

CS 696 Emerging Web and Mobile Technologies  
Spring Semester, 2011  
Doc 1 Introduction & CSS  
Jan 20, 2011

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## References

List of CSS Properties

<http://meiert.com/en/indices/css-properties/>

CSS 3 Selectors

<http://www.w3.org/TR/css3-selectors/>

Zen garden - examples

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

CS 683 Lecture notes, <http://www.eli.sdsu.edu/courses/fall04/cs683/notes/index.html>

# Course Intro

# HTML 5 Demos

<http://www.youtube.com/watch?v=S5aJAaGZlvk>

<http://bodybrowser.googlelabs.com/> (WebGL)

# Course Issues

<http://www.eli.sdsu.edu/courses/index.html>

Crashing

Course Web Site

Wiki

Screen Casts

Prerequisites

Grading

# Topics

CSS Javascript html5 Exam	5 weeks
jQuery mobile Phonegap Exam	5 weeks
Android Exam	5 weeks

# What do you need to know

Java - for Android development

HTML basics

There will lots of material and not much time

# Grading

Assignments	55%
CSS, JavaScript, HTML5 Exam Feb 22	15%
jQuery Mobile, Phonegap Exam Apr 5	15%
Android Exam May 19	15%



# Twitterrific

Estimated development cost - \$250,000

Account rogerwhitney

All Tweets

Mentions

Messages

Favorites

Search Twitter

Trends

- QUACK QUACK QUACK
- MySpace Reduces Staff
- Murilo Benício
- Jon Bon Jovi
- Trafficking Awareness
- Enrique Rubio
- VZW iPhone
- Vera Fisher
- #wouldyoulike
- #palabrasquedanmiedo

All Tweets

Pixelmator - image editing for the rest of US.

Ads via The Deck

**Avi Bryant** 12w  
Desk just moved from the side of the office with fridges to the side with kettles. Changing my iced vs. hot tea drinking habits accordingly.

**Brian Foote** 12w  
It's quite a bit like #oopsla was. RT @marick: So: what kind of conference is #splashcon #oopsla. Who's it for? Who's it compete with?

**Brian Foote** 12w  
You could always refactor legacy C code. RT @adrianh: Nothing like cleaning up dog sick to ruin your appetite. Bah.

**Brian Foote** 12w  
W/virtual shelf space unlimited, peer review increasingly seems a medieval anachronism RT @wallingf What does this do to academic pub cred?

**Brian Foote** 12w  
The Lakota Sioux dubbed Pierce "Dances with Photons" #spashcon #oopsla

# Mobile Market World Wide

6.9 Billion people - world population

5.2 Billion active mobile phone subscriptions

3.7 Billion unique phone users

4 Billion people have access to mobile phones

4.2 Billion mobile phones in use

96% of phones have web browser (html or WAP)

72% of phones have web browser

16% of phones are smart

# Handset sales world 2010 - Estimate

Company	Market Share
Nokia	32%
Samsung	21%
LG	9%
Apple	4%
RIM	4%
ZTE	4%

# SmartPhone OS market share 2010 - Estimate

OS	Market Share
Nokia Symbian	39%
Google Android	21%
Apple iOS	15%
RIM Blackberry	15%
Microsoft Widows Mobile Phone 7	4%
Samsung Bada	2%

# Development Language

Symbian - C++

Samsung Bada - C++

iOS - Objective C

Android - Java

Blackberry - Java

# Goals

Web Apps for mobile devices

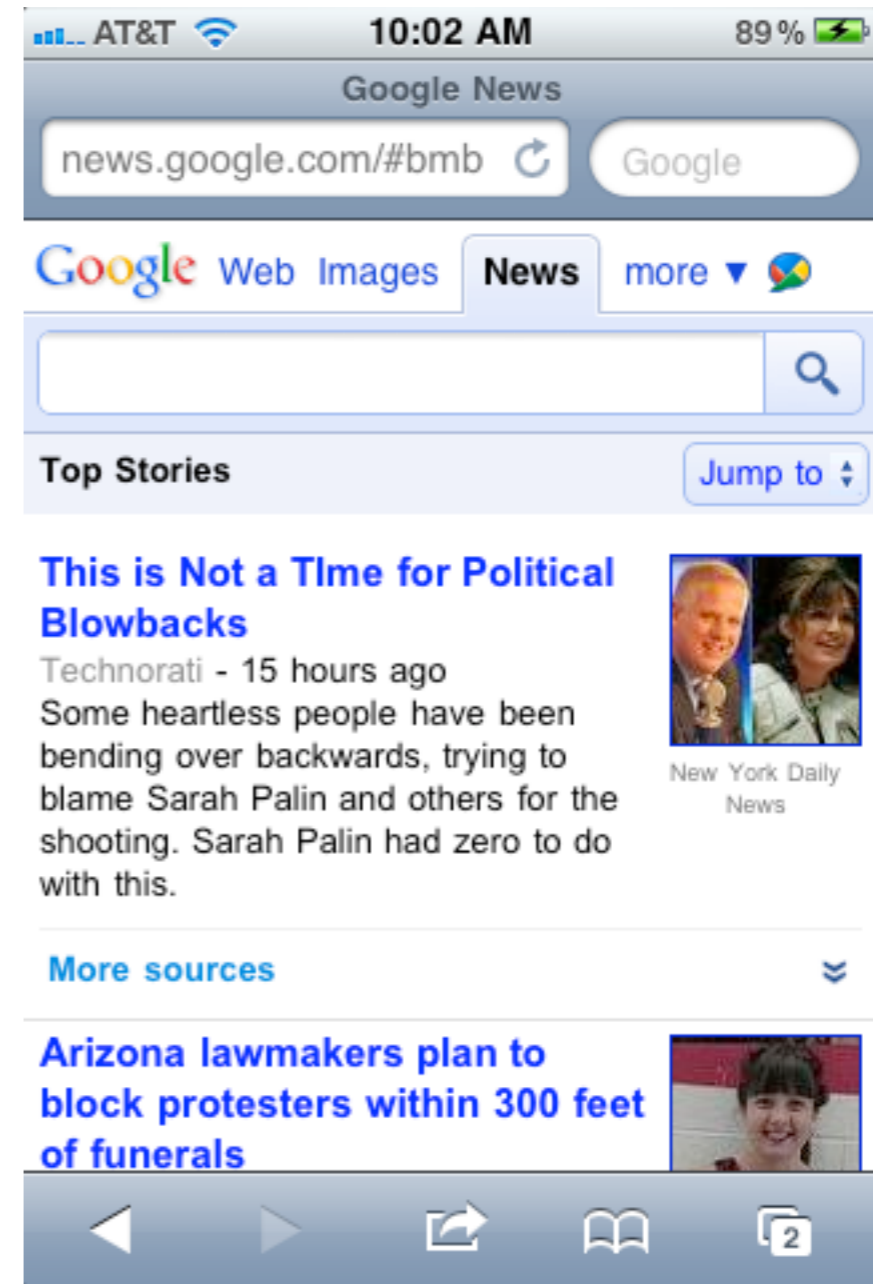
Cross-platform native mobile apps

# Web Pages on iPhone

Normal

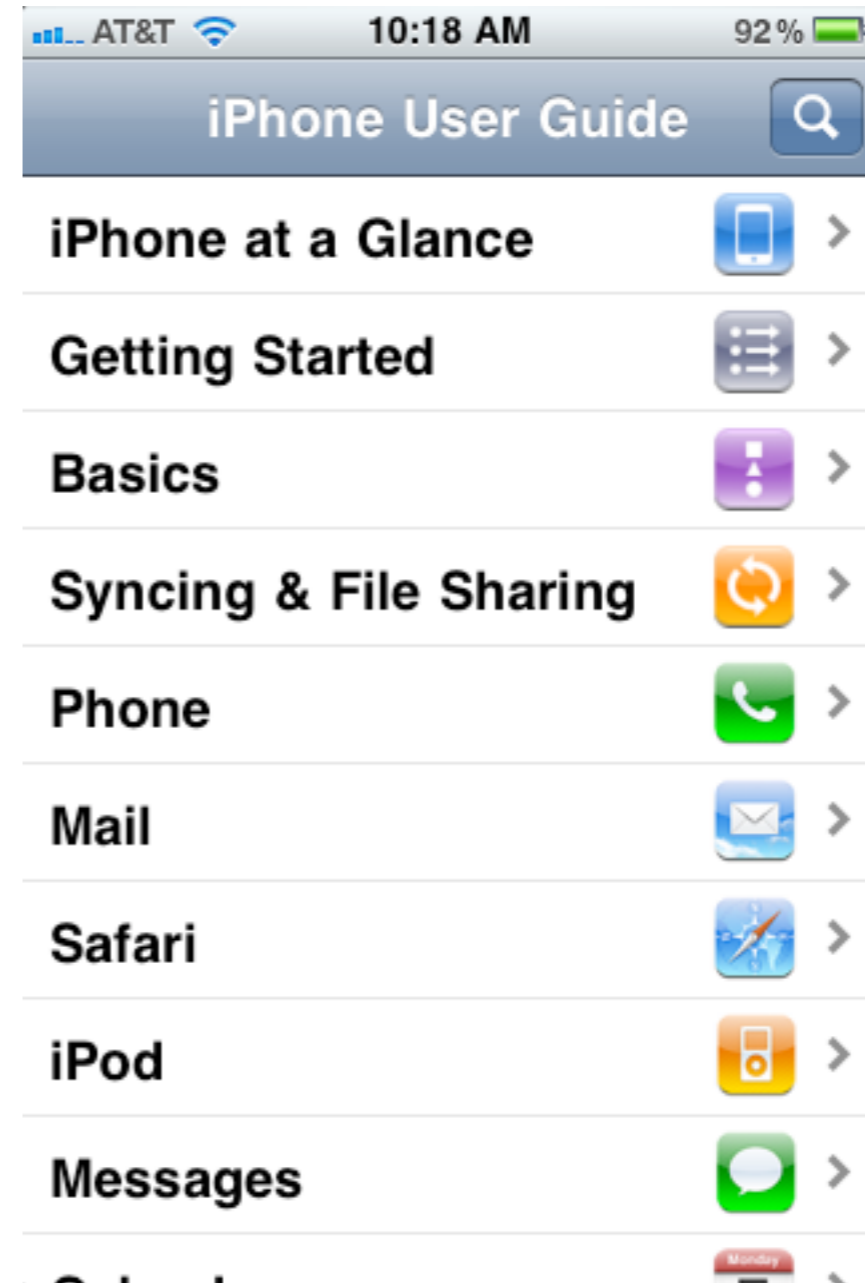
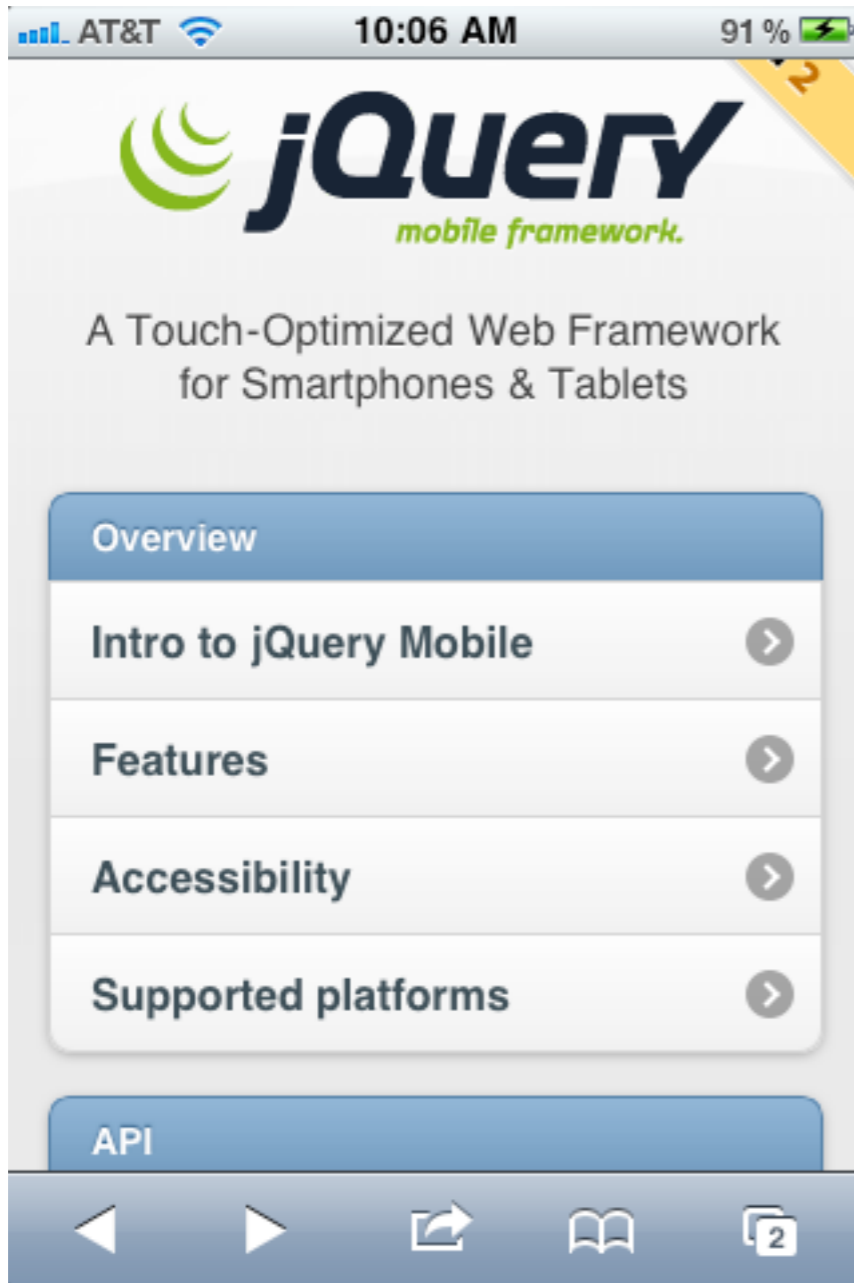


Optimized for Mobile



# Web Pages on iPhone

Using iPhone UI components





# Optimized Website for iPad

The screenshot shows an iPad interface with a status bar at the top displaying 'AT&T', signal strength, Wi-Fi, time '10:13 AM', and battery '99%'. The browser address bar shows 'developer.apple.com/library/ios/ipad/#documentation/AddressBook...'. The page title is 'ABNewPersonViewController Class Reference'. A left sidebar menu is titled 'By Type' and includes items like 'Coding How-Tos', 'Getting Started', 'Guides', 'Reference', 'Release Notes', 'Sample Code', 'Technical Notes', 'Technical Q&As', and 'Video'. The main content area features a 'Next' link, the title 'ABNewPersonViewController Class Reference', and a table of class details:

Inherits from	<a href="#">UIViewController</a> : <a href="#">UIResponder</a> : <a href="#">NSObject</a>
Conforms to	<a href="#">NSCoding (UIViewController)</a> <a href="#">NSObject (NSObject)</a>
Framework	/System/Library/Frameworks/ <a href="#">AddressBookUI.framework</a>
Availability	Available in iOS 2.0 and later.
Declared in	ABNewPersonViewController.h
Related sample code	<a href="#">QuickContacts</a>

Below the table is an 'Overview' section with the following text:

The `ABNewPersonViewController` class (whose instances are known as **new-person view controllers**) implements the view controller used to create a contact.

New-person view controllers are modal view controllers that manage a set of view controllers used to create a contact (`ABPersonRef`) and edit its properties.

**Important:** New-person view controllers must be used with a navigation controller in order

# Web Apps for mobile devices

## HTML5

- Local storage
- Off-line apps
- New tags for cleaner pages
- Canvas - 2D graphics
- audio & video without plugins
- Websockets - cleaner ajax

## CSS

- Mobile look & feel

## Javascript

- Behavior

## jQuery Mobile

- Javascript library

- Mobile widgets & behavior

# Cross-platform native mobile apps

Mobile SDK supports web view in native app

iPhone, Android, Blackberry, Symbian, Palm

Make entire app in web views

Wrap in native app

Same code base for all platforms

# Cross-platform Development Systems

Titanium Appcelertor (HTML5, CSS3 and Javascript)

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

PhoneGap (HTML5, CSS3 and Javascript)

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

RhoMobile (Ruby)

<http://rhomobile.com/>

WidgetPad (HTML5, CSS3 and Javascript)

<http://widgetpad.com/>

MoSync (C/C++)

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

# Cross-platform Development Systems

Whoop (WYSIWYG web editor)

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

Vaayoo (drag & drop, wizards)

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

appMobi (develop in Chrome web browser)

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

Number of game oriented platforms exist

# Plan

CSS basics

Javascript basics

HTML 5 features

Mobile web pages with jQuery

Cross platform apps with PhoneGap

Android

# HTML Overview

# HTML Apps

Content

HTML

Presentation

CSS

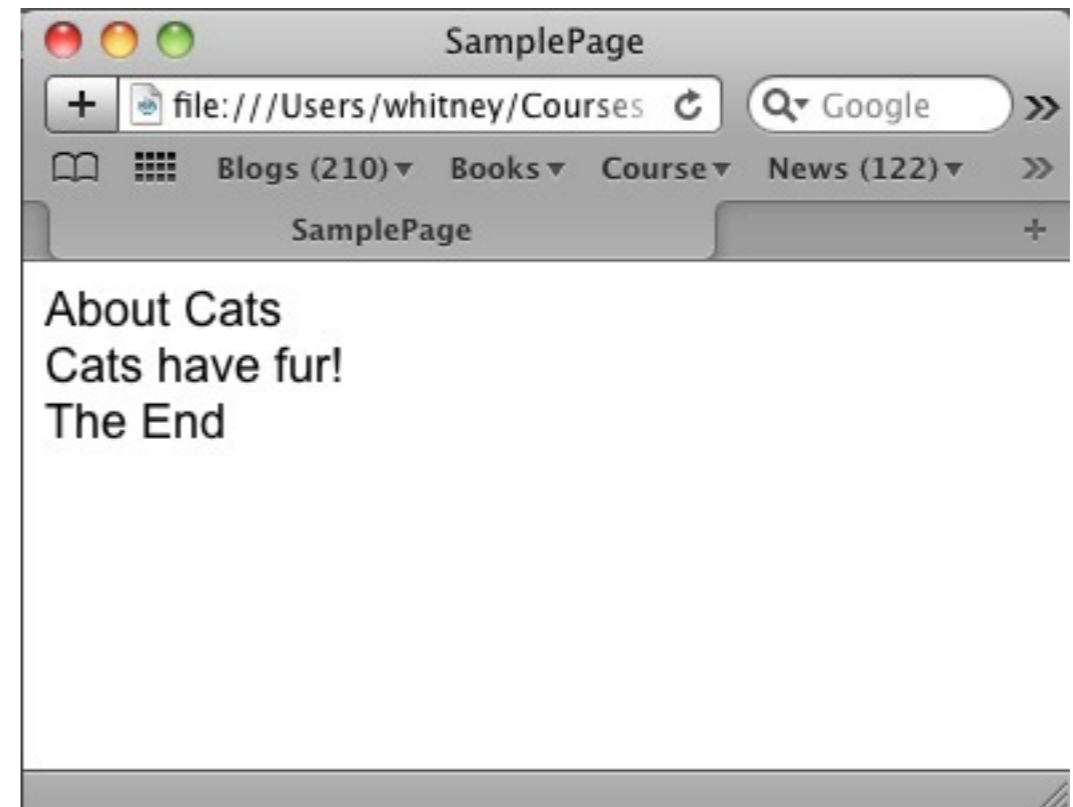
Behavior

Javascript



# Content

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8" />
    <title>SamplePage</title>
  </head>
  <body>
    <header>About Cats</header>
    <article>Cats have fur!</article>
    <footer>The End</footer>
  </body>
</html>
```



# Presentation

Sample.css

```
header
{
    text-align: center;
    color: blue;
    font-size: large;
}
footer
{
    color: red;
    font-size: x-small;
    position: relative;
    top: 8pt;
    border-top: 1pt solid;
}
```



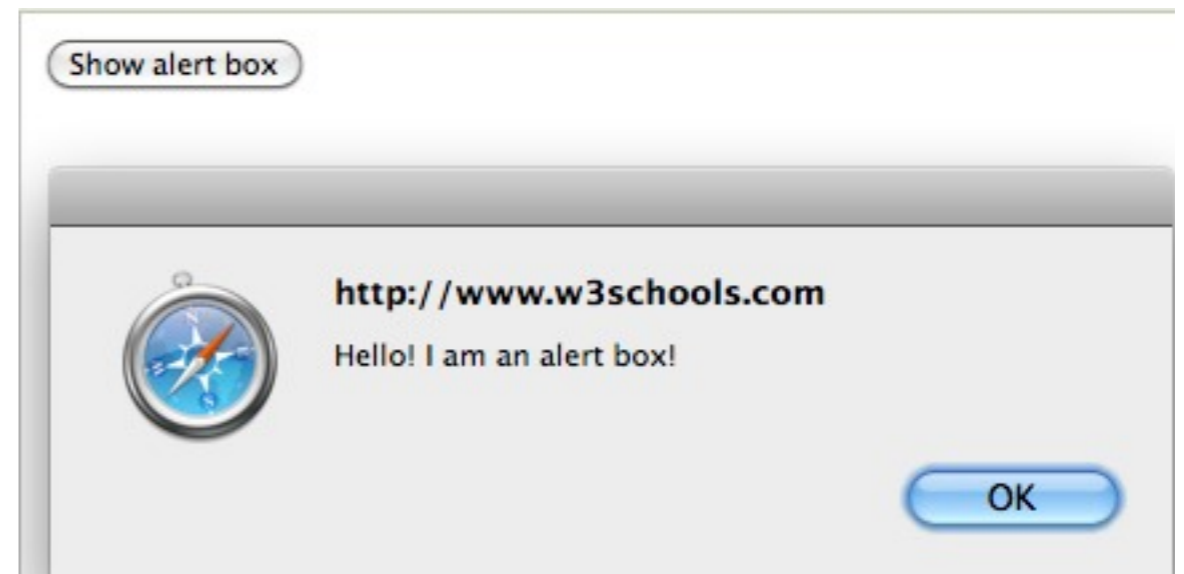
```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8" />
    <title>SamplePage</title>
    <link rel="Stylesheet" href="Sample.css"
      type="text/css" media="screen" />
  </head>
  <body>
    <header>About Cats</header>
    <article>Cats have fur!</article>
    <footer>The End</footer>
  </body>
</html>
```

# Behavior

```
<html>
<head>
<script type="text/javascript">
function show_alert()
{
alert("I am an alert box!");
}
</script>
</head>
<body>

<input type="button" onclick="show_alert()" value="Show alert box" />

</body>
</html>
```



# CSS Basics

# Cascading Style Sheets - CSS

List of CSS Properties

<http://meiert.com/en/indices/css-properties/>

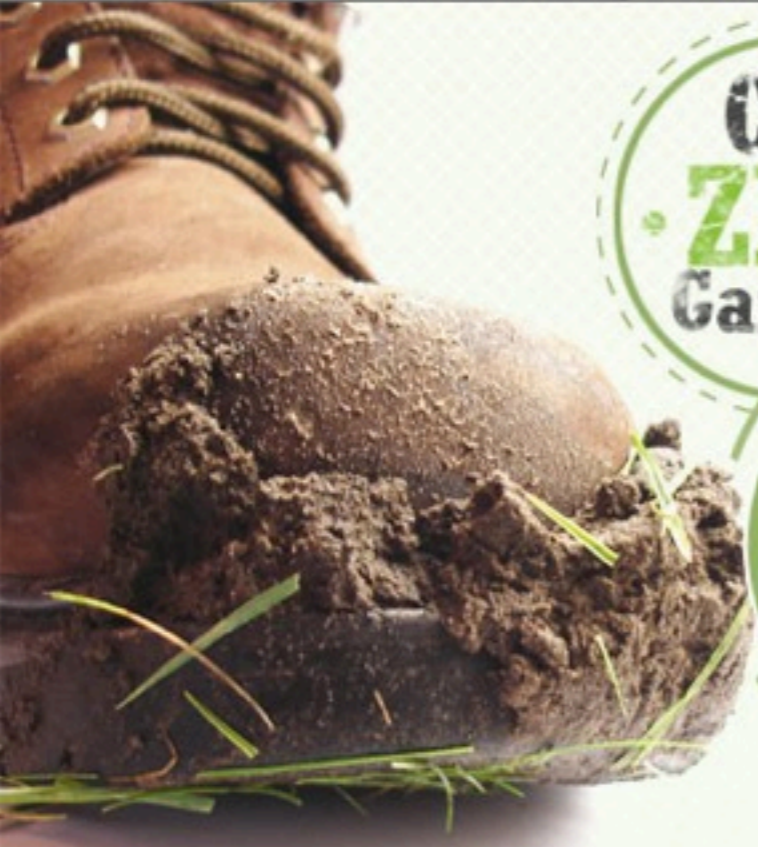
CSS 3 Selectors

<http://www.w3.org/TR/css3-selectors/>

Zen garden - examples

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

# Zen Garden - Walk in the Garden



**CSS ZEN Garden**

*the beauty of CSS design*

A demonstration of what can be accomplished visually through CSS-based design. Select any style sheet from the list to load it into this page.

Download the sample [html file](#) and [css file](#) ↓

### The Road to Enlightenment

Littering a dark and dreary road lay the past relics of browser-specific tags, incompatible DOMs, and broken CSS support.

Today, we must clear the mind of past practices. Web enlightenment has been achieved thanks to the tireless efforts of folk like the W3C, WaSP and the major browser creators.

The css Zen Garden invites you to relax and meditate on the important lessons of the masters. Begin to see with clarity. Learn to use the (yet to be) time-honored techniques in new and invigorating fashion. Become

→ Select a Design:

- [Under the Sea!](#)  
by [Eric Stoltz](#)
- [Make 'em Proud](#)  
by [Michael McAdhon and Scotty Reilshyder](#)
- [Orchid Beauty](#)  
by [Kevin Addison](#)
- [Oceanscape](#)  
by [Justin Gray](#)
- [CSS Co., Ltd.](#)  
by [Benjamin](#)



# Zen Garden - CSS Co., Ltd.

Download the sample [html file](#) and [css file](#)

## CSS Zen Garden

A demonstration of what can be accomplished visually through CSS-based design. Select any stylesheet from the list to load it into this page.



### Select a Design

- [Under the Sea!](#)  
by [Eric Stoltz](#)
- [Make 'em Proud](#)  
by [Michael McAghon](#) and [Scotty Reifsnyder](#)
- [Orchid Beauty](#)  
by [Kevin Addison](#)
- [Oceanscape](#)  
by [Justin Gray](#)
- [CSS Co., Ltd.](#)  
by [Benjamin Klemm](#)
- [Sakura](#)  
by [Tatsuya Uchida](#)
- [Kyoto Forest](#)  
by [John Polittowski](#)
- [A Walk in the Garden](#)  
by [Simon Van Hauwermeiren](#)

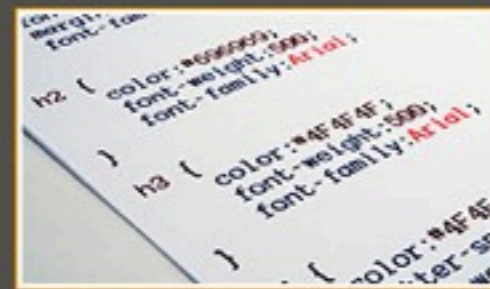
### The Road to Enlightenment

Littering a dark and dreary road lay the past relics of browser-specific tags, incompatible [DOMs](#), and broken [CSS](#) support.

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The css Zen Garden invites you to relax and meditate on the important lessons of the masters. Begin to see with clarity. Learn to use the (yet to be) time-honored techniques in new and invigorating fashion. Become one with the web.

### So What is This About



There is clearly a need for [CSS](#) to be taken seriously by graphic

### Participation



Graphic artists only please. You are modifying this page, so

# Embedding a Style Sheet

```
<!DOCTYPE html
<html xml:lang="en">
<head>
  <title>Sample</title>
  <style type="text/css" media="all">
    <!--
    p.code
    {
      margin: 0 .5in 0 .5in;
      padding: 5px;
    }
    -->
  </style>
</head>
<body>
<p>A Smalltalk example </p>
<p class="code">1000 factorial printString size</p>
</body>
</html>
```



# Linking CSS to a Web page

Link to External Style Sheet

Embedding a Style Sheet

Importing a Style Sheet

Inlining a Style Sheet

# Linking to Multiple External Style Sheets

```
<!DOCTYPE>  
<html xml:lang="en">  
<head>  
  <title>Sample</title>  
  <link rel="Stylesheet" href="simple.css" type="text/css" media="screen" />  
  <link rel="Stylesheet" href="small.css" type="text/css" media="handheld" />  
  <link rel="Stylesheet" href="print.css" type="text/css" media="print" />  
</head>
```

# Media Types

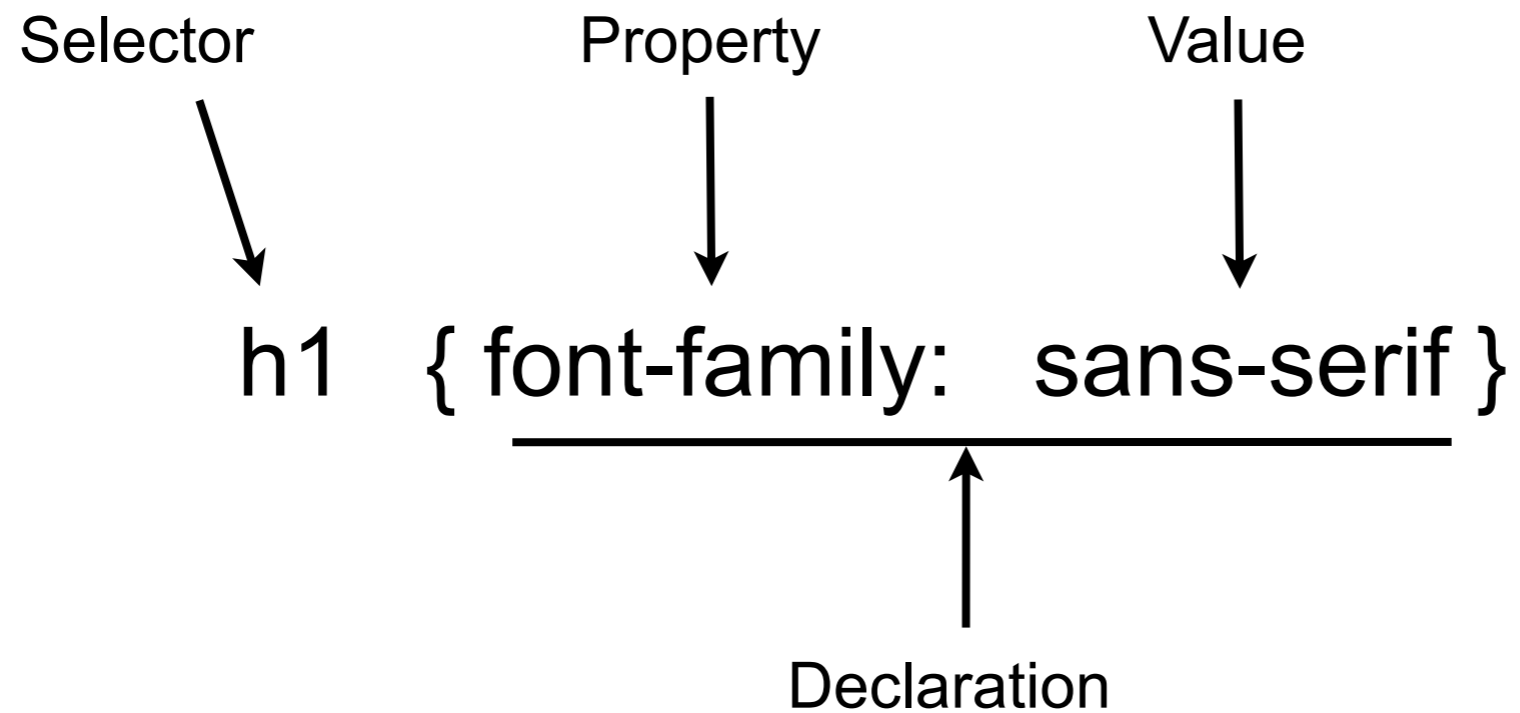
all	
braille	Braille tactile feedback devices
embossed	Paged braille printers
handheld	Handheld devices
print	Documents viewed in print preview mode & sent to printer
projection	Projected presentations
screen	Computer screens
speech	Speech synthesizers
tty	Fixed-pitch character grid
tv	Television-type devices

# Different CSS based on size

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8" />
  <title>SizeDetect</title>
  <link rel="Stylesheet" href="phone.css" type="text/css" media="screen
and (max-device-width: 320px)"/>
  <link rel="Stylesheet" href="ipad.css" type="text/css" media="screen
and (min-device-width: 768px) and (max-device-width: 768px)"/>

</head>
<body>
<p>Red = phone, Blue = iPad, Black = desktop</p>
</body>
</html>
```

# Linking Styles to Html – Selectors



<http://www.w3.org/TR/css3-selectors/>

# All Selectors CSS1-CSS3

<http://www.w3.org/TR/css3-selectors/>

*	E:first-child	E:enabled
E	E:last-child	E:disabled
E[foo]	E:first-of-type	E:checked
E[foo="bar"]	E:last-of-type	E::first-line
E[foo~="bar"]	E:only-child	E::first-letter
E[foo^="bar"]	E:only-of-type	E::before
E[foo\$="bar"]	E:empty	E::after
E[foo*="bar"]	E:link	E.warning
E[foo ="en"]	E:visited	E#myid
E:root	E:active	E:not(s)
E:nth-child(n)	E:hover	E F
E:nth-last-child(n)	E:focus	E > F
E:nth-of-type(n)	E:target	E + F
E:nth-last-of-type(n)	E:lang(fr)	E ~ F

# All CSS Properties

<http://meiert.com/en/indices/css-properties/>

264 CSS properties

# Multiple Declarations

```
h1
{
  font-style: normal;
  font-weight: bolder;
  text-align: center;
  font-size: medium;
}
```



# Grouping Selectors

```
h1  
{  
  font-style: normal;  
  text-align: center;  
}
```

```
h2  
{  
  font-style: normal;  
  text-align: center;  
}
```

```
h1, h2  
{  
  font-style: normal;  
  text-align: center;  
}
```



# Descendant Selectors -h1 em

Match em inside of h1

```
h1 { color: red }  
em { color: green }  
h1 em { color: blue }
```

**Hello**

This *is a test*

***This headline is very important***

```
<h1>Hello</h1>
```

```
<p>This <em>is a test</em></p>
```

```
<h1><em>This</em> <span>headline is <em>very important</em></span></h1>
```

## Child Selectors - h1 > em

Match em directly inside h1

```
h1 { color: red }  
em { color: green }  
h1 > em { color: blue }
```

**Hello**

This *is a test*

**This headline is *very important***

```
<h1>Hello</h1>
```

```
<p>This <em>is a test</em></p>
```

```
<h1><em>This</em> <span>headline is <em>very important</em></span></h1>
```

# Universal Selector - \* match any tag

```
h1 { color: red }  
em { color: green }  
h1 > * { color: blue }
```

**Hello**

This *is a test*

***This headline is very important***

```
<h1>Hello</h1>
```

```
<p>This <em>is a test</em></p>
```

```
<h1><em>This</em> <span>headline is <em>very important</em></span></h1>
```

# Adjacent Sibling Selector - h1 + p match p immediately after h1

```
h1 { color: red }  
em { color: green }  
h1 + p { color: blue }
```

```
<p>Before</p>  
<h1>Hello</h1>  
<p>Middle</p>  
<p>Later</p>  
<h1>Goodbye</h1>  
<p>End</p>
```

Before

**Hello**

Middle

Later

**Goodbye**

End

# Attribute Selector

```
<div name="sam">1</div>
```

```
<p name="sam" >2</p>
```

```
<p>3</p>
```

```
<a href="index.html" name="pete">4</a>
```

```
<p name="sam roger pete" >5</p>
```

```
[name] { color: lightblue}
```

1

2

All tags with name attribute

3

4

5

```
a[name] { color: lightblue}
```

1

2

All a tags with name attribute

3

4

5

# Attribute Selector

```
<div name="sam">1</div>  
<p name="sam" >2</p>  
<p>3</p>  
<a href="index.html" name="pete">4</a>  
<p name="sam roger pete" >5</p>
```

[name=pete] {color: lightblue} 1

All tags with name attribute  
with value equal to "pete" 2  
3

4

5

[name~=pete] {color: lightblue; } 1

All tags with name attribute  
with values containing "pete" 2  
3  
in whitespace list 4

5

# In case you were wondering

E[foo]	an E element with a "foo" attribute
E[foo="bar"]	an E element whose "foo" attribute value is exactly equal to "bar"
E[foo~="bar"]	an E element whose "foo" attribute value is a list of whitespace-separated values, one of which is exactly equal to "bar"
E[foo^="bar"]	an E element whose "foo" attribute value begins exactly with the string "bar"
E[foo\$="bar"]	an E element whose "foo" attribute value ends exactly with the string "bar"
E[foo*="bar"]	an E element whose "foo" attribute value contains the substring "bar"
E[foo ="en"]	an E element whose "foo" attribute has a hyphen-separated list of values beginning (from the left) with "en"



# Class

```
<div class="sam">1</div>
<p class="sam" >2</p>
<p class="pete">3</p>
<a class="pete sam">4</a>
<p name="roger sam pete" >5</p>
```

```
.sam.pete { color: lightblue }
```

All tags with class sam & pete

```
.sam { color: lightblue }
```

All tags with class sam

```
p.sam { color: lightblue }
```

All p tags with class sam

1

2

3

4

5

1

2

3

4

5

1

2

3

4

5

# ID

Two elements in same page can not have same id

```
<div id="sam">1</div>
```

```
<p id="pete" >2</p>
```

```
#sam { color: lightblue } 1
```

Match the one element  
with id = sam 2

```
p#sam { color: lightblue } 1
```

Match the one p element  
with id = sam 2

# Multiple id same value - illegal

```
<div id="sam">1</div>
```

```
<p id="sam" >2</p>
```

```
<p id="sam">3</p>
```

```
<a id="pete sam">4</a>
```

```
<p id="roger sam pete" >5</p>
```

```
#sam { color: lightblue }
```

Safari, Firefox, Chrome

Opera for mac

1

2

3

4

5

This is not legal

Don't count on this working in all browsers

# Strict verses Lax Rendering

## Strict

Users don't like it when pages don't show

## Lax

Developers don't know when they have errors in a page

Other browsers may not handle that error

# Span - inline HTML tag

```
<p>
```

```
  <span class="firstwords">The first few words</span> of a paragraph  
could be in small-caps. Style may also be inlined, such as to change the  
style of a word like <span style="font-family: Arial"> Arial</span>.
```

```
</p>
```

Used to use add style text not in normal tags

# Div

```
<div class="note">
```

```
  <h1>Divisions</h1>
```

```
  <p>
```

Since DIV may contain other block-level containers, it is useful for marking large sections of a document, such as this note.

```
  </p>
```

```
  <p>
```

The closing tag is required.

```
  </p>
```

```
</div>
```

# Divs & HTML 5

```
<div id="navbar">  
  <ul>  
    <li><a href="/">Home</a></li>  
    <li><a href="/blah">Next</a></li>  
  </ul>  
</div>
```

With HTML 5 Tag

```
<navbar>  
  <ul>  
    <li><a href="/">Home</a></li>  
    <li><a href="/blah">Next</a></li>  
  </ul>  
</div>
```

# Web developers dilemma

Cool useful new HTML, CSS features

Not supported in old browsers

Many people do not update browsers