

Foundation Website Creation with CSS, XHTML, and JavaScript

Jonathan Lane
Meitar Moscovitz
Joseph R. Lewis



Foundation Website Creation with CSS, XHTML, and JavaScript

Copyright © 2008 by Jonathan Lane, Meitar Moscovitz, Joseph R. Lewis

All rights reserved. No part of this work may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage or retrieval system, without the prior written permission of the copyright owner and the publisher.

ISBN-13 (pbk): 978-1-4302-0991-1

ISBN-13 (electronic): 978-1-4302-0992-8

Printed and bound in the United States of America 9 8 7 6 5 4 3 2 1

Trademarked names may appear in this book. Rather than use a trademark symbol with every occurrence of a trademarked name, we use the names only in an editorial fashion and to the benefit of the trademark owner, with no intention of infringement of the trademark.

Distributed to the book trade worldwide by Springer-Verlag New York, Inc., 233 Spring Street, 6th Floor, New York, NY 10013.
Phone 1-800-SPRINGER, fax 201-348-4505, e-mail orders-ny@springer-sbm.com, or visit www.springeronline.com.

For information on translations, please contact Apress directly at 2855 Telegraph Avenue, Suite 600, Berkeley, CA 94705.
Phone 510-549-5930, fax 510-549-5939, e-mail info@apress.com, or visit www.apress.com.

Apress and friends of ED books may be purchased in bulk for academic, corporate, or promotional use. eBook versions and licenses are also available for most titles. For more information, reference our Special Bulk Sales—eBook Licensing web page at <http://www.apress.com/info/bulksales>.

The information in this book is distributed on an “as is” basis, without warranty. Although every precaution has been taken in the preparation of this work, neither the author(s) nor Apress shall have any liability to any person or entity with respect to any loss or damage caused or alleged to be caused directly or indirectly by the information contained in this work.

The source code for this book is freely available to readers at www.friendsofed.com in the Downloads section.

Credits

Contributor **Associate Production Director**
Steve Smith Kari Brooks-Copony

Lead Editor **Production Editor**
Clay Andres Elizabeth Berry

Technical Reviewers **Composer**
Meitar Moscovitz, Joseph R. Lewis Dina Quan

Editorial Board **Proofreader**
Clay Andres, Steve Anglin, Dan Shaw
Ewan Buckingham, Tony Campbell,
Gary Cornell, Jonathan Gennick, **Indexer**
Matthew Moodie, Joseph Ottinger, Beth Palmer
Jeffrey Pepper, Frank Pohlmann,
Ben Renow-Clarke, Dominic Shakeshaft, **Cover Image Designer**
Matt Wade, Tom Welsh Corné van Dooren

Project Manager **Interior and Cover Designer**
Kylie Johnston Kurt Krames

Copy Editor **Manufacturing Director**
Kim Wimpsett Tom Debolski

CONTENTS

About the Authors	xv
About the Cover Image Designer	xvii
Acknowledgments	xix
Introduction	xxi
Chapter 1 Introducing the Past, Present, and Future of the Web	1
The standard way of doing things	2
Every journey starts with a single step: the Web past	2
Then there were standards: the Web now	4
A crystal ball: the Web future	8
Building on standards for the modern Web	9
What's inside this book?	10
Chapter 2 Keeping a Project on Track	13
Stay away from waterfalls: the traditional approach	14
The nine knowledge areas	15
Web project management: the power of iteration	16
An agile example of planning	17
Achieving the goal: identifying doneness	18
Focus on time	18
Focus on budget	19
Focus on scope	21
“But the PMI covers nine areas; you’ve talked about only three!”	22
Communication is paramount	22
Quality and testing	22
Procurement and contracting	23
Tools available	23
The alternatives	24
Basecamp	25
Trac	25
Others	26
Summary: the best advice	27
Being agile and standard: there’s a good combination	27
Profiling Professions: Jason Fried	28

Chapter 3 Planning and High-Level Design 35

The toolbox	36
Goals and objectives discussion	36
Brainstorming	37
User stories and user personas	39
Feature/unfeature list	41
Wireframes	42
Mock-ups	43
Information architecture	43
Prototype	44
Let's go to an example	45
Summary: achieving balance	47
Profiling Professions: Daniel Burka	48

Chapter 4 Writing Markup with HTML and XHTML 53

What are web pages, really?	53
The basics of markup	54
Where computer markup languages came from	54
Elements (and tags)	55
Attributes and their values	58
Empty elements	59
Document types	59
Starting with XHTML	60
Document shell	60
The head	61
The body	62
Marking up content	62
Headlines	63
Blocks of text	63
Grouping content	66
Identifying content	66
Links	68
The href attribute, URLs, and web page addresses	69
Emphasis	70
Lists	71
Unordered and ordered lists	71
Definition lists	74
Images	75
Tables	77
Forms	82
Special characters	91
All together now: creating real pages	93

Chapter 5 Exploring Fundamental Concepts of CSS	101
The origins and evolution of Cascading Style Sheets	101
How CSS works	103
Default browser styles	103
Anatomy of a CSS style sheet	105
Applying styles to web page elements	110
Inline styles	110
Embedded style sheets	111
External style sheets	113
More CSS selectors: targeting page elements with surgical precision	114
ID selectors	115
Class selectors	117
Pseudo-class selectors	120
Yet more simple selectors	120
Descendant selectors	120
Child selectors	121
Adjacent sibling selectors	121
Combining multiple CSS selectors in a single rule	123
CSS inheritance: making the general case work in your favor	123
The CSS cascade and rules of specificity	125
CSS selector specificity	125
Source order cascading	126
Visual rendering: document flow and the CSS box model	127
What is document flow?	128
What is the CSS box model?	129
Inline-level vs. block-level boxes	130
Changing CSS box properties: the CSS box model explained	132
Content area: defining the dimensions of content boxes	133
Padding area: giving backgrounds the floor	134
Border area: drawing borders and outlines	137
Margin area: defining whitespace and centering	139
Summary	141
Chapter 6 Developing CSS in Practice: From Design to Deployment	143
The visual source: understanding design documents	143
Diving into code: advanced CSS concepts applied	144
The CSS development workflow	145
Typography: text colors, fonts, and font sizes	148
Implementing the header: images and backgrounds	153
The main navigation menu: absolute and relative CSS positioning	164
The four values of the position property	166
Skinning the navigation menu: styling lists with CSS	169

Adding interactivity: special styling for selected items and rollovers	174
The dynamic pseudo-classes: :hover, :active, and :focus	176
Styling links using the link pseudo-classes: :link and :visited	180
Making columns using floats and margins	184
The many layout effects of floated boxes	187
Spacing your columns	189
Styling the footer: clearing floats and adding borders	194
Dealing with nonstandard browsers	197
Browser-specific style sheets using conditional comments	199
Filtering CSS rules with CSS selectors	200
CSS hacks: exploiting one bug to resolve another	201
Fixing your spacing bugs in Internet Explorer 6 and 7	202
CSS media types and creating print style sheets	205
Designing for other media types and devices	211
Summary	211
Chapter 7 Creating Interactivity with JavaScript	213
JavaScript basics: origin and background	214
The dark ages of scripting	214
Object-based programming	214
What is the Document Object Model?	215
getElementById()	216
JavaScript: the basics	216
Linking code (separating form from function)	217
Embedding JavaScript	217
Inline JavaScript	217
Commenting your code	218
Basic programming features	218
Primitive data types	219
String data type	219
Number data type	219
Boolean data type	220
Undefined and null	220
Functions	220
Passing parameters	221
Receiving output from	222
Flow control	222
If, else if, else	222
Loops	224
Arrays	225
User interaction: alert, confirm, and prompt	226
Alert	226
Confirm	226
Prompt	227

Event handlers: executing code	227
“Automatic” execution	227
Form-specific handlers	227
Other event handlers	228
Tools and practices to debug code	229
Alerts	229
Debugging tools	231
Safari and Firefox error consoles	231
Web Developer Toolbar	231
Firebug: Ajax debugging bliss	232
JavaScript libraries	234
Summary: a little JavaScript goes a long way	235

Chapter 8 **Testing, Launching, and Maintaining** **237**

The web development life cycle	237
Publishing process	239
Validating your code	240
The importance of DTDs	241
Markup validation	241
CSS validation	243
JavaScript validation	244
Browser add-ons and features	244
Browser testing	245
Testing environment	245
Firefox (Gecko)	247
Safari (WebKit)	248
Internet Explorer 8 (Trident)	248
Opera	248
Internet Explorer 7	248
Internet Explorer 6	250
Mobile devices	250
Text-only browsers	250
Obsolete browsers	251
Thoughts on browser testing	252
Security testing: how much is enough?	253
User testing	254
Defining usability	254
Accessibility testing	254
Accessibility recommendations: WCAG	255
Accessibility law	256
Accessibility basics	256
Assistive technologies	259
Accessibility checklist	259
Accessibility resources	260

Launching your site: the big milestone	260
Ongoing maintenance: beyond launch.	261
Content management.	262
Summary	264
Chapter 9 Web 2.0: Using Ajax and Social Software.	267
The Web isn't application-like	268
Ajax was born	269
A simple Ajax example	271
The "j" in Ajax	273
script.aculo.us	273
jQuery	273
Design characteristics of Web 2.0	274
Lickable interfaces.	275
Web 2.0 is more than just Ajax	276
Implications of social software.	277
APIs and syndication	278
Building products based on products.	279
Blame Facebook.	280
The mobile Web	281
Web 2.0 means business	282
Targeted and contextual advertising.	282
The long tail	283
Social features in business	284
What does the future hold?	284
Profiling Professions: Chris Messina	286
Chapter 10 Using Server-Side Technologies.	291
The server side removes barriers.	292
Web servers: dishing out hypertext	292
Apache HTTP server	292
Microsoft Internet Information Services (IIS).	292
lighttpd	293
Mongrel	294
A wide range of hosting options.	294
Databases for web geeks	295
Terminology	295
The world outside relational databases	296
Object databases	296
XML databases	296
Relational databases.	297
Structured Query Language (SQL)	297
Getting data out	297
Putting data in.	298
Changing data	298
Removing data	298

A look at the RDBMS players	299
Oracle	299
Microsoft SQL Server (MSSQL)	299
MySQL	299
PostgreSQL	300
Other data sources	301
Web application languages	301
PHP	301
Ruby	302
Python	303
ASP (.NET)	303
Java/JSP	303
ColdFusion	303
Frameworks	304
Why bother with frameworks?	304
A few popular candidates	304
Ruby on Rails	304
CakePHP	305
Django	306
Summary	307
Afterword The Business of the Web	309
Basic needs of the freelance web professional	310
Being legally well informed	310
Freelancing on the side	310
Making the transition	310
More information	311
Business types	311
Sole proprietorship	311
Partnership	312
Limited Liability Company (in the United States)	313
Corporation	313
Contracts	313
Do you need a lawyer?	314
Resources	314
Nondisclosure/noncompete	314
Making money: financial survival	315
Staying in business	315
Getting paid (aka accounts receivable)	315
Tracking time and invoicing	316
Do you need an accountant?	317
Resources	317
Advertising and promotion	317
Getting the word out	317
Finding work to pay the bills	319
Working locally	319
Finding work online	319

CONTENTS

Finding good resources: people	320
Hiring: finding the right skills and personality	321
Where do you find candidates?	321
Finding temporary help: subcontracting	322
Partnering with others to complement skill sets	322
Growing your practice and increasing capacity	323
Training to stay current and competitive	323
Index	325