

Elstob: A Variable Font for Medievalists

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I. Introduction

The Elstob font (named for the eighteenth-century medievalist Elizabeth Elstob) is based on the Double Pica typeface commissioned by Bishop John Fell in the seventeenth century and used by the Oxford University Press for many years. Though its origin is an old-style typeface, it includes many modernizing touches, and it exploits the latest in font technology so as to provide capabilities available in few other fonts. It comes in two versions: **static** and **variable**.

I.I. The Static Font

Most of the fonts on your computer are static: that is, each file contains outlines for a single style. For example, the ubiquitous Times New Roman typically has four styles in four files: regular, bold, italic, and bold italic. Because it has more than one style, we call Times New Roman a **font family**. Think of this family as having two stylistic **axes**, one being the **roman–italic** axis, on which only two positions are available (since in serif typefaces there is no middle ground between roman and italic), and the other being the **Weight** axis, on which many positions are possible, though the Times New Roman font family provides only two—regular and bold. Some static font families come packaged in more than four files and provide both more stylistic axes and more positions on these axes.

The static version of Elstob (ElstobD, where the D stands for “Desktop”) consists of forty-eight files (don’t panic—you’re not required to install them all) and has three stylistic axes: **Roman–Italic**, **Weight**, and **Optical Size**. The weights are ExtraLight, Light, Regular, Medium, SemiBold, Bold, and ExtraBold.

The **Optical Size** axis varies the shapes of characters to look good at particular sizes. The static version comes in five optical sizes: 8pt, 10pt, 12pt (Regular), 14pt,

and 18pt. You should choose the one that comes as close as possible to the point size of the text you are setting—for example, “ElstobD 8pt” for footnotes and “ElstobD 14pt Medium” for subheads, depending on your stylistic preferences.

1.2. The Variable Font

A **variable** font packages an almost infinite number of styles into a single font file. Whereas the static version of Elstob consists of forty-eight files, the variable version consists of only two: `Elstob.ttf(roman)` and `Elstob-Italic.ttf(italic)`. And yet the variable version provides many more stylistic choices than the static version because you can choose any value along any of the font’s stylistic axes. The **weight** axis runs from 200 **Extra Light** to **800 Extra Bold**. You can choose either of those, or one of the other standard weights: 300 for **Light**, 400 for **Regular**, 500 for **Medium**, 600 for **SemiBold**, or 700 for **Bold**. Or you can, if you’re so minded, choose an oddball weight like 523.45.

In addition to the **Weight** axis, Elstob has two others, **Optical Size** and **Grade**, and the italic face has one more, **Slant**. **Optical Size** works the same in the variable version as it does in the static version, but you are not limited to five optical sizes, so you can tune your type more closely to the size of your text. This axis runs from 6 to 18 (the numbers corresponding roughly to point sizes). Some applications (like Adobe InDesign) will automatically choose the appropriate value (though you may override it if you like).

Grade (0–1) is like **Weight**, but it varies the weight of characters without changing their widths. This can be useful in web pages, where dynamically changing the **Weight** axis (for example, on mouseover) may cause text to reflow annoyingly. Grade will not generally be useful in printed documents.

Slant (0–15) varies the slant of the italic from 0 *steeply slanted* to 15 *nearly upright*. The slant of the static fonts is equivalent to *a Slant of 8 in the variable font*.

The values of the various axes can be combined in any way you like. You will find, however, that some combinations are problematic or inadvisable. For example, you can add a little Grade to ExtraBold text to produce **even bolder text**, but if you overdo it, letters will collide and become misshapen—**like this**. You should add a Grade of no more than 0.2 to the ExtraBold face. Combining ExtraBold and maximum Slant may also produce misshapen characters. It is not

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unexpected that, in a three- or four-dimensional design space, some positions will be less than optimal: experiment with the Elstob specimen page to find the styles you like.

When beginning a project with Elstob, consider whether the software you're using has adequate support for variable fonts. If not, use the static version. All of the major web browsers support variable fonts, which you can control via CSS. The major programs of the Adobe Creative Suite also support variable fonts, as does Lua_TE_X, used to produce this document;¹ but most desktop applications (such as word processors) do not. ElstobD, the static version of Elstob, should work with all applications.

Elstob aims to cover all European languages using the Latin alphabet, and it offers a curated collection of Unicode characters of interest to medievalists. It includes the basic International Phonetic Alphabet and the most commonly used mathematical symbols. Version 2 includes many stylistic revisions and a few new characters, especially letters and diacritics from the *Ormulum*, recently added to Unicode. The OpenType features of the font have been revised to match as closely as possible those of the developer's Junicode font. Unnecessary or redundant features have been removed, and technical changes have been made to improve accessibility.

¹Make sure to use the latest version of Lua_TE_X, as support for variable fonts was added very recently. XeTeX does not support variable fonts.

2. Specimens

A B C D E F G H I
J K L M N O P Q R S
T U V W X Y Z Þ Æ P
a b c d e f g h i j k l m n o p q r s t u v w x
Quousque tandem abutere,
Catilina, patientia nostra?
Quousque tandem abutere,
Catilina, patientia nostra?
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9

2.1. Old English (regular)

Sum wer wæs ġeseten on þām lande þe is ġehāten Hus; his nama wæs Iob. Se wer wæs swīðe bilewite and rihtwīs and ondrædende God and forbūgende yfel. Him wæron ācennede seofan suna and ðrēo dohtra. Hē hæfde seofon ðūsēd scēapa and ðrēo ðūsēd olfēnda, fīf hund ġetȳmu oxena and fīf hund assan and ormæte micelne hīred. Se wer wæs swīðe mære betwux eallum ēasternum, and his suna fērdon and ðēnode ælc oðrum mid his ġōdum on ymbhwyrfte æt his hūse, and þærtō heora swuSTRU ġelaðodon.

2.2. Old English with insular letter-forms (light)

Her on ðiŕum gearfe ƿorðfeŕde ælfgiue ýmma Eaðƿarðeŕ cýngeŕ
modor 7 haŕðacnuteŕ cýngeŕ. 7 on þam ȝylfan gearfe gearædde ȝe cýng
7 hiŕ ƿitan þ̅ mann ȝceolde ƿorðian ut to Sandƿic ȝcipu. 7 ȝetton ƿaulf
eoŕl 7 oddan eoŕl to heafoðmannū þærto. Ða ȝeƿende Godƿine eoŕl
út ƿnā brýcge mið hiŕ ȝcýpum to ýŕeƿan. and let ut ane ðæge æŕ mið-
ŕumeŕeŕ mæŕŕeæŕene þ̅ he cō to næŕŕe. þe iŕ beŕuðan ȝumenea. Ða cō
hiŕ to ƿitenne þā eoŕlū ut to ŕandƿic. 7 hi þa ȝeƿendon ut æŕteŕ þam
oðŕum ȝcipum. 7 beað man lanðfýrðe ut onȝean þa ȝcipu.

2.3. Old English in runes (various weights)

ሆኒክ ሆፔሚክ ፍክሽን ቤት ምርጸጠኤቤምገባር ሆሮሮ ጸፍካባክ ጸረዩቲ ሆሮ ስጠ ቤት ጸረጠፕ
 ጸረዩቤቤ ስረዩቲፍክ ፍቺ. ሆኒክ ሆፔሚክ ፍክሽን ቤት ምርጸጠኤቤምገባር ሆሮሮ ጸፍካባክ
 ጸረዩቲ ሆሮ ስጠ ቤት ጸረጠፕ ጸረዩቤቤ ስረዩቲፍክ ፍቺ. ሆኒክ ሆፔሚክ ፍክሽን ቤት
 ምርጸጠኤቤምገባር ሆሮሮ ጸፍካባክ ጸረዩቲ ሆሮ ስጠ ቤት ጸረጠፕ ጸረዩቤቤ ስረዩቲፍክ
 ፍቺ. ሆኒክ ሆፔሚክ ፍክሽን ቤት ምርጸጠኤቤምገባር ሆሮሮ ጸፍካባክ ጸረዩቲ ሆሮ ስጠ
 ቤት ጸረጠፕ ጸረዩቤቤ ስረዩቲፍክ ፍቺ. ሆኒክ ሆፔሚክ ፍክሽን ቤት ምርጸጠኤቤምገባር
 ሆሮሮ ጸፍካባክ ጸረዩቲ ሆሮ ስጠ ቤት ጸረጠፕ ጸረዩቤቤ ስረዩቲፍክ ፍቺ. ሆኒክ
 ሆፔሚክ ፍክሽን ቤት ምርጸጠኤቤምገባር ሆሮሮ ጸፍካባክ ጸረዩቲ ሆሮ ስጠ ቤት
 ጸረጠፕ ጸረዩቤቤ ስረዩቲፍክ ፍቺ.

2.4. Middle English: *Ancrene Wisse* (Medium)

Nan ancre bi mi read ne ſchal makien ꝑfeſſiun. ꝥ if bihaten aſe heaſtꝛ
but þꝛeo þingef. ꝥ beoð obedience. chaſtete. ⁊ ſtude ſteaðelueſtneſſe. ꝥ
ha ne ſchal ꝥ ſtude neaũ mare changin bute foꝛ nede ane. af ſtrengðe
⁊ deaðef dred. obedience of hire biſchop oðer of hiſ herre. foꝛ hꝑa ſe
nimeð þing on hond ⁊ bihat hit Godd af heaſt foꝛte don hitꝛ ha bint
hire þerto. ⁊ ſuneged deadliche i þe bꝛuche. 3ef ha hit bꝛekeð pillef.
3ef ha hit ne bihat napt. ha hit mei do þah ⁊ leauen hꝑen ha pel pule. af
of mete. of drunch. fleſch foꝛgan oðer fiſch. alle oþer ſꝑucche þingef.
of perunge. of liggunge. of uref. of oþꝛe beoden.

2.5. Middle English: *The Ormulum* (SemiBold)

Nu bꝛoþeꝛꝛ ꝑalltē bꝛoþeꝛ min. afftē þe flæſheff kīðe. ⁊ bꝛoþeꝛ min
i cꝛiſtēnndom. þꝛꝑꝛh fulluhht ⁊ þꝛꝑꝛh tꝛoþþe. ⁊ bꝛoþeꝛꝛ min i
goddeſſ huſ. ȝēt o þe þꝛīde ꝑiſe. Þꝛꝑꝛh þatt ꝑiꝛ hafenn taken ba. an
ꝛeȝell boc to follȝenn. Vnndeꝛꝛ kanunnkeff hað. ⁊ lif. Spa ſuṡ ſannꝛ
appꝑtīn fette. Icē hafe don ſpa ſuṡ þu baððꝛ ⁊ foꝛþeðð te þī pille. ꝑ
Icē hafe ꝑend īntīll enngliſh. goddſþelleff hallȝe láꝑeꝛ Afftē ꝥ līcle
ꝑiꝛt þatt me. min dꝛīhhtīnn hafeþ lenned.

2.6. Early Modern English (Light Italic)

When the right vertuous E.W. and I were at the Emperours Court together, wee gave our ſelves to learne horſemanſhip of Jon Pietro Pugliano, one that with great commendation had the place of an Eſquire in his ſtable: and hee according to the fertilnes of the Italian wit, did not onely affoord us the demonſtration of his practiſe, but ſought to enrich our mindes with the contemplations therein, which he thought moſt precious. But with none I remember mine eares were at any time more loaden, then when (either angered with ſlow paiment, or mooved with our learnerlike admiration) hee exerciſed his ſpeech in the praiſe of his facultie.

2.7. Latin (Italic)

Humanaſ laudeſ et mortalium inſulaſ uidimus aut ére inciſo conſcriptaſ. aut auro radiantib: litteriſ. ad poſteritatiſ memoriam cōmendataſ. Et iſta attendenteſ miror quare non erubeſcim⁹ militum xpi uictoriaſ ſilentio tégere & ñ ad laudem imperatoriſ eoꝝ qualiū pugnauerint contra hoſteſ & uicerint. ſeduliſ ſaltim uilibuſ tradere & ad incitandoaſ animoſ bellatoꝝ diligentiuſ explicare. Multa bona taliū narrationū ſcripta conuertant; Lauſ dei eſt cum iſta leguntur. memoria ſcōꝝ excolitur: aedificacio m̃tib: traditur. honor martiribuſ exhibētur.

2.8. Old Icelandic (Medium Italic)

Þá mælti Hárr: Þá er þeir gengu með sævarströndu Borssynir, fundu þeir tré tvau ok tóku upp trén ok sköpuðu af menn. Gaf inn fyrsti qnd ok lif, annarr vit ok bræring, þriði ásjónu, mál ok beyrn ok sjón, gáfu þeim klæði ok ngfn. Hét karlmaðrinn Askr, en konan Embla, ok ólst þaðan af mannkindin, sú er byggðin var gefinn undir Miðgarði. Þar næst gerðu þeir sér borg í miðjum heimi, er kölluð er Ásgarðr. Þat köllum vér Trója. iocoi oicio

2.9. Gothic (Medium Italic, Maximum Slant)

Warp þan in dagans jainans, urrann gagrefts fram kaisara Agustau, gameljan allana midjungard. soh þan gilstrameleins frumista warp at wisandin kindina Swriais raginondin Saurim Kweinaiau. jah idjedun allai, ei melidai weseina, harjizuh in seinai baurg. Urrann þan jah Iosefus Galeilaia, us baurg Nazaraip, in Iudaian, in baurg Daweidis sei baitada Beplaihaim, dupe ei was us garda fadreinais Daweidis, anameljan mip Mariin sei in fragiftim was imma qeins, wisandein inkilpon. iocoi oicio

3. OpenType features

OpenType is the format employed by most modern fonts. It enables such technical wizardry as ligatures, kerning, and several kinds of variation. OpenType features, when they can be controlled by users, can be selected via four-character tags. Some applications offer more access to these features than others. The major web browsers support all of Elstob’s features, and so do LibreOffice, Affinity Publisher, XeTeX and LuaTeX. The Adobe Creative Suite supports a generous selection of them. Microsoft Word, unfortunately, supports only a few OpenType features.

Elstob’s OpenType features are for the most part a subset of those of Junicode. It will be noted below when the two fonts differ. Features are presented in alphabetical order, but this is not the order in which they are executed when more than one feature has been applied.

Different applications provide different ways of accessing OpenType features. Those that are available in Microsoft Word can be accessed in the “Advanced” tab of the “Font” dialog. In the Adobe apps those features that are available can be accessed via the “Character” dialog, and in InDesign via the “O” icon that appears when text is selected (InDesign users should select the “World-Ready Paragraph Composer” when using this font). For variable font handling in LuaTeX, see the source for this document.

3.1. aalt (Access All Alternates)

Provides access to all variants in the font. Applications that use this feature usually do so via an element of the user interface.

3.2. c2sc (Small Capitals From Capitals)

Converts capitals to small caps. Every capital in the font has a corresponding small capital. ABCDPĐÆ → ABCDPĐÆ.

3.3. calt (Contextual Alternates)

In most applications this feature is on by default. Provides many alternate characters that vary automatically by context.

3.4. case (Case-Sensitive Forms)

Mostly provides alternate diacritics for capitals, e.g. ÂĂĖĖËŒŮŰ. Also converts old-style to lining figures to harmonize with capitals. Some applications turn this feature on automatically in the vicinity of capitals.

3.5. ccmp (Glyph Composition/Decomposition)

In most applications this feature is on by default and cannot be turned off. In Elstob it performs (1.) removal of dot from i and j when followed by combining marks; and (2.) substituting ligatures for certain vowel + rhotic hook (U+02DE) combinations.

3.6. cvo7 (Variants of D)

Provides insular D (O).

3.7. cvo8 (Variants of d)

Provides two shapes of insular d: 1. ð; 2. ð.

3.8. cvii (Variants of F)

Provides insular F (ƿ).

3.9. cvi2 (Variants of f)

Provides: 1. ƿ (insular f); 2. f (narrow f).

3.10. cvi3 (Variants of G)

Provides: 1. ȝ (insular G); 2. Ȝ (Orm's hard G).

3.11. cvi4 (Variants of g)

Provides: 1. ȝ (insular g); 2. Ȝ (Orm's hard g); 3. g (script g)

3.12. cvi8 (Variants of i)

Provides dotless i (i).

3.13. cv35 (Variants of R)

Provides insular R (ŕ).

3.14. cv36 (Variants of r)

Provides: 1. ƿ (insular r); 2. ʀ (r rotunda).

3.15. cv37 (Variants of S)

Provides insular S (ʃ).

3.16. cv38 (Variants of s)

Provides: 1. r (insular s); 2. f (long s); 3. f (narrow long s).

3.17. cv39 (Variants of T)

Provides insular T (Ţ).

3.18. cv40 (Variants of t)

Provides insular t (τ).

3.19. cv57 (Variants of æ)

Italic face only. Provides an alternative (and in some contexts less ambiguous) æ (æ). This feature also affects U+01E3 (ǣ) and U+01FD (ǿ).

3.20. cv69 (Variants of Tironian et sign ȷ)

Provides two variants of U+204A: 1. ȷ; 2. ȷ.

3.21. cv76 (Variants of ?)

Provides the *punctus interrogativus* (ʔ).

3.22. cv80 (variants of bracket characters)

In the italic face, provides upright variants of the most common bracket characters: ()[]{}<>.

3.23. dlig (Discretionary Ligatures)

Provides ct and st ligatures, and in italic only, *as*, *is*, *us*.

3.24. frac (Fractions)

Elstob includes only three fractions: ¼, ½, ¾. Type as number + slash + number.

3.25. hlig (Historical Ligatures)

Provides several ligatures used in Orm's orthography: þ þ h for þþ pp hh. The first two of these correspond to Unicode U+A7D3 and U+A7D5, but using the ligatures provides an intelligible fallback when a font with these rare Unicode characters is not available.

3.26. liga (Standard Ligatures)

In most applications this feature is on by default. Provides ligatures that should always be used for certain letter combinations (e.g. first flat office afflict offer).

3.27. locl (Localized Forms)

In most applications this feature is on by default and cannot be turned off. It provides the English forms of thorn and eth (þ þ ð) when English is the active language.

3.28. ordn (Ordinals)

Provides superscript forms of a and o when preceded by a figure: 1^a, 2^o.

3.29. smcp (Small Capitals)

Converts lowercase letters to small capitals. `abcdeþðæ` → `ABCDEÞÐÆ`.

3.30. sso1 (Alternate Thorn and Eth)

Overrides any language setting to provide alternate shapes of the letters thorn and eth: Nordic shapes when the language is English, and English shapes otherwise.

3.31. sso2 (Insular Letter-Shapes)

Transliterates from modern to insular (Old English, Old Irish) letter-shapes: `dfgirstw` → `ðfȝirſtƿ`. Note that `calt` later changes the sequence `ƿt` to `ft`. You can override this behavior by placing U+200C ZERO-WIDTH NON-JOINER or any invisible formatting mark between the `s` and the `t`.

3.32. sso4 (IPA Letter-Shapes)

Changes `g` to `ɡ` and (in italic only) `a` to *`ɑ`*. This feature has no counterpart in Junicode.

3.33. sso8 (Contextual Long s)

In English and French text, and in combination with `calt`, distributes `s` and `f` according to rules commonly employed by early printers in each language.

3.34. ssi2 (Early English Futhorc)

Transliterates Latin script to runic with characters from the Early English futhorc. `fuporc` → `ƿŋƿſŕh`.

3.35. ssi3 (Elder Futhark)

Transliterates Latin script to runic with characters from the Elder futhark. fuþark → ƿᚢᚦᚱᚷ.

3.36. ssi4 (Younger Futhark)

Transliterates Latin script to runic with characters from the Younger futhark. fuþark → ƿᚢᚦᚱᚷ.

3.37. ssi5 (Long Branch to Short Twig)

Use with ssi4. Converts the default (Long Branch) version of the Younger futhark to the Short Twig version. fuþark → ƿᚢᚦᚱᚷ.

3.38. ssi6 (Contextual r Rotunda)

Together with calt, distributes r and ʀ in accordance with the rules most often employed in medieval manuscripts and early printed books: foʀm woʀkrooms pʀiest pʀayer.

3.39. subs (Subscripts)

Subscript numbers, both lining and old style. o1234 → o₁₂₃₄; 01234 → 0₁₂₃₄.

3.40. sups (Superscripts)

Superscript numbers, both lining and old style. 56789 → 5⁶⁷⁸⁹; 56789 → 5⁶⁷⁸⁹.

3.41. swsh (Swash)

Italic only. Provides swash forms of certain capitals (*ŒDTPT*) plus *z* and *k*.

3.42. tnum (Tabular Figures), onum (Old-Style Figures), pnum (Proportional Figures), lnum (Lining Figures)

In various combinations, provides figures in four styles: tabular lining (the default), tabular old-style, proportional lining, proportional old-style. The font contains variants of its mathematical operators to harmonize with the old-style figures.

3.43. zero (Slashed Zero)

Provides slashed zero (ø 0) in all figure styles.

4. Unicode character list

This is a list of characters with Unicode encodings in Elstob. In addition, the font contains more than 300 unencoded characters, including small caps, ligatures, and symbols, accessible via OpenType features (listed above).

Œ	a7co	LATIN CAPITAL LETTER OLD POLISH O
Ɔ	a7do	LATIN CAPITAL LETTER CLOSED INSULAR G
À	oo4I	LATIN CAPITAL LETTER A
Æ	a732	LATIN CAPITAL LETTER AA
Ɔ	a73a	LATIN CAPITAL LETTER AV WITH HORIZONTAL BAR
Ȧ	a73c	LATIN CAPITAL LETTER AY
Á	ooCI	LATIN CAPITAL LETTER A WITH ACUTE
Ǻ	oIo2	LATIN CAPITAL LETTER A WITH BREVE
Â	ooC2	LATIN CAPITAL LETTER A WITH CIRCUMFLEX
Ä	ooC4	LATIN CAPITAL LETTER A WITH DIAERESIS
À	ooCo	LATIN CAPITAL LETTER A WITH GRAVE
Ā	oIoO	LATIN CAPITAL LETTER A WITH MACRON
Ɔ	a734	LATIN CAPITAL LETTER AO
Ą	oIo4	LATIN CAPITAL LETTER A WITH OGONEK
Å	ooC5	LATIN CAPITAL LETTER A WITH RING ABOVE
Ǻ	oIfa	LATIN CAPITAL LETTER A WITH RING ABOVE AND ACUTE

18 UNICODE CHARACTER LIST

Ã	00c3	LATIN CAPITAL LETTER A WITH TILDE
À	a736	LATIN CAPITAL LETTER AU
Ä	a738	LATIN CAPITAL LETTER AV
Æ	00c6	LATIN CAPITAL LETTER AE
É	01fc	LATIN CAPITAL LETTER AE WITH ACUTE
Ē	01e2	LATIN CAPITAL LETTER AE WITH MACRON
B	0042	LATIN CAPITAL LETTER B
C	0043	LATIN CAPITAL LETTER C
Ć	0106	LATIN CAPITAL LETTER C WITH ACUTE
Č	010c	LATIN CAPITAL LETTER C WITH CARON
Ç	00c7	LATIN CAPITAL LETTER C WITH CEDILLA
Ĉ	010a	LATIN CAPITAL LETTER C WITH DOT ABOVE
D	0044	LATIN CAPITAL LETTER D
Ð	00d0	LATIN CAPITAL LETTER ETH
Ď	010e	LATIN CAPITAL LETTER D WITH CARON
Đ	0110	LATIN CAPITAL LETTER D WITH STROKE
Ɔ	a779	LATIN CAPITAL LETTER INSULAR D
E	0045	LATIN CAPITAL LETTER E
É	00c9	LATIN CAPITAL LETTER E WITH ACUTE
Ě	0114	LATIN CAPITAL LETTER E WITH BREVE
Ě	011a	LATIN CAPITAL LETTER E WITH CARON
Ê	00ca	LATIN CAPITAL LETTER E WITH CIRCUMFLEX
Ë	00cb	LATIN CAPITAL LETTER E WITH DIAERESIS
Ė	0116	LATIN CAPITAL LETTER E WITH DOT ABOVE
È	00c8	LATIN CAPITAL LETTER E WITH GRAVE

Ē	0112	LATIN CAPITAL LETTER E WITH MACRON
Ė	0118	LATIN CAPITAL LETTER E WITH OGONEK
F	0046	LATIN CAPITAL LETTER F
ƒ	a77b	LATIN CAPITAL LETTER INSULAR F
G	0047	LATIN CAPITAL LETTER G
Ġ	0122	LATIN CAPITAL LETTER G WITH CEDILLA
Ġ	0120	LATIN CAPITAL LETTER G WITH DOT ABOVE
Ɠ	a77d	LATIN CAPITAL LETTER INSULAR G
Ȝ	021c	LATIN CAPITAL LETTER YOGH
H	0048	LATIN CAPITAL LETTER H
Ĥ	0126	LATIN CAPITAL LETTER H WITH STROKE
Ħ	01f6	LATIN CAPITAL LETTER HWAIR
I	0049	LATIN CAPITAL LETTER I
IJ	0132	LATIN CAPITAL LIGATURE IJ
Í	00cd	LATIN CAPITAL LETTER I WITH ACUTE
Ĭ	012c	LATIN CAPITAL LETTER I WITH BREVE
Î	00ce	LATIN CAPITAL LETTER I WITH CIRCUMFLEX
Ï	00cf	LATIN CAPITAL LETTER I WITH DIAERESIS
Ī	0130	LATIN CAPITAL LETTER I WITH DOT ABOVE
Ì	00cc	LATIN CAPITAL LETTER I WITH GRAVE
Ī	012a	LATIN CAPITAL LETTER I WITH MACRON
Į	012e	LATIN CAPITAL LETTER I WITH OGONEK
J	004a	LATIN CAPITAL LETTER J
K	004b	LATIN CAPITAL LETTER K
Ķ	0136	LATIN CAPITAL LETTER K WITH CEDILLA

20 UNICODE CHARACTER LIST

L	004c	LATIN CAPITAL LETTER L
Í	0139	LATIN CAPITAL LETTER L WITH ACUTE
Ĺ	023d	LATIN CAPITAL LETTER L WITH BAR
Ľ	013d	LATIN CAPITAL LETTER L WITH CARON
Ĺ	013b	LATIN CAPITAL LETTER L WITH CEDILLA
Ĺ	a748	LATIN CAPITAL LETTER L WITH HIGH STROKE
Ĺ	2c62	LATIN CAPITAL LETTER L WITH MIDDLE TILDE
Ĺ	0141	LATIN CAPITAL LETTER L WITH STROKE
M	004d	LATIN CAPITAL LETTER M
N	004e	LATIN CAPITAL LETTER N
Ñ	0143	LATIN CAPITAL LETTER N WITH ACUTE
Ñ	0147	LATIN CAPITAL LETTER N WITH CARON
Ñ	0145	LATIN CAPITAL LETTER N WITH CEDILLA
Ñ	00d1	LATIN CAPITAL LETTER N WITH TILDE
Ŋ	014a	LATIN CAPITAL LETTER ENG
O	004f	LATIN CAPITAL LETTER O
Ō	a74e	LATIN CAPITAL LETTER OO
Ó	00d3	LATIN CAPITAL LETTER O WITH ACUTE
Ö	014e	LATIN CAPITAL LETTER O WITH BREVE
Ô	00d4	LATIN CAPITAL LETTER O WITH CIRCUMFLEX
Ö	00d6	LATIN CAPITAL LETTER O WITH DIAERESIS
Ò	00d2	LATIN CAPITAL LETTER O WITH GRAVE
Õ	0150	LATIN CAPITAL LETTER O WITH DOUBLE ACUTE
Ɔ	a74a	LATIN CAPITAL LETTER O WITH LONG STROKE OVERLAY
Ō	014c	LATIN CAPITAL LETTER O WITH MACRON

Œ	01ea	LATIN CAPITAL LETTER O WITH OGONEK
Ø	00d8	LATIN CAPITAL LETTER O WITH STROKE
Œ	01fe	LATIN CAPITAL LETTER O WITH STROKE AND ACUTE
Õ	00d5	LATIN CAPITAL LETTER O WITH TILDE
Œ	0152	LATIN CAPITAL LIGATURE OE
P	0050	LATIN CAPITAL LETTER P
ƿ	00de	LATIN CAPITAL LETTER THORN
Q	0051	LATIN CAPITAL LETTER Q
Q̇	a758	LATIN CAPITAL LETTER Q WITH DIAGONAL STROKE
R	0052	LATIN CAPITAL LETTER R
Ŕ	0154	LATIN CAPITAL LETTER R WITH ACUTE
Ř	0158	LATIN CAPITAL LETTER R WITH CARON
Ŗ	0156	LATIN CAPITAL LETTER R WITH CEDILLA
Ŧ	a782	LATIN CAPITAL LETTER INSULAR R
S	0053	LATIN CAPITAL LETTER S
Ŝ	015a	LATIN CAPITAL LETTER S WITH ACUTE
Š	0160	LATIN CAPITAL LETTER S WITH CARON
Ş	015e	LATIN CAPITAL LETTER S WITH CEDILLA
ß	00e0	LATIN CAPITAL LETTER SHARP S
Ŧ	a784	LATIN CAPITAL LETTER INSULAR S
T	0054	LATIN CAPITAL LETTER T
Ƨ	0166	LATIN CAPITAL LETTER T WITH STROKE
Ť	0164	LATIN CAPITAL LETTER T WITH CARON
Ṭ	0162	LATIN CAPITAL LETTER T WITH CEDILLA
Ƨ	a786	LATIN CAPITAL LETTER INSULAR T

22 UNICODE CHARACTER LIST

U	0055	LATIN CAPITAL LETTER U
Ú	00da	LATIN CAPITAL LETTER U WITH ACUTE
Ů	016c	LATIN CAPITAL LETTER U WITH BREVE
Û	00db	LATIN CAPITAL LETTER U WITH CIRCUMFLEX
Ü	00dc	LATIN CAPITAL LETTER U WITH DIAERESIS
Ù	00d9	LATIN CAPITAL LETTER U WITH GRAVE
Û	0170	LATIN CAPITAL LETTER U WITH DOUBLE ACUTE
Ū	016a	LATIN CAPITAL LETTER U WITH MACRON
Ů	0172	LATIN CAPITAL LETTER U WITH OGONEK
Ů	016e	LATIN CAPITAL LETTER U WITH RING ABOVE
Ů	0168	LATIN CAPITAL LETTER U WITH TILDE
V	0056	LATIN CAPITAL LETTER V
W	0057	LATIN CAPITAL LETTER W
Ŵ	a760	LATIN CAPITAL LETTER VY
Ŵ	1e82	LATIN CAPITAL LETTER W WITH ACUTE
Ŵ	0174	LATIN CAPITAL LETTER W WITH CIRCUMFLEX
Ŵ	1e84	LATIN CAPITAL LETTER W WITH DIAERESIS
Ŵ	1e80	LATIN CAPITAL LETTER W WITH GRAVE
Ƶ	01f7	LATIN CAPITAL LETTER WYNN
X	0058	LATIN CAPITAL LETTER X
Y	0059	LATIN CAPITAL LETTER Y
Ý	00dd	LATIN CAPITAL LETTER Y WITH ACUTE
Ŷ	0176	LATIN CAPITAL LETTER Y WITH CIRCUMFLEX
ÿ	0178	LATIN CAPITAL LETTER Y WITH DIAERESIS
Ÿ	1e8e	LATIN CAPITAL LETTER Y WITH DOT ABOVE

Ỳ	1ef2	LATIN CAPITAL LETTER Y WITH GRAVE
Ȳ	0232	LATIN CAPITAL LETTER Y WITH MACRON
Z	005a	LATIN CAPITAL LETTER Z
Ž	0179	LATIN CAPITAL LETTER Z WITH ACUTE
Ž	017d	LATIN CAPITAL LETTER Z WITH CARON
Ž	017b	LATIN CAPITAL LETTER Z WITH DOT ABOVE
Z	01b5	LATIN CAPITAL LETTER Z WITH STROKE
o	a7c1	LATIN SMALL LETTER OLD POLISH O
g	a7d1	LATIN SMALL LETTER CLOSED INSULAR G
þ	a7d3	LATIN SMALL LETTER DOUBLE THORN data
þ	a7d5	LATIN SMALL LETTER DOUBLE WYNN
B	0299	LATIN LETTER SMALL CAPITAL B
G	0262	LATIN LETTER SMALL CAPITAL G
Ġ	029b	LATIN LETTER SMALL CAPITAL G WITH HOOK
H	029c	LATIN LETTER SMALL CAPITAL H
I	026a	LATIN LETTER SMALL CAPITAL I
L	029f	LATIN LETTER SMALL CAPITAL L
N	0274	LATIN LETTER SMALL CAPITAL N
Œ	0276	LATIN LETTER SMALL CAPITAL OE
R	0280	LATIN LETTER SMALL CAPITAL R
Ɲ	0281	LATIN LETTER SMALL CAPITAL INVERTED R
Y	028f	LATIN LETTER SMALL CAPITAL Y
a	0061	LATIN SMALL LETTER A
æ	a733	LATIN SMALL LETTER AA
á	00e1	LATIN SMALL LETTER A WITH ACUTE

24 UNICODE CHARACTER LIST

ă	0103	LATIN SMALL LETTER A WITH BREVE
â	00e2	LATIN SMALL LETTER A WITH CIRCUMFLEX
ä	00e4	LATIN SMALL LETTER A WITH DIAERESIS
à	00e0	LATIN SMALL LETTER A WITH GRAVE
ɑ	0251	LATIN SMALL LETTER ALPHA
Ɑ	0252	LATIN SMALL LETTER TURNED ALPHA
ā	0101	LATIN SMALL LETTER A WITH MACRON
æ	a735	LATIN SMALL LETTER AO
ą	0105	LATIN SMALL LETTER A WITH OGONEK
å	00e5	LATIN SMALL LETTER A WITH RING ABOVE
Ǻ	01fb	LATIN SMALL LETTER A WITH RING ABOVE AND ACUTE
ã	00e3	LATIN SMALL LETTER A WITH TILDE
ⱥ	0250	LATIN SMALL LETTER TURNED A
au	a737	LATIN SMALL LETTER AU
av	a739	LATIN SMALL LETTER AV
ⱦ	a73b	LATIN SMALL LETTER AV WITH HORIZONTAL BAR
ay	a73d	LATIN SMALL LETTER AY
æ	00e6	LATIN SMALL LETTER AE
Ǽ	01fd	LATIN SMALL LETTER AE WITH ACUTE
ǣ	01e3	LATIN SMALL LETTER AE WITH MACRON
b	0062	LATIN SMALL LETTER B
ḃ	0253	LATIN SMALL LETTER B WITH HOOK
ɓ	02ad	LATIN LETTER BIDENTAL PERCUSSIVE
ɔ	0298	LATIN LETTER BILABIAL CLICK
ɰ	02ac	LATIN LETTER BILABIAL PERCUSSIVE

ḃ	0180	LATIN SMALL LETTER B WITH STROKE
c	0063	LATIN SMALL LETTER C
ć	0107	LATIN SMALL LETTER C WITH ACUTE
č	010d	LATIN SMALL LETTER C WITH CARON
ç	00e7	LATIN SMALL LETTER C WITH CEDILLA
ᶑ	0255	LATIN SMALL LETTER C WITH CURL
ċ	010b	LATIN SMALL LETTER C WITH DOT ABOVE
ç	a76f	LATIN SMALL LETTER CON
Ĉ	0297	LATIN LETTER STRETCHED C
d	0064	LATIN SMALL LETTER D
ð	00fo	LATIN SMALL LETTER ETH
d'	010f	LATIN SMALL LETTER D WITH CARON
ḋ	0111	LATIN SMALL LETTER D WITH STROKE
ḏ	02a4	LATIN SMALL LETTER DEZH DIGRAPH
d'	0257	LATIN SMALL LETTER D WITH HOOK
ḏ	a77a	LATIN SMALL LETTER INSULAR D
ḑ	0256	LATIN SMALL LETTER D WITH TAIL
ḑ	02a3	LATIN SMALL LETTER DZ DIGRAPH
ḑ	02a5	LATIN SMALL LETTER DZ DIGRAPH WITH CURL
e	0065	LATIN SMALL LETTER E
é	00e9	LATIN SMALL LETTER E WITH ACUTE
ě	0115	LATIN SMALL LETTER E WITH BREVE
ě	011b	LATIN SMALL LETTER E WITH CARON
ê	00ea	LATIN SMALL LETTER E WITH CIRCUMFLEX
ë	00eb	LATIN SMALL LETTER E WITH DIAERESIS

26 UNICODE CHARACTER LIST

è	0117	LATIN SMALL LETTER E WITH DOT ABOVE
è	00e8	LATIN SMALL LETTER E WITH GRAVE
ē	0113	LATIN SMALL LETTER E WITH MACRON
ę	0119	LATIN SMALL LETTER E WITH OGONEK
ɛ	025b	LATIN SMALL LETTER OPEN E
ɜ	025c	LATIN SMALL LETTER REVERSED OPEN E
ø	025e	LATIN SMALL LETTER CLOSED REVERSED OPEN E
ɜ̃	025d	LATIN SMALL LETTER REVERSED OPEN E WITH HOOK
ɞ	0258	LATIN SMALL LETTER REVERSED E
ɶ	0283	LATIN SMALL LETTER ESH
ɷ	0286	LATIN SMALL LETTER ESH WITH CURL
ɸ	0285	LATIN SMALL LETTER SQUAT REVERSED ESH
ɹ	a76b	LATIN SMALL LETTER ET
ə	0259	LATIN SMALL LETTER SCHWA
æ̃	025a	LATIN SMALL LETTER SCHWA WITH HOOK
ɷ̃	0292	LATIN SMALL LETTER EZH
ɷ̃̂	0293	LATIN SMALL LETTER EZH WITH CURL
f	0066	LATIN SMALL LETTER F
fi	02a9	LATIN SMALL LETTER FENG DIGRAPH
ƒ	a77c	LATIN SMALL LETTER INSULAR F
g	0067	LATIN SMALL LETTER G
γ	0263	LATIN SMALL LETTER GAMMA
g̃	0123	LATIN SMALL LETTER G WITH CEDILLA
ġ	0121	LATIN SMALL LETTER G WITH DOT ABOVE
g̃	0260	LATIN SMALL LETTER G WITH HOOK

ǧ	id79	LATIN SMALL LETTER INSULAR G
ʔ	o294	LATIN LETTER GLOTTAL STOP
Ƀ	o296	LATIN LETTER INVERTED GLOTTAL STOP
ƣ	o295	LATIN LETTER PHARYNGEAL VOICED FRICATIVE
ʔ̂	o2a1	LATIN LETTER GLOTTAL STOP WITH STROKE
ƣ̂	o2a2	LATIN LETTER REVERSED GLOTTAL STOP WITH STROKE
ɡ	o261	LATIN SMALL LETTER SCRIPT G
ȝ	o21d	LATIN SMALL LETTER YOGH
h	oo68	LATIN SMALL LETTER H
ĥ	o127	LATIN SMALL LETTER H WITH STROKE
ĥ̃	o267	LATIN SMALL LETTER HENG WITH HOOK
ĥ̄	o266	LATIN SMALL LETTER H WITH HOOK
Ꝓ	o265	LATIN SMALL LETTER TURNED H
Ꝓ̃	o2ae	LATIN SMALL LETTER TURNED H WITH FISHHOOK
Ꝓ̄	o2af	LATIN SMALL LETTER TURNED H WITH FISHHOOK AND TAIL
h̥	o195	LATIN SMALL LETTER HV
i	oo69	LATIN SMALL LETTER I
ı	o131	LATIN SMALL LETTER DOTLESS I
í	ooed	LATIN SMALL LETTER I WITH ACUTE
ï	o12d	LATIN SMALL LETTER I WITH BREVE
î	ooee	LATIN SMALL LETTER I WITH CIRCUMFLEX
ï̇	ooef	LATIN SMALL LETTER I WITH DIAERESIS
ì	ooec	LATIN SMALL LETTER I WITH GRAVE
ij	o133	LATIN SMALL LIGATURE IJ
ī	o12b	LATIN SMALL LETTER I WITH MACRON

28 UNICODE CHARACTER LIST

ï	012f	LATIN SMALL LETTER I WITH OGONEK
ƒ	a76d	LATIN SMALL LETTER IS
ı	0268	LATIN SMALL LETTER I WITH STROKE
j	006a	LATIN SMALL LETTER J
ĵ	0237	LATIN SMALL LETTER DOTLESS J
ȝ	029d	LATIN SMALL LETTER J WITH CROSSED-TAIL
Ƶ	025f	LATIN SMALL LETTER DOTLESS J WITH STROKE
ƶ	0284	LATIN SMALL LETTER DOTLESS J WITH STROKE AND HOOK
k	006b	LATIN SMALL LETTER K
ķ	0137	LATIN SMALL LETTER K WITH CEDILLA
ƙ	a741	LATIN SMALL LETTER K WITH STROKE
l	006c	LATIN SMALL LETTER L
ĺ	013a	LATIN SMALL LETTER L WITH ACUTE
ł	019a	LATIN SMALL LETTER L WITH BAR
Ł	026c	LATIN SMALL LETTER L WITH BELT
ľ	013e	LATIN SMALL LETTER L WITH CARON
ļ	013c	LATIN SMALL LETTER L WITH CEDILLA
Ɑ	026e	LATIN SMALL LETTER LEZH
ƚ	a749	LATIN SMALL LETTER L WITH HIGH STROKE
ɭ	026d	LATIN SMALL LETTER L WITH RETROFLEX HOOK
ł	026b	LATIN SMALL LETTER L WITH MIDDLE TILDE
ƚ	1e9c	LATIN SMALL LETTER LONG S WITH DIAGONAL STROKE
ls	02aa	LATIN SMALL LETTER LS DIGRAPH
ł	0142	LATIN SMALL LETTER L WITH STROKE
lz	02ab	LATIN SMALL LETTER LZ DIGRAPH

m	006d	LATIN SMALL LETTER M
ɱ	0271	LATIN SMALL LETTER M WITH HOOK
ʍ	0270	LATIN SMALL LETTER TURNED M WITH LONG LEG
ʎ	026f	LATIN SMALL LETTER TURNED M
n	006e	LATIN SMALL LETTER N
ñ	0144	LATIN SMALL LETTER N WITH ACUTE
ň	0148	LATIN SMALL LETTER N WITH CARON
ṅ	0146	LATIN SMALL LETTER N WITH CEDILLA
ɲ	0272	LATIN SMALL LETTER N WITH LEFT HOOK
ɳ	0273	LATIN SMALL LETTER N WITH RETROFLEX HOOK
ñ	00fi	LATIN SMALL LETTER N WITH TILDE
ŋ	014b	LATIN SMALL LETTER ENG
o	006f	LATIN SMALL LETTER O
ó	00f3	LATIN SMALL LETTER O WITH ACUTE
ø	0275	LATIN SMALL LETTER BARRED O
ö	014f	LATIN SMALL LETTER O WITH BREVE
ô	00f4	LATIN SMALL LETTER O WITH CIRCUMFLEX
ö	00f6	LATIN SMALL LETTER O WITH DIAERESIS
ò	00f2	LATIN SMALL LETTER O WITH GRAVE
ǒ	0151	LATIN SMALL LETTER O WITH DOUBLE ACUTE
ø	a74b	LATIN SMALL LETTER O WITH LONG STROKE OVERLAY
ō	014d	LATIN SMALL LETTER O WITH MACRON
ω	a74f	LATIN SMALL LETTER OO
q	01eb	LATIN SMALL LETTER O WITH OGONEK
ɔ	0254	LATIN SMALL LETTER OPEN O

30 UNICODE CHARACTER LIST

ø	oof8	LATIN SMALL LETTER O WITH STROKE
ó	oiff	LATIN SMALL LETTER O WITH STROKE AND ACUTE
õ	oof5	LATIN SMALL LETTER O WITH TILDE
œ	o153	LATIN SMALL LIGATURE OE
p	oo7o	LATIN SMALL LETTER P
Ɔ	a753	LATIN SMALL LETTER P WITH FLOURISH
ϕ	o278	LATIN SMALL LETTER PHI
þ	oofe	LATIN SMALL LETTER THORN
Ɔ	a751	LATIN SMALL LETTER P WITH STROKE THROUGH DESCENDER
q	oo71	LATIN SMALL LETTER Q
Ɔ	a759	LATIN SMALL LETTER Q WITH DIAGONAL STROKE
Ɔ	o2a0	LATIN SMALL LETTER Q WITH HOOK
Ɔ	a757	LATIN SMALL LETTER Q WITH STROKE THROUGH DESCENDER
r	oo72	LATIN SMALL LETTER R
ŕ	o155	LATIN SMALL LETTER R WITH ACUTE
Ɔ	o264	LATIN SMALL LETTER RAMS HORN
ř	o159	LATIN SMALL LETTER R WITH CARON
ŗ	o157	LATIN SMALL LETTER R WITH CEDILLA
Ɔ	o27e	LATIN SMALL LETTER R WITH FISHHOOK
Ɔ	o27f	LATIN SMALL LETTER REVERSED R WITH FISHHOOK
Ɔ	o27b	LATIN SMALL LETTER TURNED R WITH HOOK
Ɔ	a783	LATIN SMALL LETTER INSULAR R
Ɔ	o27a	LATIN SMALL LETTER TURNED R WITH LONG LEG
Ɔ	a75b	LATIN SMALL LETTER R ROTUNDA
Ɔ	o27d	LATIN SMALL LETTER R WITH TAIL

ɹ	0279	LATIN SMALL LETTER TURNED R
ꝛ	a75d	LATIN SMALL LETTER RUM ROTUNDA
s	0073	LATIN SMALL LETTER S
ś	015b	LATIN SMALL LETTER S WITH ACUTE
š	0161	LATIN SMALL LETTER S WITH CARON
ſ	015f	LATIN SMALL LETTER S WITH CEDILLA
ß	00df	LATIN SMALL LETTER SHARP S
ſ	0282	LATIN SMALL LETTER S WITH HOOK
ʀ	a785	LATIN SMALL LETTER INSULAR S
f	017f	LATIN SMALL LETTER LONG S
t	0074	LATIN SMALL LETTER T
ƚ	0167	LATIN SMALL LETTER T WITH STROKE
ť	0165	LATIN SMALL LETTER T WITH CARON
tc	02a8	LATIN SMALL LETTER TC DIGRAPH WITH CURL
ţ	0163	LATIN SMALL LETTER T WITH CEDILLA
ƚ	02a7	LATIN SMALL LETTER TESH DIGRAPH
þ	a765	LATIN SMALL LETTER THORN WITH STROKE
ƚ	a787	LATIN SMALL LETTER INSULAR T
ƚ	0288	LATIN SMALL LETTER T WITH RETROFLEX HOOK
ts	02a6	LATIN SMALL LETTER TS DIGRAPH
ɹ	0287	LATIN SMALL LETTER TURNED T
u	0075	LATIN SMALL LETTER U
ú	00fa	LATIN SMALL LETTER U WITH ACUTE
u	0289	LATIN SMALL LETTER U BAR
ü	016d	LATIN SMALL LETTER U WITH BREVE

32 UNICODE CHARACTER LIST

û	oofb	LATIN SMALL LETTER U WITH CIRCUMFLEX
ü	oofc	LATIN SMALL LETTER U WITH DIAERESIS
ù	oof9	LATIN SMALL LETTER U WITH GRAVE
ú	o171	LATIN SMALL LETTER U WITH DOUBLE ACUTE
ū	o16b	LATIN SMALL LETTER U WITH MACRON
ų	o173	LATIN SMALL LETTER U WITH OGONEK
υ	o28a	LATIN SMALL LETTER UPSILON
ũ	o16f	LATIN SMALL LETTER U WITH RING ABOVE
ũ	o169	LATIN SMALL LETTER U WITH TILDE
v	o076	LATIN SMALL LETTER V
υ	o28b	LATIN SMALL LETTER V WITH HOOK
ʋ	2c71	LATIN SMALL LETTER V WITH RIGHT HOOK
ʌ	o28c	LATIN SMALL LETTER TURNED V
w	o077	LATIN SMALL LETTER W
ŵ	1e83	LATIN SMALL LETTER W WITH ACUTE
ŵ	o175	LATIN SMALL LETTER W WITH CIRCUMFLEX
Ẁ	1e85	LATIN SMALL LETTER W WITH DIAERESIS
ẁ	1e81	LATIN SMALL LETTER W WITH GRAVE
ʍ	o28d	LATIN SMALL LETTER TURNED W
wy	a761	LATIN SMALL LETTER VY
Ƶ	o1bf	LATIN LETTER WYNN
x	o078	LATIN SMALL LETTER X
y	o079	LATIN SMALL LETTER Y
ý	oofd	LATIN SMALL LETTER Y WITH ACUTE
ÿ	o177	LATIN SMALL LETTER Y WITH CIRCUMFLEX

ÿ	00ff	LATIN SMALL LETTER Y WITH DIAERESIS
Ÿ	1e8f	LATIN SMALL LETTER Y WITH DOT ABOVE
ÿ	1ef3	LATIN SMALL LETTER Y WITH GRAVE
ȳ	0233	LATIN SMALL LETTER Y WITH MACRON
ʏ	028e	LATIN SMALL LETTER TURNED Y
z	007a	LATIN SMALL LETTER Z
ẏ	017a	LATIN SMALL LETTER Z WITH ACUTE
ž	017e	LATIN SMALL LETTER Z WITH CARON
Ƶ	0291	LATIN SMALL LETTER Z WITH CURL
Ẑ	017c	LATIN SMALL LETTER Z WITH DOT ABOVE
Ʒ	0290	LATIN SMALL LETTER Z WITH RETROFLEX HOOK
Ƶ	01b6	LATIN SMALL LETTER Z WITH STROKE
ff	fb00	LATIN SMALL LIGATURE FF
ffl	fb04	LATIN SMALL LIGATURE FFL
fi	fb01	LATIN SMALL LIGATURE FI
fl	fb02	LATIN SMALL LIGATURE FL
ft	fb05	LATIN SMALL LIGATURE LONG S T
st	fb06	LATIN SMALL LIGATURE ST
h̃	02b1	MODIFIER LETTER SMALL H WITH HOOK
h̄	02b0	MODIFIER LETTER SMALL H
j̃	02b2	MODIFIER LETTER SMALL J
l̃	02e1	MODIFIER LETTER SMALL L
ⁿ	207f	SUPERSCRIPT LATIN SMALL LETTER N
ʷ	02b7	MODIFIER LETTER SMALL W
ɰ	01c2	LATIN LETTER ALVEOLAR CLICK

34 UNICODE CHARACTER LIST

ɪ	01C0	LATIN LETTER DENTAL CLICK
ɪɪ	01C1	LATIN LETTER LATERAL CLICK
^a	00aa	FEMININE ORDINAL INDICATOR
^o	00ba	MASCULINE ORDINAL INDICATOR
β	03b2	GREEK SMALL LETTER BETA
θ	03b8	GREEK SMALL LETTER THETA
π	03c0	GREEK SMALL LETTER PI
χ	03c7	GREEK SMALL LETTER CHI
Ϛ	037c	GREEK SMALL DOTTED LUNATE SIGMA SYMBOL
ƿ	16a0	RUNIC LETTER FEHU FEOH FE F
ƿ	16a1	RUNIC LETTER V
ᚱ	16a2	RUNIC LETTER URUZ UR U
ᚱ	16a3	RUNIC LETTER YR
ᚱ	16a4	RUNIC LETTER Y
ᚱ	16a5	RUNIC LETTER W
ᚱ	16a6	RUNIC LETTER THURISAZ THURS THORN
ᚱ	16a7	RUNIC LETTER ETH
ᚱ	16a8	RUNIC LETTER ANSUZ A
ᚱ	16a9	RUNIC LETTER OS O
ᚱ	16aa	RUNIC LETTER AC A
ᚱ	16ab	RUNIC LETTER AESC
ᚱ	16ac	RUNIC LETTER LONG-BRANCH-OSS O
ᚱ	16ad	RUNIC LETTER SHORT-TWIG-OSS O
ᚱ	16ae	RUNIC LETTER O
ᚱ	16af	RUNIC LETTER OE

𐌲	i6bo	RUNIC LETTER ON
𐌷	i6b1	RUNIC LETTER RAIDO RAD REID R
𐌶	i6b2	RUNIC LETTER KAUNA
𐌵	i6b3	RUNIC LETTER CEN
𐌴	i6b4	RUNIC LETTER KAUN K
𐌳	i6b5	RUNIC LETTER G
𐌲	i6b6	RUNIC LETTER ENG
𐌱	i6b7	RUNIC LETTER GEBO GYFU G
𐌰	i6b8	RUNIC LETTER GAR
𐌯	i6b9	RUNIC LETTER WUNJO WYNN W
𐌸	i6ba	RUNIC LETTER HAGLAZ H
𐌹	i6bb	RUNIC LETTER HA EGL H
𐌺	i6bc	RUNIC LETTER LONG-BRANCH-HAGALL H
𐌻	i6bd	RUNIC LETTER SHORT-TWIG-HAGALL H
𐌼	i6be	RUNIC LETTER NAUDIZ NYD NAUD N
𐌽	i6bf	RUNIC LETTER SHORT-TWIG-NAUD N
𐌾	i6co	RUNIC LETTER DOTTED-N
𐌿	i6c1	RUNIC LETTER ISAZ IS ISS I
𐍀	i6c2	RUNIC LETTER E
𐍁	i6c3	RUNIC LETTER JERAN J
𐍂	i6c4	RUNIC LETTER GER
𐍃	i6c5	RUNIC LETTER LONG-BRANCH-AR AE
𐍄	i6c6	RUNIC LETTER SHORT-TWIG-AR A
𐍅	i6c7	RUNIC LETTER IWAZ EOH
𐍆	i6c8	RUNIC LETTER PERTHO PEORTH P

36 UNICODE CHARACTER LIST

Ÿ	16c9	RUNIC LETTER ALGIZ EOLHX
Ʒ	16ca	RUNIC LETTER SOWILO S
ᚥ	16cb	RUNIC LETTER SIGEL LONG-BRANCH-SOL S
ᚦ	16cc	RUNIC LETTER SHORT-TWIG-SOL S
ᚧ	16cd	RUNIC LETTER C
ᚨ	16ce	RUNIC LETTER Z
ᚩ	16cf	RUNIC LETTER TIWAZ TIR TYR T
ᚪ	16d0	RUNIC LETTER SHORT-TWIG-TYR T
ᚫ	16d1	RUNIC LETTER D
ᚬ	16d2	RUNIC LETTER BERKANAN BEORC BJARKAN B
ᚭ	16d3	RUNIC LETTER SHORT-TWIG-BJARKAN B
ᚮ	16d4	RUNIC LETTER DOTTED-P
ᚯ	16d5	RUNIC LETTER OPEN-P
ᚰ	16d6	RUNIC LETTER EHWAZ EH E
ᚱ	16d7	RUNIC LETTER MANNAZ MAN M
ᚲ	16d8	RUNIC LETTER LONG-BRANCH-MADR M
ᚳ	16d9	RUNIC LETTER SHORT-TWIG-MADR M
ᚴ	16da	RUNIC LETTER LAUKAZ LAGU LOGR L
ᚵ	16db	RUNIC LETTER DOTTED-L
ᚶ	16dc	RUNIC LETTER INGWAZ
ᚷ	16dd	RUNIC LETTER ING
ᚸ	16de	RUNIC LETTER DAGAZ DAEG D
ᚹ	16df	RUNIC LETTER OTHALAN ETHEL O
ᚺ	16e0	RUNIC LETTER EAR
ᚻ	16e1	RUNIC LETTER IOR

ſ	16e2	RUNIC LETTER CWEORTH
ᵿ	16e3	RUNIC LETTER CALC
ᵿ	16e4	RUNIC LETTER CEALC
ᵿ	16e5	RUNIC LETTER STAN
ᵿ	16e6	RUNIC LETTER LONG-BRANCH-YR
ᵿ	16e7	RUNIC LETTER SHORT-TWIG-YR
ᵿ	16e8	RUNIC LETTER ICELANDIC-YR
ᵿ	16e9	RUNIC LETTER Q
ᵿ	16ea	RUNIC LETTER X
ʹ	a770	MODIFIER LETTER US
0	0030	DIGIT ZERO
1	0031	DIGIT ONE
2	0032	DIGIT TWO
3	0033	DIGIT THREE
4	0034	DIGIT FOUR
5	0035	DIGIT FIVE
6	0036	DIGIT SIX
7	0037	DIGIT SEVEN
8	0038	DIGIT EIGHT
9	0039	DIGIT NINE
/	2044	FRACTION SLASH
½	00bd	VULGAR FRACTION ONE HALF
¼	00bc	VULGAR FRACTION ONE QUARTER
¾	00be	VULGAR FRACTION THREE QUARTERS
o	2080	SUBSCRIPT ZERO

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1	2081	SUBSCRIPT ONE
2	2082	SUBSCRIPT TWO
3	2083	SUBSCRIPT THREE
4	2084	SUBSCRIPT FOUR
5	2085	SUBSCRIPT FIVE
6	2086	SUBSCRIPT SIX
7	2087	SUBSCRIPT SEVEN
8	2088	SUBSCRIPT EIGHT
9	2089	SUBSCRIPT NINE
0	2070	SUPERSCRIPIT ZERO
1	00b9	SUPERSCRIPIT ONE
2	00b2	SUPERSCRIPIT TWO
3	00b3	SUPERSCRIPIT THREE
4	2074	SUPERSCRIPIT FOUR
5	2075	SUPERSCRIPIT FIVE
6	2076	SUPERSCRIPIT SIX
7	2077	SUPERSCRIPIT SEVEN
8	2078	SUPERSCRIPIT EIGHT
9	2079	SUPERSCRIPIT NINE
	200c	ZERO WIDTH NON-JOINER
	000d	<Carriage Return> (CR)
	2001	EM QUAD
	2003	EM SPACE
	2000	EN QUAD
	2002	EN SPACE

	2007	FIGURE SPACE
	2005	FOUR-PER-EM SPACE
	200a	HAIR SPACE
	202f	NARROW NO-BREAK SPACE
	2008	PUNCTUATION SPACE
	2006	SIX-PER-EM SPACE
	0020	SPACE
	00a0	NO-BREAK SPACE
	2009	THIN SPACE
	2004	THREE-PER-EM SPACE
	200b	ZERO WIDTH SPACE
⁄	2e4a	DOTTED SOLIDUS
∴	2e4c	MEDIEVAL COMMA
¶	2e4d	PARAGRAPHUS MARK
∴	2e4e	PUNCTUS ELEVATUS MARK
⟨	27e8	MATHEMATICAL LEFT ANGLE BRACKET
⟩	27e9	MATHEMATICAL RIGHT ANGLE BRACKET
⋅	16eb	RUNIC SINGLE PUNCTUATION
∴	16ec	RUNIC MULTIPLE PUNCTUATION
+	16ed	RUNIC CROSS PUNCTUATION
.	002e	FULL STOP
,	002c	COMMA
:	003a	COLON
;	003b	SEMICOLON
...	2026	HORIZONTAL ELLIPSIS

40 UNICODE CHARACTER LIST

!	0021	EXCLAMATION MARK
¡	00a1	INVERTED EXCLAMATION MARK
?	003f	QUESTION MARK
¿	00bf	INVERTED QUESTION MARK
·	00b7	MIDDLE DOT
•	2022	BULLET
*	002a	ASTERISK
	2016	DOUBLE VERTICAL LINE
ſ	204a	TIRONIAN SIGN ET
#	0023	NUMBER SIGN
/	002f	SOLIDUS
	005c	REVERSE SOLIDUS
-	002d	HYPHEN-MINUS
	00ad	SOFT HYPHEN
–	2013	EN DASH
—	2014	EM DASH
—	2012	FIGURE DASH
—	2015	HORIZONTAL BAR
-	2010	HYPHEN
-	2011	NON-BREAKING HYPHEN
—	005f	LOW LINE
=	2017	DOUBLE LOW LINE
(0028	LEFT PARENTHESIS
)	0029	RIGHT PARENTHESIS
{	007b	LEFT CURLY BRACKET

}	007d	RIGHT CURLY BRACKET
[005b	LEFT SQUARE BRACKET
]	005d	RIGHT SQUARE BRACKET
<	2329	LEFT-POINTING ANGLE BRACKET
>	232a	RIGHT-POINTING ANGLE BRACKET
,	201a	SINGLE LOW-9 QUOTATION MARK
„	201e	DOUBLE LOW-9 QUOTATION MARK
“	201c	LEFT DOUBLE QUOTATION MARK
”	201d	RIGHT DOUBLE QUOTATION MARK
‘	2018	LEFT SINGLE QUOTATION MARK
’	2019	RIGHT SINGLE QUOTATION MARK
†	201b	SINGLE HIGH-REVERSED-9 QUOTATION MARK
“	201f	DOUBLE HIGH-REVERSED-9 QUOTATION MARK
«	00ab	LEFT-POINTING DOUBLE ANGLE QUOTATION MARK
»	00bb	RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK
<	2039	SINGLE LEFT-POINTING ANGLE QUOTATION MARK
>	203a	SINGLE RIGHT-POINTING ANGLE QUOTATION MARK
”	0022	QUOTATION MARK
’	0027	APOSTROPHE
γ	02e0	MODIFIER LETTER SMALL GAMMA
ᚠ	16ee	RUNIC ARLAUG SYMBOL
ᚷ	16ef	RUNIC TVIMADUR SYMBOL
ᚨ	16fo	RUNIC BELGTHOR SYMBOL
˜	02f7	MODIFIER LETTER LOW TILDE
ᵿ	02e5	MODIFIER LETTER EXTRA-HIGH TONE BAR

42 UNICODE CHARACTER LIST

┘	02e9	MODIFIER LETTER EXTRA-LOW TONE BAR
┘	02e6	MODIFIER LETTER HIGH TONE BAR
┘	02e8	MODIFIER LETTER LOW TONE BAR
┘	02e7	MODIFIER LETTER MID TONE BAR
˘	02de	MODIFIER LETTER RHOTIC HOOK
@	0040	COMMERCIAL AT
&	0026	AMPERSAND
¶	00b6	PILCROW SIGN
§	00a7	SECTION SIGN
©	00a9	COPYRIGHT SIGN
®	00ae	REGISTERED SIGN
™	2122	TRADE MARK SIGN
°	00b0	DEGREE SIGN
'	2032	PRIME
''	2033	DOUBLE PRIME
	007c	VERTICAL LINE
¡	00a6	BROKEN BAR
†	2020	DAGGER
‡	2021	DOUBLE DAGGER
Ⓡ	211f	RESPONSE
Ⓢ	2123	VERSICLE
€	20ac	EURO SIGN
¢	00a2	CENT SIGN
¤	00a4	CURRENCY SIGN
\$	0024	DOLLAR SIGN

£	00a3	POUND SIGN
¥	00a5	YEN SIGN
/	2215	DIVISION SLASH
+	002b	PLUS SIGN
−	2212	MINUS SIGN
×	00d7	MULTIPLICATION SIGN
÷	00f7	DIVISION SIGN
=	003d	EQUALS SIGN
≠	2260	NOT EQUAL TO
>	003e	GREATER-THAN SIGN
<	003c	LESS-THAN SIGN
≥	2265	GREATER-THAN OR EQUAL TO
≤	2264	LESS-THAN OR EQUAL TO
±	00b1	PLUS-MINUS SIGN
≈	2248	ALMOST EQUAL TO
˜	007e	TILDE
¬	00ac	NOT SIGN
ˆ	005e	CIRCUMFLEX ACCENT
∞	221e	INFINITY
∅	2205	EMPTY SET
∫	222b	INTEGRAL
Ω	2126	OHM SIGN
Δ	2206	INCREMENT
∏	220f	N-ARY PRODUCT
∑	2211	N-ARY SUMMATION

44 UNICODE CHARACTER LIST

√	221a	SQUARE ROOT
μ	00b5	MICRO SIGN
∂	2202	PARTIAL DIFFERENTIAL
+	207a	SUPERSCRIFT PLUS SIGN
∴	2234	THEREFORE
→	2192	RIGHTWARDS ARROW
←	2190	LEFTWARDS ARROW
○	25cc	DOTTED CIRCLE
◇	25ca	LOZENGE
◌ ^a	0363	COMBINING LATIN SMALL LETTER A
◌ ^æ	1dd4	COMBINING LATIN SMALL LETTER AE
◌ ^{ao}	1dd5	COMBINING LATIN SMALL LETTER AO
◌ ^{av}	1dd6	COMBINING LATIN SMALL LETTER AV
◌ ^ç	1dd7	COMBINING LATIN SMALL LETTER C CEDILLA
◌ ^c	0368	COMBINING LATIN SMALL LETTER C
◌ ^d	0369	COMBINING LATIN SMALL LETTER D
◌ ^e	0364	COMBINING LATIN SMALL LETTER E
◌ ^ð	1dd9	COMBINING LATIN SMALL LETTER ETH
◌ ^ˆ	1dd3	COMBINING LATIN SMALL LETTER FLATTENED OPEN A ABOVE
◌ ^g	1dda	COMBINING LATIN SMALL LETTER G
◌ ^h	036a	COMBINING LATIN SMALL LETTER H
◌ ⁱ	0365	COMBINING LATIN SMALL LETTER I
◌ ^ð	1dd8	COMBINING LATIN SMALL LETTER INSULAR D
◌ ^k	1ddc	COMBINING LATIN SMALL LETTER K
◌ ^l	1ddd	COMBINING LATIN SMALL LETTER L

ſ	ide5	COMBINING LATIN SMALL LETTER LONG S
ᵐ	o36b	COMBINING LATIN SMALL LETTER M
ⁿ	ideo	COMBINING LATIN SMALL LETTER N
ᵒ	o366	COMBINING LATIN SMALL LETTER O
ʳ	o36c	COMBINING LATIN SMALL LETTER R
ᵝ	ide3	COMBINING LATIN SMALL LETTER R ROTUNDA
ˢ	ide4	COMBINING LATIN SMALL LETTER S
ᵀ	o36d	COMBINING LATIN SMALL LETTER T
ᵁ	o367	COMBINING LATIN SMALL LETTER U
ᵀ	racd	COMBINING LATIN SMALL LETTER INSULAR R
ᵁ	o36e	COMBINING LATIN SMALL LETTER V
ˣ	o36f	COMBINING LATIN SMALL LETTER X
ᶻ	ide6	COMBINING LATIN SMALL LETTER Z
ö	o308	COMBINING DIAERESIS
◌˙	o307	COMBINING DOT ABOVE
◌`	o300	COMBINING GRAVE ACCENT
◌´	o301	COMBINING ACUTE ACCENT
◌¨	o30b	COMBINING DOUBLE ACUTE ACCENT
◌ˆ	o302	COMBINING CIRCUMFLEX ACCENT
◌ˇ	o30c	COMBINING CARON
◌˘	o306	COMBINING BREVE
◌◌̇	o30a	COMBINING RING ABOVE
◌˜	o303	COMBINING TILDE
◌̄	o304	COMBINING MACRON
◌¯	o305	COMBINING OVERLINE

46 UNICODE CHARACTER LIST

◌́	0312	COMBINING TURNED COMMA ABOVE
◌’	0315	COMBINING COMMA ABOVE RIGHT
◌̣	0318	COMBINING LEFT TACK BELOW
◌̤	0319	COMBINING RIGHT TACK BELOW
◌̥	031a	COMBINING LEFT ANGLE ABOVE
◌̦	031c	COMBINING LEFT HALF RING BELOW
◌̧	031d	COMBINING UP TACK BELOW
◌̨	031e	COMBINING DOWN TACK BELOW
◌̩	031f	COMBINING PLUS SIGN BELOW
◌̪	0320	COMBINING MINUS SIGN BELOW
◌̫	0323	COMBINING DOT BELOW
◌̬	0324	COMBINING DIAERESIS BELOW
◌̭	0325	COMBINING RING BELOW
◌̮	0326	COMBINING COMMA BELOW
◌̯	0327	COMBINING CEDILLA
◌̰	0328	COMBINING OGONEK
◌̱	0329	COMBINING VERTICAL LINE BELOW
◌̲	032a	COMBINING BRIDGE BELOW
◌̳	032c	COMBINING CARON BELOW
◌̴	032f	COMBINING INVERTED BREVE BELOW
◌̵	0330	COMBINING TILDE BELOW
◌̶	0334	COMBINING TILDE OVERLAY
◌̷	0335	COMBINING SHORT STROKE OVERLAY
◌̸	0337	COMBINING SHORT SOLIDUS OVERLAY
◌̹	0338	COMBINING LONG SOLIDUS OVERLAY

◌̣	o339	COMBINING RIGHT HALF RING BELOW
◌̤	o33a	COMBINING INVERTED BRIDGE BELOW
◌̥	o33b	COMBINING SQUARE BELOW
◌̦	o33c	COMBINING SEAGULL BELOW
◌̧	o33d	COMBINING X ABOVE
◌̨	o33b	COMBINING ZIGZAG ABOVE
◌̩	o33c	COMBINING DOUBLE BREVE BELOW
◌̪	o36i	COMBINING DOUBLE INVERTED BREVE
◌̫	idce	COMBINING OGONEK ABOVE
◌̬	racb	COMBINING TRIPLE ACUTE ACCENT
◌̭	iacc	COMBINING LATIN SMALL LETTER INSULAR G
◌̮	race	COMBINING LATIN SMALL LETTER INSULAR T
◌̯	iddi	COMBINING UR ABOVE
◌̰	idd2	COMBINING US ABOVE
◌̱	idcf	COMBINING ZIGZAG BELOW
¨	ooa8	DIAERESIS
˙	o2d9	DOT ABOVE
˘	oo6o	GRAVE ACCENT
˙	oob4	ACUTE ACCENT
ˆ	o2c6	MODIFIER LETTER CIRCUMFLEX ACCENT
ˇ	o2c7	CARON
˘	o2d8	BREVE
°	o2da	RING ABOVE
˜	o2dc	SMALL TILDE
ˉ	ooaf	MACRON

48 UNICODE CHARACTER LIST

¸	oob8	CEDILLA
¸	o2db	OGONEK
'	o2bc	MODIFIER LETTER APOSTROPHE
¸	o2bd	MODIFIER LETTER REVERSED COMMA
¸	o2d1	MODIFIER LETTER HALF TRIANGULAR COLON
¸	o2do	MODIFIER LETTER TRIANGULAR COLON
¸	o2c1	MODIFIER LETTER REVERSED GLOTTAL STOP
¸	o2cc	MODIFIER LETTER LOW VERTICAL LINE
¸	o2c8	MODIFIER LETTER VERTICAL LINE