Mobile HTML5

Scott Davis

ThirstyHead.com

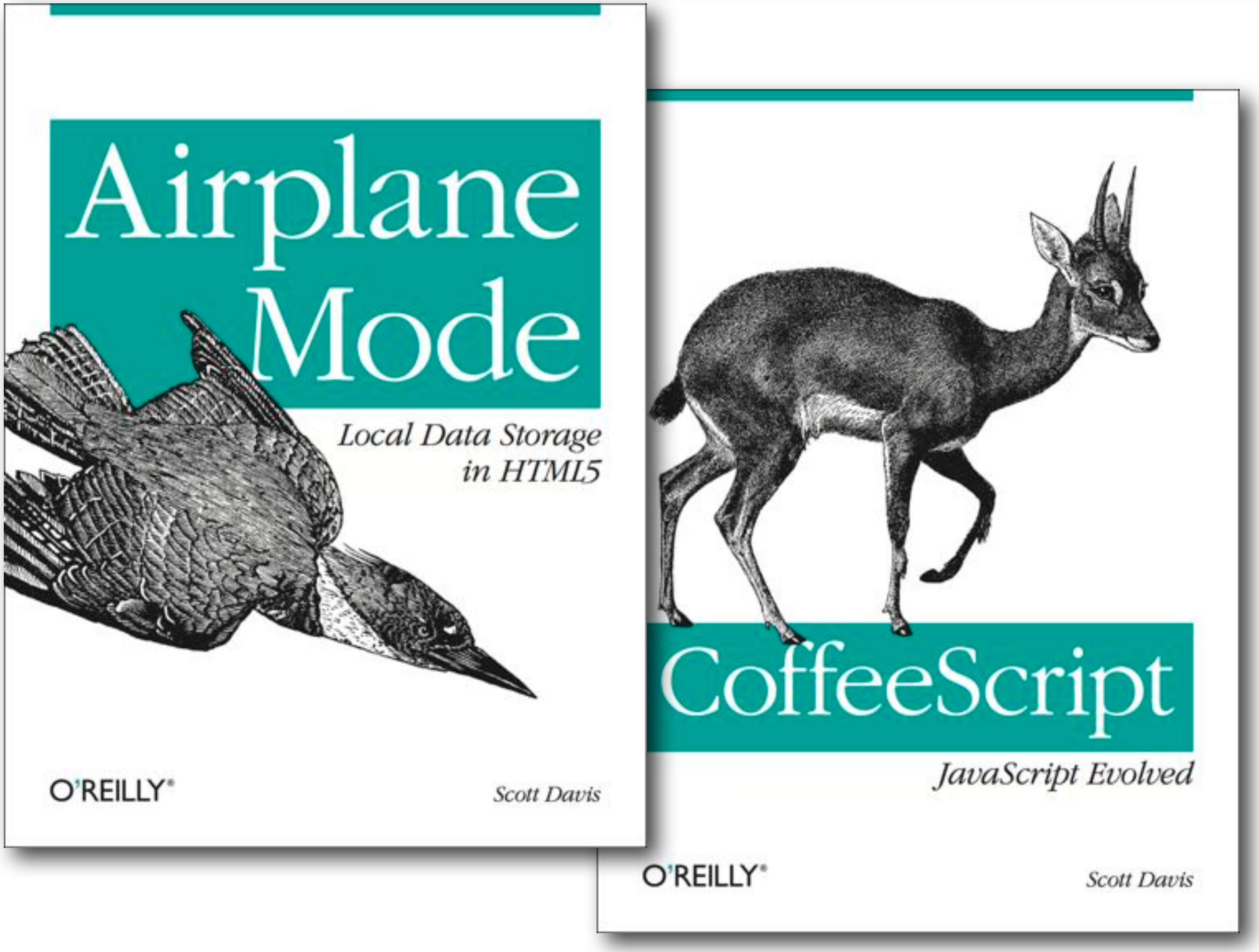
ThirstyHead.com

training done right.

ThirstyHead.com

training done right.

Scott Davis
@scottdavis99



Airplane Mode

Local Data Storage in HTML5

O'REILLY®

Scott Davis

CoffeeScript

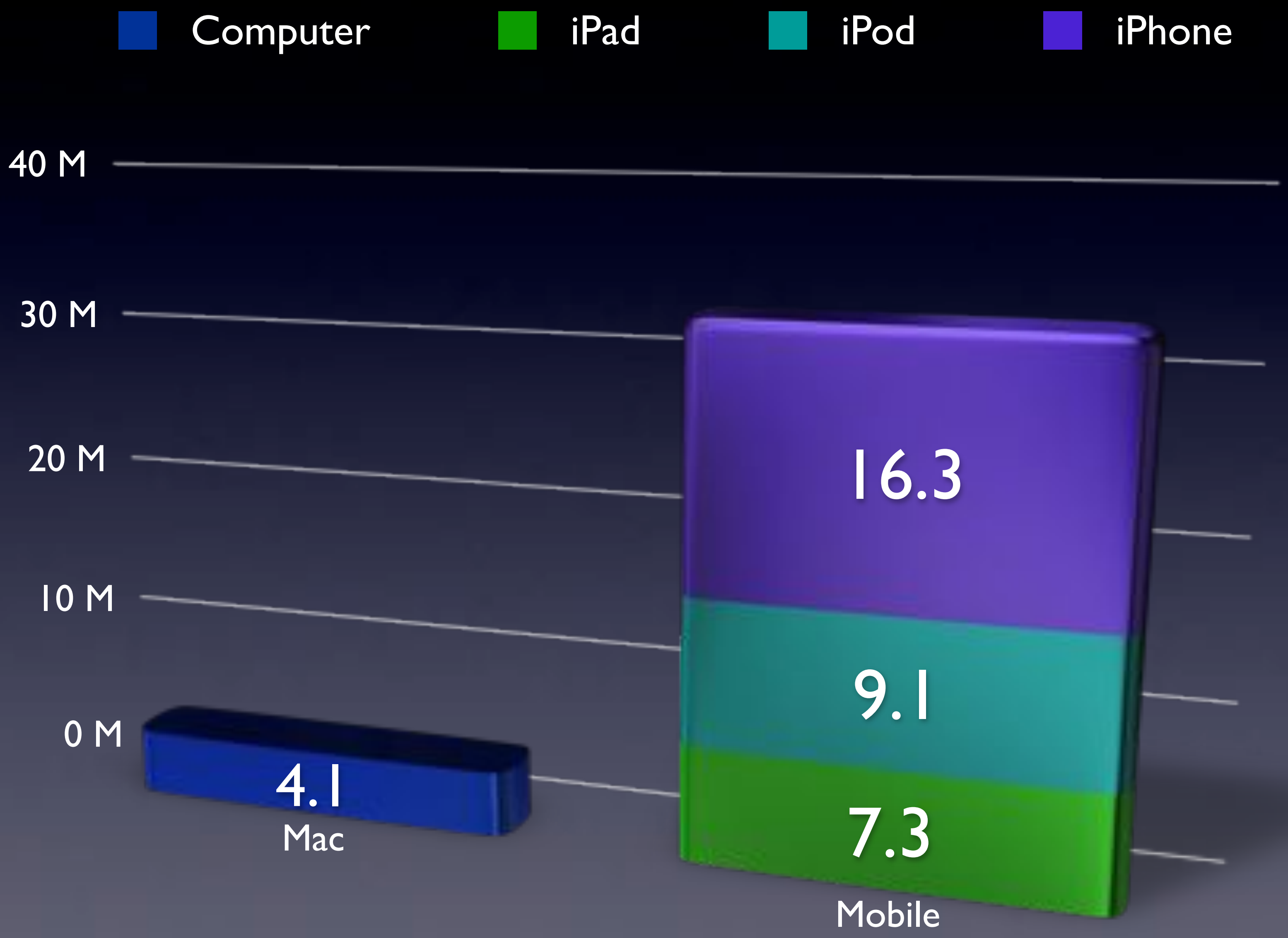
JavaScript Evolved

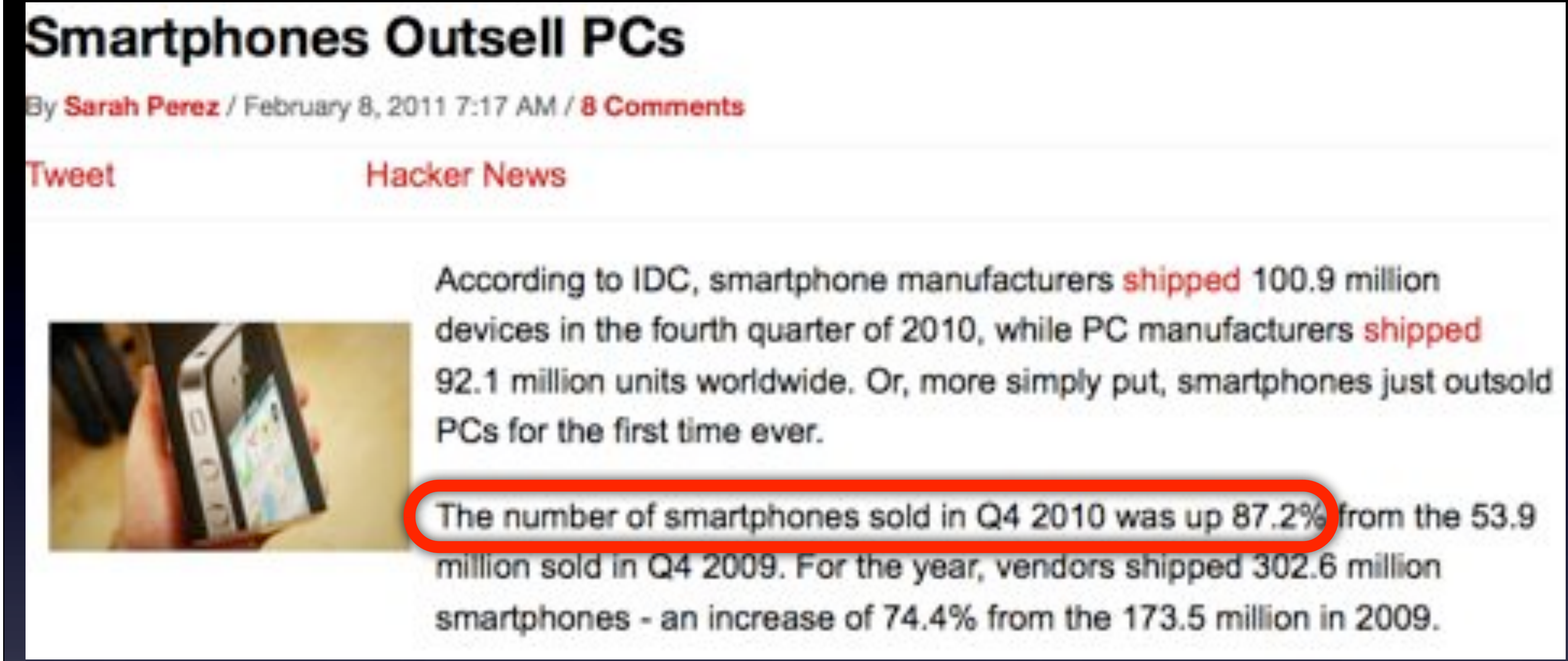
O'REILLY®

Scott Davis

7:14 AM
24
App Store
iPod

Apple Sales, Q4 2010



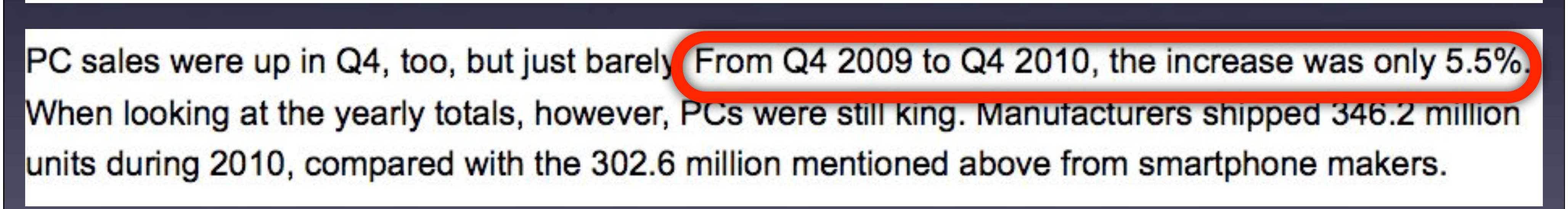


Smartphones Outsell PCs

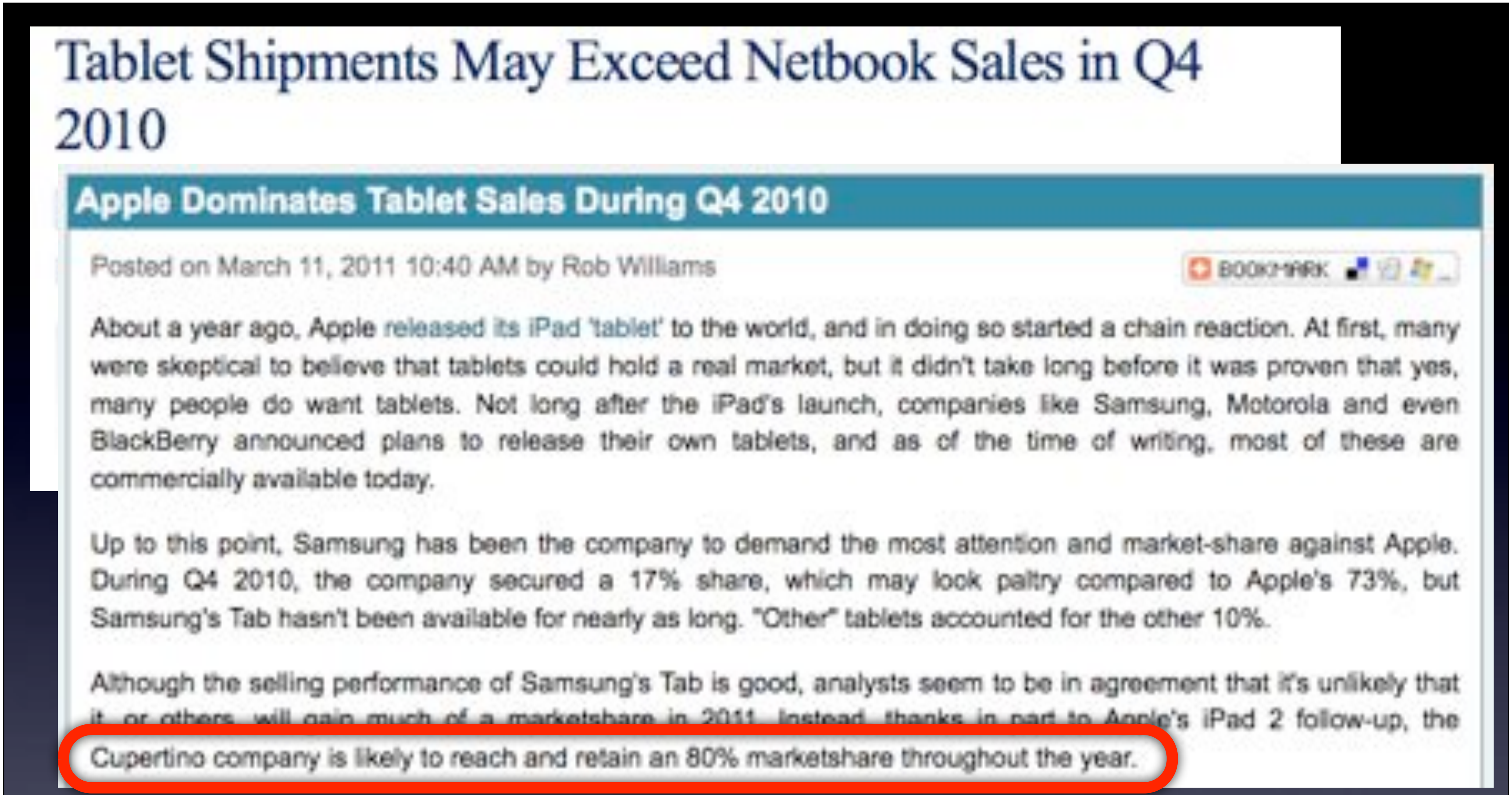
By Sarah Perez / February 8, 2011 7:17 AM / 8 Comments

According to IDC, smartphone manufacturers shipped 100.9 million devices in the fourth quarter of 2010, while PC manufacturers shipped 92.1 million units worldwide. Or, more simply put, smartphones just outsold PCs for the first time ever.

The number of smartphones sold in Q4 2010 was up 87.2% from the 53.9 million sold in Q4 2009. For the year, vendors shipped 302.6 million smartphones - an increase of 74.4% from the 173.5 million in 2009.



PC sales were up in Q4, too, but just barely. From Q4 2009 to Q4 2010, the increase was only 5.5%. When looking at the yearly totals, however, PCs were still king. Manufacturers shipped 346.2 million units during 2010, compared with the 302.6 million mentioned above from smartphone makers.



Tablet Shipments May Exceed Netbook Sales in Q4 2010

Apple Dominates Tablet Sales During Q4 2010

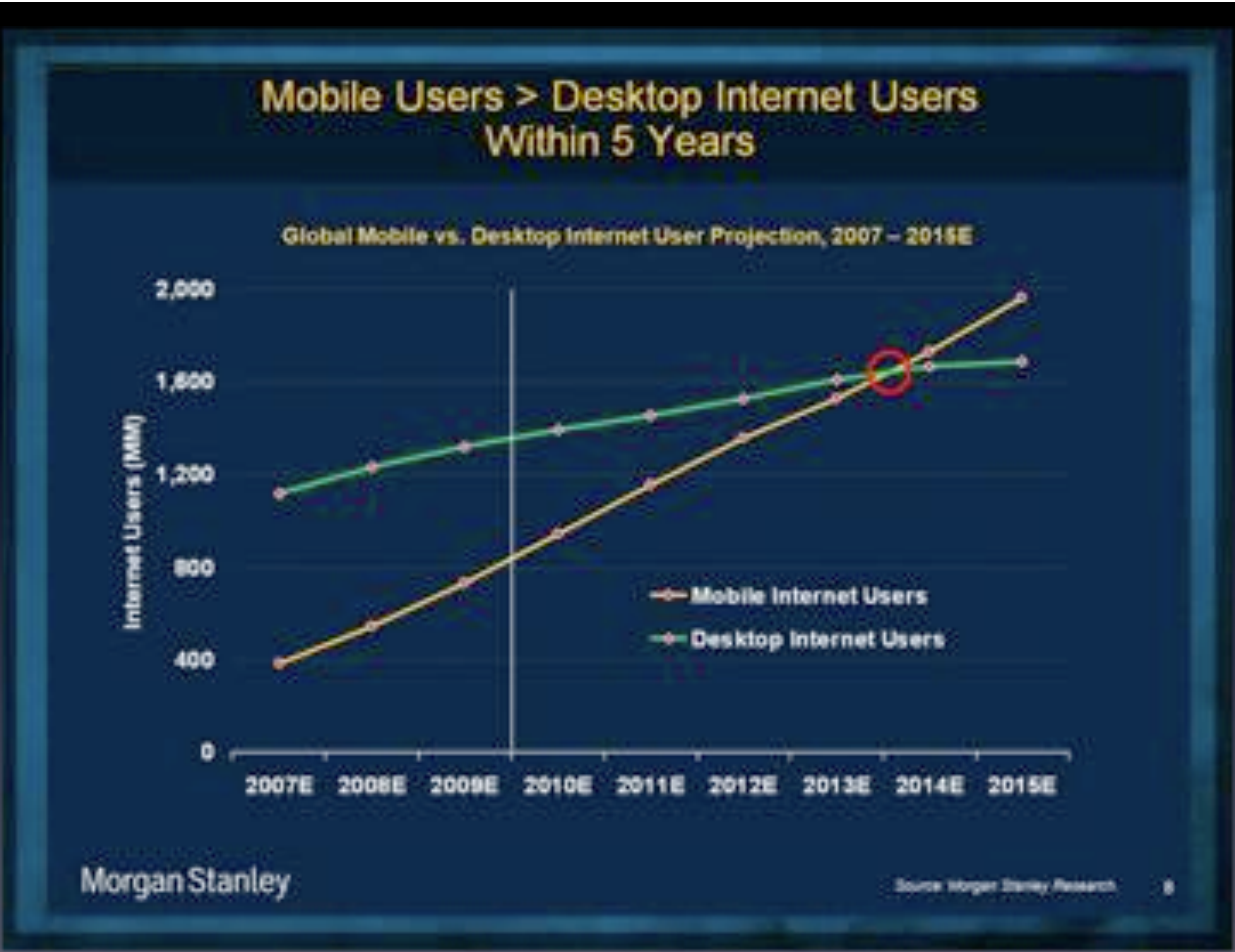
Posted on March 11, 2011 10:40 AM by Rob Williams

About a year ago, Apple released its iPad 'tablet' to the world, and in doing so started a chain reaction. At first, many were skeptical to believe that tablets could hold a real market, but it didn't take long before it was proven that yes, many people do want tablets. Not long after the iPad's launch, companies like Samsung, Motorola and even BlackBerry announced plans to release their own tablets, and as of the time of writing, most of these are commercially available today.

Up to this point, Samsung has been the company to demand the most attention and market-share against Apple. During Q4 2010, the company secured a 17% share, which may look paltry compared to Apple's 73%, but Samsung's Tab hasn't been available for nearly as long. "Other" tablets accounted for the other 10%.

Although the selling performance of Samsung's Tab is good, analysts seem to be in agreement that it's unlikely that it or others will gain much of a marketshare in 2011. Instead, thanks in part to Apple's iPad 2 follow-up, the Cupertino company is likely to reach and retain an 80% marketshare throughout the year.

Mobile Users > Desktop Internet Users Within 5 Years



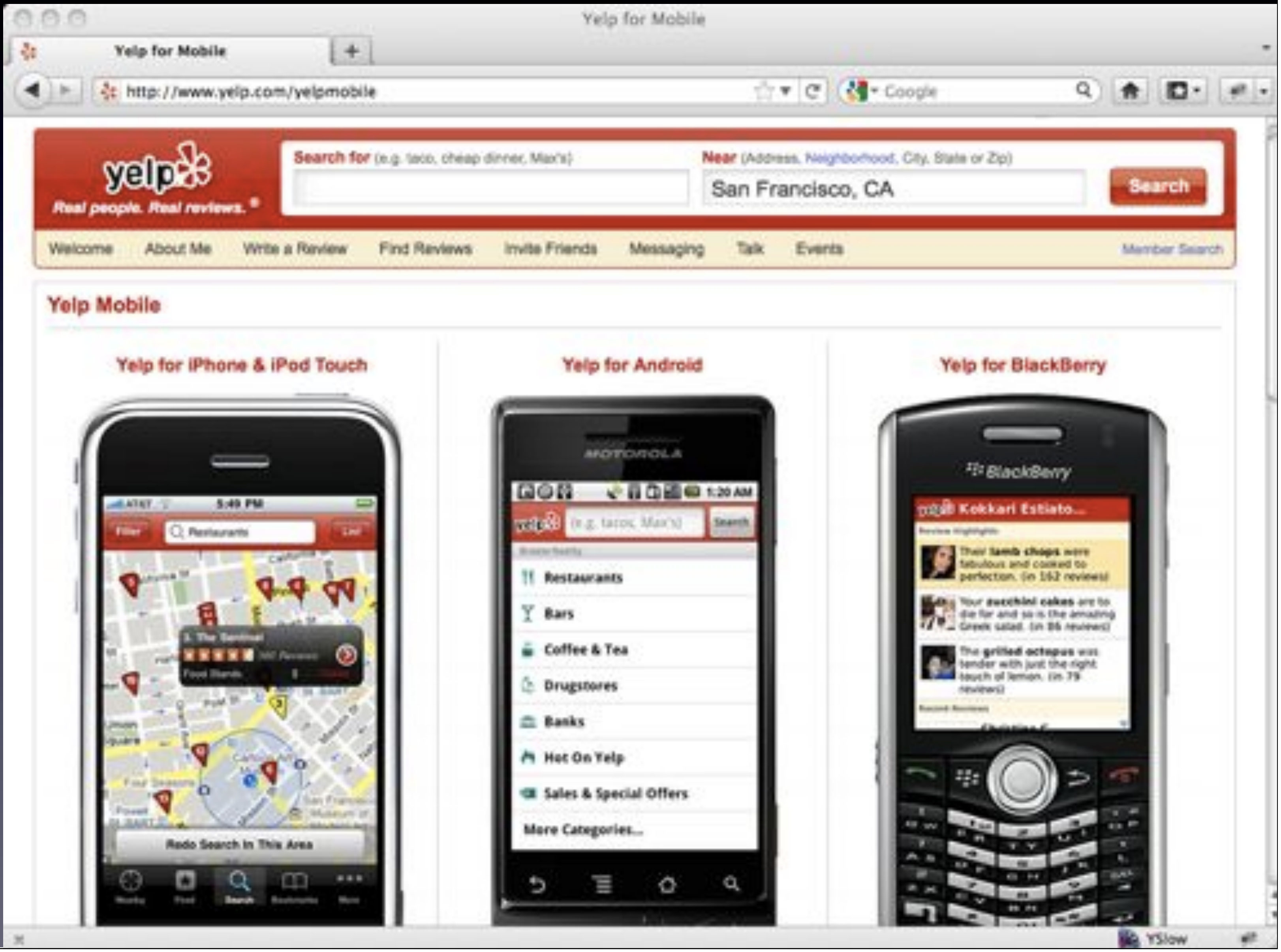
Global Mobile vs. Desktop Internet User Projection, 2007 – 2015E

Morgan Stanley

Source: Morgan Stanley Research

Native
or
HTML 5 ?

Native



Yelp for Mobile

http://www.yelp.com/yelpmobile

Search for (e.g. taco, cheap dinner, Max's)

Near (Address, Neighborhood, City, State or Zip)

San Francisco, CA

Yelp Mobile

Yelp for iPhone & iPod Touch

Yelp for Android

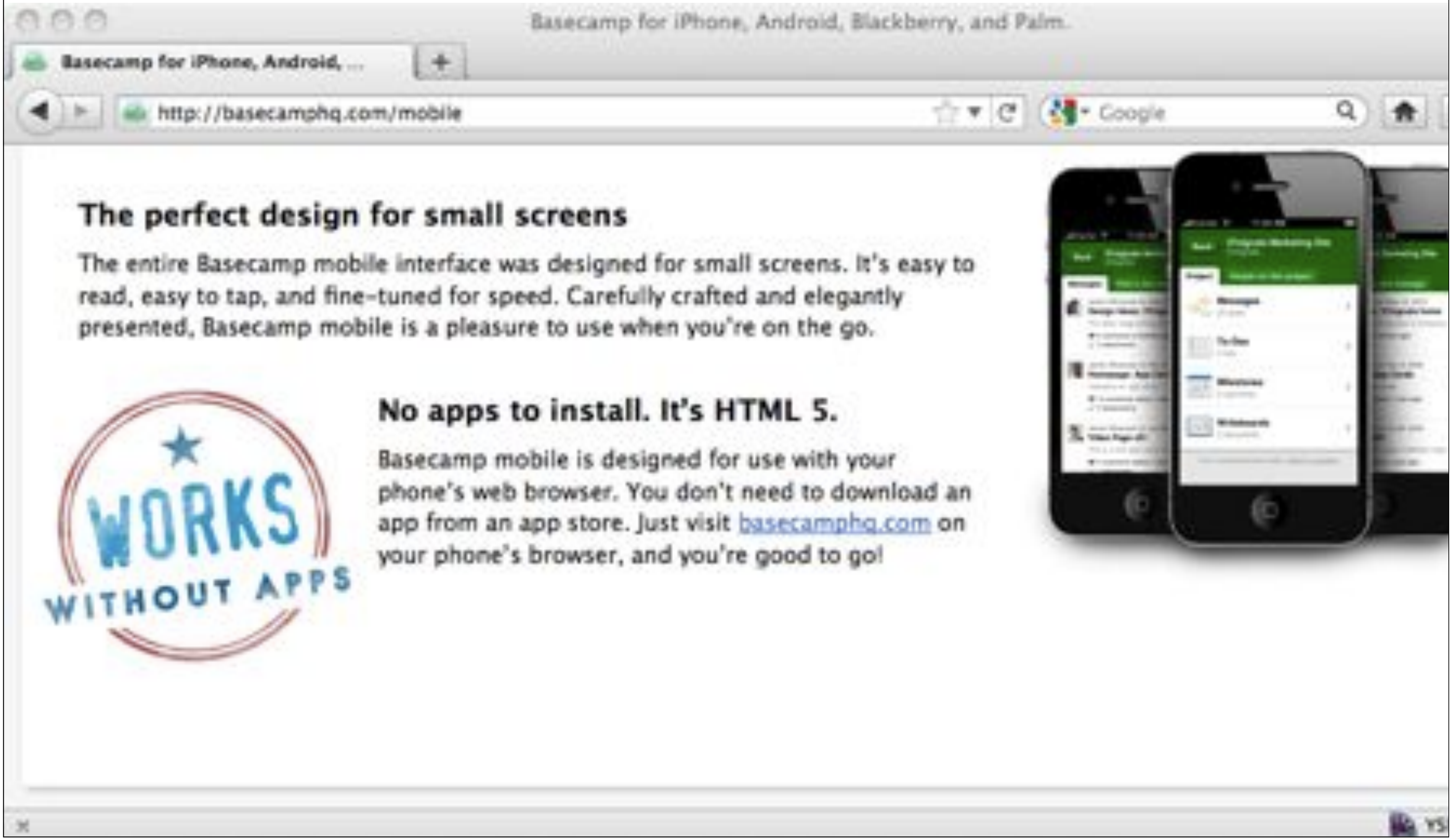
Yelp for BlackBerry

Their lamb chops were fabulous and cooked to perfection. (in 162 reviews)

Your zucchini cakes are to die for and so is the amazing Greek salad. (in 86 reviews)

The grilled octopus was tender with just the right touch of lemon. (in 79 reviews)

HTML 5

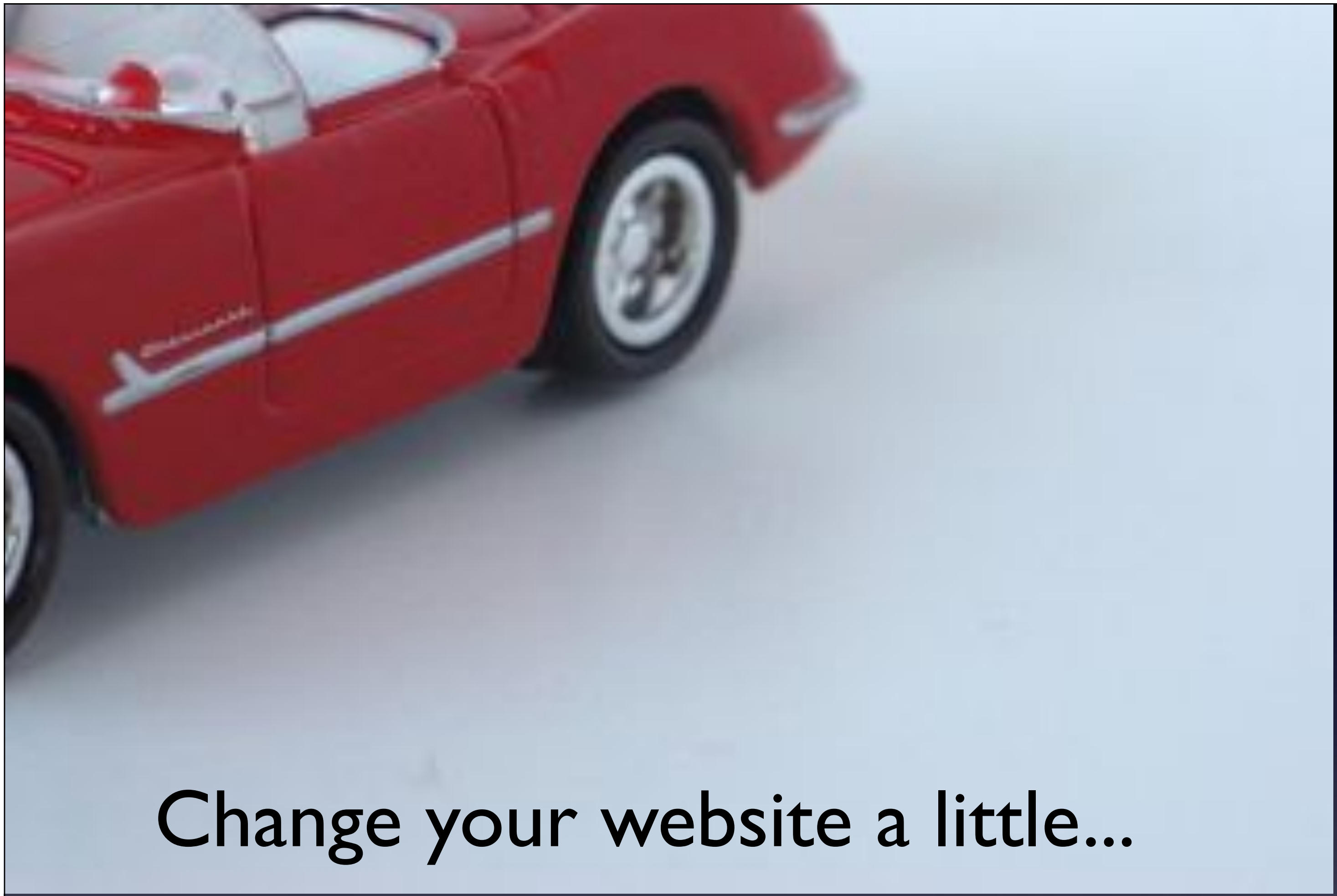

Basecamp for iPhone, Android, Blackberry, and Palm.
Basecamp for iPhone, Android, ...
http://basecamphq.com/mobile
Google
WORKS
WITHOUT APPS

The perfect design for small screens

The entire Basecamp mobile interface was designed for small screens. It's easy to read, easy to tap, and fine-tuned for speed. Carefully crafted and elegantly presented, Basecamp mobile is a pleasure to use when you're on the go.

No apps to install. It's HTML 5.

Basecamp mobile is designed for use with your phone's web browser. You don't need to download an app from an app store. Just visit basecamphq.com on your phone's browser, and you're good to go!



Change your website a little...

... or change it a lot

a little...

Screen / Window Size

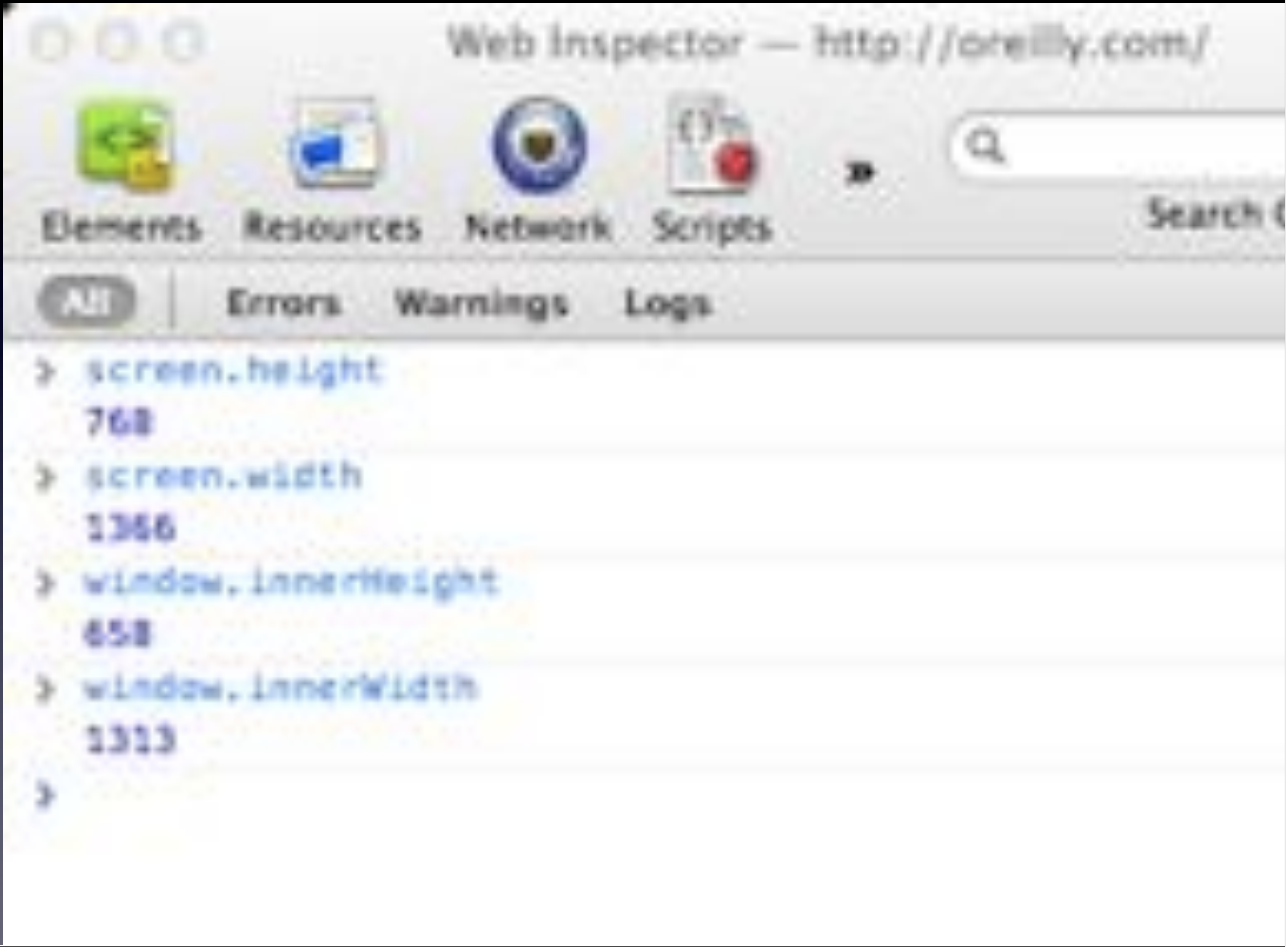
Portrait / Landscape

Form Elements

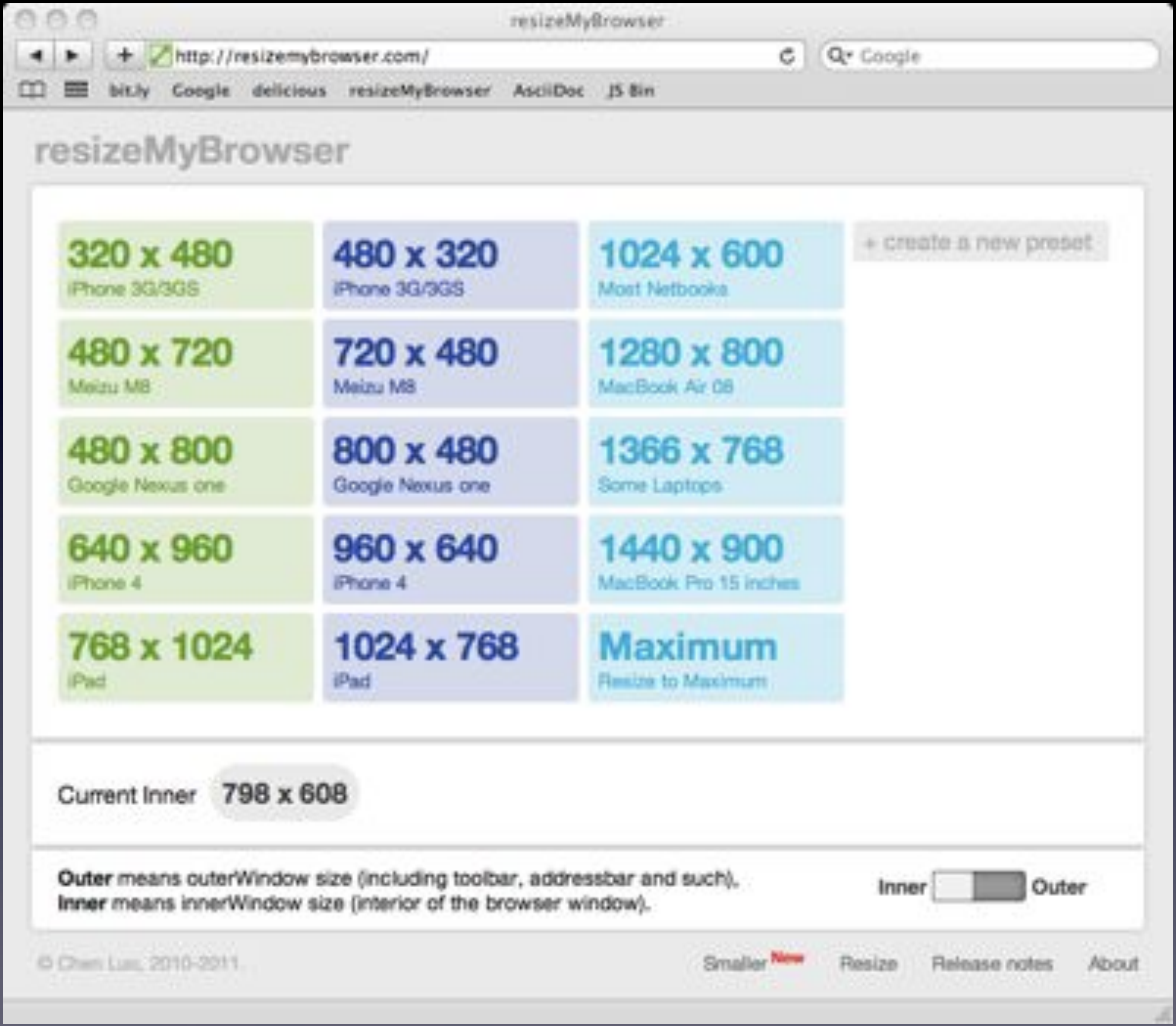
Stupid Link Tricks

Touch Events

Desktop Screen != Window



```
> screen.height
  768
> screen.width
  1366
> window.innerHeight
  658
> window.innerWidth
  1313
>
```



resizeMyBrowser

320 x 480 iPhone 3G/3GS	480 x 320 iPhone 3G/3GS	1024 x 600 Most Netbooks	+ create a new preset
480 x 720 Meizu M8	720 x 480 Meizu M8	1280 x 800 MacBook Air 08	
480 x 800 Google Nexus one	800 x 480 Google Nexus one	1366 x 768 Some Laptops	
640 x 960 iPhone 4	960 x 640 iPhone 4	1440 x 900 MacBook Pro 15 inches	
768 x 1024 iPad	1024 x 768 iPad	Maximum Resize to Maximum	

Current Inner 798 x 608

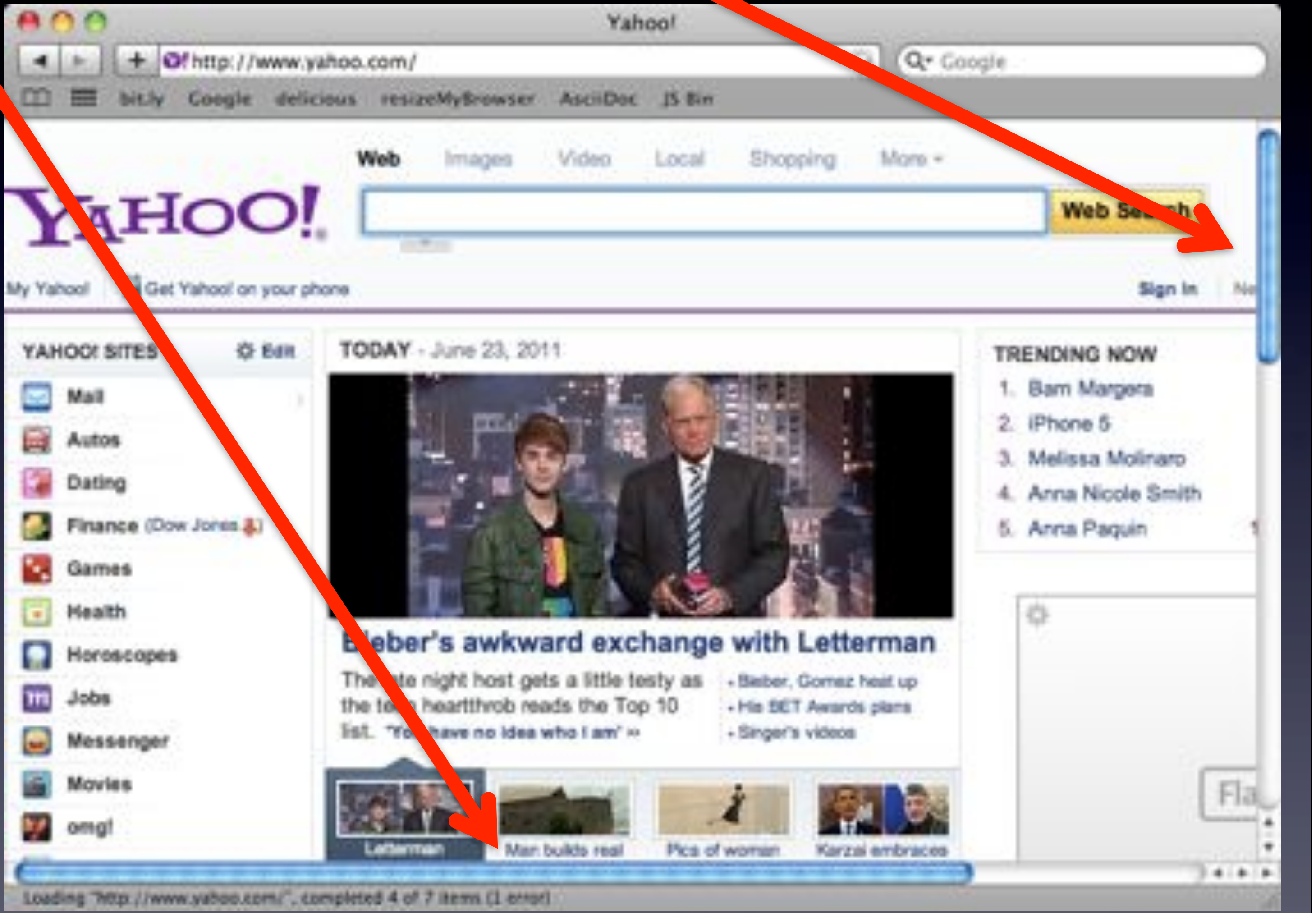
Outer means outerWindow size (including toolbar, addressbar and such).
Inner means innerWindow size (interior of the browser window).

Inner Outer

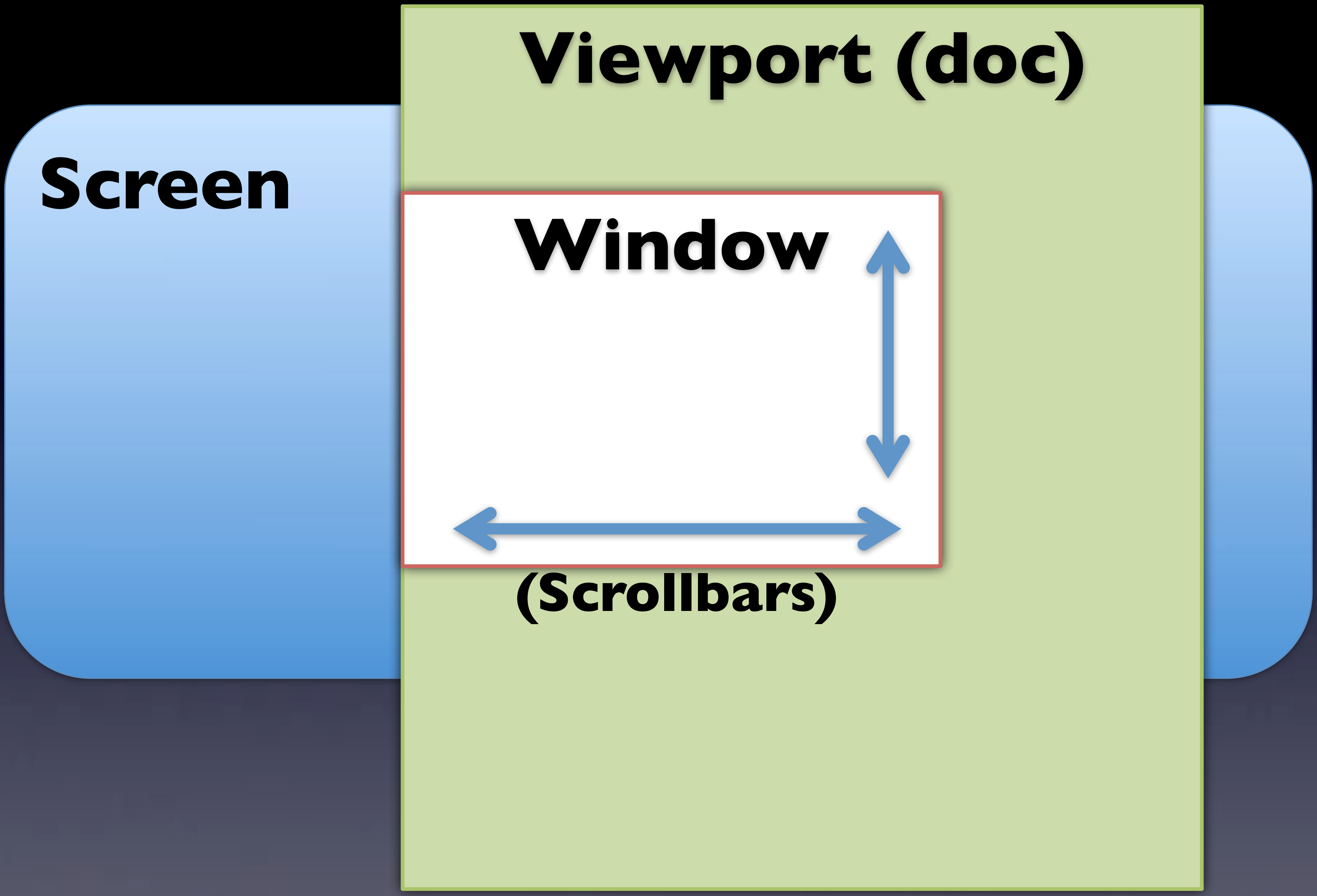
© Chen Luo, 2010-2011

Smaller New Resize Release notes About

But there's a third thing…



Loading "http://www.yahoo.com/", completed 4 of 7 items (1 error)

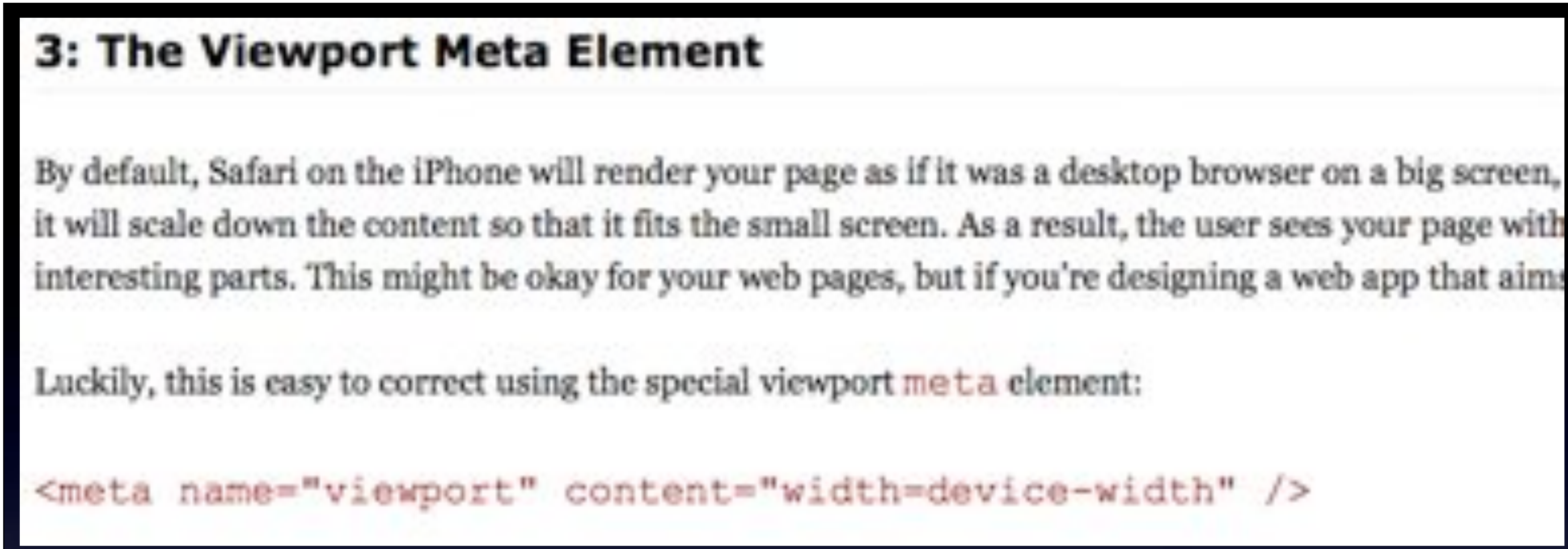


Viewport (doc)

Screen

Window

(Scrollbars)

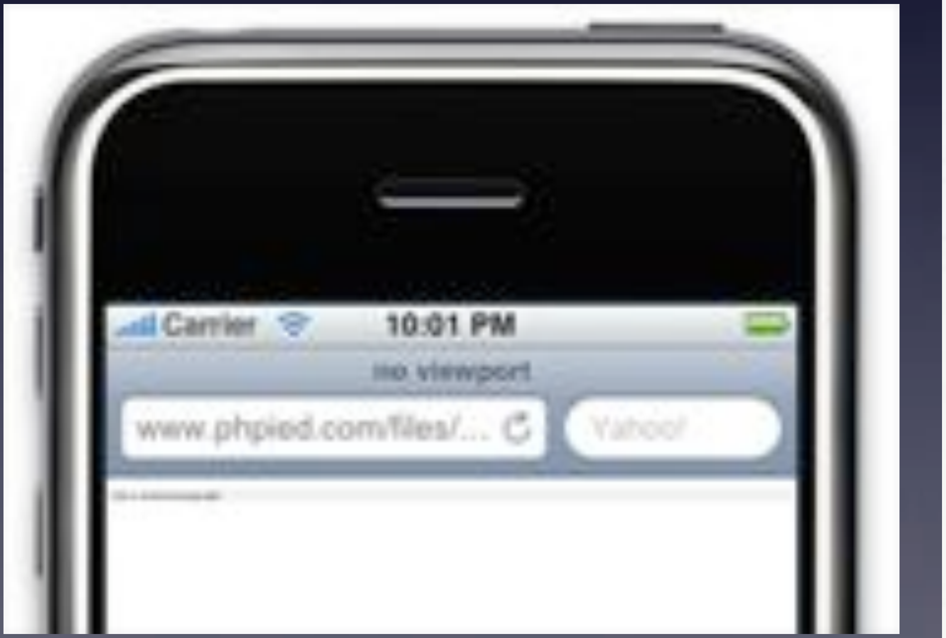


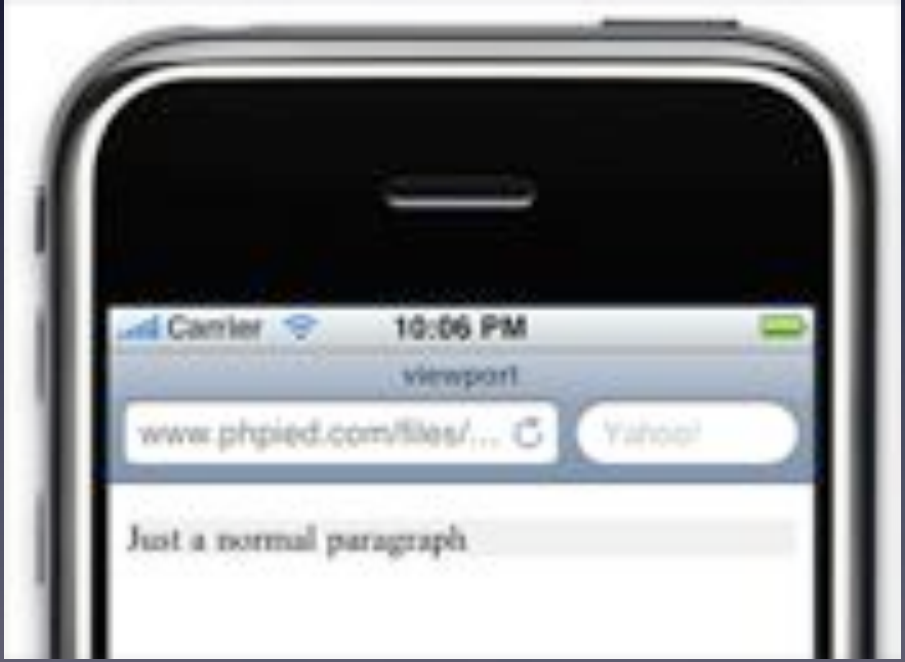
3: The Viewport Meta Element

By default, Safari on the iPhone will render your page as if it was a desktop browser on a big screen,
it will scale down the content so that it fits the small screen. As a result, the user sees your page with
interesting parts. This might be okay for your web pages, but if you're designing a web app that aim

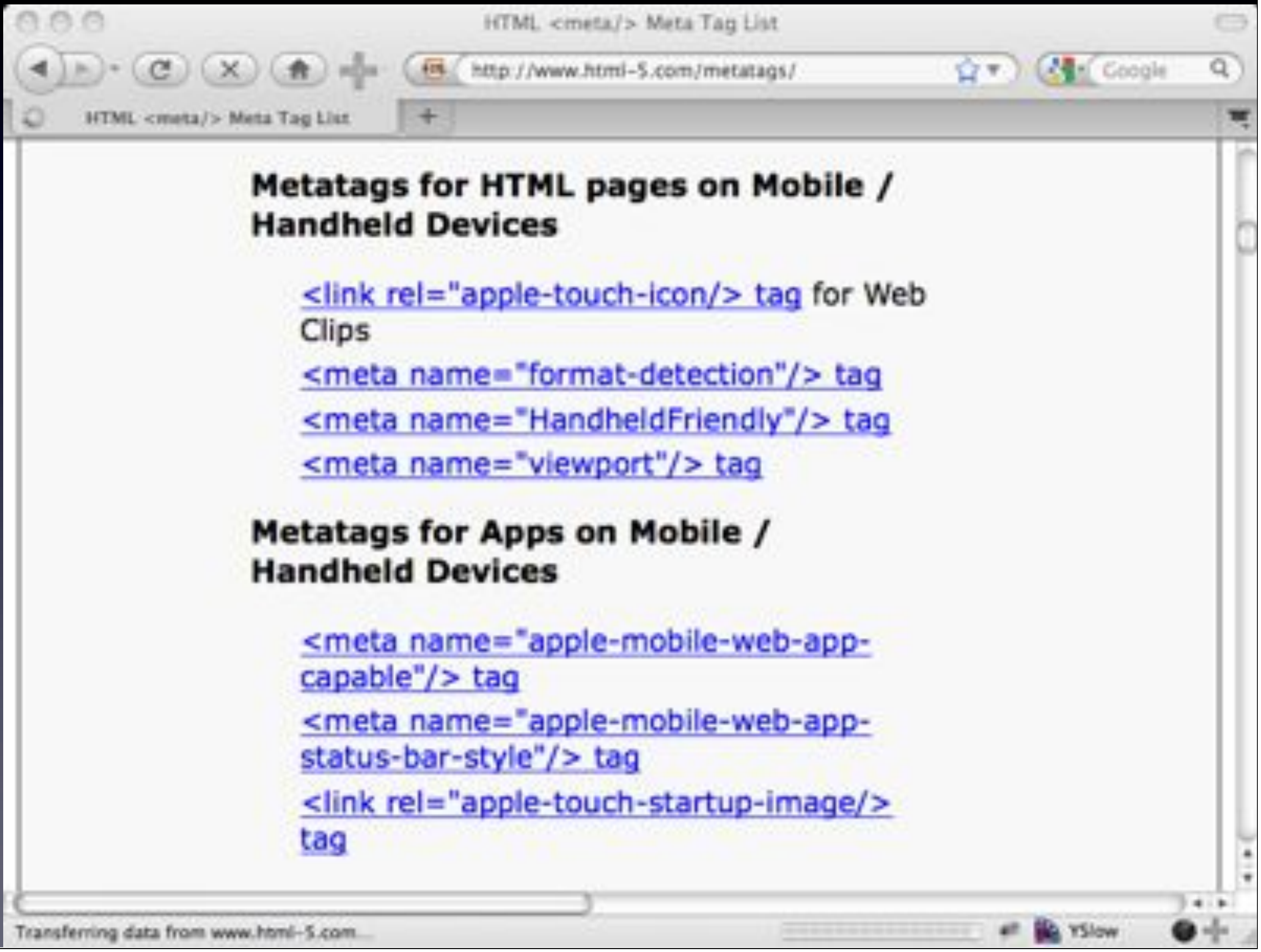
Luckily, this is easy to correct using the special viewport `meta` element:

```
<meta name="viewport" content="width=device-width" />
```





```
<meta name="viewport"
      content="width=device-width,
               initial-scale=1,
               user-scalable=no" />
```



HTML <meta/> Meta Tag List
http://www.html-5.com/metatags/
Google
HTML <meta/> Meta Tag List
YSlow

Metatags for HTML pages on Mobile / Handheld Devices

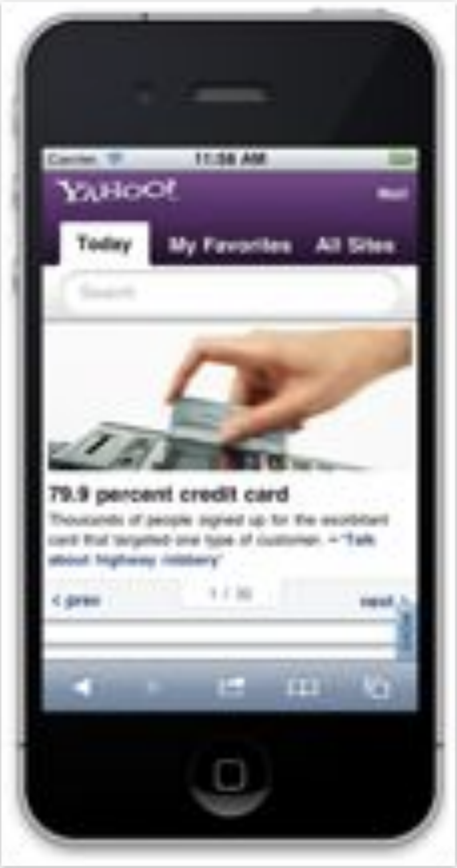
- <link rel="apple-touch-icon/> tag for Web Clips
- <meta name="format-detection"/> tag
- <meta name="HandheldFriendly"/> tag
- <meta name="viewport"/> tag

Metatags for Apps on Mobile / Handheld Devices

- <meta name="apple-mobile-web-app-capable"/> tag
- <meta name="apple-mobile-web-app-status-bar-style"/> tag
- <link rel="apple-touch-startup-image/> tag

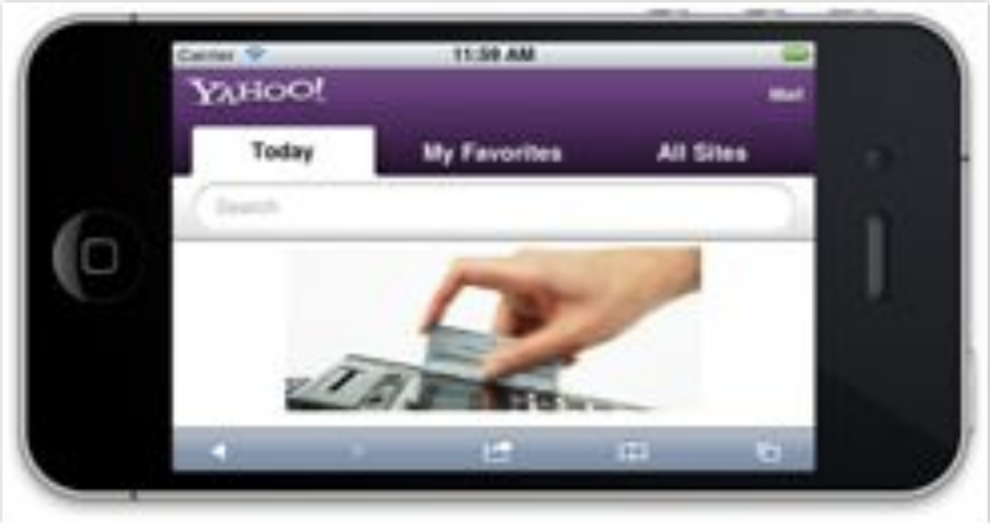
Transferring data from www.html-5.com...

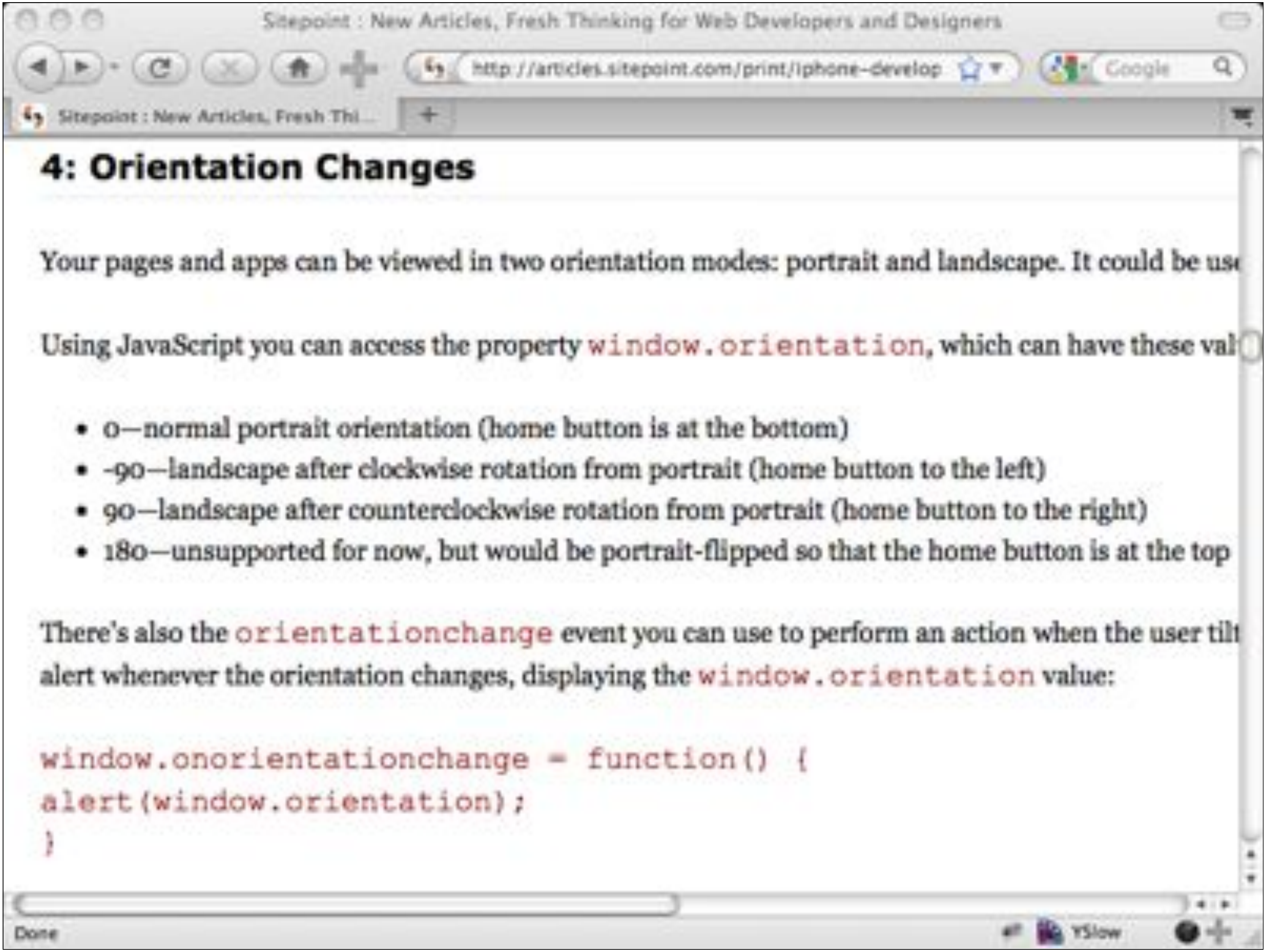
Portrait vs. Landscape



79.9 percent credit card

Thousands of people signed up for the exorbitant card that targeted one type of customer. » "Talk about highway robbery"




Sitepoint : New Articles, Fresh Thinking for Web Developers and Designers
http://articles.sitepoint.com/print/iphone-develop
Google
Sitepoint : New Articles, Fresh Thi...
Done
YSlow

4: Orientation Changes

Your pages and apps can be viewed in two orientation modes: portrait and landscape. It could be use

Using JavaScript you can access the property `window.orientation`, which can have these val

- 0—normal portrait orientation (home button is at the bottom)
- -90—landscape after clockwise rotation from portrait (home button to the left)
- 90—landscape after counterclockwise rotation from portrait (home button to the right)
- 180—unsupported for now, but would be portrait-flipped so that the home button is at the top

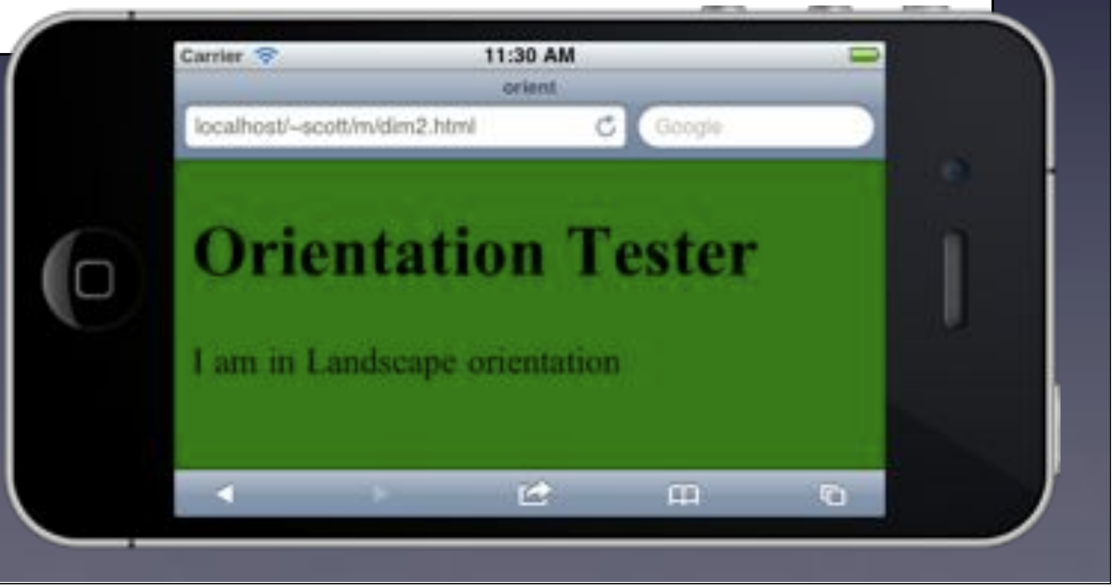
There's also the `orientationchange` event you can use to perform an action when the user tilt alert whenever the orientation changes, displaying the `window.orientation` value:

```
window.onorientationchange = function() {
alert(window.orientation);
}
```

CSS3 Media Queries

```
@media all and
       (orientation: portrait){
  ...
}
```

```
<style type="text/css">
     /* Portrait - Orientation */
     @media screen and (orientation: portrait) {
       #orientation:after { content: " Portrait orientation"; }
        body{
           background-color: red;
        }
     }

     /* Landscape - Orientation */
     @media screen and (orientation: landscape) {
        #orientation:after { content: " Landscape orientation"; }
        body{
           background-color: green;
        }
     }
</style>
```



Orientation Tester

I am in Landscape orientation

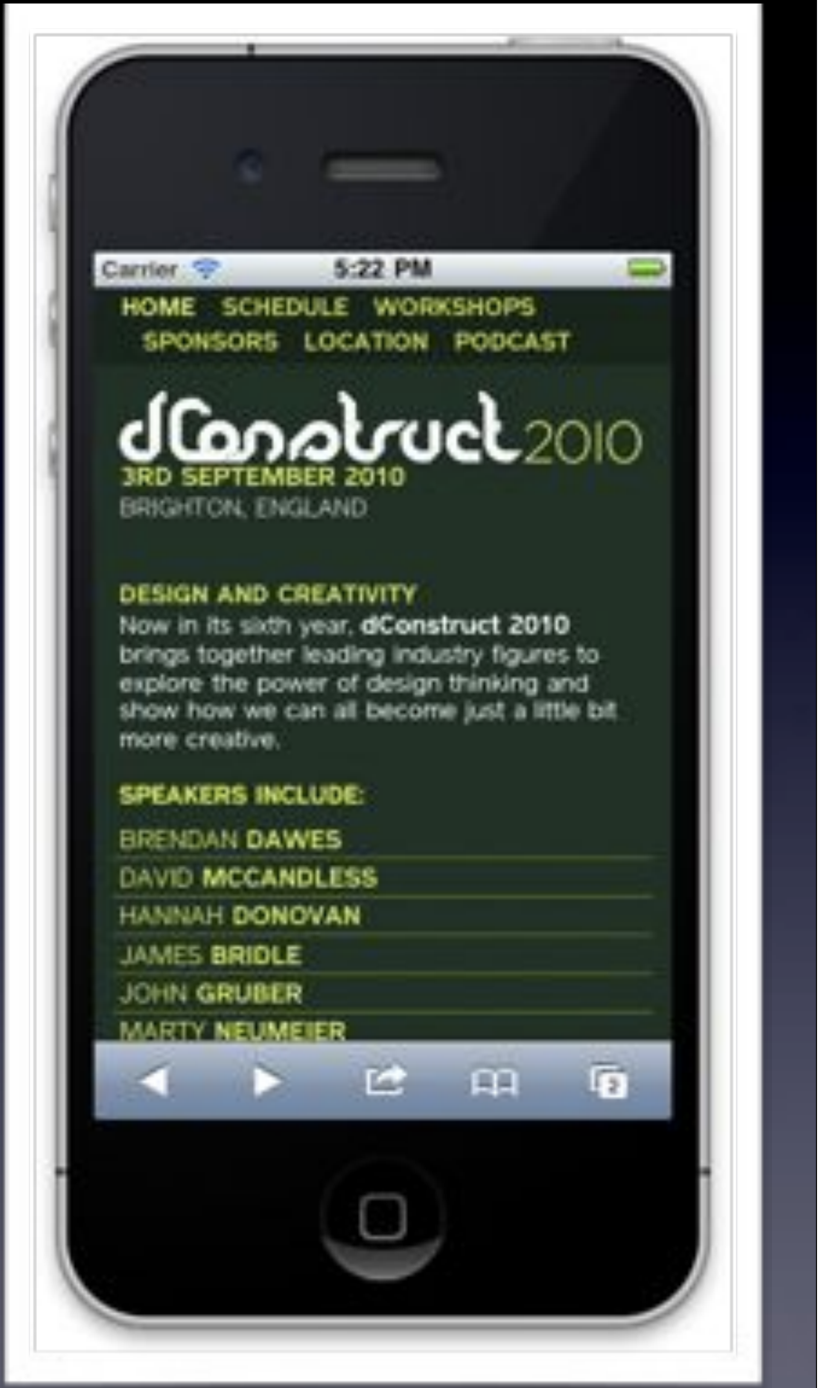
CSS3 Media Queries

```
<link media="screen and (...) and (...)" >
```

```
width (device-width)
height (device-height)
orientation (portrait | landscape)
aspect-ratio (device-aspect-ratio)
resolution
color, color-index, monochrome
scan (progressive | scan)
grid
```

http://2011.dconstruct.org

Media Queries Demo



dConstruct2010

3RD SEPTEMBER 2010

BRIGHTON, ENGLAND

DESIGN AND CREATIVITY

Now in its sixth year, **dConstruct 2010** brings together leading industry figures to explore the power of design thinking and show how we can all become just a little bit more creative.

SPEAKERS INCLUDE:

BRENDAN **DAWES**

DAVID **MCCANDLESS**

HANNAH **DONOVAN**

JAMES **BRIDLE**

JOHN **GRUBER**

MARTY **NEUMEIER**

A BOOK APART

4

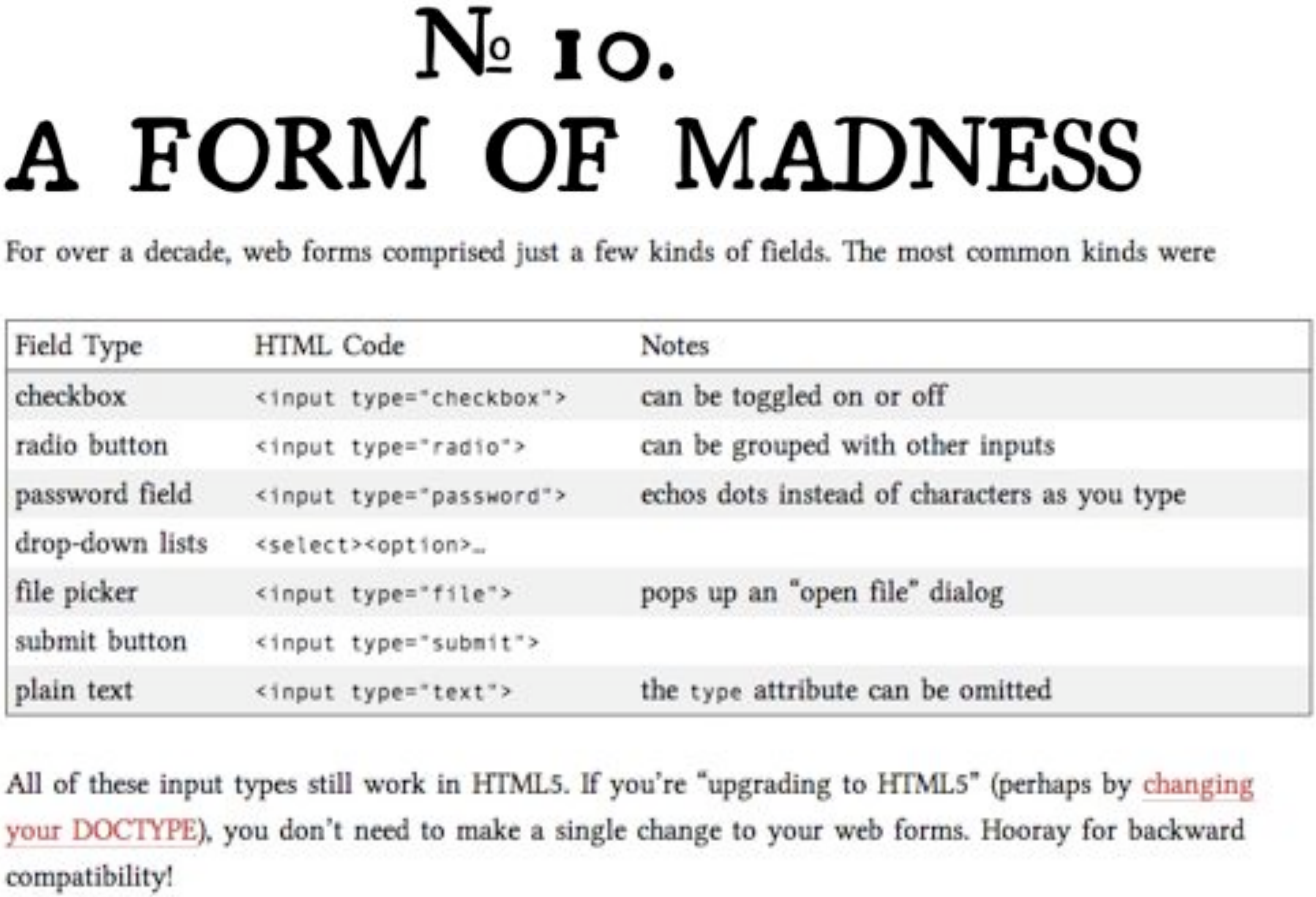
Ethan Marcotte

RESPONSIVE WEB DESIGN

FOREWORD BY Jeremy Keith

2

THE FLEXIBLE GRID



№ 10.

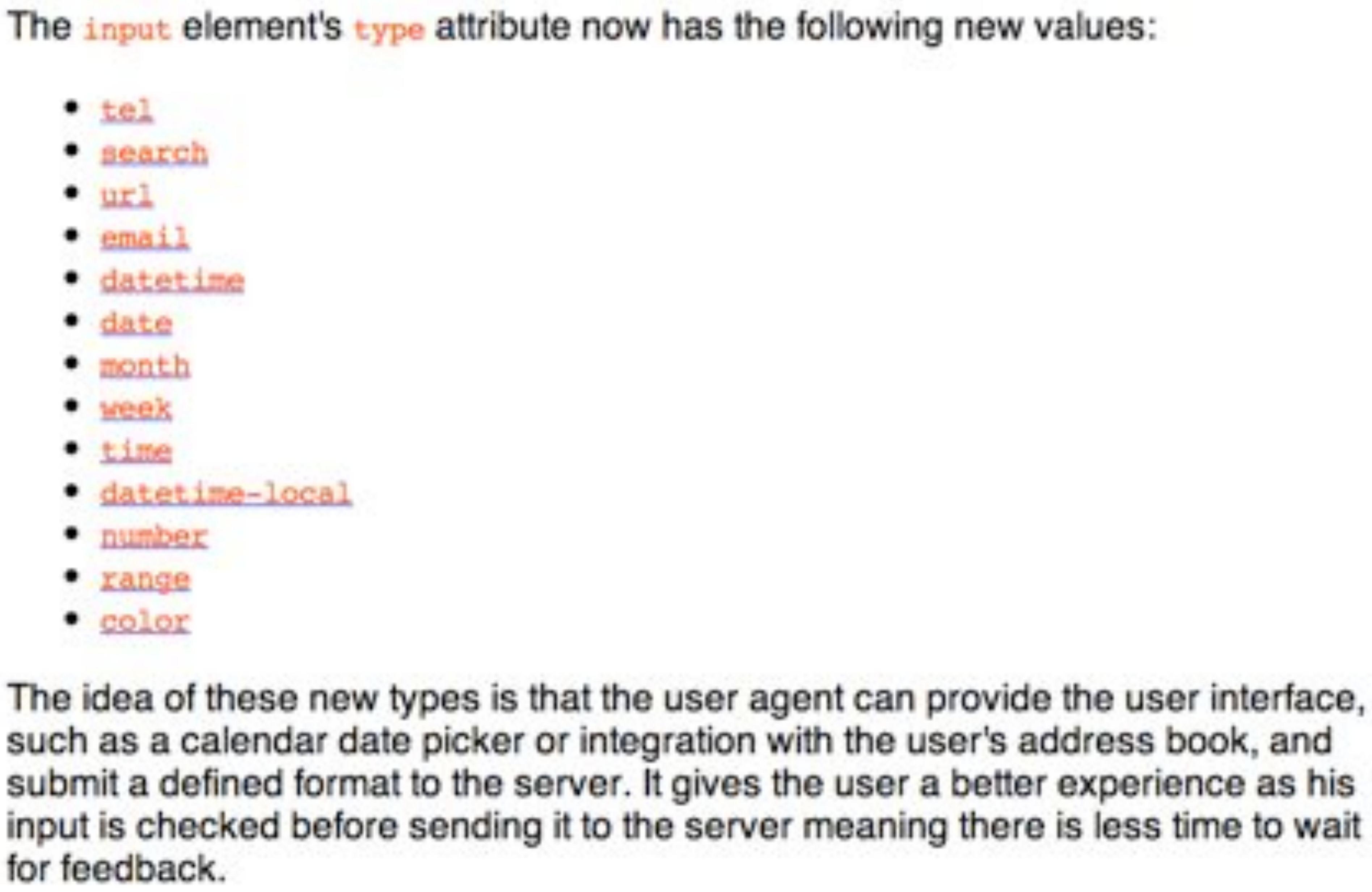
A FORM OF MADNESS

For over a decade, web forms comprised just a few kinds of fields. The most common kinds were

Field Type	HTML Code	Notes
checkbox	`<input type="checkbox">`	can be toggled on or off
radio button	`<input type="radio">`	can be grouped with other inputs
password field	`<input type="password">`	echos dots instead of characters as you type
drop-down lists	`<select><option>…`	
file picker	`<input type="file">`	pops up an "open file" dialog
submit button	`<input type="submit">`	
plain text	`<input type="text">`	the `type` attribute can be omitted

All of these input types still work in HTML5. If you're "upgrading to HTML5" (perhaps by changing your DOCTYPE), you don't need to make a single change to your web forms. Hooray for backward compatibility!

http://diveintohtml5.org/



The `input` element's `type` attribute now has the following new values:

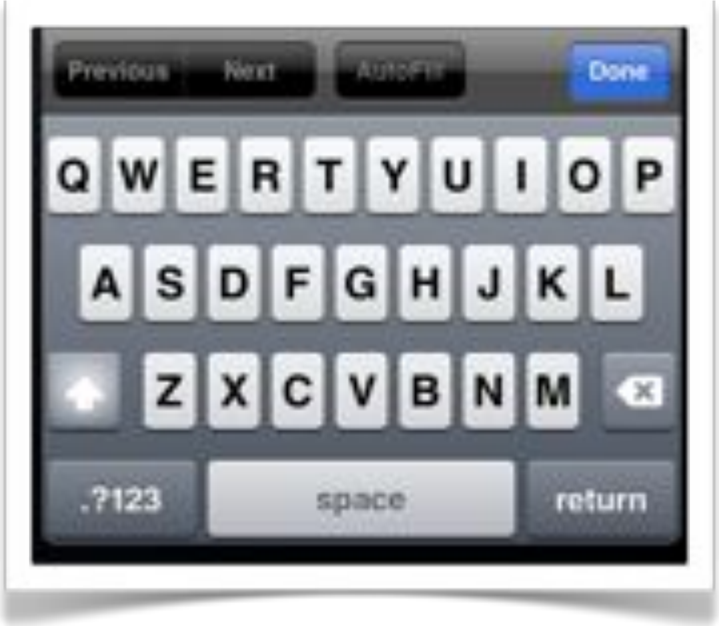
- `tel`
- `search`
- `url`
- `email`
- `datetime`
- `date`
- `month`
- `week`
- `time`
- `datetime-local`
- `number`
- `range`
- `color`

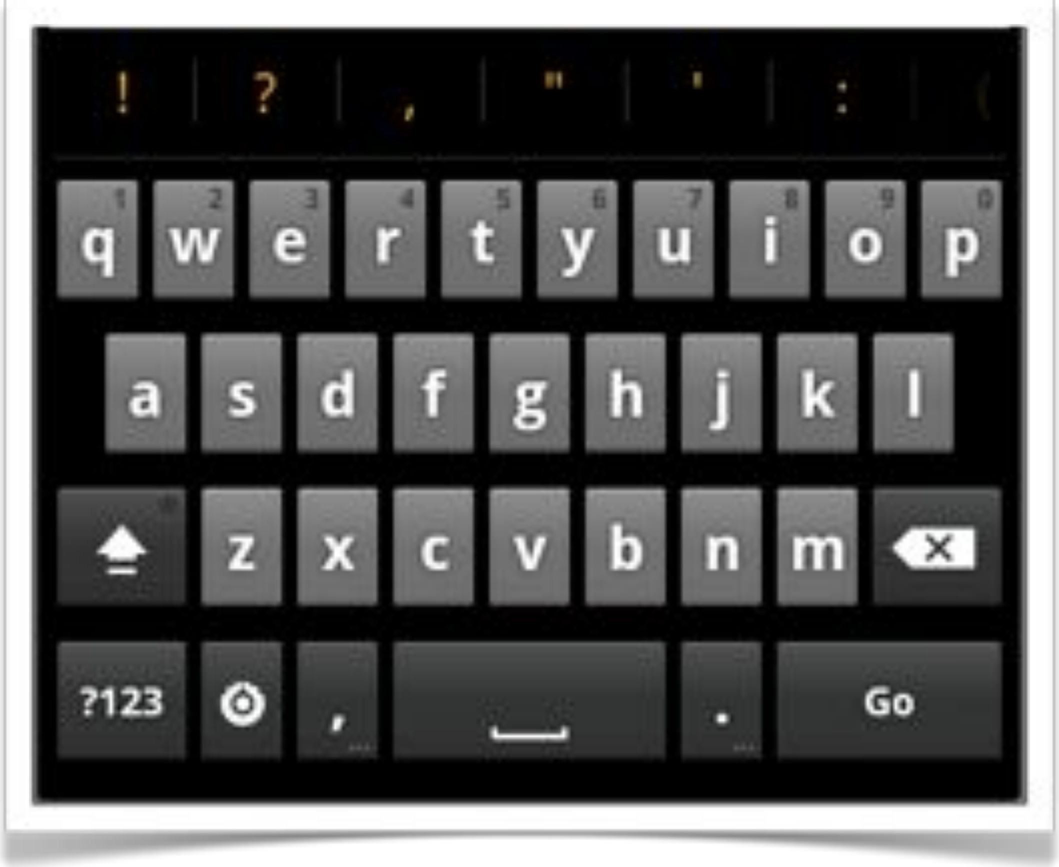
The idea of these new types is that the user agent can provide the user interface, such as a calendar date picker or integration with the user's address book, and submit a defined format to the server. It gives the user a better experience as his input is checked before sending it to the server meaning there is less time to wait for feedback.

http://dev.w3.org/html5/html4-differences/

text

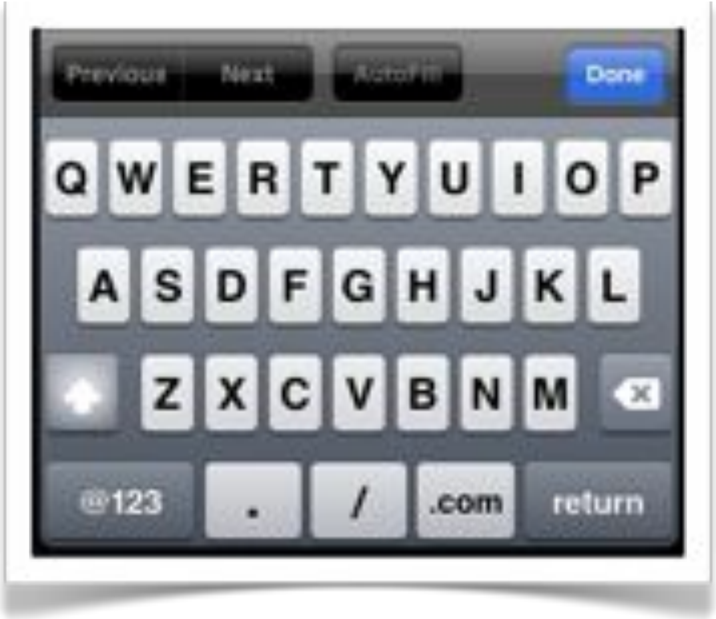
```
<input type=”text” />
```

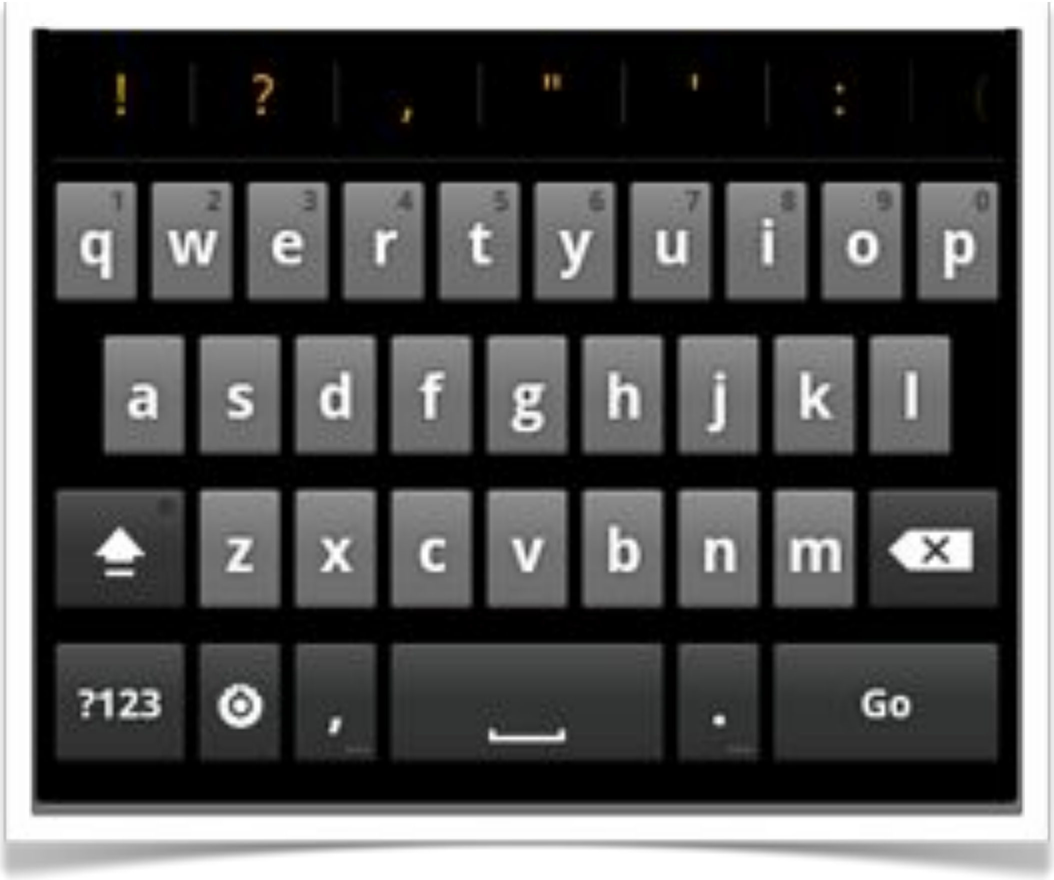

Previous
Next
AutoFill
Done
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M
.?123
space
return


! ? , " ' :
q w e r t y u i o p
1 2 3 4 5 6 7 8 9 0
a s d f g h j k l
z x c v b n m
?123
,
.
Go

url

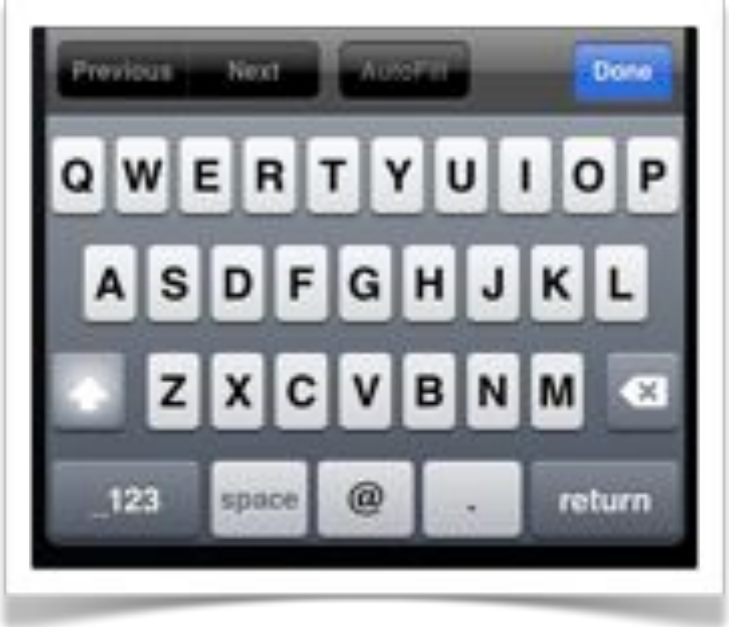
```
<input type="url" />
```

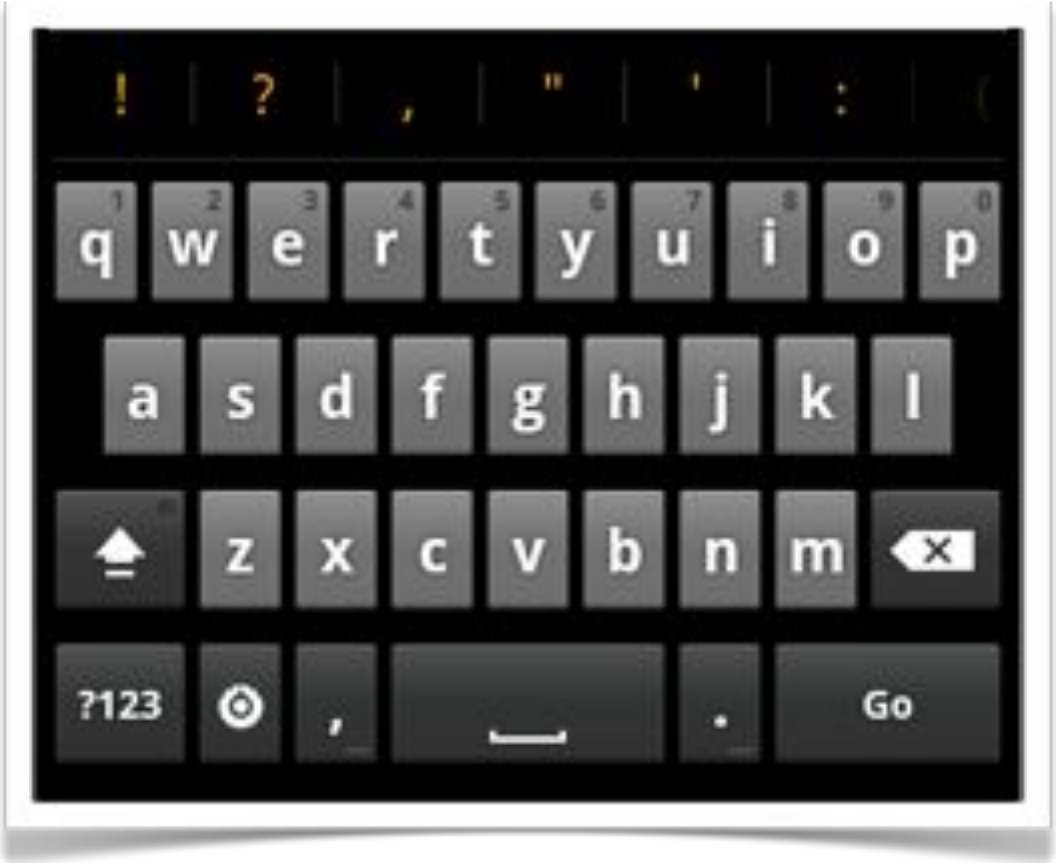

Previous
Next
AutoFill
Done
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M
@123
.
/
.com
return


! ? , " ' : (
q w e r t y u i o p
a s d f g h j k l
z x c v b n m
?123
,
.
Go

email

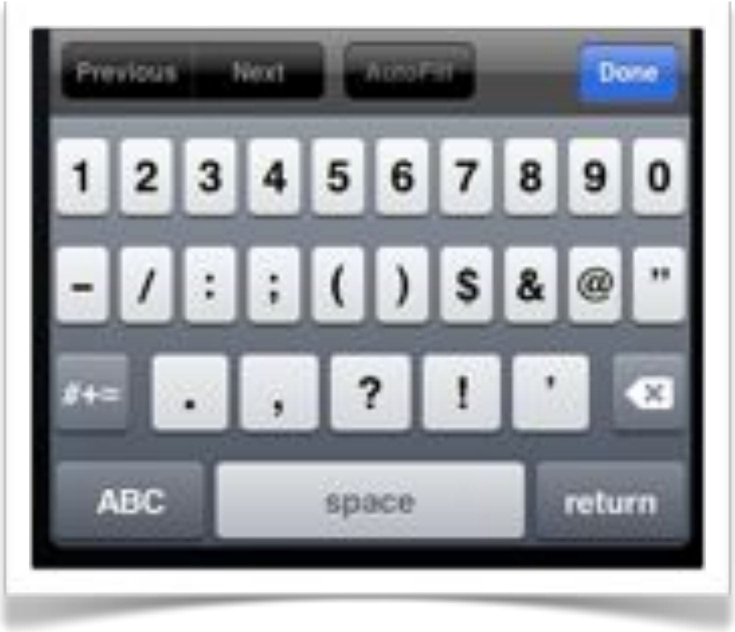
```
<input type=”email” />
```

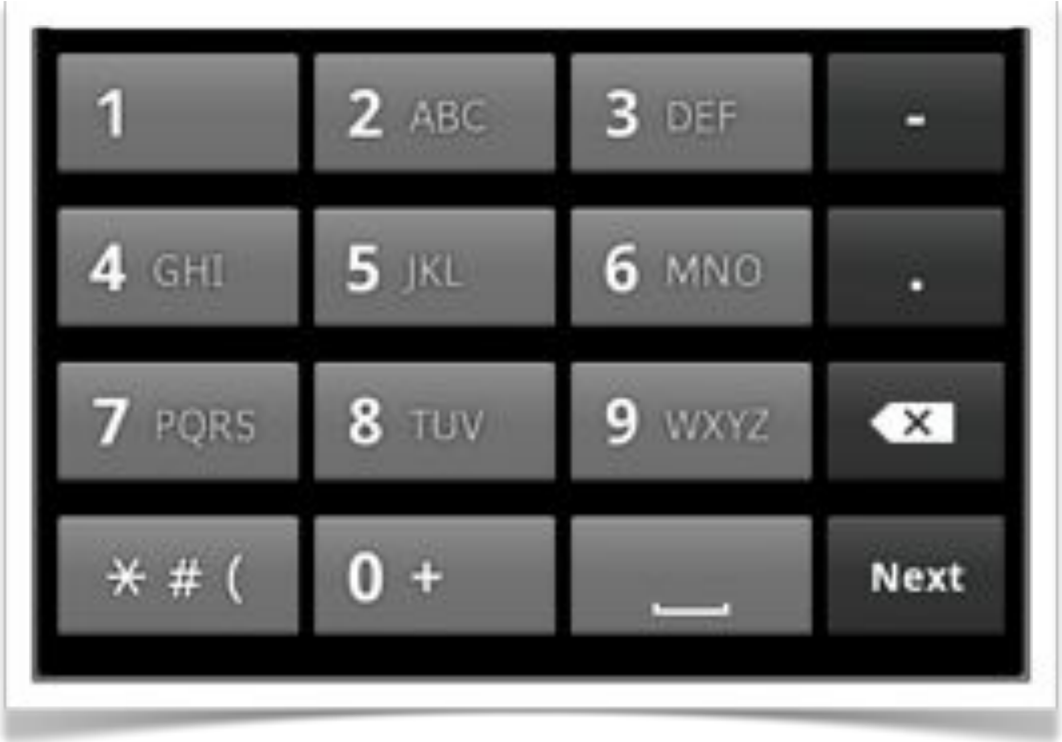

Previous
Next
AutoFill
Done
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M
.?123
space
@
.
return


! ? , " ' : (
1 2 3 4 5 6 7 8 9 0
q w e r t y u i o p
a s d f g h j k l
z x c v b n m
?123
,
.
Go

number

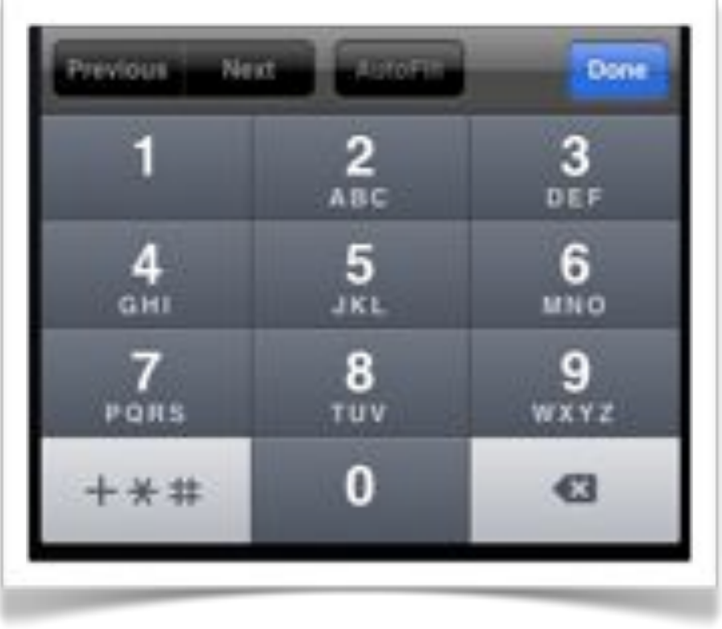
```
<input type="number" />
```

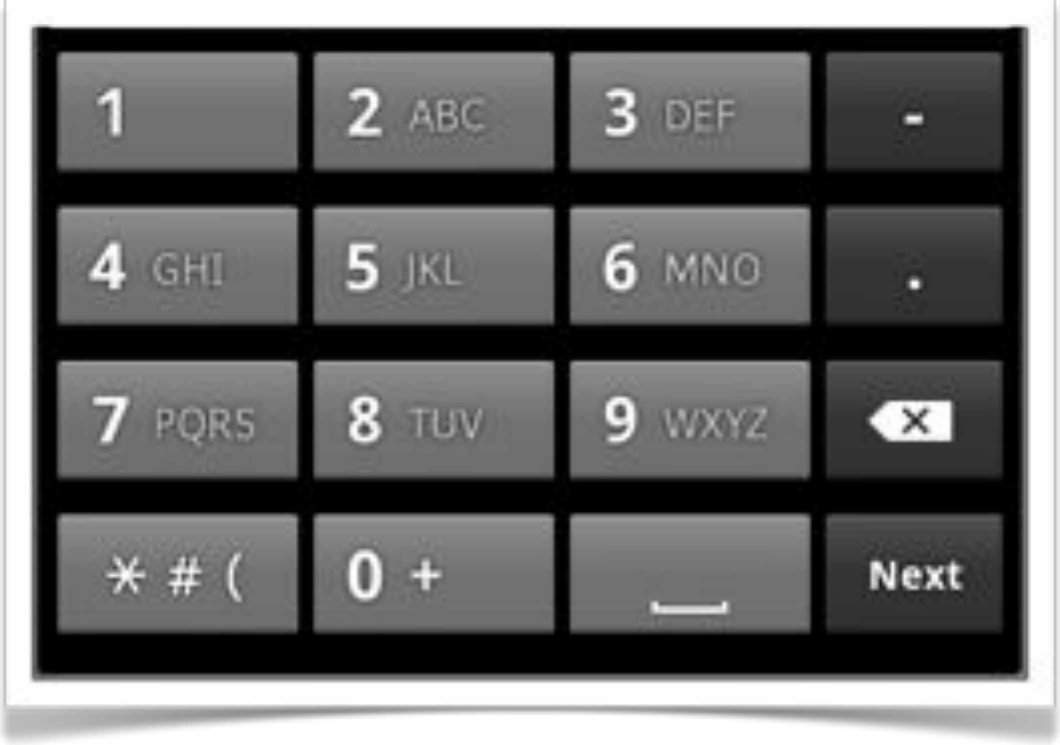

Previous
Next
AutoFill
Done
1 2 3 4 5 6 7 8 9 0
- / : ; ( ) $ & @ "
#+= . , ? ! '
ABC
space
return


1
2 ABC
3 DEF
-
4 GHI
5 JKL
6 MNO
.
7 PQRS
8 TUV
9 WXYZ
* # (
0 +
Next

tel

```
<input type=”tel” />
```


Previous
Next
AutoFill
Done
1
2 ABC
3 DEF
4 GHI
5 JKL
6 MNO
7 PQRS
8 TUV
9 WXYZ
+*#
0


1
2 ABC
3 DEF
-
4 GHI
5 JKL
6 MNO
.
7 PQRS
8 TUV
9 WXYZ
* # (
0 +
Next

Stupid Link Tricks

Email:

```
<a href=”mailto:scott@thirstyhead.com”>email me</a>
```

Phone:

```
<a href=”tel:13035551212”>phone me</a>
```

SMS:

```
<a href=”sms:13035551212”>text me</a>
```

Map:

```
<a href=”http://maps.google.com/maps?
q=123+Main+Denver+CO+80020”>find me</a>
```

Driving Directions:

```
<a href=”http://maps.google.com/maps?
daddr=123+Main+Denver+CO+80020&
saddr=987+Center+St+Broomfield+CO+80020”>visit me</a>
```

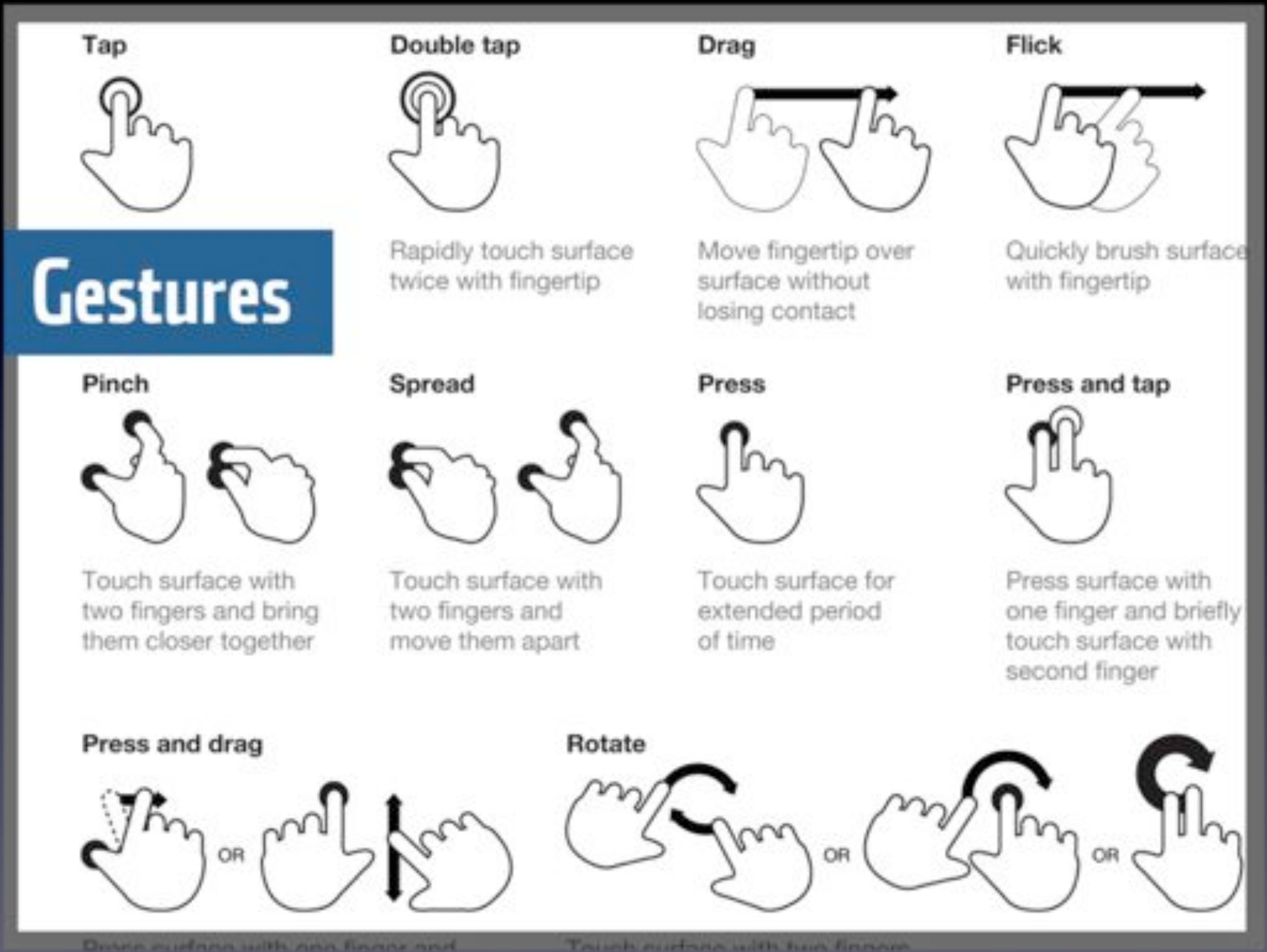
Touch Events

No Mouse == No Hover

touch++

gesture++

Gestures



Tap

Double tap

Rapidly touch surface twice with fingertip

Drag

Move fingertip over surface without losing contact

Flick

Quickly brush surface with fingertip

Pinch

Touch surface with two fingers and bring them closer together

Spread

Touch surface with two fingers and move them apart

Press

Touch surface for extended period of time

Press and tap

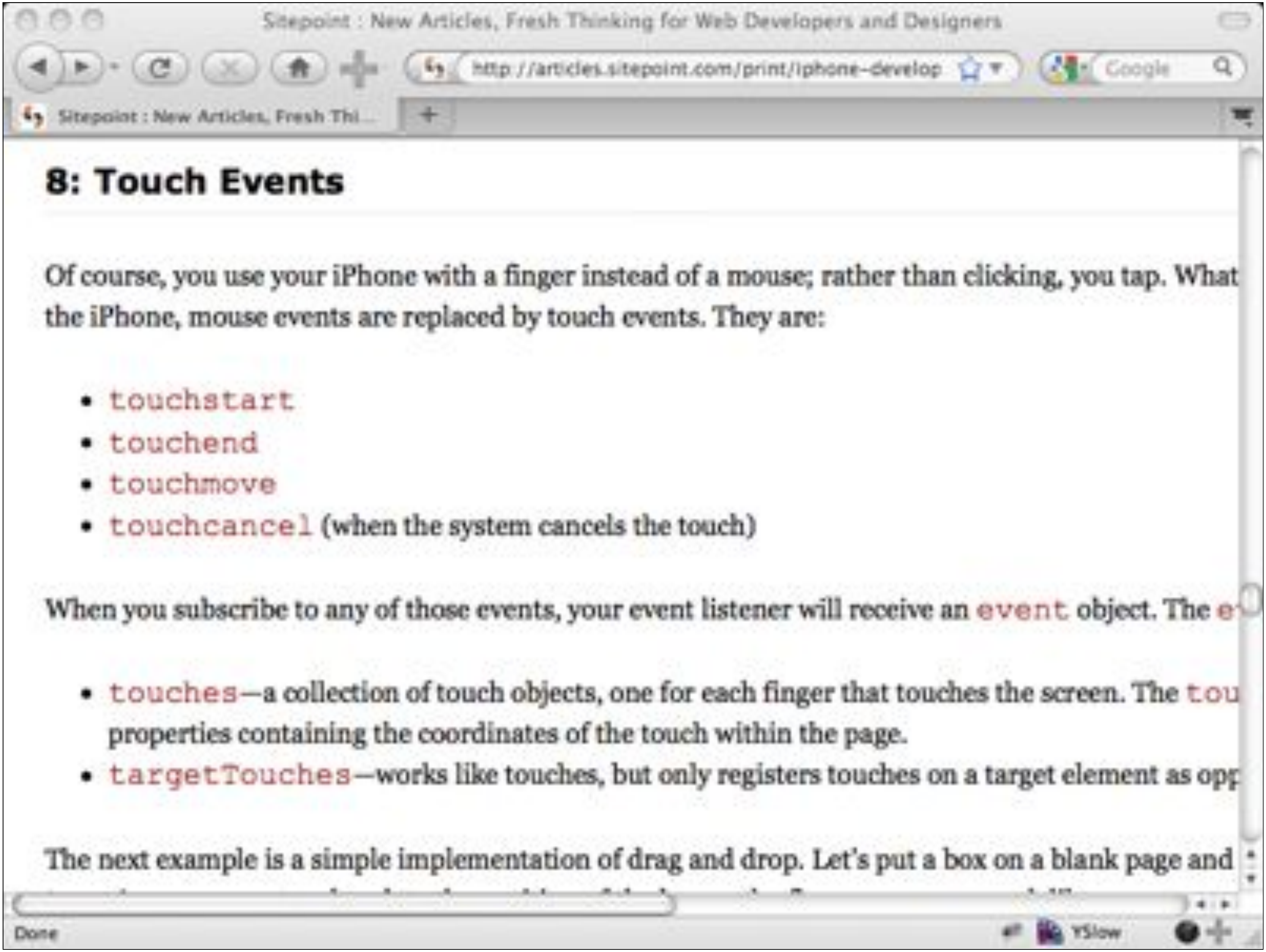
Press surface with one finger and briefly touch surface with second finger

Press and drag

Press surface with one finger and

Rotate

Touch surface with two fingers


Sitepoint : New Articles, Fresh Thinking for Web Developers and Designers
http://articles.sitepoint.com/print/iphone-develop
Google
Sitepoint : New Articles, Fresh Thi...
Done
YSlow

8: Touch Events

Of course, you use your iPhone with a finger instead of a mouse; rather than clicking, you tap. What the iPhone, mouse events are replaced by touch events. They are:

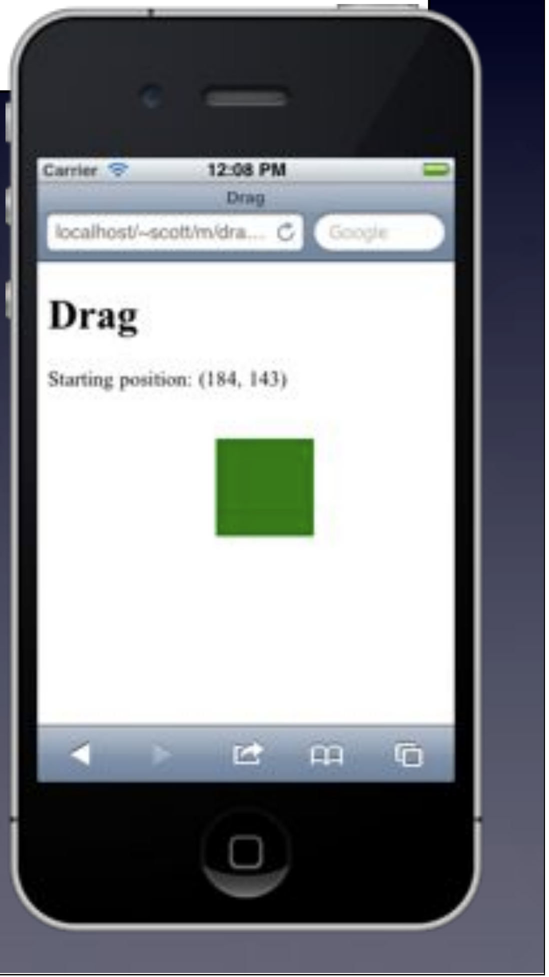
- `touchstart`
- `touchend`
- `touchmove`
- `touchcancel` (when the system cancels the touch)

When you subscribe to any of those events, your event listener will receive an `event` object. The `e`

- `touches`—a collection of touch objects, one for each finger that touches the screen. The `tou` properties containing the coordinates of the touch within the page.
- `targetTouches`—works like touches, but only registers touches on a target element as opp

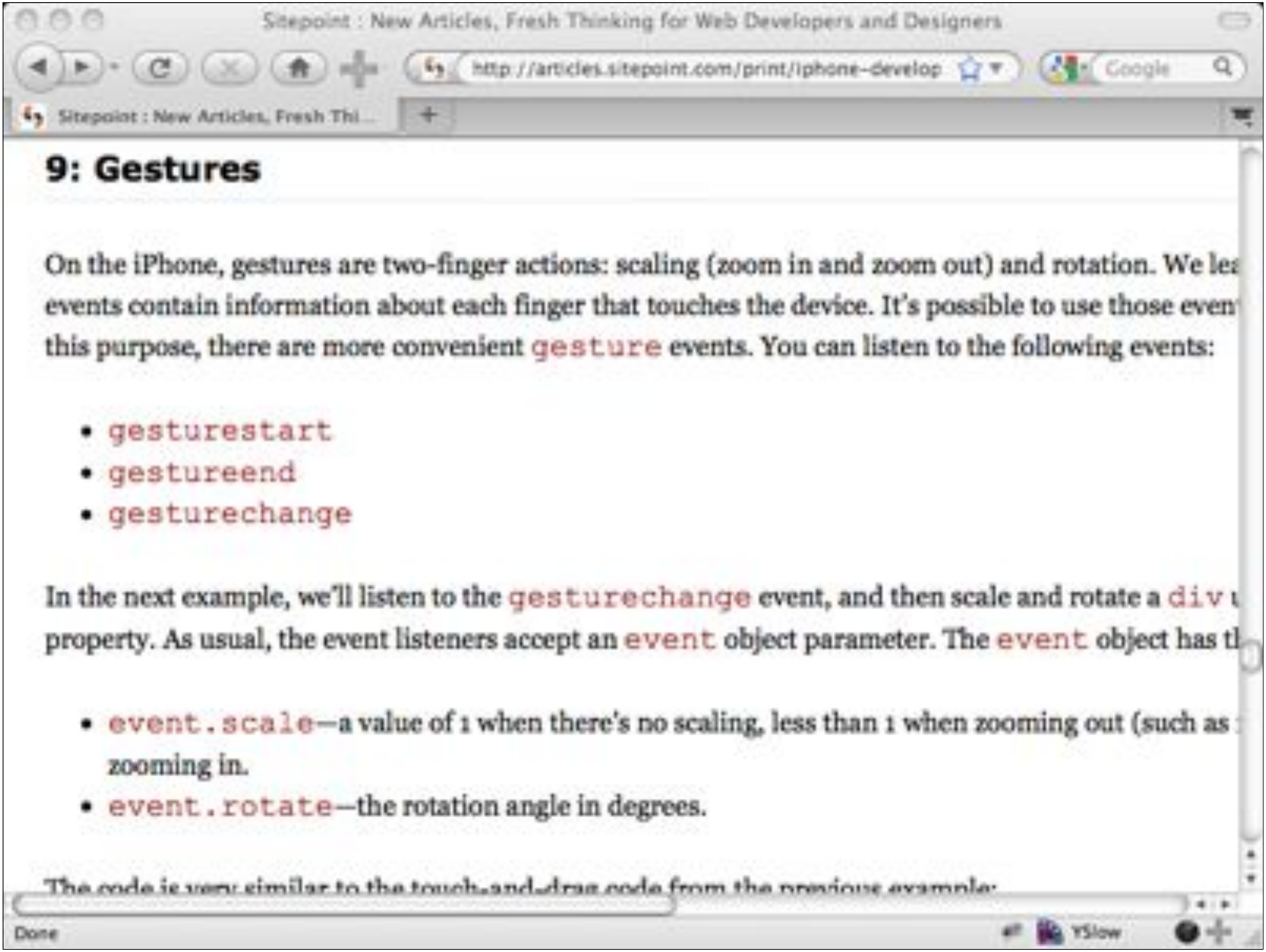
The next example is a simple implementation of drag and drop. Let's put a box on a blank page and

```
var square = document.getElementById("square")

square.addEventListener('touchmove', function(e){
   //NOTE: comment this out to see default browser behavior
   // (viewport scroll)
   e.preventDefault();

   var square = document.getElementById("square")
   square.style.left = e.targetTouches[0].screenX + "px"
   square.style.top = e.targetTouches[0].screenY + "px"

},false);
```



Drag

Starting position: (184, 143)


Sitepoint : New Articles, Fresh Thinking for Web Developers and Designers
http://articles.sitepoint.com/print/iphone-develop
Google
Sitepoint : New Articles, Fresh Thi...
Done
YSlow

9: Gestures

On the iPhone, gestures are two-finger actions: scaling (zoom in and zoom out) and rotation. We lea
events contain information about each finger that touches the device. It's possible to use those even
this purpose, there are more convenient `gesture` events. You can listen to the following events:

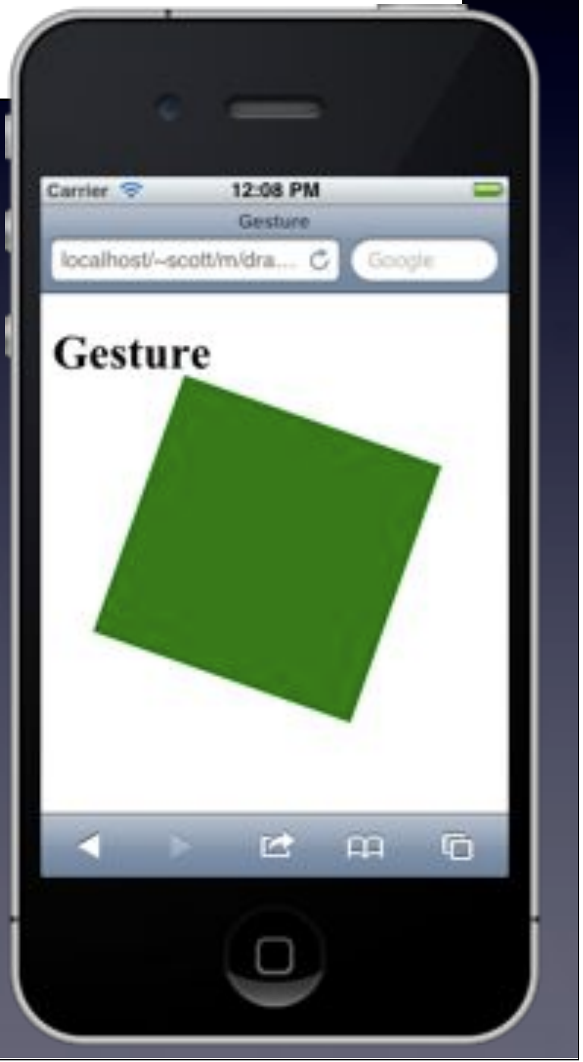
- `gesturestart`
- `gestureend`
- `gesturechange`

In the next example, we'll listen to the `gesturechange` event, and then scale and rotate a `div` u
property. As usual, the event listeners accept an `event` object parameter. The `event` object has th

- `event.scale`—a value of 1 when there's no scaling, less than 1 when zooming out (such as
zooming in.
- `event.rotate`—the rotation angle in degrees.

The code is very similar to the touch-and-drag code from the previous example:

```
var square = document.getElementById("square")
square.addEventListener('gesturechange', function(e){
   e.preventDefault();

   var square = document.getElementById("square")
   square.style.webkitTransform = 'scale(' + e.scale + ') ' +
                                  'rotate('+ e.rotation + 'deg)';

},false);
```



Screen / Window Size

Portrait / Landscape

Form Elements

Stupid Link Tricks

Touch Events

a lot...

Local Views,
Remote Data

Application Cache

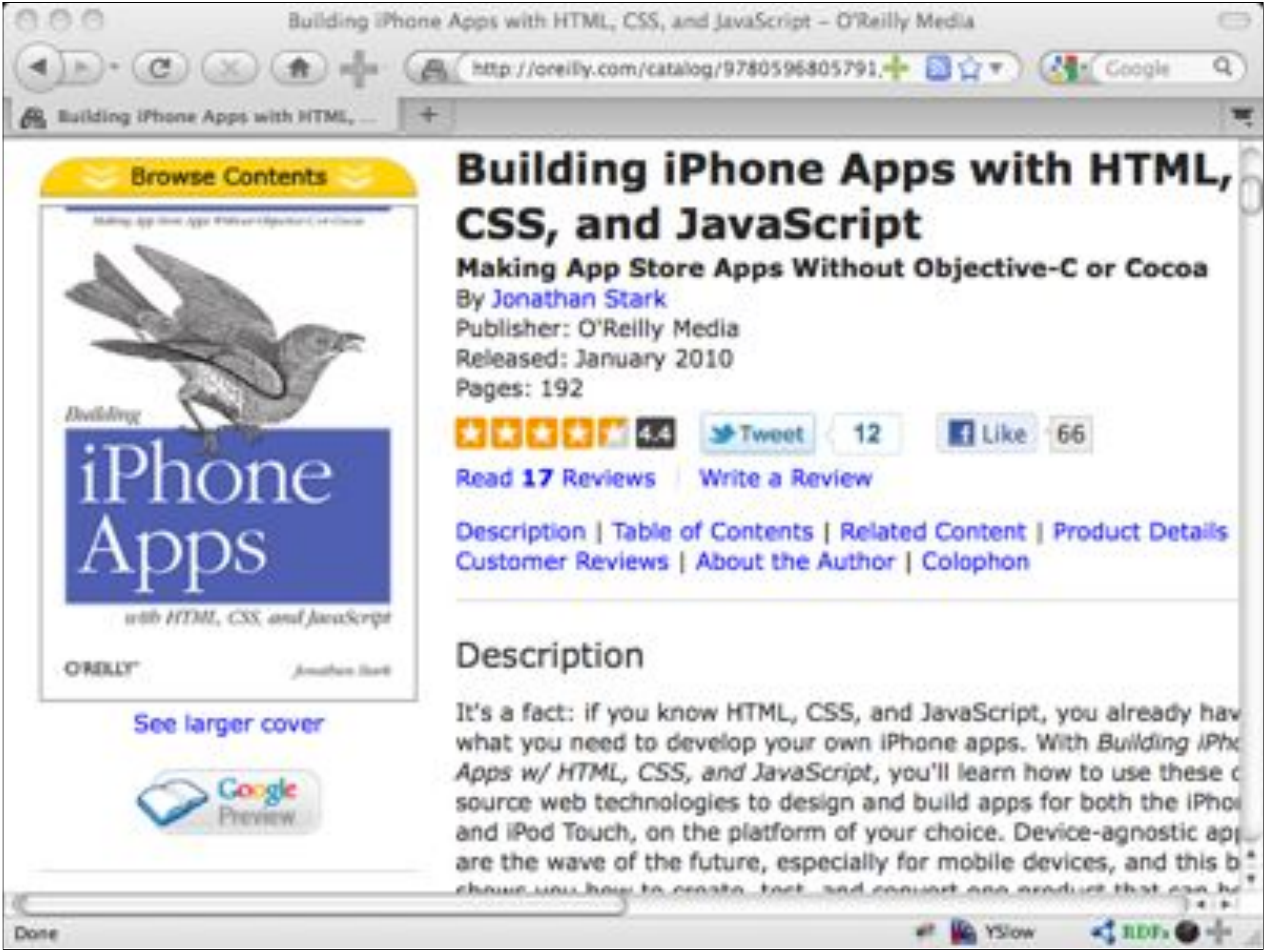
Local Storage

Recipe for a single page mobile app:

1.) All “pages” are #divs in the same page

2.) All “links” simply show / hide #divs

3.) All “data” is an AJAX request away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Jonathan Stark
See larger cover
Google Preview
4.4
Tweet
12
Like
66
Done
YSlow
RDFa

Building iPhone Apps with HTML, CSS, and JavaScript

Making App Store Apps Without Objective-C or Cocoa

By Jonathan Stark
Publisher: O'Reilly Media
Released: January 2010
Pages: 192

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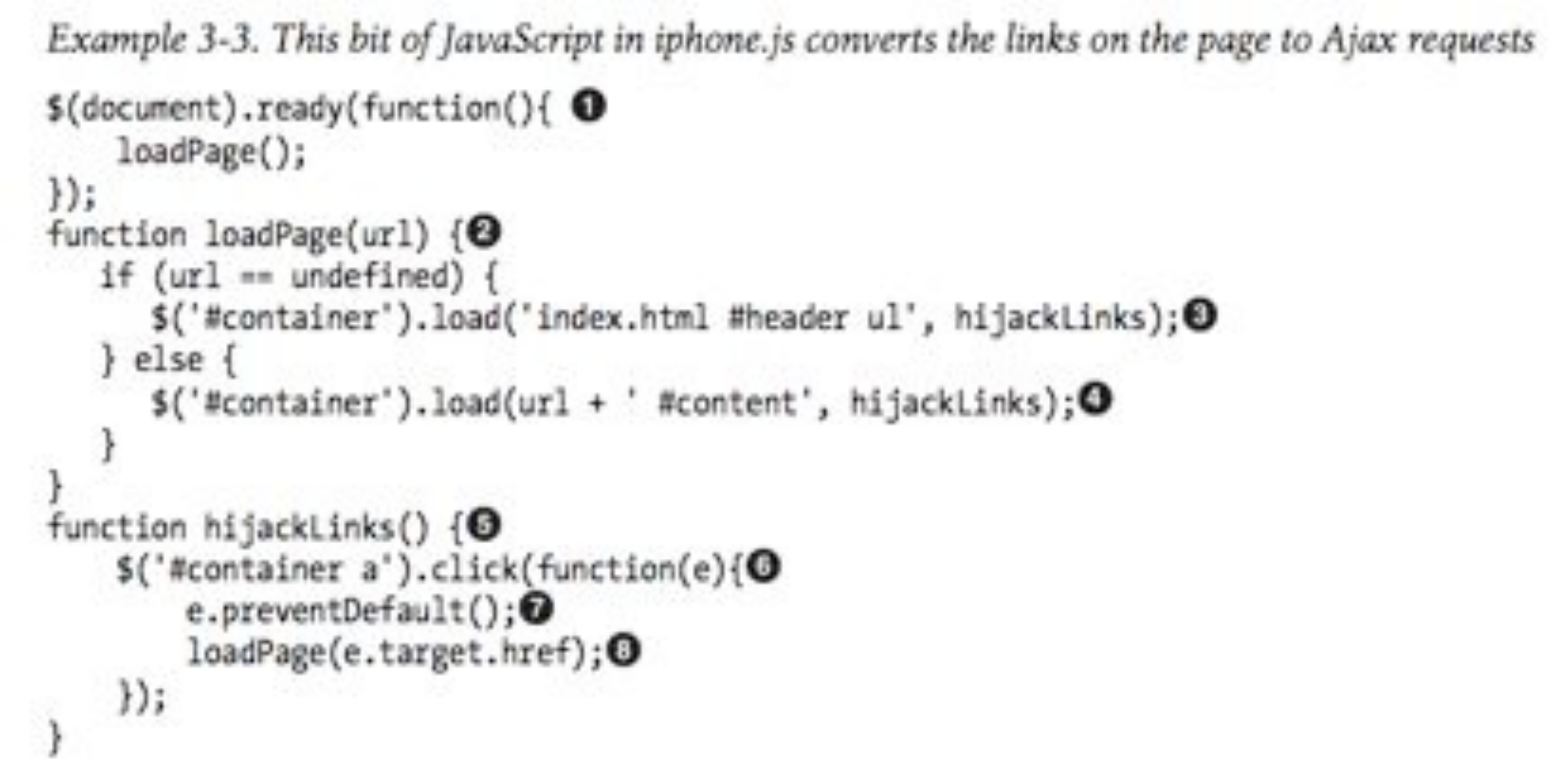
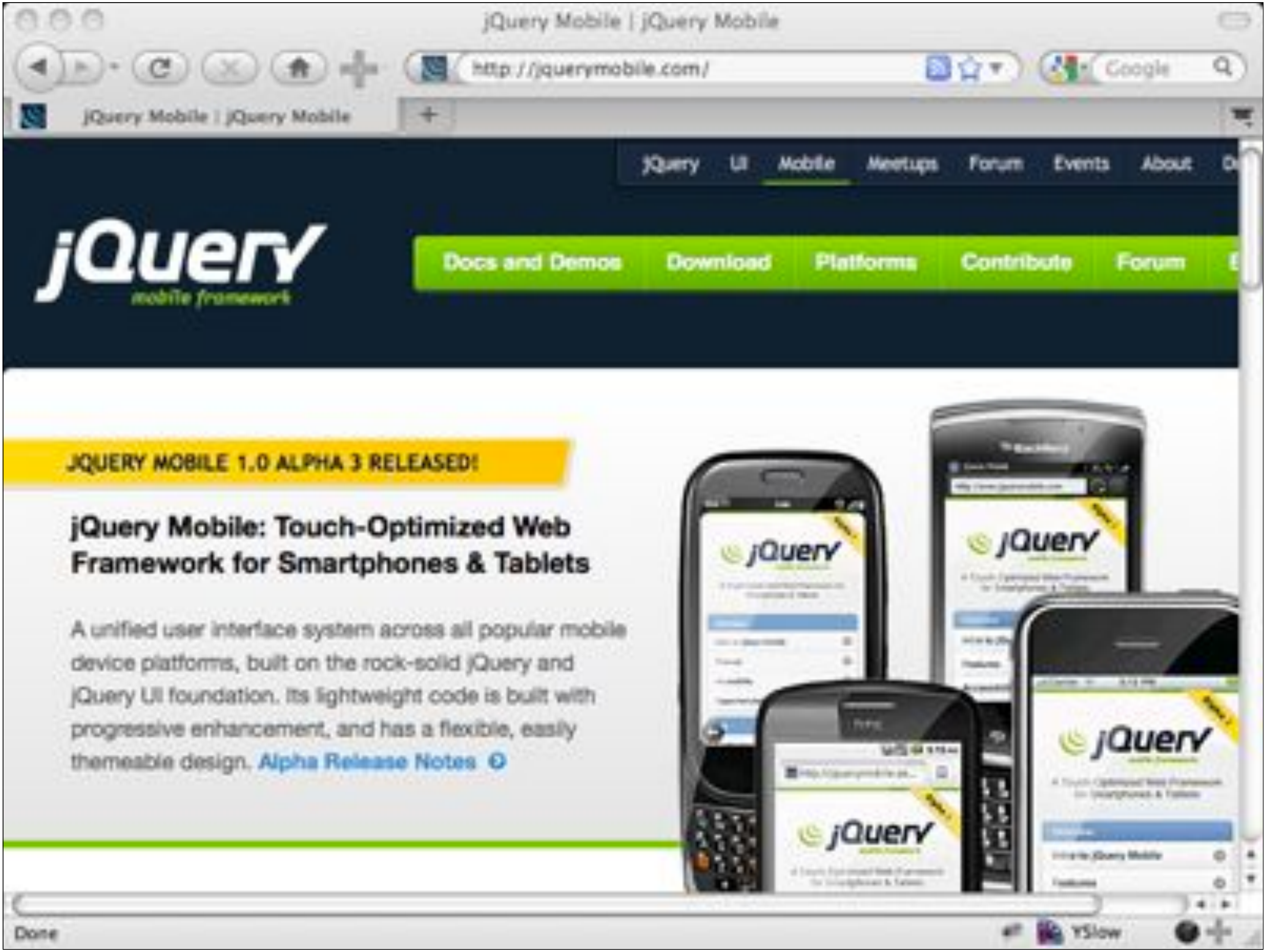
Description

It's a fact: if you know HTML, CSS, and JavaScript, you already hav
what you need to develop your own iPhone apps. With *Building iPho*
Apps w/ HTML, CSS, and JavaScript, you'll learn how to use these o
source web technologies to design and build apps for both the iPho
and iPod Touch, on the platform of your choice. Device-agnostic ap
are the wave of the future, especially for mobile devices, and this b



Example 3-3. This bit of JavaScript in iphone.js converts the links on the page to Ajax requests

```
$(document).ready(function(){ ❶
    loadPage();
});
function loadPage(url) {❷
   if (url == undefined) {
      $('#container').load('index.html #header ul', hijackLinks);❸
   } else {
      $('#container').load(url + ' #content', hijackLinks);❹
   }
}
function hijackLinks() {❺
    $('#container a').click(function(e){❻
        e.preventDefault();❼
        loadPage(e.target.href);❽
    });
}
```



JQUERY MOBILE 1.0 ALPHA 3 RELEASED!

jQuery Mobile: Touch-Optimized Web Framework for Smartphones & Tablets

A unified user interface system across all popular mobile device platforms, built on the rock-solid jQuery and jQuery UI foundation. Its lightweight code is built with progressive enhancement, and has a flexible, easily themeable design. Alpha Release Notes

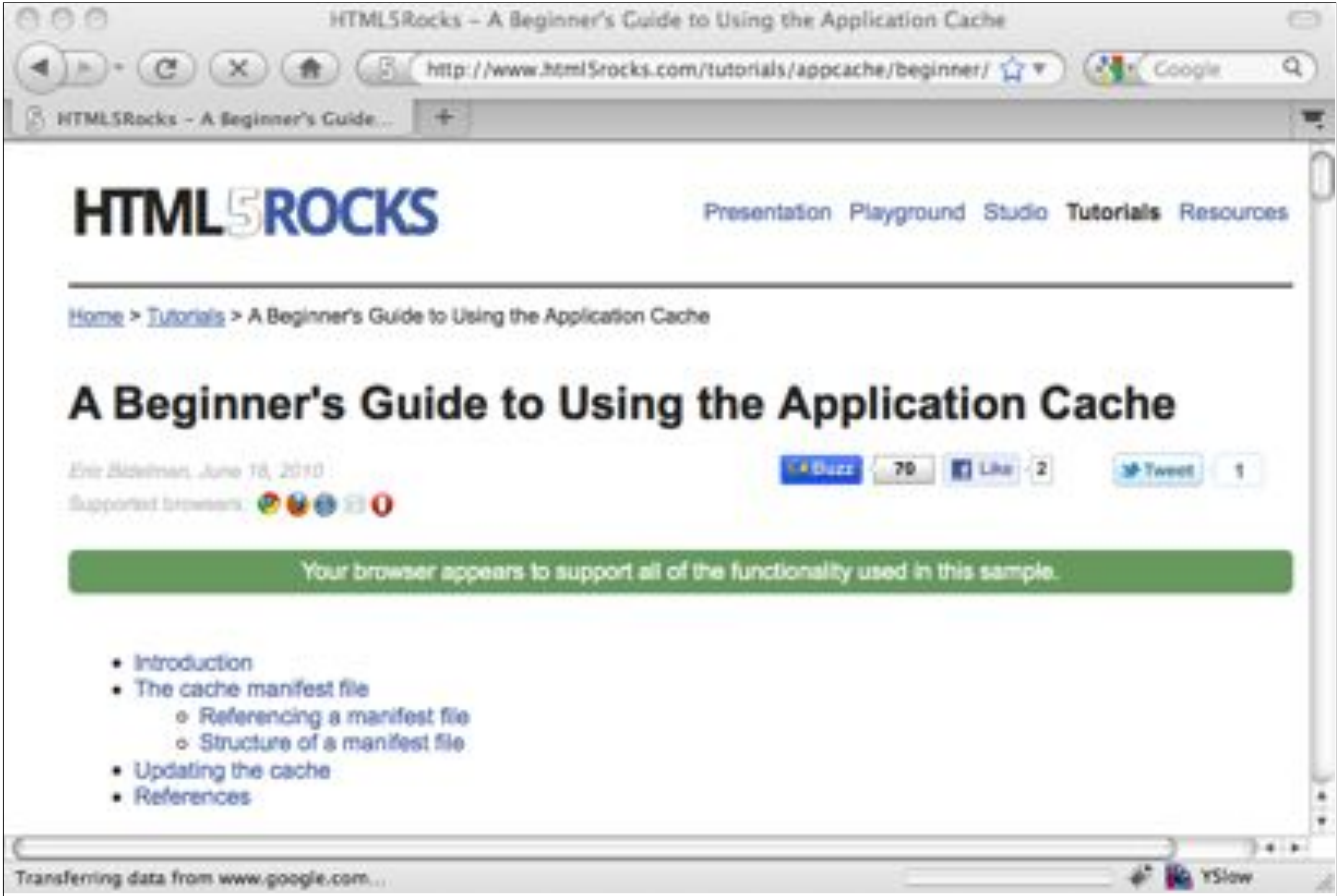
```
<!-- home -->
<div data-role="page" id="home">
   <div data-role="content" class="gradient">
    <nav id="home-nav">
      <ul>
        <li><a href="#mytv">MyTV</a></li>
        <li><a href="#livetv">Live</a></li>
        <li><a href="#schedule">Schedule</a></li>
        <li><a href="#myplaylist">My Playlist</a></li>
        <li><a href="#help">Help</a></li>
      </ul>
    </nav>
  </div>
</div>


<!-- mytv -->
<div data-role="page" id="mytv">
  <div data-role="header">
    <h1>MyTV</h1>
   <a href="#home">Back</a>
  </div>
</div>
```

Application Cache

Then:
Server-side hints

Now:
HTML5 Application Cache


HTML5Rocks – A Beginner's Guide to Using the Application Cache
http://www.html5rocks.com/tutorials/appcache/beginner/
Google
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Resources
Buzz
79
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2
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1
YSlow

Home > Tutorials > A Beginner's Guide to Using the Application Cache

A Beginner's Guide to Using the Application Cache

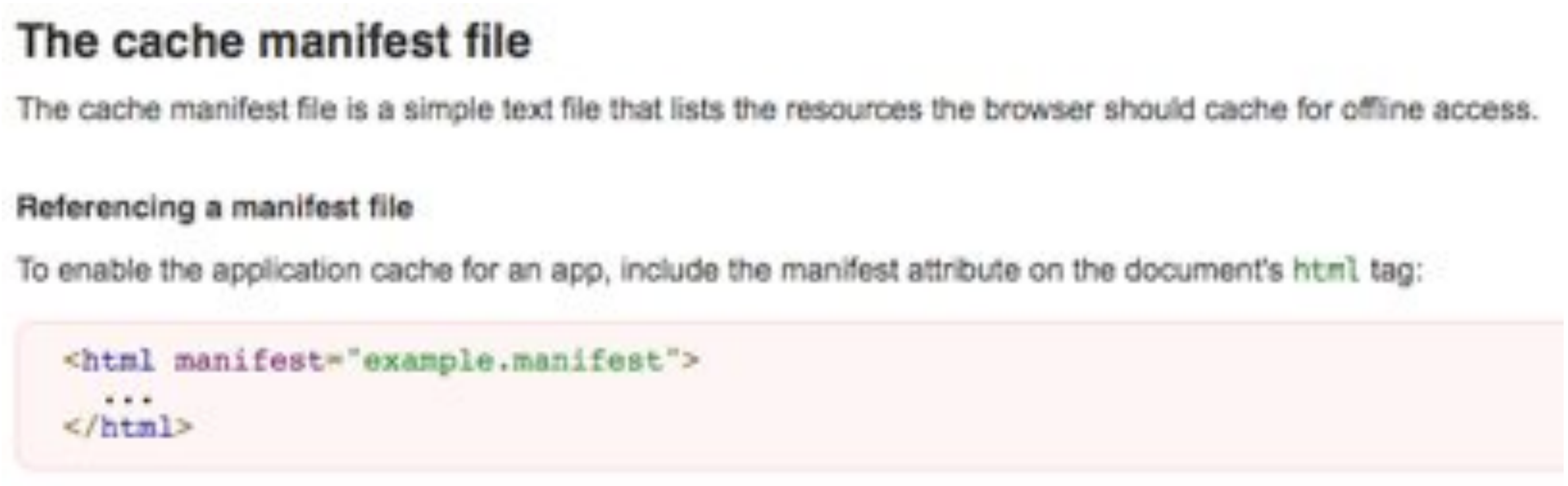
Eric Bidelman, June 18, 2010

Supported browsers:

Your browser appears to support all of the functionality used in this sample.

- Introduction
- The cache manifest file
    - Referencing a manifest file
    - Structure of a manifest file
- Updating the cache
- References

Transferring data from www.google.com...



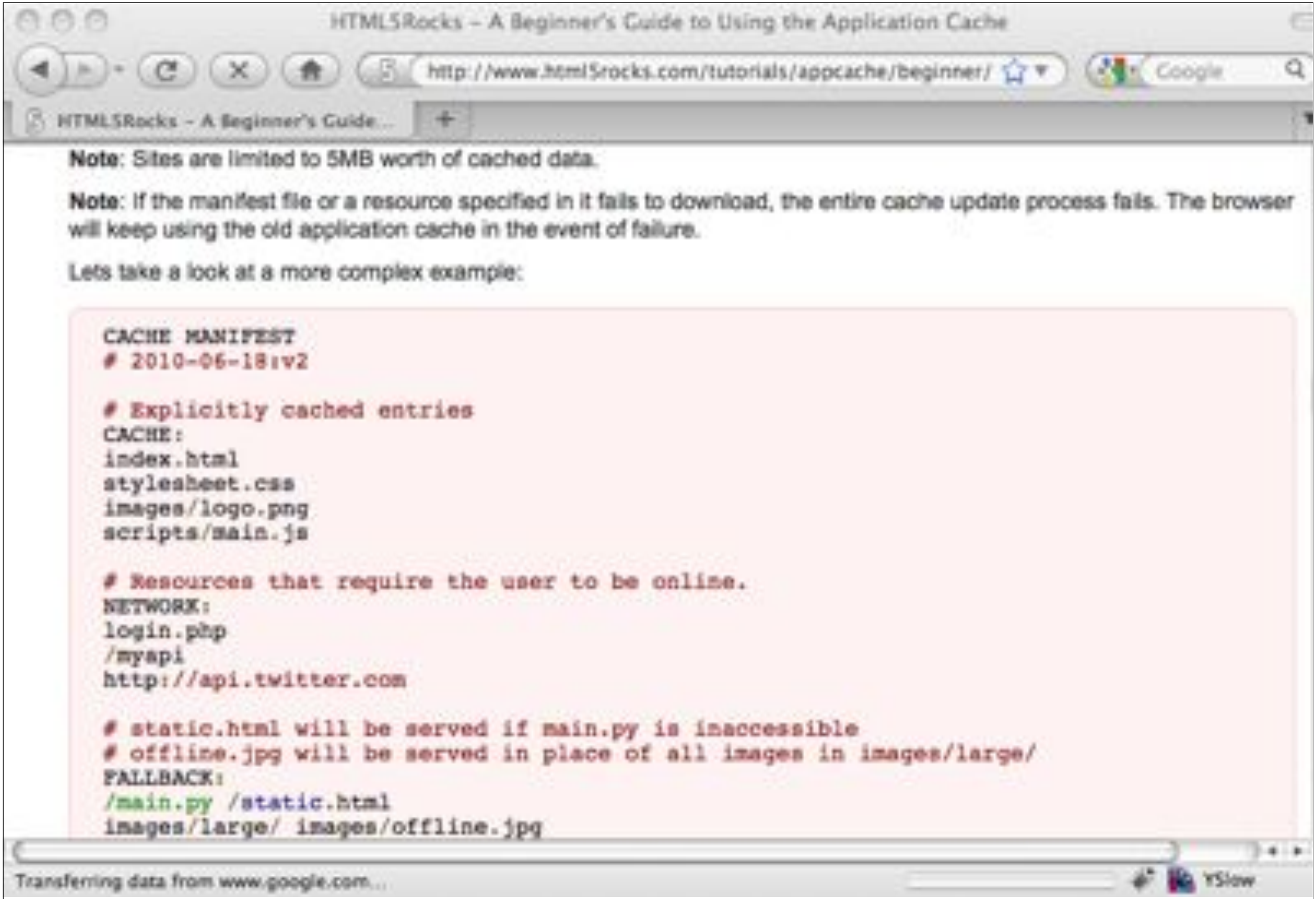
The cache manifest file

The cache manifest file is a simple text file that lists the resources the browser should cache for offline access.

Referencing a manifest file

To enable the application cache for an app, include the manifest attribute on the document's `html` tag:

```
<html manifest="example.manifest">
  ...
</html>
```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http://www.html5rocks.com/tutorials/appcache/beginner/
Google
HTML5Rocks – A Beginner's Guide...
Transferring data from www.google.com...
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Note: Sites are limited to 5MB worth of cached data.

Note: If the manifest file or a resource specified in it fails to download, the entire cache update process fails. The browser will keep using the old application cache in the event of failure.

Lets take a look at a more complex example:

```
CACHE MANIFEST
# 2010-06-18:v2

# Explicitly cached entries
CACHE:
index.html
stylesheet.css
images/logo.png
scripts/main.js

# Resources that require the user to be online.
NETWORK:
login.php
/myapi
http://api.twitter.com

# static.html will be served if main.py is inaccessible
# offline.jpg will be served in place of all images in images/large/
FALLBACK:
/main.py /static.html
images/large/ images/offline.jpg
```

Local Storage

Cookies

Persistent between requests

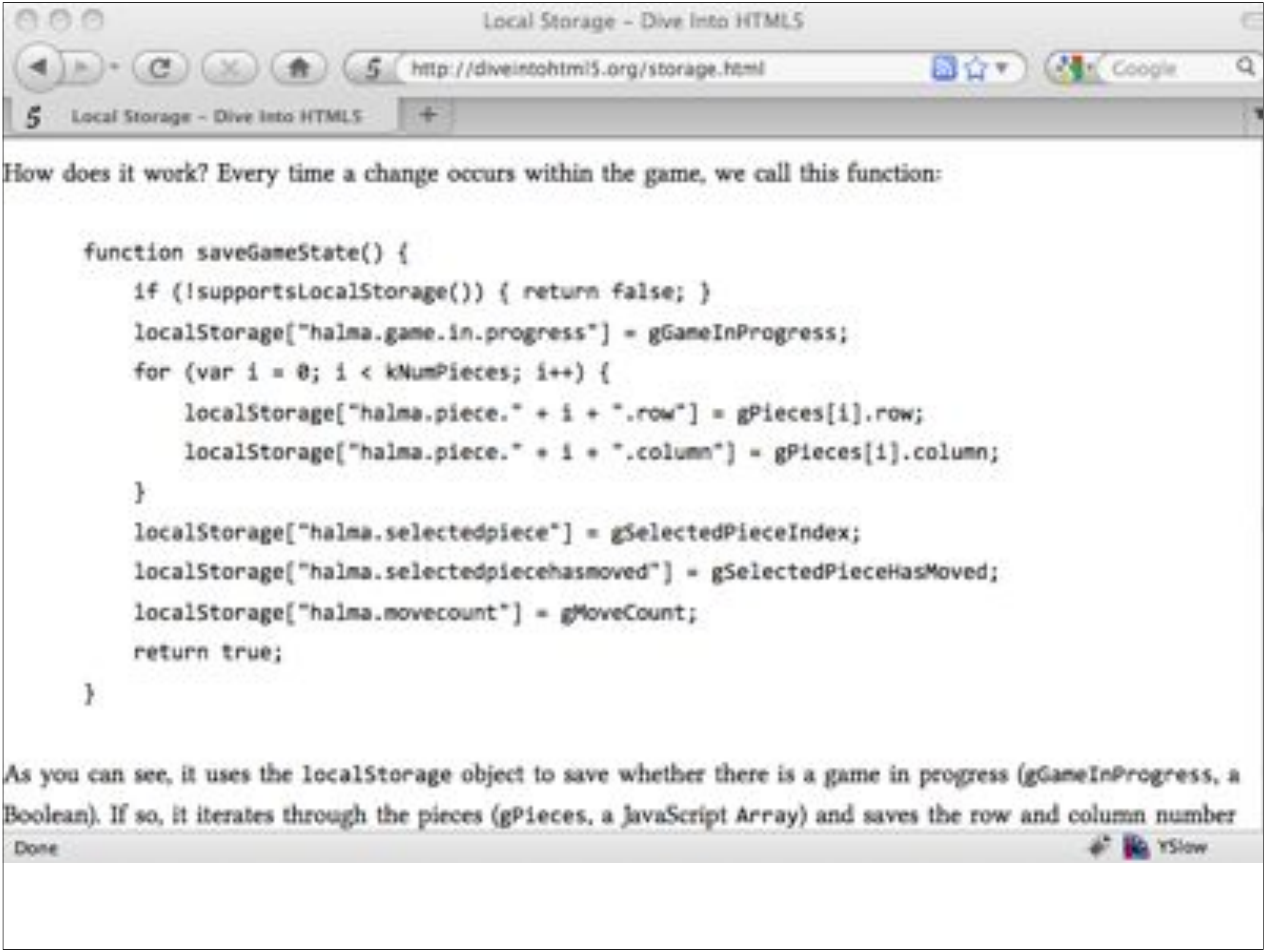
Sent back to server with every HTTP request

Limited to 4k

Local Storage – Dive Into HTML5
http://diveintohtml5.org/storage.html
Google
Local Storage – Dive Into HTML5

USING HTML5 STORAGE

HTML5 Storage is based on named key/value pairs. You store data based on a named key, then you can retrieve that data with the same key. The named key is a string. The data can be any type supported by JavaScript,


Local Storage – Dive Into HTML5
http://diveintohtml5.org/storage.html
Google
Local Storage – Dive Into HTML5
Done
YSlow

How does it work? Every time a change occurs within the game, we call this function:

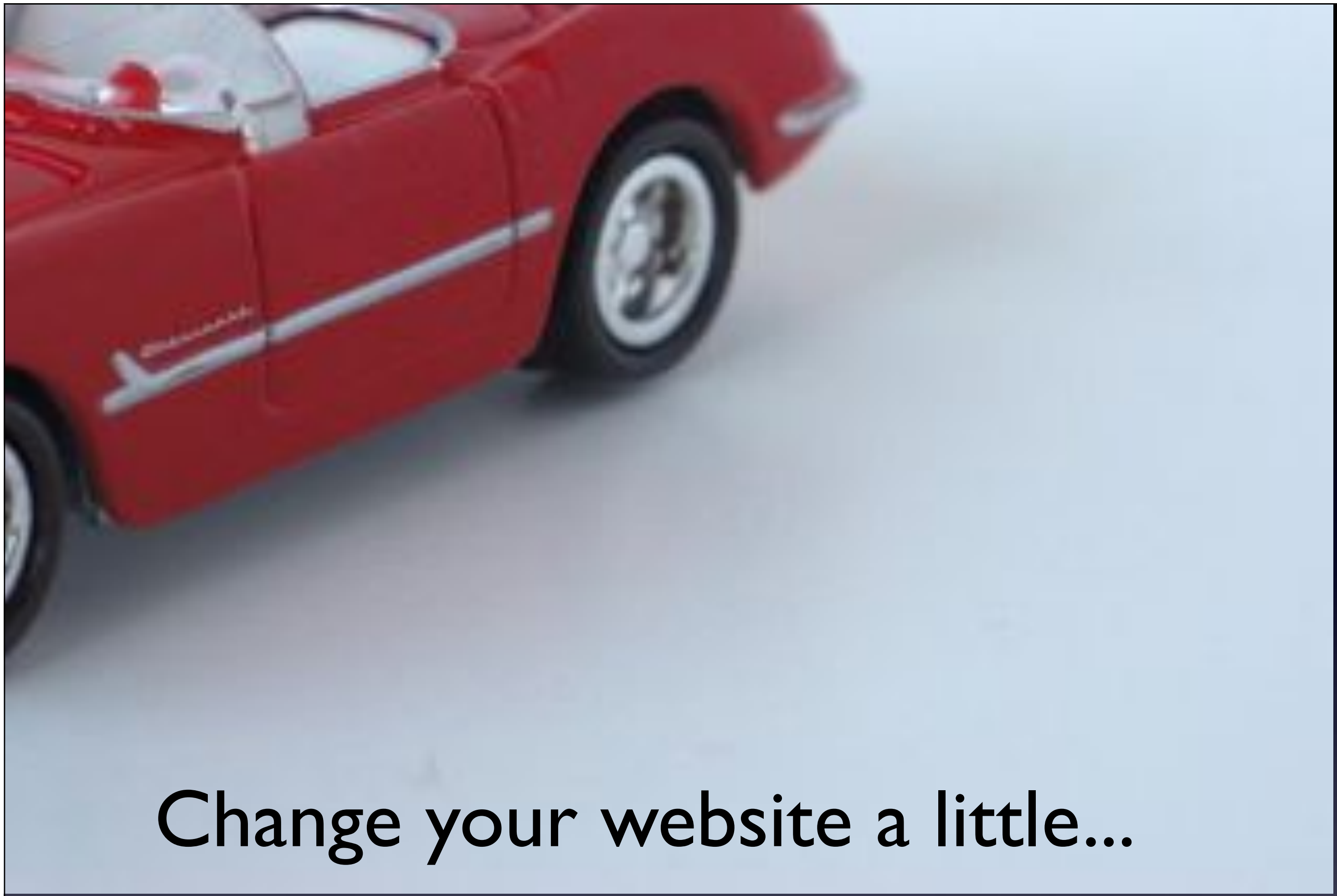
```
function saveGameState() {
    if (!supportsLocalStorage()) { return false; }
    localStorage["halma.game.in.progress"] = gGameInProgress;
    for (var i = 0; i < kNumPieces; i++) {
        localStorage["halma.piece." + i + ".row"] = gPieces[i].row;
        localStorage["halma.piece." + i + ".column"] = gPieces[i].column;
    }
    localStorage["halma.selectedpiece"] = gSelectedPieceIndex;
    localStorage["halma.selectedpiecehasmoved"] = gSelectedPieceHasMoved;
    localStorage["halma.movecount"] = gMoveCount;
    return true;
}
```

As you can see, it uses the `localStorage` object to save whether there is a game in progress (`gGameInProgress`, a Boolean). If so, it iterates through the pieces (`gPieces`, a JavaScript `Array`) and saves the row and column number

Local Views,
Remote Data

Application Cache

Local Storage



Change your website a little...

... or change it a lot

Mobile HTML5

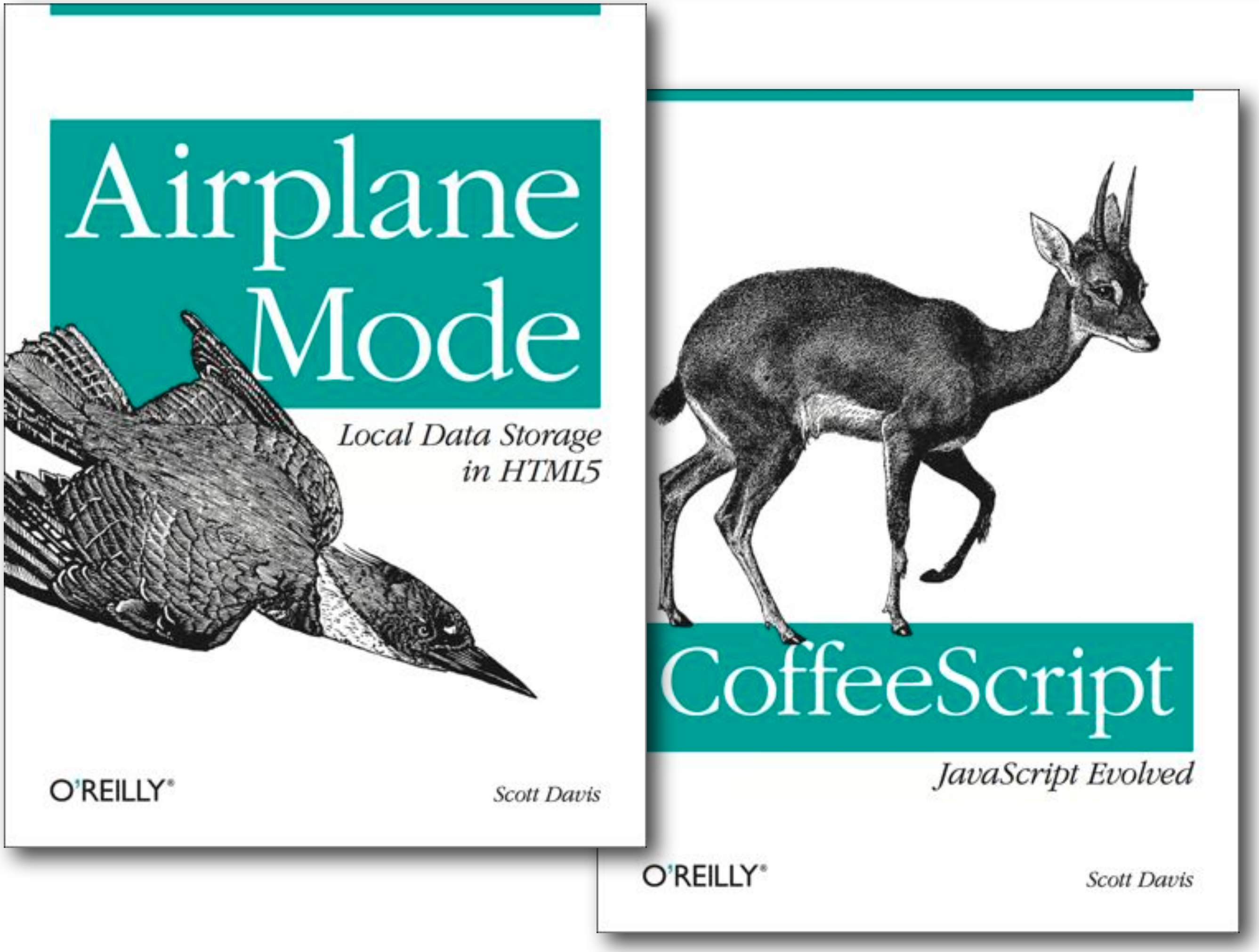
Scott Davis

ThirstyHead.com

ThirstyHead.com

training done right.

Scott Davis
@scottdavis99



Airplane Mode

Local Data Storage in HTML5

O'REILLY

Scott Davis

CoffeeScript

JavaScript Evolved

O'REILLY

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