contents

foreword xv
preface xvii
acknowledgments xix
about this book xxi
about the author xxvi
about the cover illustration xxvii

PART 1 REVIEWING THE FUNDAMENTALS 1

1 *Cascade, specificity, and inheritance* 3

1.1 The cascade 5

Stylesheet origin 8 ▪ *Inline styles* 11 ▪ *Selector specificity* 11 *Source order* 16

1.2 Inheritance 19

1.3 Special values 21

The inherit keyword 21 ▪ *The initial keyword* 23 ▪ *The unset keyword* 23 ▪ *The revert keyword* 24

1.4 Shorthand properties 25

Beware shorthands silently overriding other styles 25 ▪ *Remember the order of shorthand values* 26

1.5 Progressive enhancement 29

Using the cascade for progressive enhancement 29 ▪ Progressively enhancing selectors 30 ▪ Feature queries using @supports() 31

2 *Working with relative units 35*

2.1 The power of relative units 36

The rise of responsive design 36

2.2 Ems and rems 37

Using ems to define font-size 39 ▪ Using rems for font-size 43

2.3 Stop thinking in pixels 44

Setting a sane default font size 45 ▪ Making the panel responsive 47 ▪ Resizing a single component 48

2.4 Viewport-relative units 50

Selecting from the newer viewport units 52 ▪ Using viewport units for font size 54

2.5 Unitless numbers and line-height 55

2.6 Custom properties (aka CSS variables) 57

Changing custom properties dynamically 59

3 *Document flow and the box model 62*

3.1 Normal document flow 63

Centering content horizontally 65 ▪ Using logical properties 67 Adopting useful shorthand logical properties 69

3.2 The box model 70

Avoiding magic numbers 72 ▪ Adjusting the box model 73 Using universal border box sizing 74

3.3 Element height 75

Controlling overflow behavior 75 ▪ Using alternatives to percentage-based heights 76 ▪ Using min-height and max-height 77

3.4 Negative margins 78

3.5 Collapsed margins 79

Collapsing between text 80 ▪ Collapsing multiple margins 80 Collapsing outside a container 81

3.6 Spacing elements within a container 83

Considering changing content 85 ▪ Creating a more general solution 86

PART 2 MASTERING LAYOUT.....91

4 *Flexbox 93*

4.1 Flexbox principles 94

Building a basic flexbox menu 97 ▪ Adding padding and spacing 98

4.2 Flex item sizes 100

Flex basis 102 ▪ Flex grow 102 ▪ Flex shrink 104 Some practical examples 105

4.3 Flex direction 106

Changing the flex direction 108 ▪ Styling the login form 109

4.4 Alignment, spacing, and other details 110

Understanding flex container properties 114 ▪ Understanding flex item properties 116 ▪ Using alignment properties 117

5 *Grid layout 119*

5.1 Building a basic grid 120

5.2 Anatomy of a grid 122

Numbering grid lines 127 ▪ Working together with flexbox 128

5.3 Alternate syntaxes 132

Naming grid lines 132 ▪ Naming grid areas 134

5.4 Explicit and implicit grid 136

Adding variety 140 ▪ Adjusting grid items to fill the grid track 142

5.5 Subgrid 146

Additional options 150

5.6 Alignment properties 150

6 *Positioning and stacking contexts 153*

6.1 Fixed positioning 154

Creating a modal dialog with fixed positioning 154 ▪ Preventing the screen from scrolling while the modal dialog is open 158 Controlling the size of positioned elements 159

6.2 Absolute positioning 160

Absolutely positioning the Close button 160 ▪ Positioning a pseudo-element 161

6.3 Relative positioning 162

Creating a dropdown menu 163 ▪ Creating a CSS triangle 166

6.4 Stacking contexts and z-index 169

Understanding the rendering process and stacking order 169 Manipulating stacking order with z-index 171 ▪ Understanding stacking contexts 172

6.5 Sticky positioning 175

7 *Responsive design 179*

7.1 Mobile first 180

Creating a mobile menu 188 ▪ Adding the viewport meta tag 191

7.2 Media queries 192

Understanding types of media queries 194 ▪ Adding breakpoints to the page 197 ▪ Adding responsive columns 200

7.3 Fluid layouts 202

Adding styles for a large viewport 203 ▪ Dealing with tables 204

7.4 Responsive images 206

Using multiple images for different viewport sizes 206 ▪ Using srcset to serve the correct image 207

PART 3 MODERN CODE ORGANIZATION.....209

8 *Cascade layers and nesting 211*

8.1 Manipulating the cascade with layers 212

Defining layers 212 ▪ Layer order and priority 216 The revert-layer keyword 219

8.2 A recommended organization for cascade layers 221

Reset layer 221 ▪ Theme layer 223 ▪ Global layer 224 Layout layer 225 ▪ Modules layer 226 ▪ Utilities layer 227 Additional layers 228

8.3 The :is() and :where() pseudo-classes 228

More forgiving selectors 229 ▪ Manipulating specificity 229

8.4 Nesting 230

Using the nesting selector 231 ▪ Understanding the nuances of the nesting selector 233 ▪ Nesting media queries and other at-rules 235

9 *Modular CSS and scope 238*

9.1 Defining modules 239

Modules and global styles 240 ▪ A simple module 241 Variations of a module 242 ▪ Modules with multiple elements 246

9.2 Modules composed into larger structures 249

Dividing multiple responsibilities among modules 250 Naming modules 254

9.3 CSS scope 256

Scope proximity 258 ▪ Scoping limit 261 ▪ Implicit scope 264 Scope and layers 265

9.4 Pattern libraries 265

Using a CSS-first workflow 266 ▪ Refactoring and breaking changes 267

10 *Container queries 270*

10.1 A basic example of a container query 271

Using container size queries 274

10.2 A closer look at containers 276

Container types 276 ▪ Container names 278 ▪ Containers and modular CSS 279

10.3 Container-relative units 280

10.4 Container style queries 283

Decoupling a module from its container 284 ▪ Reducing code duplication 285

PART 4 VISUAL ENHANCEMENTS.....291

11 *Color and contrast 293*

11.1 Communicating with contrast 295

Establishing patterns 296 ▪ Implementing the design 297

11.2 Defining color 299

Gamuts and color spaces 306 ▪ CSS color notations 308

11.3 Using OKLCH to work with color 313

Switching the stylesheet to OKLCH 315 ▪ Naming color variables 316 ▪ Selecting new colors for the palette 318 Deriving colors from others on the page 318

11.4 Considering contrast for font colors 323

12 *Typography and spacing 326*

12.1 Spacing 327

Using ems vs. px 327 ▪ Factoring in line height 329 Spacing inline elements 333

12.2 Web fonts 335

12.3 Google fonts 337

12.4 How @font-face works 341

Font formats and fallbacks 343 ▪ Multiple variants of the same typeface 343

12.5 Performance considerations 344

The font-display property 346 ▪ Variable fonts 348

12.6 Adjusting space for readability 350

Body copy spacing 351 ▪ Headings, small elements, and spacing 353

13 *Gradients, shadows, and blend modes 357*

13.1 Gradients 358

Multiple color stops 360 ▪ Color interpolation 363 Radial gradients 366 ▪ Conic gradients 368

13.2 Shadows 370

Adding depth with gradients and shadows 370 ▪ Creating elements with a flat design 372 ▪ Creating buttons with a hybrid look 373

13.3 Blend modes 374

Tinting an image 376 ▪ Types of blend modes 377 Adding texture to an image 378 ▪ Mix blend modes 380

14 *Masks, shapes, and clipping 383*

14.1 Filters 384

Types of filters 386 ▪ Backdrop filter 387

14.2 Masks 389

Masking with a gradient 391 ▪ Masking using luminance 392 Other mask properties 393

14.3 Clipping paths 394

Polygon clipping paths 396 ▪ Firefox clip-path tools 397 Other clip-path types 399

14.4 Floats and shapes 399
Floating 400 ▪ Defining a shape 404

PART 5 ADDING MOTION 409

15 *Transitions 411*
15.1 From here to there 412
15.2 Timing functions 415
Custom Bézier curves 416 ▪ Steps 419
15.3 Non-animatable properties 420
Properties that cannot be animated 423 ▪ Fading in and out 424
15.4 Transitioning to auto height 426
15.5 Transitioning custom properties 428

16 *Transforms 431*
16.1 Rotate, translate, scale, and skew 432
Changing the transform origin 435 ▪ Applying multiple transforms 436 ▪ Individual transform properties 436
16.2 Transforms in motion 437
Scaling up the icon 443 ▪ Creating "fly in" labels 446 Staggering the transitions 448
16.3 Animation performance 449
Looking at the rendering pipeline 449
16.4 3D transforms 451
Controlling perspective 452 ▪ Implementing advanced 3D transforms 455

17 *Animations 459*
17.1 Keyframes 460
17.2 Animating 3D transforms 463
Building the layout without animations 463 ▪ Adding animation to the layout 466
17.3 Animation delay and fill mode 468
17.4 Conveying meaning through animation 471
Responding to user interaction 471 ▪ Drawing the user's attention 475

17.5 Scroll-based timelines 477
17.6 One final piece of advice 479

appendix A Selectors reference 481
appendix B Preprocessors 488

index 501