Preface xiii 1

Fundamentals 1
1.1 A Brief Introduction to the Internet 2
1.2 The World Wide Web 6
1.3 Web Browsers 7
1.4 Web Servers 8
1.5 Uniform Resource Locators 11
1.6 Multipurpose Internet Mail Extensions 13
1.7 The Hypertext Transfer Protocol 15
1.8 Security 18
1.9 The Web Programmer’s Toolbox 20
Summary 28
Review Questions 30
Exercises 32

2 Introduction to XHTML 35
2.1 Origins and Evolution of HTML and XHTML 36
2.2 Basic Syntax 38
2.3 Standard XHTML Document Structure 39
2.4 Basic Text Markup 40
2.5 Images 49
2.6 Hypertext Links 54
2.7 Lists 57
2.8 Tables 63
2.9 Forms 71
2.10 Syntactic Differences between HTML and XHTML 84
Summary 85
Review Questions 86
Exercises 88

3 Cascading Style Sheets 91
3.1 Introduction 92
3.2 Levels of Style Sheets 93
3.3 Style Specification Formats 94
3.4 Selector Forms 96
3.5 Property Value Forms 99
3.6 Font Properties 100
3.7 List Properties 106
3.8 Color 110
3.9 Alignment of Text 112
3.10 The Box Model 114
3.11 Background Images 119
3.12 The <span> and <div> Tags 121
3.13 Conflict Resolution 122
Summary 124
9.12 Cookies 391
9.13 Session Tracking 394
Summary 394
Review Questions 396
Exercises 398

10 Introduction to Ajax 401
10.1 Overview of Ajax 402
10.2 The Basics of Ajax 405
10.3 Return Document Forms 415
10.4 Ajax Toolkits 419
10.5 Security and Ajax 427
Summary 428
Review Questions 429
Exercises 430

11 Java Web Software 431
11.1 Introduction to Servlets 432
11.2 The NetBeans Integrated Development Environment 437
11.3 A Survey Example 447
11.4 Storing Information on Clients 454
11.5 JavaServer Pages 463
11.6 JavaBeans 475
11.7 Model-View-Controller Application Architecture 479
11.8 JavaServer Faces 480
Summary 489
Review Questions 490
Exercises 492

12 Introduction to ASP.NET 495
12.1 Overview of the .NET Framework 496
12.2 A Bit of C# 499
12.3 Introduction to ASP.NET 503
12.4 ASP.NET Controls 510
12.5 ASP.NET AJAX 540
12.6 Web Services 546
Summary 555
Review Questions 556
Exercises 558

13 Database Access through the Web 559
13.1 Relational Databases 560
13.2 An Introduction to the Structured Query Language 562
13.3 Architectures for Database Access 567
13.4 The MySQL Database System 569
13.5 Database Access with PHP and MySQL 572
13.6 Database Access with JDBC and MySQL 581
13.7 Database Access with ASP.NET and MySQL 589
Summary 596
Review Questions 598
Exercises 600

**14 Introduction to Ruby 601**
14.1 Origins and Uses of Ruby 602
14.2 Scalar Types and Their Operations 602
14.3 Simple Input and Output 610
14.4 Control Statements 613
14.5 Fundamentals of Arrays 618
14.6 Hashes 623
14.7 Methods 625
14.8 Classes 630
14.9 Blocks and Iterators 635
14.10 Pattern Matching 638
Summary 641
Review Questions 642
Exercises 642

**15 Introduction to Rails 645**
15.1 Overview of Rails 646
15.2 Document Requests 648
15.3 Rails Applications with Databases 655
15.4 Rails with Ajax 675
Summary 683
Review Questions 684
Exercises 685

Appendix A Introduction to Java 687
Appendix B Named Colors 703
Appendix C Java Applets 707
Index 735