

Contents

Introduction	xix
Chapter 1: First Steps with XSLT	1
Transforming an XML Document to a Web Page	1
Using a Browser	2
Transforming Locally	11
Transforming XML Data to XML	14
Atom and RSS Elements	14
Developing the Stylesheet	17
Summary	23
Chapter 2: Introducing XPath	25
Nodes	25
Node Types	26
Node Properties	26
Data Model	27
Path Expressions	28
Using an XPath Analyzer	29
Axes	30
Node Tests	32
Predicates	33
Operators	33
XPath Functions	35
Strings	35
Dates, Times, and Durations	37
Nodes and Documents	38
Numbers	39
Summary	40
Exercises	40
Chapter 3: Templates, Variables, and Parameters	43
About Templates	44
Template Rules	44

Contents

Invoking a Rule	45
Using Modes	46
Setting Priorities	48
Built-in Rules	49
Named Templates	49
Variables	50
Parameters	55
Global Parameters	55
Template Parameters	57
Summary	59
Exercises	60
Chapter 4: Using Logic	61
Conditional Processing	61
A Simple Choice	61
Multiple Choices	62
Using XPath for Conditional Tests	64
Iteration	64
Using Attribute Sets	64
Monitoring the Context	69
Processing XML Code	70
Summary	71
Exercises	72
Chapter 5: Sorting and Grouping	75
Sorting Content	75
Perform a Sort	81
Grouping	83
Common Values	84
Adjacent Items	85
Starting and Ending Conditions	91
Summary	93
Exercises	93
Chapter 6: Strings, Numbers, Dates, and Times	95
String Processing	95
About Collations	95
General Functions	96
Codepoints	96
Comparison	97

Contents

Concatenation	97
Simple Substrings	98
Using Regular Expressions	99
Normalizing Values	101
Escaping URIs	102
Numbers	103
Generating Numbers	103
Formatting Source Numbers	107
Dates and Times	109
Contextual Dates	109
Formatting	109
Combining and Converting Values	111
Durations	112
Time Zones	112
Summary	113
Exercises	114
Chapter 7: Multiple Documents	115
Modular Stylesheets	115
Including Modules	116
Imported Stylesheets	119
Source Documents	123
Using the document() Function	123
XPath Alternatives	125
Setting or Changing Context	127
Output Documents	127
Preparing a Feed Update	129
Splitting a Document	136
Summary	138
Exercises	139
Chapter 8: Processing Text	141
Controlling Whitespace	141
Stripping Space	142
Preserving Space	143
Using <xsl:text>	143
XML to Text	144
Text to XML	146
Loading Unparsed Text	146
Analyzing the Input	146

Contents

Alternatives to XSLT	153
XML Maps	154
XML Data in Excel	156
Summary	157
Exercises	158
Chapter 9: Identifiers and Keys	159
ID Datatypes	159
Using the id() Function	160
Keys	162
The key() Function	163
Generating Identifiers	165
Indexing Lines	165
Census to GEDCOM XML	170
Summary	179
Exercises	180
Chapter 10: Debugging, Validation, and Documentation	181
Debugging XSLT	181
Profiling	184
Verifying XHTML Output	185
Using Messages	186
Commenting Output	187
Using the error() Function	188
Type and Schema Validation	188
Types in XSLT	188
Using a Schema-Aware Processor	189
Documenting Your Stylesheets	195
Summary	199
Exercises	200
Chapter 11: A Case Study	201
Schema Overview	201
Common Elements and Attributes	202
Common Attributes	202
Block Elements	202
Inline Elements	203
The Quick-Reference Schema	204
Link Container Elements	205

Contents

Property Elements	206
Link Verification	208
Metadata Schemas	209
Resource Metadata	210
Subject Metadata	214
Reference Stylesheets	217
Link Module	220
Link Parameters	220
Function Module	223
Term Module	223
Term Parameters	225
Displaying Inline Terms	226
Building the Site	227
Generating the Reference Pages	228
Landing and Glossary Pages	233
Creating a Sitemap	234
Summary	237
Appendix A: Answers to Exercises	239
Chapter 1	239
Chapter 2	239
Question 1	239
Question 2	240
Question 3	240
Chapter 3	241
Question 1	241
Question 2	242
Chapter 4	242
Question 1	243
Question 2	243
Chapter 5	244
Question 1	244
Question 2	245
Question 3	245
Chapter 6	246
Question 1	246
Question 2	246
Question 3	247
Chapter 7	247
Question 1	247

Contents

Question 2	248
Question 3	248
Question 4	248
Chapter 8	249
Question 1	249
Question 2	249
Question 3	250
Chapter 9	250
Question 1	250
Question 2	250
Question 3	251
Chapter 10	251
Question 1	251
Question 2	251
Chapter 11	252
Appendix B: Extending XSLT	253
Stylesheet Functions	253
Calling an Extension Function	254
Function Libraries	255
EXSLT	255
FunctX	256
Vendor Extensions	256
User-Defined Extensions	257
Appendix C: XSLT Processing Model	259
The Data Model	259
Transforming	260
Parsing Inputs	260
Template Rules	261
Variables and Parameters	261
Controlling Processing	261
Outputs and Serialization	262
Appendix D: XSLT 2.0 Quick Reference	263
Elements	263
Attribute Groups	264
Types	264
Functions	264

Contents

XSLT Elements	264
xsl:analyze-string	264
xsl:apply-imports	265
xsl:apply-templates	265
xsl:attribute	266
xsl:attribute-set	267
xsl:call-template	268
xsl:character-map	269
xsl:choose	269
xsl:comment	270
xsl:copy	271
xsl:copy-of	271
xsl:decimal-format	272
xsl:declaration	274
xsl:document	274
xsl:element	274
xsl:fallback	275
xsl:for-each	276
xsl:for-each-group	276
xsl:function	277
xsl:if	278
xsl:import	279
xsl:import-schema	280
xsl:include	281
xsl:instruction	281
xsl:key	282
xsl:matching-substring	283
xsl:message	283
xsl:namespace	284
xsl:namespace-alias	285
xsl:next-match	285
xsl:non-matching-substring	286
xsl:number	286
xsl:otherwise	288
xsl:output	288
xsl:output-character	291
xsl:param	291
xsl:perform-sort	292
xsl:preserve-space	293
xsl:processing-instruction	294
xsl:result-document	294

Contents

xsl:sequence	297
xsl:sort	297
xsl:strip-space	299
xsl:stylesheet	299
xsl:template	300
xsl:text	301
xsl:transform	301
xsl:value-of	302
xsl:variable	303
xsl:with-param	304
Attribute Groups	304
Generic element attributes	304
Version attributes	305
Validation attributes	305
Types	306
XSLT Functions	306
current	307
current-group	307
current-grouping-key	307
document	307
element-available	308
format-date, format-dateTime, format-time,	308
format-number	309
function-available	310
generate-id	310
key	310
regex-group	311
system-property	311
type-available	312
unparsed-text, unparsed-text-available	312
unparsed-entity-public-id, unparsed-entity-uri	313
Appendix E: XSLT 2.0 Schema	315
W3C® Document License	336
Appendix F: XPath 2.0 Function Reference	341
Functions	341
abs	341
avg	342
adjust-date-to-timezone, adjust-dateTime-to-timezone, adjust-time-to-timezone	342
base-uri	342

Contents

boolean	343
ceiling	343
codepoint-equal	344
codepoints-to-string	344
collection	344
compare	345
concat	345
count	345
current-date, current-dateTime, current-time	346
data	346
dateTime	346
day-from-date, day-from-dateTime	347
days-from-duration	347
deep-equal	348
default-collation	348
distinct-values	348
doc, doc-available	349
document-uri	349
empty	349
encode-for-uri	350
ends-with	350
error	350
escape-html-uri	351
exactly-one	351
exists	352
false	352
floor	352
hours-from-dateTime, hours-from-time	353
id	353
idref	353
implicit-timezone	354
index-of	354
implicit-timezone	355
in-scope-prefixes	355
insert-before	355
iri-to-uri	356
lang	356
last	356
local-name	357
local-name-from-QName	357
lower-case	357
matches	358

Contents

max, min	358
minutes-from-dateTime, minutes-from-time	358
minutes-from-duration	359
month-from-date, month-from-dateTime	359
months-from-duration	360
month-from-date, month-from-dateTime	360
name	360
namespace-uri	361
namespace-uri-for-prefix	361
namespace-uri-from-QName	362
nilled	362
normalize-unicode	362
not	362
number	363
one-or-more	363
position	363
prefix-from-QName	364
QName	364
remove	364
replace	365
resolve-uri	365
resolve-QName	366
reverse	366
root	366
round	367
round-half-to-even	367
seconds-from-dateTime, seconds-from-time	368
seconds-from-duration	368
starts-with	368
static-base-uri	369
string	369
string-join	369
string-length	370
string-to-codepoints	370
subsequence	371
substring	371
substring-after	371
substring-before	372
sum	372
timezone-from-date, timezone-from-dateTime, timezone-from-time	373
tokenize	373
trace	374

Contents

translate	374
true	375
unordered	375
upper-case	375
year-from-date, year-from-dateTime	376
years-from-duration	376
zero-or-one	376
Appendix G: References	377
Specifications	377
Tools and Resources	379
Glossary	381
Index	385

