Local LaTeX class and style files

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Contents

1 xelatex-generic.sty

This file started to look like this in about 2016-04-01

1.1 XeLaTeX stuff

Normalize any residual Unicode combining accents, and write out error messages, if any:

XeLaTeX internals

```
\XeTeXinputnormalization=1
\tracinglostchars=1
\tracingonline=1
\XeTeXgenerateactualtext=1
```

1.2 Used at different times

Commented out, except for url, for which see
https://tex.stackexchange.com/questions/49788.

hyperref
pdfx
url

```
\RequirePackage[hyphens]{url}
%\usepackage[final=true,hyphens]{hyperref}
%\usepackage[a-1b]{pdfx} % get an archival PDF
```

1.3 Multilingual macros

from: Stackexchange.

etex Not used

```
%\usepackage{etex}
%\reserveinserts{28}
%\usepackage{xcolor}
```

polyglossia Set up various fonts and languages.

```
\usepackage{polyglossia}
%% work around a bug in polyglossia
%% from https://github.com/reutenauer/polyglossia/issues/626
%\makeatletter
%\ExplSyntaxOn
%\pretocmd\xpg@set@alias@values{%
%    \prop_if_exist:cF { xpg@alias@keyvals@#1@#4 }
%    { \prop_new:c {xpg@alias@keyvals@#1@#4} }
```

```
%}{}{}
%\ExplSyntaxOff
%\makeatother
%% end of workaround

\defaultfontfeatures{%
  Mapping=tex-text,
  %Color=red,
  Numbers=OldStyle,
}

\setmainlanguage[variant=british]{english}
```

Main document font:

```
% \setmainfont[AutoFakeBold=1.5]{EB Garamond 12}
\setmainfont%[BoldFont = * Bold] % tlpretest 2019
% (See https://tug.org/pipermail/tex-live/2019-March/043211.html)
% {Linux Libertine O} % lovely, but use Libertinus
% {fbb} % also lovely - Bembo, but no underdot
% {Tinos} % a croscore font; good diacritics
{TeX Gyre Pagella}
% {IndUni-P}
% {Lucida Sans Unicode}
% {Libertinus Serif} % something funny with overlapping chars in bold 2019-05
```

1.4 Packages that Polyglossia now auto-loads

polyglossia automatically loads: fixltx2e, etex, xunicode, fontspec. But we still need `metalogo` for the definitions of logos like `\XeLaTeX`.

```
\usepackage{metalogo}
% \usepackage{xunicode} % get unicode encoding in PDF even when using
% \= etc.  Not needed at present.
```

Getting properly-hyphenated Sanskrit:

```
\setotherlanguage{sanskrit}  % for transliterated Sanskrit
\newfontfamily\sanskritfont
[Script=Latin]
% [Script=Devanagari]
% {Linux Libertine O}  %Transliteration only in this font
{TeX Gyre Pagella}  %Transliteration only in this font
% {IndUni-P} %Transliteration only in this font
% {Brill} %Transliteration only in this font
% {Sanskrit 2003} % Roman and Devanagari
```

Define \sansk{} which is the same as \emph{}, except that it causes appropriate hyphenation for Sanskrit words. Use \sansk{} for Sanskrit and \emph{} for English.

```
\newcommand{\sansk}[1]{\emph{\textsanskrit{#1}}}
\let\iast=\sansk %better name for it
\let\rsan=\sansk
```

Now define the Devanagari font: input using standard IAST transliteration

```
\newfontfamily\devanagarifont
[Script=Devanagari,
% FakeStretch=1.05,
Mapping=RomDev, %prefer slightly to iast
]
% {Sahadeva}
% {Sanskrit  2003}
{Tiro Devanagari Sanskrit}

% \newcommand{\dev}[1]{\textdevanagari{#1}} % test this 2018-10
\newcommand{\dev}[1]{\textsanskrit{\devanagarifont #1}} % test this 2020-01
\let\dsan=\devanagarifont
\let\dn=\devanagarifont

\setotherlanguage{bengali}
\newfontfamily\bengalifont
[Script=Bengali]
% {Sahadeva}
%{Noto Serif Bengali}
{Tiro Bangla}
```

Use: \textbengali{ }

And other languages

```
\setotherlanguage{german}
\setotherlanguage{french}
```

will call appropriate hyphenation.

Chinese, Japanese, Korean

```
\newfontfamily\cjkfont{Noto Sans CJK SC} %
% [Script=CJK,Mapping=tex-text,Scale=MatchLowercase]
% {IPAexMincho}
% {TakaoPGothic}
\let\cjk\cjkfont
```

https://tex.stackexchange.com/questions/376420/include-chinese-characters-into-article-in-xelatex

Classical Greek:

```
\setotherlanguage{greek}
\newfontfamily\greekfont[Script=Greek,Mapping=tex-text]{GFS Didot}
%{GFS Porson}
%{GFS Philostratos}
```

End of polyglossia stuff.

1.5 Sanskrit hyphenation

hyphenations A cumulative hyphenation exception file, `sanskrit-hyphenations.tex`, adds numerous hand-tuned hyphenation points to the default Polyglossia hyphenation rules for Sanskrit. This file needs to be `\input` after the start of the document. Normally, we'd do this with `\AtBeginDocument`, but for obscure reasons, that doesn't work. So we have to add the `\input` statement by hand at the start of every document, immediately after `\begin{document}`.

```
%\AtBeginDocument{\input{sanskrit-hyphenations.tex}} % this doesn't work :-(
```

1.6 Misc.

csquotes
graphicx

```
\usepackage[style=british]{csquotes} % error in log if not included
\usepackage{graphicx}
```

1.7 Marginal note hacks

\q I use `\q{}` as a shorthand for putting a self-reminder in the margin. In my todonotes mind, it stands for "query." At first, I defined `\q` using `marginpar` (with `marginfix`). Then I discovered the `todonotes` package by Henrik Midtiby, and that's what I use now.

Set up the parameters of `\todo` notes to my liking:

```
\usepackage[colorinlistoftodos,
%    disable,
  textsize=tiny,
  obeyDraft,
  textwidth=.11\textwidth,
  loadshadowlibrary,
  shadow,
  backgroundcolor=yellow
  ]{todonotes}
\setuptodonotes{fancyline}
%
```

```
% Now renew the \q command to use \todo:
\newcommand{\q}[1]{\todo{#1}}
%
% Use the following if you want to print the todo list
% at the document's end, when in draft mode:
% \AtEndDocument{\newpage\listoftodos }
```

1.8 Stacked diacritics

\diatop \diatop, by Christina Thiele, used for r underdot overbar (ṝ, F6, 246, etc.) See *TeXniques: Conference Proceedings* 1987, no. 5, p. 11. (https://tug.org/texniques/)

```
\def\diatop[#1|#2]{\leavevmode{\setbox1=\hbox{{#1{}}}\setbox2=\hbox{{#2{}}}%
        \dimen0=\ifdim\wd1>\wd2\wd1\else\wd2\fi%
        \dimen1=\ht2\advance\dimen1by-1ex%
        \setbox1=\hbox to1\dimen0{\hss#1\hss}%
        \rlap{\raise1\dimen1\box1}%
        \hbox to1\dimen0{\hss#2\hss}}}%
```

E.g. of use: \diatop[\'ō]| gives u macron acute

1.9 Private abbreviations

\AD
etc.

```
\newcommand{\AD}{\textsc{ce}{}}
\newcommand{\BC}{\textsc{bce}{}}
\newcommand{\BCE}{\textsc{bce}{}}
\newcommand{\CE}{\textsc{ce}{}}
\providecommand{\Cs}{\emph{Caraka\-saṃ\-hitā}}
\providecommand{\Ss}{\emph{Suśruta\-saṃ\-hitā}}
\let\CS\Cs
\let\SS\Ss
\providecommand{\AH}{\emph{Aṣṭāṅga\-hṛdaya\-saṃ\-hitā}}
% \newcommand{\saneng}[2]{#2 (\sansk{#1})} % now in
% xelatex-indexing-xindex.sty
\newcommand{\PYS}{PYŚ} %{Pātañjala\-yoga\-śāstra}
\newcommand{\YSV}{\sansk{Yogasūtravivaraṇa}}
\newcommand{\sutra}[1]{\textbf{\large #1}\par}
```

1.10 Nice hanging-indent footnotes

\hangfootnotes LaTeX Companion, p.73. Not used.

```
% \def\hangfootnotes{%
```

```
% \renewcommand{\@makefntext}[1]{\setlength{\parindent}{0pt}%
%  \begin{list}{}{\setlength{\labelwidth}{1.5em}%
%    \setlength{\leftmargin}{\labelwidth}%
%    \setlength{\labelsep}{3pt}\setlength{\itemsep}{0pt}%
%    \setlength{\parsep}{0pt}\setlength{\topsep}{0pt}%
%    \footnotesize}\item[\hfill\@makefnmark]##1%
%  \end{list}}%
%}
```

But the above is broken by bigfoot (too much vertical space)

Footnotes with hanging indents adapted from http://www.ceus-now.com/raggedright-in-footnotes-with-hanging-indent/

```
\newcommand\hangfootnotes{%
    \long\def\@makefntext##1{\leftskip=1.8em\hskip-1.8em\hb@xt@1.8em
    {\@thefnmark\hss}##1}}
```

1.11 Normal LaTeX settings now

```
\setcounter{secnumdepth}{0}
```

enumitem

```
\usepackage[inline]{enumitem}   % supersedes mdwlist: does it globally
 \setlist{itemsep=.5em,
     %labelindent=\parindent,
     %leftmargin=*,
 }
```

```
% \usepackage{makeidx} % leave this to xelatex-indexing.sty
```

multicol (*env.*)
longtable (*env.*)
array (*env.*)

```
\usepackage{multicol}
% \multicolsep = 12pt plus 4pt minus 3pt % default
\multicolsep = 1pt plus .25ex % like the starred environments
\usepackage{longtable}
\usepackage{array}
% \usepackage{index}    % multiple indexes. Doesn't play well with Beamer
\widowpenalty 4000
\clubpenalty 300
\brokenpenalty 5000
\interfootnotelinepenalty 10 % lets notes break more easily
\vfuzz2pt % Don't report over-full v-boxes if over-edge is small
\hfuzz2pt % Don't report over-full h-boxes if over-edge is small
\emergencystretch .1\textwidth
```

```
\hyphenation{dharam-pal wuj-as-tyk never-the-less nutri-tive
  asoka kerala Aristotle Alex-ander Majno manu-script manu-scripts}
```

Command to draw a box where the pictures will go:

```
\newcommand{\pretendpicture}
  {{\centering \fbox{\vrule width0pt height 2.5in depth0pt
     \vrule width 4in height0pt depth0pt }\par }}
```

use as follows:

```
\begin{figure}[htp]
\begin{center}
 \pretendpicture
\end{center}
\caption{}
\label{fig: }
\end{figure}
```

1.12 From article.cls

This isn't used.

```
% \typeout{Wujastyk: NB: Modified maketitle command, flush
% left and no array for authors.}

% \providecommand\@maketitle{%
%  \newpage
%  \null
%  \vskip 2em%
%%  \begin{center}%
%  \let \footnote \thanks
%    \noindent{\LARGE \@title \par}%
%    \vskip 1.5em%
%   \noindent {\large
%      \lineskip .5em%
%%      \noindent
%%      \begin{tabular}[t]{l} %DW
%      \@author
%%      \end{tabular}\par  %DW
%     }%
%    \vskip 1em%
%   \noindent {\large \@date}%
%%  \end{center}%
%  \par
%  \vskip 3em} %DW  was 1.5em
```

sloka See http://cs.wlu.edu/~necaise/refs/latex2e/env-list.4.html Not used:

```
% \newenvironment{sloka} % based on {verse}, from book.cls
%                {\let\\\@centercr
%                 \list{}{\itemsep  \z@
%                         \topsep .1\baselineskip
%                         \parsep .25\baselineskip
%                         \itemindent   -1.5em%
%                         \listparindent\itemindent
%                         \rightmargin  \z@
%                         \leftmargin 3pc % = CUP's \SFB@indent
%                         \advance\leftmargin 1.5em}%
%                \item\itshape\relax}
%                {\endlist}
```

Here's another version from book.cls, based on the quote environment

```
\newenvironment{sloka}
{\list{}{\rightmargin\leftmargin}%
    \renewcommand{\emph}[1]{\textit{##1}}%
    \smallskip\item\itshape\relax}
{\smallskip\endlist}
```

Note that we replaced `\emph` with `\textit` so that italicized words in the italic environment stay italicized after all.

`\PreliminaryNote` Preliminary numberless "footnote" for abbreviations, grant references, and other general initial statements.

```
\newcommand{\PreliminaryNote}[1]{%
{\def\thefootnote{\relax }%
 \footnotetext{\hspace*{-2.3em} %only if not using \hangfootnotes
  #1}}}

\newcommand{\doublespacing}{%
  \renewcommand{\baselinestretch}{1.5}
  \addtolength{\footnotesep}{0.5\footnotesep}}
```

The following not used.

```
% \usepackage{cclicenses}
% \let\DWolddate\date
% \renewcommand{\date}[1]{\DWolddate{#1\\ \cc \ccby \ccnc \ccsa }}
```

2 xelatex-biblatex.sty

2.1 Load the basic package with options

biblatex.sty Load the BibLaTeX package and the oxyear style, and set the various options.

```
\usepackage[%
backend=biber,
%style=authoryear-icomp,
% Make idem and ibidem behave appropriately:
%\url{https://tex.stackexchange.com/questions/61717/biblatex-strictly-identical-footnote-c
% (and see \newbibmacro*{cite:ibid} below).
%ibidpage,
%idemtracker=false,
%style=authoryear,
%uniquename=false,
% oxref:
style=oxyear,
dashed=true,
% end oxref
%bibstyle=publist,
%marginyear=true,
%style=verbose-trad1,
%
% I finally worked out how to sort cites by year and bibliography by name
%
%\url{https://cikitsa.blogspot.ca/2017/07/biblatex-citations-and-bibliography.html}
sorting=ynt,  %ynt for the citations in date order; nyt otherwise
sortcites=true,
%sortlocale=en-GB,
backref=false,
date=comp,
datecirca=true,
dateuncertain=true,
bibencoding=auto,
hyperref=auto,
isbn=true,
doi=true,
language=auto,
natbib=true,
texencoding=auto,
url=true,
urldate=short,
usetranslator=true,
useprefix=true,% van Nooten
giveninits=false, % Give first names in the bibliography.  See
```

```
%\url{https://github.com/alex-ball/biblatex-oxref/issues/17#issuecomment-843383550}
%maxnames=1, % before "et al."
%uniquelist=false,
%refsection=section,
]{biblatex}
```

2.2 Some options for all the main entry types

cuteBibliographyOptions

```
\ExecuteBibliographyOptions[% for biblatex-oxyear
article,
book,
mvbook,
mvcollection,
inbook,
incollection,
inreference,
collection,
reference,
mvreference]{useeditor=true,
    usetranslator=true,
%    uniquename=full
}
```

2.3 Fix date abbreviations to be more verbose

\blx@ox@compyear Patch so that date-abbreviations aren't just one digit. Kindly supplied by Alex Ball, https://github.com/alex-ball/biblatex-oxref/issues/19

```
\renewcommand{\blx@ox@compyear}[2]{%
    \def\num@one{#1}%
    \def\num@two{#2}%
    \StrLen{\num@one}[\num@one@len]%
    \StrLen{\num@two}[\num@two@len]%
    \ifboolexpr{
        test {\ifnumequal{\num@one@len}{\num@two@len}}
        and
        test {\ifnumless{\num@one}{\num@two}}
    }{%
        \StrCompare{\num@one}{\num@two}[\Result]%
        \ifnum\num@two@len>3%
        \IfStrEq{\Result}{2}{\def\Result{1}}{}%
        \fi
        %%% Extend the legal date compression behaviour to all entries
        \IfStrEq{\Result}{4}{\def\Result{3}}{}%
```

```
        %%% End of changes
        \StrGobbleLeft{0\num@two}{\Result}%
    }{\num@two}}
```

2.4 Not used

bookeditor I don't use this, now. patch of Sept 2019
https://mail.google.com/mail/u/0/#inbox/FMfcgxwDrHpMnGSkkqjMqHwCCdJqBLkC

```
%\makeatletter
%\xpatchbibmacro{bookeditor}{\global\undef\bbx@lasthash}{}{}{%
%    \wlog{INFO: oxyear fix no longer needed!}}
%\makeatother
```

2.5 Sort citations and bibliography differently - fail!

assignrefcontextentries I finally discovered how to sort citations by year and bibliography entries by name (and see sorting, above).
https://cikitsa.blogspot.ca/2017/07/biblatex-citations-and-bibliography.html

```
\AtBeginDocument{\assignrefcontextentries[]{*}}
```

But this isn't working 2021-05 :-(

2.6 Placement of commas inside title quotes

efineBibliographyExtras Following sections 3.10 and 4.7.5 of the BibLaTeX manual, put the comma *inside* the quotation marks of the title.

```
\DefineBibliographyExtras{british}{\DeclareQuotePunctuation{.,}}
```

2.7 Sorting the bibliography

\printbibliography To avoid saying \newrefcontext[sorting=nyt] before \printbibliography in every document redefine \printbibliography (from biblatex.sty):

```
\renewrobustcmd*{\printbibliography}{%
 \newrefcontext[sorting=nyt] % added this line
    \begingroup
    \delimcontext{bib}%
    \edef\on@line{\on@line}%
    \@ifnextchar[%]
    {\blx@printbibliography}
    {\blx@printbibliography[]}}
```

2.8 String abbreviations

volcite no "p." or "pp." in, for example, \volcite:

```
\DefineBibliographyStrings{english}{%
    page             = {},
    pages            = {},
    volume       = {},
}
```

2.9 Load the bibliography file

\addbibresource This isn't used, because we load different bibliographies in different documents.

```
% \addbibresource
%% [datatype=bibtex]
% {biblio4-utf8.bib}
```

2.10 Auto-formatting of URL strings

Enable hot URLs for PDFs at Archive.org and Academia.edu and other sites.

\DeclareFieldFormat See BibLaTeX documentation 4.11.2 and macros from biblatex.def

```
\newif\ifBibHiddenURLs
 %
\ifBibHiddenURLs
   \relax
\else
%
\DeclareFieldFormat{url}{%
    \ifhyperref
    {\\ \textsc{url: }\href{#1}{#1}} % added a newline to help with long URLs in PDFs
    {\textsc{url: }\nolinkurl{#1}}} %DW bug here
%
% Buddhist Digital Resource Center:
\DeclareFieldFormat{eprint:tbrc}{%
    \textsc{TBRC}\space
    \ifhyperref
    {\href{https://www.tbrc.org/\#!rid=#1}{\nolinkurl{#1}}}
    {\nolinkurl{#1}}}
%
\DeclareFieldFormat{eprint:ark}{%
 \textsc{ark:}\space
 \ifhyperref
 {\href{https://n2t.net/#1}{\nolinkurl{#1}}}
```

```
 {\nolinkurl{#1}}}
%
\DeclareFieldFormat{eprint:archive}{%
%    Internet Archive\addcolon\space
    \ifhyperref
%    {\href{http://archive.org/details/#1}{\nolinkurl{#1}}}
    {\href{http://archive.org/details/#1}{{\small Internet Archive}}}
    {\nolinkurl{#1}}}
\DeclareFieldAlias{eprint:archive.org}{eprint:archive}
\DeclareFieldAlias{eprint:Archive.org}{eprint:archive}

\DeclareFieldFormat{eprint:academia}{%
%    Academia.edu\addcolon\space
    \ifhyperref
    {\href{http://www.academia.edu/#1}{{\small Academia.edu}}}
    {\nolinkurl{#1}}}
\DeclareFieldAlias{eprint:academia.edu}{eprint:academia}

\DeclareFieldFormat{eprint:dli}{%
%    DLI\addcolon\space
    \ifhyperref
    {\href{http://www.dli.gov.in/cgi-bin/DBscripts/allmetainfo.cgi?barcode=#1/}{{\small
    Digital Library of India}}}
    {\nolinkurl{#1}}}
\DeclareFieldAlias{eprint:DLI}{eprint:dli}
\DeclareFieldFormat{eprint:jstor}{%
    \ifhyperref
    {\href{http://www.jstor.org/stable/#1}{{\small JSTOR}}}
    {\nolinkurl{#1}}}

\DeclareFieldFormat{eprint:google}{%
    \ifhyperref
    {\href{http://books.google.com/books?id=#1}{{\small Google books}}}
    {\nolinkurl{#1}}}
%
\DeclareFieldFormat{doi}{%
    \textsc{doi}\addcolon\space
    \ifhyperref
    {\href{https://doi.org/#1}{\nolinkurl{#1}}}
    {\nolinkurl{#1}}}
%
\fi
\BibHiddenURLsfalse
```

2.11 Some bibliographical aliases - not used

Not used. This should be done in individual documents and document styles, not here in a generic style file.

\defcitealias

```
%\defcitealias{meul-hist}{HIML}
%\defcitealias{ncc}{NCC}
%\defcitealias{bisw-bibl}{BSIMC}
```

2.12 Move notes to the end of bibliography entries

To make BibLaTeX notes print last, like addendums.

\DeclareSourcemap From
http://tex.stackexchange.com/questions/138913/how-to-move-the-field-note-at-the-end-of-the-reference

```
\DeclareSourcemap{
    \maps[datatype=bibtex]{
        \map{
            \step[fieldsource=note, final]
            \step[fieldset=addendum, origfieldval, final]
            \step[fieldset=note, null]
        }
    }
}
```

2.13 Tweak the punctuation of citations

\DeclareFieldFormat Tweaks to make the citation form:- Author date: page

```
\DeclareFieldFormat{postnote}{#1}
\renewcommand{\postnotedelim}{:\,}
\renewcommand{\nameyeardelim}{ }
```

2.14 Suppress shorthands. Not used

\clearfield Suppress shorthands: http://tex.stackexchange.com/questions/57041/

Once again, I don't use this at present.

```
% \AtEveryCitekey{\clearfield{shorthand}}
```

2.15 csquotes

csquotes

```
\usepackage{csquotes}
\setquotestyle{american} % american = double quotes
```

2.16 Hacks for pubstate

\DeclareLabeldate BibLaTeX hacks to get pubstate (?forthcoming? etc.) behaving as it should
BibLaTeX manual 4.5.10

```
\DeclareLabeldate{%
 \field{date}
 \field{year}
 \field{pubstate}
    \field{eventdate}
    \field{origdate}
    \field{urldate}
    \literal{nodate}
}
```

2.17 Width of shorthand abbreviations

\DeclareFieldFormat Some magic from "moewe" at
https://tex.stackexchange.com/questions/442749/biblatex-have-hyperref-links-point-to-the-shorthand-list
that makes hyperlinks from citations point to the list of abbreviations.

```
\DeclareFieldFormat{shorthandwidth}{%
    \bibhypertarget{shorthand:\thefield{entrykey}}
    {#1}}

\DeclareFieldFormat{bibhyperref}{%
    \iffieldundef{shorthand}
    {\bibhyperref{#1}}
    {\bibhyperlink{shorthand:\thefield{entrykey}}{#1}}}
```

2.18 Penalties for URLs – not used

penalties Penalty settings to make URLs format better. From xurl documentation.
Currently not used.

```
%\usepackage{xurl}
%\setcounter{biburllcpenalty}{1}
%\setcounter{biburlucpenalty}{1}
```

```
%\setcounter{biburlnumpenalty}{1}
%% but Bib\LaTeX\  has this built in to it.
```

2.19 Create a dummy data type for putting literal strings into a bibliography

clareBibliographyDriver Create a new data type in bibtex, @literal, which just prints the content of the title field.

Thanks to emilianoeheyns at https://forums.zotero.org/discussion/110863/biblatex-both-langid-and-language-are-needed

```
\DeclareBibliographyDriver{literal}{%
    \newunit\newblock
    \printfield{title}%
    \finentry}
```

2.20 Turn language into langid

\DeclareSourcemap It turns out that it's the `langid` field that controls language-switching in bibliography entries, not `language`. Since I've always used `language`, this code will just write the content of the `language` field to the `langid` field, on the fly.

```
\DeclareSourcemap{
    \maps[datatype=bibtex]{
        \map{
            \step[fieldsource=lanuage,fieldtarget=langid]
        }
    }
}
```

That's all, folks!

3 xelatex-glossaries.sty

Official documentation of LaTeX glossaries is found in the TeXlive distribution:

- glossaries.pdf
- glossaries-extra.pdf
- bib2gls.pdf
- glossariesbegin.pdf

See

- https://ctan.org/pkg/glossaries
- https://ctan.org/pkg/glossaries-extra
- https://ctan.org/pkg/bib2gls

The Glossaries packages are complex and the documentation is voluminous and written from the point of view of an insider programmer. See also https://en.wikibooks.org/wiki/LaTeX/Glossary

I cannot pretend to understand the package overall, but the code below works.

A shorter and earlier description of this package – with pictures! – is available at https://cikitsa.blogspot.com/2022/11/making-index-of-plant-names.html

3.1 Glossaries of plants, animals, and minerals

This package initializes two glossaries, plants and animals. These glossaries draw their content from the databases `plants.bib` and `animals.bib`, using the `bib2gls` feature of Glossaries. These two databases are in simple bibtex format. One entry, for example, reads,

```
@Entry{māṃsī,
citationkey = {māṃsī},
description = {Nardostachys grandiflora, DC. See
               \volcite{1}[\#1691]{NK}},
name        = {spikenard},
}
```

Note the use of BibLaTeX citations in the `description` field. You will have loaded the `biblatex` package earlier for this to work.

Also, note that the separate field "`citationkey = {māṃsī},`" is not necessary (as far as I know). The citation key is the word after `@Entry{` and before the comma. I use JabRef to manage my databases and it adds the `citationkey =` by itself. It does no harm.

The citation keys in the databases, e.g., `māṃsī`, is used as the argument of the macro `\gls{}` in your document. It may contain diacritical marks. For example, you write "The plant is `\gls{māṃsī}`" and your out put PDF will print "The plant is spikenard". The macro `\gls` has looked up "māṃsī" in plants.bib and replaced it with the name "spikenard". At the same time, the entry "spikenard" is written to the glossary at the end of your document, giving the name "māṃsī" and then the contents of the description field from `plants.bib`.

3.2 Singular, plural, capitalized

The command `\glspl{}` produces the plural ("spikenards"). The command `\Gls{}` capitalizes the ouput ("Spikenard"). `\Glspl{}` ... ("Spikenards"). If the plural isn't composed with suffix s, you can add a field "`plural =`" to the `plants.bib` database giving the plural form. (So, with `plural=mongeese`, `\Glspl{nakula}` prints "Mongeese".)

The glossaries at the end of your document are produced by the commands

- `\printunsrtglossary[type=plants]`
- `\printunsrtglossary[type=animals]`
- `\printunsrtglossary[type=minerals]`

glossaries-extra.sty

```
\usepackage[record={only}, % see bib2gls manual, option summary
nostyles,         % don't load things you don't need
style=bookindex,       % load this style
stylemods=bookindex,     % load the updates for this style
postpunc={\,:\ },     % after description, before page numbers
automake,         % run bib2gls automatically; bib2gls manual
section]{glossaries-extra}
```

3.3 Define two glossaries

\newglossary Give names to the database types and to the default headings that will print when the glossaries are printed. Filename extensions etc. are handled silently.

```
\newglossary*{plants}{Flora}
\newglossary*{animals}{Fauna}
\newglossary*{minerals}{Minerals}
```

3.4 Format of the glossary entries

This controls the format of the text printed in the glossaries.
See glossaries-extra.pdf manual, section 8.7.1, p.443

\glsxtrbookindexname

```
\renewcommand*{\glsxtrbookindexname}[1]{%
    \glossentryname{#1}%
    \space (\emph{\the\glslabeltok{#1}})%
    \ifglshasdesc{#1}{\space \glossentrydesc{#1}\glspostdescription}{}%
}
```

Get rid of that pesky pre-comma. (glossaries-extra.pdf manual, section 8.7.1, p.446):

```
\renewcommand*\glsxtrbookindexprelocation[1]{\empty }
```

3.5 Glossary preamble

\setglossarypreamble Tell the reader that a colon (`postpunc` above) is what separates the glossary text from the page numbers. It can be a bit visually confusing.
(glossaries-extra.pdf manual, section 8.7.1, p.443):

```
%\renewcommand{\glossaryname}{Materia Medica} % can do that later
\setglossarypreamble{\emph{\footnotesize
        Numbers after the final colon refer to
        pages in this book.}\bigskip}
```

3.6 Load up the databases

Instructions to `bib2gls`, telling it the location of the databases and what type of data is in each.

The `type=` parameter tells bib2gls what kind of data is in this database. So you can use the same `\gls{}` command whether you are referring to a plant or an animal. `bib2gls` will look through both databases and send the plant identies to the plants glossary and the animals to the animals glossary.

I don't understand why the `field-aliases` parameter is necessary, but it seems to be.

3.7 Plants

```
\GlsXtrLoadResources[
  src={~/Dropbox/localtexmf/bibtex/bib/plants},
  type=plants,
  %selection=all,  % select this if you want all the contents of the database
  field-aliases={identifier=citationkey},
  sort={en-GB},
]
```

3.8 Animals

```
\GlsXtrLoadResources[
  src={~/Dropbox/localtexmf/bibtex/bib/animals},
  type=animals,
  %selection=all,  % select this if you want all the contents of the database
  field-aliases={identifier=citationkey},
  sort={en-GB},
]
```

3.9 Minerals

```
\GlsXtrLoadResources[
  src={~/Dropbox/localtexmf/bibtex/bib/minerals},
  type=minerals,
  %selection=all,  % select this if you want all the contents of the database
  field-aliases={identifier=citationkey},
  sort={en-GB},
]
```

3.10 Print the glossaries

As mentioned above, produce the actual glossaries with:

\printunsrtglossary

- `\printunsrtglossary[type=plants]`
- `\printunsrtglossary[type=animals]`

at the end of your document.

That's all folks!

4 xelatex-indexing-xindex.sty

Formerly used `xindy`; now updated to use `xindex`

These are macros for creating several indexes. First, a lexical index, Sanskrit-English and English-Sanskrit. Secondly An index of manuscripts.

4.1 Load indextools

`indextools.sty`

```
%\usepackage[imakeidx]{xindex} % deprecated by indextools
\usepackage[xindex]{indextools}
```

This is useful if there are multiple indexes, and to make indexing happen during a normal XeTeX run. see
https://cikitsa.blogspot.ca/2016/07/getting-xindy-to-work-for-iast-encoded.html

This should be loaded *before* `hyperref`.

4.2 Create a lexical index

A lexical index that sorts words with diacritical marks. I use this with `\saneng{}{}` to make indexes and reverse indexes of Sanskrit terms. Load the databases:

`\makeindex`

```
\makeindex[name=lexical,
title=Glossary,
columns=2,
%options= --input-markup xelatex -M iast.xdy -L general,
%options = --input-markup xelatex -M de-accent
options=  -c iast -a -n, % nocasesensitive, noheadings
intoc, % put an entry in the table of contents
]
```

4.3 Create an index of manuscripts

Now an index of manuscripts, used by the `\MS` or `\MScite` commands.

`\makeindex`

```
\makeindex[name=manuscripts,
title=Index of Manuscripts,
%program=texindy,
%options = --input-markup xelatex -M iast.xdy -L general,
```

```
%options = --input-markup xelatex -M de-accent
options = -c iast -a -n, % nocasesensitive, noheadings
columns=1,
intoc]
```

4.4 Format the index

\indexsetup

```
\indexsetup{level=\section*,
%    noclearpage,
% firstpagestyle=fancy
othercode= %\footnotesize
    \newcommand{\lettergroup}[1]{\relax}
%
%https://tex.stackexchange.com/questions/541009/index-layout-subitems-on-the-same-line-as-
    \renewcommand\@idxitem{\par}
    \renewcommand\subitem{}
}
```

4.5 User macros for indexing items

A simple command \saneng{sanskrit}{english} to print the English, put the Skt. in parentheses, and send both words to a lexical index.

\saneng

```
% simple command to print the English, put the Skt.
% in parentheses, and send both words to a lexical index.
\newcommand{\saneng}[2]
% #1 = Sanskrit
% #2 = English
{#2 (\emph{#1})%
    %%{\def\tuck{\kern -.175em }%
    %%  \def\loweramount{.6ex }%
    %%  \leavevmode
    %%  \lower\loweramount
    %%  \hbox{\tiny $\llcorner$}\tuck #2 (\sansk{#1})%
    %%  \raise\loweramount
    %%  \hbox{\tuck \tiny $\urcorner$}%
    % and now make the index entries:
    %  \index[lex]{\sansk{#1}!#2@#2}%
    %  \index[lex]{#2@#2!\sansk{#1}}}%
%
% Version with glosses as sub-items:
    \index[lexical]{#2@\MakeLowercase{#2}!#1@\emph{#1}}%
```

```
    \index[lexical]{#1@\emph{#1}!#2@\MakeLowercase{#2}}}
```

\sanidx Like \saneng{}{}, but only print the English, and send the Sanskrit silently to the index:

```
\newcommand{\sanidx}[2]
% #1 = Sanskrit
% #2 = English
{#2%
    %%{\def\tuck{\kern -.175em }%
    %%  \def\loweramount{.6ex }%
    %%  \leavevmode
    %%  \lower\loweramount
    %%  \hbox{\tiny $\llcorner$}\tuck #2 (\sansk{#1})%
    %%  \raise\loweramount
    %%  \hbox{\tuck \tiny $\urcorner$}%
    % and now make the index entries:
    %  \index[lex]{\sansk{#1}!#2@#2}%
    %  \index[lex]{#2@#2!\sansk{#1}}}%
    \index[lexical]{#2@\MakeLowercase{#2}!#1@\emph{#1}}%
    \index[lexical]{#1@\emph{#1}!#2@\MakeLowercase{#2}}}
```

\sanengdev Now a version that prints #1 in Devanagari in the text, but Latin in the index:

```
\newcommand{\sanengdev}[2]
% #1 = Sanskrit
% #2 = English
{#2 (\dev{#1})%
    %%{\def\tuck{\kern -.175em }%
    %%  \def\loweramount{.6ex }%
    %%  \leavevmode
    %%  \lower\loweramount
    %%  \hbox{\tiny $\llcorner$}\tuck #2 (\sansk{#1})%
    %%  \raise\loweramount
    %%  \hbox{\tuck \tiny $\urcorner$}%
    % and now make the index entries:
    %  \index[lex]{\sansk{#1}!#2@#2}%
    %  \index[lex]{#2@#2!\sansk{#1}}}%
%
% Version with glosses as sub-items:
%    \index[lexical]{#2@\MakeLowercase{#2}!#1@\emph{#1}}%
       \index[lexical]{#2@\MakeLowercase{#2}!{#1}@\emph{{#1}}}%
%    \index[lexical]{#1@\emph{#1}!#2@\MakeLowercase{#2}}
       \index[lexical]{{#1}@\emph{{#1}}!#2@\MakeLowercase{#2}}}
%
% Version with glosses on the same line in parens:
%    \index[lexical]{#2@\MakeLowercase{#2 (\emph{#1})}}%
```

```
%    \index[lexical]{#1@\MakeLowercase{\emph{#1} (#2)}}}
%
```

\engsan A variant that puts the English input first; of historical interest only:

```
\newcommand{\engsan}[2]
% #2 = Sanskrit
% #1 = English
{#1 (\sansk{#2})%
    %%{\def\tuck{\kern -.175em }%
    %%  \def\loweramount{.6ex }%
    %%  \leavevmode
    %%  \lower\loweramount
    %%  \hbox{\tiny $\llcorner$}\tuck #2 (\sansk{#1})%
    %%  \raise\loweramount
    %%  \hbox{\tuck \tiny $\urcorner$}%
    % and now make the index entries:
    %  \index[lex]{\sansk{#1}!#2@#2}%
    %  \index[lex]{#2@#2!\sansk{#1}}}%
    \index[lexical]{#1!#2@\emph{#2}}%
    \index[lexical]{#2@\emph{#2}!#1}}
```

\ssaneng Now a silent version of \saneng{}{} that prints nothing in the text but sends the entries to the index.

```
\providecommand{\ssaneng}[2]% silent \saneng index entry
% #1 = Sanskrit
% #2 = English
{%#2 (\sansk{#1})%
    %%{\def\tuck{\kern -.175em }%
    %%  \def\loweramount{.6ex }%
    %%  \leavevmode
    %%  \lower\loweramount
    %%  \hbox{\tiny $\llcorner$}\tuck #2 (\sansk{#1})%
    %%  \raise\loweramount
    %%  \hbox{\tuck \tiny $\urcorner$}%
    % and now make the index entries:
    %  \index[lex]{\sansk{#1}!#2@#2}%
    %  \index[lex]{#2@#2!\sansk{#1}}}%
%
% Version with glosses as sub-items:
     \index[lexical]{#2@\MakeLowercase{#2}!#1@\emph{#1}}%
    \index[lexical]{#1@\emph{#1}!#2@\MakeLowercase{#2}}}
%
   \let\sse=\ssaneng
```

4.6 Obsolete code

Older code, using index.sty: Lexical index, for inclusion in \engsan or \saneng

```
 %\usepackage{index,amssymb}
 %\newindex{lex}{ldx}{lnd}{Lexical Index}
 %\makeatletter
```

4.7 Tweak the item spacing of index items

\@idxitem

```
594 \renewcommand\@idxitem{\par\hangindent 15\p@ }% from sanmed.sty
```

4.8 Obsolete code

```
\newcommand\skt[2]{#1%\footnote{#1: Skt. \emph{#2}}%
% #1 = English
% #2 = Sanskrit
% next lines experimental
 %  \index[skt]{#1!#2@\emph{#2}}%
 % \index[skt]{#2@\emph{#2}!#1}}
 % \makeatother

 test version of \saneng that puts tick marks around the indexed words.
\newcommand{\saneng}[2]
% #1 = Sanskrit
% #2 = English
 %{\def\tuck{\kern -.175em }%
 %\def\loweramount{.6ex }%
 % \leavevmode
 % \lower\loweramount
 % \hbox{\tiny $\llcorner$}\tuck #2 (\sansk{#1})%
 % \raise\loweramount
 % \hbox{\tuck \tiny $\urcorner$}%
% and now make the index entries:
%  \index[lex]{\sansk{#1}!#2@#2}%
%  \index[lex]{#2@#2!\sansk{#1}}}%
 %  \index[lex]{#2!#1@\emph{#1}}%
 % \index[lex]{#1@\emph{#1}!#2}}

 Index of manuscripts, old version for index.sty
 %\newindex{mex}{mdx}{mnd}{Index of Manuscripts}
 %\newcommand{\MS}[1]{MS #1\index[mex]{#1}}
```

```
%\newcommand{\MSsilent}[1]{\index[mex]{#1}}
```

4.9 Macros for citing and indexing manuscripts

New version with `imakeidx`.

`\MS` `\MScite` Say `\MS{Kathmandu, NAK 1-243}`. `\MScite{}` is identical. This prints "MS Kathmandu, NAK 1-243" in the text and sends an entry to the index of manuscripts.

```
\newcommand{\MS}[1]{MS #1\index[manuscripts]{#1}}
    \let\MScite=\MS
\newcommand{\MSsilent}[1]{\index[manuscripts]{#1}}
    \let\MSnocite=\MSsilent
```

4.10 Obsolete code

```
%\renewcommand{\doublespacing}{%
%\renewcommand{\baselinestretch}{1.5}
%\addtolength{\footnotesep}{0.5\footnotesep}}
```

Index

Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.