1 The Thai language

The file `thai.dtx`[1] defines language-specific macros for Thai language.

1.1 Input encoding

Thai documents supported by this language definition can be encoded in either TIS-620 (ISO/IEC 8859-11) or UTF-8 with the aids of the `inputenc` package.

`\thaitext` `\latintext` The commands `\thaitext` and `\latintext` can be used to switch to Thai or Latin fonts. These are declarations.

`\textthai` `\textlatin` The commands `\textthai` and `\textlatin` both take one text argument which is then typeset using the requested language settings.

`\textpali` The command `\textpali` takes one text argument which is then typeset using Thai font, with special shapes for certain characters, such as descender-less Yo Ying and Tho Than, as required by usual Pali-Sanskrit transliteration.

1.2 Word breaks

Thai is written continuously without word delimitors. The word boundary analysis is considered too complicated for rule-based approaches. Most available good-quality word analysis tools employ special matching algorithms against pre-defined dictionaries. Some even use statistics-based contextual analysis to resolve ambiguities. Therefore, no good hyphenation pattern is found to be comparable with those tools yet.

`\wbr` What provided here for the word boundary problem is the `\wbr` command for separating words. It delimits words without taking physical space, so that the TEX typesetter still wraps lines at word boundary like when it typesets English text.

Therefore, one can preprocess their Thai document using Thai word analysis tools which automatically insert the `\wbr` commands between words, such as:

- *cttex* by Vuthichai Ampornaramveth
- *swath* by Phaisarn Charoenpornsawat, now maintained by Thai Linux Working Group, which can be downloaded from:
  `ftp://linux.thai.net/pub/thailinux/software/swath`

  To compile *swath*, you need *libdatrie* as the dependency, which is provided under the *libthai* project:
  `ftp://linux.thai.net/pub/thailinux/software/libthai`

[1] The file described in this section has version number v1.8 and was last revised on 2013/03/31. The original author was Surapant Meknavin, and it was composed into `thai.dtx` and maintained by Theppitak Karoonboonyanan (`thep@linux.thai.net`).

1.3 Thai paragraph

Generally speaking, Thai paragraph uses the same rule as in English. However, there are some differences, such as how to start the paragraph in a new chapter or section.

thaiindentfirst

As suggested by English writing guideline, the first paragraph in each section shall not be indented. However, for Thai language, indenting the first paragraph is more popular and widely suggested. The option thaiindentfirst can be used to control this behavior.

1.4 Thai numbering

Some certain Thai documents use Thai digits instead of Arabic. And Thai alphabetic numbering is also commonly used for appendices. This file provides a number of numbering styles that can be applied to LaTeX `\pagenumbering` command:

- `\thainum` for plain Thai digits
- `\thaibracenum` for Thai digits in parentheses
- `\thaialph` for Thai alphabetic numbering, using a reduced set (with three alphabets skipped: Kho Khuat, Kho Khon and Kho Rakhang)
- `\thaiAlph` for Thai alphabetic numbering, using the full set (with full alphabet set, plus two semi-vowels, Ru and Lu, in the order defined in Thai official dictionary)

thainumber

The above numbering styles can be automatically chosen using the thainumber option. When this option is supplied to the babel package, Thai numberings will be applied to pages, sections, enumerations, dates, etc.

1.5 Thai language definition

The macro `\LdfInit` takes care of preventing file from being loaded more than once, checking the category code of the `@` sign, etc.

```
1 ⟨*code⟩
2 \LdfInit\CurrentOption{captions\CurrentOption}
```

When this file is read as an option, i.e. by the `\usepackage{babel}` command, `thai` will be an 'unknown' language, in which case we have to make it known. So, we check for the existence of `\l@thai` to see whether we have to do something here.

```
3 \ifx\l@thai\@undefined
4   \@nopatterns{thai}
5   \adddialect\l@thai0\fi
```

1.5.1 Thai character encoding

In this language definition, we support TIS-620, the national standard 8-bit character encoding, and Unicode by means of `inputenc` package.

The encoding has been described in terms of TIS-620 as `LTH` in the `lthenc.def` file. So, we require it.

```
\InputIfFileExists{lthenc.def}%
  {\message{Loading the definitions for the Thai font encoding}}%
  {%
    \errhelp{I can't find the lthenc.def file for the Thai fonts}%
    \errmessage{Since I do not know what the LTH encoding means^^J
      I can't typeset Thai.^^J
      I stop here, while you get a suitable lthenc.def file}\@@end
  }
```

The next step consists of defining commands to switch to the Thai language, for users to switch back and forth between languages.

`\thaitext` We define `\thaitext` as a declarative switch to Thai font encoding.

```
\DeclareRobustCommand{\thaitext}{%
  \fontencoding{LTH}\selectfont%
  \def\encodingdefault{LTH}}
```

`\textthai` This command takes one text argument which is then typeset using Thai font encoding.

```
\DeclareRobustCommand{\textthai}[1]{{\thaitext #1}}
```

1.5.2 Pali-Sanskrit Transliteration

Thai script can also be used for writing Pali and Sanskrit. Additional conventions are applied when doing so: (a) Yo Ying and Tho Than must be written without descender; (b) Phinthu is used for marking cluster; (c) Nikhahit is used as a Pali-Sanskrit consonant.

(b) is inherently applicable as combining character. So is (c), with an exception for the case in which it is combined over upper vowel (namely, Sara I), where it must be shifted to higher position. Nikhahit shifting is implemented in the ligkern rules with the extra glyph provision in the fonts.

What is left here is (a). Yo Ying and Tho Than must be converted to their descender-less variants. The `\textpali` macro is defined for this purpose. Note that `\wbr` commands which are normally inserted by automatic tools are ignored here, as most of such tools are not designed for Pali/Sanskrit. Besides, Pali/Sanskrit is already space delimited.

`\textpali` This command converts all Yo Ying and Tho Than in its argument to their descender-less variations.

```
\DeclareRobustCommand{\textpali}[1]{%
  \begingroup
    \def\thaiYoYing{\textYoYingPali{}}%
```

```
    \def\thaiThoThan{\textThoThanPali{}}%
    \def\wbr{}%
    \scantokens\expandafter{#1}\relax
  \endgroup
}
```

1.5.3 Hyphenation

We define `\thaihyphenmins` macro for hyphenation parameters. This is one of the five macros required by babel.

`\thaihyphenmins` This macro is used to store the correct values of the hyphenation parameters `\lefthyphenmin` and `\righthyphenmin`. They are set to 11.

```
\providehyphenmins{thai}{11}
```

1.5.4 Captions translation

We define `\captionsthai` macro for translations of strings. This is one of the five macros required by babel.

`\captionsthai` The macro `\captionsthai` defines all strings used in the four standard document-classes provided with LaTeX.

```
\addto\captionsthai{%
  \def\prefacename{\thaiKhoKhwai\thaiSaraAm\thaiNoNu\thaiSaraAm}%
  \def\refname{\thaiSaraE\thaiOAng\thaiKoKai\thaiSoSua\thaiSaraAa\thaiRoRua%
               \thaiOAng\thaiMaiTho\thaiSaraAa\thaiNgoNgu%
               \thaiOAng\thaiSaraI\thaiNgoNgu}%
  \def\abstractname{\thaiBoBaimai\thaiThoThahan%
                    \thaiKhoKhwai\thaiMaiHanakat\thaiDoDek%
                    \thaiYoYak\thaiMaiEk\thaiOAng}%
  \def\bibname{\thaiBoBaimai\thaiRoRua\thaiRoRua\thaiNoNen\thaiSaraAa%
               \thaiNoNu\thaiSaraU\thaiKoKai\thaiRoRua\thaiMoMa}%
  \def\chaptername{\thaiBoBaimai\thaiThoThahan%
                   \thaiThoThahan\thaiSaraIi\thaiMaiEk}%
  \def\appendixname{\thaiPhoSamphao\thaiSaraAa\thaiKhoKhwai%
                    \thaiPhoPhung\thaiNoNu\thaiWoWaen\thaiKoKai}%
  \def\contentsname{\thaiSoSua\thaiSaraAa\thaiRoRua%
                    \thaiBoBaimai\thaiMaiHanakat\thaiYoYing}%
  \def\listfigurename{\thaiSoSua\thaiSaraAa\thaiRoRua%
                      \thaiBoBaimai\thaiMaiHanakat\thaiYoYing%
                      \thaiRoRua\thaiSaraUu\thaiPoPla}%
  \def\listtablename{\thaiSoSua\thaiSaraAa\thaiRoRua%
                     \thaiBoBaimai\thaiMaiHanakat\thaiYoYing%
                     \thaiToTao\thaiSaraAa\thaiRoRua\thaiSaraAa\thaiNgoNgu}%
  \def\indexname{\thaiDoDek\thaiRoRua\thaiRoRua\thaiChoChang%
                 \thaiNoNu\thaiSaraIi}%
  \def\figurename{\thaiRoRua\thaiSaraUu\thaiPoPla%
                  \thaiThoThahan\thaiSaraIi\thaiMaiEk}%
  \def\tablename{\thaiToTao\thaiSaraAa\thaiRoRua\thaiSaraAa\thaiNgoNgu%
```

```
                \thaiThoThahan\thaiSaraIi\thaiMaiEk}%
  \def\partname{\thaiPhoSamphao\thaiSaraAa\thaiKhoKhwai}%
  \def\enclname{\thaiSoSua\thaiSaraI\thaiMaiEk\thaiNgoNgu%
                \thaiThoThahan\thaiSaraIi\thaiMaiEk%
                \thaiSaraAe\thaiNoNu\thaiBoBaimai%
                \thaiMoMa\thaiSaraAa%
                \thaiDoDek\thaiMaiTho\thaiWoWaen\thaiYoYak}%
  \def\ccname{\thaiSoSua\thaiSaraAm\thaiSaraE\thaiNoNu\thaiSaraAa%
              \thaiThoThung\thaiSaraUe\thaiNgoNgu}%
  \def\headtoname{\thaiSaraE\thaiRoRua\thaiSaraIi\thaiYoYak\thaiNoNu}%
  \def\pagename{\thaiHoHip\thaiNoNu\thaiMaiTho\thaiSaraAa}%
  \def\seename{\thaiDoDek\thaiSaraUu}%
  \def\alsoname{\thaiDoDek\thaiSaraUu%
                \thaiSaraE\thaiPhoPhan\thaiSaraI\thaiMaiEk\thaiMoMa%
                \thaiSaraE\thaiToTao\thaiSaraI\thaiMoMa}%
  \def\proofname{\thaiPhoPhan\thaiSaraI%
                 \thaiSoSua\thaiSaraUu\thaiChoChan\thaiNoNu\thaiThanthakhat}%
  }
```

1.5.5 Date

Here we define `\datethai` macro for Thai date format. This is one of the five macros required by babel.

First, let's define the months in Thai.

```
\def\th@month{%
  \ifcase\month\or
    \thaiMoMa\thaiKoKai\thaiRoRua\thaiSaraAa\thaiKhoKhwai\thaiMoMa \or
    \thaiKoKai\thaiSaraU\thaiMoMa\thaiPhoSamphao\thaiSaraAa%
      \thaiPhoPhan\thaiMaiHanakat\thaiNoNu\thaiThoThong\thaiThanthakhat \or
    \thaiMoMa\thaiSaraIi\thaiNoNu\thaiSaraAa\thaiKhoKhwai\thaiMoMa \or
    \thaiSaraE\thaiMoMa\thaiSoRusi\thaiSaraAa\thaiYoYak\thaiNoNu \or
    \thaiPhoPhan\thaiRu\thaiSoRusi\thaiPhoSamphao\thaiSaraAa%
      \thaiKhoKhwai\thaiMoMa \or
    \thaiMoMa\thaiSaraI\thaiThoThung\thaiSaraU\thaiNoNu\thaiSaraAa%
      \thaiYoYak\thaiNoNu \or
    \thaiKoKai\thaiRoRua\thaiKoKai\thaiDoChada\thaiSaraAa%
      \thaiKhoKhwai\thaiMoMa \or
    \thaiSoSua\thaiSaraI\thaiNgoNgu\thaiHoHip\thaiSaraAa%
      \thaiKhoKhwai\thaiMoMa \or
    \thaiKoKai\thaiMaiHanakat\thaiNoNu\thaiYoYak\thaiSaraAa%
      \thaiYoYak\thaiNoNu \or
    \thaiToTao\thaiSaraU\thaiLoLing\thaiSaraAa\thaiKhoKhwai\thaiMoMa \or
    \thaiPhoPhan\thaiRu\thaiSoSala\thaiChoChan\thaiSaraI\thaiKoKai\thaiSaraAa%
      \thaiYoYak\thaiNoNu \or
    \thaiThoThong\thaiMaiHanakat\thaiNoNu\thaiWoWaen\thaiSaraAa%
      \thaiKhoKhwai\thaiMoMa
  \fi}
```

Thai official calendar uses Buddhist Era, the era whose start is marked by Buddha's entry into Parinirvana. In original form, it is a lunar calendar. But in

Thai contemporary calendar, it is synchronized to Gregorian calendar, with offset of 543 years back.

```
\newcount\th@year
\th@year=\year
\advance\th@year by 543
```

Then, we come to the `\datethai` macro.

`\datethai` Thai date format is in the day-month-year order, using Buddhist Era.

```
\def\datethai{%
  \def\today{\number\day \space \th@month\space %
             \thaiPhoPhan.\thaiSoSala.~\number\th@year}}
```

1.5.6 Extra definitions for language switching

Then, the last two macros required by babel are `\extrasthai` and `\noextrasthai` containing extra definitions needed for Thai language upon switching to and out of it, respectively.

```
\addto\extrasthai{\thaitext}
\addto\noextrasthai{\latintext}
```

1.6 Word break support

As Thai script is written continuously without word delimitors, we define `\wbr` command to mark word boundaries without taking space, so that TEXtypesetter can wrap Thai lines at proper positions.

```
\def\wbr{\hskip0pt\relax}
```

1.7 Space stretching

Since ordinary Thai text contains fewer spaces than English, the TEX justification is stressed with fewer places to stretch to make the line reach the right margin. This usually ends up with overfull lines when TEX decides to include the next word to fill the space, instead of trying to manipulate spacing with appropriate amount of text. Possible solutions to this problem include:

- *Use letter spacing.* This is a common practice in Thai publishing. However, TEX does not allow this, probably not to shag sheep.[2]
- *Allow stretching between words.* This used to be a simple hack in an old version of this module, until it was finally dropped in version 1.4b, as it was considered suboptimal.
- *Allow more space stretching.* This can be more acceptable, compared to the ragged right margin. And it is what we do here.

[2] *"Men who would letterspace blackletter would shag sheep" — Frederick Goudy.*

```
\addto\extrasthai{%
  \edef\th@restoreemstretch{\emergencystretch=\the\emergencystretch}
  \setlength{\emergencystretch}{0.6em}}
\addto\noextrasthai{\th@restoreemstretch}
```

1.8 Line spacing

Due to multi-level combining character stacking, Thai text lines can occupy more vertical space than English. To prevent overlapping, TEX allocates more height for lines with combining characters but not for those without. This can cause irregular line spacing. To avoid this problem, we need to stretch the line spacing.

```
\renewcommand{\baselinestretch}{1.2}
```

1.9 Paragraph

This section provides Thai paragarph formating style as described in §1.3.

1.9.1 thaiindentfirst option

If thaiindentfirst is supplied in the `\usepackage` command, the first Thai paragraph in each section will be indented. The other paragraphs will behave as default.

```
\DeclareOption{thaiindentfirst} {%
```

When switching to Thai language, point `\@afterindentfalse` to `\@afterindentrue`, so that LATEX will never indent the first paragraph.

```
  \addto\extrasthai{%
    \let\th@afterindentfalse\@afterindentfalse
    \let\@afterindentfalse\@afterindenttrue
    \@afterindenttrue
  }
```

When switching out of Thai language, point `\@afterindentfalse` back to its original function.

```
  \addto\noextrasthai{%
    \let\@afterindentfalse\th@afterindentfalse
  }
}
```

1.10 Thai numbering support

This section provides Thai numbering styles as described in §1.4: `\thainum`, `\thaibracenum`, `\thaialph` and `\thaiAlph`.

First, we define a macro for translating decimal digits into Thai digits.

`\thaitranslate` The `\thaitranslate` macro determines decimal digits in the argument and convert them to Thai digit one by one, until the '`@`' terminator is found.

```
\def\thaitranslate#1{\ifx @#1%
```

```
    \else\ifcase#1
      \thaizero \or \thaione \or \thaitwo \or \thaithree \or \thaifour \or
      \thaifive \or \thaisix \or \thaiseven \or \thaieight \or \thainine
      \else\fi
      \expandafter\thaitranslate
    \fi
}
```

`\thainum` The `\thainum` macro is to be used as a numbering style in LaTeX `\pagenumbering` command.

It takes a counter name and converts its value into Thai digits. In details, it prepends the counter name with '`c@`' to access the counter value, then calls `\@thainum` to convert it into Thai digits.

The `\@thainum` macro converts a number into Thai digits. It expands the argument into a number, terminates it with '`@`', and calls `\thaitranslate` to convert it into Thai digits.

```
\def\@thainum#1{\expandafter\thaitranslate\number#1@}
\def\thainum#1{\expandafter\@thainum\csname c@#1\endcsname}
```

`\thaibracenum` Similar to `\thainum`, the `\thaibracenum` macro is to be used as a numbering style in LaTeX `\pagenumbering` command.

It provides Thai digits numbering, surrounded by parentheses.

```
\def\@thaibracenum#1{(\expandafter\thaitranslate\number#1@)}
\def\thaibracenum#1{\expandafter\@thaibracenum\csname c@#1\endcsname}
```

Now come to Thai alphabetic numbering, beginning with the reduced set.

`\thaialph` The `\thaialph` macro is to be used as a numbering style in LaTeX `\pagenumbering` command.

It converts a number not greater than 41 into Thai alphabet in the corresponding order in the reduced set. In this set, 3 characters are skipped: Kho Khuat, Kho Khon and Kho Rakhang.

```
\def\thaialph#1{\expandafter\@thaialph\csname c@#1\endcsname}
\def\@thaialph#1{%
  \ifcase#1\or \thaiKoKai\or \thaiKhoKhai\or \thaiKhoKhwai\or \thaiNgoNgu\or
    \thaiChoChan\or \thaiChoChing\or \thaiChoChang\or \thaiSoSo\or
    \thaiChoChoe\or \thaiYoYing\or \thaiDoChada\or \thaiToPatak\or
    \thaiThoThan\or \thaiThoNangmontho\or \thaiThoPhuthao\or \thaiNoNen\or
    \thaiDoDek\or \thaiToTao\or \thaiThoThung\or \thaiThoThahan\or
    \thaiThoThong\or \thaiNoNu\or \thaiBoBaimai\or \thaiPoPla\or
    \thaiPhoPhung\or \thaiFoFa\or \thaiPhoPhan\or \thaiFoFan\or
    \thaiPhoSamphao\or \thaiMoMa\or \thaiYoYak\or \thaiRoRua\or
    \thaiLoLing\or \thaiWoWaen\or \thaiSoSala\or \thaiSoRusi\or
    \thaiSoSua\or \thaiHoHip\or \thaiLoChula\or \thaiOAng\or
    \thaiHoNokhuk\else\@ctrerr\fi}
```

\thaiAlph Similar to \thaialph, the \thaiAlph macro provides Thai alphabetic numbering with full alphabet set in the order defined in Thai official dictionary. So, it supports up to 44 entries.

```
\def\thaiAlph#1{\expandafter\@thaiAlph\csname c@#1\endcsname}
\def\@thaiAlph#1{%
  \ifcase#1\or \thaiKoKai\or \thaiKhoKhai\or \thaiKhoKhuat\or \thaiKhoKhwai\or
    \thaiKhoKhon\or \thaiKhoRakhang\or \thaiNgoNgu\or \thaiChoChan\or
    \thaiChoChing\or \thaiChoChang\or \thaiSoSo\or \thaiChoChoe\or
    \thaiYoYing\or \thaiDoChada\or \thaiToPatak\or \thaiThoThan\or
    \thaiThoNangmontho\or \thaiThoPhuthao\or \thaiNoNen\or \thaiDoDek\or
    \thaiToTao\or \thaiThoThung\or \thaiThoThahan\or \thaiThoThong\or
    \thaiNoNu\or \thaiBoBaimai\or \thaiPoPla\or \thaiPhoPhung\or
    \thaiFoFa\or \thaiPhoPhan\or \thaiFoFan\or \thaiPhoSamphao\or
    \thaiMoMa\or \thaiYoYak\or \thaiRoRua\or \thaiLoLing\or
    \thaiWoWaen\or \thaiSoSala\or \thaiSoRusi\or \thaiSoSua\or
    \thaiHoHip\or \thaiLoChula\or \thaiOAng\or \thaiHoNokhuk\else\@ctrerr\fi}
```

1.10.1 thainumber option

Not all Thai documents use Thai digits. So, we support this as an option. If thainumber option is supplied in the \usepackage command, Thai digits will be used in all numberings.

```
\DeclareOption{thainumber}{
```

We need to use the '@' character in macro implementations. So, make it a normal charactor.

```
\catcode`\@=11
```

Since \renewcommand will fail if the renewed command does not exist, and we are redefining counters independently on the document class being used, we had better check for the counters' existence before redefining them. To do so, we define a helper macro for this.

```
\def\@overridecommand#1#2{\ifdefined#1\renewcommand{#1}{#2}\fi}
```

Then, set default page numbering to thainum, and redefine counters to thainum.

```
\pagenumbering{thainum}
\@overridecommand\theenumi{\@thainum\c@enumi}
\@overridecommand\theenumii{\@thaialph\c@enumii}
%\@overridecommand\theenumiii{\@roman\c@enumiii}
%\@overridecommand\theenumiv{\@Alph\c@enumiv}
\@ifundefined{thechapter}%
  {\@overridecommand\thesection{\@thainum\c@section}%
   \@overridecommand\thesubsection{\thesection.\@thainum\c@subsection}%
   \@overridecommand\thesubsubsection{\thesubsection.\@thainum\c@subsubsection}%
   \@overridecommand\theparagraph    {\thesubsubsection.\@thainum\c@paragraph}%
   \@overridecommand\thesubparagraph {\theparagraph.\@thainum\c@subparagraph}%
   \@overridecommand\theequation{\@thainum\c@equation}%
```

```
   \@overridecommand\thetable{\@thainum\c@table}%
   \@overridecommand\thefigure{\@thainum\c@figure}}%
  {\@overridecommand\thepart{\@thainum\c@part}%
   \@overridecommand\thechapter{\@thainum\c@chapter}%
   \@overridecommand\thesection{\thechapter.\@thainum\c@section}%
   \@overridecommand\thesubsection{\thesection.\@thainum\c@subsection}%
   \@overridecommand\thesubsubsection{\thesubsection.\@thainum\c@subsubsection}%
   \@overridecommand\theparagraph    {\thesubsubsection.\@thainum\c@paragraph}%
   \@overridecommand\thesubparagraph {\theparagraph.\@thainum\c@subparagraph}%
   \@overridecommand\theequation%
       {\ifnum \c@chapter>\z@ \thechapter.\fi \@thainum\c@equation}%
   \@overridecommand \thetable%
       {\ifnum \c@chapter>\z@ \thechapter.\fi \@thainum\c@table}%
   \@overridecommand \thefigure%
       {\ifnum \c@chapter>\z@ \thechapter.\fi \@thainum\c@figure}}
\@overridecommand\thefootnote{\@thainum\c@footnote}
```

For theorems, we support all custom theorem counters at once by redefining `\@thmcounter` macro.

```
\def\@thmcounter#1{\noexpand\thainum{#1}}
```

In book class, page numberings for frontmatter and mainmatter are different. So, redefine them.

```
\@ifclassloaded{book}{%
  % redefine page numbering for frontmatter and mainmatter
  \def\ps@headnum{\let\@mkboth\@gobbletwo
       \def\@oddhead{\reset@font\hfil\thepage\hfil}\let\@oddfoot\@empty
       \let\@evenhead\@oddhead\let\@evenfoot\@empty}
  \let\@ltxfrontmatter\frontmatter
  \renewcommand\frontmatter%
    {\@ltxfrontmatter\pagestyle{headnum}\pagenumbering{thaibracenum}}
  \let\@ltxmainmatter\mainmatter
  \renewcommand\mainmatter%
    {\@ltxmainmatter\pagestyle{headings}\pagenumbering{thainum}}
}{}
```

Redefine Thai date using Thai digits.

```
\def\datethai{%
  \def\today{\@thainum\day\space \th@month\space %
             \thaiPhoPhan.\thaiSoSala.~\@thainum\th@year}
}
```

And finish declaration of thainumber option

```
\relax
}
```

Always use thaialph as counter for appendix

```
\@ifclassloaded{book}{%
\renewcommand\appendix{\par
  \setcounter{chapter}{0}%
```

```
  \setcounter{section}{0}%
  \gdef\@chapapp{\appendixname}%
  \gdef\thechapter{\@thaialph\c@chapter}}
}{}
\@ifclassloaded{report}{%
\renewcommand\appendix{\par
  \setcounter{chapter}{0}%
  \setcounter{section}{0}%
  \gdef\@chapapp{\appendixname}%
  \gdef\thechapter{\@thaialph\c@chapter}}
}{}
\@ifclassloaded{article}{%
\renewcommand\appendix{\par
  \setcounter{section}{0}%
  \setcounter{subsection}{0}%
  \gdef\thesection{\@thaialph\c@section}}
}{}
```

1.11 Miscellaneous

Initialize character codes for Thai

```
\catcode‘\^^a1=11 \lccode‘\^^a1=‘\^^a1 \uccode‘\^^a1=‘\^^a1
\catcode‘\^^a2=11 \lccode‘\^^a2=‘\^^a2 \uccode‘\^^a2=‘\^^a2
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⟨/code⟩