

Oct, 10th, 2011
Aarhus, Denmark



MOBILE HTML



MOBILE HTML5

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mobile+web developer

INTERNATIONAL
SOFTWARE DEVELOPMENT
CONFERENCE



gotocon.com

who am I?

mobile+web developer

mobilexweb.com blog



where?



where?

buenos aires ~ argentina



where?

buenos aires ~ argentina



patagonia

football

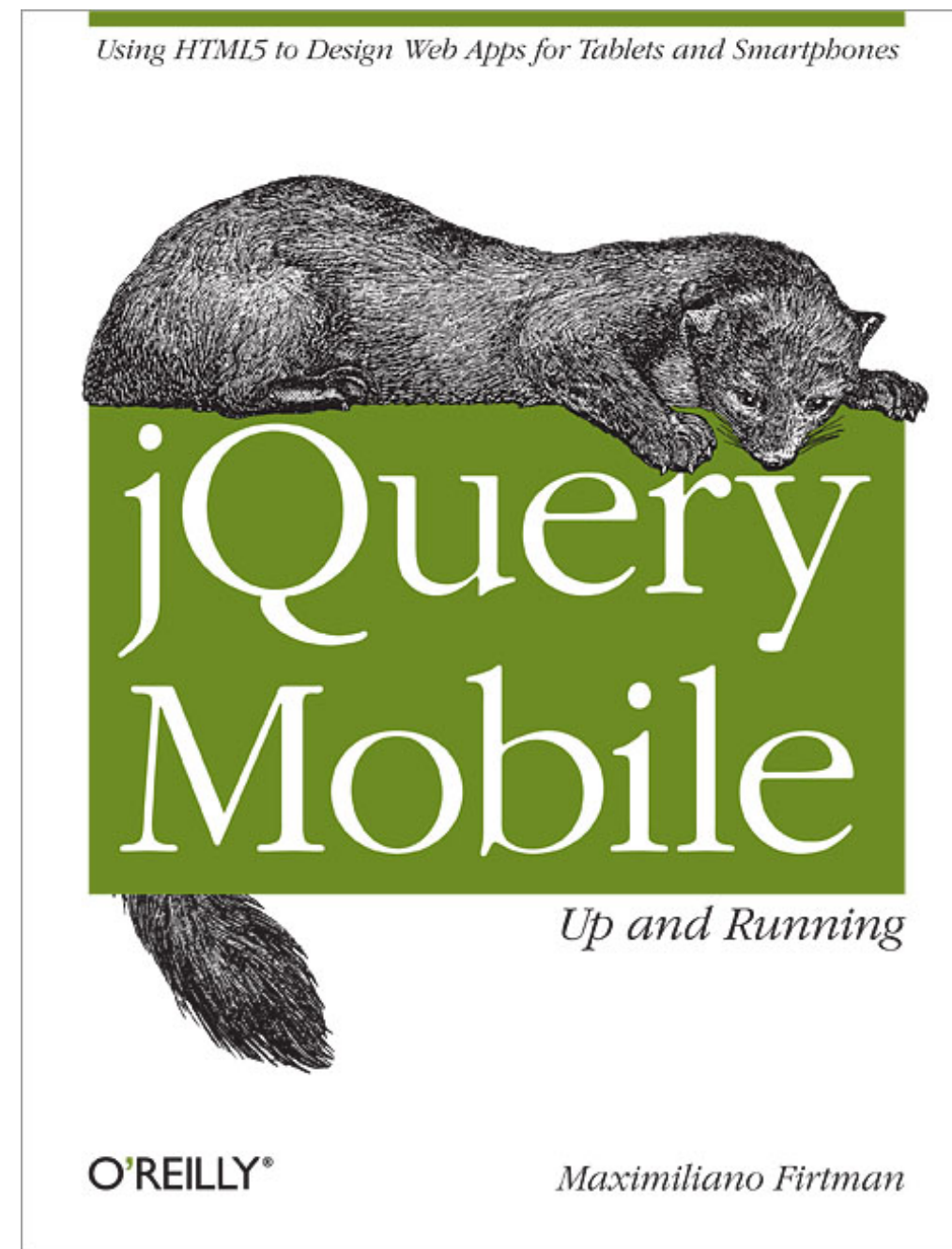
meat & wine

tango

books



Image from my house



Early Release

Using the Latest Today



Mobile HTML5

O'REILLY®

*Estelle Weyl
& Maximiliano Firtman*

coming soon...
also by @estellevw

MOBILE HTML



beta, of course



Do not program conditionals per platform or version. Always use feature detection.

This list is in progress. New tests, new features, more specificity of each feature and more mobile browsers soon!

If you want to help on the test, [contact me](#).

by [firt](#) | [Updates on Twitter](#) | [Blog](#)

Trying to understand HTML5 compatibility on mobile and tablet browsers

Feature	Safari on iOS	Android Browser		BlackBerry Browser		Internet Explorer	Opera		Firefox	webOS Browser	Symbian Browser
Version tested	iPhone, iPad	Phones (1.0-2.3)	Tablets (3.0+)	Phones	Tablet	Windows Phone	Mobile	Mini	Android		Nokia phones
Minimum version tested	3.2	1.5	3.0	5.0	1.0	9	11	5	6	1.4	^3
Application Cache <u>W3C API</u> Offline package installation.	✓	✓ 2.1+	✓	✓ 6.0+	✓		✓		✓	✓	
Web storage <u>W3C API</u> Persistent and session storage.	✓	✓ 2.0+	✓	✓ 6.0+	✓	✓	✓		✓	✓	
Web SQL storage <u>W3C API (no active)</u> Persistent SQLite storage.	✓	✓ 2.0+	✓	✓ 6.0+	✓		✓			✓	
Geolocation <u>W3C API</u> Geolocation & tracking using GPS, cells or Wi-Fi.	✓	✓ 2.0+	✓	✓ 6.0+	✓	✓	✓		✓	✓	
Multimedia <u>W3C API</u> Video & Audio Players	✓	✓ 2.3+	✓	✓ 7.0+	✓	✓	✓		✓	✓	
Server-Sent Events <u>W3C API</u> EventSource pattern to maintain the connection to the server open	✓ 4.1+						✓		✓		
Web Sockets <u>W3C API</u> Newbidirectional protocol over HTTP	✓ 4.2+			✓ 6.1+	✓		✓		✓		

www.mobilehtml5.org



native
vs
web

WAIT!

Are you sure?



native code vs javascript



browser VS installed apps & stores

what is native?

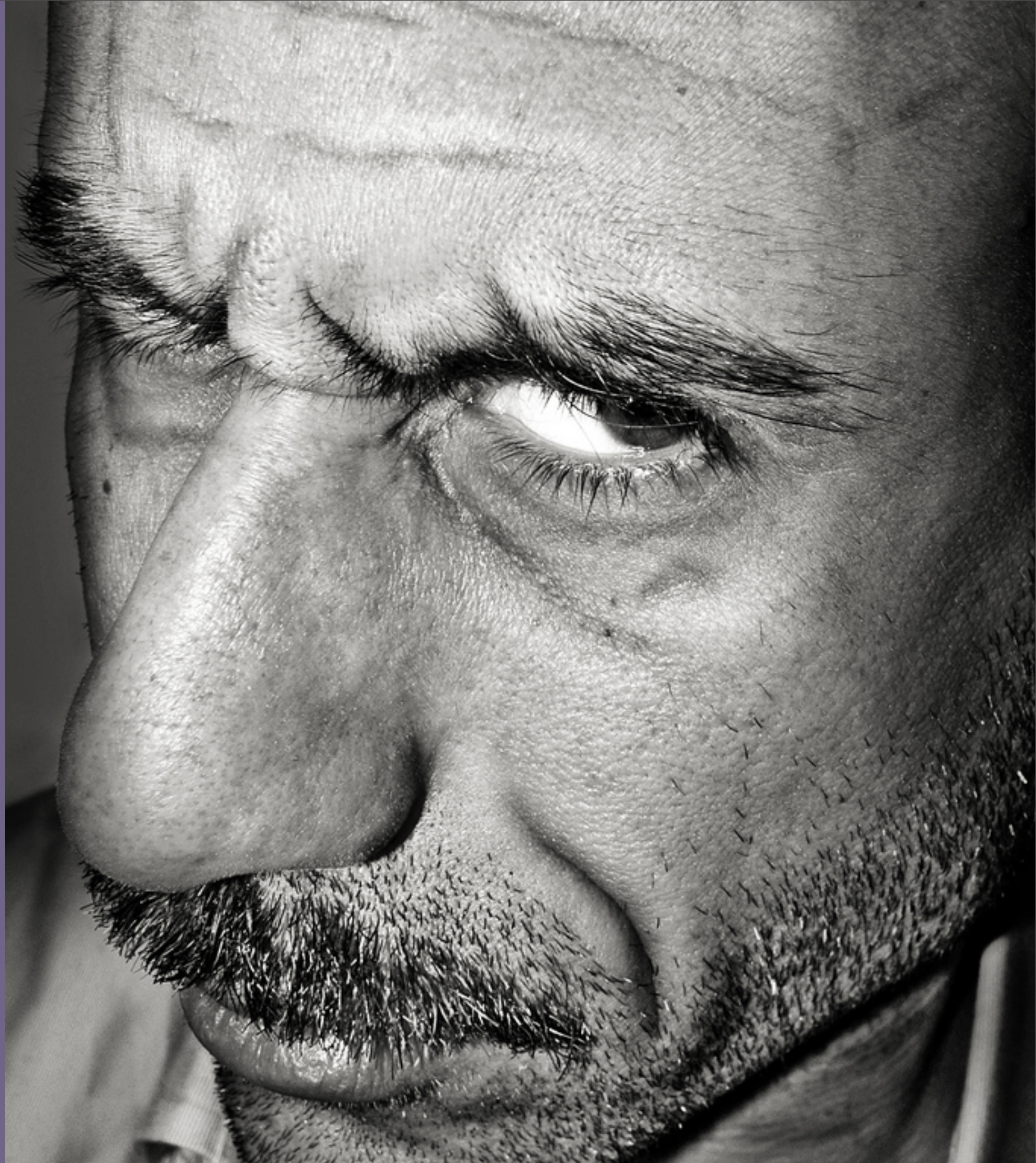
what is a webapp?

HTML



**Are you
sure?**

Photo by Ricky David (Flickr)



HTML

What is



?

html5

html5

- ▶ w3c standards (all in draft)

html5

- ▶ w3c standards (all in draft)
- ▶ some are other w3c standards

html5

- ▶ w3c standards (all in draft)
- ▶ some are other w3c standards
- ▶ de-facto standards

html5

- ▶ w3c standards (all in draft)
- ▶ some are other w3c standards
- ▶ de-facto standards
- ▶ w3c ex-standards

html5

- ▶ w3c standards (all in draft)
- ▶ some are other w3c standards
- ▶ de-facto standards
- ▶ w3c ex-standards
- ▶ everything “new” on the web

html version 5?

why mobile html5?

`typeof html5 !== boolean`

some features safe

**some features only on
few platforms**

**some features
experimental**



Internet Explorer 9



webOS



and what about
capabilities today?

MOBILE HTML



beta, of course



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Trying to understand HTML5 compatibility on mobile and tablet browsers

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Version tested	iPhone, iPad	Phones (1.0-2.3)	Tablets (3.0+)	Phones	Tablet	Windows Phone	Mobile	Mini	Android		Nokia phones
Minimum version tested	3.2	1.5	3.0	5.0	1.0	9	11	5	6	1.4	^3
Application Cache <u>W3C API</u> Offline package installation.	✓	✓ 2.1+	✓	✓ 6.0+	✓		✓		✓	✓	
Web storage <u>W3C API</u> Persistent and session storage.	✓	✓ 2.0+	✓	✓ 6.0+	✓	✓	✓		✓	✓	
Web SQL storage <u>W3C API (no active)</u> Persistent SQLite storage.	✓	✓ 2.0+	✓	✓ 6.0+	✓		✓			✓	
Geolocation <u>W3C API</u> Geolocation & tracking using GPS, cells or Wi-Fi.	✓	✓ 2.0+	✓	✓ 6.0+	✓	✓	✓		✓	✓	
Multimedia <u>W3C API</u> Video & Audio Players	✓	✓ 2.3+	✓	✓ 7.0+	✓	✓	✓		✓	✓	
Server-Sent Events <u>W3C API</u> EventSource pattern to maintain the connection to the server open	✓ 4.1+						✓		✓		
Web Sockets <u>W3C API</u> Newbidirectional protocol over HTTP	✓ 4.2+			✓ 6.1+	✓		✓		✓		

www.mobilehtml5.org

warning....



new doctype

new doctype

▶ `<!DOCTYPE html>`

new doctype

- ▶ `<!DOCTYPE html>`
- ▶ works on every mobile browser

new semantic tags

new semantic tags

- ▶ section, article, header, footer, nav

new semantic tags

- ▶ section, article, header, footer, nav
- ▶ time, mark, ...

new semantic tags

- ▶ section, article, header, footer, nav
- ▶ time, mark, ...
- ▶ works on every mobile browser

new form controls



HTML5



2.2+ (b)



5.0+ (adv)



9.0 (basic)



10+ (med)



6.0+ (med)

new form controls

- ▶ variable support



HTML5



2.2+ (b)



5.0+ (adv)



9.0 (basic)



10+ (med)



6.0+ (med)

new form controls

- ▶ variable support
- ▶ basic=different virtual keyboard



HTML5



2.2+ (b)



5.0+ (adv)



9.0 (basic)



10+ (med)



6.0+ (med)

new form controls

- ▶ variable support
- ▶ basic=different virtual keyboard
- ▶ medium=new date, number, range



HTML5



2.2+ (b)



5.0+ (adv)



9.0 (basic)



10+ (med)



6.0+ (med)

new form controls

- ▶ variable support
- ▶ basic=different virtual keyboard
- ▶ medium=new date, number, range
- ▶ advanced=datalist



HTML5

2.2+ (b)

5.0+ (adv)

9.0 (basic)

10+ (med)

6.0+ (med)

new form controls

- ▶ variable support
- ▶ basic=different virtual keyboard
- ▶ medium=new date, number, range
- ▶ advanced=datalist
- ▶ (some) allows validation and css3 pseudo-classes



HTML5



2.2+ (b)



5.0+ (adv)



9.0 (basic)



10+ (med)



6.0+ (med)

new form controls

new form controls

- ▶ `<input type="`

new form controls

- ▶ `<input type="`
- ▶ `date`

new form controls

- ▶ `<input type=`"
 - ▶ `date`
 - ▶ `range`

new form controls

- ▶ `<input type="`
 - ▶ `date`
 - ▶ `range`
 - ▶ `datetime`

new form controls

- ▶ `<input type="`
 - ▶ `date`
 - ▶ `range`
 - ▶ `datetime`
 - ▶ `email`

new form controls

- ▶ `<input type="`
 - ▶ `date`
 - ▶ `range`
 - ▶ `datetime`
 - ▶ `email`
 - ▶ `url`

new form controls

- ▶ `<input type="`
 - ▶ `date`
 - ▶ `range`
 - ▶ `datetime`
 - ▶ `email`
 - ▶ `url`
 - ▶ `tel`

new form controls

- ▶ `<input type="`
 - ▶ `date`
 - ▶ `range`
 - ▶ `datetime`
 - ▶ `email`
 - ▶ `url`
 - ▶ `tel`
 - ▶ `number`

new form validation



HTML5



4.0+



5.0+



Internet Explorer 9

9.0 (basic)



10+



6.0+

new form validation

- ▶ by type



HTML5



4.0+



5.0+



9.0 (basic)



10+



6.0+

new form validation

- ▶ by type
- ▶ <input required>



HTML5



4.0+



5.0+



9.0 (basic)



10+



6.0+

new form validation

- ▶ by type
- ▶ <input required>
- ▶ :valid, :invalid, :required pseudo-classes

W3C



HTML5

4.0+

5.0+

9.0 (basic)

10+

6.0+

offline installation



HTML5



3.0+



2.1+



6.0+



Internet Explorer 9



Mobile 11+



5.0+

offline installation

- ▶ Install a package on the device



HTML5



3.0+



2.1+



6.0+



Internet Explorer 9



Mobile 11+



5.0+

offline installation

- ▶ Install a package on the device
- ▶ Complex to debug / reload



HTML5



3.0+



2.1+



6.0+



Mobile 11+



5.0+

offline installation

- ▶ Install a package on the device
- ▶ Complex to debug / reload
- ▶ Buggy on some platforms



HTML5



3.0+



2.1+



6.0+



Internet Explorer 9



Mobile 11+



5.0+

offline installation

- ▶ Install a package on the device
- ▶ Complex to debug / reload
- ▶ Buggy on some platforms
- ▶ online / offline events



HTML5



3.0+



2.1+



6.0+



Mobile 11+



5.0+

offline installation

- ▶ Install a package on the device
- ▶ Complex to debug / reload
- ▶ Buggy on some platforms
- ▶ online / offline events
- ▶ on iOS can be mixed with icons and full-screen webapp metatags



HTML5



3.0+



2.1+



6.0+



Internet Explorer 9



Mobile 11+



5.0+

geolocation



webOS

Geolocation

2.0+

2.0+

6.0+

9.0+

Mobile 11+

5.0+

geolocation

- ▶ GPS, A-GPS, Wi-Fi, cells



webOS

Geolocation

2.0+

2.0+

6.0+

9.0+

Mobile 11+

5.0+

geolocation

- ▶ GPS, A-GPS, Wi-Fi, cells
- ▶ (some) force GPS “highAccuracy”



webOS

Geolocation

2.0+

2.0+

6.0+

9.0+

Mobile 11+

5.0+

geolocation

- ▶ GPS, A-GPS, Wi-Fi, cells
- ▶ (some) force GPS "highAccuracy"
- ▶ (some) heading



webOS

Geolocation

2.0+

2.0+

6.0+

9.0+

Mobile 11+

5.0+

geolocation

- ▶ GPS, A-GPS, Wi-Fi, cells
- ▶ (some) force GPS "highAccuracy"
- ▶ (some) heading
- ▶ once or movement



webOS

Geolocation

2.0+

2.0+

6.0+

9.0+

Mobile 11+

5.0+

offline web storage

W3C



webOS

Web Storage

2.0+

2.0+

6.0+

9.0+

Mobile 11+

5.0+

offline web storage

- ▶ persistent and session storage

W3C



webOS

Web Storage

2.0+

2.0+

6.0+

9.0+

Mobile 11+

5.0+

offline web storage

- ▶ persistent and session storage
- ▶ key/value (strings)

W3C



webOS

Web Storage

2.0+

2.0+

6.0+

9.0+

Mobile 11+

5.0+

offline web storage

- ▶ persistent and session storage
- ▶ key/value (strings)
- ▶ (some) allow object storage

W3C



webOS

Web Storage

2.0+

2.0+

6.0+

9.0+

Mobile 11+

5.0+

offline web storage

- ▶ persistent and session storage
- ▶ key/value (strings)
- ▶ (some) allow object storage
- ▶ limit space, non-standard ~5Mb

W3C



webOS

Web Storage

2.0+

2.0+

6.0+

9.0+

Mobile 11+

5.0+

offline web storage

- ▶ persistent and session storage
- ▶ key/value (strings)
- ▶ (some) allow object storage
- ▶ limit space, non-standard ~5Mb
- ▶ be careful with private browsing

W3C



webOS

Web Storage

2.0+

2.0+

6.0+

9.0+

Mobile 11+

5.0+

offline sql storage



webOS

deprecated

2.2+

2.0+

6.0+

Mobile 11+

offline sql storage

- ▶ persistent and session storage



deprecated



2.2+



2.0+



6.0+



Mobile 11+



webOS

offline sql storage

- ▶ persistent and session storage
- ▶ key/value (strings)



webOS

deprecated

2.2+

2.0+

6.0+

Mobile 11+

offline sql storage

- ▶ persistent and session storage
- ▶ key/value (strings)
- ▶ (some) allow object storage



webOS

deprecated

2.2+

2.0+

6.0+

Mobile 11+

offline sql storage

- ▶ persistent and session storage
- ▶ key/value (strings)
- ▶ (some) allow object storage
- ▶ limit space, non-standard ~5Mb

W3C



webOS

deprecated

2.2+

2.0+

6.0+

Mobile 11+

offline sql storage

- ▶ persistent and session storage
- ▶ key/value (strings)
- ▶ (some) allow object storage
- ▶ limit space, non-standard ~5Mb
- ▶ be careful with private browsing



webOS

deprecated

2.2+

2.0+

6.0+

Mobile 11+

multimedia API

W3C



webOS

Web Storage

3.0+

2.3+

7.0+

9.0+

Mobile 11+

5.0+

multimedia API

- ▶ audio and video tags

W3C



webOS

Web Storage

3.0+

2.3+

7.0+

9.0+

Mobile 11+

5.0+

multimedia API

- ▶ audio and video tags
- ▶ javascript api & events

W3C



webOS

Web Storage

3.0+

2.3+

7.0+

9.0+

Mobile 11+

5.0+

multimedia API

- ▶ audio and video tags
- ▶ javascript api & events
- ▶ codecs nightmare

W3C



webOS

Web Storage

3.0+

2.3+

7.0+

9.0+

Mobile 11+

5.0+

2d drawing api (canvas)

W3C

HTML5



1.0+



1.5+



6.0+



Internet Explorer 9

9.0+



Mob 10+ / Mini 5



4.0+

webOS



2d drawing api (canvas)

- ▶ great support

W3C

HTML5



1.0+



1.5+



6.0+



9.0+



Mob 10+ / Mini 5



4.0+



2d drawing api (canvas)

- ▶ great support
- ▶ javascript-based drawing

W3C

HTML5



1.0+



1.5+



6.0+



Internet Explorer 9

9.0+



Mob 10+ / Mini 5



4.0+



2d drawing api (canvas)

- ▶ great support
- ▶ javascript-based drawing
- ▶ (some) allows data URI export

W3C

HTML5



1.0+



1.5+



6.0+



Internet Explorer 9

9.0+



Mob 10+ / Mini 5



4.0+



svg



SVG



2.2+



3.0+



4.7+



Internet Explorer 9

9.0+



Mob 10+ / Mini 5



4.0+



svg

- ▶ old standard



SVG



2.2+



3.0+



4.7+



Internet Explorer 9

9.0+



Mob 10+ / Mini 5



4.0+



svg

- ▶ old standard
- ▶ scalable vector graphics



SVG

2.2+

3.0+

4.7+

9.0+

Mob 10+ / Mini 5

4.0+

svg

- ▶ old standard
- ▶ scalable vector graphics
- ▶ (some) allows inline `<svg>` tag



SVG



2.2+



3.0+



4.7+



Internet Explorer 9

9.0+



Mob 10+ / Mini 5



4.0+



svg

- ▶ old standard
- ▶ scalable vector graphics
- ▶ (some) allows inline `<svg>` tag
- ▶ (some) allows svg as background



SVG

2.2+

3.0+

4.7+

9.0+

Mob 10+ / Mini 5

4.0+

svg

- ▶ old standard
- ▶ scalable vector graphics
- ▶ (some) allows inline `<svg>` tag
- ▶ (some) allows svg as background
- ▶ (some) allows svg as font



SVG



2.2+



3.0+



4.7+



Internet Explorer 9

9.0+



Mob 10+ / Mini 5



4.0+



motion sensors



DeviceOrientation

4.2+

3.0+

4.7+ (basic)

6.0+ (moz)

motion sensors

- ▶ accelerometer / gyroscope / magnetometer



DeviceOrientation

4.2+

3.0+

4.7+ (basic)

6.0+ (moz)

motion sensors

- ▶ accelerometer / gyroscope / magnetometer
- ▶ `onorientationchange`



DeviceOrientation

4.2+

3.0+

4.7+ (basic)

6.0+ (moz)

motion sensors

- ▶ accelerometer / gyroscope / magnetometer
- ▶ `onorientationchange`
- ▶ `window.orientation`



DeviceOrientation

4.2+

3.0+

4.7+ (basic)

6.0+ (moz)

motion sensors

- ▶ accelerometer / gyroscope / magnetometer
- ▶ `onorientationchange`
- ▶ `window.orientation`
- ▶ games, visual effects, pressure detection?



DeviceOrientation

4.2+

3.0+

4.7+ (basic)

6.0+ (moz)

motion sensors

- ▶ accelerometer / gyroscope / magnetometer
- ▶ `onorientationchange`
- ▶ `window.orientation`
- ▶ games, visual effects, pressure detection?

mobilexweb.com/samples/ball.html

mobilexweb.com/samples/pressure.html



DeviceOrientation

4.2+

3.0+

4.7+ (basic)

6.0+ (moz)

touch events



Touch events

3.0+

2.1+

6.1+

6.0+

touch events

- ▶ iOS specification



Touch events

3.0+

2.1+

6.1+

6.0+

touch events

- ▶ iOS specification
- ▶ some differences between implementations

W3C



Touch events

3.0+

2.1+

6.1+

6.0+

touch events

- ▶ iOS specification
- ▶ some differences between implementations
- ▶ (some) multi-touch



Touch events

3.0+

2.1+

6.1+

6.0+

touch events

- ▶ iOS specification
- ▶ some differences between implementations
- ▶ (some) multi-touch
- ▶ touchstart, touchmove, touchend, touchcancel

W3C



Touch events

3.0+

2.1+

6.1+

6.0+

touch events

- ▶ iOS specification
- ▶ some differences between implementations
- ▶ (some) multi-touch
- ▶ touchstart, touchmove, touchend, touchcancel
- ▶ (some) touchenter, touchleave

W3C



Touch events

3.0+

2.1+

6.1+

6.0+

css3 basic



CSS 3



1.0+



1.0+



6.0+



Internet Explorer 9

9.0+



10+



6.0+



Anna+

css3 basic

- ▶ basic new styling



CSS 3



1.0+



1.0+



6.0+



Internet Explorer 9

9.0+



10+



6.0+



Anna+

css3 basic

- ▶ basic new styling
- ▶ rounded borders, opacity



CSS 3

1.0+

1.0+

6.0+

9.0+

10+

6.0+

Anna+

css3 basic

- ▶ basic new styling
- ▶ rounded borders, opacity
- ▶ (some) still requires prefix



CSS 3



1.0+



1.0+



6.0+



9.0+



10+



6.0+



Anna+

css3 basic

- ▶ basic new styling
- ▶ rounded borders, opacity
- ▶ (some) still requires prefix
- ▶ -webkit, -o, -moz, -ms



CSS 3



1.0+



1.0+



6.0+



Internet Explorer 9

9.0+



10+



6.0+



Anna+

css3 transforms



CSS 3



2.0+



2.0+



6.0+



9.0+



11+



6.0+



Anna+

css3 transforms

- ▶ basic 2d transforms



CSS 3



2.0+



2.0+



6.0+



Internet Explorer 9

9.0+



11+



6.0+



Anna+

css3 transforms

- ▶ basic 2d transforms
- ▶ -webkit, -o, -moz, -ms



CSS 3



2.0+



2.0+



6.0+



Internet Explorer 9

9.0+



11+



6.0+



Anna+

css3 transforms

- ▶ basic 2d transforms
- ▶ -webkit, -o, -moz, -ms
- ▶ rotate, scale, skew, translate



CSS 3



2.0+



2.0+



6.0+



Internet Explorer 9

9.0+



11+



6.0+



Anna+

css3 transforms

- ▶ basic 2d transforms
- ▶ -webkit, -o, -moz, -ms
- ▶ rotate, scale, skew, translate
- ▶ (some) matrix



CSS 3



2.0+



2.0+



6.0+



Internet Explorer 9

9.0+



11+



6.0+



Anna+

css3 transforms

- ▶ basic 2d transforms
- ▶ -webkit, -o, -moz, -ms
- ▶ rotate, scale, skew, translate
- ▶ (some) matrix
- ▶ (some) 3d transforms



CSS 3



2.0+



2.0+



6.0+



9.0+



11+



6.0+



Anna+

css3 transitions



CSS 3



2.0+



2.0+



6.0+



10+



6.0+



Anna+

css3 transitions

- ▶ basic animations between 2 states



CSS 3



2.0+



2.0+



6.0+



Internet Explorer 9



10+



6.0+



Anna+

css3 transitions

- ▶ basic animations between 2 states
- ▶ prefix



CSS 3



2.0+



2.0+



6.0+



Internet Explorer 9



10+



6.0+



Anna+

css3 animations



CSS 3



2.2+



2.0+



6.0+



Internet Explorer 9



6.0+



Anna+

css3 animations

- ▶ keyframe animations



CSS 3



2.2+



2.0+



6.0+



Internet Explorer 9



6.0+



Anna+

css3 animations

- ▶ keyframe animations
- ▶ attribute prefix and keyframe prefix



CSS 3



2.2+



2.0+



6.0+



Internet Explorer 9



6.0+



Anna+

css3 animations

- ▶ keyframe animations
- ▶ attribute prefix and keyframe prefix
- ▶ duplication :S



CSS 3



2.2+



2.0+



6.0+



Internet Explorer 9



6.0+



Anna+

server-sent events



Server-Sent events

4.1+

Mobile 11+

6.0+

server-sent events

- ▶ EventSource



Server-Sent events

4.1+

Mobile 11+

6.0+

server-sent events

- ▶ EventSource
- ▶ reduce AJAX/Comet solutions



Server-Sent events

4.1+

Mobile 11+

6.0+

server-sent events

- ▶ EventSource
- ▶ reduce AJAX/Comet solutions
- ▶ be careful with proxies/3g connections



Server-Sent events

4.1+

Mobile 11+

6.0+

web sockets



web sockets

4.2+

6.1+

Mobile 11+

6.0+

web sockets

- ▶ Evolution of bi-directional communication



web sockets



4.2+



6.1+



Internet Explorer 9



Mobile 11+



6.0+

web sockets

- ▶ Evolution of bi-directional communication
- ▶ reduce AJAX/Comet solutions



web sockets

4.2+

6.1+

Mobile 11+

6.0+

web sockets

- ▶ Evolution of bi-directional communication
- ▶ reduce AJAX/Comet solutions
- ▶ be careful with proxies/3g connections



web sockets

4.2+

6.1+

Mobile 11+

6.0+

web sockets

- ▶ Evolution of bi-directional communication
- ▶ reduce AJAX/Comet solutions
- ▶ be careful with proxies/3g connections
- ▶ special server



web sockets

4.2+

6.1+

Mobile 11+

6.0+

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- ▶ reduce AJAX/Comet solutions
- ▶ be careful with proxies/3g connections
- ▶ special server
- ▶ standard changed months ago



web sockets

4.2+

6.1+

Mobile 11+

6.0+

web workers



web workers



6.0+



Mobile 11+



6.0+

web workers

- ▶ threading in JavaScript



web workers

6.0+

Mobile 11+

6.0+

web workers

- ▶ threading in JavaScript
- ▶ important for performance



web workers

6.0+

Mobile 11+

6.0+

web workers

- ▶ threading in JavaScript
- ▶ important for performance
- ▶ worker without DOM manipulation



web workers

6.0+

Mobile 11+

6.0+

what is just
starting...?

apis starting to appear

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- ▶ XMLHttpRequest 2 - Android 3.0

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- ▶ Media Camera API - Android 3.0
- ▶ IndexedDB - Firefox 6.0

and what to expect
in the future?

for next year...

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- ▶ Augmented Reality on the web

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- ▶ Camera API

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- ▶ Camera API
- ▶ MathML

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- Augmented Reality on the web
- Camera API
- MathML
- Idle detection

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- ▶ 3D Drawing API (aka WebGL)

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working on these APIs...

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- ▶ WAC

<http://www.wacapps.net/>

can i use apis today?

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- ▶ PhoneGap

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<http://www.phonegap.com>

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<http://www.phonegap.com>

- ▶ BlackBerry WebWorks

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- ▶ Nokia webapps

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<http://us.blackberry.com/developers/browserdev/>

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<http://www.developer.nokia.com/Develop/Web/>

how to use features today

progressive enhancement



thank you!

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www.mobilexweb.com