

Contents

Acknowledgments	v
About This Book	xi
How to Use This Book	xiii
Notations and Conventions	xv
<i>Codes</i>	xv
<i>Images</i>	xv
<i>Names</i>	xvi
<i>Names List Annotations</i>	xvii
1.0 Introduction	1
1.1 Background	1
1.2 Conformance	2
1.3 Coverage	2
<i>Statistics of Version 1.0</i>	4
<i>Future Plans</i>	4
1.4 The Unicode Consortium	5
The Unicode Technical Committee	5
2.0 General Principles of the Unicode Standard	7
2.1 Architectural Context of a Character Encoding	7
<i>Text Elements, Code Elements, and Text Processes</i>	7
<i>Plain and Fancy Text</i>	9
2.2 The Basic Design of the Unicode Character Encoding	10
<i>Unicode Principles</i>	10
<i>Glyphs</i>	12
2.3 Codespace Allocation	13
2.4 Character Properties, Controls, and Sequences	14
<i>Properties</i>	15
<i>Control Characters</i>	15
<i>Paragraph/Line Separators</i>	16
<i>Ordering of Character Sequences</i>	16
<i>Alternate Spellings</i>	17
2.5 Non-spacing Marks	18
<i>Sequence of Base Letters and Non-spacing Marks</i>	19
<i>Spacing Clones of European Diacritical Marks</i>	19
<i>Multiple Non-spacing Marks</i>	19

2.6 Formal Requirements for Unicode Conformance	21
Examples of Conformant and Non-conformant Processing	24
3.0 Character Blocks	27
3.1 General Scripts	28
<i>ASCII U+0000 → U+007F</i>	29
<i>Latin1 Characters U+0080 → U+00FF</i>	32
<i>European Latin U+0100 → U+017F</i>	33
<i>Extended Latin U+0180 → U+01FF</i>	34
<i>Standard Phonetic U+0250 → U+02AF</i>	36
<i>Modifier Letters U+02B0 → U+02FF</i>	38
<i>Generic Diacritical Marks U+0300 → U+036F</i>	40
<i>Greek U+0370 → U+03FF</i>	42
<i>Cyrillic U+0400 → U+04FF</i>	44
<i>Armenian U+0530 → U+058F</i>	46
<i>Hebrew U+0590 → U+05FF</i>	47
<i>Arabic U+0600 → U+06FF</i>	49
<i>Devanagari U+0900 → U+097F</i>	53
<i>Bengali U+0980 → U+09FF</i>	60
<i>Gurmukhi U+0A00 → U+0A7F</i>	61
<i>Gujarati U+0A80 → U+0AFF</i>	62
<i>Oriya U+0B00 → U+0B7F</i>	63
<i>Tamil U+0B80 → U+0BFF</i>	64
<i>Telugu U+0C00 → U+0C7F</i>	65
<i>Kannada U+0C80 → U+0CFF</i>	66
<i>Malayalam U+0D00 → U+0D7F</i>	67
<i>Thai U+0E00 → U+0E7F</i>	68
<i>Lao U+0E80 → U+0EFF</i>	70
<i>Tibetan U+1000 → U+105F</i>	71
<i>Georgian U+10A0 → U+10FF</i>	73
3.2 Symbols	74
<i>General Punctuation U+2000 → U+206F</i>	75
<i>Superscripts and Subscripts U+2070 → U+209F</i>	79
<i>Currency Symbols U+20A0 → U+20CF</i>	80
<i>Diacritical Marks for Symbols U+20D0 → U+20FF</i>	81
<i>Letterlike Symbols U+2100 → U+214F</i>	82
<i>Number Forms U+2150 → U+218F</i>	83
<i>Arrows U+2190 → U+21FF</i>	84
<i>Mathematical Operators U+2200 → U+22FF</i>	85
<i>Miscellaneous Technical U+2300 → U+23FF</i>	87

<i>Pictures for Control Codes U+2400 → U+243F</i>	88
<i>Optical Character Recognition U+2440 → U+245F</i>	89
<i>Enclosed Alphanumerics U+2460 → U+24FF</i>	90
<i>Form and Chart Components U+2500 → U+257F</i>	91
<i>Blocks U+2580 → U+259F</i>	92
<i>Geometric Shapes U+25A0 → U+25FF</i>	93
<i>Miscellaneous Dingbats U+2600 → U+26FF</i>	94
<i>Zapf Dingbats U+2700 → U+27BF</i>	96
3.3 CJK Phonetics and Symbols	98
<i>CJK Symbols and Punctuation U+3000 → U+303F</i>	99
<i>Hiragana U+3040 → U+309F</i>	100
<i>Katakana U+30A0 → U+30FF</i>	101
<i>Bopomofo U+3100 → U+312F</i>	102
<i>Hangul Elements U+3130 → U+318F</i>	103
<i>CJK Miscellaneous U+3190 → U+31FF</i>	104
<i>Enclosed CJK Letters and Ideographs U+3200 → U+32FF</i>	105
<i>CJK Squared Words U+3300 → U+337F</i>	106
<i>CJK Squared Abbreviations U+3380 → U+33FF</i>	107
<i>Korean Hangul Syllables U+3400 → U+3D2F</i>	108
3.4 CJK Ideographs	110
<i>Chinese/Japanese/Korean Ideographs U+4000 → U+8BFF</i>	111
3.5 Private Use Area	118
<i>Private Use Area U+E800 → U+FDFF</i>	119
3.6 Compatibility Zone	120
<i>Compatibility Zone U+FE00 → U+FFEF</i>	121
<i>Special U+FFF0 → U+FFFD</i>	123
3.7 Code Charts	125
3.8 Block-by-Block Charts	171
4.0 Character Properties	389
4.1 Numeric	390
<i>Decimal Digits</i>	391
<i>Digits</i>	395
<i>Numbers</i>	397
4.2 Space Characters	400
4.3 Dashes	401
4.4 Line Breaking	402
4.5 Non-spacing Marks	403
4.6 Directional Character Types	407

5.0 Internal Mapping Tables	411
5.1 Composite Character Mappings	412
<i>Unicode Decomposition Mapping—Precomposed Letters</i>	413
<i>Unicode Decomposition Mapping—Ligatures & Digraphs</i>	419
5.2 Compatibility Mappings	420
<i>Unicode Compatibility Zone Mapping</i>	421
5.3 Vietnamese Mappings	432
<i>Unicode Vietnamese Decomposition</i>	433
5.4 Polytonic Greek to Unicode Characters	436
<i>Unicode Polytonic Greek Decomposition</i>	437
5.5 Case Tables	440
<i>Unicode Upper-case to Lower-case Character Mapping</i>	441
<i>Unicode Lower-case to Upper-case Character Mapping</i>	453
6.0 External Mapping Tables	465
6.1 ISO Mapping Tables	466
6.2 Vendor Mapping Tables	494
 Appendix A: Directionality	611
Appendix B: Implementation Guidelines	623
Appendix C: How to Deal with Unknown or Missing Characters	629
Appendix D: How to Submit New Characters for Consideration	631
Appendix E: Proposed Scripts for Future Versions of the Unicode Standard	635
Appendix F: Glossary	637
References	645
Index to Names of Characters	651
General Index	679