CONTENTS

Chapter 1 Introduction to the World of Digital Information Organization 1

What This Book Is About 1
Metadata and Its Roles in Everyday Life 3
What Is Information? 4
The Information Lifecycle 6
"Aboutness" and the Role of Classification in Information 9
The Internet and Its Impact on Information Use 10
The Purpose of This Book and What You Can Expect 13
Notes 14

Chapter 2 Information Systems as Boundary Objects 15

Information Seeking Behavior 15
Process-Based Models 17
Cognitive and Affective Models 18
Information Seeking in Context 19
Connections between Information Seeking and Technology 20
Understanding Document Structure 21
Digital Document Case Study: HTML 22
Document Structure Overview 24
HTML in Context: Web Browsers, Web Servers, and the HTTP Protocol 26
Verifying Adherence to the HTML Schema and Serialization Standards 27
Conclusion 28
Notes 29

Chapter 3 Design of Information Systems 31
Information Services in Libraries: The Integrated Library System and MARC 31
Components of Information Service Design 36
Exploring the Connection between Document Structure and Use 38
The Model-View-Controller Paradigm 47
The Document Object Model (DOM) 49
JavaScript 51
Conclusion 57
Notes 57

Chapter 4 Information Organization Models 59
A Broad Model of Organized Information 60
Cataloging Principles 65
Content Rules 73
General Data Models 83
Conclusion 95
Notes 96

Chapter 5 Metadata Standards, Contents, and Values 99
The Relationship between Metadata, Resources, and Information Systems 99
Metadata Schemas and Their Roles in Information Systems 103
Vocabularies 103
Taxonomies 104
Thesauri 105
Ontologies 105
Types of Metadata Schemas 105
Cataloging Principles and Metadata Schemas 107
Engaging in Metadata Creation—Selecting and Applying Schema 107
The Structure of a Metadata Schema 108
Exploration of Specific Metadata Schemas, Vocabularies, Thesauri, Taxonomies, and Ontologies 117
Understanding Types of Information Organization Structures 117
Metadata Schemas Common in Libraries, Archives, and Museums 117
Creating Metadata 127
Contents and Values 129
Relationships between Metadata Schemas, Vocabularies, Thesauri, Taxonomies, and Ontologies 130
RDF and Linked Data 132
RDF Records Serialized as XML 133
RDF Schema (RDFS) 133
RDF Data Structures 134

Example of RDF in Use 136
RDF-based Databases 138
RDF and Vocabularies 139
Conclusion 140
Notes 141

Chapter 6 Serialization 143
Serialization and Exchange Formats 143
History and Future Directions of Commonly Used Serialization Formats 155
Serialization and Available Technology 171
Linked Data in LAM Institutions 173
Metadata Exchange and Web Services 175
Conclusion 184
Notes 185

Chapter 7 Creating, Using, and Evaluating Metadata in Digital Information Systems 187
Quality Control 188
Digital Libraries 205
Examples of Large-scale Digital Information Systems 209
Conclusion 215
Notes 215

Chapter 8 Using Metadata to Create Information Services 217
Review of Programming Foundations 217
The Extensible Stylesheet Language Family 225
Conclusion 248
Notes 248

Chapter 9 Future Trends in Information Systems, Metadata, and Information Use 251
Library Systems and Metadata Are Increasingly Open 252
LAM Information Resources and Metadata Are Becoming Increasingly Networked 253
Demonstrating Value Will Be a Key Challenge for LAM Institutions around Metadata and Information System Design 254
LAM Institutions Must Be Creative to Address Metadata Quality Issues 255
Cloud Computing Will Continue to Influence Technology, Metadata, and Information Services 258
Researchers Need New Metadata and Information Gathering Platforms 260

Technology Capabilities Lag Behind Innovation in Data Storage and Sharing 261
Whither LAM Metadata? 262
LAM Communities Will See Continued Change in User Needs and Information Seeking 263
Library and Information Science Draws on Expertise in Multiple Domains 264
Notes 265

Bibliography 267
Index 273