

ArabX_YTeX عرب زينج

An ArabTeX-like interface for typesetting languages in Arabic script with X_YL^ATeX

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Abstract

This package provides a convenient ArabTeX-like user-interface for typesetting languages using the Arabic script in X_YL^ATeX, with flexible access to font features. Input in ArabTeX notation can be set in three different vocalization modes or in roman transliteration. Direct UTF-8 input is also supported. Since most of the ‘real work’ – namely parsing and converting ArabTeX input to Unicode – is done at the level of TECKit mappings, ArabX_YTeX is really performant.

Contents

1 Introduction

Since the early 1990s, T_EX users who wished to typeset in Arabic script have relied on Klaus Lagally’s excellent ArabT_EX system.¹ While ArabT_EX’s overall qualities and Lagally’s masterful T_EX-programming abilities are undeniable, the system can hardly hide its 15-odd years of existence. Or to state it otherwise, it is now slowly becoming an archaic piece of software (which as a historian who has used ArabT_EX for more than eleven years I find a sad thing to admit). First of all, it is monolithic and idiosyncratic, in the sense that everything – from parsing the input encoding, to doing contextual analysis, to assembling all elements of the script and placing them on the page from right to left, in defiance of T_EX’s natural logic – is taken care of by means of T_EX macro programming. Thus before the availability of relatively fast Pentium processors, ArabT_EX was really slow, but this is less of an issue nowadays. Another disadvantage is that one is inexorably bound to use the custom Naskh font, which without being necessarily ugly does not meet the standards of fine typesetting. Finally, the collection of very sophisticated T_EX code that constitutes the ArabT_EX package is not documented at all, which means that even though it is now licensed under the LPPL, its internals are extremely difficult to understand in depth. (It is

¹[ftp://ftp.informatik.uni-stuttgart.de/pub/arabtex/arabtex.htm](http://ftp.informatik.uni-stuttgart.de/pub/arabtex/arabtex.htm). Version 2.00 was released in April 1992 and version 3.00 in November of the following year. The latest stable version (dated 2 July 2006) is 3.11s. Since version 3.02 the Hebrew language is also supported.

only fair to state, however, that Prof. Lagally has been extremely responsive to ideas, suggestions and wishes by users in the past).

The introduction of Omega in *ca.* 1996, a T_EX extension for multilingual, multidirectional typesetting based on Unicode, raised of course many hopes, but these have by now completely dissipated since the project has been moribund for several years and is now probably defunct. Aleph, a more humble attempt to reach some of the goals set by Omega, has been equally unsuccessful.² Both engines suffered of numerous bugs and never reached a stable and usable state, *at least according to my own subjective experience.*

After completion of the initial alpha version of ArabX_YT_EX, I came across the package Arabi by Youssef Jabri on CTAN.³ This is a pure LaTeX/Babel approach to Arabic typesetting which makes use of TFM hackery (by means of complex sequences of ligature rules) to provide custom contextual analysis for individual fonts. Thus the Arabi only works in combination with the fonts for which support is built in the package.

With the availability of Jonathan Kew's X_YT_EX, users can now rely on a very up-to-date typesetting engine based on the integration of ϵ -T_EX, Unicode, and modern font-rendering technology (AAT and ICU), without the complex hassle of font installation.⁴

2 Description

The ArabX_YT_EX package consists of a set of TECKit⁵ mappings for converting internally from ArabT_EX's ASCII input convention to Unicode, and a L^AT_EX style file (arabxetex.sty) that provides a convenient user interface for typesetting in those languages. For details on ArabT_EX and its input convention the reader is referred to Lagally's detailed manual.⁶ ArabX_YT_EX introduces several additions, and a few minor modifications, to ArabT_EX's conventions. These are documented in tabular form in Section 4. ArabX_YT_EX relies on the package bidi which contains the macros necessary for bidirectional typesetting – using ϵ -T_EX's `\beginR ... \endR`, `\beginL ... \endL` primitives. The main code in bidi.sty is essentially borrowed, with minor adaptations,

²Based on Omega 1.15 and ϵ -T_EX, Aleph attempted to provide a usable and stable branch. See <http://www.tug.org/TUGboat/Articles/tb25-1/bilotta.pdf>. Unfortunately the project is currently dormant.

³<http://www.ctan.org/tex-archive/language/arabic/arabi/>

⁴<http://scripts.sil.org/xetex>. X_YT_EX was originally developed for the Mac OS X platform, but Linux and WIN32 ports are now available.

⁵<http://scripts.sil.org/TECKit>

⁶<http://129.69.218.213/arabtex/doc/arabdoc.pdf>

from the file `rlbabel.def` in the Babel distribution (where it serves for typesetting Hebrew). Some improvements in the beta version were inspired by Youssef Jabri's Arabi.

Languages supported at present are the same as in ArabTeX, namely: Arabic, Maghribi Arabic, Farsi (Persian), Urdu, Sindhi, Kashmiri, Ottoman Turkish, Kurdish, Jawi (Malay) and Uighur. ArabX_ΓTeX adds support for several additional Unicode characters, so that some more languages are probably supported de-facto as well (such as Western Punjabi).

2.1 The ArabTeX input encoding

Why would one need to type those languages by means of an old-fashioned ASCII representation? Native speakers have access to keyboards that allow to input them directly in Unicode, while non-native scholars who need to type them can use keymaps or keyboard utilities to achieve the same, so why bother? An expert in Arabic mathematical linguistic and author of the Perl module `Encode::Arabic::ArabTeX`, Otakar Srmž, has this to say about the virtues of ArabTeX ASCII encoding:

“ArabTeX is an excellent extension to TeX/LaTeX designed for typesetting the right-to-left scripts of the Orient. It comes up with very intuitive and comprehensible lower ASCII transliterations, the expressive power of which is even better than that of the scripts.”[Source: <http://search.cpan.org/~smrz/Encode-Arabic-1.16/ArabTeX/ArabTeX.pm#DESCRIPTION>. See also <http://ufal.mff.cuni.cz/~smrz/ICFP2006/icfp-encode.pdf>]

There are indeed several advantages in using ArabTeX input convention for typesetting in the Arabic script, besides ease and legibility. First it is possible and even trivial to switch between a representation of the data in the Arabic script and its romanized transliteration, without having to modify it. Second, despite the increasing availability of good Unicode editors that support bidirectionality, editing (La)TeX source files with bidirectional content can be a real pain, for it leads to confusion and distraction. Also, with complex multi-layer documents such as critical editions, where footnotes and annotations abound, the advantage of dealing with a plain ASCII encoding cannot be overstated. Finally, such an input convention allows far greater control of typographical details.

3 Usage

<code>\textarab</code>	For short insertions (say within a LR text), use <code>\text<language>[option]{...}</code>
<code>\textfarsi</code>	where <code><language></code> is one of the following (alternative names are given in brackets):
etc.	<ul style="list-style-type: none">• arab (Arabic),⁷• farsi (persian),• urdu,• sindhi,• pashto,• ottoman (turk),• kurdish,• kashmiri,• malay (jawi), and• uighur.
<code>\begin{arab}</code>	For typesetting whole paragraphs in Arabic script, use
<code>\begin{farsi}</code>	<code>\begin{<language>}[option]</code>
etc.	<code>...</code>
	<code>\end{<language>}</code>

Most languages can be typeset in one of four modes: non-vocalized, vocalized, fully-vocalized, and transliterated, exactly as in ArabT_EX, and these are switched by means of the options `novoc`, `voc`, `fullvoc` and `trans`, respectively. Note that Kurdish and Uighur only have one vocalization mode. The mode can be determined either globally as an option to the `arabxetex` package, or as a local option of either the `\text<language>` commands or `\begin{<language>} ... \end{<language>}` environments. When no option is set locally, the global option is chosen. The default global option is always *non-vocalized* mode.

There is also an option `utf` for input in plain UTF-8 encoding. Note that it is also possible to mix ArabT_EX input convention and UTF-8 characters, since the latter will not be affected by the font-mapping (except of course in transliteration mode, unless your roman font also contains Arabic characters). There are also advantages of choosing an ArabT_EX mapping (*i.e.*, one of the `novoc`, `voc` and `fullvoc` modes) even with UTF-8 encoding, as it provides easy access to special glyphs and some useful features. See further below.

⁷Since the command `\arabic` is already defined in L^AT_EX, we chose the environment `arab` and the command `\textarab` instead, but the equivalent environment `Arabic` and the command `\textarabic` are also available.

Latin (LR) insertions within Arabic environment can be made by means of the command `\textroman{...}`. ←⁸ Emphasis in Arabic is traditionally indicated by overlining the text, and this can be achieved with the command `\aemph`:⁹

```

\textroman
→ 1.1: New!
\begin{arab}[novoc]
mi_tAl: \aemph{45} darajaT
\end{arab}

```

مثال: ٤٥ درجة

3.1 Font setup

`\arabicfont` ArabX_YTeX requires the user to define an `\arabicfont` in the preamble. The recommended procedure, by means of `fontspec`, is to define it as follows:

```
\newfontfamily\arabicfont[Script=Arabic]{<fontname>}
```

If not, then a warning is issued and ArabX_YTeX will attempt to load the font **Scheherazade** (designed by Bob Halissy and Jonathan Kew of SIL International).¹⁰

→ 1.1: New! You can also define specific fonts ← for all other languages, by similarly defining `\<language>font`, such as for example:

```
\newfontfamily\urdufont[Script=Arabic]{Nafees Pakistani Naskh}
```

So for example if the `\texturdu` command or the `urdu` environment is used, ArabX_YTeX will use the `\urdufont` if it is defined, and the `\arabicfont` if not. In the same manner one can define `\maghribifont`, `\ottomanfont`, `\uighurfont`, etc.

3.2 Examples

3.2.1 Contextual analysis of *hamza*

As with ArabTeX, a contextual analysis of the input encoding is performed (at the font-mapping level) to automatically determine the carrier of the *hamza*, as illustrated by the following examples:

```

\begin{arab}
'amruN, 'ibiluN, 'u_htuN, ''u_ht"uN, '"Uql"Id"Is, ra'suN, 'ar'asu,

```

⁸In version 1.0 this was called `\textlatin`. The latter still works but its usage is deprecated, because `babel` defines a command of the same name.

⁹This macro makes use of the mathematical command `\overline`, which explains why `arabxetex` requires the `amsmath` package. I welcome any suggestion that would make it possible to circumvent this by emulating `\overline` directly.

¹⁰Available from <http://scripts.sil.org/ArabicFonts>. For typesetting Sindhi and Kashmiri, the font **Lateef**, available at the same place, is also recommended.

```

sa'ala, qara'a, bu'suN, 'ab'usuN, ra'ufa, ru'asA'u, bi'ruN, 'as'ilaTuN,
ka'iba, qA'imuN, ri'AsaTuN, su'ila, samA'uN, barI'uN, sU'uN, bad'uN,
^say'uN, ^say'iN, ^say'aN, sA'ala, mas'alaTuN, saw'aTuN, _ha.tI'aTuN,
jA'a, ridA'uN, ridA'aN, jI'a, radI'iN, sU'uN, .daw'uN, qay'iN, .zim'aN
, yatasA'alUna, 'a'dA'akum, 'a'dA'ikum, 'a'dA'ukum maqrU'aT, mU'ibAt,
taw'am, yas'alu, 'a.sdiq^A$\\;$'uh_u, ya^g^I'u, s^U'ila
\end{arab}

```

أَمْرٌ، إِبِلٌ، أُخْتُ، أُخْتُ، أُوقْلِيدِيسَ، رَأْسٌ، أَرَأْسٌ، سَأَلَ، قَرَأَ، بُؤْسٌ، أَبُؤْسٌ، رُؤْفٌ، رُؤْسَاءُ،
بِئْرٌ، أَسْئَلَةٌ، كَتَبَ، قَاتِمٌ، رَأْسَةٌ، سُنِّلَ، سَمَاءٌ، بَرِيءٌ، سُوءٌ، بَدِءٌ، شَيْءٌ، شَيْءٌ، شَيْئاً،
سَأَلَ، مَسْأَلَةٌ، سَوَاءٌ، خَطِيبَةٌ، جَاءَ، رَدَاءٌ، رَدَاءٌ، جِئْتُ، رَدِيءٌ، سُوءٌ، ضَوْءٌ، قِيءٌ، ظُمناً
، يَتَسَاءَلُونَ، أَعْدَاءُكُمْ، أَعْدَائِكُمْ، أَعْدَاؤُكُمْ مَقْرُوءَةٌ، مُوْتَبَاتٌ، تَوَامٌ، يَسْأَلُ، أَصْدِقَاءُهُ،
يَجِيءُ، سُوَيْلٌ

3.2.2 Special orthographies

Some Arabic words, like *mi'a* “hundred”, have irregular orthographies. ArabX_{TeX} recognizes them automatically.

```

\begin{arab}[voc]
mi'aT , mi'at"An , sab'ami'"aT
\end{arab}

```

مائة ، مِائَتَان ، سَبْعِمِائَةٍ

NB: For the time being only *mi'a* is supported, but more irregular constructs should be added in later versions.

3.2.3 Typesetting the Holy Qur'ān

High-quality typesetting of the Holy Qur'ān (الْقُرْآنُ الْكَرِيمُ) is a most complex and demanding task, which probably should be left to professional typesetters. Nevertheless, with Open Type fonts that cover the full Unicode range for the Arabic script, it is possible to achieve pretty decent results. The following examples represent my attempt to reproduce, with the font Scheherazade, the various typographic features of a typical printed edition from Saudi Arabia.

In printed Qur'āns, one frequently encounters typographical oddities that are not taken into account by Unicode, such as the *hamza* placed directly over the baseline instead as over the *alif*. But with a T_EX macro it is possible to emulate this rather well:

`\newcommand{\hamzaB}{\char"200D\char"0640\raise-.95ex\hbox{\char"0654}\char"200D}`

`\begin{arab}[fullvoc]`

mina 'l-qur'Ani 'l-karImi, sUraTu 'l-ssajdaTi 15--16:

'innamA yu'minu bi-\hamzaB a|"Ay___atinA 'lla_dIna 'i_dA _dukkirUA bihA
_harrUA sujjadaN wa-sabba.hUA bi-.hamdi rabbihim wa-hum lA yastakbirUna
SAJDA [[15]] tatajAfY_a junUbuhum 'ani 'l-ma.dAji'i yad'Una rabbahum
_hawfaN wa-.tama'aN wa-mimma razaqn_ahum yunfiqUna [[16]]
`\end{arab}`

`\begin{arab}[fullvoc]`

sUraTu 'l-baqaraTi 71--72:

qAla 'innahu, yaqUlu 'innahA baqaraTuN lIA _dalUluN tu_tIru 'l-'ar.da wa-lA
tasq.I 'l-.har_ta musallamaTuN lIA ^siyaTa fIH| ^JIM qAluW" 'l-\hamzaB a___ana
ji'ta bi-'l-.haqqi|^JIM fa_daba.hUHA wa-mA kAdduW" yaf'alUna [[71]] wa-'i_d
qatalum nafsaN fa-udda\$, \$_ara|' |_i"tum fIH| ^SLY wa-al-ll_ahu mu_hrijuN mma
kun"tum taktumUna [[72]]
`\end{arab}`

مِنَ الْقُرْآنِ الْكَرِيمِ، سُورَةُ السَّجْدَةِ ١٥-١٦:

إِنَّمَا يُؤْمِنُ بِآيَاتِنَا الَّذِينَ إِذَا ذُكِّرُوا بِهَا خَرُّوا سُجَّدًا وَسَبَّحُوا بِحَمْدِ رَبِّهِمْ وَهُمْ لَا يَسْتَكْبِرُونَ
تَتَجَافَى جُنُوبُهُمْ عَنِ الْمَضَاجِعِ يَدْعُونَ رَبَّهُمْ خَوْفًا وَطَمَعًا وَمِمَّا رَزَقْنَاهُمْ يُنفِقُونَ ﴿١٦﴾

سُورَةُ الْبَقَرَةِ ٧١-٧٢:

قَالَ إِنَّهُ، يَقُولُ إِنَّهَا بَقَرَةٌ لَا ذَلُولٌ تُثِيرُ الْأَرْضَ وَلَا تَسْقِي الْحَرْثَ مُسَلَّمَةً لَا شِئَةَ فِيهَا قَالُوا
الْأَن جِئْتَ بِالْحَقِّ فَذَبَحُوهَا وَمَا كَادُوا يَفْعَلُونَ ﴿٧١﴾ وَإِذ قَتَلْتُمْ نَفْسًا فَادَّارَءْتُمْ فِيهَا وَاللَّهُ مُخْرِجٌ
مَّا كُنْتُمْ تَكْتُمُونَ ﴿٧٢﴾

3.2.4 Farsi

These are some of the Persian examples in the ArabTeX documentation, typeset with the font Simple Farsi Bold:

`\begin{farsi}[voc]`

_hwAb, xwI^s, _hwod, ^ceH, naH, yaI_aH, _hAneH, _hAneHhA, _hAneH-hA,
ketAb-e, U, rAh-e, t_U, nAmeH-i, man, bInI-e, An, mard, pA-i, In,
zan, bAzU-i, In, zan, dAr-_i, man, _hU-_i, t_U, nAmeH-_i, sormeH-_i,


```

gofteH-_i, ketAb-I, rAh-I, nAmeH-I, dAnA-I, pArU-I, dAnA-I-keH,
pArU-I-keH, rafteH-am, rafteH-Im, AnjA-st, U-st, t_U-st, ketAb-I-st,
be-man, be-t_U, be-An, be-In, be-insAn, beU, be-U, .sA.heb"|_hAneH,
pas"|andAz, naw"|AmUz
\end{farsi}

```

خواب، خویش، خود، چه، نہ، یلہ، خانہ، خانہ، خانہ، کتاب، او، راہ، تو، نامہ، من،
 بینہ، آن، مرد، پای، این، زن، باڑی، این، زن، دارِ من، خوی، تو، نامہ، سرمہ،
 گفتہ، کتابی، راہی، نامہ ای، دانی، پانوی، دانیکی، پانویکی، رفتہ ام، رفتہ ایم،
 آجاست، اوست، توست، کتابیست، بمن، بتو، بان، باین، بانسان، باو، باو،
 صاحب خانہ، پس ندان نو آموز

3.2.5 Urdu

An Urdu example, typeset with Nafees Pakistani Naskh:¹¹

```

\begin{urdu}[novoc]
,ham 'i^sq kE mArO.n kA itnA ,hI fasAna,h ,hae
rOnE kO na,hI.n kO'I ,ha.nsnE kO zamAna,h ,hae

ya,h kiskA ta.sawwur ,hae ya,h kiskA fasAna,h ,hae
j0 a^sk ,hae A.nkhO.n mE.n tasbI.h kA dAnA ,hae
\end{urdu}

```

ہم عشق کے ماروں کا اتنا ہی فسانہ ہے
 رونے کو نہیں کوئی ہنسنے کو زمانہ ہے
 یہ کسکا تصور ہے یہ کسکا فسانہ ہے
 جواشک ہے آنکھوں میں تسبیح کا دانا ہے

3.3 Special considerations

3.3.1 The name of God

The glyph FDF2, defined as ‘ARABIC LIGATURE ALLAH ISOLATED FORM’ by the Unicode Consortium, is a source of great confusion. It is displayed in the Unicode Book with

¹¹The example is borrowed from <http://tabish.freeshell.org/u-trans/urducode.html>

an initial alif and thus represents the name of God, Allāh, which in Arabic is always written as a special ligature (*i.e.*, الله and not الله).¹²

However, the majority of real-world fonts rather represent that ligature *without* the initial alif.¹³ The confusion probably has to do with Unicode’s omission to include the ALLAH ligature without the initial alif, which is imperatively required for typesetting expressions like *al-ḥamdu li-llāh* الحمد لله. Many fonts code the ligature الله in the Private Use Area and make it accessible as a default ligature for the sequence *lām-lām-hā’*. In such a case it can be generated from the input `\textarab{1|lh}` (the vertical bar here tells ArabX_YTeX not to interpret the sequence 11 as *lām* with *shadda*).¹⁴ Besides not being a standard ArabTeX input sequence, the trouble is that there is no way to know a priori whether the font provides the glyph الله at all, and whether it is defined as a default ligature from the above input.

To solve this problem with ArabX_YTeX, we had no choice but provide two classes of font mappings, one for each of the above two categories of Arabic fonts.¹⁵ By default we assume the canonical situation where U+FD₂ corresponds to الله, but the user can change this by choosing one of the package options `fdf2alif` or `fdf2noalif`; it can also be changed locally by means of the commands `\SetAllahWithAlif` and `\SetAllahWithoutAlif` *before* making use of `\arabicfont`. In a future version we might perhaps implement a database of Arabic fonts within ArabX_YTeX, so that this would work automatically in the most common cases.

The font Adobe Arabic has in addition the ligature *fā-li-llāb*: *fā fatha lām kasra lām hā’* → الله, which can be entered in ArabTeX notation as `\textarab{falilh}`. In this particular case we also provide the input convention FALILLAH.

¹²The glyph الله is taken from the font Traditional Arabic. In Scheherazade its design is rather suboptimal: الله.

¹³My research on Arabic fonts available or known to me yields the following picture: The fonts that do not display the initial alif in the ligature FD₂ include those provided by Linotype; the great majority of those licensed to or developed by Microsoft (I could verify it for Times New Roman, Arial, Courier New, Microsoft Sans Serif, Arabic Transparent, Simplified Arabic, Simplified Arabic Fixed, WinSoft Serif Pro, Traditional Arabic, Andalus, Old Antic Bold, Old Antic Decorated and Farsi Simple Bold); the fonts distributed by Arabeyes.org; SIL’s Lateef; and the fonts developed by CRULP in Pakistan. The Unicode-conformant fonts, on the other hand, are: SIL’s Scheherazade, Adobe Arabic (distributed with the Middle-Eastern version of the latest Adobe Reader 7), Arial Unicode MS, and Arabic Typesetting (distributed with VOL_T and with Microsoft Office Proofing Tools 2003).

¹⁴This currently does not work with Scheharazade, but the developers are aware of the issue.

¹⁵This has the unfortunate consequence of doubling the number of mappings shipped with ArabX_YTeX. But since their size is small, it is more an esthetic annoyance than a practical one.

3.4 Transliteration

At the moment transliteration mappings are provided for Arabic, Persian, Urdu, Sindhi and Pashto. The rest will be provided in a forthcoming version. It is also planned to implement alternative transliteration conventions for each language, as with Arab_ẒTEX, e.g., ZDMG, Encyclopedia Iranica, etc. Transliteration is set in italics by default. This can be changed by declaring, e.g., `\SetTranslitStyle{\upshape}`. To transliterate proper nouns with capitals, prefix the words to be capitalized with

`\SetTranslitStyle`

`\UC` `\UC:`

```
\begin{arab}[trans]
al-^say_h al-'Alim \UC na.sIr \UC al-dIn \UC al-.tUsI
\end{arab}
```

al-shaykh al-‘ālim Naṣīr al-Dīn al-Ṭūsī

Note that the article *al-* is automatically skipped. Note also that since the transliteration is coded in Unicode at the level of the font-mapping, it is necessary that the font contains all required glyphs.¹⁶

3.5 Typesetting critical editions with ednotes

In conjunction with `bidi`, the `ednotes` package makes it wonderfully easy to typeset critical editions of texts in Arabic script (or other RTL scripts).¹⁷ The direction of each level of footnotes can be controlled by means of `\SetFootnoteHook{\setRL}` (or `\setLR`) right before the declaration `\DeclareNewFootnote{X}[...]`. Here is an example preamble that might be used for typesetting a critical edition with `ednotes` and Arab_ẒTEX.¹⁸ See the `ednotes` documentation for more details.¹⁹

```
\usepackage[modulo,perpage,para*]{ednotes}%this calls manyfoot.sty and lineno.sty
\usepackage{arabxetex}
```

```
% make \footnoterule of \textwidth
\makeatletter%
\renewcommand{\footnoterule}{\kern-3\p@
```

¹⁶See Appendix B for a list of recommended Unicode fonts that cover the full LATIN EXTENDED ADDITIONAL plane.

¹⁷The package `ledmac` has not been extensively tested with `bidi` yet, but our initial trials were not successful.

¹⁸Of course if the edition is typed directly in UTF-8 encoding, the use of Arab_ẒTEX is by no means compulsory. Yet see the remarks in § 2.1 above.

¹⁹<http://www.ctan.org/tex-archive/macros/latex/contrib/ednotes/ednotugb.pdf>. See also http://www.webdesign-bu.de/uwe_lueck/criteditx.html.

```

\hrule width \textwidth \kern 2.6\p@}
\makeatother

\modulolinenumbers[5]
% this is to set linenumbering in Arabic:
\renewcommand{\linenumberfont}{\arabicfont\addfontfeature{Mapping=arabicdigits}\tiny}

\renewcommand{\extrafootnoterule}{}
\SelectFootnoteRule[0]{extra}
\SetFootnoteHook{\unsetRL}%--> must appear immediately before \DeclareNewFootnote
%% For ednotes the command \PrecedeLevelWith{X}{hook} is available
\DeclareNewFootnote{B}[fnsymbol]
\renewcommand*{\differentlines}[2]{\linesfmt{\RL{#1$-#$2}}}%
\renewcommand*{\linesfmt}[1]{\raisebox{1ex}{\linenumberfont #1}~}%
\renewcommand{\lemmafnt}[1]{#1~[ ]}%
%Custom macros to enter variants, additions, omissions, illegible passages,
% text above the line, marginal notes, lacunae, and restorations:
\newcommand{\VAR}[2]{\Anote{\textarab{#1}}{\textarab{#2}}}%
\newcommand{\ADD}{\textroman{\textbf{+}}\,}% or \textarab{zAyid fI}\
\newcommand{\OM}{\textroman{\textbf{\char"2013}}\,}% or \textarab{nAqi.s fI}\
\newcommand{\ILLEG}{\textarab{.gayr maqrU' fI}\ }
\newcommand{\BLANK}{\textarab{bayA.d fI}\ }
\newcommand{\SUPERLIN}{\textarab{ta.ht al-sa.tr fI}\ }
\newcommand{\MARG}{\textarab{bi-al-hAmi's fI}\ }
\newcommand{\LACUNA}{\textroman{\texttriangle~\dots~\texttriangle}}
\newcommand{\RESTOR}[1]{\textroman{\texttriangle}#1\textroman{\texttriangle}}
% to separate lemmas in different manuscripts:
\def\SEP{\enskip$\Vert$\enskip}

```

For a real-life example of how to use ednotes with ArabX_YTeX, see the file `ednotes_example.tex` which comes with this package.

4 Tabular overview of ArabTeX encoding conventions

The table is arranged alphabetically following the most significant letter of the ASCII input code. Color convention: red means that the glyph is the default for the given input code, and that it is available in all languages except those where different glyphs are shown (in black). That default glyph is also displayed in light gray under each language in which it is featured. Glyphs in blue are archaic forms (*e.g.*, old Urdu). An asterisk after the Unicode number means that the character was not available with ArabTeX. Green glyphs are special: either they are used to represent defective

writing or they provide characters for other languages. Those shown in the column for Arabic are available by default. See the relevant notes at the end.

code	ar	fa	ur	ps	sd	tr	ku	ks	ms	ug
a	ا 064E						ئا/ا			
A	آ 0627						ئا/ا			
.a								ء 0654		
.A								آ 0672		
_a	ا 0670									
_A	آ 0670									
:a										ئه
b	ب 0628	ب	ب	ب	ب	ب	ب	ب	ب	ب
B	ب 0640									
.b	ب 066E									
:b					ب 067B					
bh					ب 0680					
c					چ 0681	چ 062C			چ 0686	
,c				چ 0685		چ 0686	چ 0686			
^c	چ 0686	چ 0686	چ	چ	چ	چ	چ	چ	چ	چ
^ch					چ 0687					
:c				چ 0682*						
.^c	چ 068F*									
d	د 062F	د	د	د	د	د	د	د	د	د
.d	ض 0636	ض	ض	ض	ض	ض	ض	ض	ض	ض

code	ar	fa	ur	ps	sd	tr	ku	ks	ms	ug
,d			ذ 0688	ڌ 0689	ڏ 068A					
.,d			ذ 068B*							
^d	ذ 06EE*				ڏ 068E*					
_d	ذ 0630	ذ	ذ	ذ	ذ	ذ	ذ	ذ	ذ	
:d					ڏ 068F					
::d			ڏ 0690*							
dh					ڌ 068C					
,dh					ڌ 068D					
e		ه	ه	ه 0659	ه		ئە/ه	ه 06D2+0658		ه 06D0
E		ه	ه 06D2	ه 06D0			ئە/ه	ه 06D2		
ee				ه						
ae	ه		ه	ه	ه					
Ee				ه 06CD						
_e		ه								
'e							ه			
'E			ه 06D3							
f	ف 0641	ف	ف	ف	ف	ف	ف	ف	ف	ف
.f	ف 06A1									
g		گ 06AF	گ	گ	گ	گ	گ	گ	گ 0762	گ
G				گ 06AB						
.g	غ 063A	غ	غ	غ	غ	غ	غ	غ	غ	

code	ar	fa	ur	ps	sd	tr	ku	ks	ms	ug
:g					گ 06B3					
.:g					گھ 06B4*					
,g	ج b 06AC									
^g	ج 062C	ج	ج	ج	ج	غ 06A0	غ 063A	ج	غ 06A0	غ 063A
gh					گھ					
h	ه 0647	ه	ه 06BE	ه	ه	ه	ه	ه	ه	ه
H		ه 0647	ه 06C3	ه 0647						
.h	ح 062D	ح	ح	ح	ح	ح	ح	ح	ح	
,h			ه 06C1					ه		
_h	خ 062E	خ	خ	خ	خ	خ	خ	خ	خ	
i	ي 0650									ي 066E
I	ي 064A	ي 06CC	ي	ي	ي	ي	ئي/ي	ي	ي	
.I	ي 06CC*									
_i	ي 0656									
j	ج 062C	ج	ج	ج	ج	ژ 0698	ژ 0698	ج	ج	ج
:j					ج 0684					
jh					جھ 06A9					
k	ك 0643	ك	ك	ك	ك 06AA	ك	ك	ك	ك	ك
.k	ك 06A9					ق 0642				
_k	غ 063A									
kh					ک					

code	ar	fa	ur	ps	sd	tr	ku	ks	ms	ug
l	ل 0644	ل	ل	ل	ل	ل	ل	ل	ل	ل
.l							ل 06B6*			
^l							ل 06B5			
m	م 0645	م	م	م	م	م	م	م	م	م
.mIN					م 06FE					
' IN					م 06FD					
n	ن 0646	ن	ن	ن	ن	ن	ن	ن	ن	ن
aN	ا 064B									
uN	و 064C									
iN	ي 064D									
.n			ن 06BA							
. .n					گ 06B2*					
,n				ن 06BC	ن 06BB					
^n					ج 06B3				ن 06BD	ن 06AD
:n					گ 06B1					
o		و 0657		و 0657			و/و	و 06C6		و
0		و	و	و			و/و	و		
ao			و		و					
.o								و 06C4		
.0								و		
_o		و 0657								

code	ar	fa	ur	ps	sd	tr	ku	ks	ms	ug
_0		و								ئو/و 06C6
:o										
:0	غ 06FC									
p		پ 067E	پ	پ	پ	پ	پ	پ	ڦ 06A8	پ
ph					ڦ 06A6					
q	ق 0642	ق	ق	ق	ق	ق	ق	ق	ق	ق
.q	ق 066F									
r	ر 0631	ر	ر	ر	ر	ر	ر	ر	ر	ر
.r	ر 0694*						ر 0695			
,r		ر 0691	ر 0693	ر 0693	ر 0699		ر 0694*			
^r	ر 06EF*						ر 0692*			
:r	ر ^c 0697*									
s	س 0633	س	س	س	س	س	س	س	س	س
.s	ص 0635	ص	ص	ص	ص	ص	ص	ص	ص	
,s				س 069A		ش 0634				
^s	ش 0634	ش	ش	ش	ش	ش	ش	ش	ش	ش
_s					ث 062B					
:s	س 069B									
t	ت 062A	ت	ت	ت	ت	ت	ت	ت	ت	ت
T	ة 062A							ة		
.t	ط 0637	ط	ط	ط	ط	ط	ط	ط	ط	

code	ar	fa	ur	ps	sd	tr	ku	ks	ms	ug
, t			ٹ 0679	ٲ 067C	ٲ 067D					
_t	ث 062B	ث	ث		ث	ث	ث	ث	ث	
th					ٲ 067F					
, th					ٲ 067A					
u	ُ 064F	ُ	ُ	ُ	ُ	ُ	ئو/و	ُ	ُ	ئو/ئو 06C7
U	و 0648	و	و	و	و	و	ئو/ئو	ئاو 0648+0657	و	
.u								ء 0655		
.U								ئا 0673		
_u	ُ 0657									
:u										ئو/ئو 06C8
:U	د 06C7									
v	ف 06A4								ف 06CF	
w	و 0648	و	و	و	و	و	و	و	و	ف 06CB
W	وا									
^w	ؤ 06C9*									
:w	ق 06CA*									
x	خ 062E	خ	خ	خ	خ	خ	خ	خ	خ	خ
y	ي 064A	ی 06CC	ی	ی	ي	ی	ي	ی	ي	ي
Y	ی 0649									
.y								ج		
z	ز 0632	ز	ز	ز	ز	ز	ز	ز	ز	ز

code	ar	fa	ur	ps	sd	tr	ku	ks	ms	ug
.z	ظ 0638	ظ	ظ	ظ	ظ	ظ	ظ	ظ	ظ	
,z				ڙ 0696		ض 0636				
^z		ژ 0698	ژ	ژ				ژ		ژ
_z	ذ 0630 ^f									
:z								ض 0636		
'	ع 0621	ع	ع	ع	ع	ع	ع	ع	ع	ع
`	ع 0639	ع	ع	ع	ع	ع	ع	ع	ع	

^a For Western Punjabi (Lahnda).

^b Alternative form of كى in Malay.

^c For Dargwa (language of Dagestan).

^d For Kirgiz (and Uighur).

^e To transliterate dialects and foreign words.

^f Alternative to _d.

Maghribi Arabic is identical to Arabic except for the three letters f, q and v which yield the glyphs ف (U+06A2), في (U+06A7), and پ (U+06A5), respectively.

5 Unicode-Encoding concordance

060B	ف	0613	ض
060C	،	0614	ص
060D	ر	0615	ط
060E	ه	061B	؛ ;
060F	و	061E	.. ::/DOTS
0610	ز	061F	؟ ?
0611	ع	0621	ع " ' or context
0612	ع	0622	ع A " ' or context

0623	أ	a''' or context	0643	ك	k
0624	ؤ	w''' or context	0644	ل	l
0625	إ	i''' or context	0645	م	m
0626	ئ	y''' or context	0646	ن	n
0627	ا	A	0647	ه	h
0628	ب	b	0648	و	w
0629	ة	T	0649	ى	Y
062A	ت	t	064A	ي	y
062B	ث	_t	064B	؁	aN
062C	ج	^g/j	064C	ء	uN
062D	ح	.h	064D	؂	iN
062E	خ	_h/x	064E	؃	a
062F	د	d	064F	؄	u
0630	ذ	_d	0650		i
0631	ر	r	0651	؅	
0632	ز	z	0652	؆	" after a consonant or °
0633	س	s	0653	؇	^U
0634	ش	^s	0654	؈	'B
0635	ص	.s	0655	؉	.u kashmiri
0636	ض	.d	0656	؊	I kashmiri
0637	ط	.t	0657	؋	o pashto
0638	ظ	.z	0658	،	see kashmiri e
0639	ع	'	0659	؍	e pashto
063A	غ	.g	065A	؎	
0640	-	B	065B	؏	
0641	ف	f	065C	ؐ	
0642	ق	q	065D	ؑ	

065E	۞		0679	ٹ	, t
0660	۰	0	067A	ث	, th
0661	۱	1	067B	ب	: b
0662	۲	2	067C	ت	, t
0663	۳	3	067D	ت	, t
0664	۴	4	067E	پ	p
0665	۵	5	067F	ث	th
0666	۶	6	0680	پ	bh
0667	۷	7	0681	ع	c
0668	۸	8	0682	خ	: c
0669	۹	9	0683	چ	^n
066A	٪	\^^A	0684	چ	: j
%			0685	خ	, c
066B	ر		0686	چ	^c, c malay
066C	,	,	0687	چ	^ch sindhi
066D	★	*	0688	ڈ	, d
066E	ب	.b, i uighur	0689	ډ	, d pashto
066F	ف	.f	068A	ډ	, d sindhi
0670	ا	_a	068B	ڊ	, d
0671	آ	automatic	068C	ڌ	dh sindhi
0672	أ	.A kashmiri	068D	ڍ	, dh sindhi
0673	إ	.U kashmiri	068E	ڏ	^d sindhi
0674	ء		068F	ڌ	: d
0675	أ		0690	ڌ	: : d urdu
0676	و		0691	ر	, r
0677	و		0692	ر	^r kurdisb
0678	ئ		0693	ر	, r pashto

0694	ر	.r, ,r <i>kurdish</i>	06AF	گ	g
0695	ړ	.r <i>kurdish</i>	06B0	ځ	
0696	ز	,z	06B1	ځی	:n
0697	ژ	:r	06B2	ځی	.n <i>sindhi</i>
0698	ژ	^z, j <i>ottoman</i>	06B3	ځی	:g
0699	ژ	:s	06B4	ځی	.:g <i>sindhi</i>
069A	ښ	,s	06B5	ل	^1
069B	پس	:s	06B6	ل	.1
069C	پش		06B7	ل	
069D	صی		06B8	پ	
069E	ض		06B9	ښ	
069F	ظ		06BA	و	.n
06A0	غ	^g <i>ottoman+malay</i>	06BB	ښ	,n <i>sindhi</i>
06A1	ف	.f	06BC	ښ	,n
06A2	ڦ	f	06BD	ښ	^n <i>malay</i>
06A3	ڦ		06BE	ه	h <i>urdu</i>
06A4	ڦ	v, p <i>malay</i>	06BF	ڇ	.^c
06A5	ڦ	v <i>maghribi</i>	06C0	ه	h'' ' or context
06A6	ڦ	ph <i>sindhi</i>	06C1	ه	,h
06A7	ڦ	q	06C2	ه	H- (+ <i>ezafe</i>) ²⁰ <i>urdu</i>
06A8	ڦ	p	06C3	ه	H <i>urdu</i>
06A9	ک	.k	06C4	و	.o <i>kashmiri</i>
06AA	ک	k	06C5	و	
06AB	ک	G	06C6	و	o <i>kashmiri</i> , :o <i>uighur</i>
06AC	ک	,g	06C7	و	:U, u <i>uighur</i>
06AD	ک	^n	06C8	و	:u <i>uighur</i>
06AE	ک		06C9	و	^w

06CA	ق	:w	06E4	ـ	^MADDA
06CB	ڤ	w <i>uighur</i>	06E5	و	WAW
06CC	ى	y/I <i>farsi, etc.,</i> . I <i>arabic, sindhi, malay</i>	06E6	ے	YEH
06CD	ی	Ee <i>pashto</i>	06E7	ے	^YEH
06CE	ئ		06E8	ن	^NUN
06CF	ز	v <i>malay</i>	06E9	ڙ	SAJDA
06D0	ې	E <i>pashto,</i> e <i>uighur</i>	06EA	۔	_STOP
06D1	پ		06EB	۔	^STOP
06D2	ے	E <i>urdu+kashmiri</i>	06EC	۔	^RSTOP
06D3	ء	'E <i>urdu</i>	06ED	م	_MIM
06D4	-	.. <i>urdu</i>	06EE	ذ	^d
06D5	ہ		06EF	ر	^r
06D6	صلے	^SLY	06F0	۰	0 <i>persian, urdu, etc.</i>
06D7	قلے	^QLY	06F1	۱	1 <i>persian, urdu, etc.</i>
06D8	م	^MIM	06F2	۲	2 <i>persian, urdu, etc.</i>
06D9	لا	^LA	06F3	۳	3 <i>persian, urdu, etc.</i>
06DA	ج	^JIM	06F4	۴	4 <i>persian, urdu, etc.</i>
06DB	۔	^DOTS	06F5	۵	5 <i>persian, urdu, etc.</i>
06DC	س	^SIN	06F6	۶	6 <i>persian, urdu, etc.</i>
06DD	◻	[[<digits>]]	06F7	۷	7 <i>persian, urdu, etc.</i>
06DE	✽	HIZB	06F8	۸	8 <i>persian, urdu, etc.</i>
06DF	۔	CIRCZERO	06F9	۹	9 <i>persian, urdu, etc.</i>
06E0	۔	RECTZERO	06FA	ش	
06E1	ح	^JAZM	06FB	ض	
06E2	م	^MIM	06FC	غ	:0
06E3	س	_SIN	06FD	ء	. <i>IN sindhi</i>
			06FE	پ	.MIN <i>sindhi</i>

06FF	هـ
Arabic Supplement	
0750	ي
0751	ث
0752	پ
0753	ت
0754	ب
0755	ب
0756	ن
0757	خ
0758	ج
0759	ط
075A	د
075B	ر
075C	س
075D	ع
075E	غ
075F	غ
0760	ف
0761	ف
0762	ک
0763	ث
0764	ک
0765	م
0766	م
0767	ن

g malay

Notes

0768	ٹ
0769	ن
076A	ل
076B	ز
076C	ر
076D	س
Presentation Forms *	
FD3E	﴾
FD3F	﴿
FDF0	صلے SALLASTOP
FDF1	قلے QALA
FDF2	اللہ al-ll_ah or ALLAH **
FDF3	اکبر AKBAR
FDF4	محمد MUHAMMAD
FDF5	صلعم SALAM
FDF6	رسول RASUL or RASOUL
FDF7	علیہ ALAYHI or ALAYHE
FDF8	وسلم WASALLAM
FDF9	صلی SALLA
FDFA	ﷺ SLM
FDFB	ﷺ JALLA
FDFC	ریال RIYAL
FDFD	ﷻ BASMALA
Non-Unicode Ligatures	
	للہ ll_ah or LLAH **
	فَلِلّٰهِ FALILLAH ***

* Since most of these glyphs are not present in Scheherazade (and, with a few exceptions, are very rarely featured in other fonts), for illustration purposes we have taken FDF0, FDF1, FDF3–FDF9 and FDFB from Arial Unicode MS, FDFA from Adobe Arabic, and FDFD from AGA Arabesque.

** See § [3.3.1](#)

*** Specific to the font Adobe Arabic

A Notes on available free and commercial fonts for the Perso-Arabic script

TO BE COMPLETED

- ‘Scheherazade’ and ‘Lateef’ from SIL
- ‘Adobe Arabic’
- Free fonts from Arabeyes.org
- ...
- Arabic fonts on Mac OS X: ‘Geeza Pro’, ‘DecoType Naskh’, ... more?
→ Help needed to test those fonts!
- ‘Arabic Typesetting’ and other Arabic fonts licensed to Microsoft
- Commercial fonts by vendors:
 - Linotype GmbH: ...
 - AGFA Monotype: ...
 - ParaType: ...
 - ...

B Recommended Unicode fonts for transliterating Oriental languages

Here follows a list of open source and freeware fonts with full LATIN EXTENDED ADDITIONAL coverage.²¹

- Gentium, Doulos, Charis: <http://scripts.sil.org/FontDownloads>
- Junicode: <http://junicode.sourceforge.net/>
- jGaramond: <http://www.janthor.de/jGaramond/>
- LinuxLibertine: <http://linuxlibertine.sourceforge.net/>
- Roman Unicode: <http://everywitchway.net/linguistics/fonts/roman.html>
- Chrisanthi Unicode: <http://everywitchway.net/linguistics/fonts/chrysuni.html>
- DejaVu Serif / Sans / Sans Mono: http://dejavu.sourceforge.net/wiki/index.php/Main_Page
- Lucida Grande: Mac OS X
- FreeSerif / FreeSans / FreeMono: <http://savannah.nongnu.org/projects/freefont/>
- Thryomanes: <ftp://ftp.io.com/pub/usr/hmiller/fonts/Thryomanes12.zip>
- HindSight Unicode (not very nice): <http://dartcanada.tripod.com/Objets/Zips/HindUnic.zip>
- TITUS Cyberbit Basic: <http://titus.fkidg1.uni-frankfurt.de/unicode/tituut.asp>
- AbRoman: <http://www.languagegeek.com/font/fontdownload.html>
- Everson Mono Unicode (shareware): <http://www.evertype.com/emono/>
- Arial Unicode MS: Windows
- Microsoft Sans Serif: Windows

²¹See this [webpage](#) for more details.

- Garava: <http://www.aimwell.org/Fonts/fonts.html>
- Verajja (based on Bitstream Vera Sans, so very similar to DejaVu Sans): <http://www.aimwell.org/Fonts/fonts.html>
- Legendum: <http://home.kabelfoon.nl/~slam/fonts/fonts.html>
- Code2000 (shareware): <http://www.code2000.net>

C Implementation

```

1 \NeedsTeXFormat{LaTeX2e}
2 \ProvidesPackage{arabxetex}
3 [2007/11/08 v1.1.1 ArabTeX-like interface for XeLaTeX]
4 %
5 \DeclareOption{fullvoc}{\def\ax@mode{fullvoc}}
6 \DeclareOption{voc}{\def\ax@mode{voc}}
7 \DeclareOption{novoc}{\def\ax@mode{novoc}}
8 \DeclareOption{trans}{\def\ax@mode{trans}}
9 \DeclareOption{utf}{\def\ax@mode{utf}}
10 \DeclareOption{fdf2alif}{\def\ax@font@allah{fdf2alif}}
11 \DeclareOption{fdf2noalif}{\def\ax@font@allah{fdf2noalif}}
12 \ExecuteOptions{novoc,fdf2alif}
13 \ProcessOptions
14 \def\ax@mode@fullvoc{fullvoc}
15 \def\ax@mode@voc{voc}
16 \def\ax@mode@novoc{novoc}
17 \def\ax@mode@trans{trans}
18 \def\ax@mode@utf{utf}
19 \newif\ifax@mode@defined
20 \def\ax@ismode@defined#1{%
21 \ifcsname ax@mode@#1\endcsname%
22 \ax@mode@definedtrue%
23 \else%
24 \ax@mode@definedfalse%
25 \fi}
26 \def\ax@lang{arab}%default language (for macros like \aemph)
27 \RequirePackage{bidi}
28 \RequirePackage{amsmath}%because of macro \overline used in \aemph
29 \RequirePackage{fontspec}
30 \AtBeginDocument{\ifdefined\arabicfont\relax\else%
31 \PackageWarning{arabxetex}{\string\arabicfont\ is not defined!^^JI will try to load Scheherazade}%
32 \newfontfamily\arabicfont[Script=Arabic,Scale=2]{Scheherazade}\fi
33 }%
34 \def\ax@trans@style{\itshape}%

```

```

35 \newcommand{\SetTranslitStyle}[1]{\def\ax@trans@style{#1}}
36 \newcommand{\SetAllahWithAlif}{\def\ax@font@allah{fdf2alif}}
37 \newcommand{\SetAllahWithoutAlif}{\def\ax@font@allah{fdf2noalif}}
38 \def\arabtex@codes{\catcode'^=11\relax\catcode'_=11\relax}
39 \def\UC{\char"E000} % This is used to capitalize the following letter (ignoring
    % article al-) in transliteration mode
41 %%%Font setup
42 \def\ax@farsi@font{\ifdefined\farsifont\farsifont\else\arabicfont\fi}
43 \def\ax@urdu@font{\ifdefined\urdufont\urdufont\else\arabicfont\fi}
44 \def\ax@pashto@font{\ifdefined\pashtofont\pashtofont\else\arabicfont\fi}
45 \def\ax@maghribi@font{\ifdefined\maghribifont\maghribifont\else\arabicfont\fi}
46 \def\ax@sindhi@font{\ifdefined\sindhifont\sindhifont\else\arabicfont\fi}
47 \def\ax@kashmiri@font{\ifdefined\kashmirifont\kashmirifont\else\arabicfont\fi}
48 \def\ax@ottoman@font{\ifdefined\ottomanfont\ottomanfont\else\arabicfont\fi}
49 \def\ax@kurdish@font{\ifdefined\kurdishfont\kurdishfont\else\arabicfont\fi}
50 \def\ax@malay@font{\ifdefined\malayfont\malayfont\else\arabicfont\fi}
51 \def\ax@uighur@font{\ifdefined\uighurfont\uighurfont\else\arabicfont\fi}
52 \def\ax@urdu@font{\ifdefined\urdufont\urdufont\else\arabicfont\fi}
53
54 \newenvironment{arab}[1][\ax@mode]%
55 {\edef\@tempa{#1}%
56 \def\ax@lang{arab}%
57 \ax@ismode@defined{\@tempa}%
58 \ifax@mode@defined%
59 \ifx\@tempa\ax@mode@trans%
60 \par\arabtex@codes\ax@trans@style%
61 \addfontfeature{Mapping=arabtex-trans}%
62 \else%
63 \ifx\@tempa\ax@mode@utf%
64 \par\setRL\arabicfont\addfontfeature{Mapping=arabicfixes}%
65 \else%
66 \par\setRL\arabicfont\arabtex@codes%
67 \addfontfeature{Mapping=arabtex-\ax@font@allah-\@tempa}%
68 \fi\fi%
69 \else%
70 \PackageWarning{arabxetex}{Mode \@tempa\ not defined, defaulting to \@ax@mode}%
71 \par\setRL\arabicfont\arabtex@codes%
72 \addfontfeature{Mapping=arabtex-\ax@font@allah-\ax@mode}%
73 \fi}
74 {\ifx\@tempa\ax@mode@trans\relax\else\unsetRL\fi\par}
75 \let\Arabic=\arab%
76 %%%

```

```

77 \newenvironment{maghribi}[1][\ax@mode]%
78 {\edef\@tempa{#1}%
79 \def\ax@lang{maghribi}%
80 \ax@ismode@defined{\@tempa}%
81 \ifax@mode@defined%
82 \ifx\@tempa\ax@mode@trans%
83 \par\arabtex@codes\ax@trans@style%
84 \addfontfeature{Mapping=arabtex-trans}%
85 \else%
86 \ifx\@tempa\ax@mode@utf%
87 \par\setRL\ax@maghribi@font\addfontfeature{Mapping=arabicfixes}%
88 \else%
89 \par\setRL\ax@maghribi@font\arabtex@codes%
90 \addfontfeature{Mapping=arabtex-\ax@font@allah-maghribi-\@tempa}%
91 \fi\fi%
92 \else%
93 \PackageWarning{arabxetex}{Mode \@tempa\ not defined, defaulting to \@ax@mode}%
94 \par\setRL\ax@maghribi@font\arabtex@codes%
95 \addfontfeature{Mapping=arabtex-\ax@font@allah-maghribi-\ax@mode}%
96 \fi}
97 {\ifx\@tempa\ax@mode@trans\relax\else\unsetRL\fi\par}
98 %%%
99 \newenvironment{farsi}[1][\ax@mode]%
100 {\edef\@tempa{#1}%
101 \def\ax@lang{farsi}%
102 \ax@ismode@defined{\@tempa}%
103 \ifax@mode@defined%
104 \ifx\@tempa\ax@mode@trans%
105 \par\arabtex@codes\ax@trans@style%
106 \addfontfeature{Mapping=arabtex-farsi-trans}%
107 \else%
108 \ifx\@tempa\ax@mode@utf%
109 \par\setRL\ax@farsi@font\addfontfeature{Mapping=arabicfixes}%
110 \else%
111 \par\setRL\ax@farsi@font\arabtex@codes%
112 \addfontfeature{Mapping=arabtex-\ax@font@allah-farsi-\@tempa}%
113 \fi\fi%
114 \else%
115 \PackageWarning{arabxetex}{Mode \@tempa\ not defined, defaulting to \@ax@mode}%
116 \par\setRL\ax@farsi@font\arabtex@codes%
117 \addfontfeature{Mapping=arabtex-\ax@font@allah-farsi-\ax@mode}%
118 \fi}
119 {\ifx\@tempa\ax@mode@trans\relax\else\unsetRL\fi\par}

```

```

120 \let\persian=\farsi
121 %%%
122 \newenvironment{urdu}[1][\ax@mode]%
123 {\edef\@tempa{#1}%
124 \def\ax@lang{urdu}%
125 \ax@ismode@defined{\@tempa}%
126 \ifax@mode@defined%
127 \ifx\@tempa\ax@mode@trans%
128 \par\arabtex@codes\ax@trans@style%
129 \addfontfeature{Mapping=arabtex-urdu-trans}%
130 \else%
131 \ifx\@tempa\ax@mode@utf%
132 \par\setRL\ax@urdu@font\addfontfeature{Language=Urdu}%Mapping=arabtex-utf}%
133 \else%
134 \par\setRL\ax@urdu@font\arabtex@codes%
135 \addfontfeature{Mapping=arabtex-\ax@font@allah-urdu-\@tempa}%
136 \fi\fi%
137 \else%
138 \PackageWarning{arabxetex}{Mode \@tempa\ not defined, defaulting to \@ax@mode}%
139 \par\setRL\ax@urdu@font\arabtex@codes%
140 \addfontfeature{Mapping=arabtex-\ax@font@allah-urdu-\ax@mode}%
141 \fi}
142 {\ifx\@tempa\ax@mode@trans\relax\else\unsetRL\fi\par}
143 %%%
144 \newenvironment{pashto}[1][\ax@mode]%
145 {\edef\@tempa{#1}%
146 \def\ax@lang{pashto}%
147 \ax@ismode@defined{\@tempa}%
148 \ifax@mode@defined%
149 \ifx\@tempa\ax@mode@trans%
150 \par\arabtex@codes\ax@trans@style%
151 \addfontfeature{Mapping=arabtex-pashto-trans}%
152 \else%
153 \ifx\@tempa\ax@mode@utf%
154 \par\setRL\ax@pashto@font\addfontfeature{Mapping=arabicfixes}%
155 \else%
156 \par\setRL\ax@pashto@font\arabtex@codes%
157 \addfontfeature{Mapping=arabtex-\ax@font@allah-pashto-\@tempa}%
158 \fi\fi%
159 \else%
160 \PackageWarning{arabxetex}{Mode \@tempa\ not defined, defaulting to \@ax@mode}%
161 \par\setRL\ax@pashto@font\arabtex@codes%
162 \addfontfeature{Mapping=arabtex-\ax@font@allah-pashto-\ax@mode}%

```

```

163 \fi}
164 {\ifx\@tempa\ax@mode@trans\relax\else\unsetRL\fi\par}
165 %%%
166 \newenvironment{sindhi}[1][\ax@mode]%
167 {\edef\@tempa{#1}%
168 \def\ax@lang{sindhi}%
169 \ax@ismode@defined{\@tempa}%
170 \ifax@mode@defined%
171 \ifx\@tempa\ax@mode@trans%
172 \par\arabtex@codes\ax@trans@style%
173 \addfontfeature{Mapping=arabtex-sindhi-trans}%
174 \else%
175 \ifx\@tempa\ax@mode@utf%
176 \par\setRL\ax@sindhi@font\addfontfeature{Language=Sindhi}%Mapping=arabtex-utf}%
177 \else%
178 \par\setRL\ax@sindhi@font\arabtex@codes%
179 \addfontfeature{Mapping=arabtex-\ax@font@allah-sindhi-\@tempa,Language=Sindhi}%
180 \fi\fi%
181 \else%
182 \PackageWarning{arabxetex}{Mode \@tempa\ not defined, defaulting to \@ax@mode}%
183 \par\setRL\ax@sindhi@font\arabtex@codes%
184 \addfontfeature{Mapping=arabtex-\ax@font@allah-sindhi-\ax@mode,Language=Sindhi}%
185 \fi}
186 {\ifx\@tempa\ax@mode@trans\relax\else\unsetRL\fi\par}
187 %%%
188 \newenvironment{ottoman}[1][\ax@mode]%
189 {\edef\@tempa{#1}%
190 \def\ax@lang{ottoman}%
191 \ax@ismode@defined{\@tempa}%
192 \ifax@mode@defined%
193 %\ifx\@tempa\ax@mode@trans%
194 % \par\arabtex@codes\ax@trans@style%
195 % \addfontfeature{Mapping=arabtex-turk-trans}%
196 %\else%
197 \ifx\@tempa\ax@mode@utf%
198 \par\setRL\ax@ottoman@font\addfontfeature{Mapping=arabicfixes}%
199 \else%
200 \par\setRL\ax@ottoman@font\arabtex@codes%
201 \addfontfeature{Mapping=arabtex-\ax@font@allah-turk-\@tempa}%
202 \fi\fi%
203 \else%
204 \PackageWarning{arabxetex}{Mode \@tempa\ not defined, defaulting to \@ax@mode}%
205 \par\setRL\ax@ottoman@font\arabtex@codes%

```

```

206 \addfontfeature{Mapping=arabtex-\ax@font@allah-turk-\ax@mode}%
207 \fi}
208 {%\ifx\@tempa\ax@mode@trans\relax\else
209 \unsetRL%\fi
210 \par}
211 \let\turk=\ottoman
212 %%
213 \newenvironment{kurdish}[1][]%
214 {\def\ax@lang{kurdish}%
215 %\edef\@tempa{#1}%
216 %\ifx\@tempa\ax@mode@trans%
217 % \par\arabtex@codes\ax@trans@style%
218 % \addfontfeature{Mapping=arabtex-kurdish-trans}%
219 %\else%
220 \ifx\@tempa\ax@mode@utf%
221 \par\setRL\ax@kurdish@font\addfontfeature{Language=Kurdish}%Mapping=arabtex-
    utf}%
222 \else%
223 \par\setRL\ax@kurdish@font\arabtex@codes%
224 \addfontfeature{Mapping=arabtex-\ax@font@allah-kurdish,Language=Kurdish}%
225 \fi}
226 {%\ifx\@tempa\ax@mode@trans\relax\else
227 \unsetRL%\fi
228 \par}
229 %%
230 \newenvironment{kashmiri}[1][\ax@mode]%
231 {\edef\@tempa{#1}%
232 \def\ax@lang{kashmiri}%
233 \ax@ismode@defined{\@tempa}%
234 \ifax@mode@defined%
235 %\ifx\@tempa\ax@mode@trans%
236 % \par\arabtex@codes\ax@trans@style%
237 % \addfontfeature{Mapping=arabtex-\ax@font@allah-kashmiri-trans}%
238 %\else%
239 \ifx\@tempa\ax@mode@utf%
240 \par\setRL\ax@kashmiri@font\addfontfeature{Mapping=arabicfixes}%
241 \else%
242 \par\setRL\ax@kashmiri@font\arabtex@codes%
243 \addfontfeature{Mapping=arabtex-\ax@font@allah-kashmiri-\@tempa}%
244 \fi%\fi%
245 \else%
246 \PackageWarning{arabxetex}{Mode \@tempa\ not defined, defaulting to \@ax@mode}%
247 \par\setRL\ax@kashmiri@font\arabtex@codes%

```



```

248 \addfontfeature{Mapping=arabtex-\ax@font@allah-kashmiri-\ax@mode}%
249 \fi}
250 {%\ifx\@tempa\ax@mode@trans\relax\else
251 \unsetRL%\fi
252 \par}
253 %%%
254 \newenvironment{malay}[1][\ax@mode]%
255 {\edef\@tempa{#1}%
256 \def\ax@lang{malay}%
257 \ax@ismode@defined{\@tempa}%
258 \ifax@mode@defined%
259 %\ifx\@tempa\ax@mode@trans%
260 % \par\arabtex@codes\ax@trans@style%
261 % \addfontfeature{Mapping=arabtex-malay-trans}%
262 %\else%
263 \ifx\@tempa\ax@mode@utf%
264 \par\setRL\ax@malay@font\addfontfeature{Mapping=arabicfixes}%
265 \else%
266 \par\setRL\ax@malay@font\arabtex@codes%
267 \addfontfeature{Mapping=arabtex-\ax@font@allah-malay-\@tempa}%
268 \fi%\fi%
269 \else%
270 \PackageWarning{arabxetex}{Mode \@tempa\ not defined, defaulting to \@ax@mode}%
271 \par\setRL\ax@malay@font\arabtex@codes%
272 \addfontfeature{Mapping=arabtex-\ax@font@allah-malay-\ax@mode}%
273 \fi}
274 {%\ifx\@tempa\ax@mode@trans\relax\else
275 \unsetRL%\fi
276 \par}
277 \let\jawi=\malay
278 %%%
279 \newenvironment{uighur}[1]%
280 {%\edef\@tempa{#1}%
281 \def\ax@lang{uighur}%
282 %\ifx\@tempa\ax@mode@trans%
283 % \par\arabtex@codes\ax@trans@style%
284 % \addfontfeature{Mapping=arabtex-uighur-trans}%
285 %\else%
286 \ifx\@tempa\ax@mode@utf%
287 \par\setRL\ax@uighur@font\addfontfeature{Mapping=arabicfixes}%
288 \else%
289 \par\setRL\ax@uighur@font\arabtex@codes%
290 \addfontfeature{Mapping=arabtex-\ax@font@allah-uighur}%

```

```

291 \fi}
292 {%\ifx\@tempa\ax@mode@trans\relax\else
293 \unsetRL%\fi
294 \par}
295 %%
296 \def\textarab{\bgroup\arabtex@codes\text@arab}
297 \let\textarabic=\textarab
298 \def\textmaghribi{\bgroup\arabtex@codes\text@maghribi}
299 \def\textfarsi{\bgroup\arabtex@codes\text@farsi}
300 \let\textpersian=\textfarsi
301 \def\texturdu{\bgroup\arabtex@codes\text@urdu}
302 \def\textsindhi{\bgroup\arabtex@codes\text@sindhi}
303 \def\textpashto{\bgroup\arabtex@codes\text@pashto}
304 \def\textottoman{\bgroup\arabtex@codes\text@ottoman}
305 \let\textturk=\textottoman
306 \def\textkurdish{\bgroup\arabtex@codes\text@kurdish}
307 \def\textkashmiri{\bgroup\arabtex@codes\text@kashmiri}
308 \def\textmalay{\bgroup\arabtex@codes\text@malay}
309 \let\textjawi=\textmalay
310 \def\textuighur{\bgroup\arabtex@codes\text@uighur}
311 \newcommand\text@arab[2][\ax@mode]{%
312 \edef\@tempa{#1}%
313 \def\ax@lang{arab}%
314 \ax@ismode@defined{\@tempa}%
315 \ifax@mode@defined%
316 \ifx\@tempa\ax@mode@trans%
317 {\ax@trans@style\addfontfeature{Mapping=arabtex-trans}#2}%
318 \else%
319 \ifx\@tempa\ax@mode@utf%
320 \RL{\arabicfont\addfontfeature{Mapping=arabicfixes} #2}
321 \else%
322 \RL{\arabicfont\addfontfeature{Mapping=arabtex-\ax@font@allah-\@tempa}#2}%
323 \fi\fi
324 \else%
325 \PackageWarning{arabxetex}{Mode \@tempa\ not defined, defaulting to \@ax@mode}%
326 \RL{\arabicfont\addfontfeature{Mapping=arabtex-\ax@font@allah-\ax@mode}#2}%
327 \fi\egroup}
328 \newcommand\text@maghribi[2][\ax@mode]{%
329 \edef\@tempa{#1}%
330 \def\ax@lang{maghribi}%
331 \ax@ismode@defined{\@tempa}%
332 \ifax@mode@defined%
333 \ifx\@tempa\ax@mode@trans%

```

```

334 {\ax@trans@style\addfontfeature{Mapping=arabtex-trans}#2}%
335 \else%
336 \ifx\@tempa\ax@mode@utf%
337 \RL{\ax@maghribi@font\addfontfeature{Mapping=arabicfixes} #2}%evtl {Mapping=arabtex-
utf}
338 \else%
339 \RL{\ax@maghribi@font%
340 \addfontfeature{Mapping=arabtex-\ax@font@allah-maghribi-\@tempa}#2}%
341 \fi\fi%
342 \else%
343 \PackageWarning{arabxetex}{Mode \@tempa\ not defined, defaulting to \@ax@mode}%
344 \RL{\ax@maghribi@font\addfontfeature{Mapping=arabtex-\ax@font@allah-maghribi-
\ax@mode}#2}%
345 \fi\egroup}
346 \newcommand\text@farsi[2][\ax@mode]{%
347 \edef\@tempa{#1}%
348 \def\ax@lang{farsi}%
349 \ax@ismode@defined{\@tempa}%
350 \ifax@mode@defined%
351 \ifx\@tempa\ax@mode@trans%
352 {\ax@trans@style\addfontfeature{Mapping=arabtex-farsi-trans}#2}%
353 \else%
354 \ifx\@tempa\ax@mode@utf%
355 \RL{\ax@farsi@font\addfontfeature{Mapping=arabicfixes} #2}%evtl {Mapping=arabtex-
utf}
356 \else%
357 \RL{\ax@farsi@font%
358 \addfontfeature{Mapping=arabtex-\ax@font@allah-farsi-\@tempa}#2}%
359 \fi\fi%
360 \else%
361 \PackageWarning{arabxetex}{Mode \@tempa\ not defined, defaulting to \@ax@mode}%
362 \RL{\ax@farsi@font\addfontfeature{Mapping=arabtex-\ax@font@allah-farsi-\ax@mode}#2}%
363 \fi\egroup}
364 \newcommand\text@urdu[2][\ax@mode]{%
365 \edef\@tempa{#1}%
366 \def\ax@lang{urdu}%
367 \ax@ismode@defined{\@tempa}%
368 \ifax@mode@defined%
369 \ifx\@tempa\ax@mode@trans%
370 {\ax@trans@style\addfontfeature{Mapping=arabtex-urdu-trans}#2}%
371 \else%
372 \ifx\@tempa\ax@mode@utf%

```

```

373 \RL{\ax@urdu@font\addfontfeature{Language=Urdu}#2}%eventually Mapping=arabtex-
    utf
374 \else%
375 \RL{\ax@urdu@font%
376 \addfontfeature{Mapping=arabtex-\ax@font@allah-urdu-\@tempa,Language=Urdu}#2}%
377 \fi\fi%
378 \else%
379 \PackageWarning{arabxetex}{Mode \@tempa\ not defined, defaulting to \@ax@mode}%
380 \RL{\ax@urdu@font\addfontfeature{Mapping=arabtex-\ax@font@allah-urdu-\ax@mode,Language=Urdu}#2}%
381 \fi\egroup}
382 \newcommand\text@sindhi[2][\ax@mode]{%
383 \edef\@tempa{#1}%
384 \def\ax@lang{sindhi}%
385 \ax@ismode@defined{\@tempa}%
386 \ifax@mode@defined%
387 \ifx\@tempa\ax@mode@trans%
388 {\ax@trans@style\addfontfeature{Mapping=arabtex-sindhi-trans}#2}%
389 \else%
390 \ifx\@tempa\ax@mode@utf%
391 \RL{\ax@sindhi@font\addfontfeature{Language=Sindhi} #2}%eventually Mapping=arabtex-
    utf
392 \else%
393 \RL{\ax@sindhi@font%
394 \addfontfeature{Mapping=arabtex-\ax@font@allah-sindhi-\@tempa,Language=Sindhi}#2}%
395 \fi\fi%
396 \else%
397 \PackageWarning{arabxetex}{Mode \@tempa\ not defined, defaulting to \@ax@mode}%
398 \RL{\ax@sindhi@font\addfontfeature{Mapping=arabtex-\ax@font@allah-sindhi-\ax@mode,Language=Sindh
399 \fi\egroup}
400 \newcommand\text@pashto[2][\ax@mode]{%
401 \edef\@tempa{#1}%
402 \def\ax@lang{pashto}%
403 \ax@ismode@defined{\@tempa}%
404 \ifax@mode@defined%
405 \ifx\@tempa\ax@mode@trans%
406 {\ax@trans@style\addfontfeature{Mapping=arabtex-pashto-trans}#2}%
407 \else%
408 \ifx\@tempa\ax@mode@utf%
409 \RL{\ax@pashto@font\addfontfeature{Mapping=arabicfixes} #2}%evtl {Mapping=arabtex-
    utf}
410 \else%
411 \RL{\ax@pashto@font%
412 \addfontfeature{Mapping=arabtex-\ax@font@allah-pashto-\@tempa}#2}%

```

```

413 \fi\fi%
414 \else%
415 \PackageWarning{arabxetex}{Mode \@tempa\ not defined, defaulting to \@ax@mode}%
416 \RL{\ax@pashto@font\addfontfeature{Mapping=arabtex-\ax@font@allah-pashto-\ax@mode}#2}%
417 \fi\egroup}
418 \newcommand\text@ottoman[2][\ax@mode]{%
419 \edef\@tempa{#1}%
420 \def\ax@lang{ottoman}%
421 \ax@ismode@defined{\@tempa}%
422 \ifax@mode@defined%
423 % UNCOMMENT when transliteration mapping is done
424 %\ifx\@tempa\ax@mode@trans%
425 % {\ax@trans@style\addfontfeature{Mapping=arabtex-turk-trans}#2}%
426 %\else%
427 \ifx\@tempa\ax@mode@utf%
428 \RL{\ax@ottoman@font\addfontfeature{Mapping=arabicfixes} #2}%evtl {\Mapping=arabtex-
utf}
429 \else%
430 \RL{\ax@ottoman@font%
431 \addfontfeature{Mapping=arabtex-\ax@font@allah-turk-\@tempa}#2}%
432 \fi%\fi%
433 \else%
434 \PackageWarning{arabxetex}{Mode \@tempa\ not defined, defaulting to \@ax@mode}%
435 \RL{\ax@ottoman@font\addfontfeature{Mapping=arabtex-\ax@font@allah-turk-\ax@mode}#2}%
436 \fi\egroup}
437 \newcommand\text@kurdish[2][\ax@mode]{%
438 \edef\@tempa{#1}%
439 \def\ax@lang{kurdish}%
440 % UNCOMMENT when transliteration mapping is done
441 %\ifx\@tempa\ax@mode@trans%
442 % {\ax@trans@style\addfontfeature{Mapping=arabtex-kurdish-trans}#2}%
443 %\else%
444 \ifx\@tempa\ax@mode@utf%
445 \RL{\ax@kurdish@font\addfontfeature{Mapping=arabicfixes} #2}%evtl {\Mapping=arabtex-
utf}
446 \else%
447 \RL{\ax@kurdish@font%
448 \addfontfeature{Mapping=arabtex-\ax@font@allah-kurdish,Language=Kurdish}#2}%
449 \fi%\fi%
450 \egroup}
451 \newcommand\text@kashmiri[2][\ax@mode]{%
452 \edef\@tempa{#1}%
453 \def\ax@lang{kashmiri}%

```

```

454 \ax@ismode@defined{\@tempa}%
455 \ifax@mode@defined%
456 % UNCOMMENT when transliteration mapping is done
457 %\ifx\@tempa\ax@mode@trans%
458 % {\ax@trans@style\addfontfeature{Mapping=arabtex-kashmiri-trans}#2}%
459 %\else%
460 \ifx\@tempa\ax@mode@utf%
461 \RL{\ax@kashmiri@font\addfontfeature{Mapping=arabicfixes} #2}%evtl {Mapping=arabtex-
    utf}
462 \else%
463 \RL{\ax@kashmiri@font%
464 \addfontfeature{Mapping=arabtex-\ax@font@allah-kashmiri-\@tempa}#2}%
465 \fi%\fi%
466 \else%
467 \PackageWarning{arabxetex}{Mode \@tempa\ not defined, defaulting to \@ax@mode}%
468 \RL{\ax@kashmiri@font\addfontfeature{Mapping=arabtex-\ax@font@allah-kashmiri-
    \@ax@mode}#2}%
469 \fi\egroup}
470 \newcommand\text@malay[2][\ax@mode]{%
471 \edef\@tempa{#1}%
472 \def\ax@lang{malay}%
473 \ax@ismode@defined{\@tempa}%
474 \ifax@mode@defined%
475 % UNCOMMENT when transliteration mapping is done
476 %\ifx\@tempa\ax@mode@trans%
477 % {\ax@trans@style\addfontfeature{Mapping=arabtex-malay-trans}#2}%
478 %\else%
479 \ifx\@tempa\ax@mode@utf%
480 \RL{\ax@malay@font\addfontfeature{Mapping=arabicfixes} #2}%evtl {Mapping=arabtex-
    utf}
481 \else%
482 \RL{\ax@malay@font%
483 \addfontfeature{Mapping=arabtex-\ax@font@allah-malay-\@tempa}#2}%
484 \fi%\fi%
485 \else%
486 \PackageWarning{arabxetex}{Mode \@tempa\ not defined, defaulting to \@ax@mode}%
487 \RL{\ax@malay@font\addfontfeature{Mapping=arabtex-\ax@font@allah-malay-\ax@mode}#2}%
488 \fi\egroup}
489 \newcommand\text@uighur[2][\ax@mode]{%
490 \edef\@tempa{#1}%
491 \def\ax@lang{uighur}%
492 % UNCOMMENT when transliteration mapping is done
493 %\ifx\@tempa\ax@mode@trans%

```

```

494 % {\ax@trans@style\addfontfeature{Mapping=arabtex-ughur-trans}#2}%
495 %\else%
496 \ifx\@tempa\ax@mode@utf%
497 \RL{\ax@ughur@font\addfontfeature{Mapping=arabicfixes} #2}%\evtl {Mapping=arabtex-
    utf}
498 \else%
499 \RL{\ax@ughur@font%
500 \addfontfeature{Mapping=arabtex-\ax@font@allah-ughur}#2}%
501 \fi%\fi%
502 \egroup}
503 %
504 \newcommand{\textroman}[1]{\LR{\rmfamily #1}}
505 \@ifpackageloaded{babel}{%
506 \renewcommand{\textlatin}[1]{\textroman{#1}}
507 \PackageWarning{babel}{You have loaded Babel. ArabXeTeX has now rede-
    fined \textlatin !}}%
508 {\newcommand{\textlatin}[1]{\textroman{#1}}}%
509 \newcommand{\aemph}[1]{%
510 \edef\@tempb{\expandafter\noexpand\csname text\ax@lang\endcsname}%
511 $\overline{\text{\@tempb{#1}}}$}
512 %
513 % experimental: this surely does not work!
514 % I want a mechanism to enable defining commands that accept args contain-
    ing \arabtex@codes
515 %\def\newarabxetexcommand#1#2{%
516 % \edef\ax@tcomm@nd{\expandafter\relax\csname #1@\endcsname}
517 % \expandafter\def\string#1{%
518 % \bgroup\arabtex@codes\ax@tcomm@nd}
519 % \def\ax@tcomm@nd{#2\egroup}}

```

C.1 Some notes on the TECKit mappings

TO BE DONE . . .