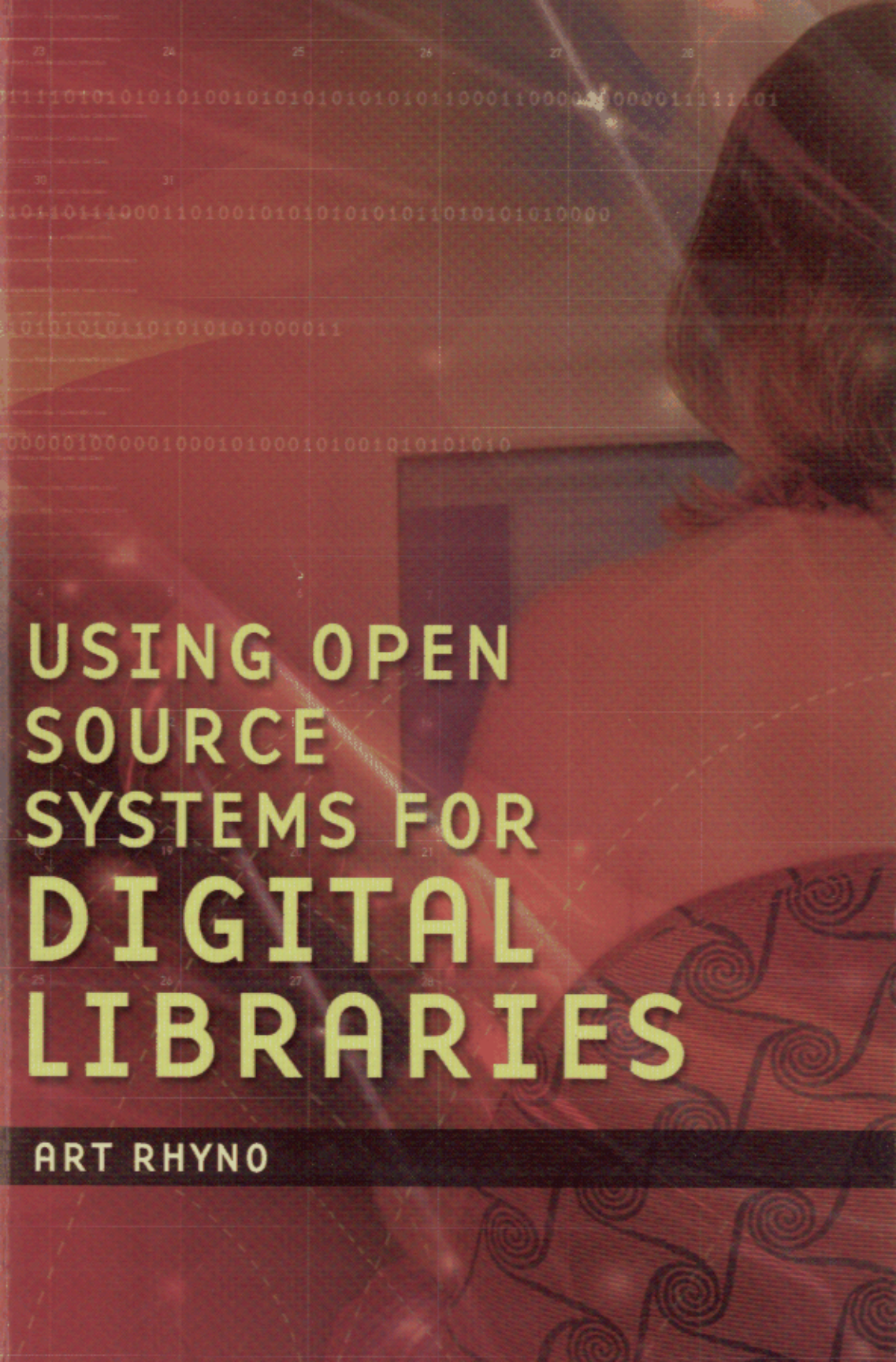




USING OPEN SOURCE SYSTEMS FOR DIGITAL LIBRARIES

ART RHYNO

Contents

Preface.....	ix
Introduction.....	xi
Chapter 1: Scoping Out Content for Digital Libraries:	
A Tale of Documents, Multimedia, and Metadata	1
Understanding Differences in Digital Objects	1
The Role of XML.....	4
Fast-Forward to the Web.....	5
XML: HTML-Plus or SGML-Lite?	6
Metadata and Access Levels	8
XML + Metadata = The Semantic Web?	12
TAP and Topic Maps	14
Putting It All Together	16
Chapter 2: Important Protocols for Digital Libraries and	
OSS Options for Using Them	17
HTTP.....	18
Retaining State Information	21
The Ubiquitous Nature of HTTP.....	23
OSS HTTP Software: Apache.....	25
OSS HTTP Software: AOLServer	26
OAI-PMH.....	26
OSS OAI Software: Complete Systems	28
Z39.50	29
Other Protocols for DLs	31
RSS.....	32
Shibboleth	34
Putting It All Together	35
Chapter 3: OSS Authoring Tools for Digital Libraries	37
Image Tools.....	37
Other Media	40
XML Editors	42
Putting It All Together	46
Chapter 4: OSS Tools for Manipulating and Transforming XML.....	47
XSLT and XSLT Processors.....	47
When CSS Is Not Enough.....	49
Sorting Out XSLT	51
About Directory Structures	56
Putting It All Together	56

Chapter 5: Open Source Relational Databases for Digital Libraries	59
Standard Query Language (SQL).....	61
MySQL.....	62
Other OSS Relational Databases	66
Putting It All Together	66
Chapter 6: Object and XML Databases	69
Zope	70
Using XML in Zope	71
Using Zope for XML Searching	73
Xindice	75
Other OSS Object/XML Databases	76
Putting It All Together	76
Chapter 7: Built to Order: DL-Specific Systems	79
dlbox.....	80
DL Generator	81
Fedora.....	82
Greenstone.....	83
SiteSearch.....	84
Putting It All Together	85
Chapter 8: Scripting Languages and Regular Expressions	87
The Role of Scripting Languages.....	88
Perl	89
PHP	90
Python	91
Scripting Digital Libraries.....	91
Regular Expressions.....	92
Scripting + Regular Expressions = Extreme Programming Power	94
A Final Word about XML.....	96
Putting It All Together	97
Chapter 9: Plugging Digital Libraries into the Mainstream	99
Loosely Coupled versus Highly Coupled	101
XML Integration of Components Using REST and Web Services.....	102
Understanding WSDL.....	104
A Quick Look at UDDI.....	106
Cocoon and XSLT as Component Equalizers	108
Putting It All Together	111
Chapter 10: Long-Term Care and Feeding of Digital Libraries	113
The Digital Library as Place and Space	113
Preserving and Future-Proofing Collections	116

The Reference Model for an Open Archival Information System (OAIS).....	117
Project Proposals and Reports.....	119
Measuring Use and Soliciting User Feedback	119
Metrics for Success	120
Putting It All Together	120
Appendix	121
Notes	123
Glossary	135
Further Resources: Digital Library and Open Source Resources on the Web.....	145
Index.....	157