

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.

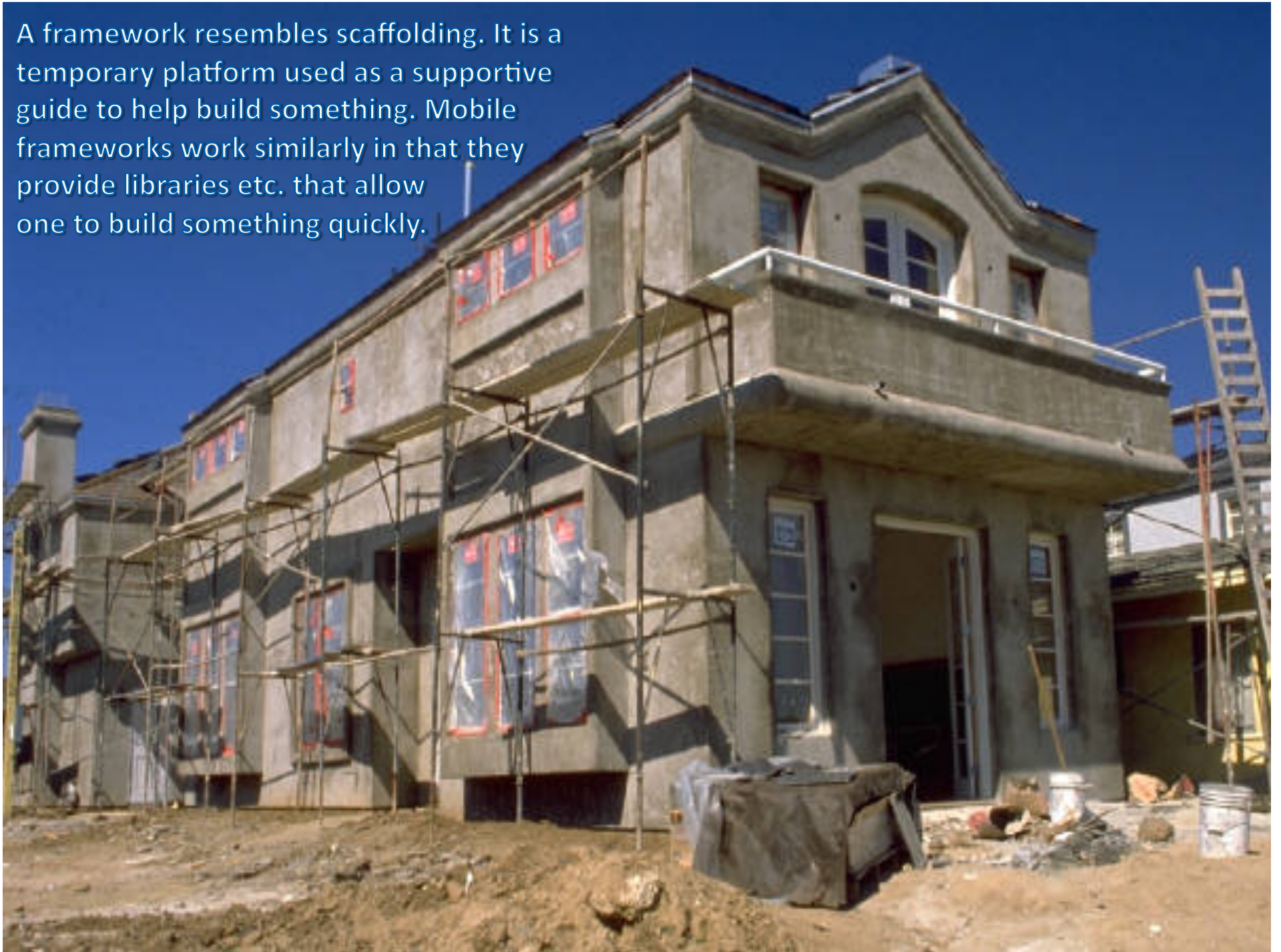
Quick Poll

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 fits your needs.

Framework	Platform (Rendering Engine)																						
	iOS (Webkit)	Android (Webkit)	Windows Mobile (Trident)	Windows Phone (Trident)	Blackberry OS (Webkit)	Symbian (Webkit/Gecko)	MeeGo (Gecko)																
Adobe Flex*	✓	✓	✗	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗
Appcelerator Titanium Mobile*	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	✓	✗	✓	✗	✗	✗
CNET iPhone UI*	✓	✓	✗	✗	✓	✗	✓	✗	✓	✓	✗	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Corona*	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗	✗	✗	✗	✗	✗
GWT mobile webkit + gwt mobile ui*	✓	✓	✗	✗	✗	✗	✗	✗	✓	✗	✗	✓	✓	✗	✗	✗	✗	✓	✗	✗	✗	✗	✗
iPhone Universal*	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗
iUI*	✓	✓	✗	✗	✓	✗	✓	✗	✓	✓	✗	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Jo HTML5 Mobile App Framework*	✓	✓	✗	✗	✗	✓	✗	✗	✓	✗	✗	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗

Platform X

What platforms must be supported by the framework?

iOS
 Android
 Windows Mobile
 Windows Phone
 Blackberry OS

Symbian
 MeeGo
 Maemo
 WebOS
 Bada
 Java ME

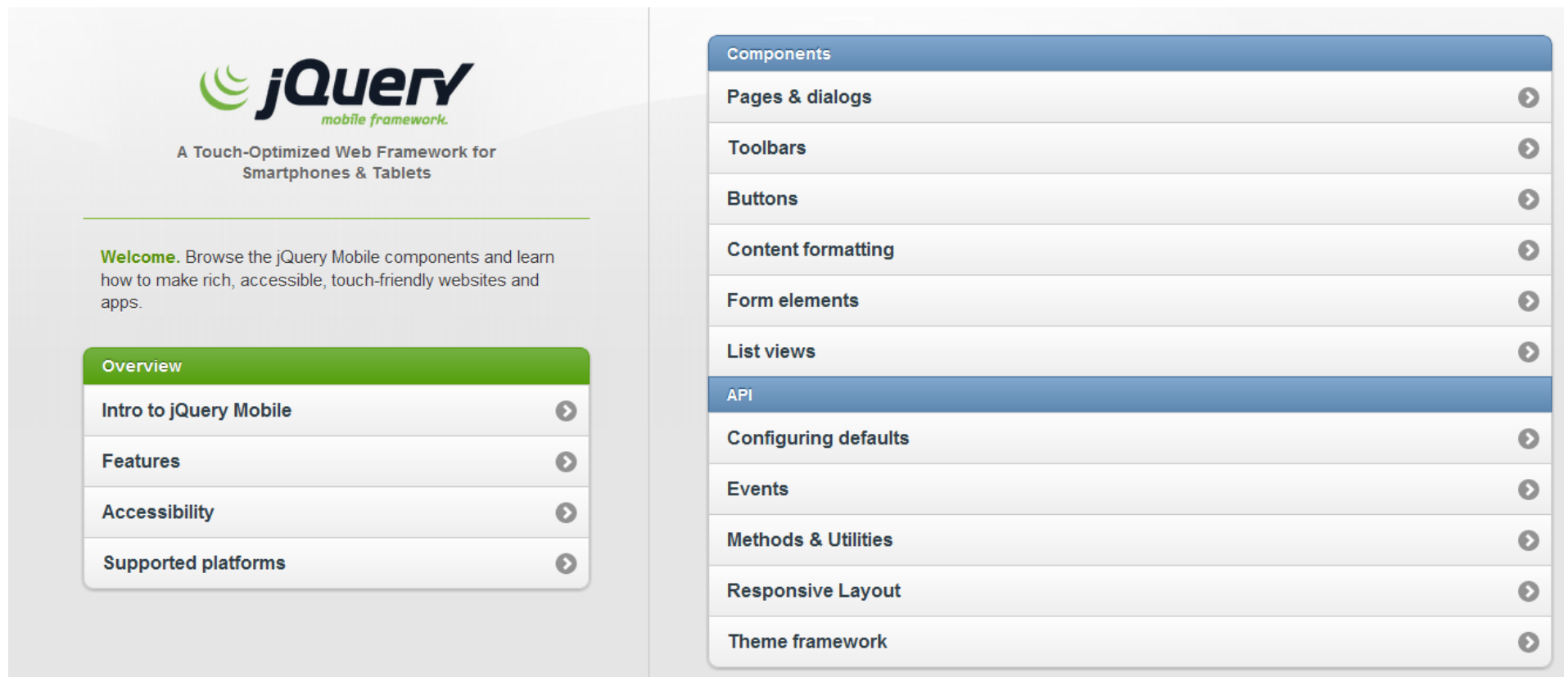
Native Apps vs. Web/Browser Apps

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

jQuery Mobile is ...

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

jQuery Mobile is well-documented and there are great demos to get you started



The image shows a screenshot of the jQuery Mobile website. On the left side, there is a navigation menu with the following items: Overview (highlighted in green), Intro to jQuery Mobile, Features, Accessibility, and Supported platforms. Each item has a right-pointing arrow. Above the menu is the jQuery Mobile logo and the text "A Touch-Optimized Web Framework for Smartphones & Tablets". Below the logo is a "Welcome" message: "Welcome. Browse the jQuery Mobile components and learn how to make rich, accessible, touch-friendly websites and apps." On the right side, there is a list of components, each with a right-pointing arrow. The components are: Components (highlighted in blue), Pages & dialogs, Toolbars, Buttons, Content formatting, Form elements, List views, API (highlighted in blue), Configuring defaults, Events, Methods & Utilities, Responsive Layout, and Theme framework.

jQuery
mobile framework.

A Touch-Optimized Web Framework for Smartphones & Tablets

Welcome. Browse the jQuery Mobile components and learn how to make rich, accessible, touch-friendly websites and apps.

Overview

- Intro to jQuery Mobile
- Features
- Accessibility
- Supported platforms

Components

- Pages & dialogs
- Toolbars
- Buttons
- Content formatting
- Form elements
- List views
- API**
- Configuring defaults
- Events
- Methods & Utilities
- Responsive Layout
- Theme framework

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](http://marcomponline.com/chadtest/Class/user001/jquery-mobile-template/index.html)

Rapid Prototyping for jQuery Mobile

The screenshot displays the Codiqa web-based rapid prototyping tool. The interface includes a top navigation bar with the Codiqa logo, user information (Hi, Chad!), and links for 'My account' and 'Log out'. Below the navigation bar, there are controls for 'Last saved: just now', 'Theme', 'Device Size', 'Rotate Device', and buttons for 'Design' and 'Preview'. On the left side, there are two panels: 'PAGES' and 'COMPONENTS'. The 'PAGES' panel lists 'Home', 'News', 'Locations', 'Contact', 'Articles', 'Books', and 'Guides', with a 'New page' button. The 'COMPONENTS' panel contains various UI elements like buttons, links, maps, headings, text, images, collapsibles, grids, list views, form controls, text inputs, text areas, toggle switches, sliders, select menus, and submit buttons. The central workspace shows a mobile app prototype for 'SPC Libraries' on a tablet device. The app has a blue header with the logo, a navigation bar with 'Home', 'News', 'Locations', and 'Contact' buttons, and a main content area with several blue buttons: 'Find Articles', 'Find Books', 'Research Tools', 'Ask-a-Librarian', and 'Feedback'. A 'Footer' is visible at the bottom. A 'BUTTON' configuration panel is open on the right, showing settings for 'Text' (Find Articles), 'Link to' (Articles), 'Transition' (Fade), 'Icon' (Search), 'Theme' (Default), 'Inline' (No), 'Reverse Transition' (No), and 'Back in history' (No).

Try it at <http://codiqa.com/>

ThemeRoller
For jQuery Mobile

jQuery Mobile
Version 1.1.0

undo redo Inspector off

Download theme zip file

Import or upgrade

Share theme link

Help center

Global A B C +

Theme Settings

Font Family

FONT Helvetica, Arial, sans-serif

Active State

TEXT COLOR #ffffff

TEXT SHADOW 0 1px 1px #3373a5

BACKGROUND #387bbe

BORDER #2373a5

Corner Radii

Icon

Box Shadow

Drag a color onto an element below or pick from the Adobe Kuler swatches

Recent Colors

jQuery mobile framework

A B C

Sample text and [links](#).

List Header

Radio 1

Radio 2

Checkbox

On Off

Option 1

Text Input

50

Button

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 essential

core

simple



SEARCH

[Advanced Search](#) | [About CatSearch](#) | [Feedback](#)

Find

- Books (Library Catalog)
- Articles & Research Databases
- Journals (JournaList)
- Digital Collections
- [+ more...](#)

Services

- Request It!
- Interlibrary Loan (ILL)
- Renew Books
- Schedule Group Room
- [+ more...](#)

Course Materials

- Reserves
- Desire2Learn
- Library 121
- Instruction Services
- Guides | Tutorials

Help

- Library FAQ
- Research Assistance
- Borrowing from MSU Library
- Library Accounts & Passwords
- [+ more...](#)

Spotlight



Late Night at the Library:
Extended Hours

About Us

- Staff Directory
- Give to the Library
- Library Collections
- Site Search
- [+ more...](#)

News & Events

Today's Hours

- 3/22 Free Workshop: Citing Sources Properly
- 3/14 Free Workshop: Exploring Wikipedia
- 4/12 Distinctive Dialogues
- Gothic & Horror in Fiction & Film

[More News](#)

[More Hours](#)





MSU Library (Mobile)

Search



Databases



Hours



Ask a Librarian




About



Where



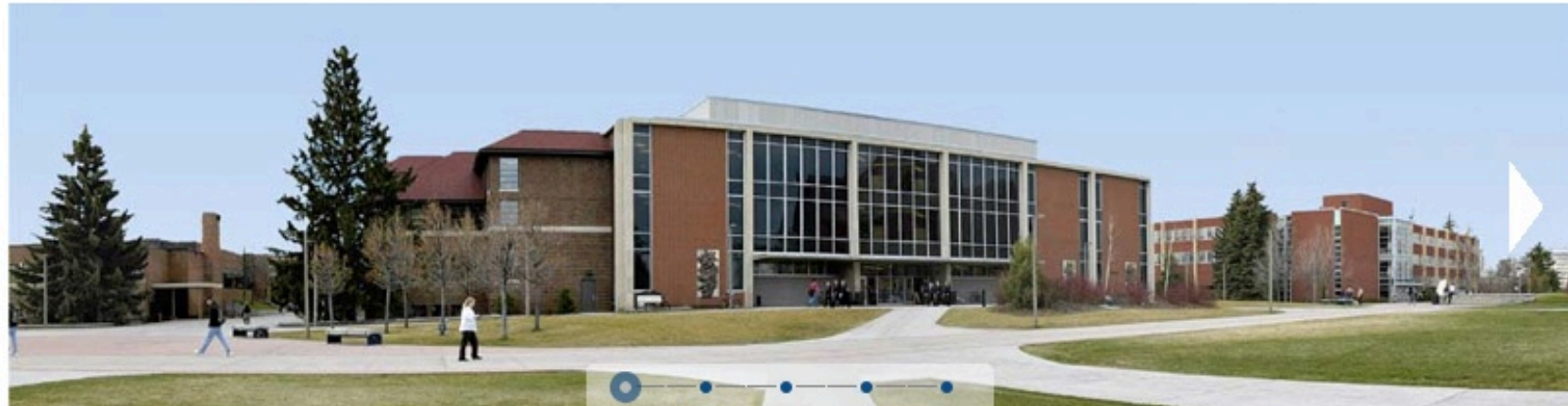
 Home

 Search

 Ask

 Full site

Inspiration, Discovery, Knowledge



CatSearch

Search for articles, journals, books and more

SEARCH

Advanced Search

FIND

Find research materials, including articles, books, databases, journals, and course reserves

REQUEST

Request resources and services, including group study rooms, laptops, documents, and books

INTERACT

Learn about the library and meet with us for research assistance, writing help, and tech support

Events Hours Twitter

10/15 Library Workshop: Google Search Secrets

10/16 Library Workshop: Word 2010 Tips & Tricks

10/23 Library Workshop: Keyboard Shortcuts: Let your f

Database trial: IBISWorld Industry Research Reports



Small Screen Rendering (260 px) using the Web Developer add-on in Firefox

Desktop

Small Screen

SPC M.M. Bennett Libraries
St. Petersburg College classic view

Download SPC Library Toolbar

Home Mobile Text-Only Databases A-Z or by Subject Journals A-Z My Account

Library Search Article Search Subject Guides Databases & Journals

Enter Search Terms

Advanced Library Search | What am I searching?

Live Chat
Email
About us

ASK a Librarian

ShareThis Page!

I Need to Find

- Books and More
- Articles
- Journals A-Z
- Citation Help
- Subject Guides
- Course Reserves

SPC Links

- ANGEL
- Contact Staff/Faculty
- Critical Thinking Gateway
- Library Events
- MySPC
- SPC Home

Library Information & Help


- FAQ's - Frequently Asked Questions
- Instruction Request Form
- Interlibrary Loan Form *What is this?*
- Library Locations & Hours
- Library Policies and Procedures
- Renew Items
- SPC Archive - Digital Collection

News

- New database: DemographicsNow
- To Kill a Mockingbird Turns 50!
- New databases: GREENR and Grzimek's Animal Life
- Local Book Talks & Signings
- The Madonnas of Echo Park

New Titles

New Titles @ SPC Libraries



SPC M.M. Bennett Libraries
St. Petersburg College classic view

Story Time!
West St. Petersburg Community Library / Gibbs Campus

Home Mobile Text-Only Databases A-Z or by Subject Journals A-Z My Account

- Library Search
- Article Search
- Subject Guides
- Databases & Journals

Enter Search Terms

Advanced Library Search | What am I searching?

ShareThis Page!

Library Information & Help

- FAQ's - Frequently Asked Questions
- Instruction Request Form
- Interlibrary Loan Form *What is this?*
- Library Locations & Hours
- Library Policies and Procedures
- Renew Items
- SPC Archive - Digital Collection

I Need to Find

In-page Analytics

89% Search Article Search Subject Guides Databases & Journals

Enter Search Terms

Advanced Library Search | What am I searching?

Live Chat

Email

About us

ASK a Librarian

I Need to Find

- Books and More
- Articles
- Journals A-Z
- Citation Help
- Subject Guides
- Course Reserves

SPC Links

- ANGEL
- Contact Staff/Faculty
- Thinking Gateway
- Events
- MySPC
- me

Library Information & Help

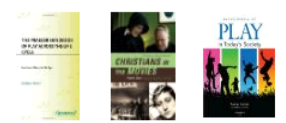
- FAQ's - Frequently Asked Questions
- Instruction Request Form
- Interlibrary Loan Form
- Locations & Hours
- Policies and Procedures
- Renew Items
- Archive - Digital Collection

News

- New databases: GREENR and Grzimek's Animal Life
- Local Book Talks & Signings
- The Madonnas of Echo Park
- NPR Music app for iPhone and iPod

New Titles

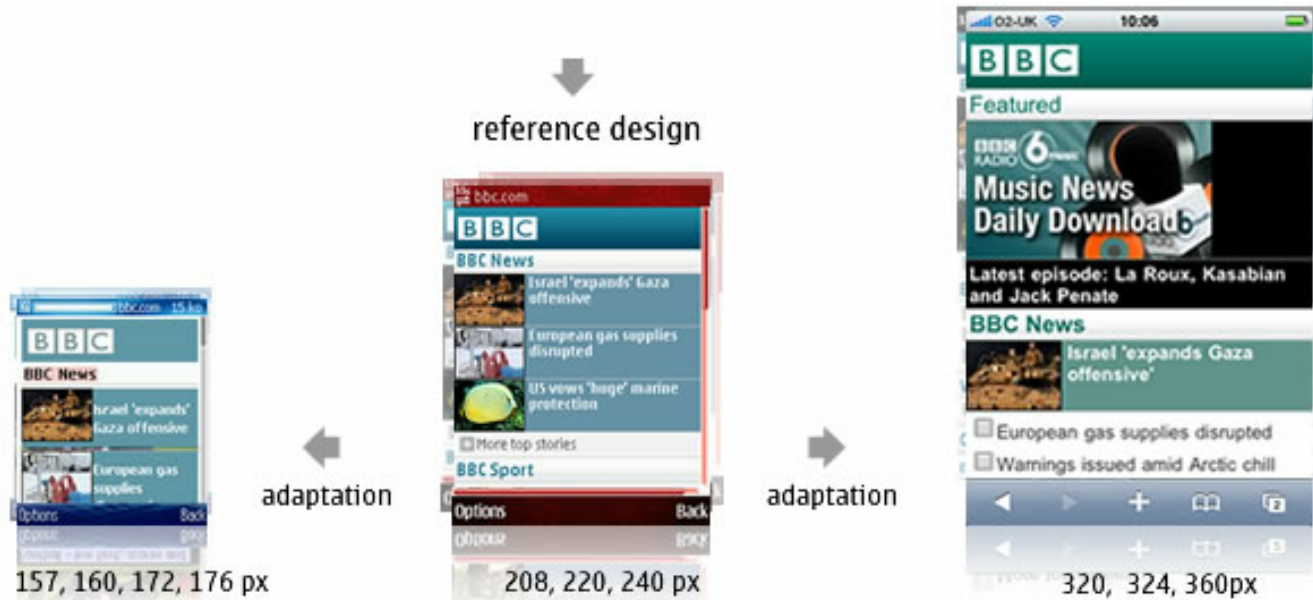
New Titles @ SPC Libraries



Mobile Device Info	Visits
1. Apple iPad	109
2. Apple iPhone	75
3. SonyEricsson LT15i Xperia Arc	11
4. Acer A200 Picasso_E	9
5. Apple iPod Touch	8
6. Samsung SGH-T679 Exhibit II 4G	7
7. LG MS690 Optimus M	6
8. Samsung SPH-D710	6
9. HTC EVO 4G	5
10. HTC EVO 3D Shooter	5

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

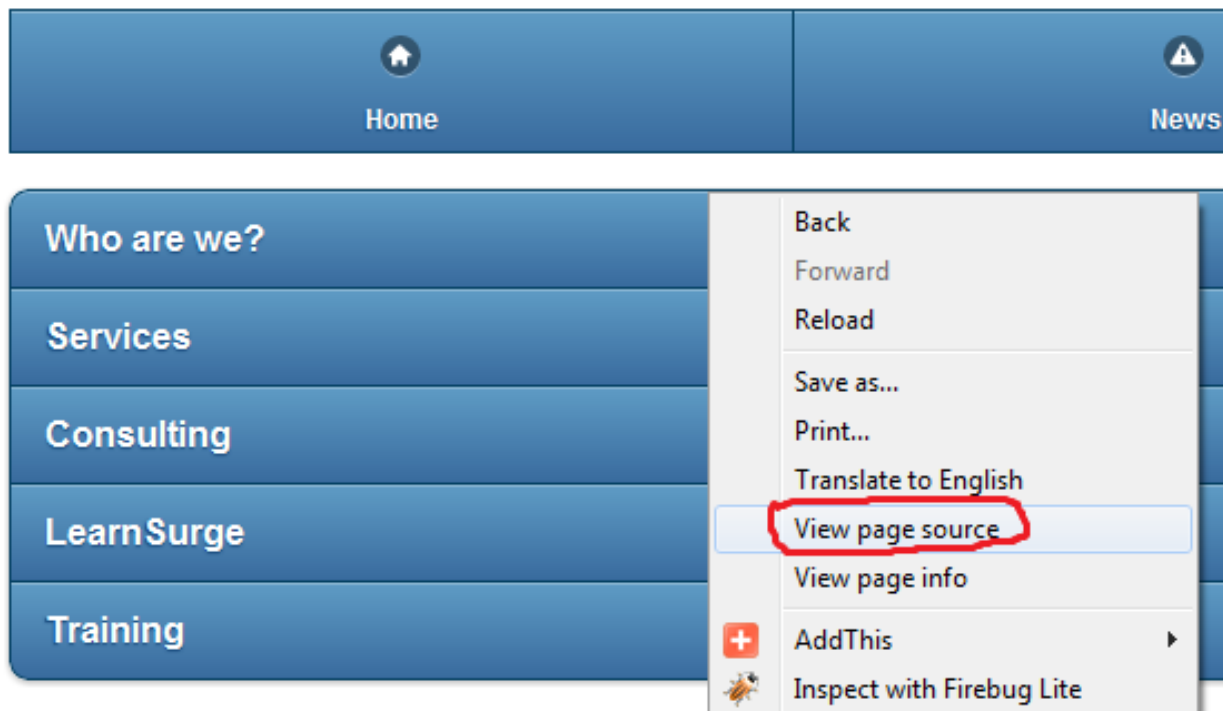
Apple iPad 1024x768

Palm Pre 320 x 480

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/>

SPC mobile

Header image

NAV BAR

Home News Locations Contact

Find Articles →

Find Books →

Research Guides →

Ask-a-Librarian →

Feedback →

Home Social My Favs Full site

* Don't forget Google Analytics.


Sketch ideas

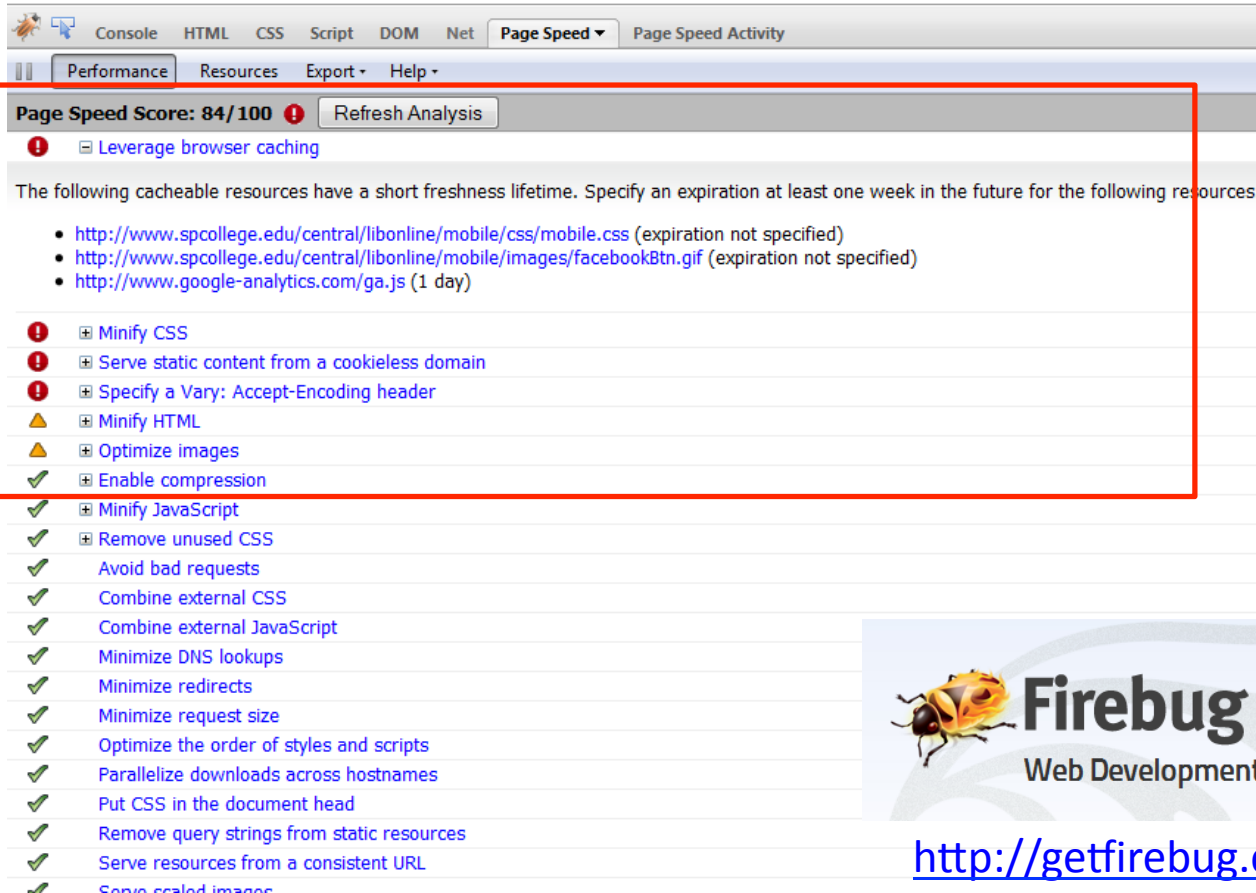
Testing and validation

SPC M.M. Bennett Libraries
St. Petersburg College

1. [Hours](#)
2. [Contact us](#)
3. [Directions](#)
4. [Find articles](#)
5. [Find books](#)
6. [Call the Library](#)
7. [Popular Links](#)

Test Page Speed in Firebug

Connect with us on --> 



The screenshot shows the Firebug Page Speed tool interface. At the top, it displays the Page Speed Score: 84/100 with a red exclamation mark icon and a 'Refresh Analysis' button. Below this, a red box highlights the 'Leverage browser caching' section, which includes the following text: 'The following cacheable resources have a short freshness lifetime. Specify an expiration at least one week in the future for the following resources:' and a list of three resources:

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

Below the highlighted section, a list of other optimization suggestions is visible, including: 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, and Serve scaled images.



<http://getfirebug.com/>

W3C mobileOK Checker


<http://validator.w3.org/mobile/>

W3C mobileOK Checker
Is your Web site mobile-friendly?

[Expand all](#) | [Expand one level](#) | [Collapse one level](#) | [Collapse all](#)





▶ Address **http://www.spcollege.edu/central/libonline/mobile/index.html**

▼ Result **96%**




96%

FAILURES PER SEVERITY

 CRITICAL	0
 SEVERE	0
 MEDIUM	0
 LOW	2

FAILURES PER CATEGORY

 Rely on Web standards	2
---	---

↑ TOP

▶ Page Size **5.9KB** ▶ Network usage **3 requests**

▼ Detailed report

http://ready.mobi

mobiReady.

YOU ARE HERE: [home](#) > [page results](#)

Username: Password:
Use your mobiForge sign-in - [Sign up@mobiForge](#) - [Lost password](#)

Page results

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

<http://www.spcollege.edu/central/libonline/mobile/>



4

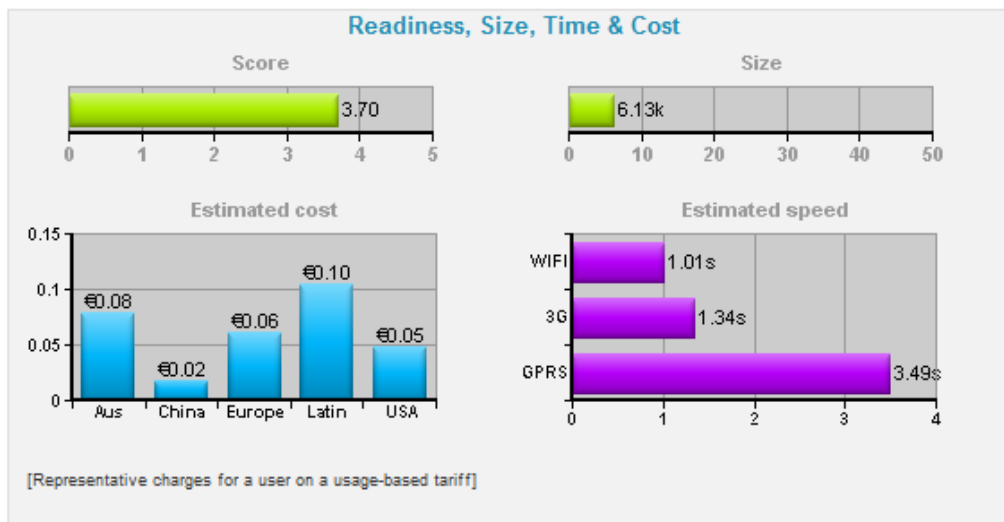
Overall



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.




About this report

Ready.mobi uses industry standard tests developed with the W3C and leading mobility companies.

Ready.mobi provides an analysis of how your web content is likely to function on a mobile device.

Many tests performed by ready.mobi are defined by the W3C in the [MobileOK Basic Tests 1.0](#) document.

More testing?

 [Back to start page](#)
[Retest this page](#)

Test another page

Feedback

 How useful did you find this report?

Grolsch

grolsch.com

SHARE

Tweet 8 Like 140

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

Schroll Down

WTF?!!!

Name	Method	Status	Type	Initiator	Size	Time	Timeline
f2.png	GET	200	image/png	jquery-1.7.1.min...	72.07KB	58.02s	
f3.png	GET	200	image/png	jquery-1.7.1.min...	70.66KB	58.96s	
f4.png	GET	200	image/png	jquery-1.7.1.min...	68.74KB	59.05s	
f5.png	GET	200	image/png	jquery-1.7.1.min...	63.82KB	59.11s	
f6.p	GET	200	image/png	jquery-1.7.1.min...	27.56KB	59.21s	
facebook.png	GET	200	image/png	jquery-1.7.1.min...	22.06KB	59.30s	

388 requests | 24.29MB transferred | 2.1min (onload: 49.60s, DOMContentLoaded: 1.23s)

Documents Stylesheets Images Scripts XHR Fonts WebSockets Other

"All sizes | Enough of this silliness | Flickr - Photo Sharing!." Last modified 10/15/2012 12:45:55. <http://www.flickr.com/photos/philhawsworth/7562460356/sizes//in/photostream/> (accessed 10/15/2012).

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:

- Cowemo Mobile Emulator: <http://www.mobilephoneemulator.com/>
- dotMobi Emulator - <http://mtld.mobi/emulator.php>
- Opera Mini Simulator - <http://www.opera.com/mobile/demo/>
- Mimic - emulates European and Japanese models: N400i and N505i. <http://pukupi.com/post/2059>
- Android Emulator - <http://developer.android.com/guide/developing/tools/emulator.html>
- BlackBerry Device Simulators - <https://www.blackberry.com/Downloads/entry.do?code=060AD92489947D410D897474079C1477>
- iPhone Dev Center: <http://developer.apple.com/iphone/>
- Palm Pre - <http://developer.palm.com/>
- Windows Mobile - <http://msdn.microsoft.com/en-us/windowsmobile/default.aspx>
- 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>

Take an emulated look at your desktop site.

Mobile Site

Select Skin:

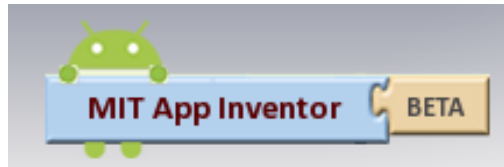


Desktop Site

Select Skin:



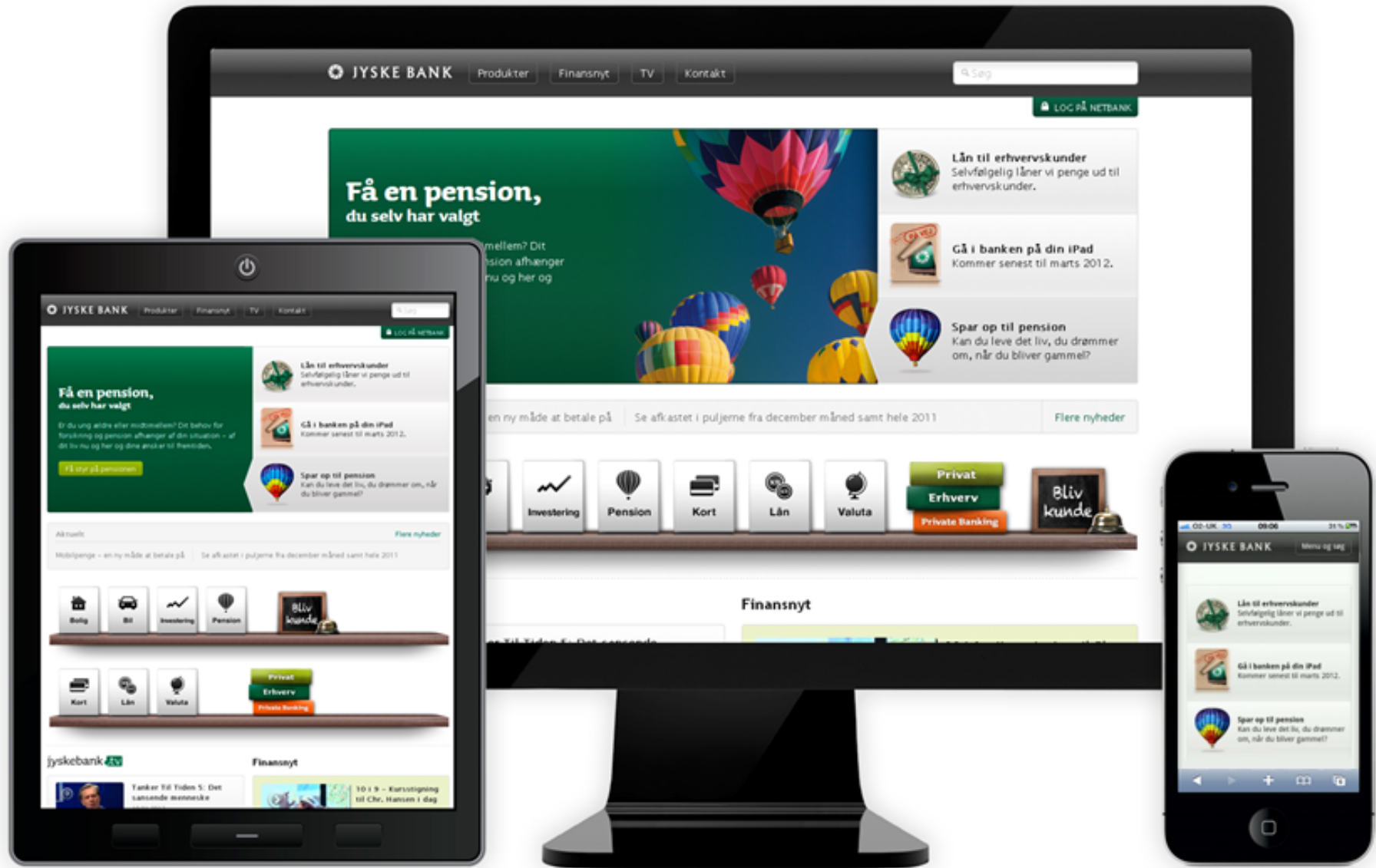
Other mobile development tools/frameworks



Mobilize.js



The Future of Mobile Web App/Site Development? Responsive Web Design?




jQuery Mobile Templates at: <http://goo.gl/1Fd00>



Handout: <http://goo.gl/GIzWJ>


Chad Mairn, M.L.I.S.
St. Petersburg College

 mairn.chad@spcollege.edu

 (727) 341-7181

 chadmairn@gmail.com

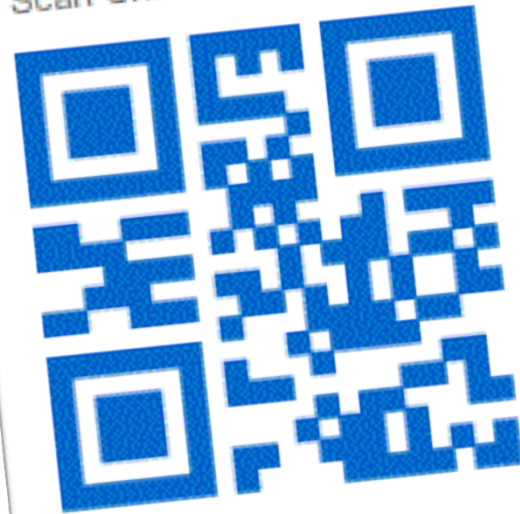
 chadmairn

 (727) 537-6405

 twitter.com/cmairn

 Text *chadmairn* to 50500

Scan Chad's ShareSquare



shsq.re/73

Want to
Hangout?

[gplus.to/chadmairn](https://plus.google.com/u/0/117246260000000000000)



Jason Clark

Head of Digital Access & Web Services

Associate Professor

Montana State University Library

[@jaclark](https://twitter.com/jaclark) - twitter.com/jaclark

jaclark@montana.edu