

Responsive Web Design (RWD)

Building a single web site for the desktop,
tablet and smartphone

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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.

```
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%;}  
img {max-width:100%;}
```


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;  
}
```

Live RWD redesign

Taking off the training wheels....

RWD in Libraries

- Matthew Reidsma
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- Brad Czerniak
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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