The **abbrevs** LaTeX package
abbreviation macros (Frankenstein’s briefs)

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Version: 1.2   Date: 1999/03/08
Documentation revision: 1999/03/08

**Abstract**

“Abbreviation macros” expand to defined text and insert following space intelligently, based on context. They can also expand to one thing the first time they are used and another thing on subsequent invocations. Thus they can be abbreviations in two senses, in the source and in the document. Useful applications include the abstraction of textual elements such as names without fussing over spacing and the automatic expansion of abbreviations and acronyms at their first use. The initial and subsequent expansions of an abbreviation macro are available at any time via explicit commands. Abbreviation macros are grouped into categories; there are hooks applicable to each category. Categories can be reset so that subsequent abbreviation macros in that category behave as if used for the first time again.

A generic facility is also provided for suffixes like 1900 B.C. and 6:00 P.M., which correctly handles following periods.

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Part I
Discussion

1 General

An abbreviation macro \texttt{\foo} that expands to \texttt{(text)} is robust; \texttt{\foo} can be used in place of \texttt{(text)} almost anywhere. A space is inserted following an abbreviation macro when the first non-white character following it is \texttt{not} in the set \texttt{\nospacelist}, whose default value is \texttt{, . ':;?~!}{).}

When an abbreviation macro has different initial and subsequent expansions, either may be explicitly requested by adding a suffix to the abbreviation macro. The commands \texttt{\(command\)short} and \texttt{\(command\)long} are also defined whenever an abbreviation macro \texttt{\(command\)} is defined. Using the \texttt{\(command\)long} command does not affect what the next abbreviation macros expands to.

All abbreviation macros are assigned categories, identified by a string. Four categories are defined by the package, and it is easy to add more. Categories facilitate handling different groups of abbreviation macros in different ways.

\textbf{Warning:} Regarding CJK macros and probably other 8-bit input. If you use the abbrevs package with the CJK macros for typesetting Chinese, Japanese, and Korean text, you must define your abbreviations within the CJK environment. I believe that the CJK macros work by interpreting 8-bit input in the source file. But this input is only interpreted properly within the CJK environment. If you define the abbrevs outside, such as in the preamble, you will just get a bunch of numbers when your abbreviation expands.

I would use capital letters for the name of this macro, since it doesn’t seem like a user command to me, but I’m modelling after the kernel’s \texttt{\nocorrlist}.

\textbf{To do:} Emulate the acronym and acromake packages.

2 Usage

Examples of how to define abbreviation macros:

\begin{verbatim}
\newbook\worst{Worstward Ho}
\newbook\fall{All That Fall}
\newbook\nacht{Nacht und Tr"aume}
\newbook\csp{Collected Shorter Plays \textit{(}CSP\textit{)}}[CSP]
\newname\joyce{James Joyce}[Joyce]
\newname\nixon{Richard Milhou\textsc{s} Nixon}[Nixon]
\newname\ww{Wordsworth}
\newname\beckett{Samuel Beckett}[Beckett]
\newwork\godot{Waiting for Godot}[Godot]
\newbook\prelude{The Prelude}
\newabbrev\ART{American Repetrory Theater (ART)}[ART]
\end{verbatim}

\textbf{To do:} Give example of using \texttt{\short} or \texttt{\long}.
Examples of how to use the macros, and how they are typeset:\footnote{\texttt{\lips} is defined in the \texttt{lips} package, part of the \texttt{Frankenstein} bundle.}
The manuscripts of Wordsworth's *The Prelude* differ. Before he began *The Prelude*, Wordsworth wrote...

LOOKS LIKE:
The manuscripts of Wordsworth's *The Prelude* differ... Before he began *The Prelude*, Wordsworth wrote...

Richard Milhous Nixon was the 37th American President... Many Americans like my uncle Norm voted for Nixon enthusiastically in both 1968 and 1972.

LOOKS LIKE:
Richard Milhous Nixon was the 37th American President... Many Americans like my uncle Norm voted for Nixon enthusiastically in both 1968 and 1972.

Samuel Beckett gained international notoriety with the play *Waiting for Godot* in the early 1950s. Beckett wrote *Godot*, he said, as a diversion from the novels he was then writing. I have seen this play at the American Repertory Theater (ART) in Cambridge, Massachusetts. The ART is often disappointing, but I liked their production of *Godot*.

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\newabbrev \newabbrev {\(\text{\textbackslash command}\)}{\{\text{\textbackslash initial}\}}{\{\text{\textbackslash subsequent}\}} defines an abbreviation macro {\(\text{\textbackslash command}\)} of category Generic.
\newname \newname {\(\text{\textbackslash command}\)}{\{\text{\textbackslash initial}\}}{\{\text{\textbackslash subsequent}\}} defines an abbreviation macro {\(\text{\textbackslash command}\)} of category Name.
\newbook \newbook {\(\text{\textbackslash command}\)}{\{\text{\textbackslash initial}\}}{\{\text{\textbackslash subsequent}\}} defines an abbreviation macro {\(\text{\textbackslash command}\)} of category Book.
\newwork \newwork {\(\text{\textbackslash command}\)}{\{\text{\textbackslash bibliography key}\}}{\{\text{\textbackslash initial}\}}{\{\text{\textbackslash subsequent}\}} defines an abbreviation macro {\(\text{\textbackslash command}\)} of category Work. Works can be distinguished from books by being listed in a separate bibliography, e.g., of primary works referred to by short titles in the main text. The defining command therefore requires a \texttt{BibTeX} key as an argument. The first use of the work serves as a citation to that bibliography, and all uses of the work generate an index entry.

To do: Work are not yet fully implemented. Presently they are the same as Books.

3 Date Marks

\PM These variants of abbreviation macros correctly handle following periods.
\AM She left for work before 6\AM, but
\BC did not arrive until 12\PM. The
\AD interval 5\BC--5\AD is one year
shorter than the interval
95\AD--105\AD.
She left for work before 6 a.m., but did not arrive until 12 p.m. The interval 5 B.C.–5 A.D. is one year shorter than the interval 95 A.D.–105 A.D.

4 Programmers’ interface

\ResetAbbrevs

When abbreviation macros are reset, their next invocation will expand to the initial text. Subsequent occurrences will expand to the subsequent text again. For example, using \ResetAbbrevs {Name} at the beginning of chapters will cause the full name to be used only for the first occurrence in each chapter. \ResetAbbrevs {\category list} resets all abbreviation macros of the listed categories. The list is comma-separated, and the category All is a shorthand for all defined categories. Example:

\SaveCS\chapter
\renewcommand\chapter {%
\ResetAbbrevs{All}%
\MDSavedchapter
}

\NewAbbrevCategory

To create new categories of abbreviation, use \NewAbbrevCategory{\category name}. Macros \TMFont{\category}, \TMHook{\category}, and \TMReset{\category} are all reserved. The hook and font slots start empty. The virtual category All is predefined and refers to all defined categories. \TMHookAll and \TMFontAll are called before the respective category-specific commands.

\NewUserAbbrevDefiner

A user command (defining command). With the default \DefineAbbrevStandard, the (defining command) will take the arguments {\abbreviation command}{\initial text}{\subsequent text} and defines (abbreviation command) to be a plain or switching abbreviation macro as appropriate. If given, the optional argument (definer) should be a macro name, which will be first be passed a {\category}, then will read user arguments (e.g., in the case of \DefineAbbrevStandard, {\cs}\{\initial\}\{\subsequent\}). The (definer) is expected of course to do something like define \cs.

\TMInitialSuffix \TMSubsequentSuffix

The factory default suffixes “short” and “long” may be changed by changing the definitions of \TMSubsequentSuffix and \TMInitialSuffix. The change should be made after the package is loaded but before any abbreviation macros have been defined.

\DateMark

Abbreviation macros like \PM are defined as \DateMarks, like this, without the final period:

\newcommand\PM {%
\DateMark{p.m}%
}

\ifTMInhibitSwitching \TMInhibitSwitchingfalse \TMInhibitSwitchingtrue \ifTMAwaysLong \TMAwaysLongtrue \TMAwaysLongfalse

When \ifTMInhibitSwitching is true, first occurrences of an abbreviation macro will expand to the initial expansion as usual, but they will not trigger the change to subsequent expansions. Example: inhibit switching inside footnotes, and abbreviations will not be spelled out for the first and only time in a footnote. That is, if their first appearance is in a footnote, their first appearance in the main
text will also expand to the long version. See the configuration file for how to do this.

When \texttt{\textsc{TMAlwaysLong}} is true, every abbreviation macro expands to its initial expansion.
Part II
Implementation

5 Version control

\fileinfo
\DoXUsepackage
\HaveECitationS
\fileversion
\docdate
\PPOptArg

These definitions must be the first ones in the file.

1 \def\fileinfo{abbreviation macros (Frankenstein's briefs)}
2 \def\DoXPackageS {abbrevs}
3 \def\fileversion{v1.2}
4 \def\docdate{1999/03/08}
5 \def\docdate{1999/03/08}
6 \edef\PPOptArg {%
7 \filedate\space \fileversion\space \fileinfo
8 }

If we're loading this file from a \ProcessDTXFile command (see the compsci package), then \justloadinformation will be defined; otherwise we assume it is not (that's why the FunkY Name).

If we're loading from \ProcessDTXFile, we want to load the packages listed in \DoXPackageS (needed to typeset the documentation for this file) and then bail out. Otherwise, we're using this file in a normal way as a package, so do nothing. \DoXPackageS, if there are any, are declared in the dtx file, and, if you're reading the typeset documentation of this package, would appear just above. (It's OK to call \usepackage with an empty argument or \relax, by the way.)

9 \makeatletter% A special comment to help create bst files. Don’t change!
10 \ifundefined{justloadinformation} {
11 }{% ELSE (we know the compsci package is already loaded, too)
12 \undefinedcs\justloadinformation
13 \SaveDoXVarS
14 \eExpand\csname DoXPackageS\endcsname\In %{use \csname in case it’s undefined
15 \usepackage[#1]%
16 }%
17 \RestoreDoXVarS
18 \makeatother
19 \endinput
20 \% A special comment to help create bst files. Don’t change!

Now we check for \LaTeX2e and declare the \LaTeX package.

21 \NeedsTeXFormat{LaTeX2e}
22 \ProvidesPackage{abbrevs}[/PPOptArg]

6 Requirements

23 \NeedsTeXFormat{LaTeX2e}[1995/12/01]
24 \RequirePackage{moredefs,slemph}

7 Basics

Let’s begin with the tricky part of inserting space based on context. The strategy is: first, if the following character is not in \nocorr and the current font is
not slanted, insert an italic correction with \sw@slant; second, if the following character is not in \nospacelist, insert a space.

Again, in pseudocode:

\begin{verbatim}
LET T = the next token 
IF (slanted font is current AND T NOT IN \nocorrlist)
  \sw@slant 
FI 
IF T NOT IN \nospacelist
  \space 
FI 
\end{verbatim}

\nospacelist

Put these in the order of their frequency. Anything in \nocorrlist should also be in here, most likely.

\begin{verbatim}
25 \newcommand\nospacelist {\%
26  ,.';?-~!)[bgroup\egroup
27 \}%
\end{verbatim}

\maybe@ic@space
\maybe@ic@space checks the next character and inserts an italic correction and space as appropriate.

\begin{verbatim}
28 \newcommand\maybe@ic@space {\%
29 \futurelet\@let@token\maybe@ic@space@ 
30 \}%
\end{verbatim}

We first call the kernel’s \maybe@ic@, then our own \maybe@space@.

\begin{verbatim}
31 \newcommand\maybe@ic@space@ {\%
32 \maybe@ic@ 
33 \maybe@space@ 
34 \}%
\end{verbatim}

\maybe@space
\maybe@space and \maybe@space@ are very similar to the kernel’s analogs \maybe@ic and \maybe@ic@, but they check \nospacelist instead of \nocorr. \t@st@ic sets \@tempswa true if \@let@token is in \nospacelist.

\begin{verbatim}
35 \newcommand\maybe@space {\%
36 \futurelet\@let@token\maybe@space@ 
37 \}%
38 \newcommand\maybe@space@ {\%
39 \@tempswatrue 
40 \% \DTypeout{In maybe@space@ my lettoken is [\meaning\@let@token]}\%
41 \expandafter \@tfor 
42 \expandafter \reserved@a 
43 \expandafter :\% 
44 \expandafter =\%
45 \nospacelist 
46 \do \t@st@ic 
47 \if@tempswa 
48 \space 
49 \fi 
50 \}%
8 Categories

Each time an abbreviation of category \texttt{C} is defined, some tokens are added to the contents of \texttt{TMReset}(C).

\input{categories}

9 Suffixes

When an abbreviation macro is created, two additional commands with these suffixes are also created. For example, \texttt{\foo}, \texttt{\foolong}, and \texttt{\fooshort}. When \texttt{abbrevs} are used in such a way that “long” and “short” don’t make sense, it would make sense to change these to something more descriptive.

\input{suffixes}

10 Plain abbreviations

The checking that \texttt{sw@slant} does for skips and penalties on the list is going to be superfluous for the applications I imagine. But we trade that for a more flexible macro.

We don’t check for \texttt{\nocorr} or an empty body; maybe we should when it’s first defined; but I ran into really hairy expansion troubles trying to do that and use \texttt{\DeclareRobustCommand}. FIX.

\input{plainabbrevs}
We can skip the check for emptiness and containing just a space, since those won’t occur with abbreviation macros except by accident, I think. We proceed straight to a check for \nocorr.

\tm@check@nocorr #3\nocorr\@nil
\TMFontAll
\@nameuse{TMFont#2}%
\tm@check@left #3%
\tm@check@right
\endgroup
}

\tm@check@nocorr
This corresponds to the kernel’s \check@nocorr@. We simply substitute \maybe@ic@space and \maybe@space in where necessary. We also use \tm@check@left and \tm@check@right instead of \check@icl and \check@icr.

\NewName{tm@check@nocorr} {#1#2\nocorr\@nil} {%
\let\tm@check@left\maybe@ic
\def\tm@check@right {\aftergroup\maybe@ic@space}%
\def\reserved@0a \{\nocorr\}%
\def\reserved@0b \{#1}%
\def\reserved@0c \{#3}%
\ifx\reserved@0a\reserved@0b
\let\check@icl@empty
\else
\let\check@icl@empty
\def\check@icr {\aftergroup\maybe@space}%
\fi
\else
\def\tm@check@right {\aftergroup\maybe@space}%
\fi
\fi
\fi
}
Control booleans

\ifTMInhibitSwitching
\TMInhibitSwitchingtrue
\TMInhibitSwitchingfalse
\ifTMAlwaysLong
\TMAlwaysLongtrue
\TMAlwaysLongfalse

Switching abbreviations

\TMNewAbbrevSwitcher

Here is the main abbreviation macro definer. It works by defining two macros, one for the initial text and one for the subsequent text, and setting up a third user command to choose between the two as appropriate. (The first two are made available to the user by explicit call as well.) The function used to define the two macros is passed as the first argument to this function. Supplied definers are \TMNewAbbrevPlain (I will write \TMNewAbbrevWork and \TMNewAbbrevDotclose soon FIX). The second argument is the category—each definer takes at least three arguments: a command name, a category, and the content. The third argument is the user macro name to be created, and the fourth and fifth arguments are the initial and subsequent expansion texts.

The first part sets three token variables to the three command sequences that this macro is going to define—the user, initial, and subsequent commands. The user command checks its associated boolean variable to see whether it has been called before. If so, it calls the “subsequent” macro; if not, the “initial” macro.

\newcommand\TMNewAbbrevSwitcher \[5\] {% args: definer category csname
\expandafter#1\csname #3\TMInitialSuffix\endcsname{#2}{#4}
\expandafter#1\csname #3\TMSubsequentSuffix\endcsname{#2}{#5}
\newboolean{@#3@mentioned}
\expandafter\g@addto@macro\csname TMReset#2\endcsname {%
\global\csname @#3@mentionedfalse\endcsname%
}
}

We’ve created the initial and subsequent macros, and the boolean. Now we define the user macro. This definition is tricky. In pseudocode, it looks like this:

if #3 definable then

#3 := \{ if (#3-mentioned AND NOT TMAlwaysLong) then
#3-short
else
if NOT TMInhibitSwitching then #3-mentioned := (global) true
#3-long
fi \}

fi

I’m not sure this is any more readable than a sea of \expandafter \noexpands. Notice that in a switching abbrev, the -mentioned boolean is set to true before calling the macro itself, so that the hook can check and possibly alter the value. See the \TMacroDefiner definer in the configuration file for a use of this.
Warning: The \csname (e.g., either \foolong or \fooshort)\) must be the very last thing to occur in the definitions, or the \futurelet that checks following spacing in, e.g., \TMNewAbbrevPlain will break. This is why we use the construction with \sc@t@a. No space must sneak into the macros, either!

The hard work is done. Now we define some macros to help create new categories.

13 Defining commands

A \langle definer\rangle is always called with a category as a first argument. There is only one definer in this package, though another is given in the distributed configuration file.

\TMDefineAbbrevStandard \tm@defineabbrevstandard \TMDefineAbbrevStandard is the standard \langle definer\rangle that makes the choice between defining an switching or a plain abbreviation, depending on whether the user supplies a subsequent text.

\newcommand\TMDefineAbbrevStandard [3] \% args: category \csname

\% initial [subsequent]
Right now, the Book and Work categories are separate but equal. A future revision will distinguish them by keeping track of more information about Works, with the idea of using them to generate a separate bibliography and index in a long document that refers to a certain list of books by short titles. E.g., my thesis is on Samuel Beckett, and I want to refer to his works by short titles, and automatically generate a Beckett bibliography of only the ones I use, listed by title.

14 Basic categories
15 Date marks

\newcommand{\DateMark}{%  
  \hspace{.2em}{\scshape \DateMarkSize #1}  
  \@ifnextchar. { \spacefactor\@m } { ELSE .\maybe@ic@space }  
}  
\newlet{\DateMarkSize}{\small}

\PM Some common time abbreviations. \AM \BC \AD

\newcommand{\PM} { \DateMark{p.m} }  
\newcommand{\AM} { \DateMark{a.m} }  
\newcommand{\BC} { \DateMark{b.c} }  
\newcommand{\AD} { \DateMark{a.d} }
Part III
Configuration

We’ve built up the groundwork and leave the definitions of useful things to the configuration file.

1 \InputIfFileExists{abbrevs.cfg}{}

The contents of the distributed configuration file are below.

2 \def\fileinfo{Abbrevs package configuration}
3 \def\fileversion{v1.1}
4 \def\filedate{1997/10/18}
5 \def\docdate{1997/10/18}
6 \ProvidesFile{abbrevs.cfg}

\DateMarkSize

I like to use this definition instead of the one in the main file, but I didn’t want to require \texttt{abbrevs} to depend on \texttt{relsize}.

7 \RequirePackage{relsize}
8 \def\DateMarkSize {%
9 \relsize{-1}%
10 }

\BackwardsCompatibility

This can be uncommented to deal with anything you might have written that referred to these variables before I changed their names.

11 \% \newlet\TMNewCategory\NewAbbrevCategory
12 \% \newlet\TMDefineAbbrevPlain\TMDefineAbbrevStandard

\Suggestions

Here are ideas commented out that you might want to try.

You can learn a helpful general strategy about how to work with hooks in \LaTeX{} from this example. If you put the inhibitor directly into \texttt{\PreFootnote}, you could never take it out without either losing whatever else had been put into \texttt{\PreFootnote}, or using some thorny procedure that stepped through the macro and removed just the inhibitor (you don’t want to try that). If you add a “subhook” to \texttt{\PreFootnote}, you can turn the subhook on or off without even knowing what else is in \texttt{\PreFootnote}. You can’t redefine \texttt{\TMInhibitSwitchingtrue}. A \texttt{\newcommand} would work as well as the \texttt{\newlet} here, a tad less efficient.

13 \% \newlet\FootnoteTMHook\TMInhibitSwitchingtrue
14 \% \addto\macro\PreFootnote {%
15 \% \FootnoteTMHook
16 \% }

To undo the effect later, say \texttt{\let\FootnoteTMHook}\relax or \texttt{\global\let...} as appropriate.
Part IV

Testing

I’m presently writing a dissertation on Samuel Beckett. Although there is comparatively little biographical material available, it is well known that he spent several years under the wing of James Joyce, another of the great writers in English this century. Joyce and Beckett, it is curious, like other great writers, both had trouble with their vision, and both were exiles in some sense. One of my favorite pieces by Beckett is *Worstward Ho*, a short work written in the 1980’s not long before his death: “Fail again. Fail better.” *Worstward Ho* is lyric and exalting to me. A work I feel is underrated is the radio play *All That Fall* (all but his three long plays are collected in *Collected Shorter Plays (CSP)*). It’s extremely funny, and very touchingly compassionate. Because it is a radio play, it loses less from performance to reading. I would recommend *All That Fall* to anyone. His later plays (and fiction) are famously enigmatic, but with a little practice, it is not hard to see the same lyric beauty and compassion. Take the brief television play *Nacht und Träume* (in *CSP* of course), which has no dialogue, only a few murmured bars of the Schubert song, also brief, and also called *Nacht und Träume*—it’s one of the most hauntingly beautiful few minutes of music I’ve ever heard, and I particularly recommend Cheryl Studer’s recording on Deutsche Grammophone. Every other recording I’ve heard plays too fast.

Joyce is short for James Joyce, not Joyce Smith.

Now some more rigorous and boring testing. Each pair should be identical.

initial hello
initial hello
subsequent hello
subsequent hello
subsequent tie
subsequent tie
subsequent regular text
subsequent regular text
subsequent: colon
subsequent: colon
subsequent; semicolon
subsequent; semicolon
subsequent. Period.
subsequent. Period.
subsequent! Exclamation point.
subsequent! Exclamation point.
subsequent? Question mark.
subsequent? Question mark.
subsequent-hyphen.
subsequent-hyphen.
subsequent texttt
subsequent texttt
subsequent (leftparen)
subsequent (leftparen)
(subsequent) rightparen
(subsequent) rightparen
subsequent, comma
subsequent, comma.
subsequent tmacro
subsequent tmacro
subsequent’s face
subsequent’s face
subsequent “quote”
subsequent “quote”
subsequent [leftbracket]
subsequent [leftbracket]
[subsequent] rightbracket
[subsequent] rightbracket
subsequentopen group
subsequentopengroup
subsequent close group
subsequent close group
subsequent {realbrace}
subsequent {realbrace}
subsequent 666 number
subsequent 666 number
subsequent $realdollar
subsequent $realdollar
subsequent #numbersign
subsequent #numbersign
x = y^2 math
x = y^2 math
$realdollar
$realdollar
#numbersign
#numbersign