Understanding Layout and Gestures

In Safari on iOS and Lion

Session 516

Beth Dakin
Safari and WebKit Engineer

These are confidential sessions—please refrain from streaming, blogging, or taking pictures

[redacted]

iPad
9:41 AM
Monday
6
Messages
Calendar
Notes
Reminders
Maps
YouTube
Videos
Contacts
Game Center
iTunes
App Store
Newsstand
FaceTime
Camera
Photo Booth
Settings
Safari
Mail
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Music

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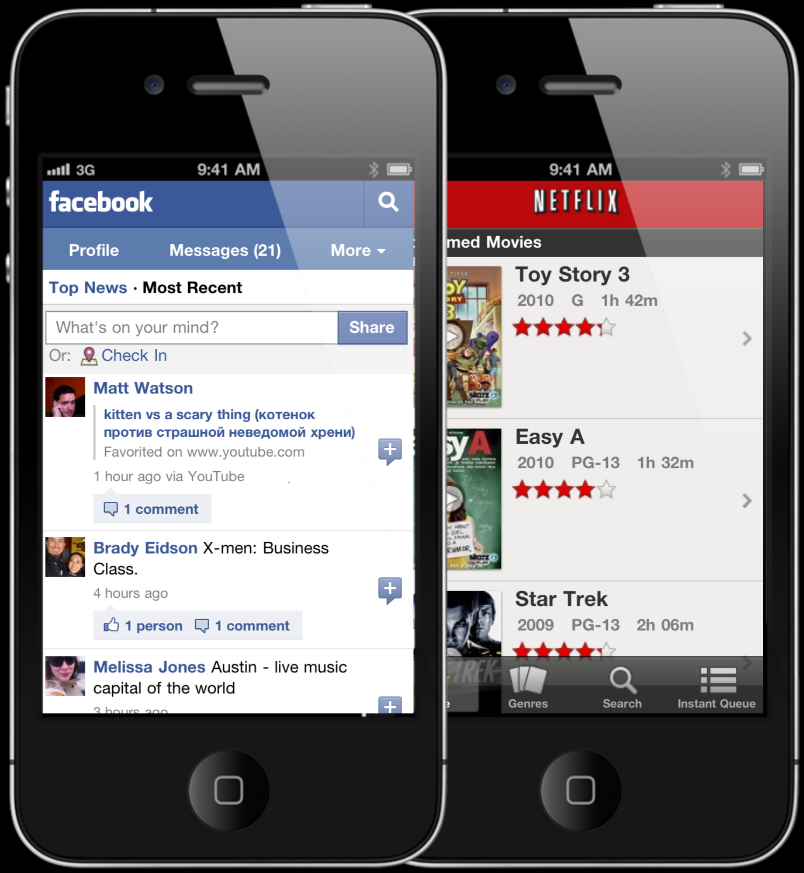
What You Will Learn

1. Pixel perfection on iOS
2. Scrollbars and scrolling on Lion
3. Multi-touch gestures on Lion and iOS

Safari on iOS

How did it do that? How do I do this?

Vicki Murley
Safari Technologies Evangelist



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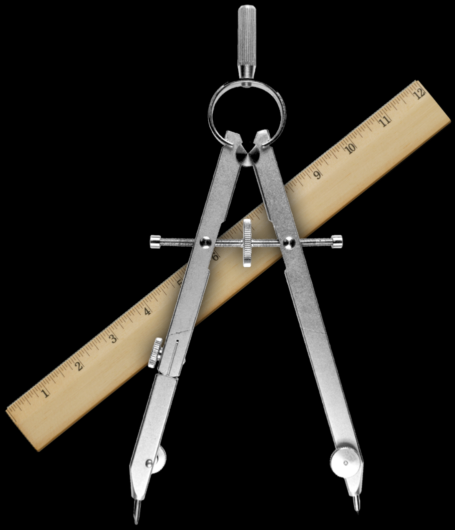
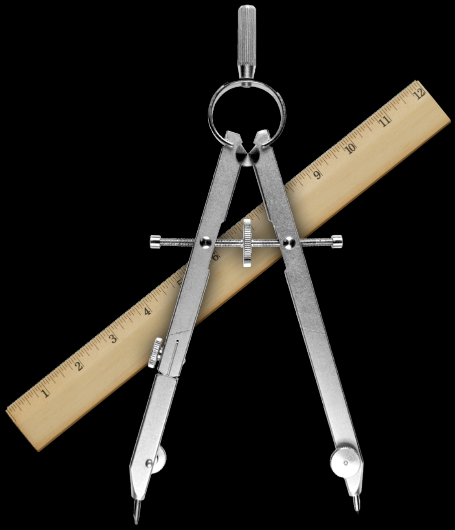
Toy Story 3
2010 G 1h 42m

Easy A
2010 PG-13 1h 32m

Star Trek
2009 PG-13 2h 06m

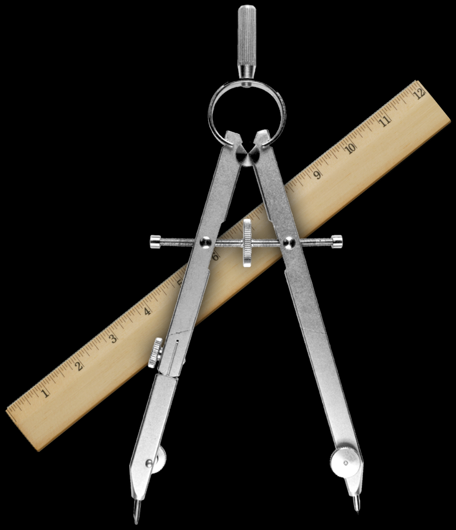


Undesirable Results for Layout and Behaviors



Undesirable Results
for Layout and Behaviors

Pixelated Images
on Retina Displays



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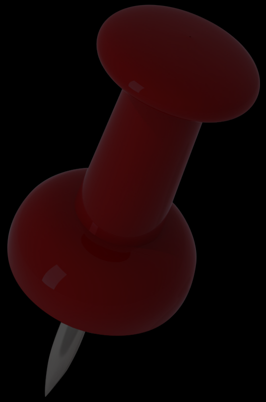


Flaky
Fixed Positioning

Undesirable Results for Layout and Behaviors

What kind of results, specifically?

"I have empty space on the edges of my web page..."

The Viewport

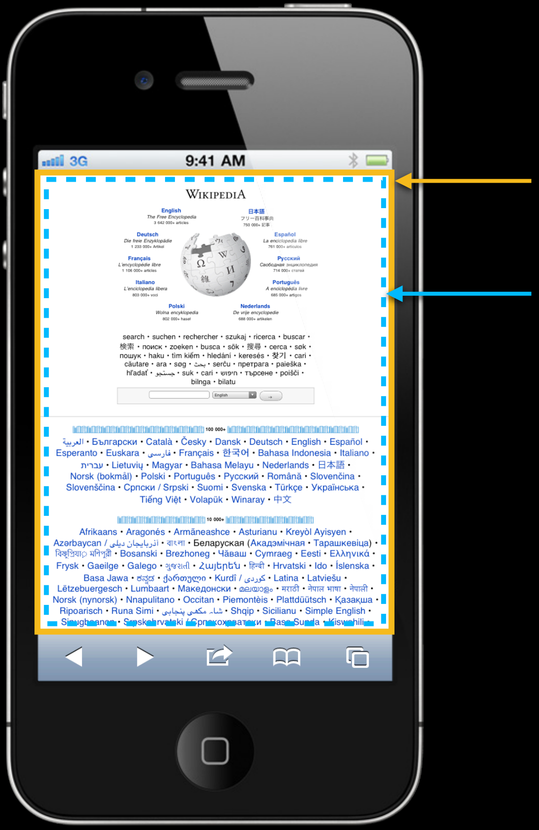
"My web app doesn't fit the screen the way I want it to..."

"I set the width, but I'm still seeing horizontal scrolling, or 'bounce'..."

"Double-tap and pinch are great for web pages, but not for my web app..."

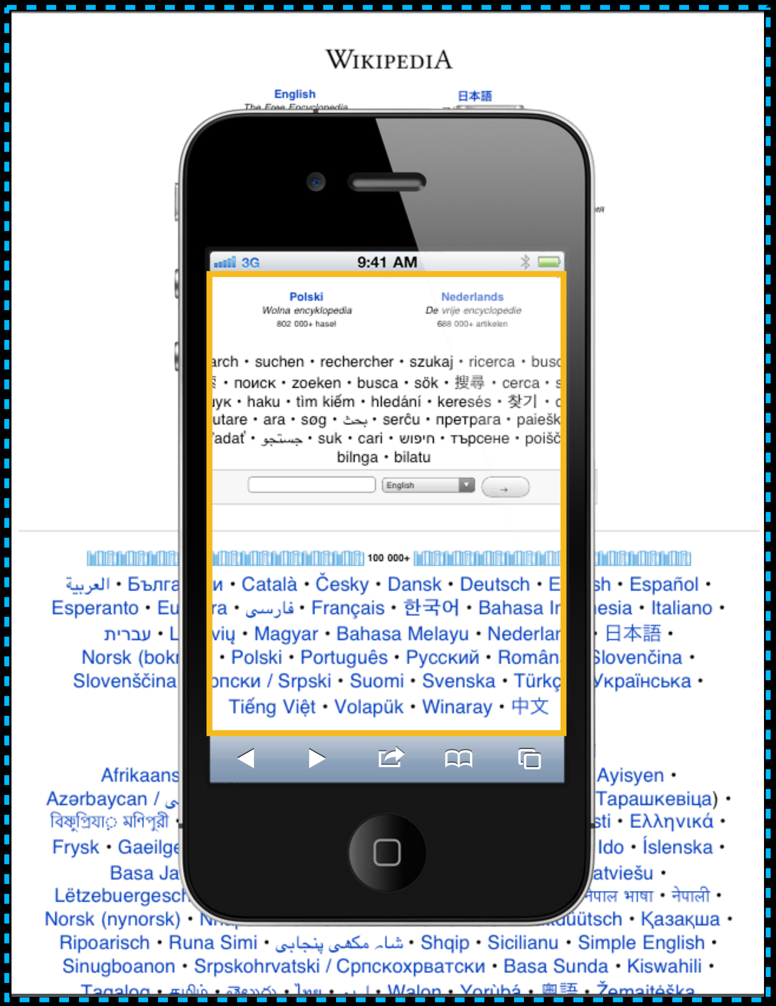
The Viewport

Safari on iOS

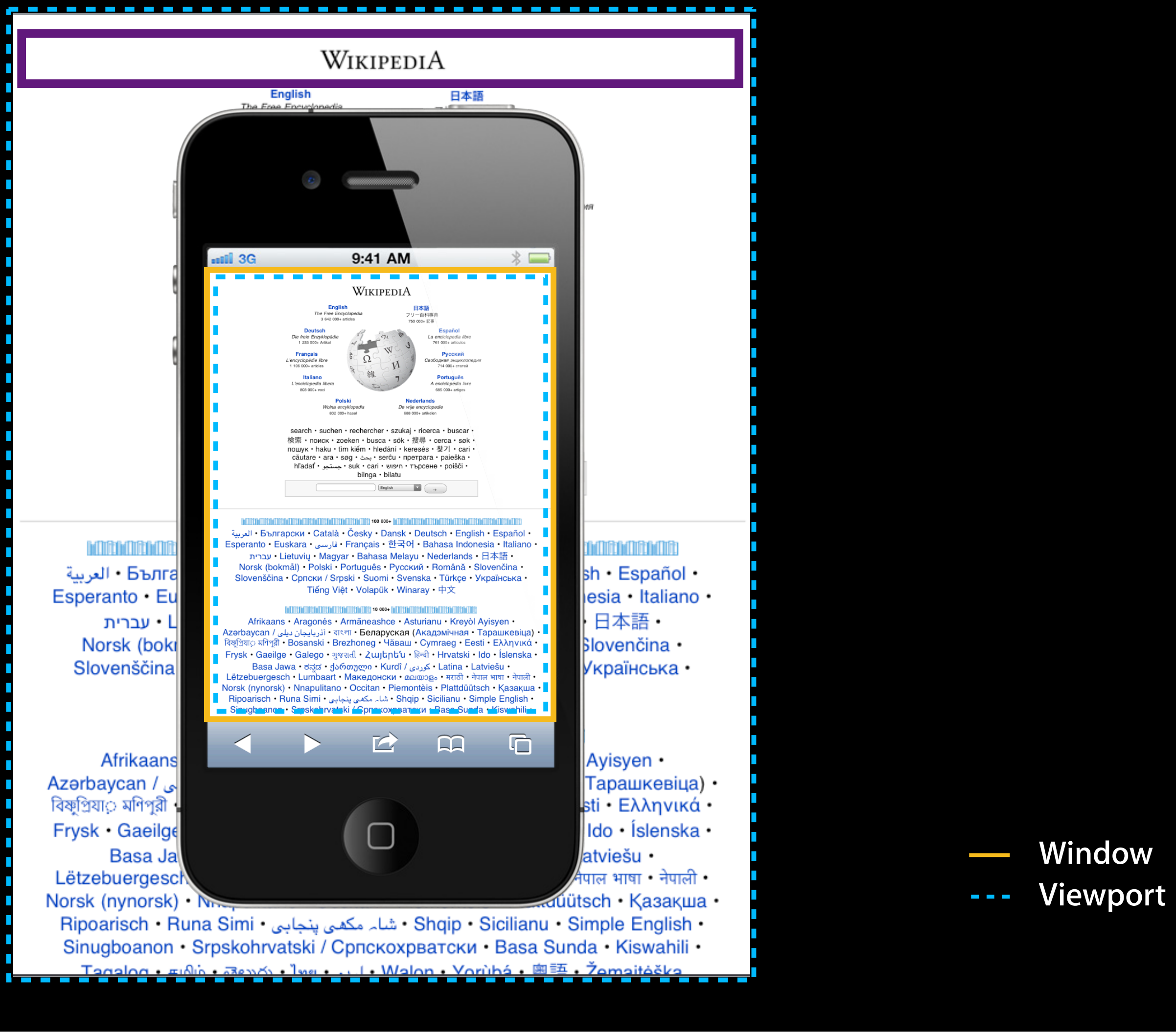


Window
(not the DOM window)

Viewport



— Window
- - - Viewport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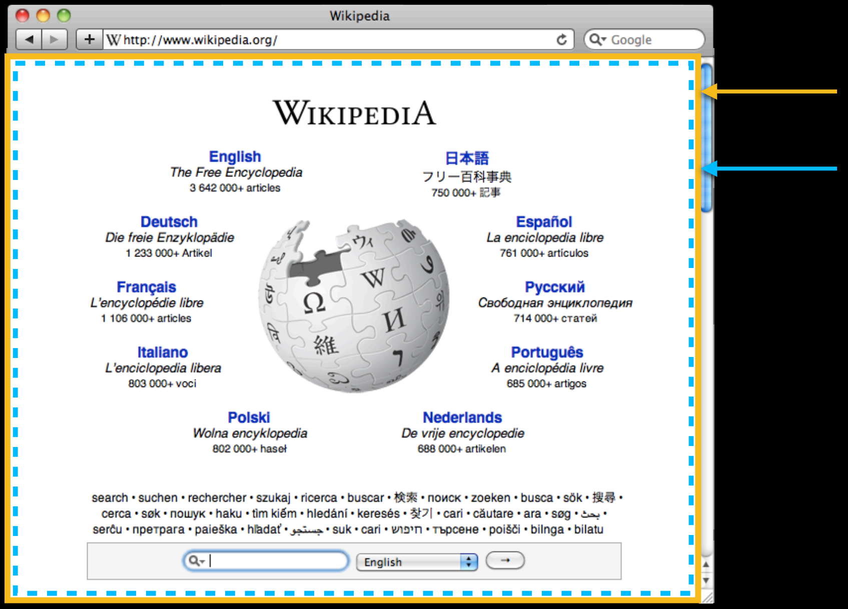
3G
9:41 AM
Window
Viewport

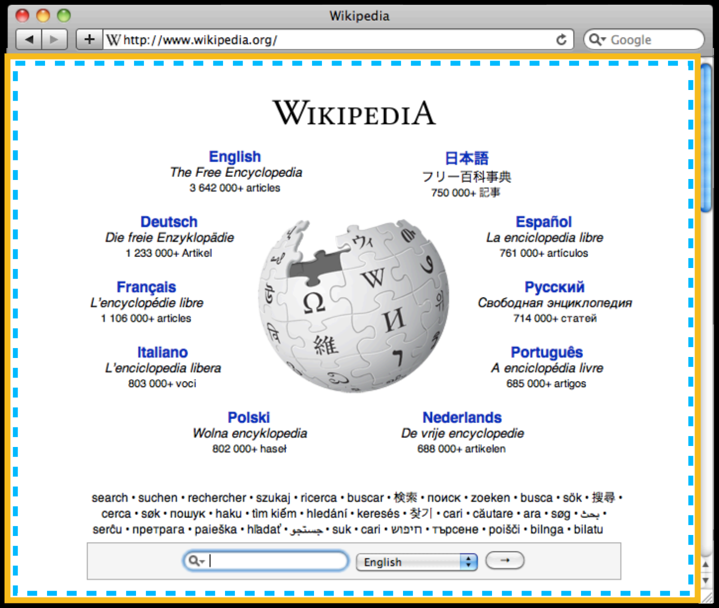
The Viewport

Safari on the desktop



The Viewport

Safari on the desktop



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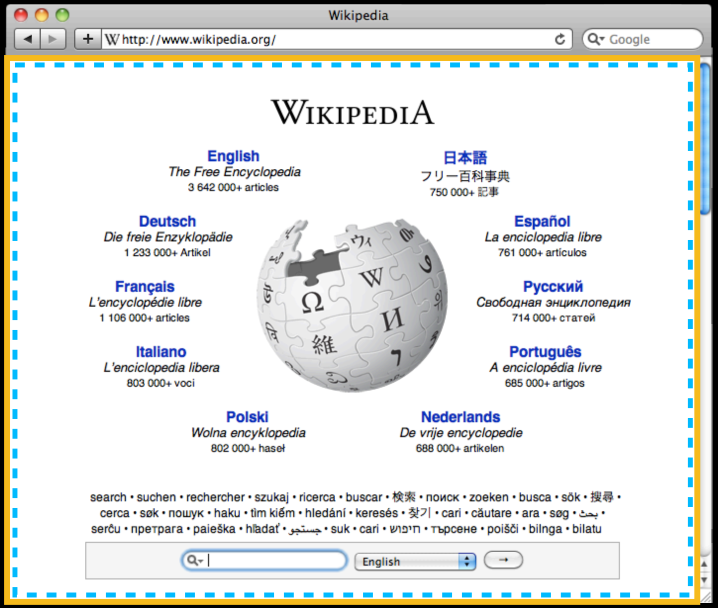
The Viewport

Safari on the desktop



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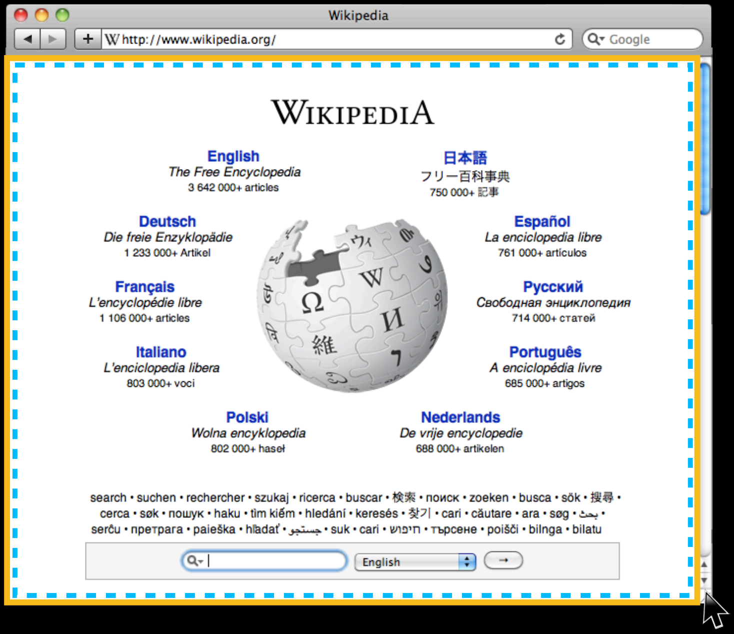

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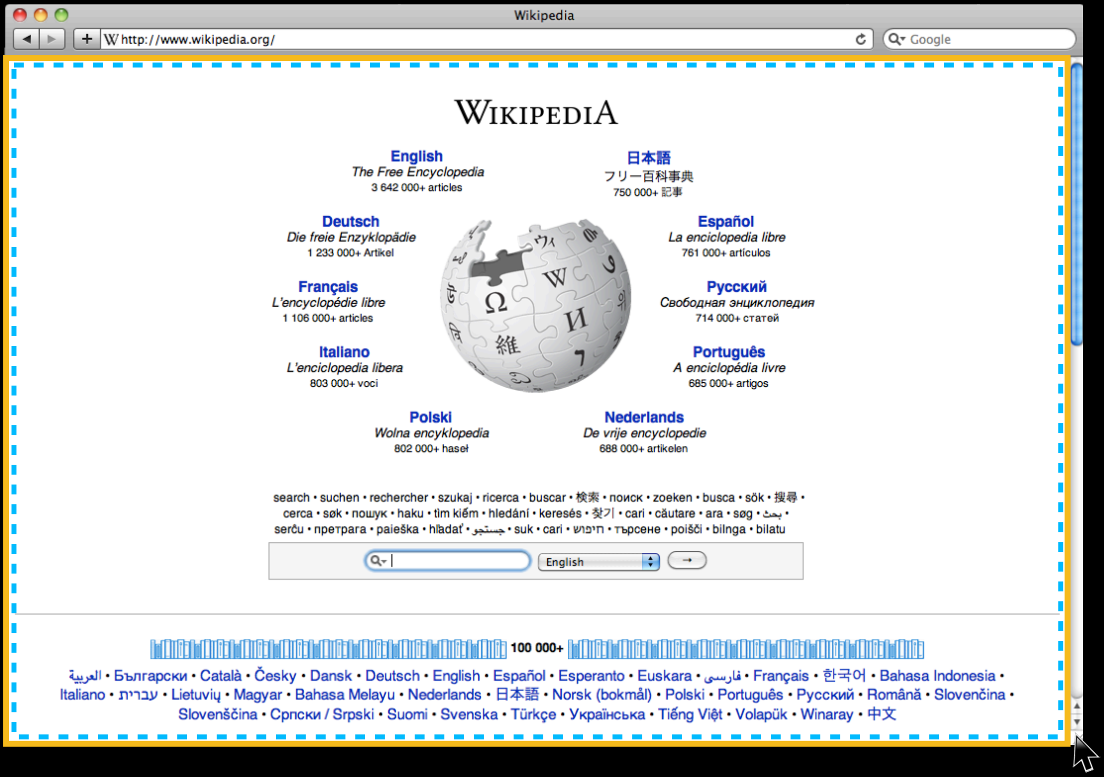

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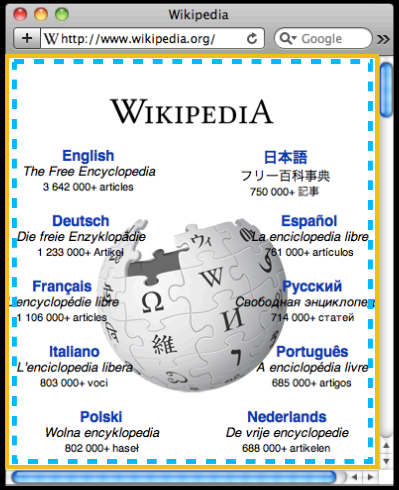
The Viewport

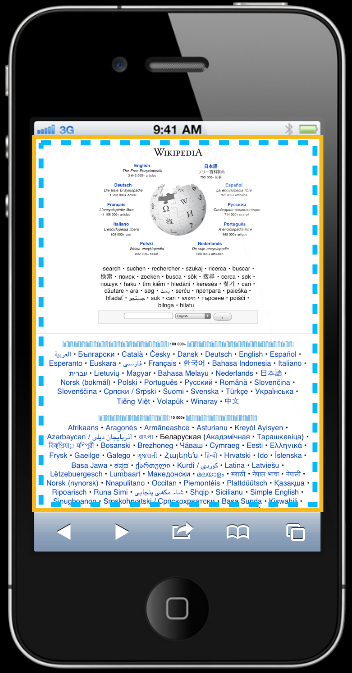
Safari on the desktop



The Viewport

Safari on iOS

- Viewport height and width values do not change
- Users scale, and pan to see content



— Window

- - - Viewport

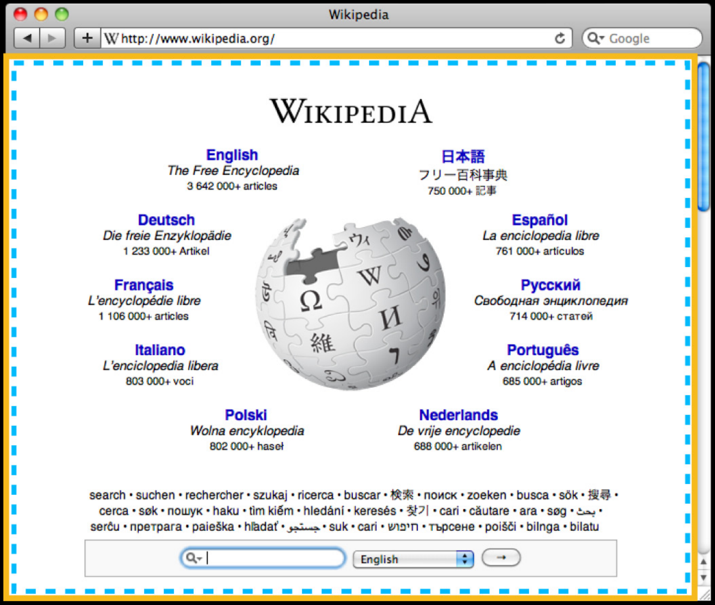
The Viewport

Safari on iOS

- Viewport height and width values do not change
- Users scale, and pan to see content

Safari on the desktop

- Viewport height and width values are adjusted by the user



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— Window
- - - Viewport

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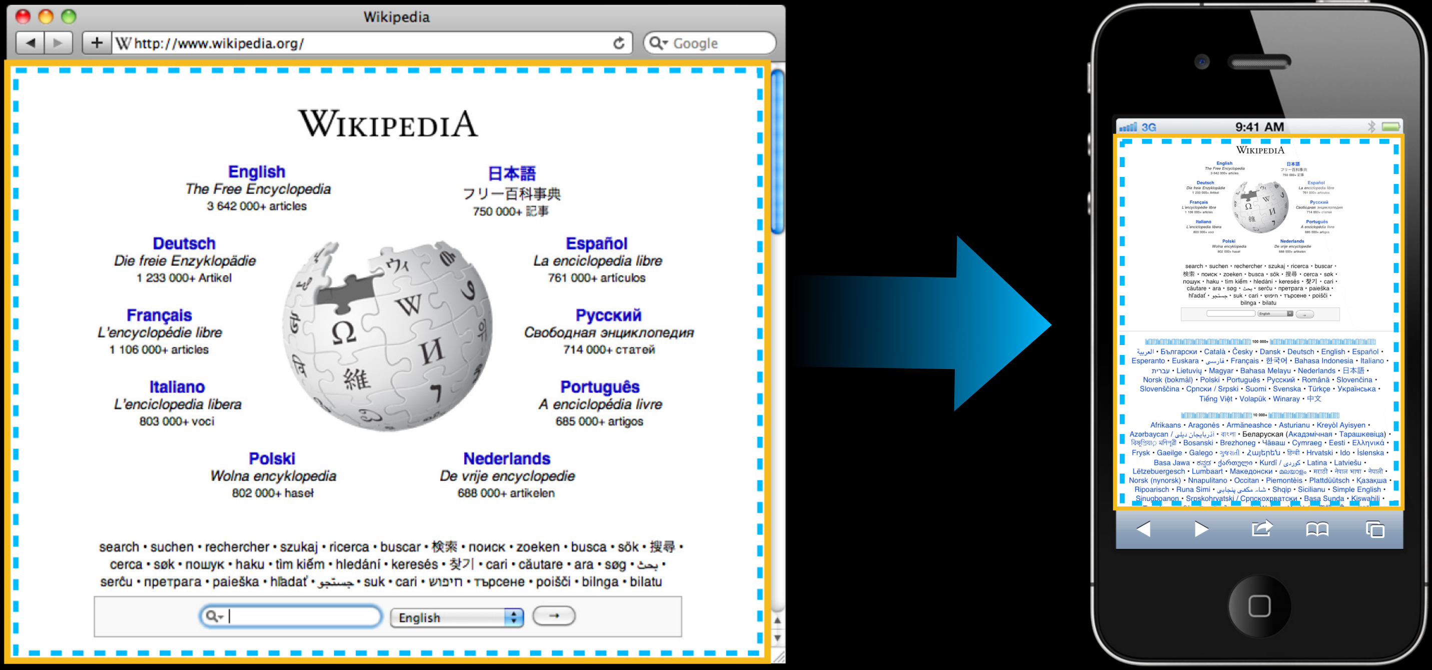

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English

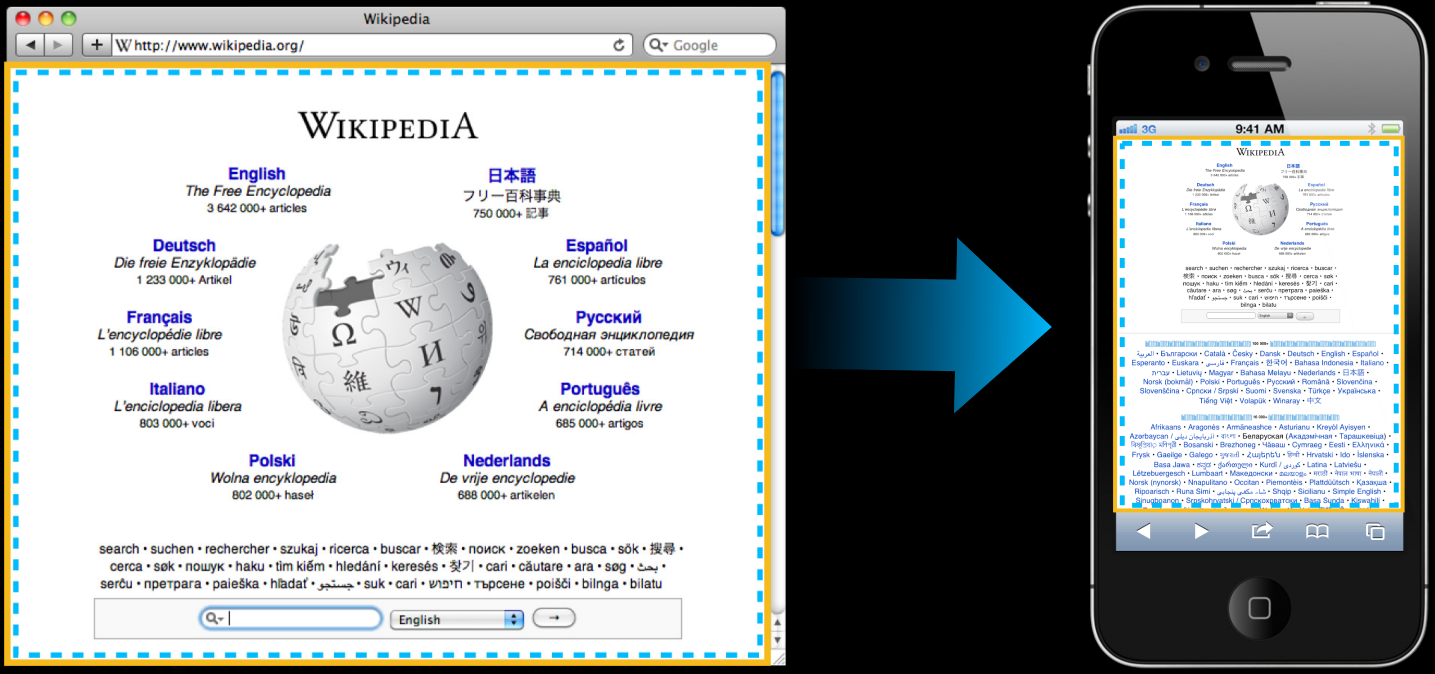
We assume 980px width…

…then scale down to 320px
(for iPhone)

The Viewport

Default Viewport Settings

`width:980px   scale:320/980 = 0.32653`



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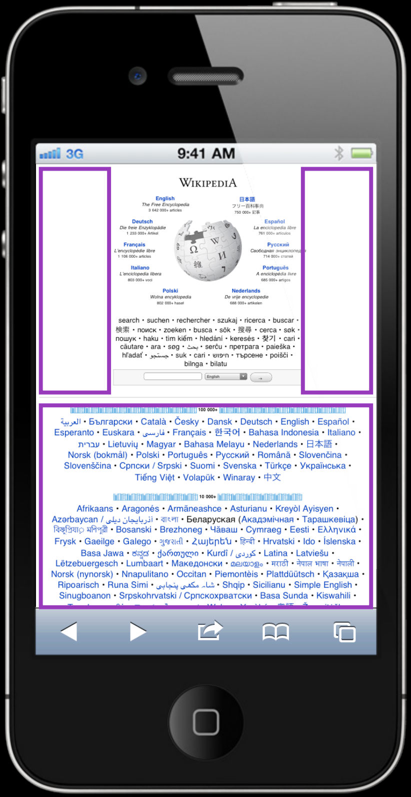
We assume 980px width...

...then scale down to 320px
(for iPhone)

Undesirable Results for Layout and Behaviors

Under-utilized edge space



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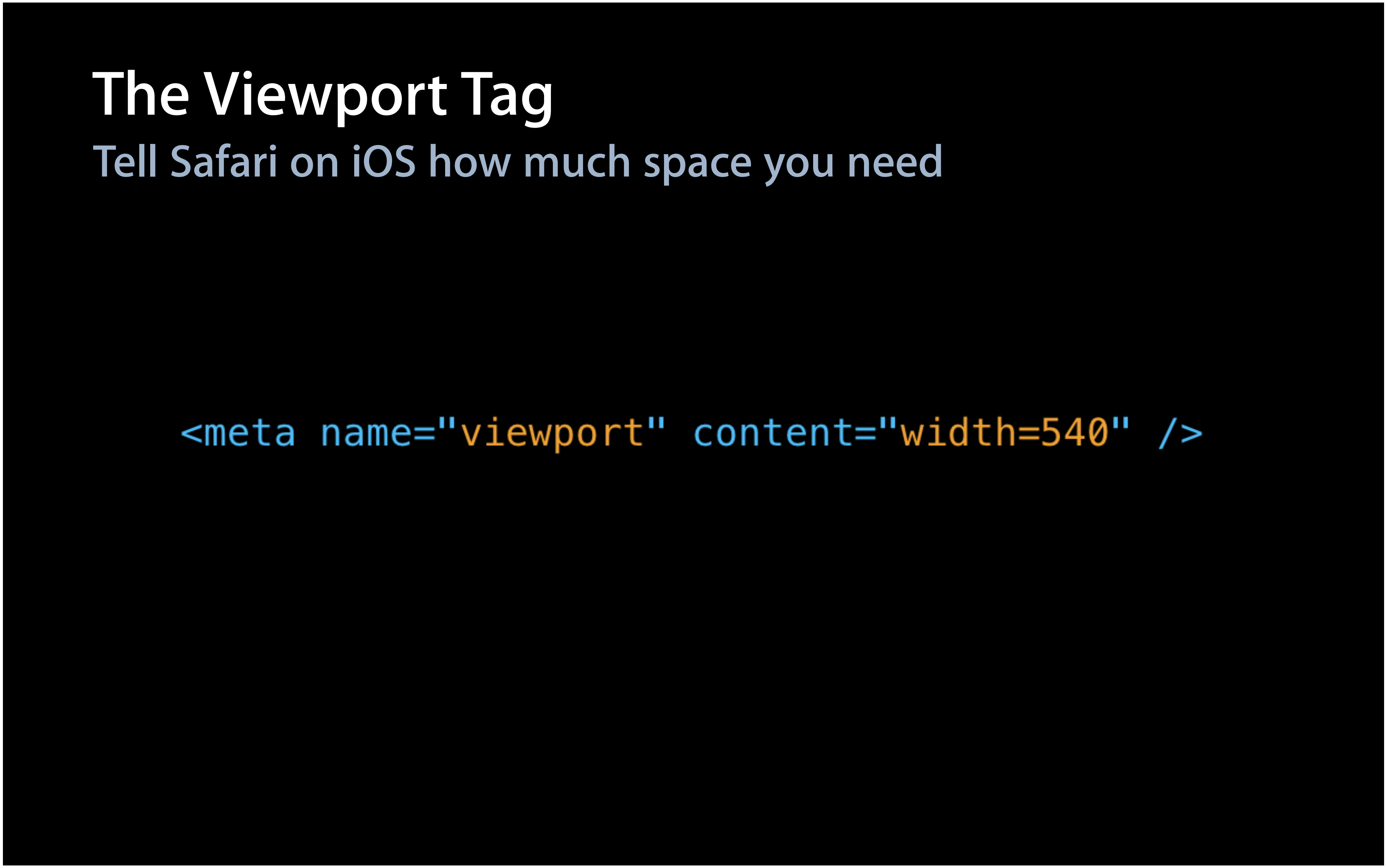


The Viewport Tag

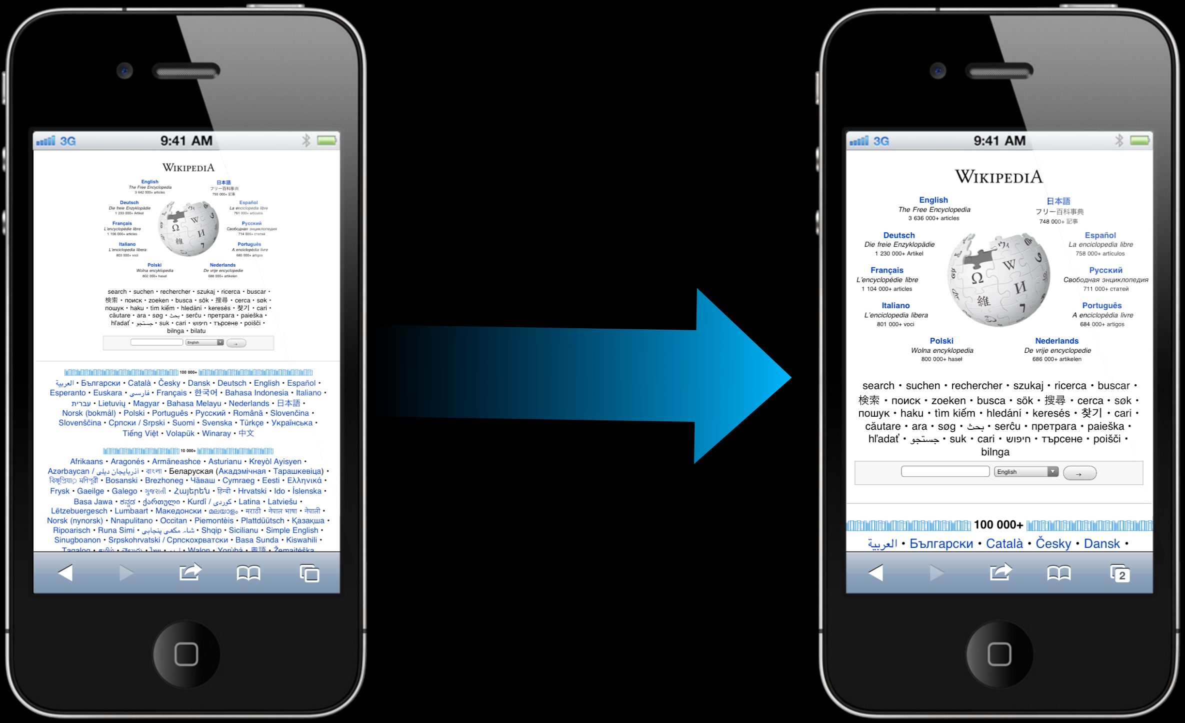
Tell Safari on iOS how much space you need

```
<meta name="viewport" content="width=540" />
```

The Viewport Tag

Tell Safari on iOS how much space you need

```
<meta name="viewport" content="width=540" />
```



Fine-grained Control with the Viewport Tag

Setting additional parameters

```
<meta name="viewport" content="width=540" />
```

Fine-grained Control with the Viewport Tag

Setting additional parameters

```
<meta name="viewport" content="width=540" />
<meta name="viewport" content="height=800" />
```

Fine-grained Control with the Viewport Tag

Setting additional parameters

```
<meta name="viewport" content="width=540" />
<meta name="viewport" content="height=800" />
<meta name="viewport" content="initial-scale=2" />
```

Fine-grained Control with the Viewport Tag

Setting additional parameters

```
<meta name="viewport" content="width=540" />
<meta name="viewport" content="height=800" />
<meta name="viewport" content="initial-scale=2" />
<meta name="viewport" content="width=540,
                               height=800,
                               initial-scale=2" />
```

Fine-grained Control with the Viewport Tag

Setting additional parameters

```
<meta name="viewport" content="width=540" />
<meta name="viewport" content="height=800" />
<meta name="viewport" content="initial-scale=2" />
<meta name="viewport" content="width=540,
                               height=800,
                               initial-scale=2" />
```

Fine-grained Control with the Viewport Tag

Setting additional parameters

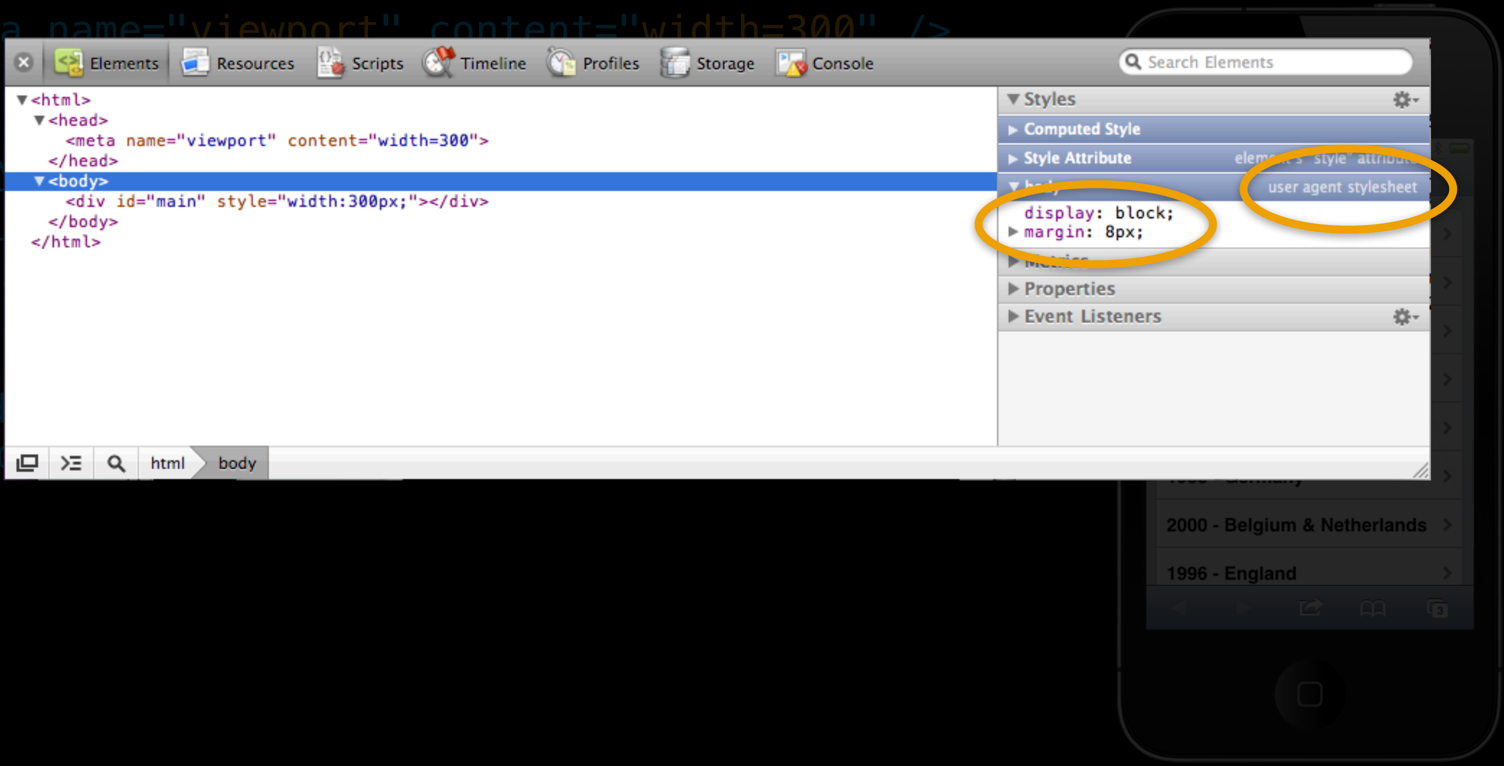
- Set a single viewport parameter, and others are inferred
- `width` is your friend

```
<meta name="viewport" content="width=540" />
<meta name="viewport" content="height=800" />
<meta name="viewport" content="initial-scale=2" />
<meta name="viewport" content="width=540,
                                height=800,
                                initial-scale=2" />
```

The Viewport Tag

Beware of the bounce

```
<meta name="viewport" content="width=300" />
...
<body
  <di
    <
  </d
</bod
```



```
▼<html>
  ▼<head>
      <meta name="viewport" content="width=300">
    </head>
  ▼<body>
      <div id="main" style="width:300px;"></div>
    </body>
  </html>
```

```
display: block;
▶ margin: 8px;
```

"Double-tap and pinch are great for web pages, but not for my web app..."

Additional Viewport Tag Settings

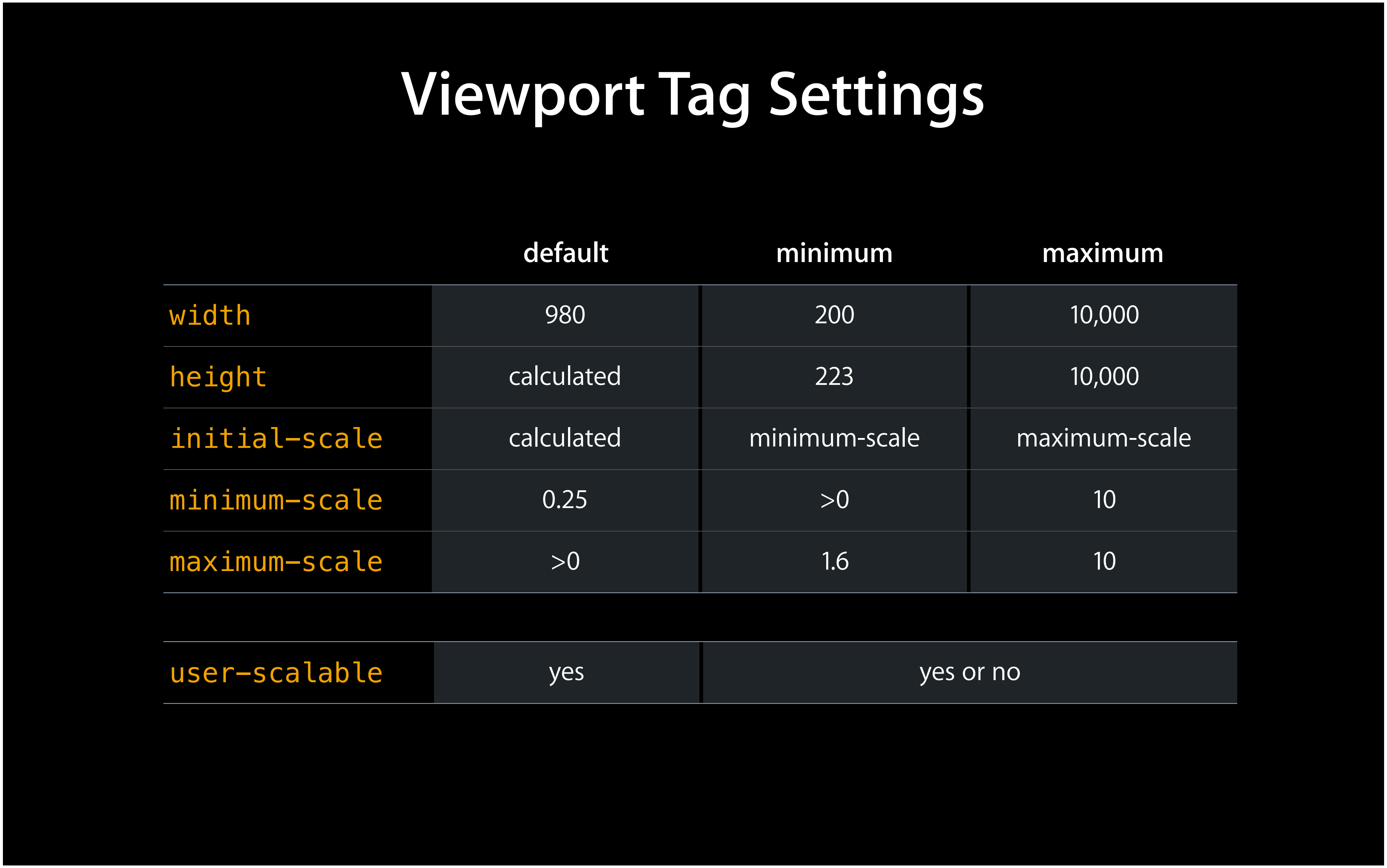
Customizing scaling

```
<meta name="viewport" content="user-scalable=no" />
```

Additional Viewport Tag Settings

Customizing scaling

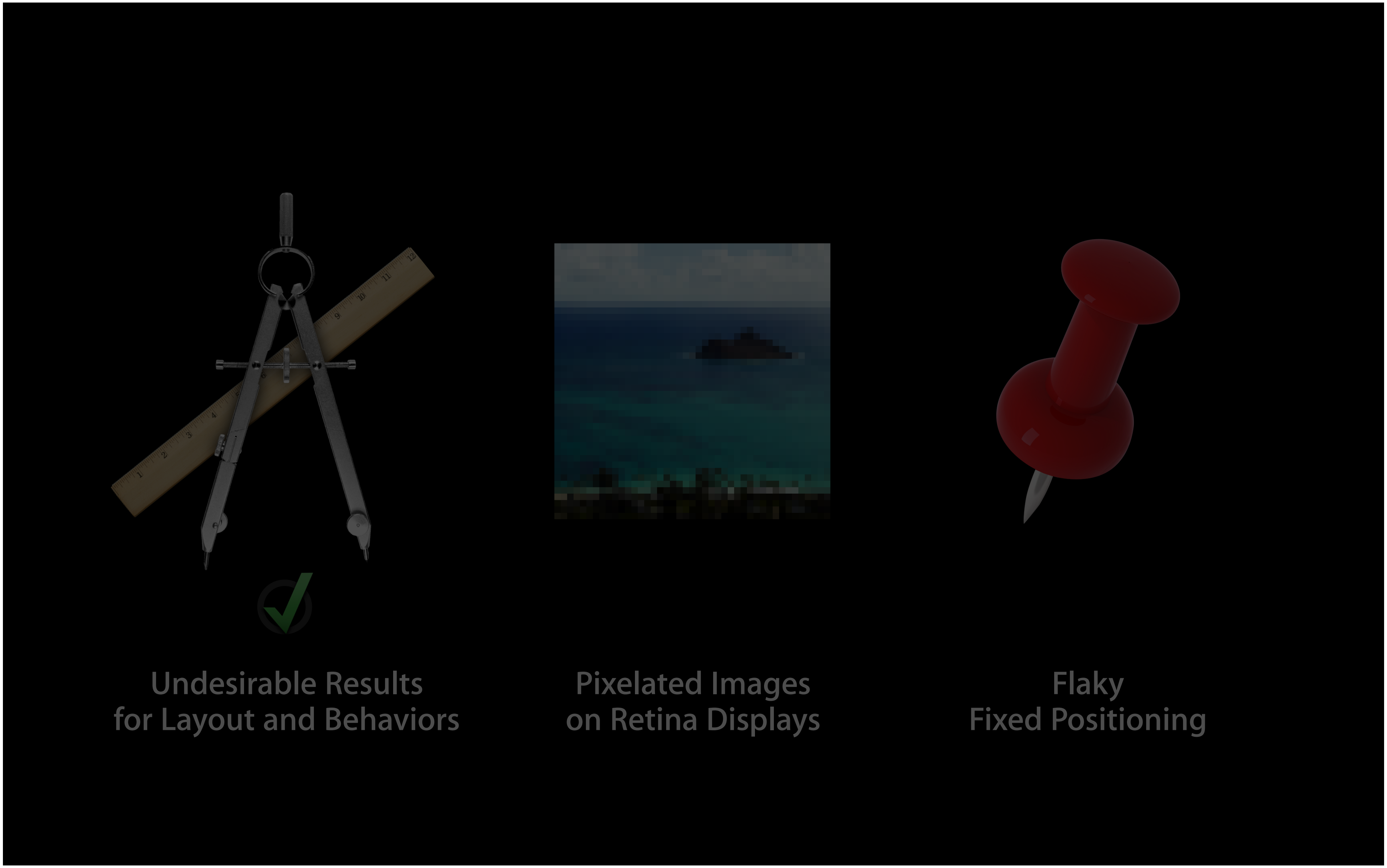
```
<meta name="viewport" content="user-scalable=no" />
<meta name="viewport" content="minimum-scale=0.25" />
<meta name="viewport" content="maximum-scale=10" />
```



Viewport Tag Settings

	default	minimum	maximum
`width`	980	200	10,000
`height`	calculated	223	10,000
`initial-scale`	calculated	minimum-scale	maximum-scale
`minimum-scale`	0.25	>0	10
`maximum-scale`	>0	1.6	10

`user-scalable`	yes	yes or no	



✓

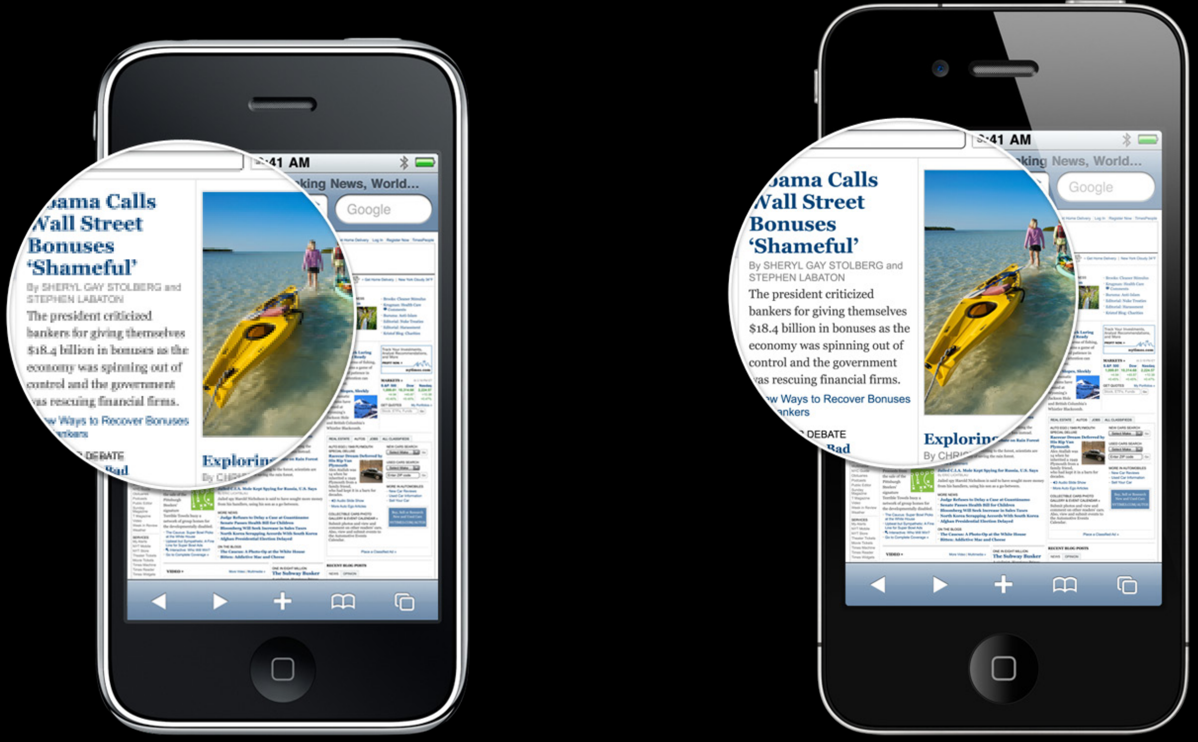
Undesirable Results
for Layout and Behaviors

Pixelated Images
on Retina Displays

Flaky
Fixed Positioning

iPhone 4 Retina Display

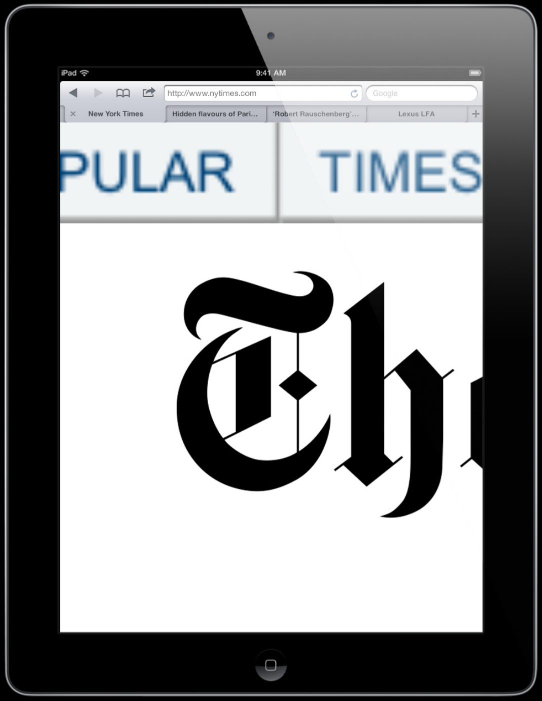
How did that text get so sharp?


9:41 AM
king News, World...
Google
bama Calls
Wall Street
Bonuses
'Shameful'
By SHERYL GAY STOLBERG and
STEPHEN LABATON
The president criticized
bankers for giving themselves
$18.4 billion in bonuses as the
economy was spinning out of
control and the government
was rescuing financial firms.
w Ways to Recover Bonuses
ankers
DEBATE
Bad
Explorin
By CHRI

Use SVG

Scalable Vector Graphics

- Declarative API for drawing and animating shapes, lines, arcs, and more
- Drawn by the web browser
- Remains sharp at any resolution



CSS Sizing

Double the image dimensions, halve them in CSS

CSS Sizing

Double the image dimensions, halve them in CSS

```
#background {
  background-image:
      url(hawaii.jpg);
  width: 450px;
  height: 300px
}
```

CSS Media Queries

```
<style>
   @media screen {
      /* fancy CSS for the screen version */
   }

   @media print {
      /* plain CSS for the printed version */
   }
</style>
```

CSS Media Queries

```
<style>
   @media screen and (device-width: 320px) {
     body {
        width: 320px;
        margin: 0px;
      }
   }

   @media screen and (device-width: 768px) {
     body {
        width: 768px;
        margin: 0px;
      }
   }
</style>
```

CSS Media Queries

-webkit-device-pixel-ratio

```
<style>
   @media screen and (device-width: 320px), (device-width: 768px) {
   /* my images for older iPhones, iPod touch, or iPad */
      #main {
        background-image:url('main.png');
      }
   }

   @media screen and (device-width: 320px)
                 and (-webkit-min-device-pixel-ratio: 2) {
   /* my images for new iPhone 4 retina display */
      #main {
        background-image:url('main-retina.png');
      }
   }
</style>
```

CSS Media Queries

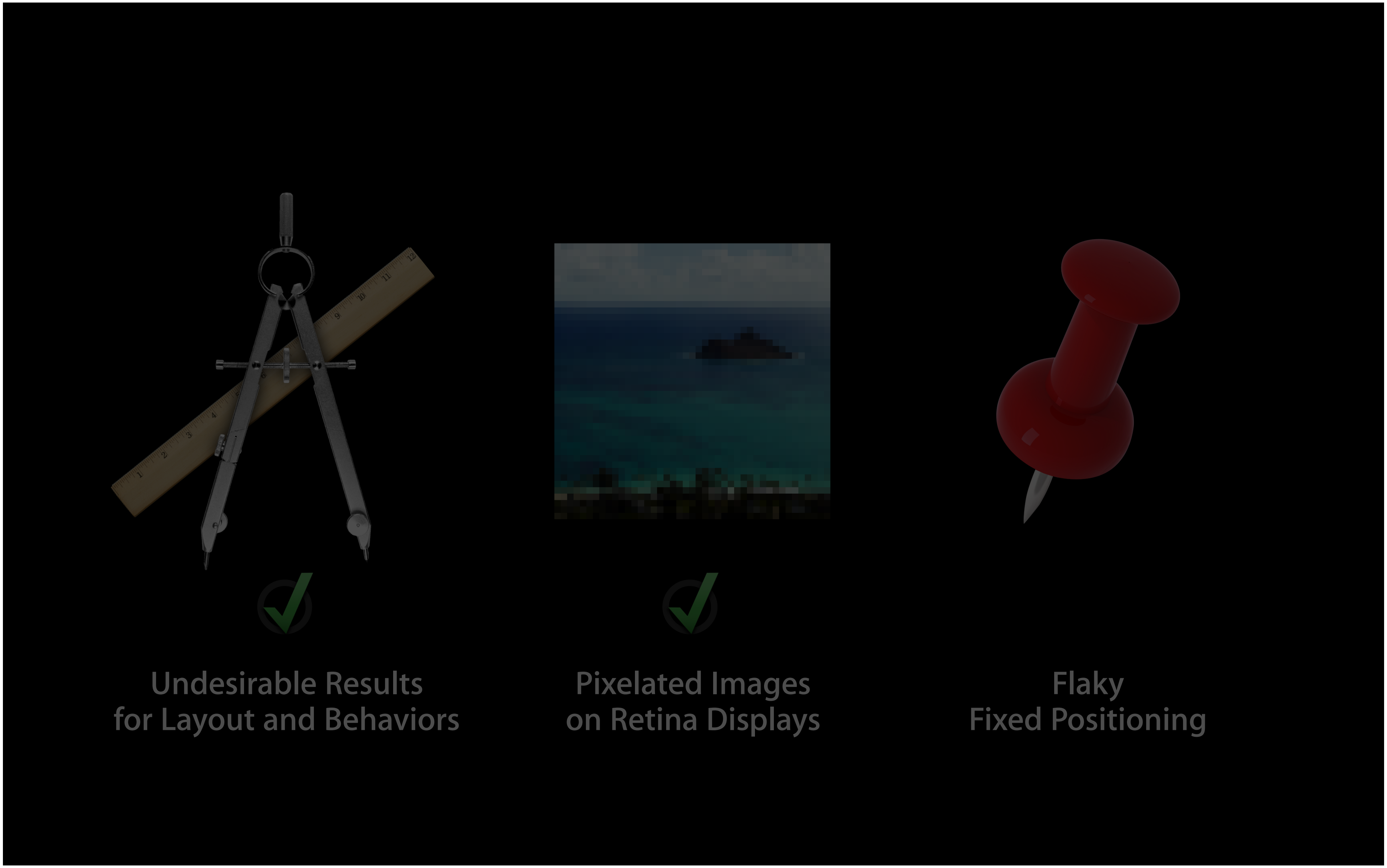
Evaluating a media query from JavaScript

```
<script>
function addImages() {

  var image = new Image();
  image.src = "myPhoto.jpg";

  if ('styleMedia' in window
  && window.styleMedia.matchMedium("screen and
                                  (device-width: 320px) and
                                  (-webkit-min-device-pixel-ratio: 2)")){
    // load your iPhone 4 images
    image.src = "myPhoto-retina.jpg";
  }

  document.body.appendChild(image);
}
</script>
```



✓

Undesirable Results
for Layout and Behaviors

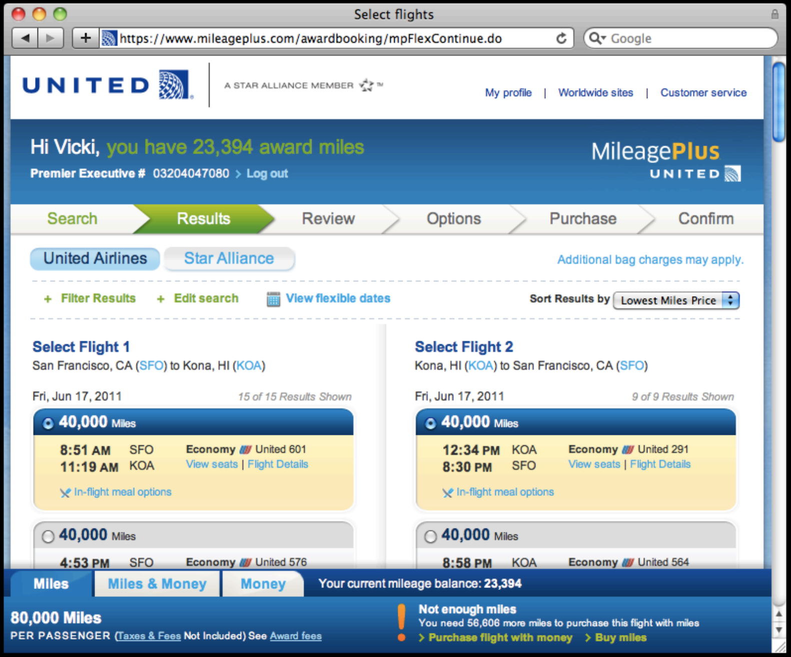
✓

Pixelated Images
on Retina Displays

Flaky
Fixed Positioning

Flaky Fixed Positioning

```
#bottomBar {
  position: fixed;
  bottom: 0px;
  height: 100px;
  width: 100%;
  z-index: 3;
}
```



Hi Vicki, you have 23,394 award miles

Premier Executive # 03204047080 > Log out

Additional bag charges may apply.

Sort Results by: Lowest Miles Price

Select Flight 1
San Francisco, CA (SFO) to Kona, HI (KOA)

Fri, Jun 17, 2011 — *15 of 15 Results Shown*

● 40,000 Miles
8:51 AM SFO — 11:19 AM KOA — Economy United 601 — View seats | Flight Details
In-flight meal options

○ 40,000 Miles
4:53 PM SFO — Economy United 576

Select Flight 2
Kona, HI (KOA) to San Francisco, CA (SFO)

Fri, Jun 17, 2011 — *9 of 9 Results Shown*

● 40,000 Miles
12:34 PM KOA — 8:30 PM SFO — Economy United 291 — View seats | Flight Details
In-flight meal options

○ 40,000 Miles
8:58 PM KOA — Economy United 564

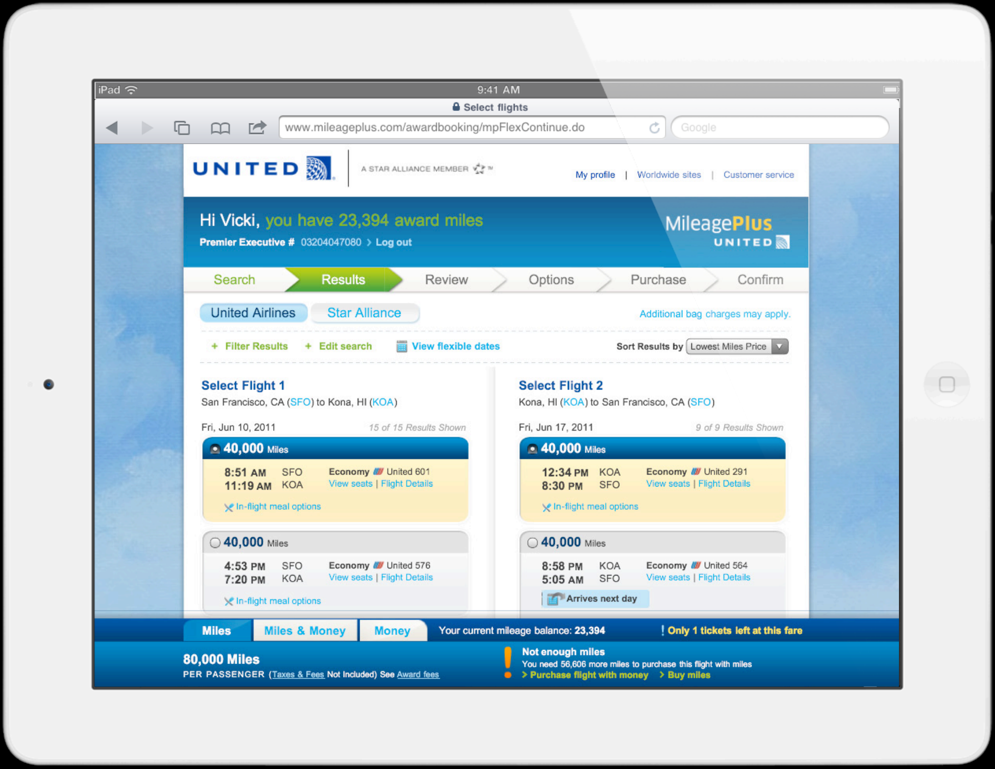
Your current mileage balance: 23,394

80,000 Miles
PER PASSENGER (Taxes & Fees Not Included) See Award fees

Not enough miles
You need 56,606 more miles to purchase this flight with miles
> Purchase flight with money > Buy miles

Flaky Fixed Positioning

```
#bottomBar {
  position: fixed;
  bottom: 0px;
  height: 100px;
  width: 100%;
  z-index: 3;
}
```



Hi Vicki, you have 23,394 award miles

Premier Executive # 03204047080 › Log out

Additional bag charges may apply.

Select Flight 1

San Francisco, CA (SFO) to Kona, HI (KOA)

Fri, Jun 10, 2011 — 15 of 15 Results Shown

● 40,000 Miles

8:51 AM SFO — 11:19 AM KOA — Economy United 601 — View seats | Flight Details

In-flight meal options

○ 40,000 Miles

4:53 PM SFO — 7:20 PM KOA — Economy United 576 — View seats | Flight Details

In-flight meal options

Select Flight 2

Kona, HI (KOA) to San Francisco, CA (SFO)

Fri, Jun 17, 2011 — 9 of 9 Results Shown

● 40,000 Miles

12:34 PM KOA — 8:30 PM SFO — Economy United 291 — View seats | Flight Details

In-flight meal options

○ 40,000 Miles

8:58 PM KOA — 5:05 AM SFO — Economy United 564 — View seats | Flight Details

Arrives next day

Your current mileage balance: 23,394

! Only 1 tickets left at this fare

80,000 Miles

PER PASSENGER (Taxes & Fees Not Included) See Award fees

! Not enough miles

You need 56,606 more miles to purchase this flight with miles

› Purchase flight with money › Buy miles

Flaky Fixed Positioning

JavaScript libraries let us pretend

- But, scroll events fire when a finger is lifted from the screen

Demo

CSS fixed positioning in Safari on iOS

CSS Fixed Positioning

New in iOS 5.0

- Watch for overlapping elements
- Test your content

Another Solution For Fixed Content

Using overflow: scroll

```
<html>
<head>
<meta name="viewport" content="width=320" />
  <style>
    body {
      margin: 0px;
    }
    #header {
     width: 320px;
     height: 56px;
     background-color: blue;
    }
    #content {
      overflow: scroll;
      height: 300px;
    }
  </style>
</head>
```

```
<body>
  <div id="header">My App</div>
  <div id="content">
</body>
```

Another Solution For Fixed Content

Using overflow: scroll

- `overflow:scroll` areas no longer require two fingers to scroll

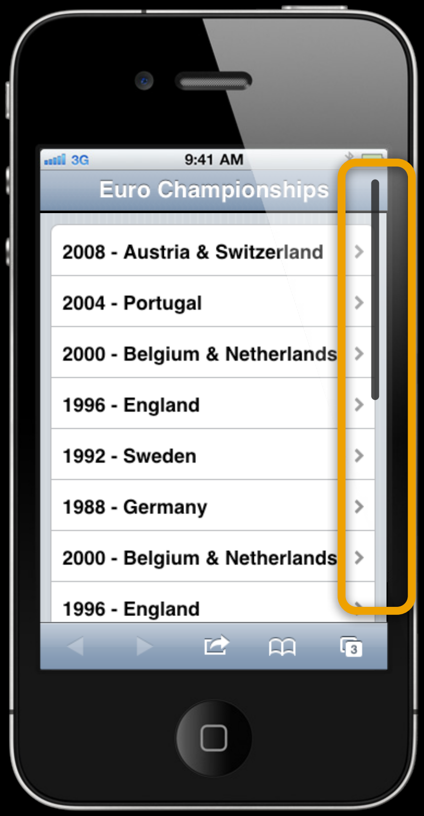
Another Solution For Fixed Content

Using overflow: scroll

- `overflow:scroll` areas no longer require two fingers to scroll
- And, scrolling is improving in other ways
  - Watch the iOS Release Notes for more information

Another Solution For Fixed Content

Using overflow: scroll

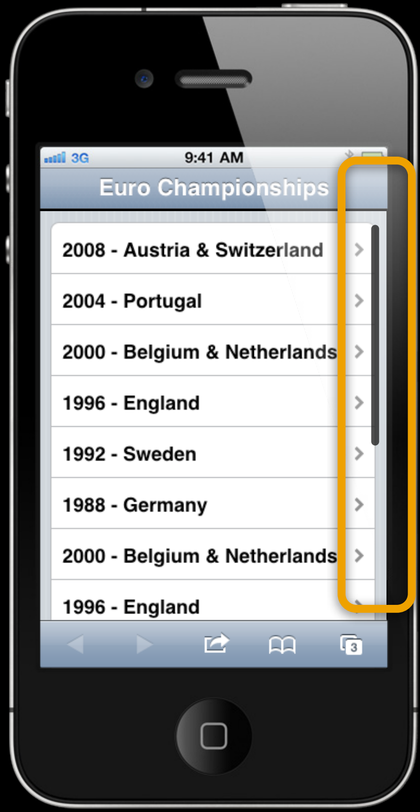


Euro Championships

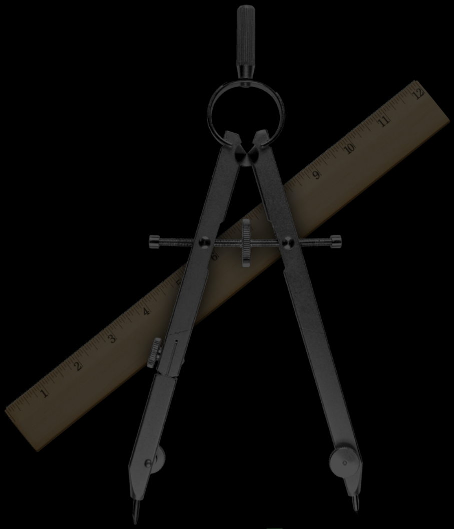
- 2008 - Austria & Switzerland
- 2004 - Portugal
- 2000 - Belgium & Netherlands
- 1996 - England
- 1992 - Sweden
- 1988 - Germany
- 2000 - Belgium & Netherlands
- 1996 - England

Another Solution For Fixed Content

Using overflow: scroll



2008 - Austria & Switzerland
2004 - Portugal
2000 - Belgium & Netherlands
1996 - England
1992 - Sweden
1988 - Germany
2000 - Belgium & Netherlands
1996 - England



✓

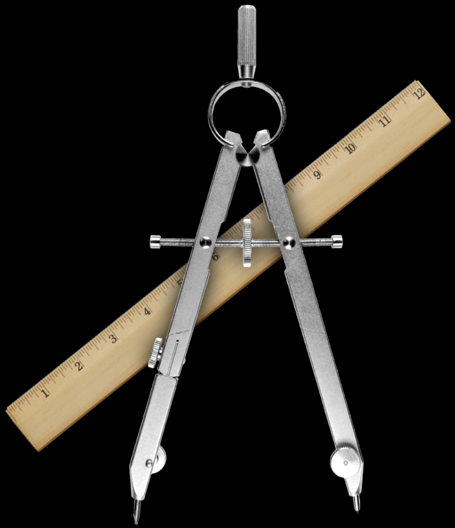
Undesirable Results
for Layout and Behaviors

✓

Pixelated Images
on Retina Displays

✓

**Flaky
Fixed Positioning**



✓

Undesirable Results
for Layout and Behaviors

✓

Pixelated Images
on Retina Displays

✓

Flaky
Fixed Positioning

Scrollbars and Scrolling

Beth Dakin
Safari and WebKit Engineer

Scrollbars and Scrolling

What you will learn

- Overview of the new scrollbar design
- How the new design affects web content
- Overlay scrollbar color heuristic
- Scrolling

Scrollbars and Scrolling

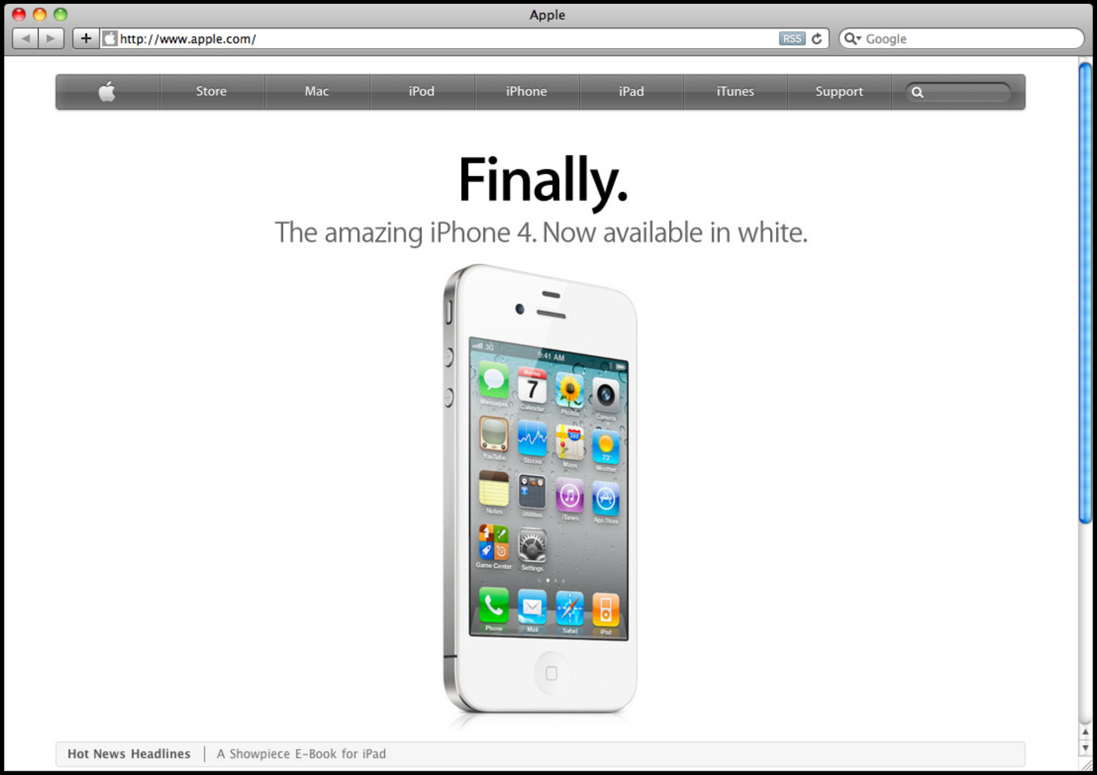
New design

Scrollbars and Scrolling

New design

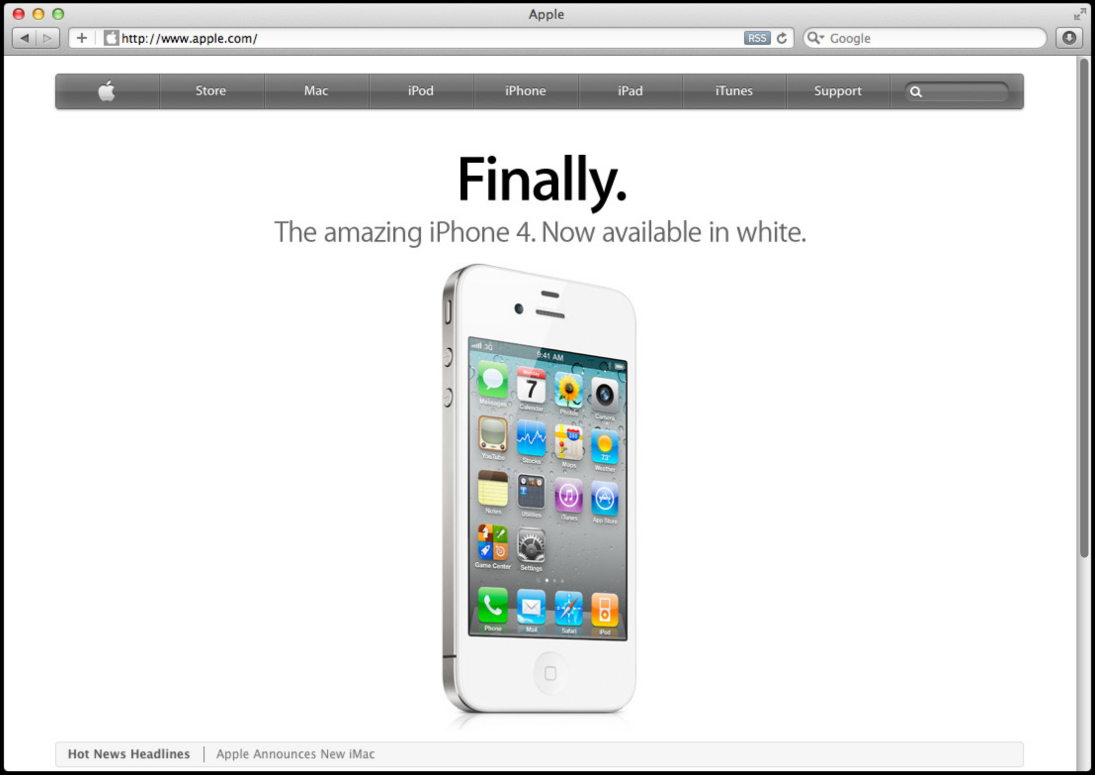
Scrollbars on Snow Leopard

Old design



Scrollbars on Lion

New design: legacy



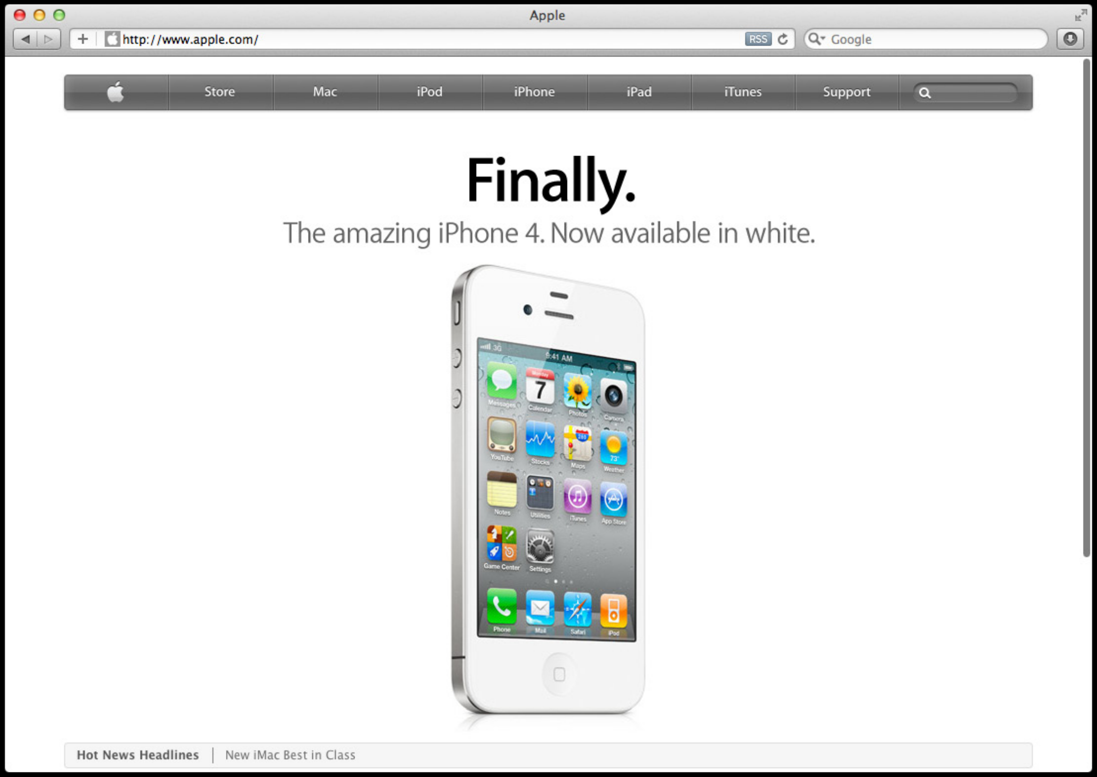
Finally.

The amazing iPhone 4. Now available in white.

Hot News Headlines | Apple Announces New iMac

Scrollbars on Lion

New design



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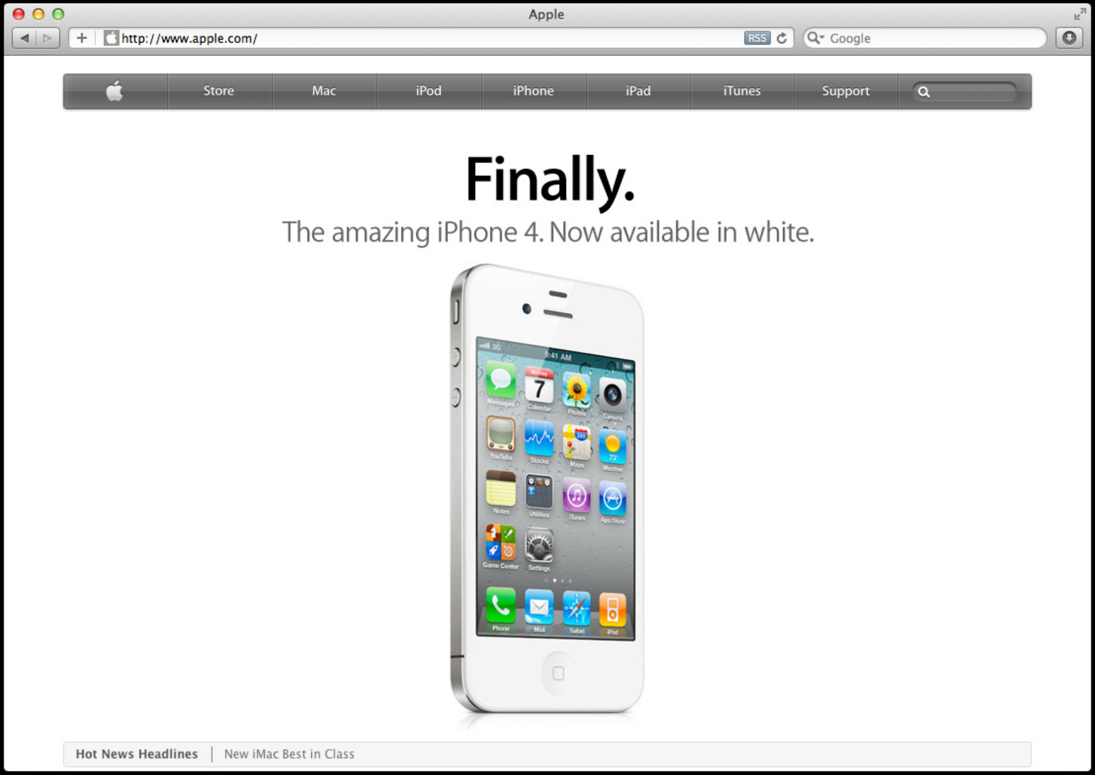
Hot News Headlines | New iMac Best in Class

Scrollbars on Lion

New design



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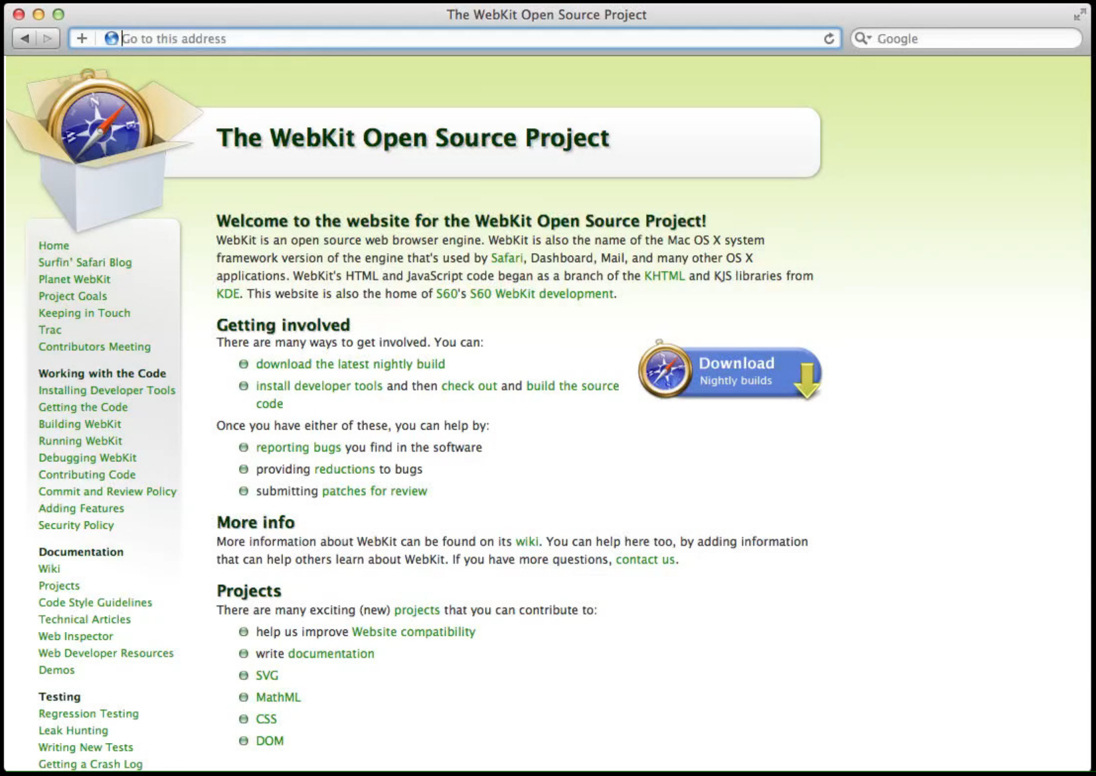
Scrollbars and Scrolling

New design



The WebKit Open Source Project

Home
Surfin' Safari Blog
Planet WebKit
Project Goals
Keeping in Touch
Trac
Contributors Meeting

Working with the Code
Installing Developer Tools
Getting the Code
Building WebKit
Running WebKit
Debugging WebKit
Contributing Code
Commit and Review Policy
Adding Features
Security Policy

Documentation
Wiki
Projects
Code Style Guidelines
Technical Articles
Web Inspector
Web Developer Resources
Demos

Testing
Regression Testing
Leak Hunting
Writing New Tests
Getting a Crash Log

Welcome to the website for the WebKit Open Source Project!

WebKit is an open source web browser engine. WebKit is also the name of the Mac OS X system framework version of the engine that's used by Safari, Dashboard, Mail, and many other OS X applications. WebKit's HTML and JavaScript code began as a branch of the KHTML and KJS libraries from KDE. This website is also the home of S60's S60 WebKit development.

Getting involved

There are many ways to get involved. You can:

- download the latest nightly build
- install developer tools and then check out and build the source code

Once you have either of these, you can help by:

- reporting bugs you find in the software
- providing reductions to bugs
- submitting patches for review

More info

More information about WebKit can be found on its wiki. You can help here too, by adding information that can help others learn about WebKit. If you have more questions, contact us.

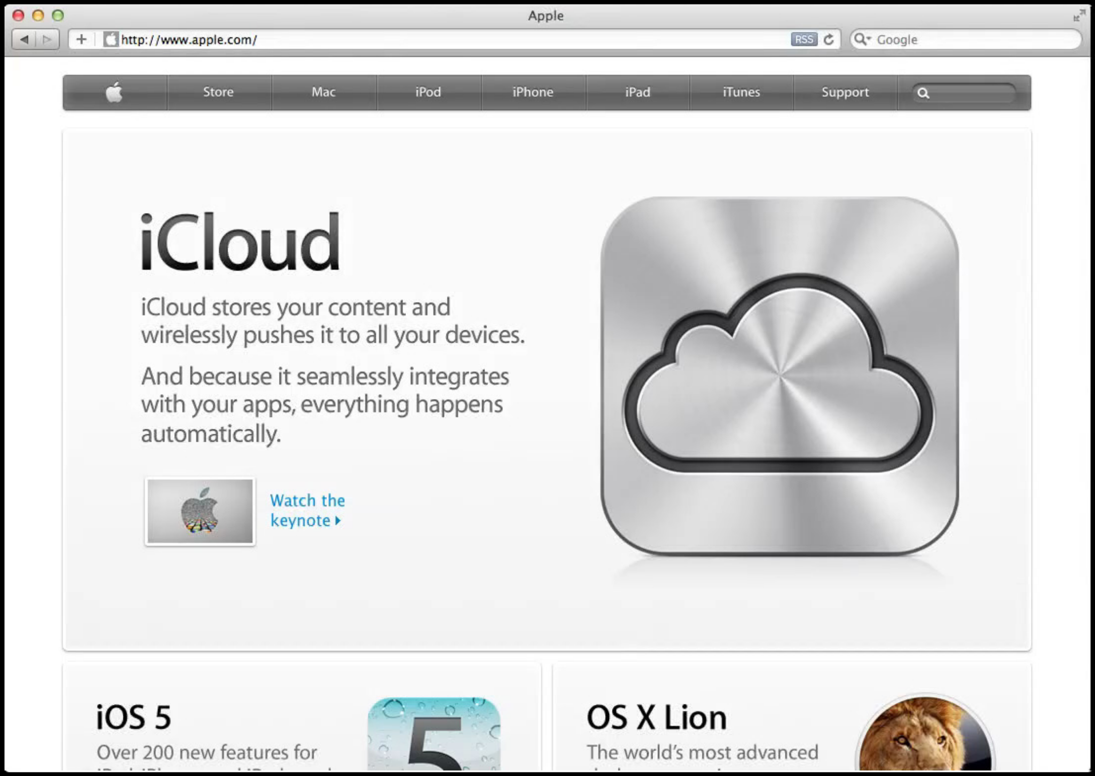
Projects

There are many exciting (new) projects that you can contribute to:

- help us improve Website compatibility
- write documentation
- SVG
- MathML
- CSS
- DOM

Scrollbars and Scrolling

New design



iCloud

iCloud stores your content and wirelessly pushes it to all your devices.

And because it seamlessly integrates with your apps, everything happens automatically.

Watch the keynote ▸

iOS 5

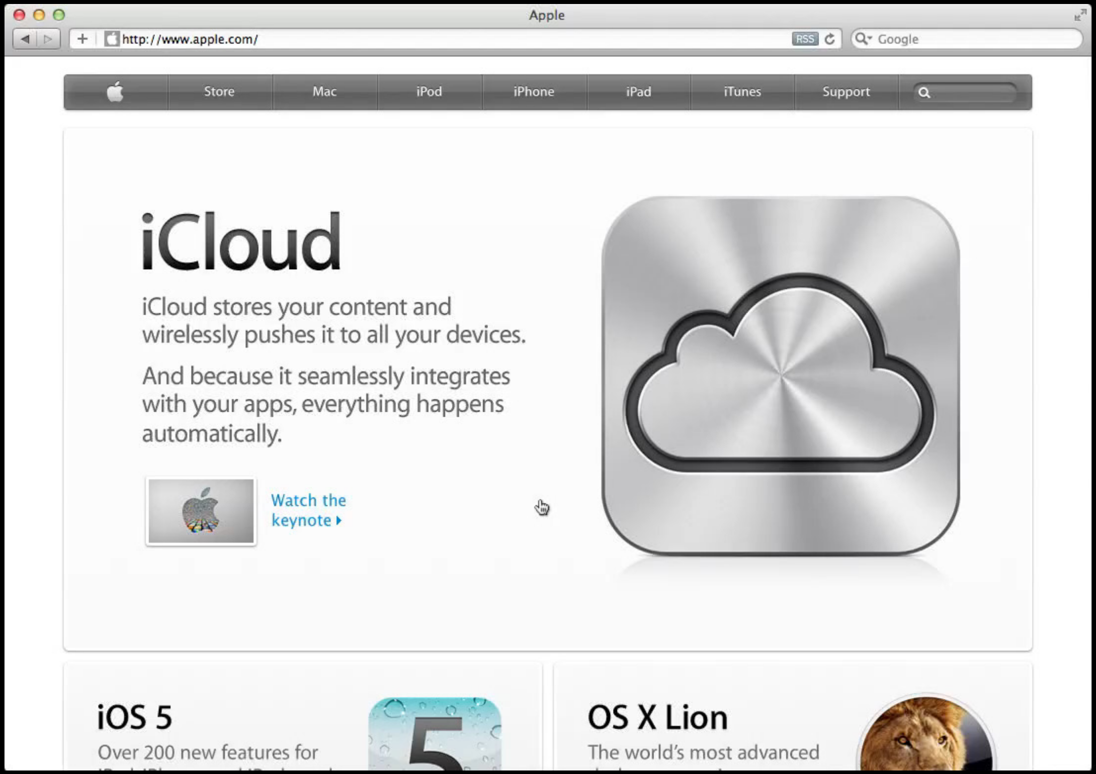
Over 200 new features for

OS X Lion

The world's most advanced

Scrollbars and Scrolling

New design



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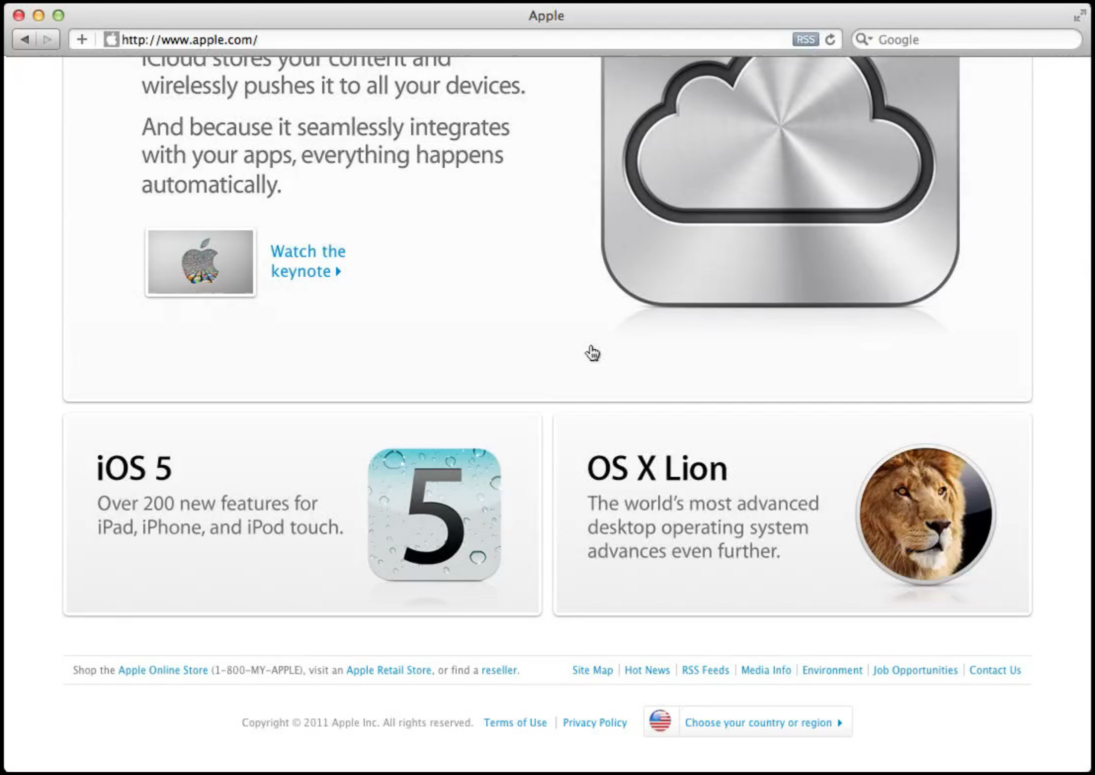

iCloud stores your content and wirelessly pushes it to all your devices.

And because it seamlessly integrates with your apps, everything happens automatically.

iOS 5

Over 200 new features for iPad, iPhone, and iPod touch.

OS X Lion

The world's most advanced desktop operating system advances even further.

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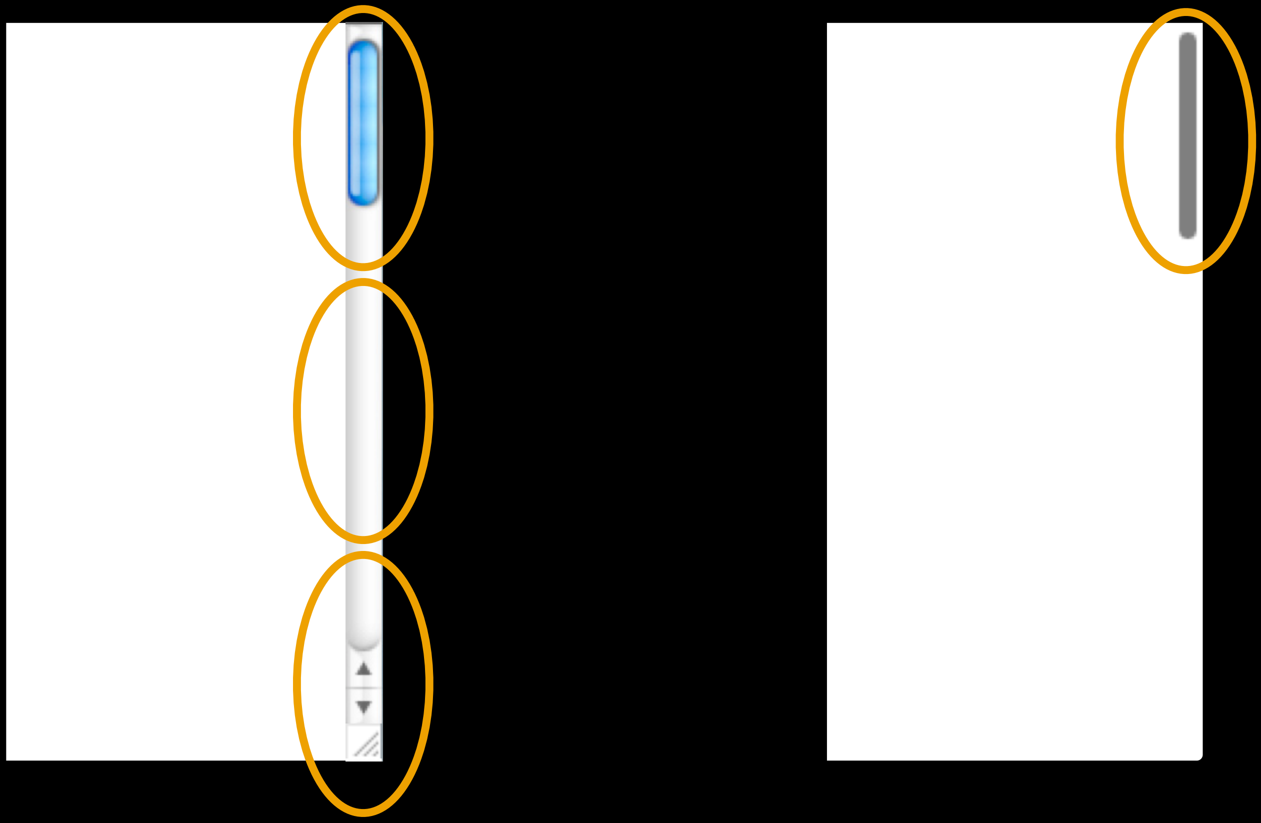
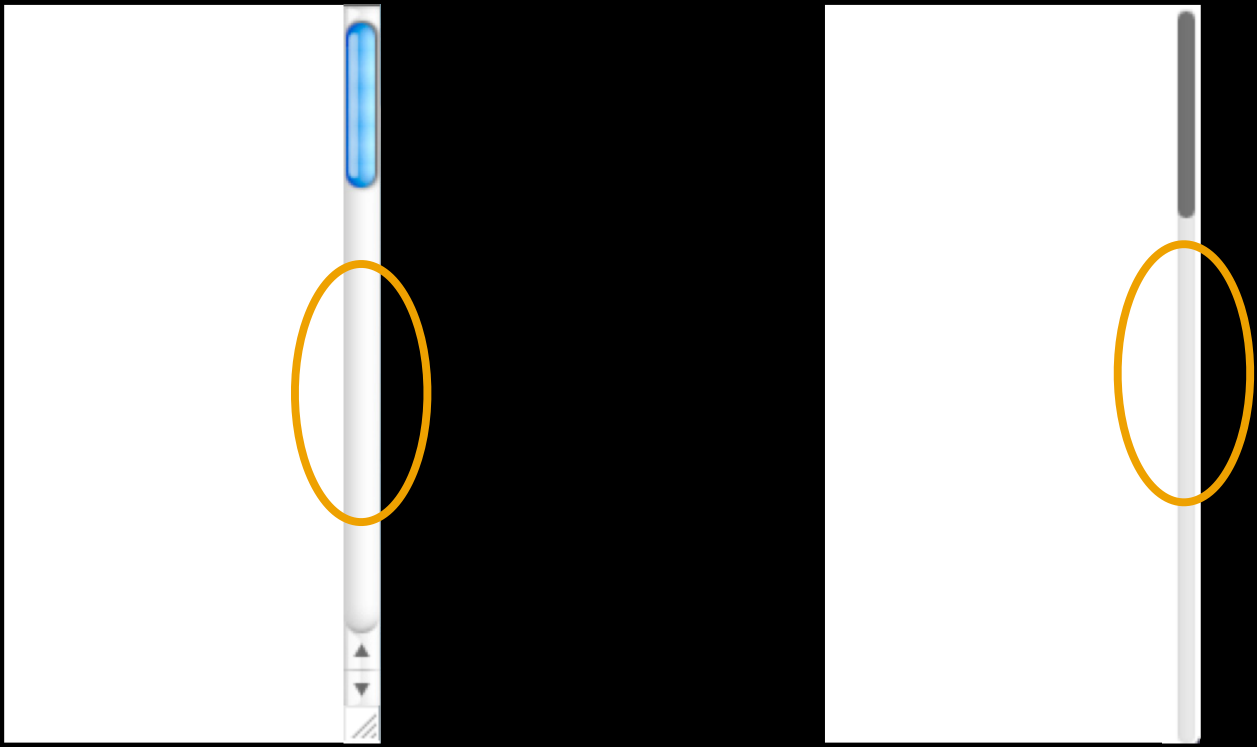
Scrollbars and Scrolling

Side-by-side



Scrollbars and Scrolling

Side-by-side



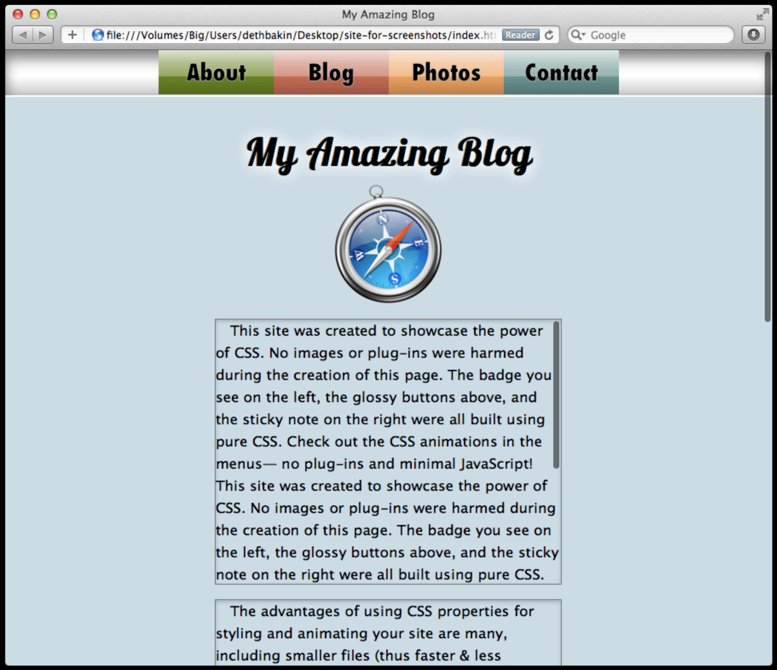
Scrollbars and Scrolling

What you will learn

- Overview of the new scrollbar design
- How the new design affects web content
- Overlay scrollbar color heuristic
- Scrolling

Scrollbars and Scrolling

New design on the web


My Amazing Blog
file:///Volumes/Big/Users/dethbakin/Desktop/site-for-screenshots/index.ht
Reader
Google
About
Blog
Photos
Contact

My Amazing Blog

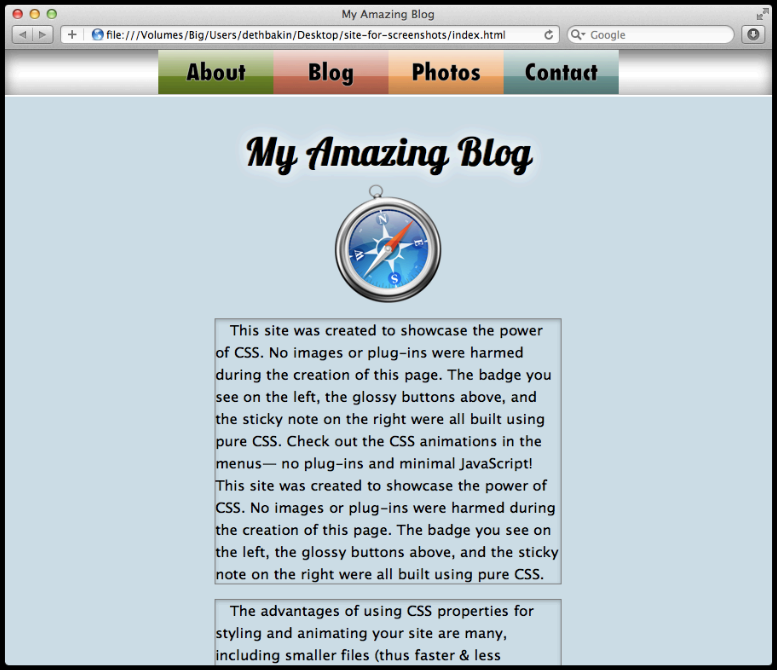
This site was created to showcase the power of CSS. No images or plug-ins were harmed during the creation of this page. The badge you see on the left, the glossy buttons above, and the sticky note on the right were all built using pure CSS. Check out the CSS animations in the menus— no plug-ins and minimal JavaScript! This site was created to showcase the power of CSS. No images or plug-ins were harmed during the creation of this page. The badge you see on the left, the glossy buttons above, and the sticky note on the right were all built using pure CSS.

The advantages of using CSS properties for styling and animating your site are many, including smaller files (thus faster & less

- All scrollable areas will honor the design

Scrollbars and Scrolling

New design on the web


My Amazing Blog
file:///Volumes/Big/Users/dethbakin/Desktop/site-for-screenshots/index.html
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About
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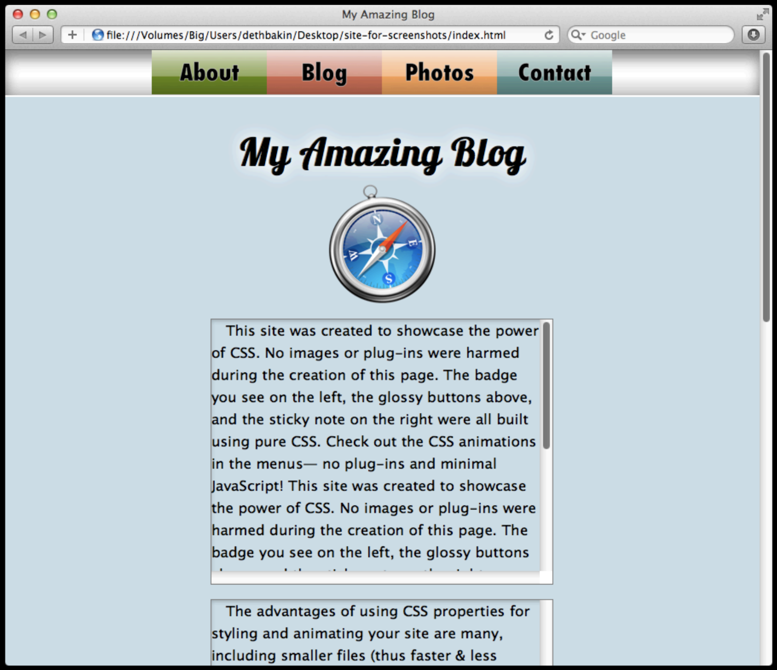
- All scrollable areas will honor the design
- No empty tracks for overlay scrollbars

Scrollbars and Scrolling

New design on the web


My Amazing Blog
file:///Volumes/Big/Users/dethbakin/Desktop/site-for-screenshots/index.html
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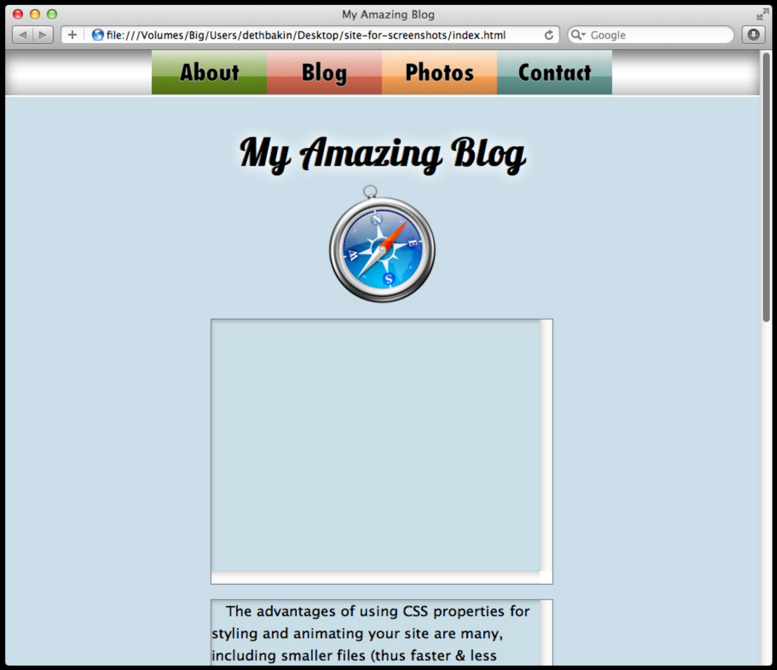
Scrollbars and Scrolling

New design on the web


My Amazing Blog
file:///Volumes/Big/Users/dethbakin/Desktop/site-for-screenshots/index.html
Google
About
Blog
Photos
Contact
My Amazing Blog

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- All scrollable areas will honor the design
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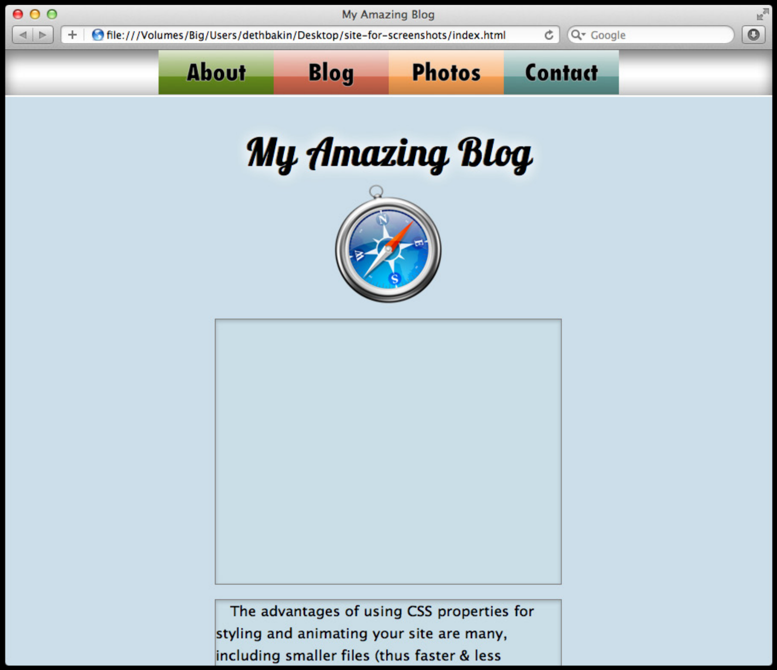
Scrollbars and Scrolling

New design on the web


My Amazing Blog
file:///Volumes/Big/Users/dethbakin/Desktop/site-for-screenshots/index.html
Google
About
Blog
Photos
Contact
My Amazing Blog

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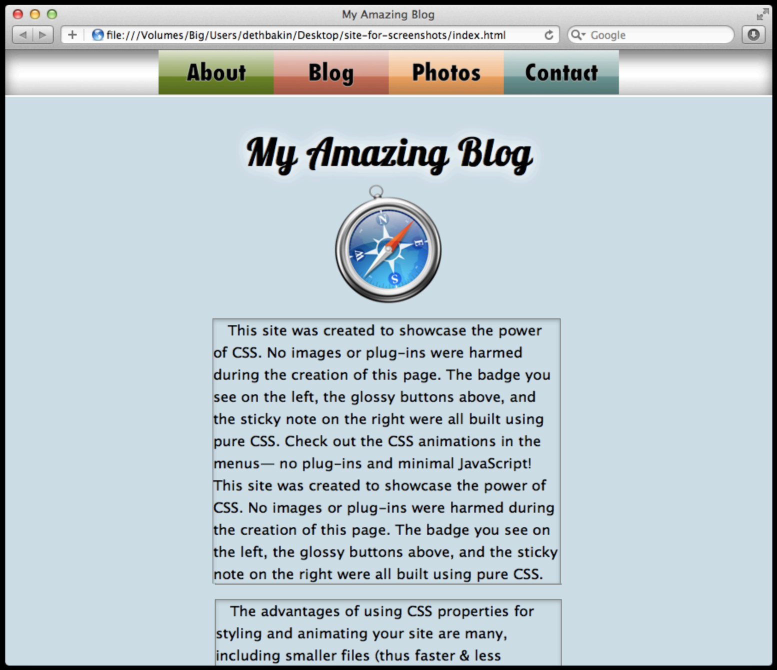
- All scrollable areas will honor the design
- No empty tracks for overlay scrollbars

Scrollbars and Scrolling

New design on the web



My Amazing Blog
file:///Volumes/Big/Users/dethbakin/Desktop/site-for-screenshots/index.html
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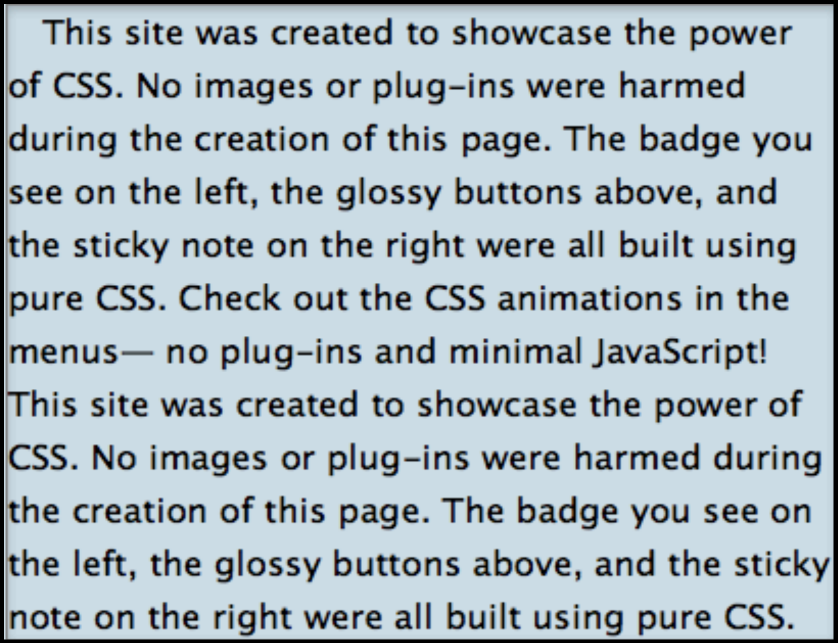
- All scrollable areas will honor the design
- No empty tracks for overlay scrollbars
- 15 more visual pixels

Scrollbars and Scrolling

New design on the web



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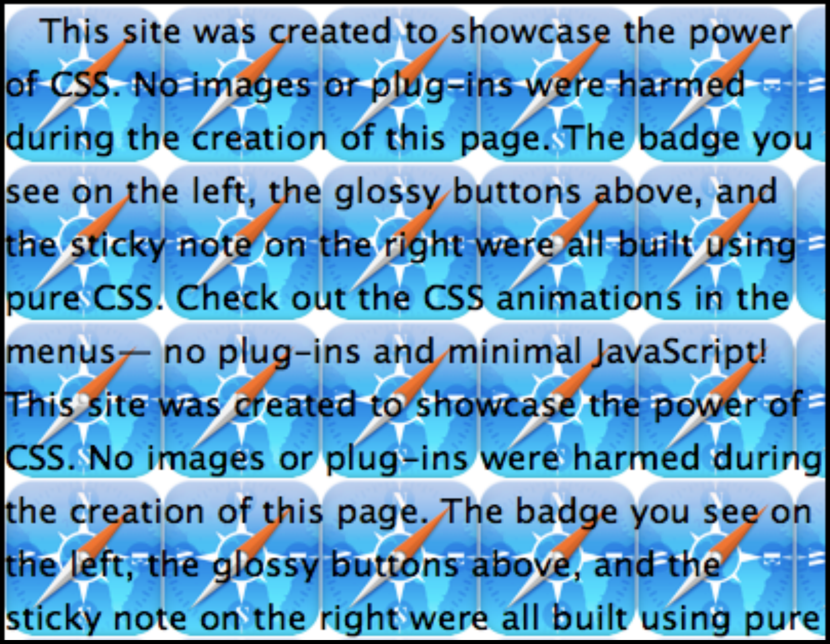
Scrollbars and Scrolling

New design on the web



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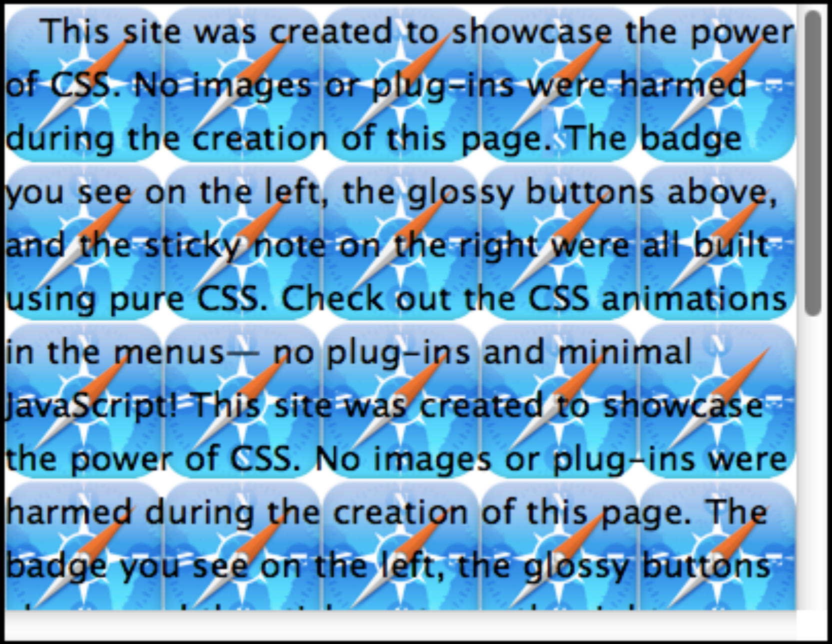
Scrollbars and Scrolling

New design on the web



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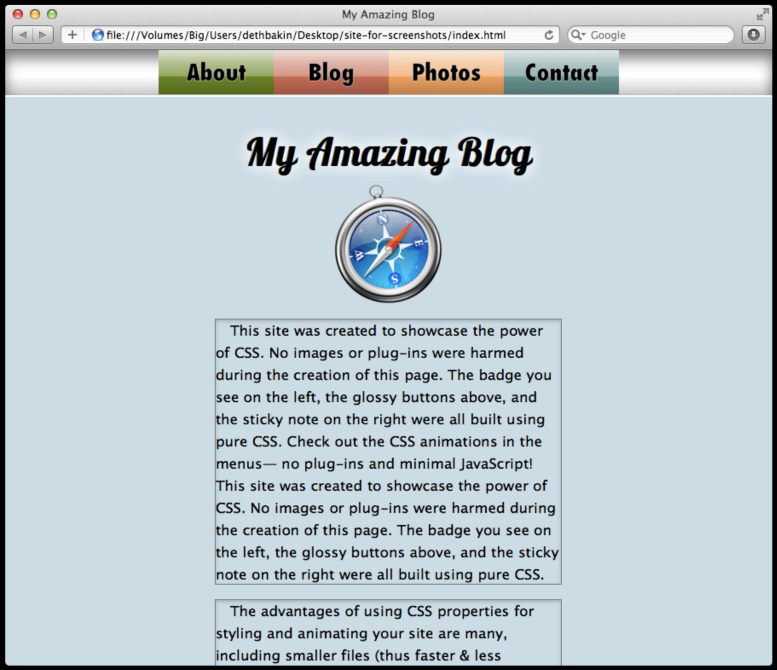
Scrollbars and Scrolling

New design on the web


My Amazing Blog
file:///Volumes/Big/Users/dethbakin/Desktop/site-for-screenshots/index.html
Google
About
Blog
Photos
Contact

My Amazing Blog

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The advantages of using CSS properties for styling and animating your site are many, including smaller files (thus faster & less

- All scrollable areas will honor the design
- No empty tracks for overlay scrollbars
- 15 more visual pixels
- Most DOM metrics are the same
  - offsetWidth, scrollWidth, etc.
- Some are different
  - clientWidth, computed style
- Make sure you like what you see

Scrollbars and Scrolling

What you will learn

- Overview of the new scrollbar design
- How the new design affects web content
- Overlay scrollbar color heuristic
- Scrolling

Scrollbars and Scrolling

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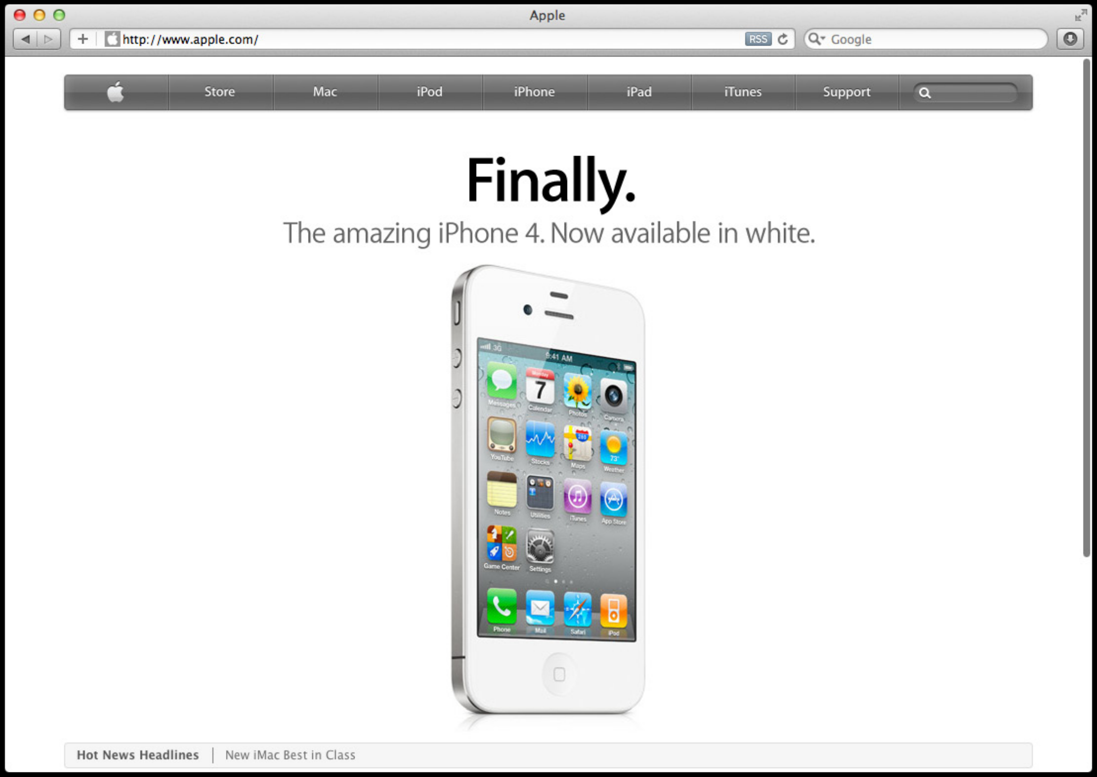
Overlay scrollbar color heuristic



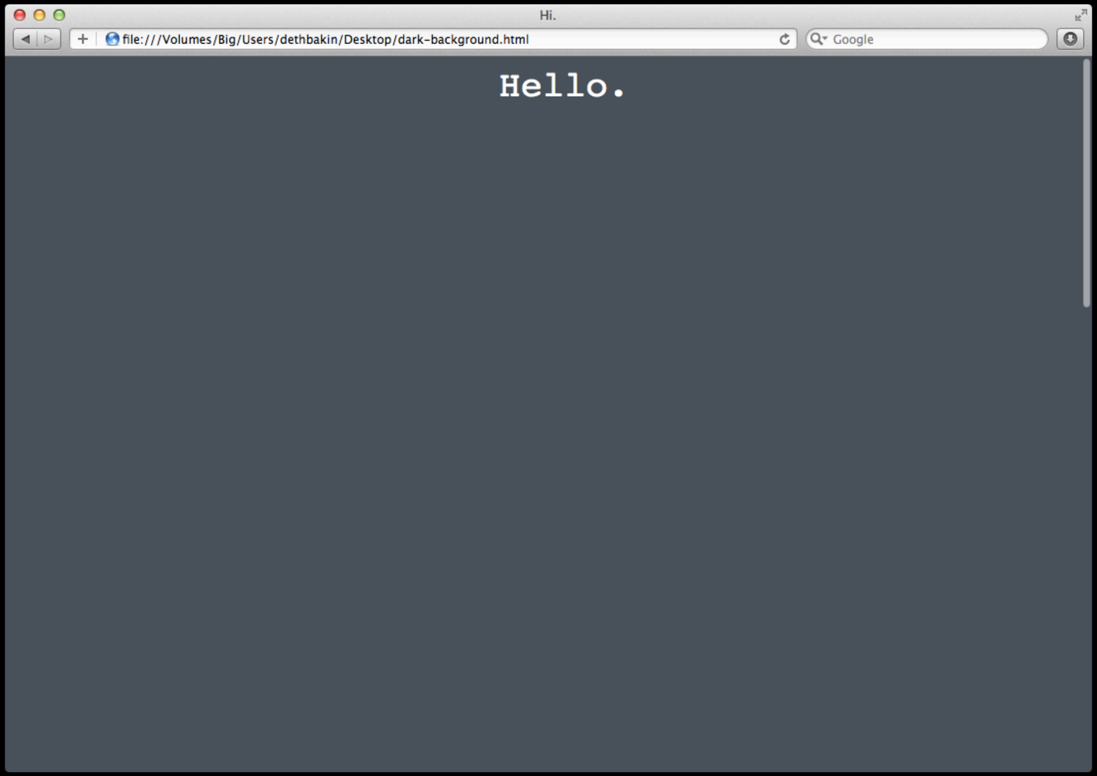
Finally.

The amazing iPhone 4. Now available in white.

Hot News Headlines | New iMac Best in Class

Scrollbars and Scrolling

Overlay scrollbar color heuristic

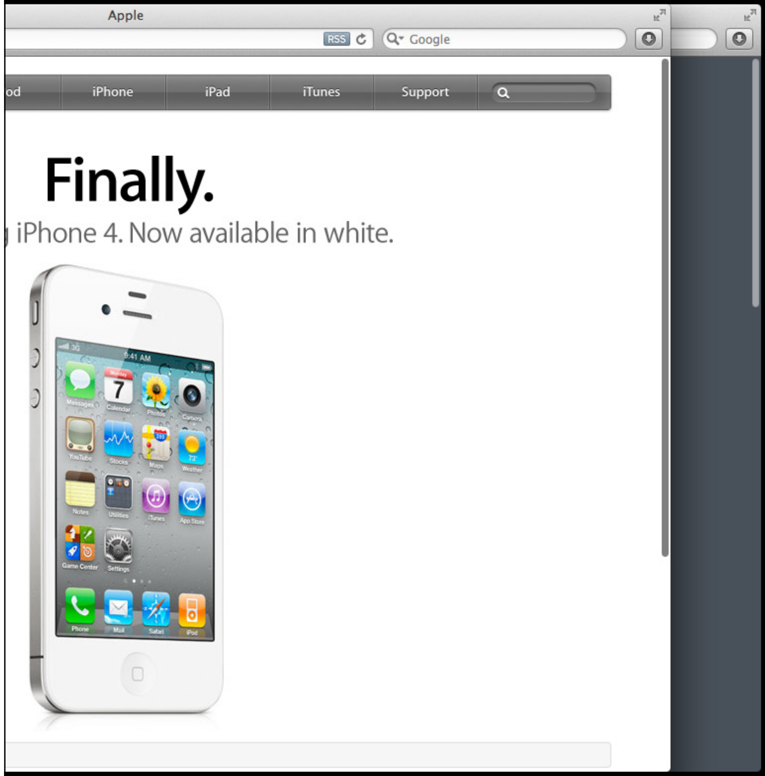


Hi.
file:///Volumes/Big/Users/dethbakin/Desktop/dark-background.html
Google

Hello.

Scrollbars and Scrolling

Overlay scrollbar color heuristic



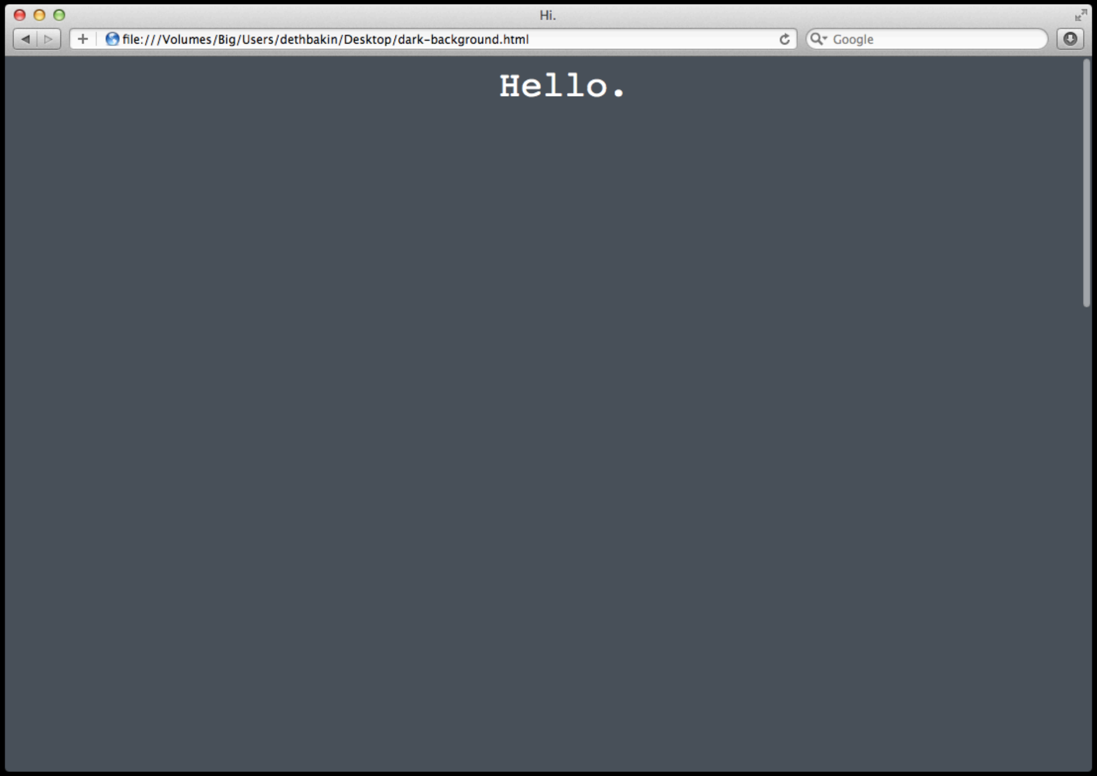
Finally.

iPhone 4. Now available in white.

- Blend relevant colors
  - <html> background-color
  - <body> background-color
  - Base background color
- Result converted to HSL
- Background images are ignored
- All other elements are ignored

Scrollbars and Scrolling

Overlay scrollbar color heuristic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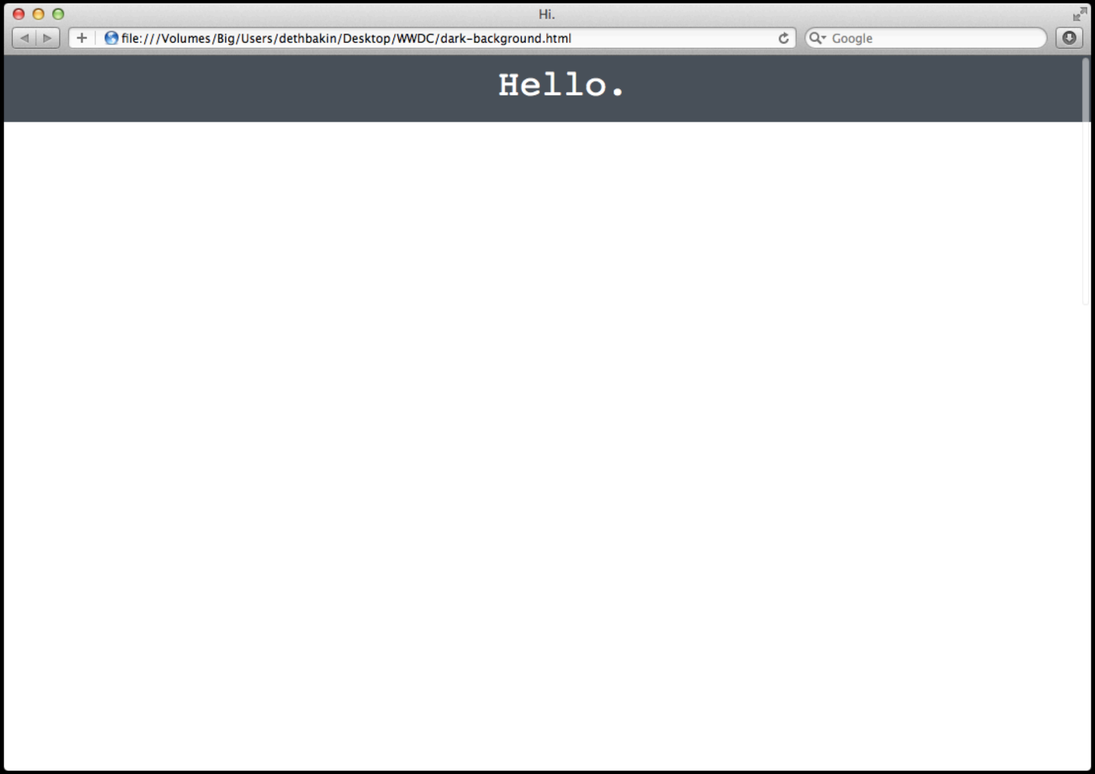
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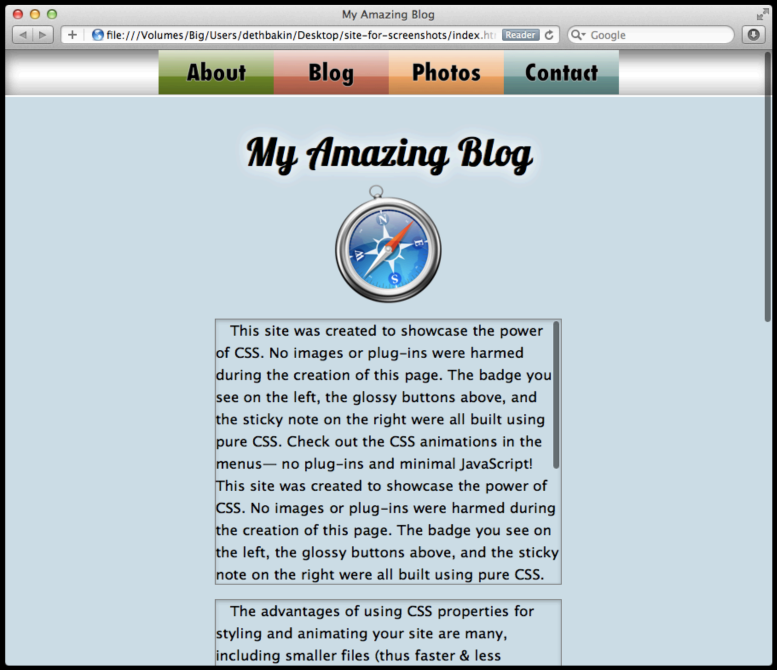
Scrollbars and Scrolling

Overlay scrollbar color heuristic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- Scrollbar can be one of two colors
- Make sure you like what you see

Scrollbars and Scrolling

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Scrollbars and Scrolling

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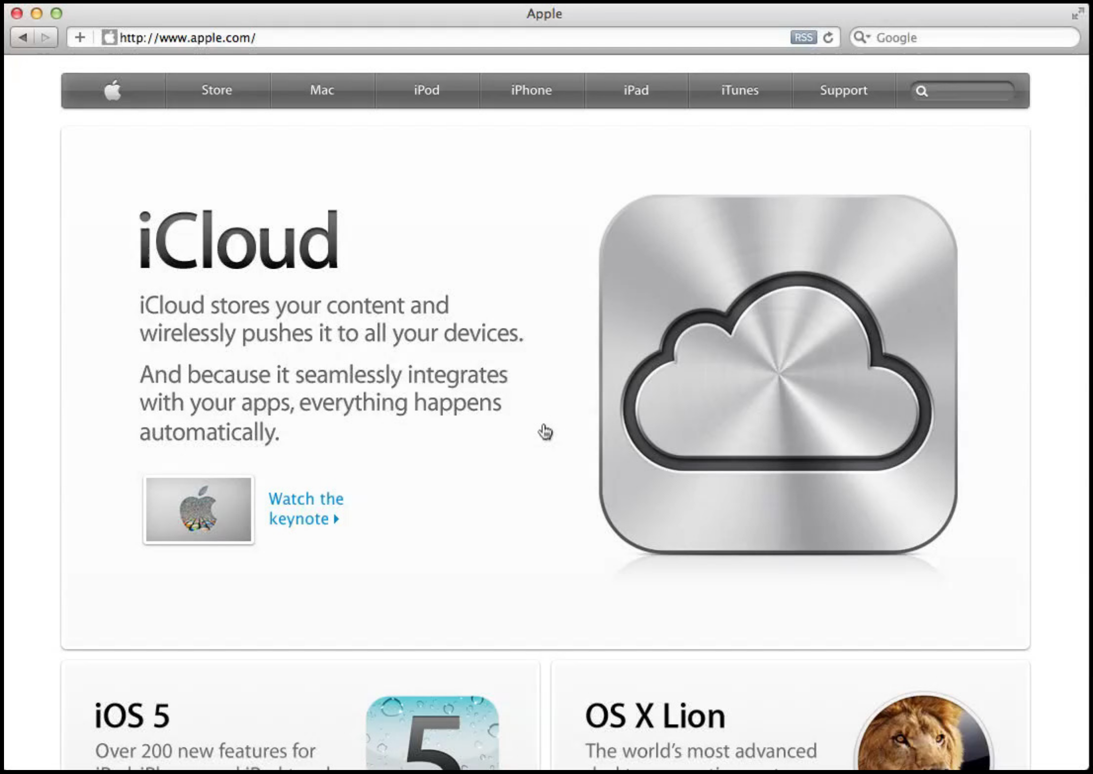
Scrolling on Lion

Rubber-banding



iCloud

iCloud stores your content and wirelessly pushes it to all your devices.

And because it seamlessly integrates with your apps, everything happens automatically.

iOS 5

Over 200 new features for

OS X Lion

The world's most advanced

Scrolling on Lion

Rubber banding

- During a rubber band on Lion:
  - Scroll events fire
  - Scroll offset can be negative
  - Scroll offset can be greater than expected
- Different on iOS

Scrollbars and Scrolling

What you will learn

- Overview of the new scrollbar design
- How the new design affects web content
- Overlay scrollbar color heuristic
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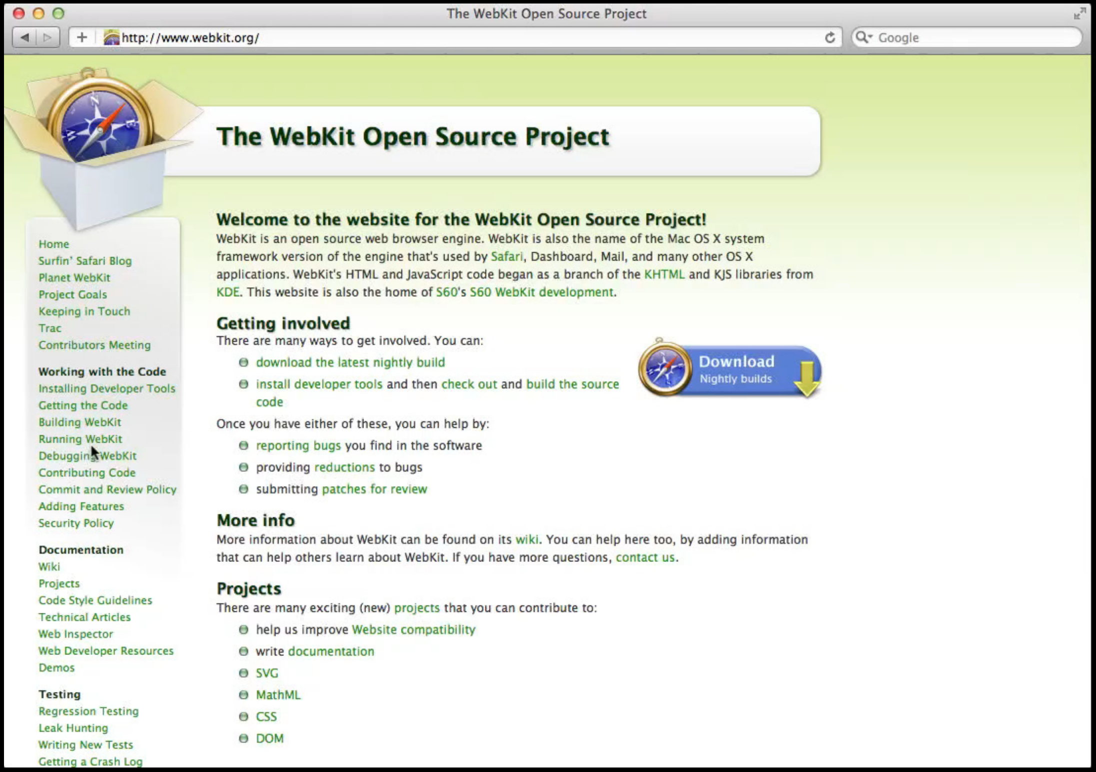
Fluid Gestures

Fluid Gestures

Now on MacOS X



The WebKit Open Source Project

Home
Surfin' Safari Blog
Planet WebKit
Project Goals
Keeping in Touch
Trac
Contributors Meeting

Working with the Code
Installing Developer Tools
Getting the Code
Building WebKit
Running WebKit
Debugging WebKit
Contributing Code
Commit and Review Policy
Adding Features
Security Policy

Documentation
Wiki
Projects
Code Style Guidelines
Technical Articles
Web Inspector
Web Developer Resources
Demos

Testing
Regression Testing
Leak Hunting
Writing New Tests
Getting a Crash Log

Welcome to the website for the WebKit Open Source Project!

WebKit is an open source web browser engine. WebKit is also the name of the Mac OS X system framework version of the engine that's used by Safari, Dashboard, Mail, and many other OS X applications. WebKit's HTML and JavaScript code began as a branch of the KHTML and KJS libraries from KDE. This website is also the home of S60's S60 WebKit development.

Getting involved

There are many ways to get involved. You can:

- download the latest nightly build
- install developer tools and then check out and build the source code

Once you have either of these, you can help by:

- reporting bugs you find in the software
- providing reductions to bugs
- submitting patches for review

More info

More information about WebKit can be found on its wiki. You can help here too, by adding information that can help others learn about WebKit. If you have more questions, contact us.

Projects

There are many exciting (new) projects that you can contribute to:

- help us improve Website compatibility
- write documentation
- SVG
- MathML
- CSS
- DOM

Fluid Gestures

What you will learn

- Optimizing web content for double tap
- Ensuring back/forward performance

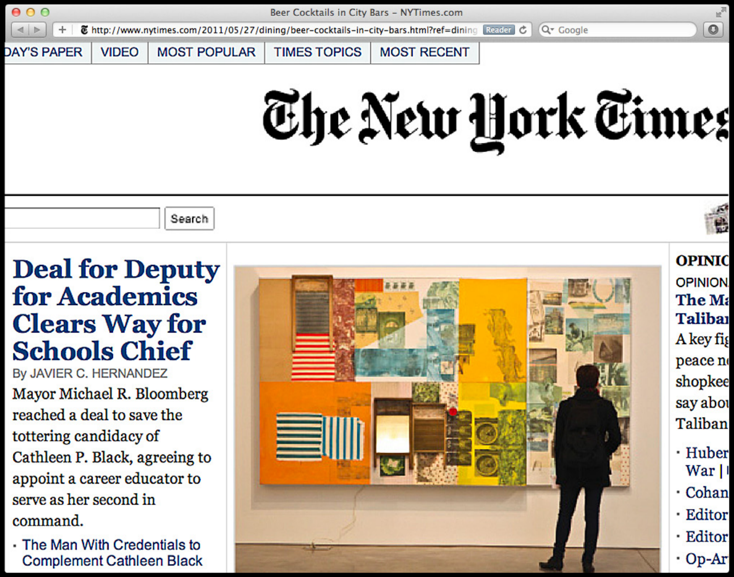
Fluid Gestures

What you will learn

- Optimizing web content for double tap
- Ensuring back/forward performance

Fluid Gestures

Double tap algorithm



Deal for Deputy for Academics Clears Way for Schools Chief

By JAVIER C. HERNANDEZ

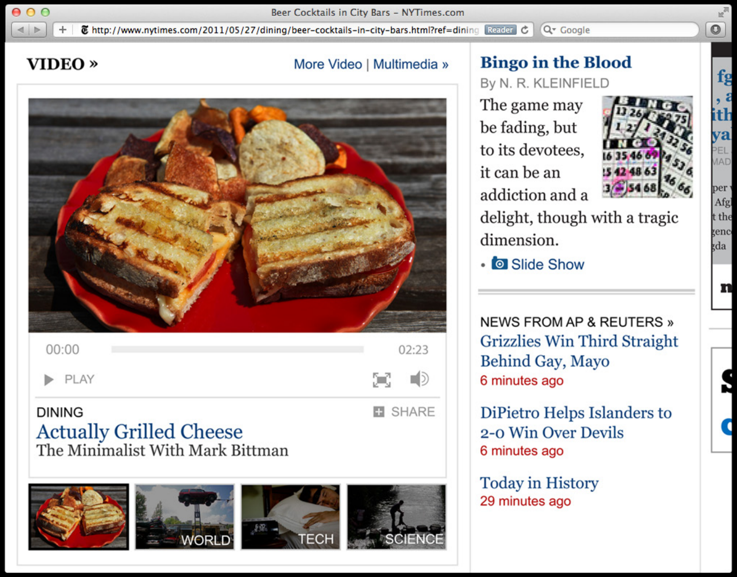
Mayor Michael R. Bloomberg reached a deal to save the tottering candidacy of Cathleen P. Black, agreeing to appoint a career educator to serve as her second in command.

- The Man With Credentials to Complement Cathleen Black

- Same algorithm on Lion and iOS
- Finds the tapped element
- Finds the first block or image element ancestor
  - Blocks zoom to fit width-wise

Fluid Gestures

Double tap algorithm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02:23
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SHARE
WORLD
TECH
SCIENCE
NEWS FROM AP & REUTERS »

Actually Grilled Cheese
The Minimalist With Mark Bittman

Bingo in the Blood
By N. R. KLEINFIELD
The game may be fading, but to its devotees, it can be an addiction and a delight, though with a tragic dimension.
- Slide Show

Grizzlies Win Third Straight Behind Gay, Mayo
6 minutes ago

DiPietro Helps Islanders to 2-0 Win Over Devils
6 minutes ago

Today in History
29 minutes ago

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- Finds the tapped element
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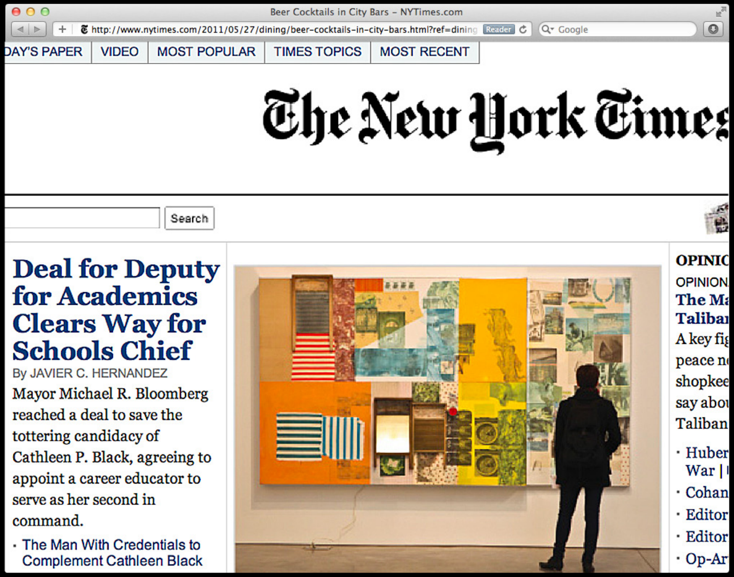
Fluid Gestures

Double tap algorithm



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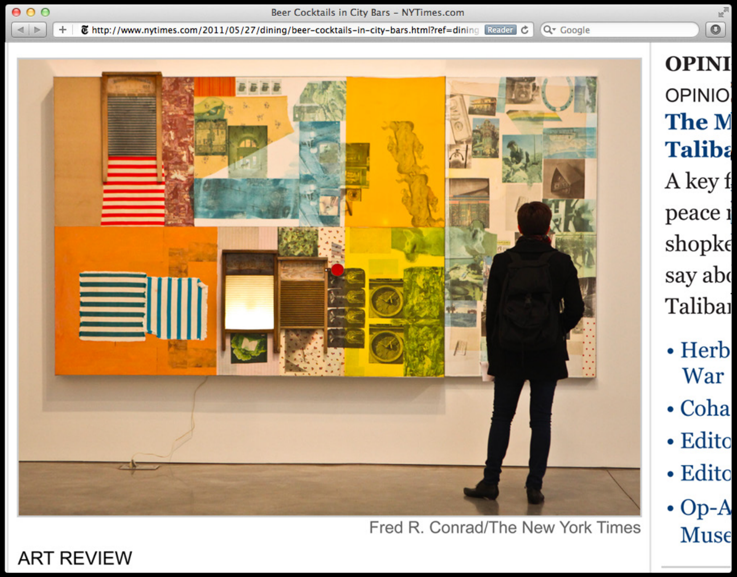
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• Herb
War
• Coha
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• Edito
• Op-A
Muse

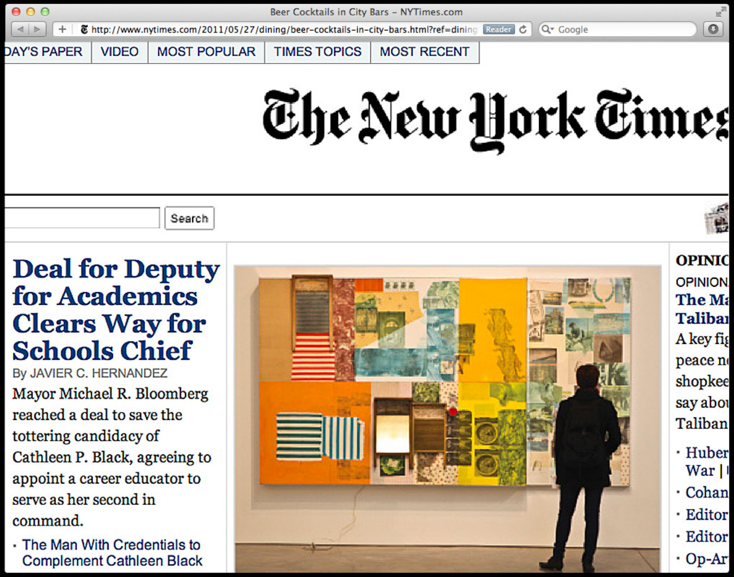
Fred R. Conrad/The New York Times

ART REVIEW

- Same algorithm on Lion and iOS
- Finds the tapped element
- Finds the first block or image element ancestor
  - Blocks zoom to fit width-wise
  - Images zoom to fit

Fluid Gestures

Double tap algorithm



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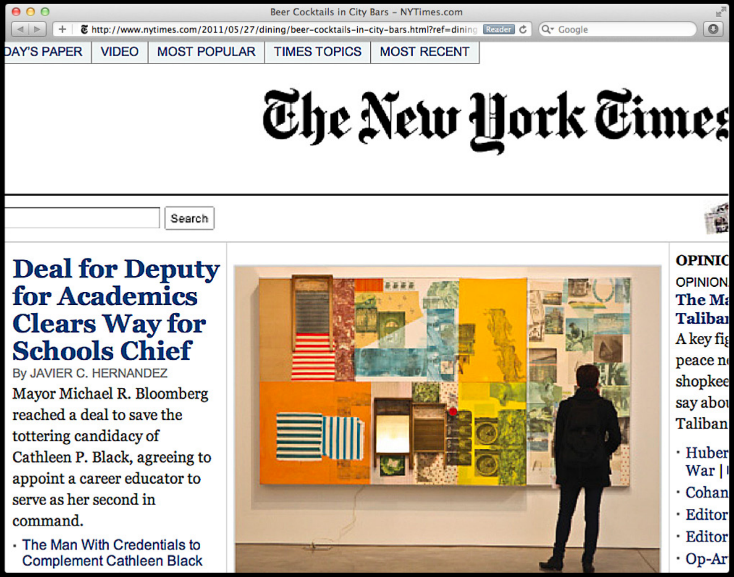
- Finds the first block or image element ancestor
  - Blocks zoom to fit width-wise
  - Images zoom to fit
- Maximum scale is different on iOS and Lion

Fluid Gestures

Double tap best practices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- Cohan
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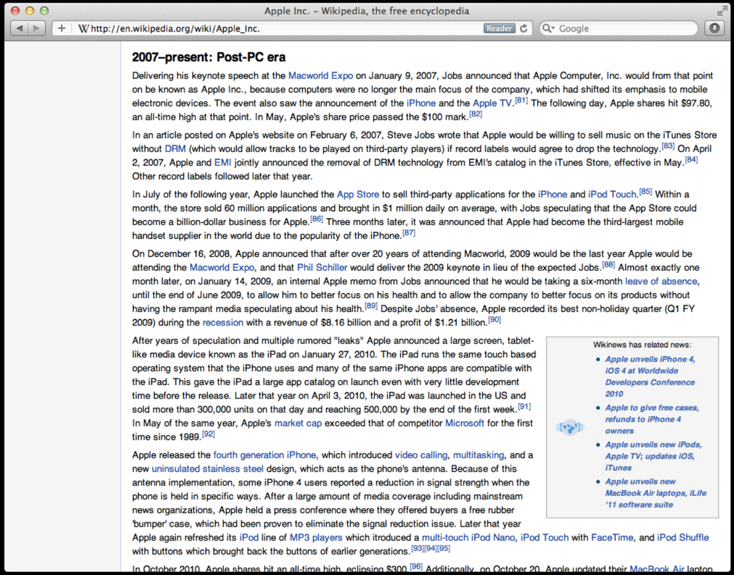
Apple Inc. – Wikipedia, the free encyclopedia
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2007–present: Post-PC era

Delivering his keynote speech at the Macworld Expo on January 9, 2007, Jobs announced that Apple Computer, Inc. would from that point on be known as Apple Inc., because computers were no longer the main focus of the company, which had shifted its emphasis to mobile electronic devices. The event also saw the announcement of the iPhone and the Apple TV.[81] The following day, Apple shares hit $97.80, an all-time high at that point. In May, Apple's share price passed the $100 mark.[82]

In an article posted on Apple's website on February 6, 2007, Steve Jobs wrote that Apple would be willing to sell music on the iTunes Store without DRM (which would allow tracks to be played on third-party players) if record labels would agree to drop the technology.[83] On April 2, 2007, Apple and EMI jointly announced the removal of DRM technology from EMI's catalog in the iTunes Store, effective in May.[84] Other record labels followed later that year.

In July of the following year, Apple launched the App Store to sell third-party applications for the iPhone and iPod Touch.[85] Within a month, the store sold 60 million applications and brought in $1 million daily on average, with Jobs speculating that the App Store could become a billion-dollar business for Apple.[86] Three months later, it was announced that Apple had become the third-largest mobile handset supplier in the world due to the popularity of the iPhone.[87]

On December 16, 2008, Apple announced that after over 20 years of attending Macworld, 2009 would be the last year Apple would be attending the Macworld Expo, and that Phil Schiller would deliver the 2009 keynote in lieu of the expected Jobs.[88] Almost exactly one month later, on January 14, 2009, an internal Apple memo from Jobs announced that he would be taking a six-month leave of absence, until the end of June 2009, to allow him to better focus on his health and to allow the company to better focus on its products without having the rampant media speculating about his health.[89] Despite Jobs' absence, Apple recorded its best non-holiday quarter (Q1 FY 2009) during the recession with a revenue of $8.16 billion and a profit of $1.21 billion.[90]

After years of speculation and multiple rumored "leaks" Apple announced a large screen, tablet-like media device known as the iPad on January 27, 2010. The iPad runs the same touch based operating system that the iPhone uses and many of the same iPhone apps are compatible with the iPad. This gave the iPad a large app catalog on launch even with very little development time before the release. Later that year on April 3, 2010, the iPad was launched in the US and sold more than 300,000 units on that day and reaching 500,000 by the end of the first week.[91] In May of the same year, Apple's market cap exceeded that of competitor Microsoft for the first time since 1989.[92]

Apple released the fourth generation iPhone, which introduced video calling, multitasking, and a new uninsulated stainless steel design, which acts as the phone's antenna. Because of this antenna implementation, some iPhone 4 users reported a reduction in signal strength when the phone is held in specific ways. After a large amount of media coverage including mainstream news organizations, Apple held a press conference where they offered buyers a free rubber 'bumper' case, which had been proven to eliminate the signal reduction issue. Later that year Apple again refreshed its iPod line of MP3 players which itroduced a multi-touch iPod Nano, iPod Touch with FaceTime, and iPod Shuffle with buttons which brought back the buttons of earlier generations.[93][94][95]

Wikinews has related news:

- *Apple unveils iPhone 4, iOS 4 at Worldwide Developers Conference 2010*
- *Apple to give free cases, refunds to iPhone 4 owners*
- *Apple unveils new iPods, Apple TV; updates iOS, iTunes*
- *Apple unveils new MacBook Air laptops, iLife '11 software suite*

In October 2010, Apple shares hit an all-time high, eclipsing $300.[96] Additionally, on October 20, Apple updated their MacBook Air laptop,

- Just works most of the time!
- Works best if you:
  - Avoid wide blocks of text

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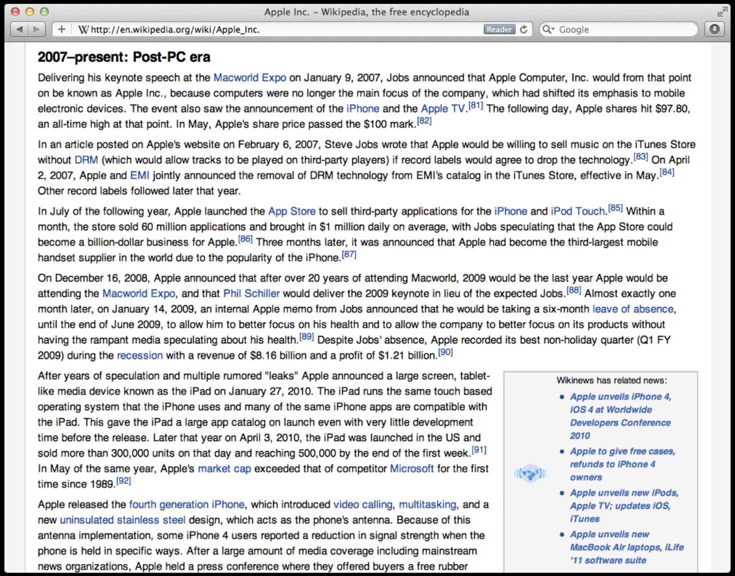
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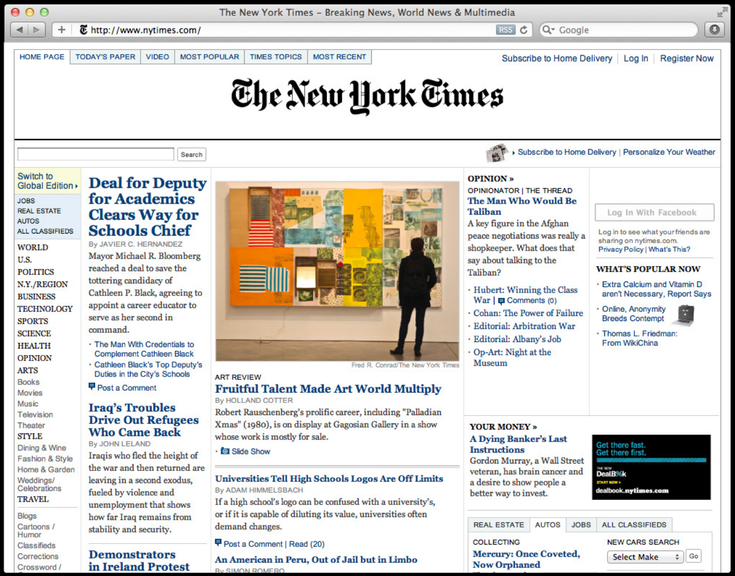

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- The Man With Credentials to Complement Cathleen Black
- Cathleen Black's Top Deputy's Duties in the City's Schools

Post a Comment

Iraq's Troubles Drive Out Refugees Who Came Back

By JOHN LELAND

Iraqis who fled the height of the war and then returned are leaving in a second exodus, fueled by violence and unemployment that shows how far Iraq remains from stability and security.

Demonstrators in Ireland Protest

Fred R. Conrad/The New York Times

ART REVIEW

Fruitful Talent Made Art World Multiply

By HOLLAND COTTER

Robert Rauschenberg's prolific career, including "Palladian Xmas" (1980), is on display at Gagosian Gallery in a show whose work is mostly for sale.

- Slide Show

Universities Tell High Schools Logos Are Off Limits

By ADAM HIMMELSBACH

If a high school's logo can be confused with a university's, or if it is capable of diluting its value, universities often demand changes.

Post a Comment | Read (20)

An American in Peru, Out of Jail but in Limbo

By SIMON ROMERO

OPINION »

OPINIONATOR | THE THREAD

The Man Who Would Be Taliban

A key figure in the Afghan peace negotiations was really a shopkeeper. What does that say about talking to the Taliban?

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A Dying Banker's Last Instructions

Gordon Murray, a Wall Street veteran, has brain cancer and a desire to show people a better way to invest.

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COLLECTING

Mercury: Once Coveted, Now Orphaned

NEW CARS SEARCH

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- Just works most of the time!
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The Page Cache

CSS
JS

JS

Page Cache

The WebKit Open Source Project

- Home
- Surfin' Safari Blog
- Planet WebKit
- Project Goals
- Keeping in Touch
- Trac
- Contributors Meeting

Working with the Code

- Installing Developer Tools
- Getting the Code
- Building WebKit
- Running WebKit
- Debugging WebKit
- Contributing Code
- Commit and Review Policy
- Adding Features
- Security Policy

Documentation

- Wiki
- Projects
- Code Style Guidelines
- Technical Articles
- Web Inspector
- Web Developer Resources
- Demos

Testing

- Regression Testing
- Leak Hunting
- Writing New Tests
- Getting a Crash Log

Welcome to the website for the WebKit Open Source Project!

WebKit is an open source web browse Mac OS X system
framework version of the engine t other OS X
applications. WebKit's HTML and nd KJS libraries from
KDE. This website is also the hor

Getting involved

There are many ways to get invo

- download the latest night
- install developer tools an
  code

Once you have either of these, y

- reporting bugs you find i
- providing reductions to b
- submitting patches for rev

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Projects

There are many exciting (new) projects that you can contribute to:

- help us improve Website compatibility
- write documentation
- SVG
- MathML
- CSS
- DOM

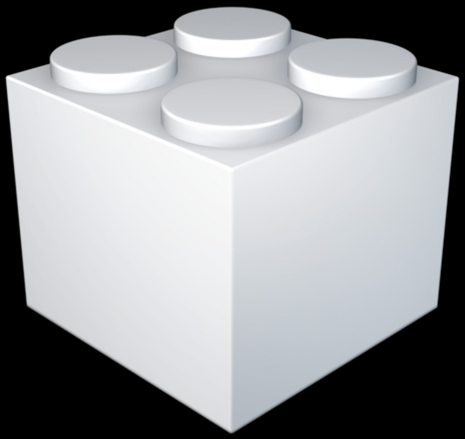
Fluid Gestures

Back/forward performance

- Uncachable:
    - HTTPS

Fluid Gestures

Back/forward performance



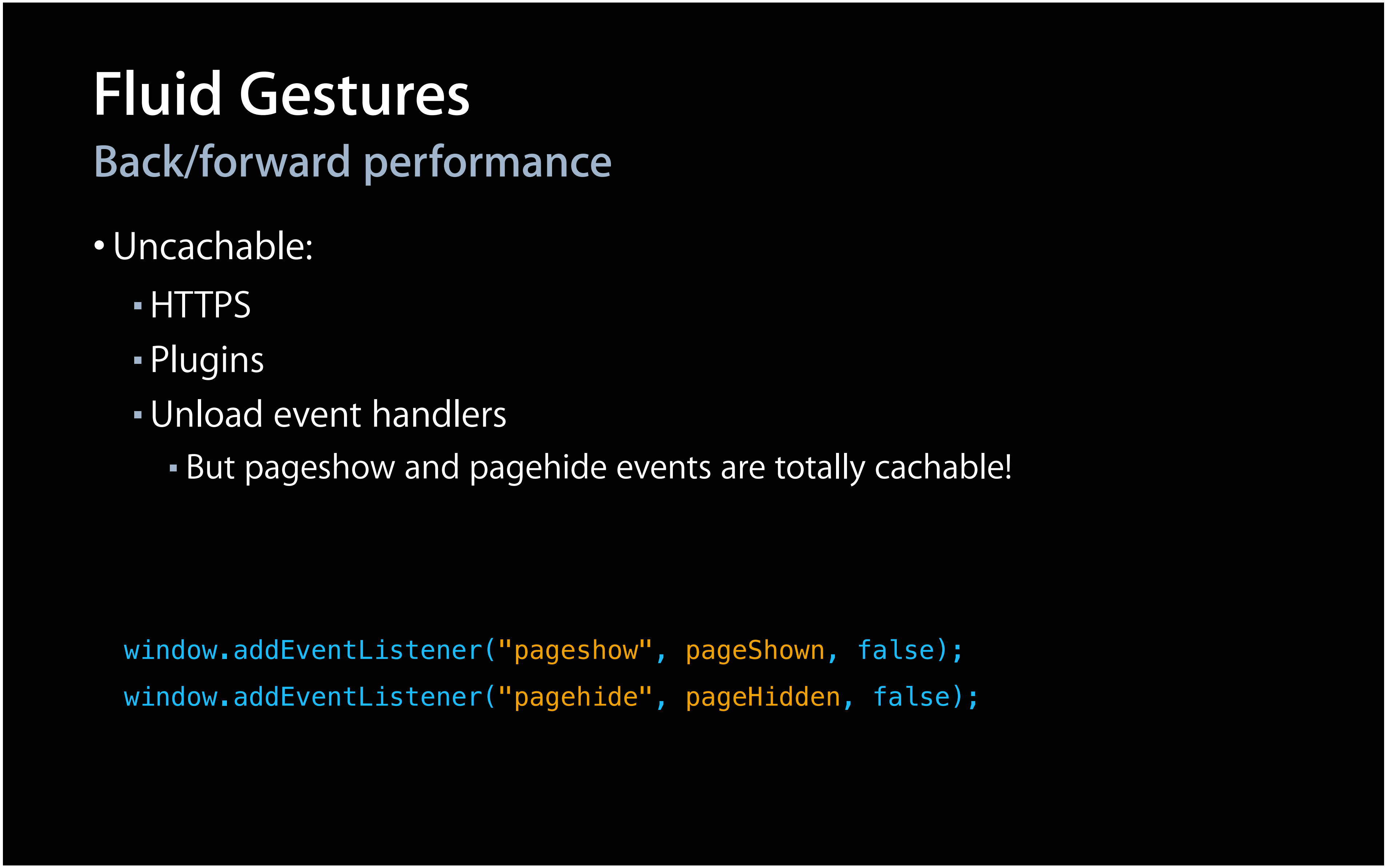
- Uncachable:
  - HTTPS
  - Plugins

Fluid Gestures

Back/forward performance

- Uncachable
  - HTTPS
  - Plugins
  - Unload event handlers

```
window.addEventListener("load", pageLoaded, false);
window.addEventListener("unload", pageUnloaded, false);
```



Fluid Gestures

Back/forward performance

- Uncachable:
  - HTTPS
  - Plugins
  - Unload event handlers
    - But pageshow and pagehide events are totally cachable!

```
window.addEventListener("pageshow", pageShown, false);
window.addEventListener("pagehide", pageHidden, false);
```

Fluid Gestures

What you will learn

- Optimizing web content for double tap
- Ensuring back/forward performance

Summary

- Most things will look great, as is
- Customizations and improvements available when you need them
- Test your content

More Information

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Documentation
Mac OS X Human Interface Guidelines
http://developer.apple.com/ue

Apple Developer Forums
http://devforums.apple.com

Related Sessions

Advanced HTML5 Media Controllers in Safari	Marina Tuesday 2:00PM
Understanding And Optimizing Web Graphics	Marina Wednesday 3:15PM
What's New in CSS Effects and Animations	Marina Wednesday 4:30PM

Labs

HTML5 Offline Storage Lab	Internet and Web Lab B Friday 9:00AM

Q&A

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