Contents

Foreword xi
Teddy PAYET

Preface xiii

Chapter 1. The Web and its Future 1

1.1. Background 1
1.1.1. The 1960s: context of the Cold War 2
1.1.2. The 1970s and 1980s: birth of the TCP/IP protocol 2
1.1.3. The 1980s, 1990s and 2000s: evolution of the Internet to the WWW 2
1.2. Phases of evolution of the Web 3
1.2.1. 1991–1999: Web 1.0, static or passive? 4
1.2.2. 2000–2010: Web 2.0, collaborative or social? 4
1.2.3. 2010–2020: Web 3.0, semantic or smart? 5
1.2.4. Since 2020: Web 4.0, intelligent 5
1.3. Web application architecture 7
1.3.1. The three levels of abstraction of an application 7
1.3.2. One-tier architecture 8
1.3.3. Two-tier architecture 8
1.3.4. Three-tier architecture 9
1.3.5. n-tier architecture 10

Chapter 2. The Language of the Web: HTML5 13

2.1. Overview 13
2.1.1. Origins of HTML5 13
2.1.2. Syntax and lexicon of the HTML5 language 14
2.1.3. Basic rules of HTML5 16

2.1.4. Working environment 17
2.2. Structure of an HTML5 document 18
2.3. Structuring the content of a web page 21
2.3.1. The element 21
2.3.2. The element 23
2.3.3. The new elements of HTML5 23
2.4. Text organization 28
2.4.1. Paragraphs and texts 28
2.4.2. Bulleted lists 47
2.4.3. Titles 51
2.5. Creating hyperlinks 52
2.5.1. Inserting a hyperlink: the <a> tag 52
2.5.2. Types of hyperlinks 54
2.5.3. Adding a tooltip to a link 57
2.6. Inserting images and multimedia objects 58
2.6.1. The image 58
2.6.2. Audio and video media 62
2.7. Tables 65
2.7.1. The <table> tag 65
2.7.2. The <caption> tag 66
2.7.3. The <thead> tag 66
2.7.4. The <tfoot> tag 66
2.7.5. The <tbody> tag 66
2.7.6. The <tr> tag 68
2.7.7. The <td> tag 68
2.7.8. The <th> tag 69
2.8. Forms 70
2.8.1. Benefit of a form 70
2.8.2. Form construction 71
2.8.3. The form <input /> tag and its variants 73
2.8.4. Other form tags 86
2.8.5. Common attributes for form elements 93
2.8.6. Several new attributes added with HTML5 95

Chapter 3. Style Sheets: CSS3 101

3.1. Overview 101
3.1.1. Origins of CSS3 101
3.1.2. Syntax and structure of the CSS3 language 103
3.1.3. Selectors 110
3.1.4. Values and units used 119
3.2. Text formatting 121
3.2.1. Character size 121

3.2.2. Font type 122
3.2.3. Italic text 123
3.2.4. Bold text 124
3.2.5. Text decoration and underlining 124
3.2.6. Small capitals 125
3.2.7. Text coloring 125
3.2.8. Transforming text to lowercase or uppercase 126
3.2.9. Indenting the first line of a paragraph 126
3.2.10. Letter spacing 127
3.2.11. Word spacing 127
3.2.12. Paragraph spacing 127
3.2.13. Horizontal text alignment 128
3.2.14. Vertical text alignment 128
3.2.15. Text direction 129
3.2.16. Text length and height 130
3.2.17. Floating 130
3.3. List formatting 131
3.3.1. Different bullet numbering styles 131
3.3.2. Graphic style of bullets 132
3.3.3. Removing lines from a bullet list. 132
3.4. Backgrounds, borders and shadows 133
3.4.1. Backgrounds. 133
3.4.2. Borders and shadows. 136
3.5. Table formatting 144
3.5.1. Space between cells 144
3.5.2. Borders 145
3.5.3. Empty cells 146
3.5.4. Caption position. 147
3.6. Layout of the site 148
3.6.1. Concept of the box model 148
3.6.2. Block or inline element 150
3.6.3. Width and height of a box element 151
3.6.4. Outer margins 153
3.6.5. Inner margins 155
3.6.6. Element positioning 157
3.6.7. Element floating 162
3.6.8. Element stacking 163

Chapter 4. Design and Creation of a Website 167

4.1. Process of creating a website 167
4.1.1. Development 167
4.1.2. Hosting 171

4.1.3. Referencing 173
4.1.4. Updating 175
4.1.5. Evaluation 175
4.2. Ergonomics of the website 175
4.2.1. Concept of ergonomics 175
4.2.2. Ergonomics criterion 176
4.2.3. Graphic charter 179
4.2.4. Mockup 179
4.2.5. Dimensions of web pages 180
4.3. Different website types 181
4.3.1. Search engine/metasearch engine 181
4.3.2. Web directory 181
4.3.3. Merchant site (e-commerce) 182
4.3.4. Educational site (e-learning) 183
4.3.5. Advertising site 183

Chapter 5. Practical Exercises 185

5.1. PE1: structure of an HTML5 web page 185
5.1.1. Purpose 185
5.1.2. Presentation 185
5.1.3. Solution 189
5.2. PE2: simple forms 195
5.2.1. Purpose 195
5.2.2. Presentation 195
5.2.3. Solution 201
5.3. PE3: table formatting 211
5.3.1. Purpose 211
5.3.2. Presentation 211
5.3.3. Solution 221
5.4. TP 4: media (image, video and audio) 240
5.4.1. Purpose 240
5.4.2. Presentation 240
5.4.3. Solution 252
5.5. PE: element positioning 270
5.5.1. Purpose 270
5.5.2. Presentation 270
5.5.3. Solution 282
5.6. PE6: creating a template model 296
5.6.1. Purpose 296
5.6.2. Presentation 296
5.6.3. Solution 302

5.7. PE7: creating a website from A to Z 313
5.7.1. Step 0: purpose of the site 313
5.7.2. Step 1: functional scope 313
5.7.3. Step 2: site mockup 315
5.7.4. Step 3: choosing/defining the graphic charter 319
5.7.5. Step 4: creating HTML/CSS mockups of the main pages 320
5.7.6. Step 5: developing the site from mockups 321

References 323

Index 325