Best Practices in Mobile Development: Building Your First jQuery Mobile App
Handheld Librarian VI February 2, 2012

Jason A. Clark
Head of Digital Access and Web Services
Montana State University Libraries

Chad Mairn
Information Services Librarian/Adjunct Professor, St. Petersburg College
Chief Technology Officer, Novare Library Services
Some housekeeping ...

- FTP access/directory overview
  - Host: marcomponline.com
  - Username: chadm
  - Password: java_cookie1

- Just in case, there is a Dropbox folder with the jQuery template available at
  http://dl.dropbox.com/u/9567522/jquery-mobile-template.zip

- You will have access to your directory for at least 2 weeks so you can finish and test your app on a variety of devices. I'll send everyone an e-mail before the directories are removed so you know when to get your files.

- A handout powered by Google Docs is available at http://goo.gl/ki6lo

- We will try our best to answer questions during the presentation, but know that we'll keep track of all questions and answer them either at the end of today's presentation or through a follow-up.

- In a few, fire up your text editor (or Dreamweaver etc.). Happy coding!
A Look Ahead…

• Native Apps versus Browser Apps
• jQuery Mobile - how it works
• Hands-on, building your first app
• Tips and trends about mobile
Mobile First as Strategy

Google programmers are doing work on mobile applications first, because they are better apps and that's what top programmers want to develop.

- Eric Schmidt, Google CEO
## 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>

... can help one decide what to include in a mobile site.

Note: with Google Analytics you can determine how your user’s are accessing your mobile site (e.g., mobile devices, carriers, browsers, OS’s, screen resolution etc.)
“Fundamentally, 'mobile' refers to the user, not the device or application.”

Barbara Ballard Designing the Mobile User Experience
A live mobile web app...

**Demos:**
Terra - lifeonterra.com
Terra mobile - lifeonterra.com/m/

**Download:**
Mobile template - www.lib.montana.edu/~jason/files/m/
Explanation & blog post - http://wp.me/p8yR-1J

**Code Samples:**
http://www.lib.montana.edu/~jason/files.php
TERRA 537: A Winning Scenario

A WINNING SCENARIO is a short film about the agricultural implications of climate change in Kenya. Despite the adverse effects of global warming in Kenya, local communities are adapting farming practices...

Date Uploaded: Fri, 23 Jul 2010 03:14:51 +0000

View Full Details: http://blip.tv/file/3916865

Search TERRA:
Making the Move to Mobile...
functional

essence

necessary primary core essential

simple
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.
Let’s build this...

- jQuery Mobile Template
  http://www.lib.montana.edu/~jason/files/touch-jquery/
- Code walkthrough (codelab)
Tips and Trends

1. Mobile Design

2. Mobile Development
The Future of Mobile App Development?
The Future of Mobile App Development?

- Web/Browser?
- Native Apps?
- “Smarter browsers” = not required?
- Other?
Narrow your Focus

• Do a few things really well
• What are the core actions?
Know your Audience

- Run the Analytics
- Research for Mobile Browser Types
Learn from the Masters

- View Source -> m.flickr.com
- "Be Mobile" with User Agent Switcher

Study the Interface & Device

- Scalable Design
- Think Percentages
  o 320px AND 480px
Study the Interface & Device

• Tactile navigation
  o touch, pinch, spread, flick, spin
    (gyrometer)

Apple recommends a minimum target size: 29px wide 44px tall
Speed FTW, Performance First

- Limit Images and Markup
  - Limit HTML pages to 25KB to allow for caching
- "Minify" your scripts and CSS
  - JSLint, CleanCSS
- Take Advantage of HTML5, CSS3
  - `<!DOCTYPE html>`
Testing and validation

Page Speed in Firebug

Page Speed Score: 84/100

1. Leverage browser caching

The following cacheable resources have a short freshness lifetime. Specify an expiration at least one week in the future for the following resources:

- http://www.spccollege.edu/central/libonline/mobile/css/mobile.css (expiration not specified)
- http://www.spccollege.edu/central/libonline/mobile/images/facebookitn.gif (expiration not specified)
- http://www.google-analytics.com/ga.js (1 day)

- Minify CSS
- Serve static content from a cookieless domain
- Specify a Vary: Accept-Encoding header
- Minify HTML
- Optimize images
- Enable compression
- Minify JavaScript
- Remove unused CSS
- Avoid bad requests
- Combine external CSS
- Combine external JavaScript
- Minimize DNS lookups
- Minimize redirects
- Minimize request size
- Optimize the order of styles and scripts
- Parallelize downloads across hostnames
- Put CSS in the document head
- Remove query strings from static resources
- Serve resources from a consistent URL
- Strip protocol
- Strip query string
- Strip anchor
W3C mobileOK Checker
http://validator.w3.org/mobile/
Ready.mobi
http://ready.mobi

Page results

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

Overall
GOOD

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]
Respect the URL

• Follow the "m" convention
  - m.delicious.com OR lifeonterra.com/m/
• Keep Categories (directories) Short

It's a touch environment, not a typing environment.
Mobile Browsers = Cutting Edge

- WebKit Browser Engine
- Supports many HTML5 and CSS3 features
- Native app functionality
  - geolocation
  - offline storage
  - web workers
Allow for User Choice

- Link to Full Site
- Sniff for User Agent – Detection
- To redirect, or not to redirect, that is the question
Know Mobile Design Conventions

- One Column Layout
- Whitespace is Your Friend
- Embrace an Economy of Language
- "Quick Visit" Architecture
Emulators/Simulators:

- iPhone Dev Center: http://developer.apple.com/iphone/
- Palm Pre - 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
Mobile Development in Libraries

• Chad Haefele, Mobile Site Generator
  o http://www.hiddenpeanuts.com/msg/
• Jason Casden, WolfWalk at NCSU
  o http://www.lib.ncsu.edu/dli/projects/wolfwalk/
• Laurie Bridges and Kim Griggs
  o http://ir.library.oregonstate.edu/jspui/handle/1957/16437
New Releases from Simon & Schuster

See more New Releases in:

See Bestsellers

The Fallen 2
Aerie and Reckoning (Part of Fallen)
By: Thomas E. Sniegoski
This edition: Trade Paperback, 576 pages
List Price: $9.99
BUY NOW

Book Details

Book Description

About the Author

Welcome to Simon & Schuster

Simon Pulse, July 2010
ISBN-10: 1442408634

Newsletters Sign-up

Email Address:

Date of Birth:

Monthly Update
Find out about new releases, author news, videos and more.

Audio

http://www.simonandschuster.mobi/
Welcome to USC mobile

USC Maps
UPC and HSC campus

Arts & Events
USC public events

USC News
news from campus

USC on Twitter
read trojan tweets

USC Reader

University News

Centers & Departments

Schools

Athletics

Browse news sources

Events

USC on Twitter

View USC Twitter Accounts

USC Public Diplomacy [Today in PD]
The stars are aligned http://bit.ly/b3r30u
3 hours ago from twitterfeed

Eddie St. John's, a South LA Hospital, Does Health Care Right* says @pattmorrison @scottgold of @latimes:

Students Talk Back
January 20, 2010 - April 21, 2010
11:30 AM - 1:00 PM

(No) Dumping Drains To Ocean
January 29, 2010 - February 17, 2010

http://mobile.usc.edu/
PhoneGap | Cross platform mobile framework

fring – Make free mobile calls, IM with Skype, M...

jQTouch â€“ jQuery plugin for mobile web develop...

QIK | Streaming video right from your phone

Twitter: What are you doing?

Android

QR-Code Generator

http://m.delicious.com/
http://m.youtube.com
Revelry Over, Obama Turns To Presidential Priorities

Geithner Says Tax Mistake Was

Most Popular Stories

Transcript: Barack Obama's Inaugural Address

Thirty Things I Believe

Exclusive First Listen: Bruce Springsteen

Gut Reaction: Overeating Can Impair Body Function

Charity Organization Helps With Inaugural Mask

Neglected Films Of 2008 Still Well Worth Seeing

By Bob Mondello

All Things Considered, January 11, 2009 - It happens every year. Awards season rolls

NPR.org, January 20, 2009 · The following is Barack Obama's inaugural address, as prepared for delivery.

My fellow citizens:

I stand here today humbled by the task before us, grateful for the trust you have

http://m.npr.org/
Current Exhibitions

Yaddo: Making American Culture
Humanities and Social Sciences Library

Jill Kupin Rose Gallery - Ongoing
Humanities and Social Sciences Library

Jill Kupin Rose Gallery - Ongoing
ONGOING EXHIBITION
This ongoing exhibition consists of large wall panels with photographs, text, objects, and videos illustrating

http://m.nypl.org
Mobile Screen Resolutions

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

Source: http://insideria.com/2010/05/building-web-sites-optimized-f.html
Contact Information

Jason A. Clark
Head of Digital Access and Web Services
Montana State University Libraries
jaclark@montana.edu
twitter.com/jaclark
www.jasonclark.info

Chad Mairn
Information Services Librarian
St. Petersburg College
mairn.chad@spcollege.edu
twitter.com/cmairn