

Designing Mobile Experiences:

Building Mobile Web Apps

Internet Librarian
October 23, 2010

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

A Look Ahead...

- Native Apps versus Browser Apps
- Mobile Design Trends
- Mobile Design Case Study
- Mobile Development Tips
- Demos and Code Templates
- Getting Started

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

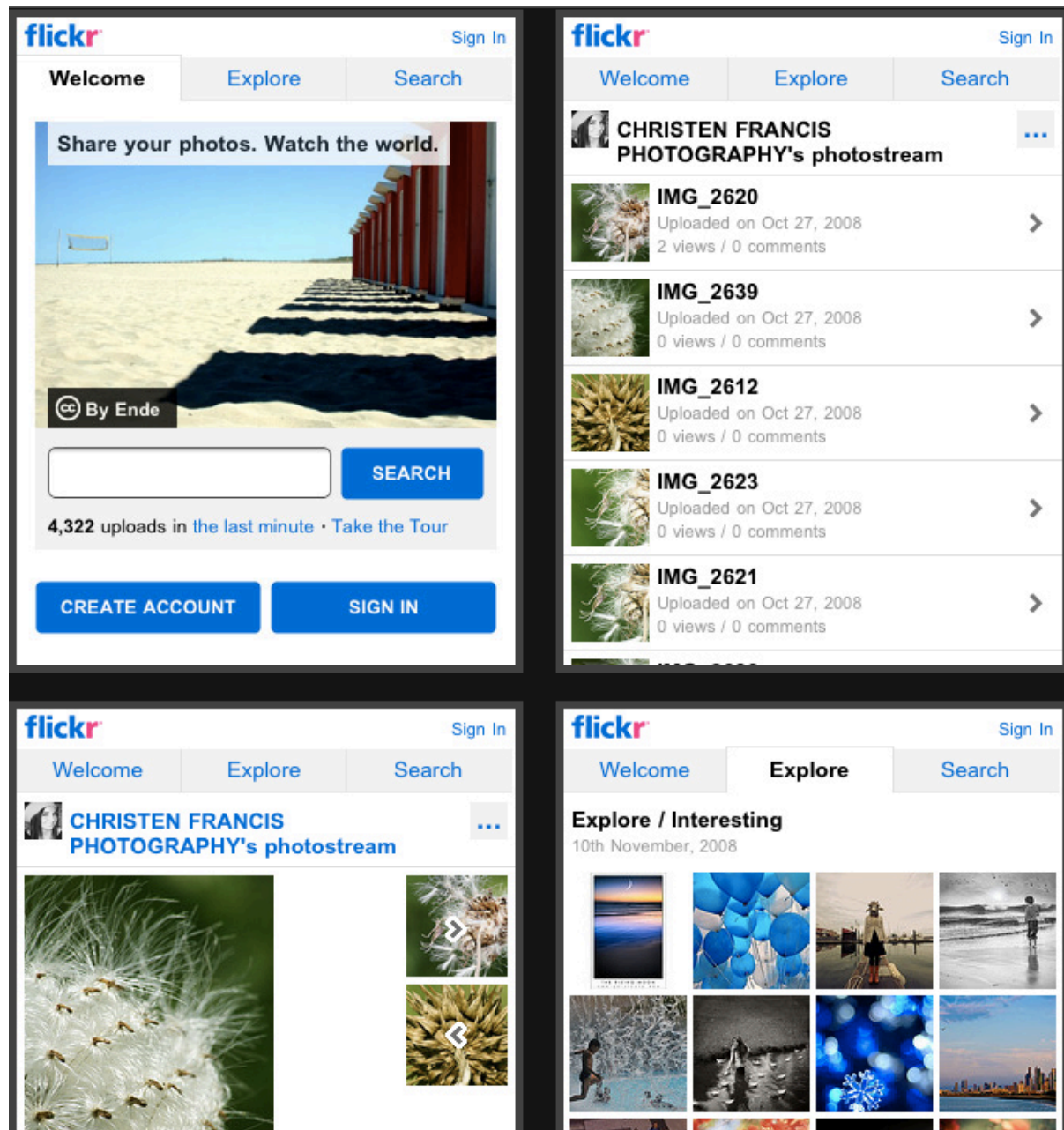
Shiny App Syndrome?

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

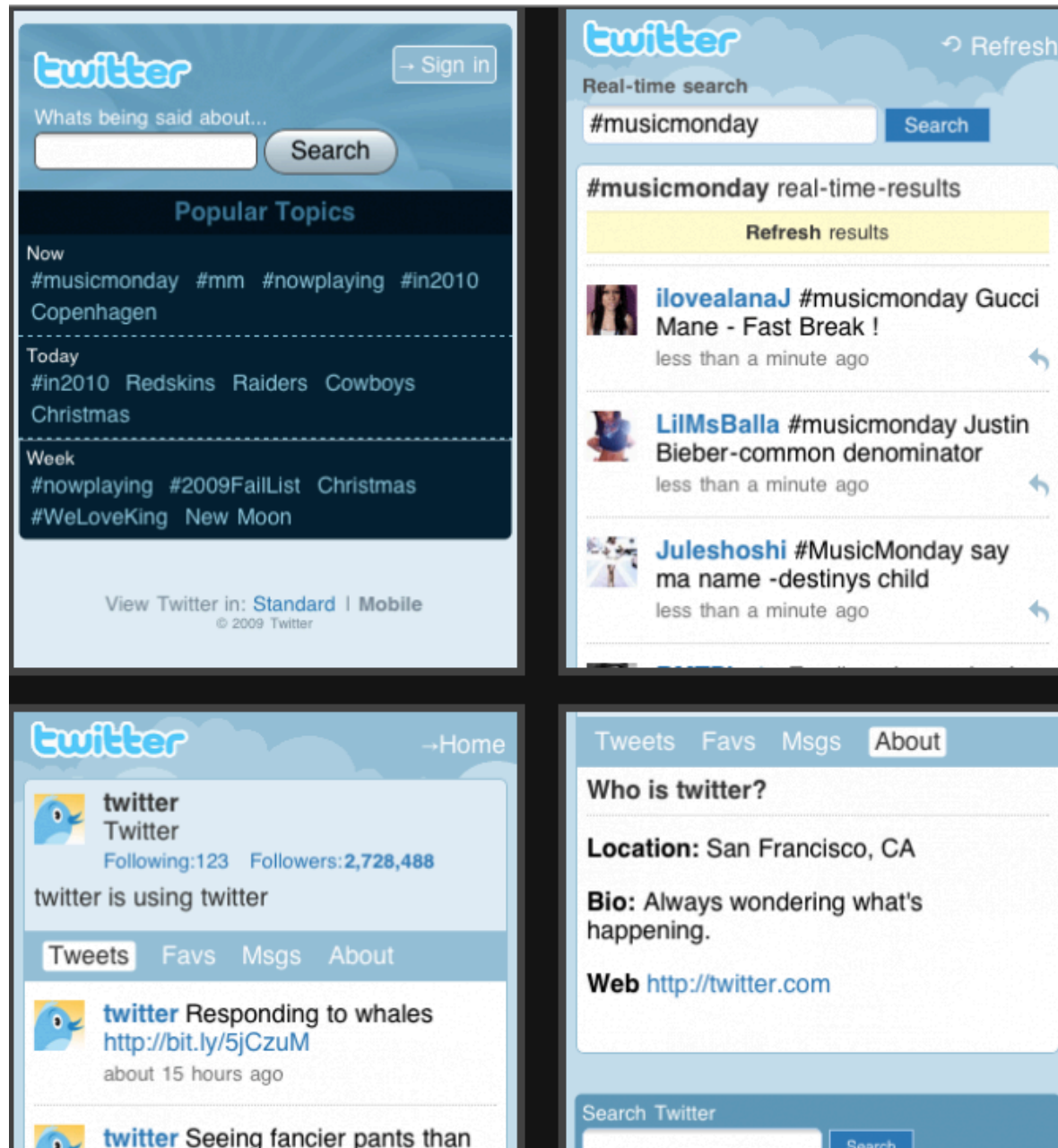
Source: "Shiny app syndrome" and Gov 2.0" by Alex Howard from O'Reilly Radar
<http://radar.oreilly.com/2010/10/is-there-a-government-app-for.html>

Trends in Mobile Design

- A Survey of Major Web Sites



<http://m.flickr.com>



<http://mobile.twitter.com>

amazon.com.

Kindle Store

Shop More Than 280,000 Books

GO

Browse Books by Category >

New York Times Best Sellers >

Kindle Top Sellers >

New & Noteworthy >

Recommended for You >

amazon.com.

Browse More Than 280,000 Books

All Books
282,781 >

Fiction
111,272 >

Nonfiction
169,448 >

Advice & How-to
19,977 >

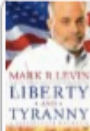
Business & Investing
25,559 >

Politics & Current Events
11,380 >


Literary Fiction
8,692 >

amazon.com.

[Kindle Store](#) > **New York Times Best Sellers**

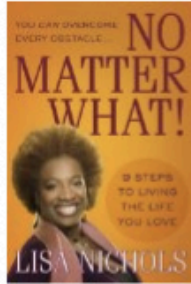


1. **[Liberty and Tyranny: A Conservative Manifesto \(Kindle Edition\)](#)**
Mark R. Levin
\$9.99 - Auto-delivered wirelessly
★★★★☆ (1101)



2. **[The Help \(Kindle Edition\)](#)**
KATHRYN STOCKETT
\$9.99 - Auto-delivered wirelessly
★★★★☆ (251)

amazon.com.



No Matter What!: 9 Steps to Living the Life You Love (Kindle Edition)
Lisa Nichols (Author)
Digital List Price: ~~\$24.99~~
Print List Price: ~~\$24.99~~
Kindle Price: **\$9.99**
You Save: **\$15.00 (60%)**
Sold by Amazon Digital Services

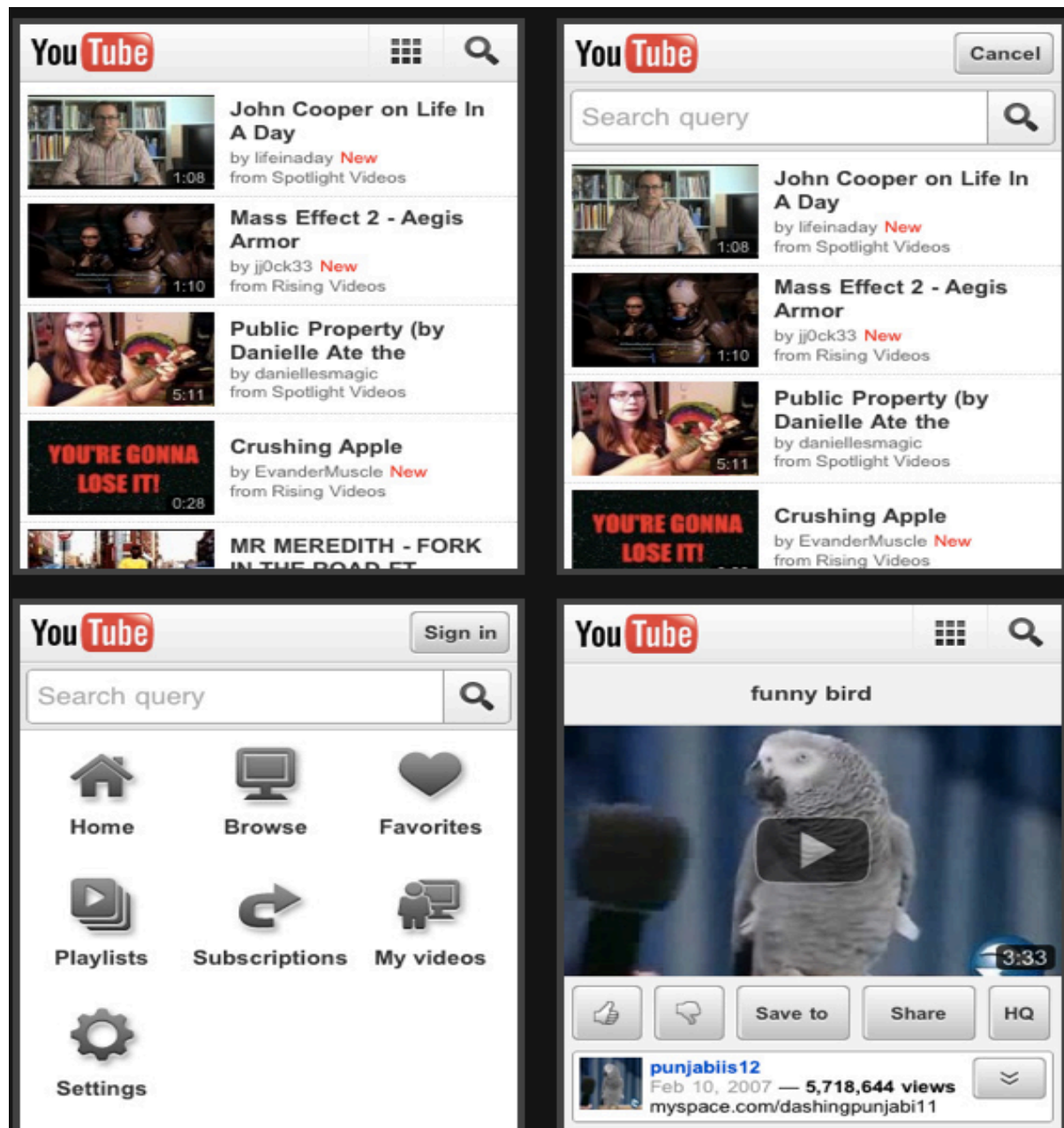
Buy Now with 1-Click

Try a Sample

<http://www.amazon.com/gp/aw/kindle/storefront/>



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



<http://m.youtube.com>


NPR


Local STA

npr

MOBILE

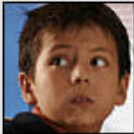
[VIEW FULL NPR WEBSITE](#)


NPR Hourly News




[Revelry Over, Obama Turns To Presidential Priorities](#)

[Geithner Says Tax Mistake Was](#)


Listen Now


[Transcript: Barack Obama's Inaugural Address](#)




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](#)



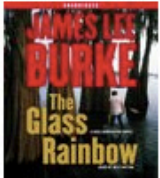


By Bob Mondello

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

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

SIMON & SCHUSTER

New Releases from Simon & Schuster



See more New Releases in:

All Books

GO

See Bestsellers


SEARCH

Home

Newsletters

Video

SIMON & SCHUSTER



The Fallen 2

Aerie and Reckoning (Part of Fallen)

By: [Thomas E. Sniegowski](#)

This edition: Trade Paperback, 576 pages

List Price: \$9.99

BUY NOW

Book Details

Book Description


About the Author

SEARCH

Home

Newsletters

SIMON & SCHUSTER



The Fallen 2

Aerie and Reckoning (Part of Fallen)

By: [Thomas E. Sniegowski](#)

This edition: Trade Paperback, 576 pages

List Price: \$9.99

BUY NOW

Book Details

Simon Pulse, July 2010

ISBN-10: 1442408634

ISBN-13: 9781442408630

SIMON & SCHUSTER

Newsletters Sign-up

Email Address:

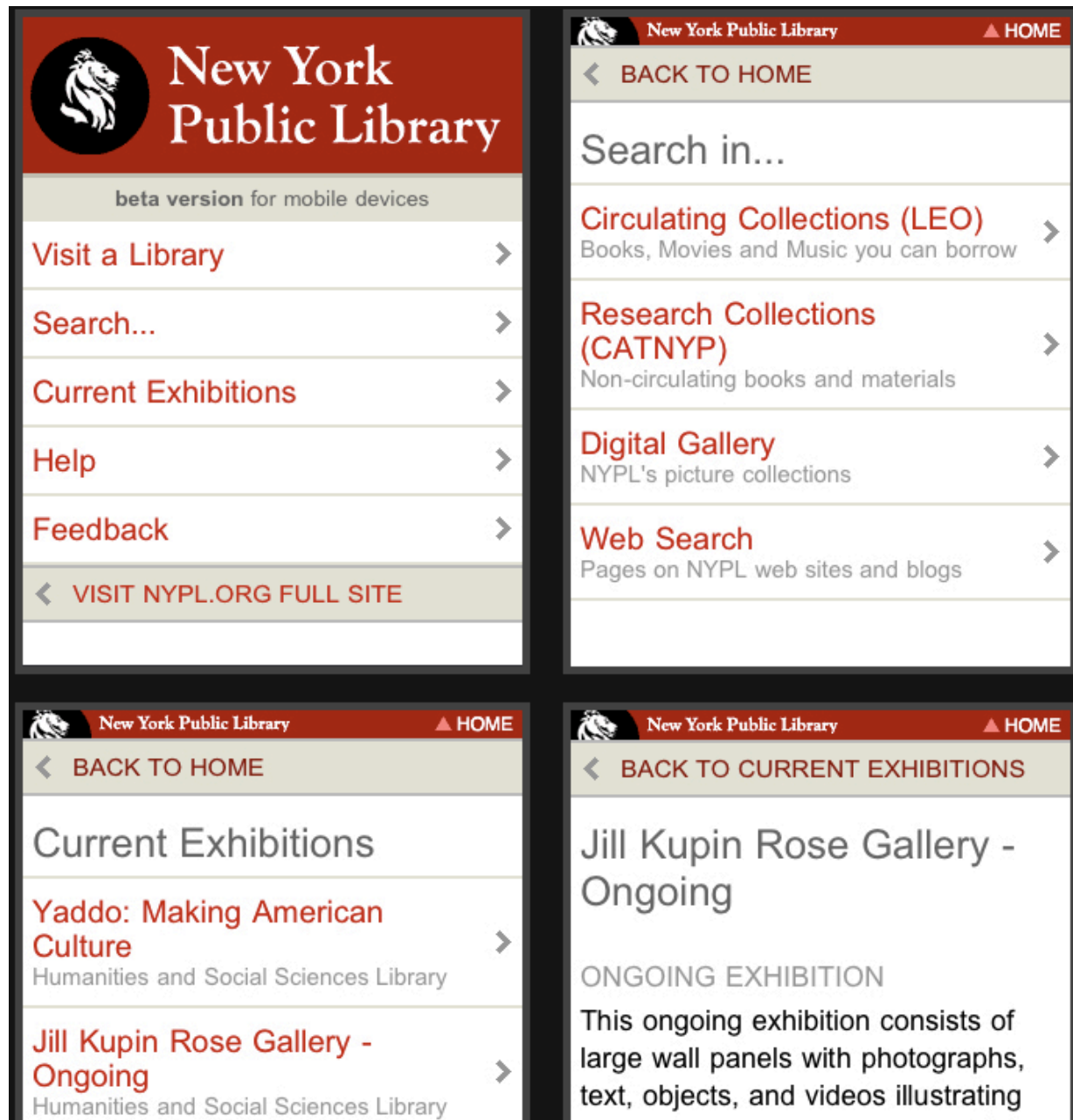
Date of Birth:

☐ Monthly Update

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

☐ Audio


<http://www.simonandschuster.mobi/>



<http://m.nypl.org>

Explore

Bookmarks

 mobile

All 'mobile' Search Results

(1000+ results)

[PhoneGap | Cross platform mobile framework](#)

iphone mobile javascript ...

[fring – Make free mobile calls, IM with Skype, M...](#)

mobile voip skype ...

[jQuery Touch – jQuery plugin for mobile web develop...](#)

iphone jquery javascript ...

[QIK | Streaming video right from your phone](#)

video streaming mobile ...

[Twitter: What are you doing?](#)

twitter social web2.0 ...

[Android](#)

android google mobile ...

[QR-Code Generator](#)

qrcode generator barcode ...

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

Mobile App Design – Case Study

Demos:

Terra - lifeonterra.com

Terra mobile - lifeonterra.com/m/

MSU Extension - arc.lib.montana.edu/msu-extension/

MSU Extension mobile - arc.lib.montana.edu/msu-extension/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>

A live mobile web app...

Terra - lifeonterra.com

becomes

Terra mobile - lifeonterra.com/m/

terra

TERRA 537: A Winning Scenario

PLAY FULL EPISODE

PLAY SHORT TRAILER

0000 / 12:16

MED. RES. HIGH RES.

terra

THE NATURE
OF OUR WORLD

Search

Subscribe

Subscribe via email

MAC ITUNES

PC ITUNES

MIRO CHANNEL

Recently Popular on TERRA

About

More Info

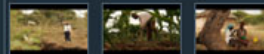
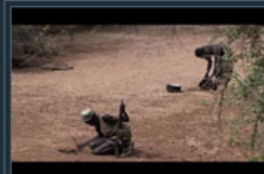
Related Shows

Comments

Now Playing at LIFEONTERRA

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.

(0) comments
Learn More

TERRA, The Nature of Our World : Montana State University Libraries

+

http://lifeonterra.com/m/

Q

Google

TERRA: The Nature of Our World


F R O M M S U L I B R A R I E S

Now Playing

Explore

Search

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 practi
...

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

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

Search TERRA:

Search

 [Subscribe to our Feed](#)

+

[What is TERRA?](#)

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://joehe Witt.com/post/ipad/>

functional
essence

necessary primary essential

core

simple

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 - Demo

Demo:

Mobile Prototype built with jQtouch Library

www.lib.montana.edu/~jason/files/touch/

Code Samples and Downloads:

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

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

Getting Started, Learning More

- Don't Ignore Frameworks and Libraries
 - jQuery, iUI, Sencha Touch, PhoneGap
- Google App Inventor
 - <http://appinventor.googlelabs.com/about/>
- 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

twitter.com/jaclark

www.jasonclark.info