

Intro to Web Development

Building a web site for the desktop, tablet
and smartphone

Florida Library Webinars
Novare Library Services
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First Principles

- Responsive Web Design
- Search Engine Optimization
 - Information Architecture
- Analytics and Statistics



pinboard.in tag

pinboard.in/u:jasonclark/t:rwd/

twitter as channel (#hashtag)

@jaclark #rwd

Overview

- What is Responsive Web Design?
- RWD Principles
- Live RWD Redesign
- Getting Started
- Questions

Terms: HTML + CSS

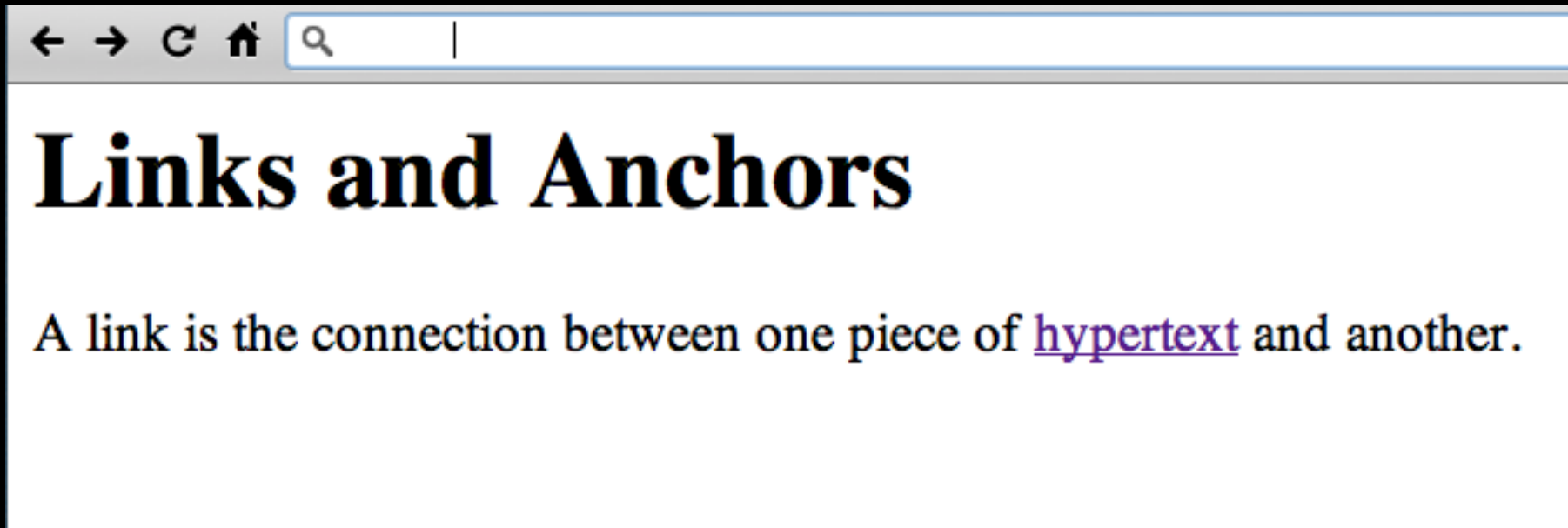
Does everybody know what these elements are?

CSS

- style rules for HTML documents

HTML

- markup tags that structure docs
- browsers read them and display according to rules



```
1 <title>Hypertext Links</title>
2 <h1>Links and Anchors</h1>
3 A link is the connection between one piece of
4 <a href=WhatIs.html>hypertext</a> and another.
```

Responsive design = 3 techniques

1. Media Queries
2. A Fluid Grid
3. Flexible Images or Media Objects

RWD Working Examples

HTML5 Mobile Feed Widget

www.lib.montana.edu/~jason/files/html5-mobile-feed/

Mobilize Your Site with CSS (Responsive Design)

www.lib.montana.edu/~jason/files/responsive-design/

www.lib.montana.edu/~jason/files/responsive-design.zip

Learn more by viewing source

OR

Download from jasonclark.info & github.com/jasonclark

Media Queries

- switch stylesheets based on width and height of viewport
- same content, new view depending on device

```
@media screen and (max-device-width:480px) {... mobile styles here... }
```

* note “em” measurements based on base sizing of main body font are becoming standard (not pixels)

Media Queries in Action

```
<link rel="stylesheet" type="text/css" media="screen and (max-device-width:480px) and (resolution: 163dpi)" href="shetland.css" />
```

Responsive Web Design, Ethan Marcotte

<http://www.alistapart.com/articles/responsive-web-design>

Define the Breakpoints

- 3 major breaks

480 / 768 / 1024

Define the Breakpoints

- 3 major media query rules

< 480

< 768

> 768

A Fluid Grid

- Create Flexible Layouts with Relative Sizing

~~| 200 px | 300 px | 800 px |~~

| 15.38% | 23.07% | 61.5384% |

Box Sizing

Set how the browser calculates the width of an element to include (or not include) padding, borders, and margins

```
div.doc {  
    width: 200px;  
    padding: 0 30px;  
    -webkit-box-sizing: border-box;  
    -moz-box-sizing: border-box;  
    box-sizing: border-box;  
}
```

Flexible Images & Media

- Adaptive Sizing

```
img{width:100%;min-width:250px;}
```

Flexible Images & Media ...

- Adaptive Sizing

```
<div class="video-container">  
<iframe src="http://player.vimeo.com/video/6284199?  
title=0&byline=0&portrait=0" width="800" height="450"  
frameborder="0"></iframe>  
</div>
```

```
.video-container {position:relative;padding-bottom:  
56.25%;padding-top: 30px;height:0;overflow:hidden;}  
.video-container iframe {position:absolute;top:0;left:  
0;width:100%;height: 100%;}
```

Ensure Device Screen Size

- meta viewport tag in <head>

```
<meta name="viewport"  
content="width=device-  
width, initial-scale=1">
```

Linearize Layout for Mobile

- Turn all block level elements into full width to create single column layout

`width -> 100%`

Hide Non-Essential Content

- As screen sizes shrink, remove elements from view
- Apply a `.hide` class

```
@media screen and (max-width:480) {  
    .hide {display:none;}  
}
```

RWD Gotchas

- Hidden page weights
- Be lean with your markup
- Minify if performance bottleneck

Minification + Optimization

Removing unnecessary characters and spacing from code to reduce size, and optimizing the code to improve load times

Minify

www.cleancss.com

Optimize

csstidyonline.com

What Type of Support?

- see "When can I use..."
 - <http://a.deveria.com/caniuse/>
- Mobile browsers leading the way
- Modernizr
 - <http://www.modernizr.com/>
- HTML5 enabling script
 - <http://remysharp.com/2009/01/07/html5-enabling-script/>

RWD Tools

- Twitter Bootstrap
twitter.github.io/bootstrap/
- Responsify
responsify.it/
- 960 Grid System
<http://960.gs/>

Resources

- HTML5 & CSS3 Cheat Sheets
 - webresourcesdepot.com/html-5-and-css3-cheat-sheets-collection/
- HTML5 Boilerplate
 - <http://html5boilerplate.com/>
- HTML5rocks
 - html5rocks.com
- HTML5 Please
 - html5please.com/#use

Next version of RWD = Flexbox

•A flexible box model?

```
body>div#main {  
    display: -webkit-flexbox;  
    display: -moz-flexbox;  
    display: -ms-flexbox;  
    display: -o-flexbox;  
    height: 500px;  
    padding: 1em;  
    background-color: gray;  
}
```

RWD in Libraries

- Matthew Reidsma
matthew.reidsrow.com
@mreidsma
- Brad Czerniak
brad.hawidu.com
@ao5357

Search Engine Optimization

Engineering Findability...

pinboard.in tag

pinboard.in/u:jasonclark/t:
libseo/

Search Engine Optimization

- The act of creating indexable and crawlable content for commercial search engine robots

SEO

Best Practices and SEO

- Approved SEO techniques
- Based on search engine guidelines and documentation for indexing
- Align with user's expectations for a search result

NASA



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Orbital Tracking - Video - Expedition
36 - Karen L. Nyberg

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Skip to main content. LOADING...
LOADING... NEWSNews ...

[NASA Kids](#)

Buzz Lightyear - Mars - Elmo Visits
NASA - Text Only Site - ...

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The National Aeronautics and Space Administration is the agency of the United States government that is responsible for the nation's civilian space program and for aeronautics and aerospace research. [Wikipedia](#)

Founded: July 29, 1958

Founders: [Dwight D. Eisenhower](#), [John F. Kennedy](#), [Wernher von Braun](#), [Richard Nixon](#)

SEO - Baseline Techniques

Keyword analysis

Writing titles and descriptions

Creating indexable content

- sitemaps, linked architecture

Reduce noise in the index

- rel canonical, noindex nofollow

Introduce semantic markup

Keyword Analysis

- Research your market
- Write or rewrite your web copy, titles, descriptions based on this research
- Set up Google Adwords Account
 - Keyword Planner

Writing Titles and Descriptions

Writing web copy for the robot and the human

```
<title></title>
```

```
<meta name="description" />
```

Writing Titles and Descriptions

Title

"Keyword Phrase | Context"

Example:

"Staff Directory and People Listing: Montana State University MSU Library"

Writing Titles and Descriptions

Description

a short, declarative sentence that incorporates your keywords, as you laid it out in your page title

Example:

"A listing of staff employed at Montana State University MSU Library including library departments, roles, job titles, phone numbers and contact information."

Creating Indexable Content

- Clear hierarchy and site architecture
 - Directory in URL shows hierarchy
 - Breadcrumb links

“Every page should be reachable from at least one static text link.”

<https://support.google.com/webmasters/answer/35769>

Creating Indexable Content

- Set up machine-readable sitemap
 - Listing all pages that you want to be indexed and indexing priorities for those pages

“Google adheres to Sitemap Protocol 0.9 as defined by sitemaps.org.”

<https://support.google.com/webmasters/answer/156184>

Creating Indexable Content

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Reduce “Noise” in the Index

- Redundant content
- Dynamic pages, search result pages
- Not every page is unique

Techniques:

1. robots.txt directives
2. link relations and index directive markup

Reduce “Noise” in the Index

robots.txt

- set of commands in text file at top level of your site

```
Disallow: /staff/  
#allow primary mobile page  
Allow: /finding-aids/m/index.php  
Allow: /finding-aids/m/$
```

Reduce “Noise” in the Index

Link relations and index directive markup

- markup that identifies canonicalization or whether to index a page

```
<link rel="canonical" href="http://arc.lib.montana.edu/finding-aids/item/23" />
```

```
<a rel="nofollow" href="http://arc.lib.montana.edu/finding-aids/item/23"></a>
```

```
<meta name="robots" content="nofollow,noindex" />
```

Introducing Semantic Markup

- HTML5 semantic tags and microdata that helps classify page types and types of content on the page

“If Google understands the content on your pages, we can create rich snippets—detailed information intended to help users with specific queries.”

https://support.google.com/webmasters/answer/99170?hl=en&ref_topic=1088472

Item: **Women posing on college locomotive engine****Title:** Women posing on college locomotive engine**Creator:** unknown**Date:** unknown**Description:** Women posing on a college locomotive engine.**Notes:****Physical Description:** Photo print - Black and White**Subjects:** [Locomotive](#)**Keywords:** locomotive**Photograph ID:** parc-000432 [Higher quality/resolution](#) [Persistent link](#) [Bookmark and Share](#) [Get embed code](#)[<a title="Women posing on college locomo](#)[+ Back to MSU Photos Homepage](#)

BM (Before Microdata)

Item: **Women posing on college locomotive engine****Title:** Women posing on college locomotive engine**Creator:** unknown**Date:** unknown**Description:** Women posing on a college locomotive engine.**Notes:****Physical Description:** Photo print - Black and White**Subjects:** [Locomotive](#)**Keywords:** locomotive**Photograph ID:** parc-000432 [Higher quality/resolution](#) [Persistent link](#) [Bookmark and Share](#) [Get embed code](#)[<a title="Women posing on college loco](#)[+ Back to MSU Photos Homepage](#)

AM (After Microdata)

```
<dl>
<dt>Title</dt>
<dd>A River Runs Through It and Other
Stories</dd>
<dt>Author</dt>
<dd>Norman Maclean</dd>
<dt>Publication date</dt>
<dd>October 1, 2001</dd>
<dt>ID</dt>
<dd>0226500667</dd>
</dl>
```

```
<dl itemscope itemtype="http://schema.org/Book">
<dt>Title</dt>
<dd itemprop="title">A River Runs Through It and
Other Stories</dd>
<dt>Author</dt>
<dd itemprop="author">Norman Maclean</dd>
<dt>Publication date</dt>
<dd itemprop="pubdate">October 1, 2001</dd>
<dt>ID</dt>
<dd itemprop="isbn">0226500667</dd>
</dl>
```

Analytics and Statistics

Know your Users...

Recording Web site usage

1. Create a Google Analytics account
2. Create a Google Webmaster Tools Account
3. Connect the accounts

<https://support.google.com/webmasters/answer/1120006>



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Share



Webmaster Tools

[www.lib.montana.edu/~jason](#)

Help



Site Dashboard

Site Messages

Search Appearance

Search Traffic

Google Index

Crawl

Security Issues

Other Resources

Labs

New and important

No new messages or recent critical issues. [View all](#)

Current Status

Crawl Errors



Site Errors

DNS



Server connectivity



Robots.txt fetch



URL Errors

0 Server error

8 Soft 404

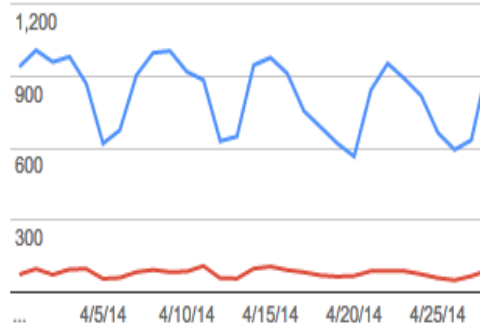
105 Not found

Search Queries



848 queries

23,823 impressions
2,313 clicks

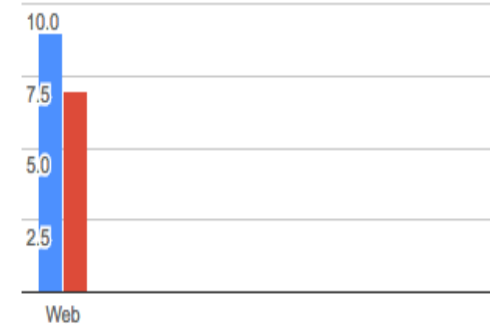


Sitemaps

By me (1)



9 URLs submitted
7 URLs indexed



THE TECH SET

Ellyssa Kroski, Series Editor

#12

Building Mobile Library Applications



Jason A. Clark

Questions?

twitter.com/jaclark

www.lib.montana.edu/~jason/talks.php