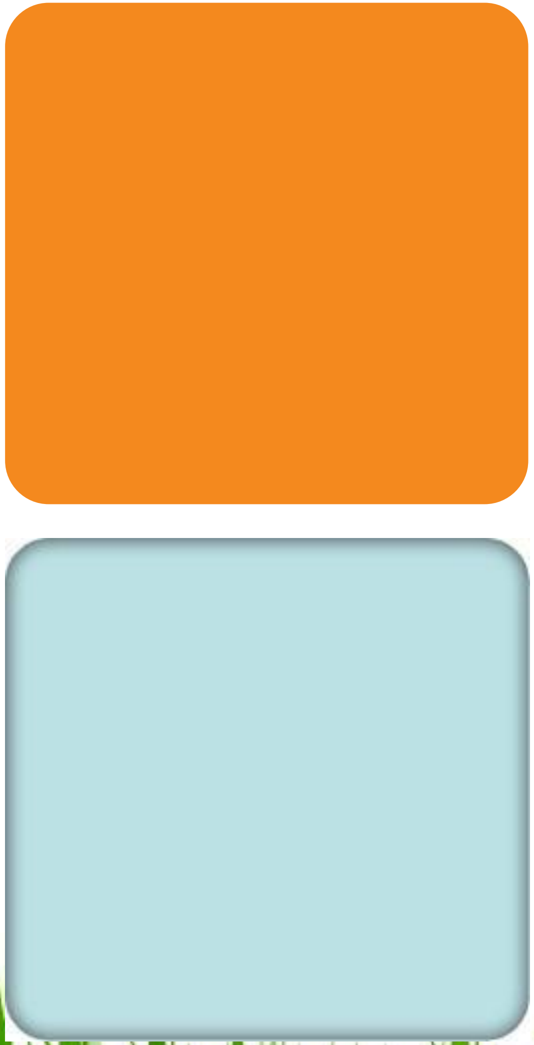
-
  ```
  #sidebar {
          float: right;
          width: 300px;
          margin-left: 25px;
          background-image: url(images/harbour.jpg);
          background-attachment: fixed;
  }
  ```

Using Background Images

- Background images are useful in allowing us to visually define a page, and separate content into a deliberate visual hierarchy.
- The ability to to repeat images in a background box, *and* reuse the SAME images across a number of boxes, means we can make very efficient use of images.
- Wherever possible, background images should be used in conjunction with background colours.

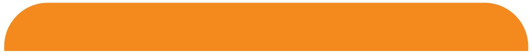
Rounded Corner Boxes

- Rounded corner boxes are very popular. Unfortunately, the current version of CSS does not have any properties that can define a corner radius (CSS 3 will).
- However, simple rounded corner boxes are very easy to create in CSS 2 with a couple of background images.



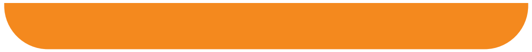
Fixed-Width Rounded Corner Boxes

- Simple flat-colour, fixed-width rounded corner boxes require only 2 images:

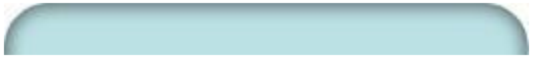


boxtop.gif

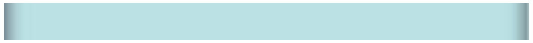
boxbottom.gif



- Fixed-width boxes with a shadow require 3 images, with the centre one set to repeat:

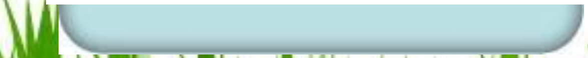


boxshaded_top.gif



boxshaded_back.gif

boxshaded_bottom.gif



- CSS code tutorial…

Using divs to Define CSS boxes

- **id example:** in the XHTML:
- <div id="sidebar">

  ```
  <div id=“sidebar”>
  	<p> blah, blah, blah,
  blah, blah, blah. </p>
  </div>
  ```
- In the CSS:
-
  ```
  	#sidebar {
  		float: right;
  		width: 300px;
  		margin-left: 25px;
  	}
  ```

class example: in the XHTML:

```
<div class=“sidebar”>
	<p> blah, blah, blah, blah.</p>

</div>
```

In the CSS:

```
	.sidebar {
		float: right;
		width: 300px;
		margin-left: 25px;
	}
```

wait…

Any More!

Q

Thanks