

The `collref` Package*

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Abstract

`collref` is a $\text{\LaTeX}2_{\epsilon}$ package to automatically collect multiple `\bibitem` references which always appear in the same sequence in `\cite` into a single `\bibitem` block.

Contents

1 Introduction	1
2 Usage	2
3 Revision History	3
4 Acknowledgements	4
A Files and Installation	4
B Sample File	4
C Implementation	5
D Copyright	8

1 Introduction

Suppose a manuscript uses the following set of four references:

- [1] Reference A
- [2] Reference B
- [3] Reference C
- [4] Reference D

Now if references B and C cover similar or related material, they might always be cited together as in “[\dots , 2, 3, \dots]” throughout the manuscript. In some (physics) journals it is then customary to collect the two references into a single reference

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- [1] Reference A
- [2] Reference B
Reference C
- [3] Reference D

and cite it by “[... , 2, ...]”. The package `collref` automates this process by analysing the `\cite` commands and identifying blocks of references which always appear in conjunction. These blocks are collapsed to a single item in the bibliography. Please note that `collref` requires the sequence of `\bibitem` entries to match with the sequence of `\cite` blocks. This is most easily achieved through the use of `BIBTEX` with any *unsorted* style.

Similar CTAN Packages. The objective and some of the implementation of the `collref` package is similar to the CTAN packages `mcite` by Thorsten Ohl and `mciteplus` by Michael Shell, but the functionality is different in several respects:

- `collref` is intended to work transparently: \LaTeX documents which compile with `collref` should also compile fine without invoking `collref` (obviously without collected references). The package decides automatically which references can be collapsed, no further interaction of the author is required.

`mcite` and `mciteplus` leave the decision/duty to collapse certain references using the modified syntax `\cite{A,*B,*C}`.

- `mcite` and `mciteplus` are intended to handle punctuations in collapsed references correctly. This requires a specialised `BIBTEX` style.

No effort is made in `collref` in this regard. Some minor modification in `collref.sty` together with a modified `BIBTEX` style might achieve basic punctuation features similar to `mcite`.

2 Usage

Inclusion. To use `collref` simply add the command

$$\backslash usepackage\{collref\}$$

to the preamble of your \LaTeX document. No further interaction is required.

Punctuation. `collref` provide basic punctuation between collected references. This is specified through the package options `\usepackage[opt]{collref}` where *opt* is one of the following

<code>nosep</code> (default)	<code>parsep</code>	<code>bulletsep</code>	<code>punctsep</code>
no separator:	separated by <code>\par</code> :	separated by ‘•’:	punctuated by ‘;’ and ‘.’:
[1] A	[1] A	[1] A	[1] A .
[2] B C	[2] B C	[2] B • C	[2] B ; C .
[3] D	[3] D	[3] D	[3] D .

cf. note on spacing below.

Alternative separators can be specified in the preamble through the command:

$$\backslash collectsep[punctuation]\{separator\}$$

The *separator* appears between references in a block and the *punctuation* at the end of a block of references.

Bibliography Preparation. Please note that only such blocks of references can be collapsed which appear in the same order for `\cite` commands as for `thebibliography`. It is recommended to prepare the bibliography through `BIBTEX` which does this automatically. You must use a style which does not sort the references but preserves the order in which they were `\cite`'d, e.g. `unsrt.bst`.

Also note that `collref` suppresses new paragraphs invoked by empty lines in the bibliography. This allows to use standard `BIBTEX` styles which commonly separate reference entries by empty lines. If these empty lines would be expanded to new paragraphs, `collref` would not be able to join two references properly. Therefore new paragraphs have to be invoked by the command `\par`.

If you wish to use the style `punctsep`, please refer to the following note on spacing and punctuation.

Spacing and Punctuation. References are usually punctuated in some way. Three of the predefined styles – `nosep`, `parsep` and `bulletsep` – preserve the punctuation from the bibliography.

The fourth predefined style – `punctsep` – automatically performs the punctuation. This however requires care in the preparation of the bibliography: The entries have to be provided *without* punctuation. Furthermore, there must not be *whitespaces* at the end of an entry. They can be suppressed with `'%` or `\ignorespaces` directly following the last word of the entry. See Appendix B for an example. The standard `BIBTEX` styles, e.g. `unsrt.bst`, have to be adjusted to remove the punctuation and whitespaces.

Control. The package `collref` provides one command to control which references (not) to collect:

$$\backslash\text{nocollect}\{label\}$$

It ensures that the label *label* starts a new block of references. It is not collapsed with earlier references. Later references, however, can still be collapsed to the end of *label*.

Labels for Blocks of References. While `collref` aims to automatically collect similar references into a single block, it is often convenient for the author to refer to such blocks with a single citation label. Standard `TEX/LATEX` commands can be used to define such a block:

$$\backslash\text{newcommand}\{\backslash\text{blocklabel}\}\{label1, label2, \dots\}$$

Subsequently this block can be referenced with `\cite{..., \backslashblocklabel, ...}`.

Interaction with CTAN Packages. The package `collref` has been tested with other CTAN packages concerned with citations and the bibliography:

- `cite`: `collref` works in conjunction with `cite`. Note that you must load `cite` *before* `collref` so that the latter can pass the correctly reduced list of references down to `cite`. Tested with `cite` v5.1.
- `hyperref`: `collref` works in conjunction with `hyperref`. The two packages can be loaded in any sequence. Tested with `hyperref` v6.78s.

3 Revision History

v2.0: 2009/09/07

- proper punctuation added

- blocks of references enabled
- manual extended

v1.0: 2009/06/09

- streamlined detection of chains
- manual and installation package added
- renamed package to `collref` due to name clash on CTAN
- first version published on CTAN

v0.9:

- package named `collect`; unpublished

4 Acknowledgements

Thanks to Oleg Zhiron for suggesting proper punctuation and labels for blocks of references.

A Files and Installation

The package consists of the files

<code>README</code>	readme file
<code>collref.ins</code>	installation file
<code>collref.dtx</code>	source file
<code>collref.sty</code>	package file
<code>collsamp.tex</code>	sample file
<code>collref.pdf</code>	manual

The distribution consists of the files `README`, `collref.ins` and `collref.dtx`.

- Run (pdf)`L`A`T`E`X` on `collref.dtx` to compile the manual `collref.pdf` (this file).
- Run `L`A`T`E`X` on `collref.ins` to create the package `collref.sty` and the sample `collsamp.tex`. Copy the file `collref.sty` to an appropriate directory of your `L`A`T`E`X` distribution, e.g. `texmf-root/tex/latex/collref`. Alternatively, you may copy `collref.sty` to the local directories of manuscripts for which you wish to use `collref`.

B Sample File

In this section we provide a sample file.

```

1 \documentclass{article}
2 %\usepackage{cite}
3 \usepackage[punctsep]{collref}
4 %\usepackage{hyperref}
5
6 \begin{document}
7
8 \def\tworef{c8,c9}
9
10 \cite{c1,c2,c3,c4}
11 \nocollect{c3}

```

```

12 \cite{c5,c6,c7,\tworef}
13 \cite{c5,c6,c7}
14 \cite{c7,\tworef}
15
16 \begin{thebibliography}{11}
17 \bibitem{c1} reference 1%
18 \bibitem{c2} reference 2%
19 \bibitem{c3} reference 3%
20 \bibitem{c4} reference 4%
21 \bibitem{c5} reference 5
22 \bibitem{c6} reference 6
23 \bibitem{c7} reference 7 %
24 \bibitem{c8} reference 8\ignorespaces
25 \bibitem{c9} reference 9\ignorespaces
26 \end{thebibliography}
27
28 \end{document}

```

It produces the output:

```

[1, 2] [3, 4, 5] [3, 4] [4, 5]

[1] reference 1; reference 2.
[2] reference 3; reference 4.
[3] reference 5 ; reference 6 .
[4] reference 7 .
[5] reference 8; reference 9.

```

Note the different behaviour for references 5, 6 and 7 for which trailing whitespaces were not removed.

C Implementation

In this section we describe the package `collref.sty`.

Internal Lists. For each bibliography label *label* the package maintains a predecessor `\nc@p@label` and a successor `\nc@s@label`. These are initially undefined. When a label *label* is first cited these labels are set to the *predecessor* and *successor* labels, respectively, in `\cite{..., predecessor, label, successor, ...}`. An empty `\nc@p@label` or `\nc@s@label` refers to the beginning and end of a block, respectively. Whenever `\cite` finds conflicting blocks (non-matching predecessors or successors in two `\cite`'s), it terminates the blocks to the maximum common overlap.

Interface. The package provides two public commands, described above:

```

29 \newcommand{\collectsep}[2] [] {\def\nc@punct{#1}\def\nc@sep{#2}}
30 \newcommand{\nocollect}[1] {\nc@breakbefore{#1}\ignorespaces}

```

Package Options. The package provides four predefined separators described above:

```

31 \DeclareOption{nosep}{\collectsep{}}
32 \DeclareOption{parsep}{\collectsep{\par}}
33 \DeclareOption{bulletsep}{\collectsep{\textbullet{ } }}
34 \DeclareOption{punctsep}{\collectsep[.]{; }}

```

```

35 \ExecuteOptions{nosep}
36 \ProcessOptions

```

Internal Commands. Some internal commands for abbreviation:

```

37 \newcommand{\nc@getcsname}[1]{\csname #1\endcsname}
38 \newcommand{\nc@setcsname}[2]{\expandafter\xdef\csname #1\endcsname{#2}}

```

Command to terminate the chain before a label: The predecessor of the label is terminated. If the predecessor was active, its successor is also terminated.

```

39 \newcommand{\nc@breakbefore}[1]{%
40   \edef\nccitepred{\@ifundefined{nc@p@#1}{\nc@getcsname{nc@p@#1}}}%
41   \ifx\nccitepred\empty\else\ncc@setcsname{nc@s@\nccitepred}{\fi}%
42   \nc@setcsname{nc@p@#1}{}%
43 }

```

Command to terminate the chain after a label. Similar to the above command.

```

44 \newcommand{\nc@breakafter}[1]{%
45   \edef\nccitesucc{\@ifundefined{nc@s@#1}{\nc@getcsname{nc@s@#1}}}%
46   \ifx\nccitesucc\empty\else\ncc@setcsname{nc@p@\nccitesucc}{\fi}%
47   \nc@setcsname{nc@s@#1}{}%
48 }

```

Citations. Hack for `\@citex`: It is assumed that (as in L^AT_EX 2_ε) `\cite` eventually passes down to `\@citex`.

```

49 \let\nccold@citex\@citex
50
51 \def\@citex[#1]#2{%
52   \let\nccitecomma\empty%
53   \let\nccitestring\empty%
54   \let\nccitelast\empty%
55   \edef\nccitelist{#2}%

```

Main loop to process the arguments of `\cite`. The current label is stored in `\nccitethis`.

```

56   \@for\nccitethis:={\nccitelist}\do{%
57     \edef\nccitethis{\expandafter\@firstofone\nccitethis\empty}%

```

The first entry has no predecessor, terminate the chain.

```

58     \ifx\nccitelast\empty%
59       \ncc@breakbefore{\nccitethis}%
60     \else%

```

Non-first entry: Fill undefined successor and predecessors entries with the current chain sequence.

```

61       \@ifundefined{nc@s@\nccitelast}%
62         {\ncc@setcsname{nc@s@\nccitelast}{\nccitethis}}}%
63       \@ifundefined{nc@p@\nccitethis}%
64         {\ncc@setcsname{nc@p@\nccitethis}{\nccitelast}}}%

```

Get the successor and predecessors for the last and current entry, respectively.

```

65       \edef\nccitesucc{\nc@getcsname{nc@s@\nccitelast}}%
66       \edef\nccitepred{\nc@getcsname{nc@p@\nccitethis}}%

```

In case of mismatching chains: terminate all links.

```

67     \ifx\nc@citesucc\nc@citethis%
68     \ifx\nc@citepred\nc@citelast%
69     \else%
70     \nc@breakafter{\nc@citelast}%
71     \nc@breakbefore{\nc@citethis}%
72     \fi%
73 \else%
74     \nc@breakafter{\nc@citelast}%
75     \nc@breakbefore{\nc@citethis}%
76     \fi%
77 \fi%

```

Get content of `\b@label` entry to find out whether the `\bibitem{label}` entry exists. We need to take special care of extended label definitions in `hyperref`.

```

78 {\def\hyper@link[##1]##2##3##4{##4}%
79 \xdef\nc@citelabel{\nc@getcsname{b@\nc@citethis}}}%

```

Only add those labels which actually exist to the pass-on string. This removes collapsed references from the citation marks.

```

80 \ifx\nc@citelabel\@empty\else%
81 \edef\nc@citestring{\nc@citestring\nc@citecomma\nc@citethis}%
82 \fi%

```

Write `\citation` tag to `.aux` file in original order. Some duplicate `\citation`'s will be written by the original `\citetex` code, but these will have no impact.

```

83 \if@files\immediate\write\@auxout{\string\citation{\nc@citethis}}\fi%

```

Continue to next label.

```

84 \edef\nc@citelast{\nc@citethis}%
85 \def\nc@citecomma{,}%
86 }%

```

The last entry has no successor, terminate the chain.

```

87 \nc@breakafter{\nc@citelast}%

```

Pass on to original `LATEX` code.

```

88 \nc@old@citetex[#1]{\nc@citestring}%
89 }

```

Bibliography. Enhance the `thebibliography` environment to a) set the `\nc@biblast` label to something, and empty `\nc@nextpunct` (no predecessor for the first entry), b) convert linebreaks into whitespaces (avoid implicit `\par`'s), and c) put the final punctuation for the last entry.

```

90 \let\nc@old@thebibliography\thebibliography
91 \let\nc@old@endthebibliography\endthebibliography
92
93 \def\thebibliography{%
94 \xdef\nc@biblast{asldjfhasklfh}%
95 \xdef\nc@nextpunct{}%
96 \catcode'\^M=10%
97 \nc@old@thebibliography}
98
99 \def\endthebibliography{%
100 \nc@nextpunct%
101 \nc@old@endthebibliography}

```

Overwrite `\bibitem`: It is assumed that the native $\text{\LaTeX} 2_{\epsilon}$ code is equivalent but with the \LaTeX internals `\@lbibitem` and `\@bibitem`. Some other packages may also redefine `\bibitem` and this will inevitably cause compatibility issues. This implementation is safe with current versions of `hyperref`.

```
102 \def\bibitem{\@ifnextchar[\nc@lbibitem\nc@bibitem}
```

`\nc@noitem` is invoked in place of the original `\@bibitem` or `\@lbibitem` for collapsed references:

```
103 \def\nc@noitem#1{%
104   \if@filesw\immediate\write\@auxout{\string\bibcite{#1}{}}\fi%
105 \ignorespaces}
```

The hack for `\@bibitem`: It checks whether this reference is part of a block. If so, put separator and collect by `\nc@noitem`. Otherwise put punctuation and pass down to `\@bibitem`. Finally let `\nc@biblast` point to current item, and fill the punctuation `\nc@nextpunct` for the next entry.

```
106 \def\nc@bibitem#1{%
107   \edef\nc@bibpred{\@ifundefined{nc@p@#1}{\nc@getcurname{nc@p@#1}}}%
108   \ifx\nc@biblast\nc@bibpred\nc@sep\nc@noitem{#1}%
109     \else\nc@nextpunct\@bibitem{#1}\fi%
110   \xdef\nc@biblast{#1}%
111   \xdef\nc@nextpunct{\nc@punct}%
112 \ignorespaces}
```

Similar hack for `\@lbibitem`:

```
113 \def\nc@lbibitem[#1]#2{%
114   \edef\nc@bibpred{\@ifundefined{nc@p@#2}{\nc@getcurname{nc@p@#2}}}%
115   \ifx\nc@biblast\nc@bibpred\nc@sep\nc@noitem{#2}%
116     \else\nc@nextpunct\@lbibitem[#1]{#2}\fi%
117   \xdef\nc@biblast{#2}%
118   \xdef\nc@nextpunct{\nc@punct}%
119 \ignorespaces}
```

D Copyright

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This work has the LPPL maintenance status ‘maintained’.

The Current Maintainer of this work is Niklas Beisert.

This work consists of the files `README`, `collref.dtx` and `collref.ins` as well as the derived files `collref.sty`, `collsamp.tex` and `collref.pdf`.