Responsive Web Design (RWD)
Building a single web site for the desktop, tablet and smartphone

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Jason Clark
Head of Digital Access & Web Services
Montana State University Library
pinboard.in tag

pinboard.in/u:jasonclark/t:rwd/
twitter as channel (#hashtag)

@jaclark #rwd
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
Overview

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

A link is the connection between one piece of hypertext 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

<table>
<thead>
<tr>
<th>200 px</th>
<th>300 px</th>
<th>800 px</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.38%</td>
<td>23.07%</td>
<td>61.5384%</td>
</tr>
</tbody>
</table>
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

```html
img {width:100%;}
img {max-width:100%;}
```
Flexible Images & Media ...

● Adaptive Sizing

```html
<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>

```html
<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

```css
@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
www.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
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;
}
Live RWD redesign

Taking off the training wheels....
RWD in Libraries

- Matthew Reidsma
  matthew.reidsrow.com
  @mreidsma

- Brad Czerniak
  brad.hawidu.com
  @ao5357
Questions?

twitter.com/jaclark
www.lib.montana.edu/~jason/talks.php