

# **Designing Mobile Experiences:**

## **Building Mobile Web Sites and Apps**

Metropolitan Library Service Agency (MELSA)  
Tech Training Workshop  
October 15, 2012

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

pinboard.in tag

<http://pinboard.in/u:jasonclark/t:melsa/>

# A Look Ahead...

- Native Apps versus Browser Apps
- Mobile Design Trends
- Mobile Design Case Studies
- Mobile Development Tips
- Demos and Code Templates
- Codelab and Walkthrough

# Hello, My Name is...

- Background, Position
- HTML, Programming experience?
- Experience with Mobile Design
- What do you want to learn most?

# Native Apps

- Installed on the iPhone or Device
- Access to the hardware (speakers, accelerometer, camera, etc.)
- Written with Objective-C (Apple)
- "App Store" or Proprietary Distribution

# Browser (Mobile) Apps

- Web site that is specifically optimized for the iPhone or mobile device
- Built with standard web technologies
- Available at a URL
- Speedy debugging and development

# Browser

v.

Native

# Shiny App Syndrome?

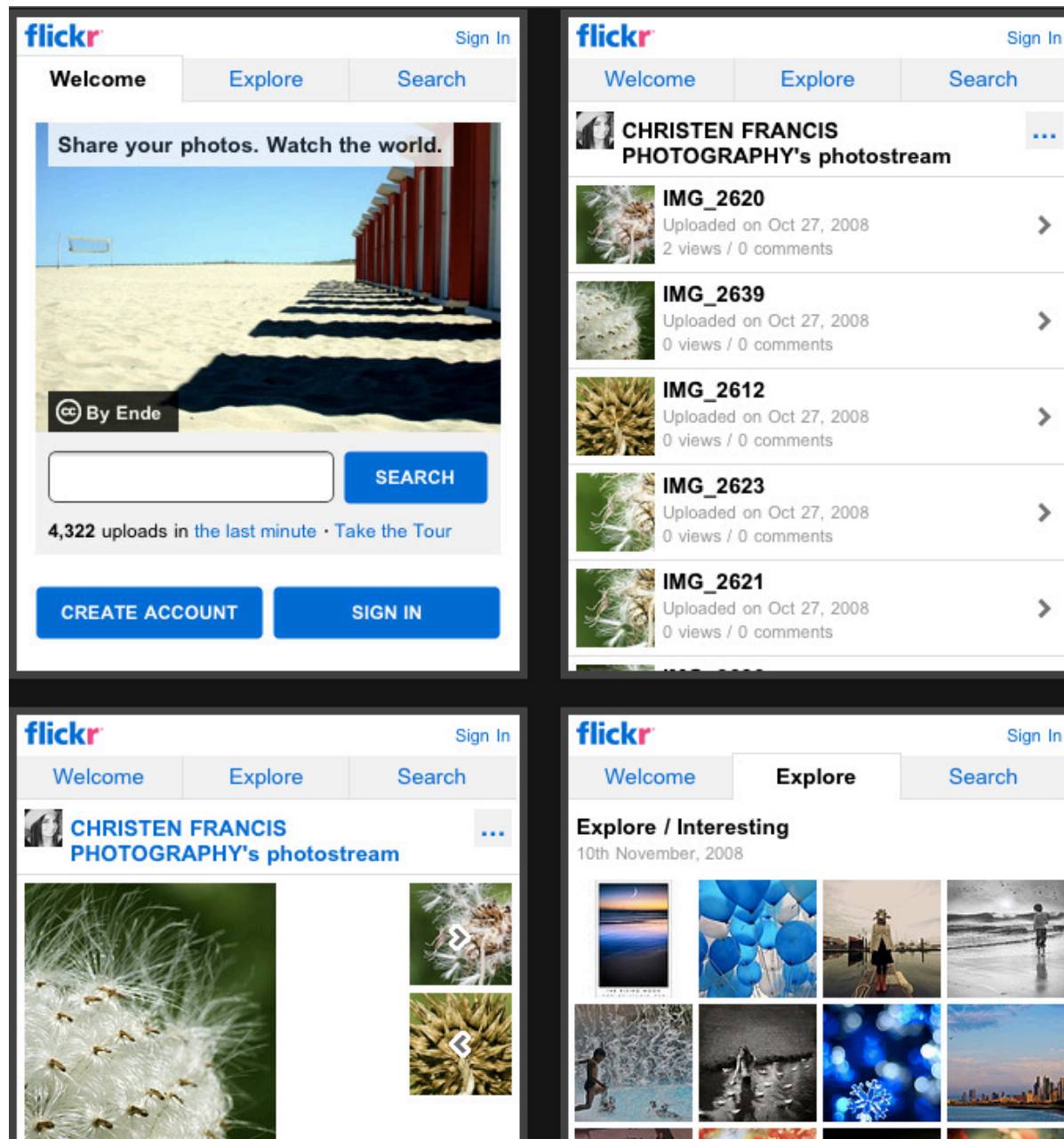
- Mobile web first?
- Incorporate what you learn into App development
- Your thoughts?

Source: "Shiny app syndrome" and Gov 2.0" by Alex Howard from O'Reilly Radar  
<http://radar.oreilly.com/2010/10/is-there-a-government-app-for.html>



# Trends in Mobile Design

- A Survey of Major Web Sites



<http://m.flickr.com>



<http://mobile.twitter.com>

amazon.com.

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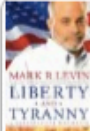
Business & Investing 25,559 >

Politics & Current Events 11,380 >


Literary Fiction 8,692 >

amazon.com.

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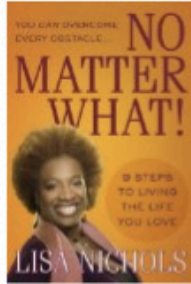


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**USC Public Diplomacy** [Today in PD]  
The stars are aligned <http://bit.ly/b3n30u>  
3 hours ago from [twitterfeed](#)



**Eddie** St. John's, a South LA Hospital, Does Health Care Right" says [@pattmorrison](#) [@scottgold](#) of [@latimes](#):

**Arts & Events**



Events for February 16, 2010



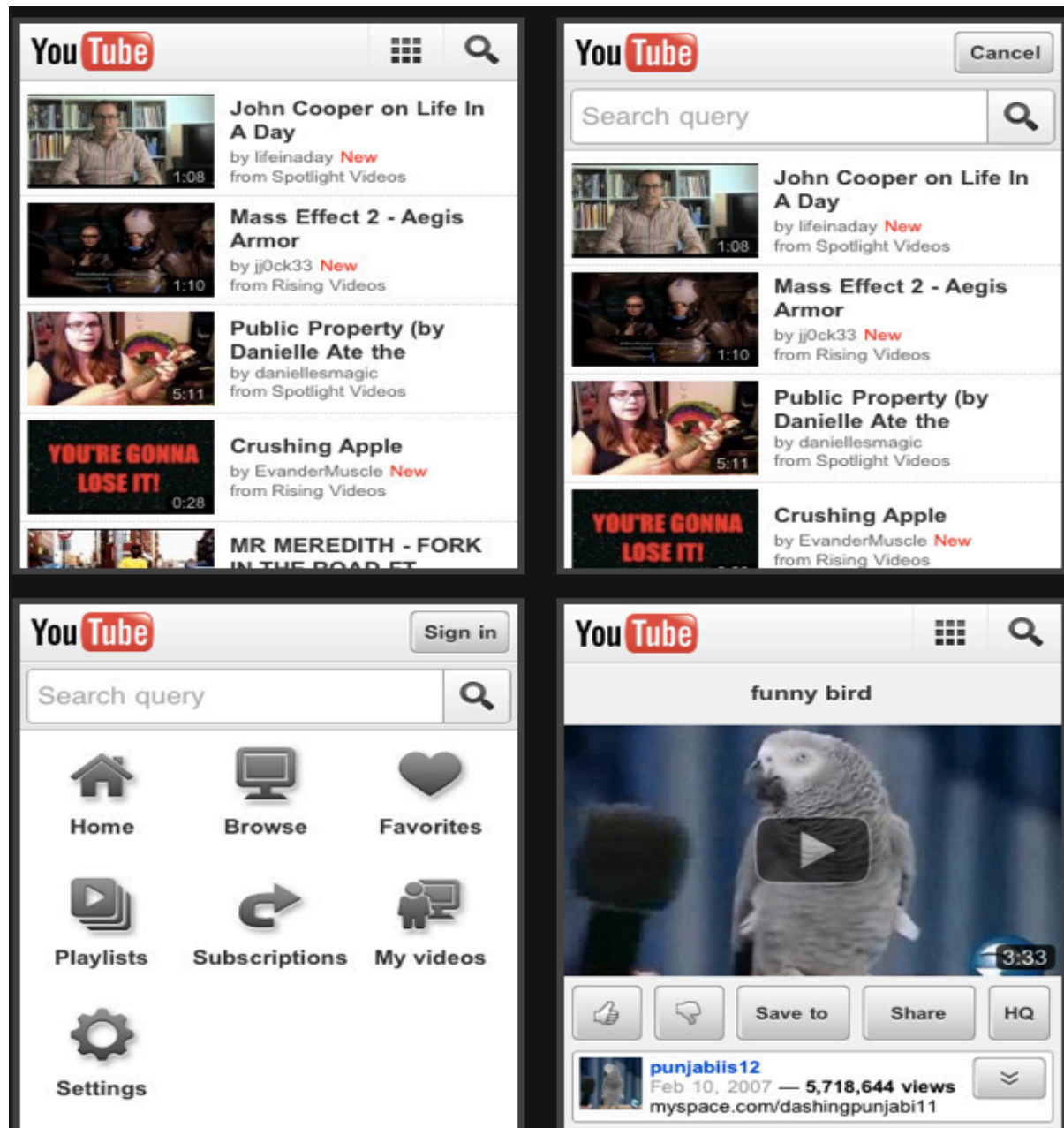
**Students Talk Back**  
January 20, 2010 - April 21, 2010  
11:30 AM - 1:00 PM



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

<http://mobile.usc.edu/>





<http://m.youtube.com>

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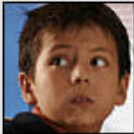
NPR.org, January 20, 2009 · The following is Barack Obama's inaugural address, as prepared for delivery.

My fellow citizens:

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

Listen Now

Neglected Films Of 2008 Still Well Worth Seeing



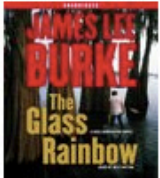


By Bob Mondello

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

<http://m.npr.org/>

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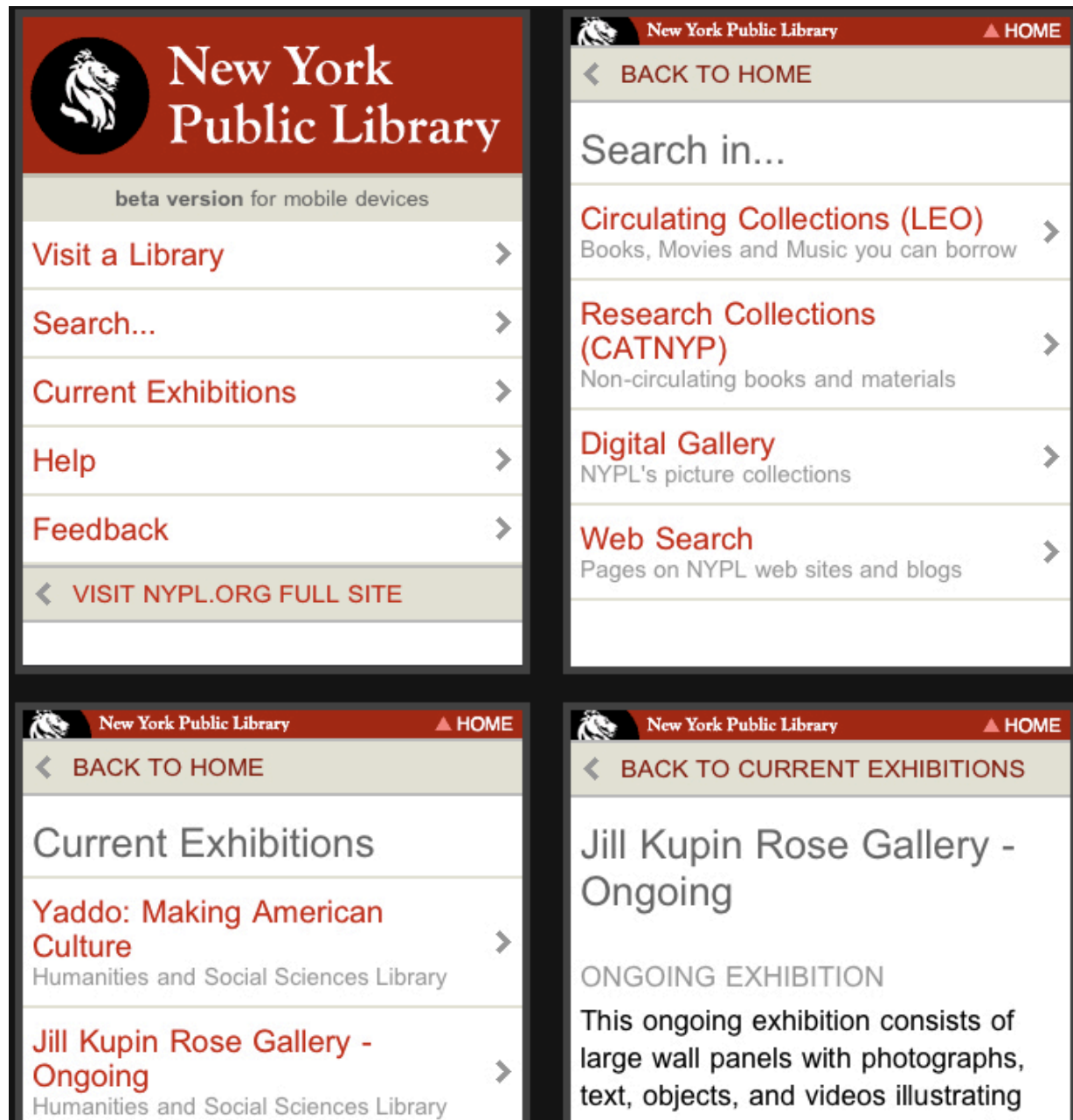
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qrcode generator barcode ...

<http://m.delicious.com/>

# Mobile App Design, Case Studies

## **Demos:**

MSU Historical Photos Walking tour app  
<http://arc.lib.montana.edu/msu-photos/app/>

Terra - [lifeonterra.com](http://lifeonterra.com)  
Terra mobile - [lifeonterra.com/m/](http://lifeonterra.com/m/)

MSU Extension - [arc.lib.montana.edu/msu-extension/](http://arc.lib.montana.edu/msu-extension/)  
MSU Extension mobile - [arc.lib.montana.edu/msu-extension/m/](http://arc.lib.montana.edu/msu-extension/m/)

## **Downloads:**

<http://www.lib.montana.edu/~jason/files.php>

## 2 live mobile web apps...

Terra - [lifeonterra.com](http://lifeonterra.com)  
becomes

Terra mobile - [lifeonterra.com/m/](http://lifeonterra.com/m/)

MSU Libraries - [www.lib.montana.edu](http://www.lib.montana.edu)  
becomes

MSU Libraries mobile – [www.lib.montana.edu/m/](http://www.lib.montana.edu/m/)

terra

TERRA 537: A Winning Scenario

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0000 / 12:16

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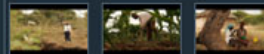
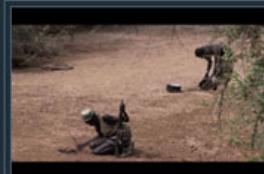
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TERRA 537: A Winning Scenario

13:15mins | 2010-07-22 | Produced by: Jenny Sharman



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 for improved crop production. Soil health is critical in a changing climate and this film explores the importance of protecting Kenyan soil for future generations.

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TERRA 719

# TRUST Pennsylvania

produced by WITNESS



Ashley, an 18-year old from western Pennsylvania, is asking the government to come up with a climate recovery plan that does not destroy our single most essential resource...the atmosphere. **Check it out.**



Welcome to TERRA: the nature of our world

Recent Episodes



**TERRA 719: TRUST Pennsylvania**

Produced by WITNESS



**TERRA 718: Passing It Down**

Produced by Christopher J. Carter



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- 3/14 Free Workshop: Exploring Wikipedia
- 4/12 Distinctive Dialogues
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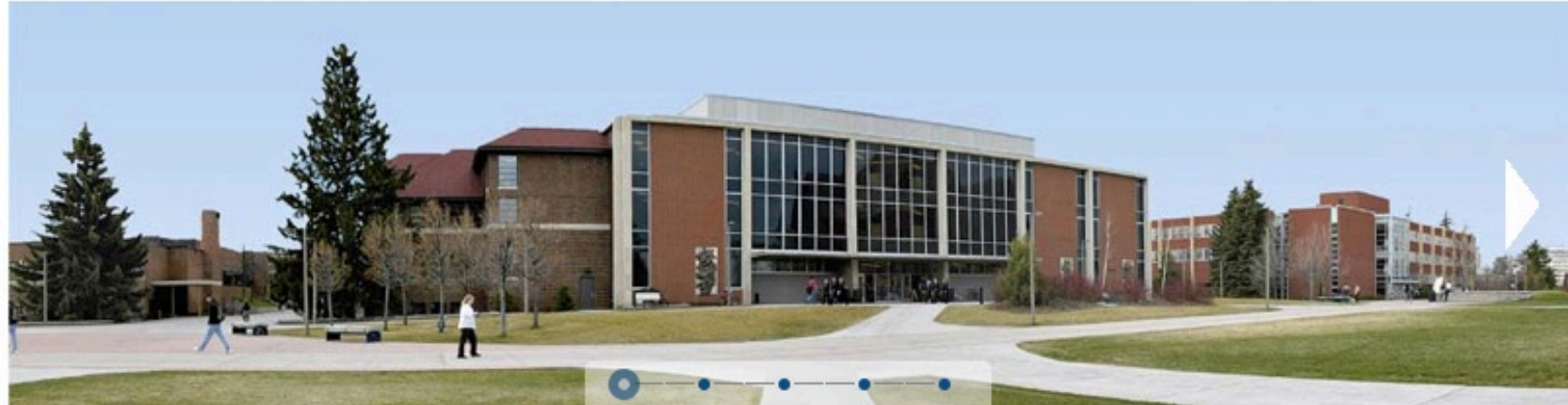


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10/16 Library Workshop: Word 2010 Tips & Tricks

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

Database trial: IBISWorld Industry Research Reports



# Making the Move to Mobile...

“My goal was initially just to make a mobile companion for the facebook.com mothership, but once I got comfortable with the platform I became convinced it was possible to create a version of Facebook that was actually better than the website.”

Joe Hewitt, lead developer for touch.facebook.com

Source: <http://joehewitt.com/post/ipad/>

functional  
essence

necessary primary essential  
core

simple

# 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?

# Mobile Analytics

- Web metrics and statistics
- Mobile search logs

“Data is your friend. Take out the guesswork.”

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.png	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/philhawksworth/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 Development Tips

- A different design mindset
- Development with new limitations
- 10 tips to get us “mobile design” thinking

# Narrow your Focus

- Do a few things really well
- What are the core actions?

Delta Desktop != Delta Mobile

# 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
  - <https://addons.mozilla.org/en-US/firefox/addon/59/>

<http://woorkup.com/2010/01/10/best-practices-to-develop-perfect-websites-for-iphone-and-mobile-devices/>

# Study the Interface & Device

- Scalable Design
- Think Percentages
  - 320px AND 480px

# Mobile UX = targets, gestures, actions

- New forms of interaction
- Tactile navigation
  - 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 cacheing
- "Minify" your scripts and CSS
  - JSLint, CleanCSS
- Take Advantage of HTML5, CSS3
  - `<!DOCTYPE html>`

# 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

# Know Mobile Design Conventions

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

# Mobile Development - Demos

## **Demos:**

Responsive Design Template (custom)

[www.lib.montana.edu/~jason/files/responsive-design/](http://www.lib.montana.edu/~jason/files/responsive-design/)

Mobile Template (jQuery Mobile)

[www.lib.montana.edu/~jason/files/touch-jquery/](http://www.lib.montana.edu/~jason/files/touch-jquery/)

## **Code Samples and Downloads:**

[www.lib.montana.edu/~jason/files.php](http://www.lib.montana.edu/~jason/files.php)

# Mobile Validators

- W3C Mobile Site Validator
  - <http://validator.w3.org/mobile>
- Mobile App Validator from mobiforge
  - [http://mobiready.com/launch.jsp?locale=en\\_EN#fragment-1](http://mobiready.com/launch.jsp?locale=en_EN#fragment-1)

# Mobile Development in Libraries

- Chad Haefele, Mobile Site Generator
  - <http://www.hiddenpeanuts.com/msg/>
- Jason Casden, WolfWalk at NCSU
  - <http://www.lib.ncsu.edu/dli/projects/wolfwalk/>
- Laurie Bridges and Kim Griggs
  - <http://ir.library.oregonstate.edu/jspui/handle/1957/16437>

\* See Mobile Development - Library Success Wiki

[http://www.libsuccess.org/index.php?title=M-Libraries#Mobile\\_applications](http://www.libsuccess.org/index.php?title=M-Libraries#Mobile_applications)

# Getting Started, Learning More

- Don't Ignore Frameworks and Libraries
  - jQuery, iUI, Sencha Touch, PhoneGap
- MIT App Inventor
  - <http://appinventor.mit.edu/>
- Mobile Web Apps - Apple
  - <http://developer.apple.com/safari/>
- Mobile Web App Design: Getting Started
  - Michael Doran, Code4Lib 2010
  - <http://code4lib.org/conference/2010/doran>

# Getting Started, Resources

- mobify.me for site conversion (page limit)
  - <http://mobify.me/features/>
- *Mobile Design and Development* (O'Reilly)  
by Brian Fling  
ISBN: 9780596155445  
<http://www.worldcat.org/oclc/318413920>
- Use the provided templates, bang on rocks, ask me questions...



# 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>

# Common Mobile Interactions

- Tap
- Double Tap
- Drag
- Flick
- Pinch
- Spread
- Press
- Press & Tap
- Press & Drag
- Rotate

# 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

<http://www.eweek.com/c/a/Midmarket/Google-CEO-Eric-Schmidt-at-MWC-Mobile-First-694942/>

# Contact Information

## **Jason A. Clark**

Head of Digital Access and Web Services

Montana State University Libraries

[jaclark@montana.edu](mailto:jaclark@montana.edu)

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

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