Building a Simple Mobile-optimized Web App/Site Using the jQuery Mobile Framework
pinboard.in tag

http://pinboard.in/u:jasonclark/t:il2012-mobile/
Agenda

• Learn what a mobile framework is.

• Understand the various technologies (HTML, CSS, JavaScript) and how they work together to build mobile Web apps/sites.

• Recognize the differences between native and web apps/sites.

• Explore jQuery Mobile basics.

• Acquire best practices in mobile Web development.

• Create an opportunity to continue to work with us after the webinar to demonstrate what you learned.

• Gain access after the webinar to a free Web server so you can see your mobile Web app/site live.
Quick Poll

Does your library have:

- ✓ Mobile-optimized Website
- ✓ Native App (iOS, Android etc.)
- ✓ Nothing yet, but considering an app
- ✓ Nothing yet, but considering a website.
- ✓ No plans; it is too expensive/complex!
A framework resembles scaffolding. It is a temporary platform used as a supportive guide to help build something. Mobile frameworks work similarly in that they provide libraries etc. that allow one to build something quickly.
# Mobile Frameworks Comparison Chart

Looking for the right mobile framework? Compare all major mobile frameworks and choose the one that best meets your needs.

<table>
<thead>
<tr>
<th>Framework</th>
<th>iOS (WebKit)</th>
<th>Android (WebKit)</th>
<th>Windows Mobile (Trident)</th>
<th>Windows Phone (Trident)</th>
<th>Blackberry OS (WebKit)</th>
<th>Symbian (WebKit/Gecko)</th>
<th>MeeGo (Gecko)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adobe Flex</td>
<td>✅</td>
<td>✅</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Appcelerator Titanium Mobile</td>
<td>✅</td>
<td>✅</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
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<tr>
<td>CNET iPhone UI</td>
<td>✅</td>
<td>✅</td>
<td>✗</td>
<td>✗</td>
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<tr>
<td>Cocoon</td>
<td>✅</td>
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<td>✗</td>
<td>✗</td>
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<tr>
<td>GWT mobile webskit + gwt mobile ui</td>
<td>✅</td>
<td>✅</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
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<tr>
<td>iPhone Universal</td>
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<td>iUI</td>
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</tr>
<tr>
<td>Jo HTML 5 Mobile App Framework</td>
<td>✅</td>
<td>✅</td>
<td>✗</td>
<td>✗</td>
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<td>✗</td>
<td>✗</td>
</tr>
</tbody>
</table>

**Platform**

What platforms must be supported by the framework?

- iOS
- Android
- Windows Mobile
- Windows Phone
- Blackberry OS
- Symbian
- MeeGo
- Maemo
- WebOS
- Bada
- Java ME

## Native Apps vs. Web/Browser Apps

<table>
<thead>
<tr>
<th>Issues</th>
<th>Native apps</th>
<th>Web apps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet access</td>
<td>Not required</td>
<td>Required, except for apps written in HTML5 (offline capabilities)</td>
</tr>
<tr>
<td>Shareable content (Twitter etc.)</td>
<td>Only if it is built in to the app</td>
<td>Web links can be shared. Social API’s allow 1-click posting</td>
</tr>
<tr>
<td>Access to hardware sensors</td>
<td>Yes: camera, gyroscope, microphone, compass, accelerometer, GPS</td>
<td>Access thru browser is limited. Geolocation works!</td>
</tr>
<tr>
<td>Development</td>
<td>Build app for target platform (Android, iOS [Objective-C] etc.)</td>
<td>Write/publish once using standard Web technologies, view it anywhere with URL. Speedy debugging and development.</td>
</tr>
<tr>
<td>Distribution</td>
<td>Most app stores require approval.</td>
<td>No hassles.</td>
</tr>
</tbody>
</table>

Source: [http://goo.gl/zSeDU](http://goo.gl/zSeDU)
jQuery Mobile is ...

a unified, HTML5-based user interface system for all popular mobile device platforms.

Source: http://jquerymobile.com/
jQuery Mobile is well-documented and there are great demos to get you started.
Getting Started!
Let’s build something.

Handout: http://goo.gl/GIzWJ
Mobile Development - Demos

Demos:

Responsive Design Template (custom)
www.lib.montana.edu/~jason/files/responsive-design/

Mobile Template (jQuery Mobile)
www.lib.montana.edu/~jason/files/touch-jquery/

Code Samples and Downloads:

www.lib.montana.edu/~jason/files.php
Your Live Site

To test your work use this URL, but change it to your user number.

Example:

http://marcomponline.com/chadtest/Class/user001/jquery-mobile-template/index.html
Rapid Prototyping for jQuery Mobile

Try it at http://codiqa.com/
Try it at http://jquerymobile.com/themeroller/
Exercise

- Pick a web site
- Define primary mobile actions
- Choose mobile entry points (links)

- What do library patrons want to do with library services in the mobile setting?
functional

essence

necessary

primary

core

essential

simple
Small Screen Rendering (260 px) using the Web Developer add-on in Firefox
Note: you can determine how your user’s are accessing your Web site (e.g., mobile devices, carriers, browsers, OS’s, screen resolution etc.)
Mobile Screen Resolutions

Android (Motorola Droid) 480x854
Android (MyTouch) 320x480
Android (Nexus One) 480x800
Apple iPhone 320x480
Apple iPad 1024x768
Palm Pre 320x480

Source: http://goo.gl/zEDoi
Some Best Practices

• Follow the "m" convention (m.novarelibrary.com OR lifeonterra.com/m)

• Keep categories (directories) short. Remember that you are creating a page that people touch without much typing

• Limit image and markup sizes

• Limit HTML pages to 25KB to allow for caching

• "Minify" your scripts and CSS (JSLint, CleanCSS)

• Link to Full Site

• Sniff for User Agent – Detection (allow the user to decide where to go)

• One Column Layout with some whitespace

• Mobile refers to the user!
Learn and borrow from sites you like.

http://m.novarelibrary.com/
Sketch ideas

* Don't forget Google Analytics.
Testing and validation

Test Page Speed in Firebug

http://getfirebug.com/
W3C mobileOK Checker
http://validator.w3.org/mobile/
http://ready.mobi

Page results

URL tested: http://www.spcollege.edu/central/libonline/mobile/index.html

Overall

It will probably display well on a mobile phone.

Your mobi.readiness score is calculated from the results displayed below. Failing tests and large page sizes both lower the score. Read through the report to understand how to improve your score and your site.

Readiness, Size, Time & Cost

Estimated cost

Estimated speed

[Representative charges for a user on a usage-based tariff]
No one's ever changed the world by being boring

This isn't just a story about beer
This is our story of interesting choices

Scroll Down

Mobile Optimization

- Minify scripts, html, css …
- Reduce HTTP requests
- Compress files with gzip
- Cache static resources

“Speed matters.”

https://developers.google.com/speed/pagespeed/insights
Mobile Analytics

• Web metrics and statistics
• Mobile search logs

“Data is your friend. Take out the guesswork.”
Editors and Tools

- You can use a simple text editor (e.g., Notepad) or a more sophisticated application (e.g., Dreamweaver).

- Adobe Device Central is part of Adobe’s CS.

- iUI: http://code.google.com/p/iui/ for iPhone.

- MIT Mobile Web Open Source Project http://sourceforge.net/projects/mitmobileweb/

- Device detection? http://detectmobilebrowsers.mobi/

- To see your browser's HTTP Headers. Works on mobile browsers. http://rabin.mobi/http

- Web Developer Toolbar in Firefox: Select Miscellaneous >>> Small Screen Rendering (260 px) >>> the layout will be reformatted to simulate rendering by a mobile browser.
Emulators/Simulators:

- Palm Pre - [http://developer.palm.com/](http://developer.palm.com/)
- JAVA ME - Java Platform Micro Edition was termed J2ME. It is considered one of the most ubiquitous application platform for mobile devices. [http://java.sun.com/javame/reference/apis.jsp](http://java.sun.com/javame/reference/apis.jsp)
Take an emulated look at your desktop site.
Other mobile development tools/frameworks

- MIT App Inventor
- Codiga
- Appmakr
- Mobilize.js
- PhoneGap
- iUI
- ShareSquare
- Sencha
The Future of Mobile Web App/Site Development? Responsive Web Design?
jQuery Mobile Templates at:  http://goo.gl/1FdO0

Handout:  http://goo.gl/GlzWJ
Chad Mairn, M.L.I.S.
St. Petersburg College

mairn.chad@spcollege.edu
(727) 341-7181
chadmairn@gmail.com
chadmairn

(727) 537-6405
twitter.com/cmairn

Text chadmairn to 50500
gplus.to/chadmairn
Jason Clark
Head of Digital Access & Web Services
Associate Professor
Montana State University Library

@jaclark - twitter.com/jaclark
jaclark@montana.edu