The combine class and the packages combinet, combnat and combcite*

Peter Wilson, Herries Press†

Maintainer: LaTeX Project
https://github.com/LaTeX-Package-Repositories/herries-press

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Abstract

The combine class can be used to assemble a group of individual LaTeX documents into a single document, such as required for a conference proceedings. Typically the documents are all of the same class, but with some limitations on ordering may be of different classes (e.g., several articles with one letter). The class requires the keyval package.

The accompanying combinet and combnat packages respectively let the titles of imported documents be added to the main ToC, and enable the combine class and the natbib package to cooperate. The combcite package enables the cite package to cooperate.

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†Dick Nickalls (`dicknickalls@compuserve.com`) provided several requirements and suggestions. He also very helpfully tested earlier experimental versions.

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1 Introduction

Questions about making a collection of different articles into a single document seem to pop up fairly regularly on the `comp.text.tex` newsgroup. The combine class provides a solution for this problem.

This manual is typeset according to the conventions of the LaTeX docstrip utility which enables the automatic extraction of the LaTeX macro source files [GMS94].

Section 2 describes the usage of the combine class and Sections 3 and 4 describe the combinet and combnat packages. Section 5 describes the combcite package. Commented source code for the class is in Section 7. The class requires the keyval package to be available. Commented source code for the combinet package is in Section 11, for combnat is in Section 12 and for combcite is in Section 13.

Note that the version number and date given for this file does not necessarily match version numbers or dates for the class and packages.

2 The combine class

The combine class enables a group of individual LaTeX documents to be imported and assembled into a single document. All the individual documents should be of the same class (e.g., all article or all report).

Sectioning, cross-referencing, bibliographies, etc., are local within each imported document. Various means are provided for controlling local Table of Contents, the format of `\maketitle`, and so on, without having to make any changes to the original of an imported document.

Here is a simple example file which might be the skeleton for a conference proceedings.

```
\documentclass[11pt]{combine}

\title{Proceedings of the ...}
\author{A. N. Editor\thanks{Support ...}}
\date{29 February, 2000}

\begin{document}
\pagestyle{combine}        % use the combine page style
\maketitle                 % main title
\tableofcontents           % main ToC
\clearpage

\section{Editor's introduction} \label{intro}  % into main ToC (section 1)

    In the article by A.~N.~Author on page~\pageref{art1} ...

\begin{papers}                  % start of individual articles/papers
\coltoctitle{An article}        % first article title into main ToC
\coltocauthor{A.~N.~Author}     % first authors into main ToC
\label{art1}
\import{art1}                   % first article, may have own ToC,
                                % bibliography, etc.
\coltoctitle{Another article}
\coltocauthor{A.~N.~Other}
\label{art2}
\import{art2}
\end{papers}                    % end of individual articles/papers

\clearpage
\section{Acknowledgements}      % into main ToC (section 2)

    Among the many ...

\end{document}
```

2.1 Class options

As well as providing all the class options appropriate for the class of the individual documents, the combine class provides the following additional options:

- memoir, book, report, and letter. By default the article class is assumed for both the main and the imported documents. These options change the class to memoir, book, report or letter, respectively.
- colclass=⟨*class*⟩. This option changes the 'classes' to ⟨*class*⟩. For example, specifying `colclass=phdthesis` will use the phdthesis class[1] definitions throughout the entire document.

  Note that if you use this option there are likely to be LaTeX warnings about `Unused global option(s): [colclass=…]`.

[1] Whatever that is.

- classes. This option enables the imported documents to be of different classes. For example, embedding a letter into a compendium of articles. Using this option may induce a plethora of LaTeX errors and the printed results may be unpredictable. If this happens, try hitting 'q' to put LaTeX into its 'quiet batch' processing mode and then examine the typeset result for usability.

  Different classes of imported documents should not be mixed within a single `papers` environment. Also, imported documents whose class is the same but which differs from the main class should be within a single `papers` environment. For example, if several letters are to be imported into a collection of articles, the letters must not be scattered between different `papers` environments, although the imported articles can be scattered.

- packages. By default all `\usepackage` commands in imported documents are ignored. If this is not desired, then the packages option will enable the imported `\usepackage` commands(s). If this option is used, then only the first occurrence of a package is actually used and is not available to any later imported documents.

  Generally speaking, it is advisable to put all `\usepackage` commands into the preamble of the main document.

- layouts. By default, a single setting of the page layout is used throughout the document. The layouts option takes account of any changes to the `\textwidth`, `\textheight`, etc., in the imported documents.

- folios. The page numbers are sequential throughout the document. When the `plain` page style is used, the folios option will display the local page numbers of imported documents as well as the the main page number. This may have unfortunate consequences on the page numbers in ToC, etc., entries as they may well refer to local rather than global page numbers.

- notoc. Disables the inclusion of a Table of Contents in any imported document.

- nolof. Disables the inclusion of a List of Figures in any imported document.

- nolot. Disables the inclusion of a List of Tables in any imported document.

- maintoc. Adds all imported documents ToC, LoF, LoT, etc., entries to the main document ToC, LoF, …

- notitle. Disables title printing by any `\maketitle` in any imported document.

- noauthor. Disables author printing by any `\maketitle` in any imported document.

- date. By default, date printing by any `\maketitle` in any imported document is disabled. This option causes the date(s) to be printed.

- nomaketitle. Disables all printing by any `\maketitle` in any imported document.

- nopubindoc. Disables the printing of the `\published` information within an imported document.

- nopubintoc. Disables the printing of the `\published` information within the main ToC.

- onebib. Disables imported bibliographies and puts all citations in the main document's bibliography.
- combinedbib. Individual imported bibliographies and also all citations put into the main document's bibliography.

The combine class may be able to incorporate any class of imported documents by setting an appropriate value for the colclass option and perhaps doing some additional work.

For example, if you want to have a collection of examination papers which were each is originally produced using the exam class, then start off with:
`\documentclass[...,colclass=exam]{combine}`
The exam class, though, does a couple of things that prevent combine and exam from working well together:

- exam has its own version of `\section` which is totally at odds with the normal article definition, and `\section*` is used by the `\tableofcontents` command.
- exam does wonderful things at the end of a document. This is alright for imported documents in a `papers` environment but is an abject failure at the final end of the main document.

To get round these problems, put the following in the preamble to the main document:

```
\makeatletter
\let\oldsection\section     % keep exam's definition of \section
\renewcommand{\section}{%   % article's definition of \section
  \@startsection{section}{1}{\z@}%
                {-3.5ex \@plus -1ex \@minus -.2ex}%
                {2.3ex \@plus .2ex}%
                {\normalfont\Large\bfseries}}
\makeatletter
```

and in the document put:
`\let\section\oldsection`
immediately before the first `papers` environment.

For the end document problem, put:

```
\makeatletter
\let\@enddocumenthook\@oldenddocumenthook
\makeatother
```

immediately before the main document's `\end{document}`.

2.2 Class commands and environments

Within a combine class document you can use any commands that are supported by the selected class. The following additional commands and environments are also provided.

`papers` (*env.*) The environment `\begin{papers}[`⟨*text/code*⟩`]...\end{papers}` provides a wrapper around imported file(s). Effectively, it modifies any `\documentclass` command or `document` environment within an imported file so that LaTeX does not stop with an error at meeting these, or preamble-only commands like `\usepackage`, in the middle of a document.

The optional argument is executed immediately at the start of the environment and its default value is `\cleardoublepage`. To avoid any forced page breaking you can call the environment with an empty optional argument (e.g., `\begin{papers}[]`).

`\import` The command `\import{`⟨*texfile*⟩`}` is a cross between the `\input` and `\include` commands, and should only be used within a `papers` environment. ⟨*texfile*⟩ is the name of a LaTeX file *without* the `.tex` extension. For example, `\import{fred}` will attempt to read in a file called `fred.tex`. The ⟨*texfile*⟩ should be a complete LaTeX document file, from `\documentclass...` to `\end{document}`. The contents of ⟨*texfile*⟩ will be typeset in the document at the point where it is imported, including any document title (via a `\maketitle`), Table of Contents, ..., Bibliography, etc.

`\maketitle` The combine class provides a `\maketitle` command, together with `\title`, `\author` and `\date` commands like those in the book/report/article classes. A titlepage option is only supported if the main class has a titlepage option. For example, if the main class is article then both `\maketitle` and the titlepage option are supported, but if the main class is letter then only the `\maketitle` command is provided.

`\maintitlefont` `\postmaintitle` `\mainauthorfont` `\postmainauthor` `\maindatefont` `\postmaindate` These commands control the typesetting of the main document's `\maketitle` command. The `\title` is processed between the `\maintitlefont` and `\postmaintitle` commands; that is, like:

```
{\maintitlefont \title \postmaintitle}
```

and similarly for the `\author` and `\date` commands. The `\...main...` commands are initialised to mimic the normal result of `\maketitle` typesetting in the article/report classes. For example, the default definitions of the `\...maintitle...` and `\...mainauthor...` commands are:

```
\newcommand{\maintitlefont}{\begin{center}\LARGE}
\newcommand{\postmaintitle}{\par\end{center}\vskip 0.5em}
\newcommand{\mainauthorfont}{\begin{center}
            \large \lineskip 0.5em%
            \begin{tabular}[t]{c}}
\newcommand{\postmainauthor}{\end{tabular}\par\end{center}}
```

They can be renewed to obtain different effects, for instance removing the `center` environment from `\...title...` will result in the title being typeset as a normal paragraph.

`\importtitlefont` `\postimporttitle` `\importauthorfont` `\postimportauthor` `\importdatefont` `\postimportdate` Without any options, the `\title` and `\author` commands are typeset by `\maketitle` commands in imported documents. Like the main document's `\maketitle`, the typesetting is controlled by these `\...import...` commands. The default definition for the title and author differ a little from the main document style, and are:

```
\newcommand{\importtitlefont}{\begin{center}\LARGE\bfseries}
\newcommand{\postimporttitle}{\par\end{center}}
\newcommand{\importauthorfont}{\begin{center}
            \large\itshape \lineskip 0.5em%
            \begin{tabular}[t]{c}}
\newcommand{\postimportauthor}{\end{tabular}\par\end{center}}
```

The commands can be renewed to obtain different formatting.

Note that if the titling package is used with the combine class, the titling maketitle typesetting commands are unavailable, being replaced by the corresponding combine commands above. Other aspects of titling, like the `\thetitle` command, are still available for use.

`\bodytitle` The `\bodytitle[`⟨*short title*⟩`]{`⟨*long title*⟩`}` command is similar to a `\chapter` or `\section` command, depending on the ⟨*class*⟩ of document. It may be used for

adding a numbered title heading into the main document and ToC for the following `\import{`⟨*texfile*⟩`}`. There is also a starred version of the command, which produces an unnumbered title heading and makes no entry in the ToC. The numbering used for `\bodytitle` is independent from any other numbering sequence.

`\coltoctitle` `\coltocauthor` The two commands `\coltoctitle{`⟨*title*⟩`}` and `\coltocauthor{`⟨*author*⟩`}` are for adding ⟨*title*⟩ and ⟨*author*⟩ to the main ToC, where ⟨*title*⟩ is the compiler's choice for the title of the following `\import{`⟨*texfile*⟩`}` and ⟨*author*⟩ is for the names of the authors.

`\published` The command `\published[`⟨*short*⟩`]{`⟨*long*⟩`}` can be used for putting the ⟨*long*⟩ text into the body of the main document. If the optional argument is not used, then ⟨*long*⟩ is also added to the main ToC. If the optional argument is used, then ⟨*short*⟩ instead of ⟨*long*⟩ is added to the ToC. The expectation is that this will be used for noting the original publication information for an imported document.

`\pubfont` In the document body the text of the `\published` command is typeset using `\pubfont`. By default this is defined as `{\normalfont\centering}` to give centered text in the normal font. If, for example, you wanted it to be typeset ragged right in an italic font you would do:
`\renewcommand{\pubfont}{\itshape\raggedright}`

`\toctitleindent` `\tocauthorindent` `\tocpubindent` `\toctocindent` These are all lengths, and their values can be changed using `\setlength`. They control the extra indentation of an imported document's title, authors, publication information and section headings within the main ToC. The default value of `\toctitleindent` is 0em and the default for the other four is 1.5em. If any values are changed, this must be done before the `\tableofcontents` command in the main document. For example, the title texts are aligned at the left margin; to align them with the default position of authors do:
`\setlength{\toctitleindent}{1.5em}`

`\toctitlefont` `\tocauthorfont` `\tocpubfont` These macros specify the fonts to be used for typesetting the imported titles, authors and publishing information within the main ToC. Their default definitions are:
`\newcommand{\toctitlefont}{\bfseries}` bold titles
`\newcommand{\tocauthorfont}{\itshape}` italic authors
`\newcommand{\tocpubfont}{\normalfont}` normal font for published

The class tries to keep any group of title/author/published entries in the ToC on one page, but sometimes TeX will insert a page break anyway. The way of combating this is to make sure that the ToC page is broken *before* the group. You can do this like:
`\addtocontents{toc}{\protect\pagebreak}`
`\coltoctitle{...} \coltocauthor{...}` etc.

`\erasetitling` This macro 'undefines' any previous `\coltoctitle`, `\coltocauthor` and/or `\published` commands; it is principally provided for use with the combinet package.

`combine` A new `combine` pagestyle is provided. This is like the `plain` pagestyle except that page numbers are put at the bottom outside corner of the page. This is the default pagestyle for the combine class.

Provided a `plain` (or `combine`) page style is used the pages are numbered in sequence throughout the document. If an imported document has any `empty` page style pages these will not be numbered.

Unless the folios option is used, all references to page numbers will be to the global page number. With the folios options some references will be to global page numbers and some to local page numbers.

You can, of course, define your own heading styles; I recommend the fancyhdr package [Oos96] if you do this. For example, if you had a collection of papers and you wanted to have the headers on the left-hand pages to have the title of the collection and the

right-hand pages to have the name of the current author(s), you can do this along the following lines.

```
\documentclass[report,twoside]{combine}
\usepackage{fancyhdr}
\title{The collection}
\author{A. N. Editor}
\pagestyle{fancy}
\fancyhead[RO]{A. N. Editor}
\fancyhead[LE]{The collection}
\fancyfoot{}
\fancyfoot[LE,RO]{\thepage}
\newcommand{\authortochead}[1]{%
   \coltocauthor{#1}
   \fancyhead[RO]{#1}
 }
...
\begin{document}
\maketitle
%% Editors introduction, ToC, etc
\begin{papers}
\coltoctitle{Paper 1}
\authortochead{A. N. Author}
    \import{paper1}
\cleardoublepage
\coltoctitle{Paper 2}
\authortochead{A. N. Other}
    \import{paper2}
...
```

In order to ensure that all the material in an imported document is typeset, there is an inbuilt `\clearpage` command within the imported document's `\end{document}`. Thus, any material after an `\import` command will start on a new page.

Here is another example file which might be the skeleton for a thesis that includes a copy of a published paper.

```
%%\documentclass{thesis}  % replace this by
\documentclass[colclass=thesis,classes,layouts]{combine}
... packages etc.,

\title{Observations on the ...}
\author{A. Candidate}
\date{1 April, 2000}
\addtolength{\toctitleindent}{2.3em}  % extra main ToC indentation
\addtolength{\tocauthorindent}{2.3em}
\addtolength{\tocpubindent}{2.3em}

\begin{document}
\pagestyle{combine}        % use the combine page style
\maketitle                 % main title
\tableofcontents           % main ToC
```

```
\clearpage
...
lots of remarkable research results
...
\appendix
...
\section{Publication}
\begin{papers}[]
\coltoctitle{...}
\published{Originally published in the
           \textit{Journal of Irreproducible Results}, 1987}
\import{mypaper}
\end{papers}
...

\bibliography{refs}      % main bibliography
\end{document}
```

Each imported file generates its own `.aux`, `.toc`, etc., files. If a BibTeX database is used for the literature references in an imported document, then BibTeX must be run against the imported document, *not* the main document, to resolve the citations. Citations are local to each imported document. There can, of course, also be a bibliography for citations made in the main document, as shown in the example file above.

`\provideenvironment` This macro is like the `\providecommand` macro except that it applies to an environment instead of a command. It is required internally by the combine class.

`\providelength` `\providecounter` These macros are used internally. They are `\provide...` versions of the `\newlength` and `\newcounter` commands.

`\zeroextracounters` The class attempts to initialise the counters used by each imported document. For example, the figure, equation, etc., counters are zeroed for each document. The `\zeroextracounters` command can be redefined so that it includes the zeroing of any additional counters that might have been introduced in a package or defined by the author. For example, if two different imports both define a (new) counter called, say, `mycounter`, then redefine the command like:

```
\renewcommand{\zeroextracounters}{%
   \@ifundefined{c@mycounter}{}{\setcounter{mycounter}{0}}
}
```

`\appendiargdef` The (internal) command `\appendiargdef{`⟨*macro*⟩`}{`⟨*stuff*⟩`}` appends ⟨*stuff*⟩ at the end of the current definition of ⟨*macro*⟩, where ⟨*macro*⟩ is the name of a macro (including the backslash) which takes one argument. For example the following are two equivalent definitions of `\mymacro`:

```
\newcommand{\mymacro}[1]{#1 is a bagpiper}
\appendiargdef{\mymacro}{ and of course is tone deaf}
% or
\newcommand{\mymacro}[1]{#1 is a bagpiper and of course is tone deaf}
```

`\emptyAtBeginDocument` Some combinations of circumstances cause an infinite recursion at the start of an imported document; in particular the combination of `combine + graphicx + caption2 + pdflatex` causes this. In this case the solution was to put `\emptyAtBeginDocument` immediately after the initial `\begin{document}`. It may also have worked if it had been

added after each \begin{papers} or before each \import{}. An error message about being out of stack space may indicate recursion. Judicious use of \emptyAtBeginDocument may resolve the problem.

2.3 Imports in subdirectories

Authors may find it convenient to put the LaTeX source files for imported documents into subdirectories of the directory for the main document. Perhaps the easiest way to make this work is to set an environment variable so that LaTeX will look in the subdirectories of the current working directory for files it can't find.

I use a teTeX system and can only talk about that distribution. The relevant environment variable, at least for document files, is TEXINPUTS. An example setting for this is:

```
TEXINPUTS=.//:${LOCALTEX}//:
```

The fragment .// tells LaTeX to look for files in the current directory, and recursively in its subdirectories. The fragment :${LOCALTEX}// tells LaTeX to look for files in the place defined by the environment variable LOCALTEX, and recursively in its subdirectories. The final : tells LaTeX to look in the standard teTeX defined places.

3 The combinet package

The combinet (COMBINE Title) package, which should only be used in conjunction with the combine class, modifies the \maketitle command of all imported documents so that the imported document's title and/or author, if defined, are automatically added to the main document's ToC.

This is presented as a package rather than as part of the combine class as some unfortunate side effects may become apparent.

If a \coltoctitle or \coltocauthor command has been given immediately prior to the import, then these will be put into the main ToC instead of the \maketitle texts. The \erasetitling command can be used to disable any prior \coltoctitle, \coltocauthor and \published commands.

The package takes the following options.

- nomtitle. Disable the \maketitle title from being added to the main ToC.
- nomauthor. Disable the \maketitle author from being added to the main ToC.
- nothanks. By default, the contents of a \thanks command will be added to the main ToC. This option prevents that, but may have unfortunate side effects if any \title or \author command has any embedded commands within the text.
- pub. Put the text of an immediately prior \published command after the \maketitle typesetting, and add the text to the main ToC after any title or author. Remember that the combine class options nopubindoc and nopubindoc can be used to inhibit printing of \published information.
- pubtop. Put the text of an immediately prior \published command at the top of the \maketitle typesetting, and add the text to the main ToC after any title or author.

As noted above, embedded commands within a `\title` or `\author` may not transform well if they appear in the main ToC. In such cases you can use `\coltoctitle` or `\coltocauthor` for adding appropriate text to the main ToC, not forgetting to disable these after the import via `\erasetitling`.

4 The combnat package

The combine class and Patrick Daly's natbib package [Dal99] both redefine some of the same basic LaTeX macros, and naturally the redefinitions are incompatible[2].

The combnat (COMBine NATbib) package hopefully resolves this problem. With the combine class you use combnat instead of natbib. That is, instead of:
`\usepackage[`⟨*natbib-options*⟩`]{natbib}`, simply do
`\usepackage[`⟨*natbib-options*⟩`]{combnat}`
in the preamble of the main document. The package automatically calls the natbib package with the given ⟨*natbib-options*⟩ and then redefines some of the natbib redefinitions to ensure combine/natbib compatibility.

For details on the ⟨*natbib-options*⟩ and the other facilities, read the natbib documentation [Dal99].

5 The combcite package

The combine class and Donald Aresneau's cite package [Ars03] both redefine some of the same basic LaTeX macros, and naturally the redefinitions are incompatible[3]

The combcite (COMBine CITE) package hopefully resolves this problem. With the combine class you use combcite instead of cite. That is, instead of:
`\usepackage[`⟨*cite-options*⟩`]{cite}`, simply do
`\usepackage[`⟨*cite-options*⟩`]{combcite}`
in the preamble of the main document. The package automatically calls the cite package with the given ⟨*cite-options*⟩ and then redefines some of the cite redefinitions to ensure combine/cite compatibility.

For details on the ⟨*cite-options*⟩ and the other facilities, read the cite documentation [Ars03].

The combcite package requires the November 2003 version 4.01 of cite. This version covers the functions provided by the overcite package. More precisely
`\usepackage[...]{overcite}` is implemented as
`\usepackage[superscript,...]{cite}`

6 Caveats

LaTeX was designed to typeset a single document, where the document has one and only one `\documentclass` command and one and only one `document` environment. The combine class attempts to handle a document that has multiple `\documentclass` commands and multiple `document` environments. In order to do this certain parts of the LaTeX kernel code has had to be modified. Unfortunately, to make the usage of combine completely transparent to the user would require very major surgery, with a high probability that

[2] Discovered by Thomas Hertweck (`Thomas.Hertweck@gpi.uni-karlsruhe.de`) in June 2001.
[3] Discovered by Marcilio Alves (`maralves@usp.br`) in November 2003.

with my skills the patient would die; being able to remove a hangnail does not imply the ability to perform a heart transplant.

It is, of course, assumed that each imported document processes without error as an individual document.

Essentially, be prepared for the unexpected, usually indicated by a rash of LaTeX error messages about undefined commands or about defining an already defined command. These are usually caused by incorrect grouping.

Commands, etc., defined in the main document are available to all imported documents. The `papers` environment forms a group. Commands defined within a group are local to the group and are not visible outside it. Another point is that LaTeX will read the code for any given class or package only once. These facts have some consequences.

- The facilities provided by any package that is used by an imported file are only available within the first `papers` environment in which the package is called for. This is why it is recommended that all packages should be called for in the main document.
- Similarly for a class that is not the main class. For example, if the main class is article and some letters are to be imported, then they must all be in the same `papers` environment. If they are in multiple `papers` environments, then only the first of these will have access to commands like `\address` which are defined by the letter class (which is only read once and whose facilities are then local to the first of the `papers`).
- An imported document does not form a group (if it did, then only a single letter could be imported into an article class collection). If two imports in a single `papers` separately use `\new...` commands with the same ⟨*name*⟩, then these ⟨*name*⟩s will be visible throughout the environment. LaTeX will then normally report trying to define a pre-existing ⟨*name*⟩. The solution to this is either: (a) put the imports into different `papers`, or (b) enclose each import within a `\begingroup` …`\endgroup` pair.

Not all problems can be solved by the above methods. For example, consider the case again of importing letters into an article collection. If two letters both define the same ⟨*name*⟩, then adding additional grouping will only change the 'defining a pre-existing ⟨*name*⟩' problem into the 'undefined `\address`' problem. A potential solution in this particular case would be to define all the letter class specific ⟨*name*⟩s in the main document.

Within a `papers` environment all `\newcommand` and `\newenvironment` commands are replaced by `\providecommand` and `\provideenvironment` respectively. This should stop LaTeX from reporting the pre-existing ⟨*name*⟩ error from these commands, but one and only one of the definitions will be available. `\newlength` and `\newcounter` commands are handled in the same manner. There is no equivalent for `\newtheorem`, but instead the `\newtheorem` command has been made local instead of global, so cunning use of grouping should be able to circumvent the problem of two separate authors creating identically named theorems.

7 The combine class code

There are various difficulties to be overcome by the combine code, some seemingly inherent in TeX itself and others by the LaTeX kernel code. These include, but are not limited to:

- TeX was not designed for processing multiple documents.
- There can only be one `\documentclass` command within a document.
- There are many LaTeX commands that can only be used in the preamble, and the preamble is closed by the (first) `\begin{document}`.
- There is a single global page number, which may be reset to one at any point in any document. If this occurs in an imported document then the page numbering for the main document is similarly reset.
- `\label`s are global in nature, and with multiple imported documents there are likely to be labels with the same name in two or more of these.
- Many of the kernel (and standard classes) commands use the page number; sometimes the use is buried at the end of a chain of macros.

A design goal for combine is that virtually any kind of document should be importable and should be processable without have to make any changes to it. To completely satisfy this would require a rewrite of much of the LaTeX kernel, which is out of the question. Of necessity some changes have had to be made but these have been limited as far as possible. I think that a collection that consists of documents that are all of the same class should process without interruption.

When there are mixed classes, LaTeX reads in the code for each class. An example is importing a letter class document into an article class collection. If the same command is defined by `\newcommand` in two or more of these classes, then LaTeX complains and I see no way of getting around this without rewriting all the classes and kernel to use `\def` instead of `\newcommand`. In any event, if this happens, try responding to the errors by hitting 'q' to put LaTeX into a batch mode. The typeset result may be usable.

To try and avoid name clashes, all the internal commands include the string `c@l`.

8 Preliminaries

Announce the name and version of the class, which requires LaTeX 2_ε and the keyval package. (This now happens at the top of DTX file so doesn't appear here.)

```
⟨*usc⟩
\RequirePackage{keyval}
```

\c@lclass `\c@lclass` stores the class name, which by default is `article`.

```
\newcommand{\c@lclass}{article}
```

(*End of definition for* `\c@lclass`.)

\c@l@tempa \c@l@getoptionname The next code chunk is based on code posted to the `ctt` newsgroup by Heiko Oberdiek (`oberdiek@ruf.uni-freiburg.de`) on 18 April 2000. The code, by some miraculous means, sets up a keyed class option.

```
\define@key{COLCLASS}{colclass}[article]%
            {\renewcommand{\c@lclass}{#1}
             \ClassWarningNoLine{combine}
                                {Expect warnings like:\MessageBreak
             \space\space LaTeX Warning: Unused global option(s):\MessageBreak
             \space\space\space\space [colclass=#1]}}
```

```
\let\c@l@tempa\@empty
\def\c@l@getoptionname#1=#2\@nil{#1}
\@for\CurrentOption:=\@classoptionslist\do{%
  \@ifundefined{%
    KV@COLCLASS@\expandafter\c@l@getoptionname\CurrentOption=\@nil
  }%
  {%  other options
  }{%
    \edef\c@l@tempa{\c@l@tempa,\CurrentOption,}%
  }%
}%
\edef\c@l@tempa{%
  \noexpand\setkeys{COLCLASS}{\c@l@tempa}%
}
\c@l@tempa

```

(*End of definition for* `\c@l@tempa` *and* `\c@l@getoptionname`.)

The following `\if...` commands are for implementing various options.

`\ifc@lclasses`

```
\newif\ifc@lclasses
  \c@lclassesfalse
```

(*End of definition for* `\ifc@lclasses`.)

`\ifc@lpackages`

```
\newif\ifc@lpackages
  \c@lpackagesfalse
```

(*End of definition for* `\ifc@lpackages`.)

`\ifc@llayouts`

```
\newif\ifc@llayouts
  \c@llayoutsfalse
```

(*End of definition for* `\ifc@llayouts`.)

`\ifc@lfolios`

```
\newif\ifc@lfolios
  \c@lfoliosfalse
```

(*End of definition for* `\ifc@lfolios`.)

`\ifc@lnotoc`

```
\newif\ifc@lnotoc
  \c@lnotocfalse
```

(*End of definition for* `\ifc@lnotoc`.)

`\ifc@lnolof`

```
\newif\ifc@lnolof
  \c@lnoloffalse
```

(*End of definition for* `\ifc@lnolof`.)

\ifc@lnolot

```
\newif\ifc@lnolot
  \c@lnolotfalse
```

(*End of definition for* `\ifc@lnolot`.)

\ifc@lmaintoc

```
\newif\ifc@lmaintoc
  \c@lmaintocfalse
```

(*End of definition for* `\ifc@lmaintoc`.)

\ifc@lnodate

```
\newif\ifc@lnodate
  \c@lnodatetrue
```

(*End of definition for* `\ifc@lnodate`.)

\ifc@lnoauthor

```
\newif\ifc@lnoauthor
  \c@lnoauthorfalse
```

(*End of definition for* `\ifc@lnoauthor`.)

\ifc@lnotitle

```
\newif\ifc@lnotitle
  \c@lnotitlefalse
```

(*End of definition for* `\ifc@lnotitle`.)

\ifc@lnomaketitle

```
\newif\ifc@lnomaketitle
  \c@lnomaketitlefalse
```

(*End of definition for* `\ifc@lnomaketitle`.)

\ifc@lnopubindoc

```
\newif\ifc@lnopubindoc
  \c@lnopubindocfalse
```

(*End of definition for* `\ifc@lnopubindoc`.)

\ifc@lnopubintoc

```
\newif\ifc@lnopubintoc
  \c@lnopubintocfalse
```

(*End of definition for* `\ifc@lnopubintoc`.)

\ifc@lonebib

```
\newif\ifc@lonebib
  \c@lonebibfalse
```

(*End of definition for* `\ifc@lonebib`.)

\ifc@lcombib

```
\newif\ifc@lcombib
  \c@lcombibfalse
```

(*End of definition for* `\ifc@lcombib`.)

Now declare and process the options.

```
\DeclareOption{book}{\def\c@lclass{book}}
\DeclareOption{report}{\def\c@lclass{report}}
\DeclareOption{letter}{\def\c@lclass{letter}}
\DeclareOption{memoir}{\def\c@lclass{memoir}}
\DeclareOption{classes}{\c@lclassestrue}
\DeclareOption{packages}{\c@lpackagestrue}
\DeclareOption{layouts}{\c@llayoutstrue}
\DeclareOption{folios}{\c@lfoliostrue}
\DeclareOption{notoc}{\c@lnotoctrue}
\DeclareOption{nolof}{\c@lnoloftrue}
\DeclareOption{nolot}{\c@lnolottrue}
\DeclareOption{maintoc}{\c@lmaintoctrue}
\DeclareOption{date}{\c@lnodatefalse}
\DeclareOption{noauthor}{\c@lnoauthortrue}
\DeclareOption{notitle}{\c@lnotitletrue}
\DeclareOption{nomaketitle}{\c@lnomaketitletrue}
\DeclareOption{nopubindoc}{\c@lnopubindoctrue}
\DeclareOption{nopubintoc}{\c@lnopubintoctrue}
\DeclareOption{onebib}{\c@lonebibtrue}
\DeclareOption{combinedbib}{\c@lcombibtrue}
\DeclareOption*{\PassOptionsToClass{\CurrentOption}{\c@lclass}}
\ProcessOptions\relax
\ifc@lcombib
  \c@lonebibtrue
\fi

```

At this point, load the actual class (as specified by `\c@lclass`).

```
\LoadClass{\c@lclass}

```

`\ifc@lhaschapter` `\ifc@lhaschapter` is TRUE if the loaded class has chapters.

```
\newif\ifc@lhaschapter
  \c@lhaschapterfalse
\@ifundefined{chapter}{}{\c@lhaschaptertrue}

```

(*End of definition for* `\ifc@lhaschapter`.)

`\if@titlepage` The letter class (and perhaps others) does not have a `\maketitle` command, and therefore neither has a titlepage option. In this case we need a new `\if@titlepage` for later use when dealing with `\maketitle`. A side effect of this implementation is that `\maketitle` is available for any main document class.

```
\@ifundefined{if@titlepage}{\newif\if@titlepage\@titlepagefalse}{}
```

(*End of definition for* `\if@titlepage`.)

`\ifc@ltoctitle` `\ifc@ltoctitle` `\ifc@lpub` Boolean hooks for testing if `\coltoctitle`, `\coltocauthor` and `\published` have been set.

```
\newif\ifc@ltoctitle
  \c@ltoctitlefalse
```

```
\newif\ifc@ltocauthor
  \c@ltocauthorfalse
\newif\ifc@lpub
  \c@lpubfalse

```

(*End of definition for* `\ifc@ltoctitle`, `\ifc@ltoctitle`, *and* `\ifc@lpub`.)

colpage
c@lctr
\c@section

`colpage` is a counter for storing the (current) page number for the main document. `c@lctr` is a counter for storing the current main document sectioning number. A section counter (`\c@section`) is provided when the class does not have sections.

```
\newcounter{colpage} \setcounter{colpage}{1}
  \renewcommand{\thecolpage}{\arabic{colpage}}
\newcounter{c@lctr}
\@ifundefined{c@section}{\newcounter{section}}{}

```

(*End of definition for* `colpage`, `c@lctr`, *and* `\c@section`.)

\c@ltocfnum
\c@lloffnum
\c@llotfnum

These are output stream numbers for local ToC, LoF and LoT files. Allocating new streams for each imported file may cause TEX to run out of streams (there is a limit of 16).

```
\newwrite\c@ltocfnum
\newwrite\c@lloffnum
\newwrite\c@llotfnum

```

(*End of definition for* `\c@ltocfnum`, `\c@lloffnum`, *and* `\c@llotfnum`.)

9 Kernel modifications (and potential additions)

Much of the class code consists of new versions of LATEX kernel commands. Redefinitions starting with `\c@la...` are for commands in the main document. Modifications starting `\c@lb...` are for commands within imported documents.

\provideenvironment
\c@lprovide@environment
\c@lenvironment
\c@lenva
\c@lenvb
\c@lthrowenv

To stop LATEX whining when multiple classes are read which happen to define commands (via `\newcommand`) or environments (via `\newenvironment`) that have the same names, we need to be able to make LATEX use `\providecommand` and `\provideenvironment` instead. Unfortunately the kernel does not provide a `\provideenvironment` command, so here is one based on the code in the makecmds package.

```
\def\provideenvironment{%
  \@star@or@long\c@lprovide@environment}
\def\c@lprovide@environment#1{%
  \@ifundefined{#1}{%
    \expandafter\let\csname#1\endcsname\relax
    \expandafter\let\csname end#1\endcsname\relax
    \new@environment{#1}}{\c@lenvironment{#1}}
}
\def\c@lenvironment#1{%
  \@testopt{\c@lenva#1}0}
\def\c@lenva#1[#2]{%
  \@ifnextchar [{\c@lenvb#1[#2]}{\c@lthrowenv{#1}{[#2]}}}
\def\c@lenvb#1[#2][#3]{\c@lthrowenv{#1}{[#2][#3]}}
```

```
\def\c@lthrowenv#1#2#3#4{}

```

(*End of definition for* `\provideenvironment` *and others. These functions are documented on page 9.*)

`\c@lnamethm` `\@xnthm` `\@ynthm` `\@othm`

As pointed out by Hendri Hondrop[4] `\newtheorem` commands in imported documents can interfere with each other. My solution to this is to make the command local instead of global. `\c@lnamethm` is a helper macro (removes the `\global` from the `\@namedef`s in the original code), and the others are modifications of the originals in `ltthm.dtx` (just removing any `\global` commands).

```
\@ifundefined{newtheorem}{}{%
  \newcommand{\c@lnamethm}[3]{%
    \@namedef{#1}{\@thm{#2}{#3}}%
    \@namedef{end#1}{\@endtheorem}}
  \def\@xnthm#1#2[#3]{%
    \expandafter\@ifdefinable\csname #1\endcsname
      {\@definecounter{#1}\@newctr{#1}[#3]%
       \expandafter\xdef\csname the#1\endcsname{%
         \expandafter\noexpand\csname the#3\endcsname \@thmcountersep
           \@thmcounter{#1}}%
       \c@lnamethm{#1}{#1}{#2}}}
  \def\@ynthm#1#2{%
    \expandafter\@ifdefinable\csname #1\endcsname
      {\@definecounter{#1}%
       \expandafter\xdef\csname the#1\endcsname{\@thmcounter{#1}}%
       \c@lnamethm{#1}{#1}{#2}}}
  \def\@othm#1[#2]#3{%
    \@ifundefined{c@#2}{\@nocounterr{#2}}%
      {\expandafter\@ifdefinable\csname #1\endcsname
       {\@namedef{the#1}{\@nameuse{the#2}}
       \c@lnamethm{#1}{#2}{#3}}}}
}

```

(*End of definition for* `\c@lnamethm` *and others.*)

`\providelength`

This is a `\provide...` version of `\newlength` (from `ltlength.dtx`).

```
\providecommand{\providelength}[1]{%
  \ifx #1\undefined
    \newlength{#1}
  \fi
}
```

(*End of definition for* `\providelength`. *This function is documented on page 9.*)

`\providecounter`

This is a `\provide...` version of `\newcounter` (from `ltcounts.dtx`).

```
\providecommand{\providecounter}[1]{%
  \expandafter\ifx \csname c@#1\endcsname \undefined
    {\@definecounter{#1}}%
    \@ifnextchar[{\@newctr{#1}}{}
  \else
    \@ifnextchar[{\c@l@gobbleoptarg}{}
  \fi
```

[4] Email from `hendri@cs.utwente.nl` on 16 May, 2000.

```
}

```

(*End of definition for* `\providecounter`. *This function is documented on page 9.*)

`\c@l@gobbleoptarg` A macro that discards an optional argument (i.e., the tokens `[optarg]`).

```
\def\c@l@gobbleoptarg[#1]{}

```

(*End of definition for* `\c@l@gobbleoptarg`.)

`\appendiargdef` The code for this is copied from the abstract package, hence the use of `@bs` instead of `c@l` as a distinguishing substring.

```
\providecommand{\appendiargdef}[2]{\begingroup
  \toks@\expandafter{#1{##1}#2}%
  \edef\@bsx{\endgroup \def\noexpand#1####1{\the\toks@}}%
  \@bsx}

```

(*End of definition for* `\appendiargdef`. *This function is documented on page 9.*)

9.1 Document commands and environments

`\c@lbdocumentclass` The `\documentclass` in imported documents has to be changed so that commands including the `@` sign are legal in the preamble. By default the declared options and class are discarded. When the classes option is used, any potential new class file must be read. `\documentclass` is originally defined in `ltclass.dtx`.

```
\ifc@lclasses
  \newcommand\c@lbdocumentclass{%
    \makeatletter                          %% added
    \let\newcommand\providecommand         %% added
    \let\newenvironment\provideenvironment  %% added
%%    \let\documentclass\@twoclasseserror
%%    \if@compatability\else\let\usepackage\RequirePackage\fi
    \@fileswithoptions\@clsextension
  }
\else
  \newcommand{\c@lbdocumentclass}[2][\@empty]{%
    \makeatletter
  }
\fi

```

(*End of definition for* `\c@lbdocumentclass`.)

`\c@lbusepackage` The `\usepackage` command (from `ltclass.dtx`) in imported documents is normally disabled. This is the disabled version.

```
\ifc@lpackages\else
  \newcommand{\c@lbusepackage}[2][\@empty]{}
\fi

```

(*End of definition for* `\c@lbusepackage`.)

\c@lbLoadClass This is a copy of the \LoadClass from ltclass.dtx. I found it was needed if an imported document used a class that in its turn used \LoadClass.[5]

```
\newcommand{\c@lbLoadClass}{%
  \ifx\@currext\@pkgextension
    \@latex@error{\noexpand\LoadClass in package file}%
      {You may only use \noexpand\LoadClass in a class file.}%
  \fi
  \@fileswithoptions\@clsextension}

```

(*End of definition for* \c@lbLoadClass.)

The \document command (defined in ltfiles.dtx) has to be modified, both for the main document (to allow later preamble commands and to store the jobname of the main document), and similarly but not identically, for the imported documents (output here is to the \@partaux file instead of the \@mainaux file).

\c@ltextblock \c@ltextblock is a macro holding some code that is common to both \c@ladocument and \c@lbdocument.

```
\newcommand{\c@ltextblock}{%
  \@colht\textheight
  \@colroom\textheight \vsize\textheight
  \columnwidth\textwidth
  \@clubpenalty\clubpenalty
  \if@twocolumn
    \advance\columnwidth -\columnsep
    \divide\columnwidth\tw@ \hsize\columnwidth \@firstcolumntrue
  \fi
  \hsize\columnwidth \linewidth\hsize
}

```

(*End of definition for* \c@ltextblock.)

\c@ladocument
\c@lbdocument

```
\newcommand{\c@ladocument}{%
  \endgroup
  \let\mainjobname\jobname            %% added
  \def\c@lmainauxfile{\jobname.aux}   %% added
  \ifx\@unusedoptionlist\@empty\else
    \@latex@warning@no@line{Unused global option(s):^^J%
          \@spaces[\@unusedoptionlist]}%
  \fi
  \c@ltextblock                       %% a replacement
  \begingroup\@floatplacement\@dblfloatplacement
    \makeatletter\let\@writefile\@gobbletwo
    \global \let \@multiplelabels \relax
    \@input{\c@lmainauxfile}%                  %% changed
  \endgroup
  \if@filesw
    \immediate\openout\@mainaux\c@lmainauxfile  %% changed
    \immediate\write\@mainaux{\relax}%
```

[5] Problem reported by Hans Fredrik Nordhaug hansfn@mi.uib.no on 2001/08/24.

```
  \fi
  \process@table
  \let\glb@currsize\@empty
  \normalsize
  \everypar{}%
  \ifx\normalsfcodes\@empty
    \ifnum\sfcode`\.=\@m
      \let\normalsfcodes\frenchspacing
    \else
      \let\normalsfcodes\nonfrenchspacing
    \fi
  \fi
  \@noskipsecfalse
```

Imported documents may change the page number, which can then mess up the numbering of later pages. The `colpage` counter is used to synchronize the main document page numbering after any import. To do this, it has to be incremented for each typeset page, so this is added to the output routine (described in `ltoutput.dtx`). This is done here in case any package in the main document has modified `\@outputpage`, as the showframe package does.

`\@outputpage`

Similarly, the `\maketitle` command is made to be `\@clamaketitle` in case some other package (e.g., titling) has modified `\maketitle` after the combine class has done its thing.

```
  \g@addto@macro{\@outputpage}{\stepcounter{colpage}}  %% added
  \let\maketitle\c@lamaketitle                         %% added
```

Store the initial forms of `\thechapter` or `\thesection` for later restoration after a possible `\appendix`.

`\c@lthechap` `\c@lthesec`

```
  \@ifundefined{c@chapter}%            %% added
    {\@ifundefined{c@section}{}{\let\c@lthesec\thesection}}%
    {\let\c@lthechap\thechapter}

  \let \@refundefined \relax
  \let\AtBeginDocument\@firstofone
  \@begindocumenthook
  \ifdim\topskip<1sp\global\topskip 1sp\relax\fi
  \global\@maxdepth\maxdepth
%%  \global\let\@begindocumenthook\@undefined
  \ifx\@listfiles\@undefined
    \global\let\@filelist\relax
    \global\let\@addtofilelist\@gobble
  \fi
%%  \gdef\do##1{\global\let ##1\@notprerr}%
%%  \@preamblecmds
  \global\let \@nodocument \relax
  \global\let\do\noexpand
  \ignorespaces}

```

For an imported document the layouts option is implemented in the `\document` command. The article, report and letter classes all start of with the `plain` page style, which is specified within the class file. When mixed classes of imported documents are used the page style definitions can get overwritten by the extra class(es). So, the revised `\document` command

resets the `plain` page style to the combine class definition and sets the initial page style to be `plain`.

```
\newcommand{\c@lbdocument}{%
%%  \endgroup
%%  \ifx\@unusedoptionlist\@empty\else
%%    \@latex@warning@no@line{Unused global option(s):^^J%
%%          \@spaces[\@unusedoptionlist]}%
%%  \fi
  \ifc@llayouts            %% layouts option
    \c@ltextblock
  \fi
  \begingroup\@floatplacement\@dblfloatplacement
    \makeatletter \let\@writefile\@gobbletwo
%%    \global \let \@multiplelabels \relax
    \@input{\c@lauxfile}%
  \endgroup
  \if@filesw
    \immediate\openout\@partaux\c@lauxfile
    \immediate\write\@partaux{\relax}%
  \fi
  \process@table
  \let\glb@currsize\@empty
  \normalsize
  \everypar{}%
  \@noskipsecfalse
%%  \let \@refundefined \relax
  \let\AtBeginDocument\@firstofone
  \@begindocumenthook
  \ifdim\topskip<1sp\global\topskip 1sp\relax\fi
  \global\@maxdepth\maxdepth
%%  \global\let\@begindocumenthook\@undefined
  \ifx\@listfiles\@undefined
    \global\let\@filelist\relax
    \global\let\@addtofilelist\@gobble
  \fi
%%  \gdef\do##1{\global\let ##1\@notprerr}%
%%  \@preamblecmds
  \global\let \@nodocument \relax
  \global\let\do\noexpand
  \let\ps@plain\c@lbps@plain   %% set pagestyle
```

Setting `\pagestyle` here kills the use of any other style (e.g., a fancy style) in the imports[6].

```
%%  \pagestyle{plain}
  \ifc@lfolios                %% folios option initialises page number
    \setcounter{page}{1}
  \fi
  \ifc@lhaschapter            %% set chapter/section number
    \setcounter{c@lctr}{\value{chapter}}
    \setcounter{chapter}{0}
  \else
    \setcounter{c@lctr}{\value{section}}
```

[6]Problem discovered by Rumen Bogdanovski (`rgb@libra.astro.bas.bg`) on 2001/04/03.

```
    \setcounter{section}{0}
  \fi
  \c@lresetcounters            %% added
  \makeatother                 %% added
  \ignorespaces}

```

(*End of definition for* `\c@ladocument` *and others.*)

`\c@lresetcounters` This sets various counters to zero, and is called at the beginning of an imported document.

```
\newcommand{\c@lresetcounters}{%
  \@ifundefined{c@figure}{}{\setcounter{figure}{0}}
  \@ifundefined{c@table}{}{\setcounter{table}{0}}
  \@ifundefined{c@equation}{}{\setcounter{equation}{0}}
  \@ifundefined{c@footnote}{}{\setcounter{footnote}{0}}
  \@ifundefined{c@chapter}%
    {\@ifundefined{c@section}{}{\renewcommand{\thesection}{\c@lthesec}}}%
    {\renewcommand{\thechapter}{\c@lthechap}}
  \zeroextracounters
}
```

(*End of definition for* `\c@lresetcounters`.)

`\zeroextracounters` This is a user-level macro that can be renewed to reset additional counters to zero at the beginning of an imported document.

```
\newcommand{\zeroextracounters}{}

```

(*End of definition for* `\zeroextracounters`. *This function is documented on page 9.*)

The `\enddocument` command (defined in `ltmiscen.dtx`) has to be modified for both the main and imported documents. The modifications are minor, mainly concerned with handling the proper files.

`\c@lenddoca` `\c@lenddoca` holds some code that is common to both `\c@laenddocument` and `\c@lbenddocument`.

```
\newcommand{\c@lenddoca}{%
    \@dofilelist
    \ifdim \font@submax >\fontsubfuzz\relax
      \@font@warning{Size substitutions with differences\MessageBreak
                  up to \font@submax\space have occurred.\@gobbletwo}%
    \fi
    \@defaultsubs
%%    \@refundefined
    \if@filesw
      \ifx \@multiplelabels \relax
        \if@tempswa
          \@latex@warning@no@line{Label(s) may have changed.
              Rerun to get cross-references right}%
        \fi
      \else
        \@multiplelabels
      \fi
    \fi
```

```
}

```

(*End of definition for* `\c@lenddoca`.)

`\c@laenddocument`
`\c@lbenddocument`

```
\newcommand{\c@laenddocument}{%
  \@enddocumenthook
  \@checkend{document}%
  \clearpage
  \begingroup
    \if@filesw
      \immediate\closeout\@mainaux
      \immediate\closeout\@partaux
      \let\@setckpt\@gobbletwo
      \let\@newl@bel\@testdef
      \@tempswafalse
      \makeatletter \input\c@lmainauxfile  %% change here
    \fi
    \c@lenddoca                            %% a replacement
    \@refundefined
  \endgroup
  \deadcycles\z@\@@end}

\newcommand{\c@lbenddocument}{%
  \@enddocumenthook
  \@checkend{document}%
  \clearpage
  \begingroup
    \if@filesw
      \immediate\closeout\@partaux   %% change here
      \let\@setckpt\@gobbletwo
      \let\@newl@bel\@testdef
      \@tempswafalse
      \makeatletter \input\c@lauxfile  %% change here
    \fi
    \c@lenddoca                        %% a replacement
%%    \@refundefined
  \endgroup
  \deadcycles\z@  %%\@@end     %% \@@end will close *all* files
  \c@lclosetocs               %% close local files
```

Reset sectional and page numbering. Also reset stuff to take account of the possibility that `\appendix` was called.

```
  \ifc@lhaschapter            %% reset chap/sec and page numbering
    \setcounter{chapter}{\value{c@lctr}}
    \gdef\thechapter{\c@lthechap}
    \gdef\@chapapp{\chaptername}
  \else
    \setcounter{section}{\value{c@lctr}}
    \gdef\thesection{\c@lthesec}
  \fi
  \setcounter{page}{\value{colpage}}
  \pagestyle{\c@lastyle}
```

```
  \erasetitling                 %% no \coltoc... or \published commands defined
%%  \let\@auxout\@mainaux
  \gdef\jobname{\mainjobname}   %% swap back to main document file name
  \endinput                     %% ignore any text after \end{document}
}
```

(*End of definition for* `\c@laenddocument` *and* `\c@lbenddocument`.)

9.2 Titling commands

Changes to `\maketitle` and friends are defined here.

`\maintitlefont` `\postmaintitle` `\mainauthorfont` `\postmainauthor` `\maindatefont` `\postmaindate`

To provide some flexibility in the titling style of the main document, user level commands are provided that can be changed to reconfigure the appearance resulting from `\maketitle`. These are defined initially to approximately mimic the normal LaTeX style.

```
\newcommand{\maintitlefont}{\begin{center}\LARGE}
\newcommand{\postmaintitle}{\par\end{center}\vskip 0.5em}
\newcommand{\mainauthorfont}{\begin{center}
  \large \lineskip .5em%
  \begin{tabular}[t]{c}}
\newcommand{\postmainauthor}{\end{tabular}\par\end{center}}
\newcommand{\maindatefont}{\begin{center}\large}
\newcommand{\postmaindate}{\par\end{center}}
```

(*End of definition for* `\maintitlefont` *and others. These functions are documented on page* 6.)

`\c@lamaketitle`

The `\maketitle` command (defined by each class) must not incapacitate several commands that it normally does (e.g., `\thanks`, `\maketitle`, `\title`, `\author`, `\date`, and `\and`). The following is a modification of `\maketitle` as in the article, report, and book classes.

```
\if@titlepage
  \newcommand{\c@lamaketitle}{\begin{titlepage}%
    \let\footnotesize\small
    \let\footnoterule\relax
    \let \footnote \thanks
    \null\vfil
    \vskip 60\p@
    {\maintitlefont \@title \postmaintitle}
    {\mainauthorfont \@author \postmainauthor}
    {\maindatefont \@date \postmaindate}
    \par
    \@thanks
    \vfil\null
    \end{titlepage}%
    \setcounter{footnote}{0}%
    \c@lmtitlempty                %% change here
  } % end titlepage defs
\else
  \newcommand{\c@lamaketitle}{\par
    \begingroup
      \c@lmtitle                  %% change here
```

```
    \endgroup
    \setcounter{footnote}{0}%
    \c@lmtitlempty                  %% change here
  } % end non-titlepage

```

I use `\def\@maketitle` to account for the cases where the main class does not have titling commands, and to ensure an existing `\@maketitle` gets overridden.

```
  \def\@maketitle{%
    \newpage
    \null
    \vskip 2em%
    {\maintitlefont \@title \postmaintitle}
    {\mainauthorfont \@author \postmainauthor}
    {\maindatefont \@date \postmaindate}
    \par
    \vskip 1.5em}
\fi    % end mod A of titling

```

This macro contains much of the code that is common between `\c@l@maketitle` and `\c@lbmaketitle`.

\c@lmtitle

```
\newcommand{\c@lmtitle}{%
  \renewcommand\thefootnote{\@fnsymbol\c@footnote}%
  \def\@makefnmark{\rlap{\@textsuperscript{\normalfont\@thefnmark}}}%
  \long\def\@makefntext##1{\parindent 1em\noindent
    \hb@xt@1.8em{%
      \hss\@textsuperscript{\normalfont\@thefnmark}}##1}%
  \if@twocolumn
    \ifnum \col@number=\@ne
      \@maketitle
    \else
      \twocolumn[\@maketitle]%
    \fi
  \else
    \newpage
    \global\@topnum\z@
    \@maketitle
  \fi
  \thispagestyle{plain}\@thanks
}

```

The modification for imported documents is simpler as there seems no point in allowing for a titlepage option. Also, don't start a new page for the title and use a local typesetting style.

```
  \newcommand{\c@lbmaketitle}{\par
    \begingroup
      \let\newpage\relax
      \let\@maketitle\c@lb@maketitle
      \c@lmtitle
    \endgroup
    \setcounter{footnote}{0}%
    \c@lmtitlempty
```

```
  }

```

(*End of definition for* `\c@lamaketitle` *and* `\c@lmtitle`.)

`\c@lmtitlempty` A helper macro to save some macro space. It empties elements of `\maketitle`.

```
\newcommand{\c@lmtitlempty}{%
  \global\let\@thanks\@empty
  \global\let\@author\@empty
  \global\let\@date\@empty
  \global\let\@title\@empty
}
```

(*End of definition for* `\c@lmtitlempty`.)

`\importtitlefont` `\postimporttitle` `\importauthorfont` `\postimportauthor` `\importdatefont` `\postimportdate` The fonts and layouts for use within `\maketitle` in imported documents.

```
\newcommand{\importtitlefont}{\begin{center}\LARGE\bfseries}
\newcommand{\postimporttitle}{\par\end{center}}
\newcommand{\importauthorfont}{\begin{center}
  \large\itshape \lineskip .5em%
  \begin{tabular}[t]{c}}
\newcommand{\postimportauthor}{\end{tabular}\par\end{center}}
\newcommand{\importdatefont}{\begin{center}\large}
\newcommand{\postimportdate}{\par\end{center}}

```

(*End of definition for* `\importtitlefont` *and others. These functions are documented on page 6.*)

`\c@lb@maketitle` This typesets the title in an imported document. It also includes the code for implementing the nodate, notitle and noauthor options. The vertical spacing is reduced slightly from normal. The title and author texts are set with `\importtitlefont` and `\importauthorfont` respectively. The date is set with `\importdatefont`.

```
\newcommand{\c@lb@maketitle}{%
%%  \newpage
  \begingroup
    \let\footnote\thanks
    \null
    \vskip 2em%
    \ifc@lnotitle\else
      {\importtitlefont \@title \postimporttitle}
    \fi
    \ifc@lnoauthor\else
      {\importauthorfont \@author \postimportauthor}
    \fi
    \ifc@lnodate\else
      {\importdatefont \@date \postimportdate}%
    \fi
    \par
  \endgroup
}

```

(*End of definition for* `\c@lb@maketitle`.)

9.3 Cross referencing

This section deals with `\tableofcontents` and friends, together with labeling, referencing and citations.

`\c@lbstarttoc` The `\@starttoc` command (from `ltsect.dtx`) has to be modified for imported documents so that a local ToC (LoF, LoT) file is used instead of the one for the main document. I use a file identifier of `c@l#1fnum` instead of the normal `tf@#1`.

```
\newcommand{\c@lb@starttoc}[1]{%
  \begingroup
    \makeatletter
    \def\tocfname{\jobname.#1}
    \@input{\tocfname}%
    \if@filesw
```

The following tests are to check if we can use a predefined output stream or have to allocate a new one (e.g., if a new list of floats hase been defined).

```
      \def\c@ltempa{#1} \def\c@ltempb{toc}
      \ifx \c@ltempa \c@ltempb
         \immediate\openout\c@ltocfnum \tocfname\relax
      \else
        \def\c@ltempb{lof}
        \ifx \c@tempa \c@ltempb
          \immediate\openout\c@lloffnum \tocfname\relax
        \else
          \def\c@ltempb{lot}
          \ifx \c@tempa \c@ltempb
            \immediate\openout\c@llotfnum \tocfname\relax
          \else
            \expandafter\newwrite\csname c@l#1fnum\endcsname
            \immediate\openout\csname c@l#1fnum\endcsname \tocfname\relax
          \fi
        \fi
      \fi
    \fi
    \@nobreakfalse
  \endgroup}

```

(*End of definition for* `\c@lbstarttoc`.)

`\c@lbwritefile` To go along with local ToC files, `\@writefile` (in `ltmiscen.dtx`) has to be modified to match. We also check if a local file exists before writing to it.

```
\newcommand{\c@lb@writefile}[2]{%
  \def\tocfname{\jobname.#1}
  \IfFileExists{\tocfname}
    {\@temptokena{#2}%
     \immediate\write\csname c@l#1fnum\endcsname{\the\@temptokena}}
    {}
}

```

(*End of definition for* `\c@lbwritefile`.)

\c@lclosetocs At the end of each imported document, any local ToC, etc., files must be closed.

```
\newcommand{\c@lclosetocs}{%
  \immediate\closeout\c@ltocfnum
  \immediate\closeout\c@lloffnum
  \immediate\closeout\c@llotfnum
}

```

(*End of definition for* `\c@lclosetocs`.)

\c@ltocgobble A macro containing some common code for `\...addtocontents` commands.

```
\newcommand{\c@ltocgobble}{%
  \let\label\@gobble \let\index\@gobble \let\glossary\@gobble}

```

(*End of definition for* `\c@ltocgobble`.)

\c@laaddtocontents
\c@laaddcontentsline It turns out to be useful to have versions of ToC addition commands that go towards the main document.

```
\newcommand{\c@laaddtocontents}[2]{%
  \protected@write\@mainaux
    {\c@ltocgobble}%
    {\string\@writefile{#1}{#2}}
}
\newcommand{\c@laaddcontentsline}[3]{%
  \c@laaddtocontents{#1}{\protect\contentsline{#2}{#3}{\thecolpage}}
}

```

(*End of definition for* `\c@laaddtocontents` *and* `\c@laaddcontentsline`.)

\c@lbaddtocontents To implement the maintoc option, we need a modification of `\addtocontents` (in `ltsect.dtx`) so that it will write to both the local and the main `.aux` files.

```
\ifc@lmaintoc
  \newcommand{\c@lbaddtocontents}[2]{%
    \protected@write\@auxout
      {\c@ltocgobble}%
      {\string\@writefile{#1}{#2}}
    \ifx\@mainaux\@auxout\else    %% prevent writing twice to mainaux
      \protected@write\@mainaux
        {\c@ltocgobble}%
        {\string\@writefile{#1}{\protect\begin{tocindent}{\toctocindent}}}
      \protected@write\@mainaux
        {\c@ltocgobble}%
        {\string\@writefile{#1}{#2}}
      \protected@write\@mainaux
        {\c@ltocgobble}%
        {\string\@writefile{#1}{\protect\end{tocindent}}}
    \fi
  }
\fi

```

(*End of definition for* `\c@lbaddtocontents`.)

\c@lblabel
\c@lb@setref

To get the 'correct' page number for labels in an imported document, we have to use the global and not the local page number.

```
\newcommand{\c@lblabel}[1]{\@bsphack
  \protected@write\@auxout{}%
    {\string\newlabel{#1}{{\@currentlabel}{\thecolpage}}}%
  \@esphack}
\newcommand{\c@lb@setref}[3]{%
  \ifx#1\relax
    \protect\G@refundefinedtrue
    \nfss@text{\reset@font\bfseries ??}%
    \@latex@warning{Reference `#3' on page \thecolpage \space
                    undefined}%
  \else
    \expandafter#2#1\null
  \fi}

```

(*End of definition for* `\c@lblabel` *and* `\c@lb@setref`.)

\c@lbnewlabel
\c@lbref
\c@lpagebref

For local labels and cross-references in an imported document, special versions of `\newlabel`, `\ref` and `\pageref` (in `ltxref.dtx`) are needed. I use `\jobname` to distinguish identical labels in different imported files.

```
\newcommand{\c@lbnewlabel}{\@newl@bel{R?\jobname?}}
\newcommand{\c@lbref}[1]{\expandafter\@setref\csname R?\jobname?@#1\endcsname
                \@firstoftwo{#1}}
\newcommand{\c@lbpageref}[1]{\expandafter\@setref\csname R?\jobname?@#1\endcsname
                \@secondoftwo{#1}}

```

(*End of definition for* `\c@lbnewlabel`, `\c@lbref`, *and* `\c@lpagebref`.)

\c@lwritemainbib
\c@lwritelocalbib

For citations we may be writing to either the main bibliography or to a local bibliography. For local bibliographies I use the `\jobname` as a distinguishing characteristic.

```
\newcommand{\c@lwritemainbib}{%
     \if@filesw\immediate\write\@mainaux{\string\citation{\@citeb}}\fi
     \@ifundefined{b@\@citeb}{\mbox{\reset@font\bfseries ?}%
      \G@refundefinedtrue
      \@latex@warning
        {Citation `\@citeb' on page \thecolpage \space undefined}}%
      {\hbox{\csname b@\@citeb\endcsname}}}
\newcommand{\c@lwritelocalbib}{%
     \if@filesw\immediate\write\@auxout{\string\citation{\@citeb}}\fi
     \@ifundefined{B?\jobname?@\@citeb}{\mbox{\reset@font\bfseries ?}%
      \G@refundefinedtrue
      \@latex@warning
        {Citation `\@citeb' on page \thecolpage \space undefined}}%
      {\hbox{\csname B?\jobname?@\@citeb\endcsname}}}

```

(*End of definition for* `\c@lwritemainbib` *and* `\c@lwritelocalbib`.)

\c@lanocite

Slight mod to the kernel `\nocite` macro.

```
\newcommand{\c@lanocite}[1]{\@bsphack
  \@for\@citeb:=#1\do{%
```

```
    \edef\@citeb{\expandafter\@firstofone\@citeb}%
    \if@filesw\immediate\write\@mainaux{\string\citation{\@citeb}}\fi
    \@ifundefined{b@\@citeb}{\G@refundefinedtrue
      \@latex@warning{Citation `\@citeb' undefined}}{}%
  \@esphack}
\let\nocite\c@lanocite

```

(*End of definition for* `\c@lanocite`.)

`\c@lbnocite` Need another version of `\nocite` for imports.

```
\newcommand{\c@lbnocite}[1]{\@bsphack
  \@for\@citeb:=#1\do{%
    \edef\@citeb{\expandafter\@firstofone\@citeb}%
    \if@filesw\immediate\write\@auxout{\string\citation{\@citeb}}\fi
    \@ifundefined{B?\jobname?@\@citeb}{\G@refundefinedtrue
      \@latex@warning{Citation `\@citeb' undefined}}{}%
  \@esphack}

```

(*End of definition for* `\c@lbnocite`.)

`\c@lb@citex` `\c@lbbibcite` For local citations in an imported document, special versions of `\@citex` and `\bibcite` (in `ltbibl.dtx`) are needed. I use the `\jobname` as a means of distinguishing between identical citation labels in different imported files.

```
\def\c@lb@citex[#1]#2{%
  \ifc@lcombib
    \c@lanocite{#2}%
  \fi
  \let\@citea\@empty
  \@cite{\@for\@citeb:=#2\do
    {\@citea\def\@citea{,\penalty\@m\ }%
     \edef\@citeb{\expandafter\@firstofone\@citeb\@empty}%
     \ifc@lcombib
       \c@lwritelocalbib
     \else
       \ifc@lonebib
         \c@lwritemainbib
       \else
         \c@lwritelocalbib
       \fi
     \fi}}{#1}}

\ifc@lonebib
  \newcommand{\c@lbbibcite}{\@newl@bel b}
  \ifc@lcombib
    \renewcommand{\c@lbbibcite}{\@newl@bel{B?\jobname?}}
  \fi
\else
  \newcommand{\c@lbbibcite}{\@newl@bel{B?\jobname?}}
\fi

```

(*End of definition for* `\c@lb@citex` *and* `\c@lbbibcite`.)

9.4 Page styles and numbering

\c@lapagestyle
\c@lastyle
\c@lbpagestyle

I want to be able to restore the main document pagestyle after an import. The current main pagestyle is kept in `\c@lastyle` which is defined by `\c@lapagestyle` (original in `ltpage.dtx`).

```
\newcommand{\c@lapagestyle}[1]{%
  \gdef\c@lastyle{#1}
  \@ifundefined{ps@#1}{}{\@nameuse{ps@#1}}
}
```

`\c@lbpagestyle` is the same as the kernel `\pagestyle`, except for some reason LaTeX complains that the original command `\undefinedpagestyle` is undefined!

```
\newcommand{\c@lbpagestyle}[1]{%
  \@ifundefined{ps@#1}{}{\@nameuse{ps@#1}}
}

```

(*End of definition for* `\c@lapagestyle`, `\c@lastyle`, *and* `\c@lbpagestyle`.)

\c@lbpagenumbering

Need to do something about changing the page numbering in imported documents, as it can have an unfortunate impact on later numbering. The original command is in `ltpageno.dtx`. Disable changing the style of the page number unless the folios option is in effect.

```
\ifc@lfolios
  \newcommand{\c@lbpagenumbering}[1]{%
    \global\c@page \@ne \gdef\thepage{\csname @#1\endcsname
      \c@page}}
\else
  \newcommand{\c@lbpagenumbering}[1]{}
\fi

```

(*End of definition for* `\c@lbpagenumbering`.)

\c@laps@plain
\c@lbps@plain

Alternative definitions for the `plain` pagestyle.

```
\if@twoside
  \newcommand{\c@laps@plain}{%
    \let\@mkboth\@gobbletwo
    \let\@oddhead\@empty \let\@evenhead\@empty
    \def\@oddfoot{\reset@font\hfil\thepage}%
    \def\@evenfoot{\reset@font\thepage\hfil}%
  }
  \ifc@lfolios
    \newcommand{\c@lbps@plain}{%
      \let\@mkboth\@gobbletwo
      \let\@oddhead\@empty \let\@evenhead\@empty
      \def\@oddfoot{\reset@font(\thepage)\hfil\thecolpage}%
      \def\@evenfoot{\reset@font\thecolpage\hfil(\thepage)}%
    }
  \else
    \newcommand{\c@lbps@plain}{%
      \let\@mkboth\@gobbletwo
      \let\@oddhead\@empty \let\@evenhead\@empty
      \def\@oddfoot{\reset@font\hfil\thecolpage}%
```

```
      \def\@evenfoot{\reset@font\thecolpage\hfil}%
    }
  \fi
\else
  \newcommand{\c@laps@plain}{%
    \let\@mkboth\@gobbletwo
    \let\@oddhead\@empty \let\@evenhead\@empty
    \def\@oddfoot{\reset@font\hfil\thepage}%
    \let\@evenfoot\@oddfoot
  }
  \ifc@lfolios
    \newcommand{\c@lbps@plain}{%
      \let\@mkboth\@gobbletwo
      \let\@oddhead\@empty \let\@evenhead\@empty
      \def\@oddfoot{\reset@font(\thepage)\hfil\thecolpage}%
      \let\@evenfoot\@oddfoot
    }
  \else
    \newcommand{\c@lbps@plain}{%
      \let\@mkboth\@gobbletwo
      \let\@oddhead\@empty \let\@evenhead\@empty
      \def\@oddfoot{\reset@font\hfil\thecolpage}%
      \let\@evenfoot\@oddfoot
    }
  \fi
\fi

```

(*End of definition for* `\c@laps@plain` *and* `\c@lbps@plain`.)

10 New class commands

That completes the preliminaries. We can now move on and define the new commands and environment implemented by the combine class.

`\ps@combine` A new pagestyle. Like `plain` but the page numbers are put at a bottom corner instead of being centered. It also changes the the `plain` style to match.

```
\if@twoside
  \newcommand{\ps@combine}{%
    \let\@mkboth\@gobbletwo
    \let\@oddhead\@empty \let\@evenhead\@empty
    \def\@oddfoot{\reset@font\hfil\thepage}%
    \def\@evenfoot{\reset@font\thepage\hfil}%
    \let\ps@plain\c@laps@plain
  }
\else
  \newcommand{\ps@combine}{%
    \let\@mkboth\@gobbletwo
    \let\@oddhead\@empty \let\@evenhead\@empty
    \def\@oddfoot{\reset@font\hfil\thepage}%
    \let\@evenfoot\@oddfoot
    \let\ps@plain\c@laps@plain
  }
```

```
\fi
```

(*End of definition for* `\ps@combine`.)

`\import` `\import{`⟨*texfile*⟩`}` attempts to find and input the file ⟨*texfile*⟩`.tex`. It is very loosely based on `\include`. It also adds the `\coltoctitle`, etc., to the ToC in a useful order[7].

```
\newcommand{\import}[1]{%
  \ifc@ltoctitle
    \addtocontents{toc}{\protect\contentsline{coltoctitle}%
      {\protect\numberline{}\savec@ltoctitle}{\thecolpage}}
    \c@ltoctitlefalse
  \fi
  \ifc@ltocauthor
    \addcontentsline{toc}{coltocauthor}{\protect\numberline{}\savec@ltocauthor}
    \c@ltocauthorfalse
  \fi
  \ifc@lpub
    \addcontentsline{toc}{published}{\protect\numberline{}\savec@lpublished}
    \c@lpubfalse
  \fi
  \gdef\jobname{#1}

  \expandafter\let\csname B?\jobname?@*\endcsname\@empty
  \gdef\c@lauxfile{#1.aux}
  \@tempswatrue
  \let\@auxout\@partaux
  \@input@{#1.tex}%
%%  \@writeckpt{#1}%
  \let\@auxout\@mainaux
}
```

(*End of definition for* `\import`. *This function is documented on page 6.*)

`\bodytitlemark` `\bodytitle` `\bodytitle[`⟨*short*⟩`]{`⟨*long*⟩`}` is for putting a sectional title into the main document for the following imported document. It is like a `\section` (or `\chapter`) command and has its own numbering scheme.

```
\newcommand*\bodytitlemark[1]{}
\newcounter{bodytitle}
\renewcommand{\thebodytitle}{\@arabic\c@bodytitle}
\ifc@lhaschapter
  \newcommand{\bodytitle}{\@startsection{bodytitle}{0}{\z@}%
                                        {-3.5ex \@plus -1ex \@minus -.2ex}%
                                        {2.3ex \@plus.2ex}%
                                        {\normalfont\Huge\bfseries}}
\else
  \newcommand{\bodytitle}{\@startsection{bodytitle}{1}{\z@}%
                                        {-3.5ex \@plus -1ex \@minus -.2ex}%
                                        {2.3ex \@plus.2ex}%
                                        {\normalfont\Large\bfseries}}
\fi
```

[7] This need pointed out by Stefan Becuwe (`Stefan.Becuwe@ua.ac.be`) by Email on 2001/07/09.

(*End of definition for* `\bodytitlemark` *and* `\bodytitle`.)

`\c@ll@chapseci` `\c@ll@chapsecii` These are two helper macros that contain common code used for some of the ToC typesetting commands that will be defined. Essentially they hold the first and second quarter of the code for ToC typesetting of chapters and sections.

```
\newcommand{\c@ll@chapseci}{%
%  \setlength\@tempdima{1.5em}%
  \setlength\@tempdima{0em}%
  \begingroup
    \parindent \z@ \rightskip \@pnumwidth
    \parfillskip -\@pnumwidth
    \leavevmode
}
\newcommand{\c@ll@chapsecii}[2]{%
  \advance\leftskip\@tempdima
  \hskip -\leftskip
  #1\nobreak\hfil \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
}

```

(*End of definition for* `\c@ll@chapseci` *and* `\c@ll@chapsecii`.)

`\l@bodytitle` `\l@bodytitle` typesets the ToC entry for `\bodytitle`.

```
\ifc@lhaschapter
  \newcommand*\l@bodytitle[2]{%  % as per chapter
    \ifnum \c@tocdepth >\m@ne
      \addpenalty{-\@highpenalty}%
      \addvspace{1.0em \@plus\p@}%
      \c@ll@chapseci
      \bfseries                    %% bold ToC entry
      \c@ll@chapsecii{#1}{#2}
      \penalty\@highpenalty
      \endgroup
    \fi}
\else
  \newcommand*\l@bodytitle[2]{%  % as per section
    \ifnum \c@tocdepth >\z@
      \addpenalty\@secpenalty
      \addvspace{1.0em \@plus\p@}%
      \c@ll@chapseci
      \bfseries                    %% bold ToC entry
      \c@ll@chapsecii{#1}{#2}
      \endgroup
    \fi}
\fi

```

(*End of definition for* `\l@bodytitle`.)

`\toctitleindent` `\tocauthorindent` `\tocpubindent` `\toctocindent` These lengths control the indentations of the imported title, author, published, and sectional headings in the main ToC.

```
\newlength{\toctitleindent}\setlength{\toctitleindent}{0pt}
\newlength{\tocauthorindent}\setlength{\tocauthorindent}{1.5em}
\newlength{\tocpubindent}\setlength{\tocpubindent}{1.5em}
```

```
\newlength{\toctocindent}\setlength{\toctocindent}{1.5em}
```

(*End of definition for* `\toctitleindent` *and others. These functions are documented on page 7.*)

`tocindent` (*env.*) The `tocindent` environment is used to set the various main ToC indents.

```
\newenvironment{tocindent}[1]{%
  \hangindent #1 \hangafter -100\relax}{}
```

`\toctitlefont` `\tocauthorfont` `\tocpubfont` These macros define the fonts to be used for typesetting the title, author and publication entries in the main ToC.

```
\newcommand{\toctitlefont}{\bfseries}
\newcommand{\tocauthorfont}{\itshape}
\newcommand{\tocpubfont}{\normalfont}
```

(*End of definition for* `\toctitlefont`, `\tocauthorfont`, *and* `\tocpubfont`. *These functions are documented on page 7.*)

`\coltoctitle` `\l@coltoctitle` `\coltoctitle{`⟨*title*⟩`}` adds ⟨*title*⟩ to the ToC for the following imported document. The ToC entry is typeset by `\l@coltoctitle`.

```
\newcommand*{\coltoctitle}[1]{%
  \c@ltoctitletrue%
  \gdef\savec@ltoctitle{#1}
}
```

We want to arrange it so that if the title is near the bottom of a page in the ToC, have the page break before rather than after the title.

```
\ifc@lhaschapter
  \newcommand*\l@coltoctitle[2]{%  % as per chapter
    \ifnum \c@tocdepth >\m@ne
      \addpenalty{-\@highpenalty}% encourage page break
      \addvspace{1.0em \@plus\p@}%
      \c@ll@chapseci
      \setlength{\@tempdima}{\toctitleindent}% eliminate any spaces here
      \toctitlefont                    %% bold ToC entry
      \c@ll@chapsecii{#1}{#2}
      \penalty\@highpenalty      % discourage page break
      \endgroup
    \fi}
\else
  \newcommand*\l@coltoctitle[2]{%  % as per section
    \ifnum \c@tocdepth >\z@
      \addpenalty\@secpenalty
      \addvspace{1.0em \@plus\p@}%
      \c@ll@chapseci
      \setlength{\@tempdima}{\toctitleindent}% eliminate any spaces here
      \toctitlefont                    %% bold ToC entry
      \c@ll@chapsecii{#1}{#2}
      \penalty\@highpenalty      % discourage page break
      \endgroup
    \fi}
\fi
```

(*End of definition for* `\coltoctitle` *and* `\l@coltoctitle`. *These functions are documented on page 7.*)

`\coltocauthor` `\l@coltocauthor`

`\coltocauthor{`⟨*authors*⟩`}` adds ⟨*authors*⟩ to the ToC for the following imported document. The ToC entry is typeset by `\l@coltocauthor`. Note that a page number is not printed.

```
\newcommand*{\coltocauthor}[1]{%
  \c@ltocauthortrue%
  \gdef\savec@ltocauthor{#1}
}

```

As it is unlikely that the author will be in the ToC without the title, don't encourage a page break beforehand.

```
\ifc@lhaschapter
  \newcommand*\l@coltocauthor[2]{%  % similar to chapter
    \ifnum \c@tocdepth >\m@ne
      \c@ll@chapseci
      \setlength{\@tempdima}{\tocauthorindent}% eliminate any spaces here
      \tocauthorfont                    %% italic ToC entry
      \c@ll@chapsecii{#1}{}
      \penalty\@highpenalty  % discourage page break
      \endgroup
    \fi}
\else
  \newcommand*\l@coltocauthor[2]{%  % similar to section
    \ifnum \c@tocdepth >\z@
      \c@ll@chapseci
      \setlength{\@tempdima}{\tocauthorindent}% eliminate any spaces here
      \tocauthorfont                    %% italic ToC entry
      \c@ll@chapsecii{#1}{}
      \penalty\@highpenalty  % discourage page break
      \endgroup
    \fi}
\fi

```

(*End of definition for* `\coltocauthor` *and* `\l@coltocauthor`. *These functions are documented on page 7.*)

`\published` `\pubfont` `\l@published`

`\published[`⟨*short*⟩`]{`⟨*long*⟩`}` adds ⟨*long*⟩ to the body of the document. It also adds ⟨*long*⟩ to the ToC, unless the optional argument is present, in which case ⟨*short*⟩ is added to the ToC.
In the body of the document ⟨*long*⟩ is typeset using `\pubfont`. The ToC entry is typeset by `\l@published`. Note that a page number is not printed.

```
\newcommand{\published}[2][\@empty]{%
  \c@lpubtrue
  \ifc@lnopubintoc\else
    \ifx #1\@empty
      \gdef\savec@lpublished{#2}
    \else
      \gdef\savec@lpublished{#1}
    \fi
  \fi
```

```
  \ifc@lnopubindoc\else
    {\parindent \z@ \pubfont #2\par\nobreak}
  \fi
}
\newcommand{\pubfont}{\normalfont\centering}
```

As the published information is unlikely to be in the ToC without prior title or author information, don't encourage a prior break, but also don't try and prevent one afterwards either.

```
\ifc@lhaschapter
  \newcommand*\l@published[2]{%  % similar to chapter
    \ifnum \c@tocdepth >\m@ne
      \c@ll@chapseci
      \setlength{\@tempdima}{\tocpubindent}% eliminate any spaces here
      \tocpubfont               %% normal font ToC entry
      \c@ll@chapsecii{#1}{}
      \endgroup
    \fi}
\else
  \newcommand*\l@published[2]{%  % similar to section
    \ifnum \c@tocdepth >\z@
      \c@ll@chapseci
      \setlength{\@tempdima}{\tocpubindent}% eliminate any spaces here
      \tocpubfont              %% normal font ToC entry
      \c@ll@chapsecii{#1}{}
      \endgroup
    \fi}
\fi
```

(*End of definition for* `\published`, `\pubfont`, *and* `\l@published`. *These functions are documented on page 7.*)

`\erasetitling` This macro sets the `\coltoctitle`, `\coltocauthor` and `\published` flags to FALSE.

```
\newcommand{\erasetitling}{\c@ltoctitlefalse\c@ltocauthorfalse\c@lpubfalse}
```

(*End of definition for* `\erasetitling`. *This function is documented on page 7.*)

`papers` (*env.*) The `papers` environment has one optional argument, default `\cleardoublepage` which gets executed at the start of the environment. Then the appropriate changes to the kernel commands are executed.

```
\newenvironment{papers}[1][\cleardoublepage]{%
#1
\setuppapers
}{%
\takedownpapers
}
```

`\setuppapers` This macro executes the kernel modifications within the `papers` environment. Various options are also checked and implemented if required. Sectional numbering is reset to zero. Imported files can't `\include` other files, so `\include` is replaced by `\input`.

If \chapter is defined, then the chapter typesetting is redefined to look more like a \section heading. .

```
\newcommand{\setuppapers}{%
\let\documentclass\c@lbdocumentclass
\ifc@lpackages\else \let\usepackage\c@lbusepackage \fi
\let\document\c@lbdocument
\let\enddocument\c@lbenddocument
\let\LoadClass\c@lbLoadClass
%% \let\maketitle\c@lbmaketitle
\def\maketitle{\c@lbmaketitle}
\let\@writefile\c@lb@writefile
\let\@starttoc\c@lb@starttoc
\ifc@lnomaketitle \let\maketitle\relax \fi
\ifc@lnotoc \let\tableofcontents\relax \fi
\ifc@lnolof \let\listoffigures\relax \fi
\ifc@lnolot \let\listoftables\relax \fi
\ifc@lmaintoc \let\addtocontents\c@lbaddtocontents \fi
\let\label\c@lblabel
\let\@setref\c@lb@setref
\let\newlabel\c@lbnewlabel
\let\ref\c@lbref
\let\pageref\c@lbpageref
%%% \renewcommand{\bibliographystyle}[1]{}
\ifc@lcombib
\else
  \ifc@lonebib
    \renewcommand{\bibliography}[1]{}
  \fi
\fi
\let\@citex\c@lb@citex
\let\bibcite\c@lbbibcite
\let\nocite\c@lbnocite
\ifc@lhaschapter
  \renewcommand{\chapter}{\@startsection{chapter}{0}{\z@}%
                                        {-3.5ex \@plus -1ex \@minus -.2ex}%
                                        {2.3ex \@plus.2ex}%
                                        {\normalfont\Large\bfseries}}
\fi
\c@ltoctitlefalse
\c@ltocauthorfalse
\c@lpubfalse
\let\pagenumbering\c@lbpagenumbering
\setcounter{colpage}{\value{page}}
\let\pagestyle\c@lbpagestyle
\pagestyle{\c@lastyle}
\let\include\input
}

```

(*End of definition for* \setuppapers.)

\takedownpapers This macro executes the actions, if any, at the end of the papers environment.

```
\newcommand{\takedownpapers}{%
}
```

```
970
```

(*End of definition for* `\takedownpapers`.)

`\emptyAtBeginDocument` This macro empties tokens stored for use at `\begin{document}` time.

```
971 \newcommand{\emptyAtBeginDocument}{\let\@begindocumenthook\@empty}
972
```

(*End of definition for* `\emptyAtBeginDocument`. *This function is documented on page 9.*)

Finally, use the appropriate revised kernel commands for the main document.

```
973 \let\document\c@ladocument
974 \let\enddocument\c@laenddocument
975 %%\let\maketitle\c@lamaketitle
976 \let\pagestyle\c@lapagestyle
977 \pagestyle{combine}
978
```

The end of this class.

```
979 ⟨/usc⟩
```

11 The combinet package code

```
980 ⟨*pck⟩
```

The usual preliminaries. The combine class is expected.

```
981 \@ifclassloaded{combine}{}{%
982   \PackageError{combinet}{The `combine' class is expected}{\@ehc}%
983 }
984
```

`\ifc@lnomtitle` `\ifc@lnomauthor` `\ifc@lnothanks` `\ifc@lpubopt` `\ifc@lpubtop` `\ifc@lpubs` Booleans for implementing the options.

```
985 \newif\ifc@lnomtitle
986   \c@lnomtitlefalse
987 \newif\ifc@lnomauthor
988   \c@lnomauthorfalse
989 \newif\ifc@lnothanks
990   \c@lnothanksfalse
991 \newif\ifc@lpubopt
992   \c@lpuboptfalse
993 \newif\ifc@lpubtop
994   \c@lpubtopfalse
995 \newif\ifc@lpubs
996   \c@lpubsfalse
997
```

(*End of definition for* `\ifc@lnomtitle` *and others.*)

Declare and execute the options.

```
998 \DeclareOption{nomtitle}{\c@lnomtitletrue}
999 \DeclareOption{nomauthor}{\c@lnomauthortrue}
1000 \DeclareOption{nothanks}{\c@lnothankstrue}
1001 \DeclareOption{pub}{\c@lpuboptttrue\c@lpubtopfalse\c@lpubstrue}
1002 \DeclareOption{pubtop}{\c@lpubtoptrue\c@lpuboptfalse\c@lpubstrue}
1003 \ProcessOptions\relax
1004
```

\published
\c@lpubtoc
\c@lpubbody

In order to implement either of the pub options, the \published command must be modified to delay printing.

```
\ifc@lpubs
  \renewcommand{\published}[2][\@empty]{%
    \c@lpubtrue
    \ifx #1\@empty
      \gdef\c@lpubtoc{#2}
    \else
      \gdef\c@lpubtoc{#1}
    \fi
    \gdef\c@lpubbody{#2}
  }
\fi
```

(*End of definition for* \published, \c@lpubtoc, *and* \c@lpubbody. *These functions are documented on page 7.*)

\title
\author

To implement the nothanks option, the \title and \author kernel commands must be extended to save their values.

Originally I used \xdef below which worked unless there was some command other than \thanks in the title or author text. David Kastrup[8] and Donald Arseneau[9] both pointed out the use of \protected@xdef. Barbara Beeton[10] suggested adding the \unskip to the redefinition of \and in order to remove any preceding spaces when it gets printed in the ToC.

```
\appendiargdef{\title}{%
  \begingroup
    \renewcommand{\thanks}[1]{}
    \protected@xdef\c@l@title{#1}
  \endgroup
}
\appendiargdef{\author}{%
  \begingroup
    \renewcommand{\thanks}[1]{}
    \renewcommand{\and}{\unskip, }
    \protected@xdef\c@l@author{#1}
  \endgroup
}
```

(*End of definition for* \title *and* \author.)

\c@lbmaketitle

The \c@lbmaketitle command is (re)defined so that it adds the title and author (if given) to the main ToC. If \coltoctitle and/or \coltocauthor have been used then nothing is done with the title and/or author respectively.

```
\def\c@lbmaketitle{\par
  \begingroup
    \let\newpage\relax
    \let\@maketitle\c@lb@maketitle
    \ifc@lpub
```

[8] At dak@neuroinformatik.ruhr-uni-bochum.de.
[9] At asnd@triumf.ca.
[10] bnb@ams.org

```
      \ifc@lpubtop
        \ifc@lnopubindoc\else
          {\parindent\z@ \pubfont \c@lpubbody\par\nobreak}
        \fi
      \fi
    \fi
    \c@lmtitle        %% typeset the title block
  \endgroup
  \setcounter{footnote}{0}
  \begingroup
    \let\thanks\@empty
    \ifc@ltoctitle\else
      \ifc@lnomtitle\else
        \ifx\@title\@empty\else
          \ifc@lnothanks
```

I originally used

```
\c@laaddtocontents{toc}%
  {\protect\contentsline{coltoctitle}%
  {\protect\numberline{}\c@l@title}{\thecolpage}}
```

below, but James Szinger[11] asked me to change to `\c@laaddcontentsline` instead (which I should have done, looking back I've no idea why I didn't) to help with using hyperref, which he said required redefining `\c@laaddcontentsline` to be compatible with hyperref's (hyperref never seems to bother with trying to be compatible with other classes though).

```
            \c@laaddcontentsline{toc}%
              {coltoctitle}{\protect\numberline{}\c@l@title}%
          \else
            \c@laaddcontentsline{toc}%
              {coltoctitle}{\protect\numberline{}\@title}%
          \fi
        \fi
      \fi
    \fi
    \ifc@ltocauthor\else
      \ifc@lnomauthor\else
        \ifx\@author\@empty\else
          \ifc@lnothanks
            \c@laaddcontentsline{toc}%
              {coltocauthor}{\protect\numberline{}\c@l@author}
          \else
            \c@laaddcontentsline{toc}%
              {coltocauthor}{\protect\numberline{}\@author}
          \fi
        \fi
      \fi
    \fi
  \endgroup
  \ifc@lpub
    \ifc@lpubopt
```

[11] Email, 2004/03/05, szinger@lanl.gov

```
      \ifc@lnopubindoc\else
        {\parindent\z@ \pubfont \c@lpubbody\par\nobreak}
      \fi
    \fi
    \ifc@lpubs
      \ifc@lnopubintoc\else
        \c@laaddcontentsline{toc}{published}{\protect\numberline{}\c@lpubtoc}
      \fi
    \fi
  \fi
  \c@lmtitlempty
}
```

(*End of definition for* `\c@lbmaketitle`.)

The end of this package

⟨/pck⟩

12 The combnat package code

This package calls the natbib package [Dal99] and then makes some minor changes to some of its macro definitions.

⟨*natpack⟩

The usual preliminaries. The natbib package is required and all options are passed to it to deal with.

```
\@ifclassloaded{combine}{}{%
  \PackageError{combnat}{The `combine' class is expected}{\@ehc}}
\RequirePackageWithOptions{natbib}
```

For multiple bibliographies (`\c@lonebibfalse`) the change consists of replacing natbib's naming of citation labels in the `.aux` files by the form used by the combine class. That is, the `b@` in each code fragment like `b@#...` or `b@\...` is replaced by `B?\jobname?@...`.

For a single main bibliography `\c@lonebibtrue`, implementation is much easier, merely ensuring that the stuff gets written to the main *.aux file.

`\c@lNATwritemainbib` `\c@lNATwritemainbibdate`

We have to write different biblabels to different files. These write to the main *.aux file.

```
\newcommand{\c@lNATwritemainbib}{%
  \if@filesw\immediate\write\@mainaux{\string\citation{\@citeb}}\fi
  \@ifundefined{b@\@citeb\@extra@b@citeb}{%
    {\reset@font\bfseries?}
     \NAT@citeundefined\PackageWarning{natbib}%
    {Citation `\@citeb' on page \thepage \space undefined}}}

\newcommand{\c@lNATwritemainbibdate}{%
  \if@filesw\immediate\write\@mainaux{\string\citation{\@citeb}}\fi
  \@ifundefined{b@\@citeb\@extra@b@citeb}{\@citea%
    {\reset@font\bfseries ?}\NAT@citeundefined
     \PackageWarning{natbib}%
       {Citation `\@citeb' on page \thepage \space undefined}
     \def\NAT@date{}}}
```

(*End of definition for* `\c@lNATwritemainbib` *and* `\c@lNATwritemainbibdate`.)

`\c@lNATwritelocalbib` `\c@lNATwritelocalbibdate` We have to write different biblabels to different files. These write to the local *.aux files.

```
\newcommand{\c@lNATwritelocalbib}{%
  \if@filesw\immediate\write\@auxout{\string\citation{\@citeb}}\fi
  \@ifundefined{B?\jobname?@\@citeb\@extra@b@citeb}{%
    {\reset@font\bfseries?}
     \NAT@citeundefined\PackageWarning{natbib}%
    {Citation `\@citeb' on page \thepage \space undefined}}}

\newcommand{\c@lNATwritelocalbibdate}{%
  \if@filesw\immediate\write\@auxout{\string\citation{\@citeb}}\fi
  \@ifundefined{B?\jobname?@\@citeb\@extra@b@citeb}{\@citea%
    {\reset@font\bfseries ?}\NAT@citeundefined
     \PackageWarning{natbib}%
       {Citation `\@citeb' on page \thepage \space undefined}
     \def\NAT@date{}}}
```

(*End of definition for* `\c@lNATwritelocalbib` *and* `\c@lNATwritelocalbibdate`.)

`\c@lNAT@citexnum@swatrue` Holds some of the internals of the original `\NAT@citexnum`.

```
\newcommand{\c@lNAT@citexnum@swatrue}{%
  \ifnum\NAT@ctype>1\relax\@citea
    \hyper@natlinkstart{\@citeb\@extra@b@citeb}%
        \ifnum\NAT@ctype=2\relax\NAT@test{\NAT@ctype}%
        \else\NAT@alias
        \fi\hyper@natlinkend\else
    \ifnum\NAT@sort>1\relax
      \begingroup\catcode`\_=8
        \ifcat _\ifnum\z@<0\NAT@num _\else A\fi
          \global\let\NAT@nm=\NAT@num \else \gdef\NAT@nm{-2}\fi
        \ifcat _\ifnum\z@<0\NAT@last@num _\else A\fi
          \global\@tempcnta=\NAT@last@num \global\advance\@tempcnta by\@ne
          \else \global\@tempcnta\m@ne\fi
      \endgroup
      \ifnum\NAT@nm=\@tempcnta
        \ifx\NAT@last@yr\relax
          \edef\NAT@last@yr{\@citea \mbox{\noexpand\citenumfont\NAT@num}}%
        \else
          \edef\NAT@last@yr{--\penalty\@m\mbox{\noexpand\citenumfont\NAT@num}}%
        \fi
      \else
        \NAT@last@yr \@citea \mbox{\citenumfont\NAT@num}%
        \let\NAT@last@yr\relax
      \fi
    \else
      \@citea \mbox{\hyper@natlinkstart{\@citeb\@extra@b@citeb}%
        {\citenumfont\NAT@num}\hyper@natlinkend}%
    \fi
  \fi
  \def\@citea{\NAT@sep\penalty\@m\NAT@space}%
}
```

(*End of definition for* `\c@lNAT@citexnum@swatrue`.)

`\NAT@citexnum` We redefine the original `\NAT@citexnum` to write for the main file.

```
\def\NAT@citexnum[#1][#2]#3{%
  \NAT@sort@cites{#3}%
  \let\@citea\@empty
  \@cite{\def\NAT@num{-1}\let\NAT@last@yr\relax\let\NAT@nm\@empty
    \@for\@citeb:=\NAT@cite@list\do
      {\edef\@citeb{\expandafter\@firstofone\@citeb}%
       \c@lNATwritemainbib   %%% change here
       {\let\NAT@last@num\NAT@num\let\NAT@last@nm\NAT@nm
        \NAT@parse{\@citeb}%
        \ifNAT@longnames\@ifundefined{bv@\@citeb\@extra@b@citeb}{%
            \let\NAT@name=\NAT@all@names
            \global\@namedef{bv@\@citeb\@extra@b@citeb}{}}{}%
        \fi
        \ifNAT@full\let\NAT@nm\NAT@all@names\else
          \let\NAT@nm\NAT@name
        \fi
      \ifNAT@swa
        \c@lNAT@citexnum@swatrue
      \else
        \ifcase\NAT@ctype\relax
          \ifx\NAT@last@nm\NAT@nm \NAT@yrsep\penalty\@m\NAT@space\else
          \@citea \NAT@test{1}\ \NAT@@open
          \if*#1*\else#1\ \fi\fi \NAT@mbox{%
          \hyper@natlinkstart{\@citeb\@extra@b@citeb}%
          {\citenumfont\NAT@num}\hyper@natlinkend}%
          \def\@citea{\NAT@@close\NAT@sep\penalty\@m\ }%
        \or\@citea
          \hyper@natlinkstart{\@citeb\@extra@b@citeb}%
           \NAT@test{\NAT@ctype}\hyper@natlinkend
          \def\@citea{\NAT@sep\penalty\@m\ }%
        \or\@citea
          \hyper@natlinkstart{\@citeb\@extra@b@citeb}%
           \NAT@test{\NAT@ctype}\hyper@natlinkend
          \def\@citea{\NAT@sep\penalty\@m\ }%
        \or\@citea
          \hyper@natlinkstart{\@citeb\@extra@b@citeb}%
           \NAT@alias\hyper@natlinkend
          \def\@citea{\NAT@sep\penalty\@m\ }%
        \fi
      \fi
      }}%
      \ifnum\NAT@sort>1\relax\NAT@last@yr\fi
      \ifNAT@swa\else\ifnum\NAT@ctype=0\if*#2*\else
      \NAT@cmt#2\fi \NAT@@close\fi\fi}{#1}{#2}}

```

(*End of definition for* `\NAT@citexnum`.)

`\c@lbNAT@citexnum` A local version of `\NAT@citexnum`.

```
\def\c@lbNAT@citexnum[#1][#2]#3{%
  \ifc@lcombib\c@laNATnocite{#3}\fi   %%% change here
```

```
  \NAT@sort@cites{#3}%
  \let\@citea\@empty
  \@cite{\def\NAT@num{-1}\let\NAT@last@yr\relax\let\NAT@nm\@empty
    \@for\@citeb:=\NAT@cite@list\do
    {\edef\@citeb{\expandafter\@firstofone\@citeb}%
     \c@lNATwritelocalbib              %%% change here
     {\let\NAT@last@num\NAT@num\let\NAT@last@nm\NAT@nm
      \NAT@parse{\@citeb}%
      \ifNAT@longnames\@ifundefined{bv@\@citeb\@extra@b@citeb}{%
        \let\NAT@name=\NAT@all@names
        \global\@namedef{bv@\@citeb\@extra@b@citeb}{}}{}%
      \fi
      \ifNAT@full\let\NAT@nm\NAT@all@names\else
        \let\NAT@nm\NAT@name\fi
      \ifNAT@swa
        \c@lNAT@citexnum@swatrue
      \else
        \ifcase\NAT@ctype\relax
          \ifx\NAT@last@nm\NAT@nm \NAT@yrsep\penalty\@m\NAT@space\else
          \@citea \NAT@test{1}\ \NAT@@open
          \if*#1*\else#1\ \fi\fi \NAT@mbox{%
          \hyper@natlinkstart{\@citeb\@extra@b@citeb}%
          {\citenumfont\NAT@num}\hyper@natlinkend}%
          \def\@citea{\NAT@@close\NAT@sep\penalty\@m\ }%
        \or\@citea
          \hyper@natlinkstart{\@citeb\@extra@b@citeb}%
          \NAT@test{\NAT@ctype}\hyper@natlinkend
          \def\@citea{\NAT@sep\penalty\@m\ }%
        \or\@citea
          \hyper@natlinkstart{\@citeb\@extra@b@citeb}%
          \NAT@test{\NAT@ctype}\hyper@natlinkend
          \def\@citea{\NAT@sep\penalty\@m\ }%
        \or\@citea
          \hyper@natlinkstart{\@citeb\@extra@b@citeb}%
          \NAT@alias\hyper@natlinkend
          \def\@citea{\NAT@sep\penalty\@m\ }%
        \fi\fi
      }}%
      \ifnum\NAT@sort>1\relax\NAT@last@yr\fi
      \ifNAT@swa\else\ifnum\NAT@ctype=0\if*#2*\else
      \NAT@cmt#2\fi \NAT@@close\fi\fi}{#1}{#2}}

```

(*End of definition for* `\c@lbNAT@citexnum`.)

`\c@lNAT@citex@swatrue` Holds some of the internals of the original `\NAT@citex`.

```
\newcommand{\c@lNAT@citex@swatrue}{%
  \ifcase\NAT@ctype
    \if\relax\NAT@date\relax
      \@citea\hyper@natlinkstart{\@citeb\@extra@b@citeb}%
      \NAT@nmfmt{\NAT@nm}\NAT@date\hyper@natlinkend
    \else
      \ifx\NAT@last@nm\NAT@nm\NAT@yrsep
        \ifx\NAT@last@yr\NAT@year
          \hyper@natlinkstart{\@citeb\@extra@b@citeb}\NAT@exlab
```

```
          \hyper@natlinkend
        \else
          \unskip\
          \hyper@natlinkstart{\@citeb\@extra@b@citeb}\NAT@date
          \hyper@natlinkend
        \fi
      \else\@citea\hyper@natlinkstart{\@citeb\@extra@b@citeb}%
        \NAT@nmfmt{\NAT@nm}%
        \hyper@natlinkbreak{\NAT@aysep\ }{\@citeb\@extra@b@citeb}%
        \NAT@date\hyper@natlinkend
      \fi
    \fi
  \or\@citea\hyper@natlinkstart{\@citeb\@extra@b@citeb}%
     \NAT@nmfmt{\NAT@nm}\hyper@natlinkend
  \or\@citea\hyper@natlinkstart{\@citeb\@extra@b@citeb}%
     \NAT@date\hyper@natlinkend
  \or\@citea\hyper@natlinkstart{\@citeb\@extra@b@citeb}%
     \NAT@alias\hyper@natlinkend
  \fi \def\@citea{\NAT@sep\ }%
}
```

(*End of definition for* `\c@lNAT@citex@swatrue`.)

`\c@laNAT@citex` We redefine the original `\NAT@citex` macro for the main document.

```
\def\NAT@citex%
  [#1][#2]#3{%
  \NAT@sort@cites{#3}%
  \let\@citea\@empty
  \@cite{\let\NAT@nm\@empty\let\NAT@year\@empty
    \@for\@citeb:=\NAT@cite@list\do
    {\edef\@citeb{\expandafter\@firstofone\@citeb}%
     \c@lNATwritemainbibdate     %%%% change here
     {\let\NAT@last@nm=\NAT@nm\let\NAT@last@yr=\NAT@year
     \NAT@parse{\@citeb}%
     \ifNAT@longnames\@ifundefined{bv@\@citeb\@extra@b@citeb}{%
         \let\NAT@name=\NAT@all@names
         \global\@namedef{bv@\@citeb\@extra@b@citeb}{}}{}%
     \fi
     \ifNAT@full\let\NAT@nm\NAT@all@names\else
       \let\NAT@nm\NAT@name\fi
     \ifNAT@swa
       \c@lNAT@citex@swatrue
     \else
       \ifcase\NAT@ctype
         \if\relax\NAT@date\relax
           \@citea\hyper@natlinkstart{\@citeb\@extra@b@citeb}%
           \NAT@nmfmt{\NAT@nm}\hyper@natlinkend
         \else
           \ifx\NAT@last@nm\NAT@nm\NAT@yrsep
             \ifx\NAT@last@yr\NAT@year
               \hyper@natlinkstart{\@citeb\@extra@b@citeb}\NAT@exlab
               \hyper@natlinkend
             \else\unskip\
               \hyper@natlinkstart{\@citeb\@extra@b@citeb}\NAT@date
```

```
              \hyper@natlinkend
            \fi
          \else\@citea\hyper@natlinkstart{\@citeb\@extra@b@citeb}%
            \NAT@nmfmt{\NAT@nm}%
            \hyper@natlinkbreak{\ \NAT@@open\if*#1*\else#1\ \fi}%
               {\@citeb\@extra@b@citeb}%
            \NAT@date\hyper@natlinkend\fi
       \fi
      \or\@citea\hyper@natlinkstart{\@citeb\@extra@b@citeb}%
         \NAT@nmfmt{\NAT@nm}\hyper@natlinkend
      \or\@citea\hyper@natlinkstart{\@citeb\@extra@b@citeb}%
         \NAT@date\hyper@natlinkend
      \or\@citea\hyper@natlinkstart{\@citeb\@extra@b@citeb}%
         \NAT@alias\hyper@natlinkend
      \fi  \if\relax\NAT@date\relax\def\@citea{\NAT@sep\ }%
           \else\def\@citea{\NAT@@close\NAT@sep\ }\fi
    \fi
    }}\ifNAT@swa\else\if*#2*\else\NAT@cmt#2\fi
   \if\relax\NAT@date\relax\else\NAT@@close\fi\fi}{#1}{#2}}

```

(*End of definition for* `\c@laNAT@citex`.)

`\c@lbNAT@citex` The local version of `\NAT@citex`.

```
\def\c@lbNAT@citex[#1][#2]#3{%
  \ifc@lcombib \c@laNATnocite{#3} \fi    %%% change here
  \NAT@sort@cites{#3}%
  \let\@citea\@empty
  \@cite{\let\NAT@nm\@empty\let\NAT@year\@empty
    \@for\@citeb:=\NAT@cite@list\do
    {\edef\@citeb{\expandafter\@firstofone\@citeb}%
     \c@lNATwritelocalbibdate            %%% change here
     {\let\NAT@last@nm=\NAT@nm\let\NAT@last@yr=\NAT@year
     \NAT@parse{\@citeb}%
     \ifNAT@longnames\@ifundefined{bv@\@citeb\@extra@b@citeb}{%
         \let\NAT@name=\NAT@all@names
         \global\@namedef{bv@\@citeb\@extra@b@citeb}{}}{}%
     \fi
     \ifNAT@full\let\NAT@nm\NAT@all@names\else
       \let\NAT@nm\NAT@name\fi
     \ifNAT@swa
       \c@lNAT@citex@swatrue
     \else
       \ifcase\NAT@ctype
         \if\relax\NAT@date\relax
           \@citea\hyper@natlinkstart{\@citeb\@extra@b@citeb}%
           \NAT@nmfmt{\NAT@nm}\hyper@natlinkend
         \else
           \ifx\NAT@last@nm\NAT@nm\NAT@yrsep
             \ifx\NAT@last@yr\NAT@year
               \hyper@natlinkstart{\@citeb\@extra@b@citeb}\NAT@exlab
               \hyper@natlinkend
             \else\unskip\
               \hyper@natlinkstart{\@citeb\@extra@b@citeb}\NAT@date
               \hyper@natlinkend
```

```
            \fi
          \else\@citea\hyper@natlinkstart{\@citeb\@extra@b@citeb}%
            \NAT@nmfmt{\NAT@nm}%
            \hyper@natlinkbreak{\ \NAT@@open\if*#1*\else#1\ \fi}%
               {\@citeb\@extra@b@citeb}%
            \NAT@date\hyper@natlinkend\fi
       \fi
      \or\@citea\hyper@natlinkstart{\@citeb\@extra@b@citeb}%
         \NAT@nmfmt{\NAT@nm}\hyper@natlinkend
      \or\@citea\hyper@natlinkstart{\@citeb\@extra@b@citeb}%
         \NAT@date\hyper@natlinkend
      \or\@citea\hyper@natlinkstart{\@citeb\@extra@b@citeb}%
         \NAT@alias\hyper@natlinkend
      \fi \if\relax\NAT@date\relax\def\@citea{\NAT@sep\ }%
          \else\def\@citea{\NAT@@close\NAT@sep\ }\fi
    \fi
    }}\ifNAT@swa\else\if*#2*\else\NAT@cmt#2\fi
   \if\relax\NAT@date\relax\else\NAT@@close\fi\fi}{#1}{#2}}

```

(*End of definition for* `\c@lbNAT@citex`.)

`\c@laNATnocite` A main document version of the natbib `\nocite`.

`\nocite`

```
\newcommand\c@laNATnocite[1]{\@bsphack
  \@for\@citeb:=#1\do{%
    \edef\@citeb{\expandafter\@firstofone\@citeb}%
    \if@filesw\immediate\write\@mainaux{\string\citation{\@citeb}}\fi
    \if*\@citeb\else
    \@ifundefined{b@\@citeb\@extra@b@citeb}{%
       \NAT@citeundefined \PackageWarning{natbib}%
       {Citation `\@citeb' undefined}}{}\fi}%
  \@esphack}
\renewcommand{\nocite}[1]{\c@laNATnocite{#1}}

```

(*End of definition for* `\c@laNATnocite` *and* `\nocite`.)

`\c@lbNATnocite` The local version pf `\nocite`.

```
\newcommand\c@lbNATnocite[1]{\@bsphack
  \@for\@citeb:=#1\do{%
    \edef\@citeb{\expandafter\@firstofone\@citeb}%
    \if@filesw\immediate\write\@auxout{\string\citation{\@citeb}}\fi
    \if*\@citeb\else
    \@ifundefined{B?\jobname?@\@citeb\@extra@b@citeb}{%
       \NAT@citeundefined \PackageWarning{natbib}%
       {Citation `\@citeb' undefined}}{}\fi}%
  \@esphack}

```

(*End of definition for* `\c@lbNATnocite`.)

`\NAT@wrout` Main version of the original `\NAT@wrout`.

```
\renewcommand{\NAT@wrout}[5]{%
  \if@filesw
    {\let\protect\noexpand\let~\relax
```

```
      \immediate
      \write\@mainaux{\string\bibcite{#5}{{#1}{#2}{{#3}}{{#4}}}}\fi
\ignorespaces}
```

(*End of definition for* `\NAT@wrout`.)

`\c@lbNAT@wrout` Local version of the original `\NAT@wrout`.

```
\newcommand{\c@lbNAT@wrout}[5]{%
  \if@filesw
    {\let\protect\noexpand\let~\relax
     \immediate
     \write\@auxout{\string\bibcite{#5}{{#1}{#2}{{#3}}{{#4}}}}\fi
\ignorespaces}
```

(*End of definition for* `\c@lbNAT@wrout`.)

`\c@laNAT@parse` `\c@lbNAT@parse` Main and local versions of `\NAT@parse`.

```
\newcommand\c@laNAT@parse[1]{{%
      \let\protect=\@unexpandable@protect\let~\relax
      \let\active@prefix=\@gobble
      \xdef\NAT@temp{\csname b@#1\@extra@b@citeb\endcsname}}%
      \expandafter\NAT@split\NAT@temp?????@@%
      \expandafter\NAT@parse@date\NAT@date??????@@%
      \ifciteindex\NAT@index\fi}

\newcommand\c@lbNAT@parse[1]{{%
      \let\protect=\@unexpandable@protect\let~\relax
      \let\active@prefix=\@gobble
      \xdef\NAT@temp{\csname B?\jobname?@#1\@extra@b@citeb\endcsname}}%
      \expandafter\NAT@split\NAT@temp?????@@%
      \expandafter\NAT@parse@date\NAT@date??????@@%
      \ifciteindex\NAT@index\fi}
```

(*End of definition for* `\c@laNAT@parse` *and* `\c@lbNAT@parse`.)

`\c@laNAT@lbibitem` `\c@lbNAT@lbibitem` Main and local version of `\@lbibitem`.

```
\def\c@laNAT@lbibitem[#1]#2{%
  \if\relax\@extra@b@citeb\relax\else
    \@ifundefined{br@#2\@extra@b@citeb}{}{%
     \@namedef{br@#2}{\@nameuse{br@#2\@extra@b@citeb}}}\fi
   \@ifundefined{b@#2\@extra@b@citeb}{\def\NAT@num{}}{\NAT@parse{#2}}%
   \item[\hfil\hyper@natanchorstart{#2\@extra@b@citeb}\@biblabel{\NAT@num}%
    \hyper@natanchorend]%
    \NAT@ifcmd#1(@)(@)\@nil{#2}}

\def\c@lbNAT@lbibitem[#1]#2{%
  \if\relax\@extra@b@citeb\relax\else
    \@ifundefined{br@#2\@extra@b@citeb}{}{%
     \@namedef{br@#2}{\@nameuse{br@#2\@extra@b@citeb}}}\fi
   \@ifundefined{B?\jobname?@#2\@extra@b@citeb}{\def\NAT@num{}}{\NAT@parse{#2}}%
   \item[\hfil\hyper@natanchorstart{#2\@extra@b@citeb}\@biblabel{\NAT@num}%
    \hyper@natanchorend]%
```

```
    \NAT@ifcmd#1(@)(@)\@nil{#2}}

```

(*End of definition for* `\c@laNAT@lbibitem` *and* `\c@lbNAT@lbibitem`.)

`\c@laNATbibcite` `\c@lbNATbibcite` Main and local versions of `\NATbibcite`.

```
\newcommand\c@laNATbibcite[2]{\@ifundefined{b@#1\@extra@binfo}\relax
  {\NAT@citemultiple
  \PackageWarningNoLine{natbib}{Citation `#1' multiply defined}}%
  \global\@namedef{b@#1\@extra@binfo}{#2}}

\newcommand\c@lbNATbibcite[2]{\@ifundefined{B?\jobname?@#1\@extra@binfo}\relax
  {\NAT@citemultiple
  \PackageWarningNoLine{natbib}{Citation `#1' multiply defined}}%
  \global\@namedef{B?\jobname?@#1\@extra@binfo}{#2}}

\ifc@lonebib
  \ifc@lcombib
  \else
    \renewcommand\c@lbNATbibcite[2]{\@ifundefined{b@#1\@extra@binfo}\relax
      {\NAT@citemultiple
      \PackageWarningNoLine{natbib}{Citation `#1' multiply defined}}%
      \global\@namedef{B?\jobname?@#1\@extra@binfo}{#2}}
  \fi
\fi

```

(*End of definition for* `\c@laNATbibcite` *and* `\c@lbNATbibcite`.)

`\c@laNAT@testdef` `\c@lbNAT@testdef` Main and local versions of `\NAT@testdef`.

```
\newcommand\c@laNAT@testdef[2]{%
  \def\NAT@temp{#2}\expandafter \ifx \csname b@#1\@extra@binfo\endcsname
    \NAT@temp \else \ifNAT@swa \NAT@swafalse
       \PackageWarningNoLine{natbib}{Citation(s) may have
          changed.\MessageBreak
          Rerun to get citations correct}\fi\fi}

\newcommand\c@lbNAT@testdef[2]{%
  \def\NAT@temp{#2}\expandafter \ifx \csname B?\jobname?@#1\@extra@binfo\endcsname
    \NAT@temp \else \ifNAT@swa \NAT@swafalse
       \PackageWarningNoLine{natbib}{Citation(s) may have
          changed.\MessageBreak
          Rerun to get citations correct}\fi\fi}

```

(*End of definition for* `\c@laNAT@testdef` *and* `\c@lbNAT@testdef`.)

`\c@laNAT@make@cite@list` `\c@lbNAT@make@cite@list` Main and local versions of `\NAT@make@cite@list`.

```
\ifnum\NAT@sort>0
  \begingroup \catcode`\_=8
    \gdef\c@laNAT@make@cite@list{%
      \edef\@citeb{\expandafter\@firstofone\@citeb}%
      \@ifundefined{b@\@citeb\@extra@b@citeb}{\def\NAT@num{A}}%
      {\NAT@parse{\@citeb}}%
        \ifcat _\ifnum\z@<0\NAT@num _\else A\fi
```

```
       \@tempcnta\NAT@num \relax
       \ifnum \@tempcnta>\@tempcntb
          \edef\NAT@num@list{\NAT@num@list \@celt{\NAT@num}}%
          \edef\NAT@cite@list{\NAT@cite@list\@citeb,}%
          \@tempcntb\@tempcnta
       \else
          \let\NAT@@cite@list=\NAT@cite@list \def\NAT@cite@list{}%
          \edef\NAT@num@list{\expandafter\NAT@num@celt \NAT@num@list \@gobble @}%
          {\let\@celt=\NAT@celt\NAT@num@list}%
       \fi
    \else
       \edef\NAT@nonsort@list{\NAT@nonsort@list\@citeb,}%
\fi}
\endgroup

\begingroup \catcode`\_=8
  \gdef\c@lbNAT@make@cite@list{%
    \edef\@citeb{\expandafter\@firstofone\@citeb}%
   \@ifundefined{B?\jobname?@\@citeb\@extra@b@citeb}{\def\NAT@num{A}}%
   {\NAT@parse{\@citeb}}%
     \ifcat _\ifnum\z@<0\NAT@num _\else A\fi
       \@tempcnta\NAT@num \relax
       \ifnum \@tempcnta>\@tempcntb
          \edef\NAT@num@list{\NAT@num@list \@celt{\NAT@num}}%
          \edef\NAT@cite@list{\NAT@cite@list\@citeb,}%
          \@tempcntb\@tempcnta
       \else
          \let\NAT@@cite@list=\NAT@cite@list \def\NAT@cite@list{}%
          \edef\NAT@num@list{\expandafter\NAT@num@celt \NAT@num@list \@gobble @}%
          {\let\@celt=\NAT@celt\NAT@num@list}%
       \fi
    \else
       \edef\NAT@nonsort@list{\NAT@nonsort@list\@citeb,}%
\fi}
  \endgroup
\fi
```

(*End of definition for* `\c@laNAT@make@cite@list` *and* `\c@lbNAT@make@cite@list`.)

Some things are done at the end of a document.

```
\AtEndDocument{%
  \ifNAT@stdbst\if@filesw\immediate\write
    \@mainaux{\string\global\string\NAT@numberstrue}\fi\fi
  }

\AtEndDocument{\NAT@swatrue\let\bibcite\NAT@testdef}
```

`\c@laNAT@set@cites` Main version of `\NAT@set@cites`.

```
\newcommand{\c@laNAT@set@cites}{\ifNAT@numbers
  \ifNAT@super \let\@cite\NAT@citesuper
      \def\NAT@mbox##1{\unskip\nobreak\hspace{1\p@}\textsuperscript{##1}}%
      \let\citeyearpar=\citeyear
```

```
      \let\NAT@space\relax\else
      \let\NAT@mbox=\mbox
      \let\@cite\NAT@citenum \def\NAT@space{ }\fi
    \let\@citex\NAT@citexnum
    \ifx\@biblabel\@empty\let\@biblabel\NAT@biblabelnum\fi
    \let\@bibsetup\NAT@bibsetnum
    \def\natexlab##1{}%
  \else
    \let\@cite\NAT@cite
    \let\@citex\NAT@citex
    \let\@biblabel\NAT@biblabel
    \let\@bibsetup\NAT@bibsetup
    \def\natexlab##1{##1}%
  \fi}
```

(*End of definition for* `\c@laNAT@set@cites`.)

`\c@lbNAT@set@cites` Local version of `\NAT@set@cites`.

```
\newcommand{\c@lbNAT@set@cites}{\ifNAT@numbers
  \ifNAT@super \let\@cite\NAT@citesuper
      \def\NAT@mbox##1{\unskip\nobreak\hspace{1\p@}\textsuperscript{##1}}%
      \let\citeyearpar=\citeyear
      \let\NAT@space\relax\else
      \let\NAT@mbox=\mbox
      \let\@cite\NAT@citenum \def\NAT@space{ }\fi
    \let\@citex\NAT@citexnum
    \ifx\@biblabel\@empty\let\@biblabel\NAT@biblabelnum\fi
    \let\@bibsetup\NAT@bibsetnum
    \def\natexlab##1{}%
  \else
    \let\@cite\NAT@cite
    \let\@citex\NAT@citex
    \let\@biblabel\NAT@biblabel
    \let\@bibsetup\NAT@bibsetup
    \def\natexlab##1{##1}%
  \fi}
```

(*End of definition for* `\c@lbNAT@set@cites`.)

For the main document, use `\c@la...` to replace the `\NAT...` definitions.

```
\let\NAT@parse\c@laNAT@parse
%%\let\nocite\c@laNATnocite
%%\let\NAT@wrout\c@laNAT@wrout
\let\@lbibitem\c@laNAT@lbibitem
\let\bibcite\c@laNATbibcite
\let\NAT@testdef\c@laNAT@testdef
%%\let\NAT@make@cite@list\c@laNAT@make@cite@list
%%\let\NAT@citexnum\c@laNAT@citexnum
%%\let\NAT@citex\c@laNAT@citex
```

And similarly for imported documents

```
\let\c@loldsetuppapers\setuppapers
```

```
\newcommand{\c@lNATsetuplocal}{%
  \let\NAT@parse\c@lbNAT@parse
  \let\nocite\c@lbNATnocite
  \let\NAT@wrout\c@lbNAT@wrout
  \let\@lbibitem\c@lbNAT@lbibitem
  \let\bibcite\c@lbNATbibcite
  \let\NAT@testdef\c@lbNAT@testdef
  \let\NAT@make@cite@list\c@lbNAT@make@cite@list
  \let\NAT@citexnum\c@lbNAT@citexnum
  \let\NAT@citex\c@lbNAT@citex
  \let\NAT@set@cites\c@lbNAT@set@cites
  \c@lbNAT@set@cites
}
\renewcommand{\setuppapers}{%
  \c@loldsetuppapers
  \ifc@lcombib
    \c@lNATsetuplocal
  \else
    \ifc@lonebib
    \else
      \c@lNATsetuplocal
    \fi
  \fi
}
```

The end of this package

⟨/natpack⟩

13 The combcite package code

This package calls the cite package [Ars03] and then makes some minor changes to some of its macro definitions.

⟨*citepack⟩

The usual preliminaries. The cite package is required and all options are passed to it to deal with.

```
\@ifclassloaded{combine}{}{%
  \PackageError{combcite}{The `combine' class is expected}{\@ehc}}
```

By definition, we need the cite package, but first have to set up some option handling.

\ifc@lbsuperopt

\ifc@lbsuperopt is a flag for if the cite superscript option has been used.

```
\newif\ifc@lbsuperopt
  \c@lbsuperoptfalse
```

(*End of definition for* \ifc@lbsuperopt.)

Now do the options.

```
\DeclareOption{super}{\ExecuteOptions{superscript}}
\DeclareOption{superscript}{\c@lbsuperopttrue
                            \PassOptionsToClass{superscript}{cite}}
\ProcessOptions
```

We need the latest cite package (version 4.01 November 2003)

```
\RequirePackageWithOptions{cite}[2003/11/04]
```

Need special versions of various macros for imported papers, principally to handle writing to the .aux files. Indicate these by prepending 'c@lb' to the name.

\c@lbciten

```
\DeclareRobustCommand\c@lbciten[1]{%
 \begingroup
  \let\@safe@activesfalse\@empty
%%  \c@lb@nocite{#1}% ignores spaces, writes to .aux file, returns #1 in \@no@sparg
  \@nocite{#1}% ignores spaces, writes to .aux file, returns #1 in \@no@sparg
  \@tempcntb\m@ne    % \@tempcntb tracks highest number
  \let\@h@ld\@empty  % nothing held from list yet
  \let\@citea\@empty % no punctuation preceding first
  \let\@celt\delimiter % an unexpandable, but identifiable, token
  \def\@cite@list{}% % empty list to start
  \@for \@citeb:=\@no@sparg\do{\c@lb@make@cite@list}% make a sorted list of numbers
  % After sorted citelist is made, execute it to compress citation ranges.
  \@tempcnta\m@ne    % no previous number
  \let\@celt\@compress@cite \@cite@list % output number list with compression
  \@h@ld % output anything held over
 \endgroup
 \@restore@auxhandle
 }
```

(*End of definition for* `\c@lbciten`.)

\c@lb@make@cite@list

```
\def\c@lb@make@cite@list{%
 \expandafter\let \expandafter\@B@citeB
          \csname B?\jobname?@\@citeb\@extra@b@citeb \endcsname
 \ifx\@B@citeB\relax % undefined: output ? and warning
    \@citea {\bfseries ?}\let\@citea\citepunct \G@refundefinedtrue
    \@warning {Citation `\@citeb' on page \thepage\space undefined}%
    \oc@verbo \global\@namedef{B?\jobname?@\@citeb\@extra@b@citeb}{?}%
 \else %  defined               % remove previous line to repeat warnings
    \ifcat _\ifnum\z@<0\@B@citeB _\else A\fi % a positive number, put in list
       \@addto@cite@list
    \else % citation is not a number, output immediately
       \@citea \citeform{\@B@citeB}\let\@citea\citepunct
 \fi\fi}
```

(*End of definition for* `\c@lb@make@cite@list`.)

\c@lbcite The revision to `\cite` depends on whether the superscript option has been used.

```
\ifc@lbsuperopt
  \DeclareRobustCommand{\c@lbcite}{%
    \@ifnextchar[{\@tempswatrue\c@lb@citex}{\@tempswafalse\c@lb@citew}}
\else
  \DeclareRobustCommand{\c@lbcite}{%
```

```
    \@ifnextchar[{\@tempswatrue\c@lb@citex}{\@tempswafalse\c@lb@citex[]}}
\fi
```

(*End of definition for* `\c@lbcite`.)

`\c@lb@citex`

```
\def\c@lb@citex[#1]#2{\@cite{\c@lbciten{#2}}{#1}}
```

(*End of definition for* `\c@lb@citex`.)

`\c@lb@citew`

```
\def\c@lb@citew#1{\begingroup \leavevmode
  \@if@fillglue \lastskip \relax \unskip
  \def\@tempa{\@tempcnta\spacefactor
     \/% this allows the last word to be hyphenated, and it looks better.
     \@citess{\c@lbciten{#1}}\spacefactor\@tempcnta
     \endgroup \@restore@auxhandle}%
  \oc@movep\relax}% check for following punctuation (depending on options)
```

(*End of definition for* `\c@lb@citew`.)

`\c@lbnocite`

```
\DeclareRobustCommand\c@lbnocite[1]{%
 \@bsphack \@nocite{#1}%
 \@for \@citeb:=\@no@sparg\do{\@ifundefined{B?\jobname?@\@citeb\@extra@b@citeb}%
    {\G@refundefinedtrue\@warning{Citation `\@citeb' undefined}%
    \oc@verbo \global\@namedef{B?\jobname?@\@citeb\@extra@b@citeb}{?}}{}}%
 \@esphack}
```

(*End of definition for* `\c@lbnocite`.)

`\@nocite`

```
\def\@nocite#1{\begingroup\let\protect\string% normalize active chars
 \xdef\@no@sparg{\expandafter\@ignsp#1 \: }\endgroup% and remove ALL spaces
 \if@filesw \immediate\write\@newciteauxhandle % = \@auxout, except with multibib
    {\string\citation {\@no@sparg}}\fi
 }
```

(*End of definition for* `\@nocite`.)

Finally, add the revision to `\setuppapers`.

```
\g@addto@macro{\setuppapers}{\let\cite\c@lbcite}
\g@addto@macro{\setuppapers}{\let\citenum\c@lbciten}
\g@addto@macro{\setuppapers}{\let\citeonline\c@lbciten}
```

The end of this package

```
⟨/citepack⟩
```

A Original code

This section presents the original kernel code before modification.

The `\documentclass` macro is specified in `ltclass.dtx`.

```
\def\documentclass{%
  \let\documentclass\@twoclasseserror
  \if@compatability\else\let\usepackage\RequirePackage\fi
  \@fileswithoptions\@clsextension}
\@onlypreamble\documentclass
```

The `document` environment is specified between `ltfiles.dtx` and `ltmiscen.dtx`. The `\document` command is given in `ltfiles.dtx`.

```
\def\document{\endgroup
  \ifx\@unusedoptionlist\@empty\else
    \@latex@warning@no@line{Unused global option(s):^^J%
          \@spaces[\@unusedoptionlist]}%
  \fi
  \@colht\textheight
  \@colroom\textheight \vsize\textheight
  \columnwidth\textwidth
  \@clubpenalty\clubpenalty
  \if@twocolumn
    \advance\columnwidth -\columnsep
    \divide\columnwidth\tw@ \hsize\columnwidth \@firstcolumntrue
  \fi
  \hsize\columnwidth \linewidth\hsize
  \begingroup\@floatplacement\@dblfloatplacement
    \makeatletter\let\@writefile\@gobbletwo
    \global \let \@multiplelabels \relax
    \@input{\jobname.aux}%
  \endgroup
  \if@filesw
    \immediate\openout\@mainaux\jobname.aux
    \immediate\write\@mainaux{\relax}%
  \fi
  \process@table
  \let\glb@currsize\@empty
  \normalsize
  \everypar{}%
  \ifx\normalsfcodes\@empty
    \ifnum\sfcode`\.=\@m
      \let\normalsfcodes\frenchspacing
    \else
      \let\normalsfcodes\nonfrenchspacing
    \fi
  \fi
  \@noskipsecfalse
  \let \@refundefined \relax
  \let\AtBeginDocument\@firstofone
  \@begindocumenthook
  \ifdim\topskip<1sp\global\topskip 1sp\relax\fi
  \global\@maxdepth\maxdepth
  \global\let\@begindocumenthook\@undefined
```

```
  \ifx\@listfiles\@undefined
    \global\let\@filelist\relax
    \global\let\@addtofilelist\@gobble
  \fi
  \gdef\do##1{\global\let ##1\@notprerr}%
  \@preamblecmds
  \global\let \@nodocument \relax
  \global\let\do\noexpand
  \ignorespaces}
\@onlypreamble\document
```

The `\enddocument` macro is specified in `ltmiscen.dtx`.

```
\def\enddocument{%
  \@enddocumenthook
  \@checkend{document}%
  \clearpage
  \begingroup
    \if@filesw
      \immediate\closeout\@mainaux
      \let\@setckpt\@gobbletwo
      \let\@newl@bel\@testdef
      \@tempswafalse
      \makeatletter \input\jobname.aux
    \fi
    \@dofilelist
    \ifdim \font@submax >\fontsubfuzz\relax
      \@font@warning{Size substitutions with differences\MessageBreak
                up to \font@submax\space have occurred.\@gobbletwo}%
    \fi
    \@defaultsubs
    \@refundefined
    \if@filesw
      \ifx \@multiplelabels \relax
        \if@tempswa
          \@latex@warning@no@line{Label(s) may have changed.
              Rerun to get cross-references right}%
        \fi
      \else
        \@multiplelabels
      \fi
    \fi
  \endgroup
  \deadcycles\z@\@@end}
```

`\maketitle` is defined by each class. The following is from `classes.dtx` for the book, report and article classes.

```
\if@titlepage
  \newcommand{\maketitle}{\begin{titlepage}%
    \let\footnotesize\small
    \let\footnoterule\relax
    \let \footnote \thanks
    \null\vfil
    \vskip 60\p@
    \begin{center}%
```

```
      {\LARGE \@title \par}%
      \vskip 3em%
      {\large
       \lineskip .75em%
       \begin{tabular}[t]{c}%
         \@author
       \end{tabular}\par}%
      \vskip 1.5em%
      {\large \@date \par}%
    \end{center}\par
    \@thanks
    \vfil\null
    \end{titlepage}%
    \setcounter{footnote}{0}%
    \global\let\thanks\relax
    \global\let\maketitle\relax
    \global\let\@thanks\@empty
    \global\let\@author\@empty
    \global\let\@date\@empty
    \global\let\@title\@empty
    \global\let\title\relax
    \global\let\author\relax
    \global\let\date\relax
    \global\let\and\relax
  } % end titlepage \maketitle
\else
  \newcommand{\maketitle}{\par
    \begingroup
      \renewcommand\thefootnote{\@fnsymbol\c@footnote}%
      \def\@makefnmark{\rlap{\@textsuperscript{\normalfont\@thefnmark}}}%
      \long\def\@makefntext##1{\parindent 1em\noindent
        \hb@xt@1.8em{%
          \hss\@textsuperscript{\normalfont\@thefnmark}}##1}%
      \if@twocolumn
        \ifnum \col@number=\@ne
          \@maketitle
        \else
          \twocolumn[\@maketitle]%
        \fi
      \else
        \newpage
        \global\@topnum\z@
        \@maketitle
      \fi
      \thispagestyle{plain}\@thanks
    \endgroup
    \setcounter{footnote}{0}%
    \global\let\thanks\relax
    \global\let\maketitle\relax
    \global\let\@maketitle\relax
    \global\let\@thanks\@empty
    \global\let\@author\@empty
    \global\let\@date\@empty
    \global\let\@title\@empty
```

```
    \global\let\title\relax
    \global\let\author\relax
    \global\let\date\relax
    \global\let\and\relax
  } % end non-titlepage \maketitle

  \def\@maketitle{%
    \newpage
    \null
    \vskip 2em%
    \begin{center}%
      \let \footnote \thanks
      {\LARGE \@title \par}%
      \vskip 1.5em%
      {\large
       \lineskip .5em%
       \begin{tabular}[t]{c}%
         \@author
       \end{tabular}\par}%
      \vskip 1em%
      {\large \@date}%
    \end{center}\par
    \vskip 1.5em}
\fi
```

The definitions of `\title` and friends are in `ltsect.dtx`.

```
\def\title#1{\gdef\@title{#1}}
  \def\@title{\@latex@error{No \noexpand\title given}\@ehc}
\def\author#1{\gdef\@author{#1}}
  \def\@author{\@latex@warning@no@line{No \noexpand\author given}}
\def\date#1{\gdef\@date{#1}}
  \gdef\@date{\today}
\def\thanks#1{\footnotemark
  \protected@xdef\@thanks{\@thanks
    \protect\footnotetext[\the\c@footnote]{#1}}}
  \let\@thanks\@empty
\def\and{%                    % \begin{tabular}
  \end{tabular}%
  \hskip 1em \@plus.17fil%
  \begin{tabular}[t]{c}}%     % \end{tabular}
```

The definition of `\@starttoc` from `ltsect.dtx`.

```
\def\@starttoc#1{%
  \begingroup
    \makeatletter
    \@input{\jobname.#1}%
    \if@filesw
      \expandafter\newwrite\csname tf@#1\endcsname
      \immediate\openout \csname tf@#1\endcsname \jobname.#1\relax
    \fi
    \@nobreakfalse
  \endgroup}
```

The definition of `\@writefile` from `ltmiscen.dtx`.

```
\long\def@writefile#1#2{%
  \@ifundefined{tf@#1}\relax
    {\@temptokena{#2}%
     \immediate\write\csname tf@#1\endcsname{\the\@temptokena}%
    }}
```

The definitions of `\addtocontents` and `addcontentsline` from `ltsect.dtx`.

```
\long\def\addtocontents#1#2{%
  \protected@write\@auxout
  {\let\label\@gobble \let\index\@gobble \let\glossary\@gobble}%
  {\string\@writefile{#1}{#2}}}
\def\addcontentsline#1#2#3{%
  \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}}
```

The definitions of `\label`, `\@setref`, `\newlabel`, `\ref` and `\pageref` from `ltxref.dtx`.

```
\def\label#1{\@bsphack
  \protected@write\@auxout{}%
    {\string\newlabel{#1}{{\@currentlabel}{\thepage}}}%
  \@esphack}
\def\@setref#1#2#3{%
  \ifx#1\relax
    \protect\G@refundefinedtrue
    \nfss@text{\reset@font\bfseries ??}%
    \@latex@warning{Reference `#3' on page \thepage \space
                    undefined}%
  \else
    \expandafter#2#1\null
  \fi}
\def\newlabel{\@newl@bel r}
\def\ref#1{\expandafter\@setref\csname r@#1\endcsname
            \@firstoftwo{#1}}
\def\pageref#1{\expandafter\@setref\csname r@#1\endcsname
               \@secondoftwo{#1}}
```

The definitions of `\bibcite` and `\@citex` from `ltbibl.dtx`.

```
\def\bibcite{\@newl@bel b}
\def\@citex[#1]#2{%
  \let\@citea\@empty
  \@cite{\@for\@citeb:=#2\do
    {\@citea\def\@citea{,\penalty\@m\ }%
     \edef\@citeb{\expandafter\@firstofone\@citeb\@empty}%
     \if@filesw\immediate\write\@auxout{\string\citation{\@citeb}}\fi
     \@ifundefined{b\@citeb}{\mbox{\reset@font\bfseries ?}%
      \G@refundefinedtrue
      \@latex@warning
        {Citation `\@citeb' on page \thepage \space undefined}}%
      {\hbox{\csname b\@citeb\endcsname}}}}{#1}}
```

References

[Ars03] Donald Arseneau. *Cite: Compressed, sorted lists of on-line or superscript numerical citations.* November 2003. (Available from CTAN in directory `macros/latex/contrib/cite`)

[Dal99] Patrick W. Daly. *Natural Sciences Citations and References*. May 1999. (Available from CTAN in directory `macros/latex/contrib/natbib`)

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