



HOW Interactive Design Conference 2011

**Embrace Greater Design Freedom with HTML5 / CSS3**  
*Chris Converse*

## CSS3 Media Queries

One of the most advantageous aspects of HTML and CSS is its free-form nature. While this can be a bit of an adjustment for designers coming from print, the possibilities for designing across devices and platforms are endless. One advancement with CSS3 is the addition of media queries. This allows us to create CSS rules based on the user's screen size. We make adjustments to layout, font sizes, and even change images we use.

The images below represent the same HTML5 and CSS3 web page rendered across three different devices. Note the changes to the layout, size of the text, and even the position of the main navigation. In each case, specific CSS3 rules are honored while others are ignored, all based on the screen size of the device rendering the web page.

Computer Screen



Tablet Screen



Phone Screen



Use this QR code to view this responsive design example on your camera-enabled device, or visit:

[codifydesign.com/go/how](http://codifydesign.com/go/how)

## CSS3 Media queries

The following lines of code represent the syntax for including alternate CSS files based on screen size. The CSS file responsible for large screen layout is always included for older browsers. When screen conditions are met, the medium and small screen files override the layout settings in the large layout file.

```
<link
  rel="stylesheet"
  type="text/css" href="includes/stylesheet_layout_medium.css"
  media="only screen and (min-width:551px) and (max-width:900px)"
/>
```

```
<link
  rel="stylesheet"
  type="text/css" href="includes/stylesheet_layout_small.css"
  media="only screen and (min-width:50px) and (max-width:550px)"
/>
```



## HTML page

```
+ index.html stylesheet_layout_large.css
3 <!DOCTYPE HTML>
4 <html>
5   <!-- This template was designed and developed by Chris Converse, Codify Design Studio -->
6   <head>
7     <meta charset="UTF-8">
8     <title>Device-Sensitive CSS3 Template</title>
9     <meta id="view" name="viewport" content="width=device-width, initial-scale=1.0" />
10    <meta http-equiv="X-UA-Compatible" content="IE=9" />
11    <link rel="stylesheet" type="text/css" href="includes/stylesheet_all.css" />
12    <link rel="stylesheet" type="text/css" href="includes/stylesheet_layout_large.css" />
13    <link rel="stylesheet" type="text/css" href="includes/stylesheet_layout_medium.css" media="only screen and (min-width:551px) and (max-width:900px)" />
14    <link rel="stylesheet" type="text/css" href="includes/stylesheet_layout_small.css" media="only screen and (min-width:50px) and (max-width:550px)" />
15    <!--[if lt IE 9]>
16      <script src="http://html5shiv.googlecode.com/svn/trunk/html5.js"></script>
17      <link rel="stylesheet" type="text/css" href="includes/stylesheet_ie.css" />
18    <![endif]-->
19  </head>
20  <body>
21    <div class="page">
22      <header><a class="logo" href="#"></a></header>
23      <div class="page_content">
24        <div class="page_content_container_left">
25          <div class="content">
26            <h1>Heading H1</h1>
27            <p>Suspendisse vestibulum dignissim quam. Integer vel augue. Phasellus nulla Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac ornare.
28            <h2>Heading H2</h2>
29            <p>Fusce magna mi, porttitor quis, convallis eget <a href="#">sodales ac</a> urna.
```

## Repositioning Layout for User Experience

When using a small screen hand-held device, navigation is often presented to the user at the end of the content. While this is not the convention for larger displays, our design needs to be able to adapt for optimal user experience.

In our HTML markup for the following web page, the navigation code follows the content code. When rendered on large and medium screen devices, however, the CSS rules reposition the navigation to the top of the page. This provides an optimized user experience without requiring changes to the markup.



Computer screen

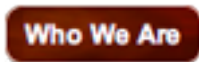


Phone Screen

The navigation repositions below the content on smaller displays.

## Restyling Links

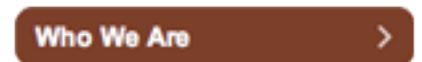
The navigation links are re-styled to look like mobile phone buttons when the small screen CSS rules are invoked.



Navigation link style for large and medium screen



Navigation links adjust their appearance between screen sizes.



Navigation link style for small screens

## HTML markup for the banner

One unique aspect of this example is there are no `<img>` tags in the layout. Images are brought in as backgrounds to other elements, which is determined by CSS. The only HTML markup the `<header>` tag includes is an anchor link for the logo. CSS is used to determine the size and background image to use in the header, as well as which version of the logo to place in the background of the `<a>` tag.

```
<header> <a class="logo" href="#"></a> </header>
```

## HTML Markup for the sidebar

CSS is also used to determine the image used in the background of the `<div>` tag that is inside of the `<figure>` tag. This technique allows us to use completely different images based on the screen size.

```
<figure>  
  <div class="figure_photo"></div>  
  <figcaption>Caption goes here.</figcaption>  
  <div class="clear_both"></div>  
</figure>
```



**75.2 Kb combined file size**  
Large banner and sidebar photo  
compressed to JPG @ 65% quality.



**32.4 Kb combined file size**  
Medium banner and sidebar photo  
compressed to JPG @ 50% quality.



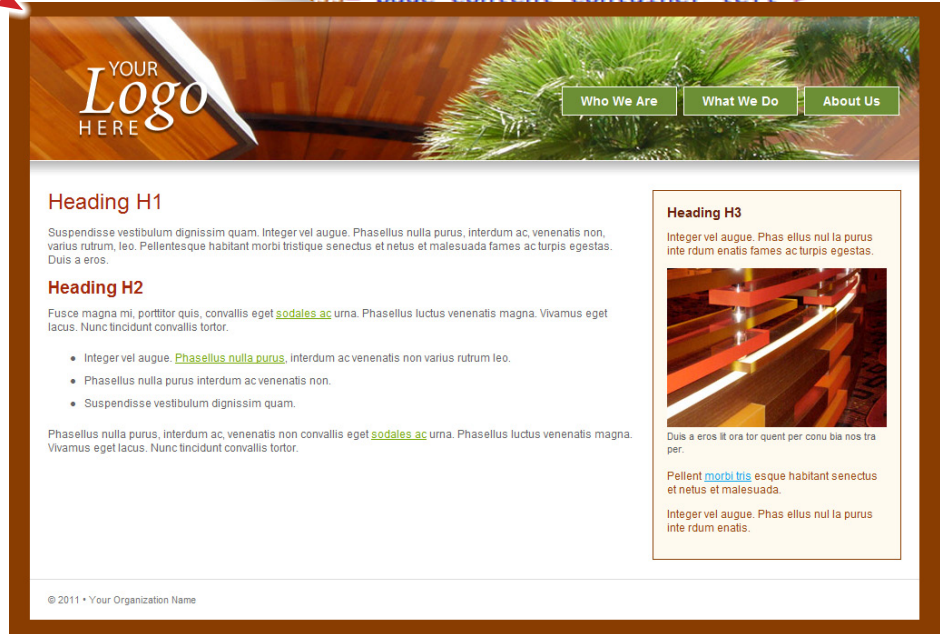
**12.1 Kb combined file size**  
Small banner and sidebar photo  
compressed to JPG @ 30% quality.

# HTML5 for Older IE Browsers

In order to help the adoption of HTML5, Google offer a free HTML5 Shiv. This offering is a single JavaScript file that can be added to your HTML5 web page. Once added, this script allows Internet Explorer 6, 7 & 8 to render HTML5 as if it were an earlier version of HTML.

HTML page

```
index.html | stylesheet_layout_large.css
<!DOCTYPE HTML>
<html>
  <!-- This template was designed and developed by Chris Converse, Codify Design Studio -->
  <head>
    <meta charset="UTF-8">
    <title>Device-Sensitive CSS3 Template</title>
    <meta id="view" name="viewport" content="width=device-width, initial-scale=1.0" />
    <meta http-equiv="X-UA-Compatible" content="IE=9" />
    <link rel="stylesheet" type="text/css" href="includes/stylesheet_all.css" />
    <link rel="stylesheet" type="text/css" href="includes/stylesheet_layout_large.css" />
    <link rel="stylesheet" type="text/css" href="includes/stylesheet_layout_medium.css" media="only screen and (min-width:551px) and (max-width:900px)" />
    <link rel="stylesheet" type="text/css" href="includes/stylesheet_layout_small.css" media="only screen and (min-width:50px) and (max-width:550px)" />
    <!--[if lt IE 9]>
      <script src="http://html5shiv.googlecode.com/svn/trunk/html5.js"></script>
      <link rel="stylesheet" type="text/css" href="includes/stylesheet_ie.css" />
    <![endif]-->
  </head>
  <body>
    <div class="page">
      <header><a class="logo" href="#"></a></header>
      <div class="page_content">
        <div class="page_content_container_left">
          <div class="page_content">
            <h1>Heading H1</h1>
            <p>Integer vel augue. Phasellus nulla purus, interdum ac, venenatis non, varius rutrum, leo, pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Duis a eros.</p>
            <h2>Heading H2</h2>
            <p>Fusce magna mi, porttitor quis, convallis eget sodales ac urna. Phasellus luctus venenatis magna. Vivamus eget lacus. Nunc tincidunt convallis tortor.</p>
            <ul>
              <li>Integer vel augue. Phasellus nulla purus, interdum ac venenatis non varius rutrum leo.</li>
              <li>Phasellus nulla purus interdum ac venenatis non.</li>
              <li>Suspendisse vestibulum dignissim quam.</li>
            </ul>
            <p>Phasellus nulla purus, interdum ac, venenatis non convallis eget sodales ac urna. Phasellus luctus venenatis magna. Vivamus eget lacus. Nunc tincidunt convallis tortor.</p>
          </div>
        </div>
      </div>
    </div>
  </body>
</html>
```



HTML5 web page rendered in Internet Explorer 7 & 8 with help from the Google HTML5 Shiv.

While many CSS3 attributes are ignored, such as rounded corners, RGBA colors, and gradients, the page renders properly without any modifications to the HTML and CSS.

## Video and Audio in HTML5

HTML5 includes many new tags, including tags for video and audio. By using these tags, the browser is now expected to handle the media files natively, instead of using 3rd party software (plug-ins) to handle the playback.

Here is an example of the video tag:

```
<video width="800" height="600" controls>
  <source src="filename.mp4" type="video/mp4" />
  <source src="filename.ogv" type="video/ogg" />
  Your browser does not support the video element.
</video>
```

Here is an example of the audio tag

```
<audio controls>
  <source src="filename.mp3" type="audio/mp3" />
  <source src="filename.ogg" type="audio/ogg" />
  Your browser does not support the audio element.
</audio>
```

Even though HTML5 is supported in most browsers, you may still wish to provide an alternate method for playing your media on older browsers. Fortunately, you can include additional "fallback" code in your web HTML5 media tags.

The following code shows how you can embed Flash video player code within the HTML5 video tag in order to ensure users with older browsers still see the video.

```
<video width="800" height="600" controls>
  <source src="filename.mp4" type="video/mp4" />
  <source src="filename.ogv" type="video/ogg" />

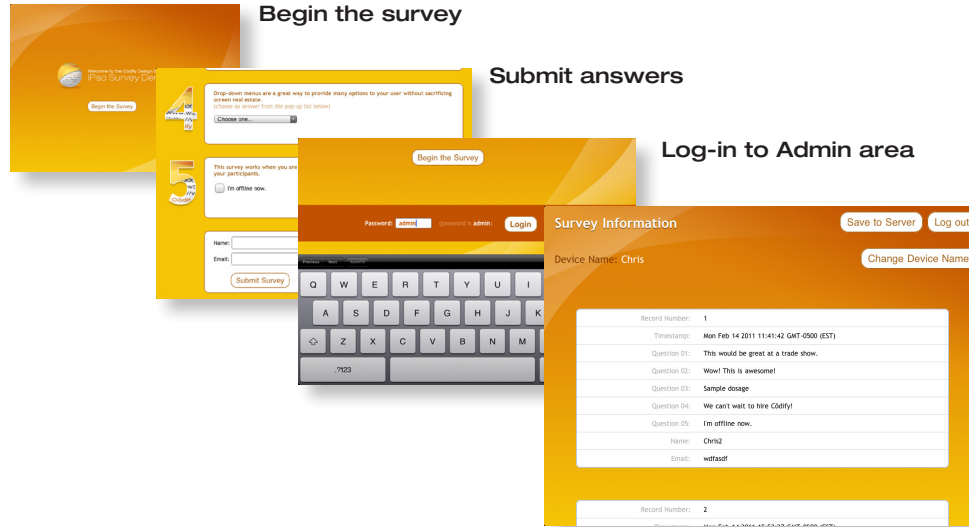
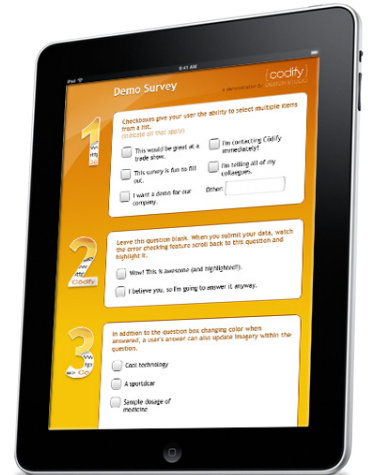
  <object classid="clsid:d27cdb6e-ae6d-11cf-96b8-444553540000"
    codebase="http://download.macromedia.com/pub/shockwave/cabs/flash/swflash.
    cab#version=9,0,0,0" width="800" height="640" id="myVideo"
    align="middle">
    <param name="allowScriptAccess" value="sameDomain">
    <param name="allowFullScreen" value="true">
    <param name="myVideo"
      value="video_player.swf?videoFile=filename.mp4&skinFile=video_
      skin.swf&videoFileWidth=800&videoFileHeight=600">
    <param name="quality" value="high">
    <param name="wmode" value="transparent">
    <param name="scale" value="noscale">
    <param name="salign" value="lt">
    <embed src="video_player.swf?videoFile=filename.mp4&skinFile=
    video_skin.swf&videoFileWidth=800&
    videoFileHeight=600" quality="high" width="800" height="640"
    name="myVideo" align="middle" allowscriptaccess="sameDomain"
    type="application/x-shockwave-flash" scale="noscale" salign="lt"
    wmode="transparent" allowfullscreen="true"
    pluginspage="http://www.macromedia.com/go/getflashplayer">
    </embed>
  </object>

</video>
```

## Offline Storage

HTML5-enabled web browsers support offline storage of data. This allows you to capture data input, run your web applications, even access data from another web session — all without an internet connection.

Try it for yourself on your iPad: <http://ipad.codifydesign.com/demo/survey>

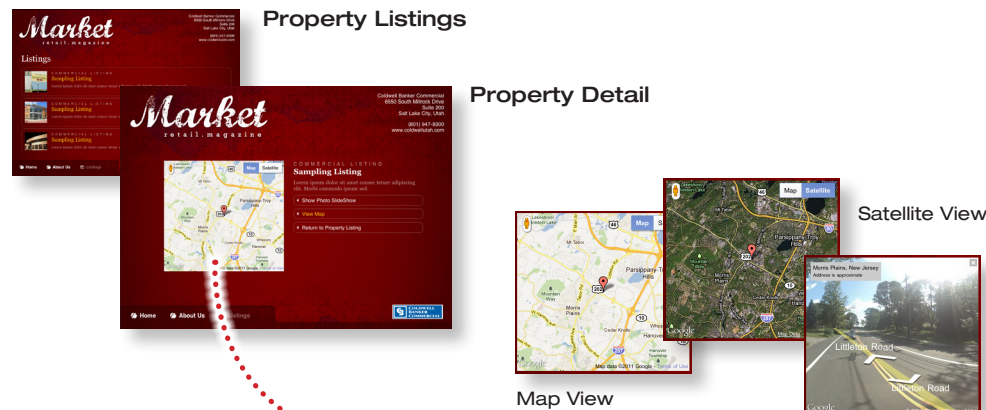


Review records from all submissions

## Web Services

Many websites and online services offer the ability to aggregate their content to your web pages via web services. In this example, Google Maps is embedded in a web application, providing a fully-enabled mapping tool without any of the overhead of developing the material in-house.

Try it for yourself on your iPad: <http://ipad.codifydesign.com/demo/coldwellbanker>



## CSS3 Animation

State-based animations can now be handled through CSS. Many browsers are now supporting these animation attributes, and can provide an enhanced user experience as CSS properties change according to various screen sizes and orientations, status of user-feedback elements, or even representing the status of a user's progress within an application.

Try it for yourself on your iPad:  
<http://ipad.codifydesign.com/demo/doctor-office>



**Portrait View**  
(768 pixels wide)

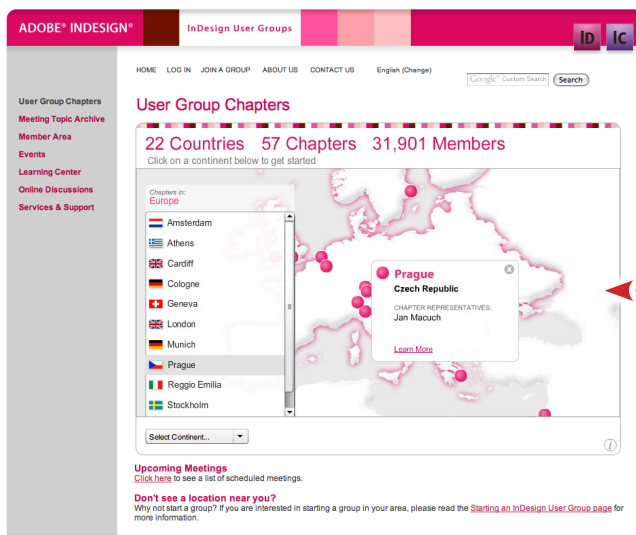
←..... CSS Animation between .....→  
layout properties



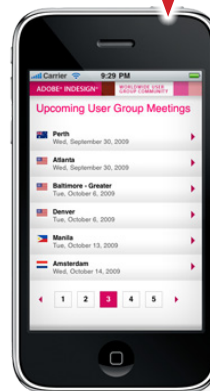
**Landscape View**  
(1024 pixels wide)

## Cross Platform Data-driven Applications

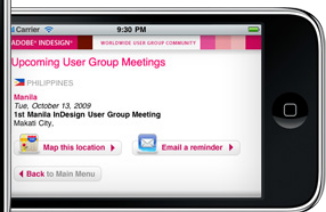
The InDesign User Group Website database produces XML-driven data, which in turn, is used to power both a Flash-based computer experience, as well as a mobile-optimized web application.



HTML page with an XML-driven  
Flash Application



Mobile XML-driven  
Web App





### Learn more jQuery from Chris Converse on Lynda.com

Get a **FREE 7-Day Trial** from Chris. Find an activation link at:

[codifydesign.com/go/how](http://codifydesign.com/go/how)



### Create a Multiscreen Web Design from scratch on udemy.com

Get **\$25 off** until November 30, 2011 from Chris by entering the Coupon Code: **HOW-2011**

[www.udemy.com/multiscreen-web-design](http://www.udemy.com/multiscreen-web-design)



### Bring Your Web Design to Life

Creating Rich Media Websites with Adobe Creative Suite Web Premium

Written, designed and hosted by Chris Converse, this DVD-ROM features step-by-step videos, a workbook, and sample files that you can use to follow along as you learn to bring your designs to the browser.

[codifydesign.com/go/bring-your-web-design-to-life](http://codifydesign.com/go/bring-your-web-design-to-life)



### Create Interactive Documents

Using Adobe InDesign CS5

Written, designed and hosted by Chris Converse, this DVD-ROM features step-by-step videos, a workbook, and sample files that you can use to follow along as you learn to create interactive PDF and Flash-based web experiences — all without writing one line of code.

Also available as an iPad App on iTunes!

[codifydesign.com/go/create-interactive-documents](http://codifydesign.com/go/create-interactive-documents)

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Blog: [smartnocities.com](http://smartnocities.com)