

# Indexing Citations with `indxcite`

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## Abstract

The `indxcite` package allows author index entries to be generated automatically each time a citation is made. Every author (or editor if there are no authors) of a cited work will appear in an index giving the page numbers where the work is cited.

## 1 Introduction

Sometimes authors of technical books desire an ‘Author Index’ listing authors whose work is referenced in the text. The `index` package can be used to allow for separate author and subject indices but the work of adding `\index` commands can be tedious, especially when many of the index entries correspond with citations to the authors’ works. The `indxcite` package allows a citation and appropriate index entries to be generated with a single command. The use of this package requires additional runs of  $\text{\LaTeX}$  before the output reaches its final form. Starting from scratch the following execution sequence is generally adequate.

```
latex
bibtex
latex
makeindex
latex
```

## 2 Bib $\text{\TeX}$ issues

The `\bibliographystyle` and `\citationstyle` commands should be used as required by the `harvard` package. Note that a specially modified Bib $\text{\TeX}$  style file is required for use with `indxcite` and that currently `dcu_ic` is the only style available. The modifications performed on `dcu.bst` to produce `dcu_ic.bst` could be used as a guide to creating other Bib $\text{\TeX}$  style files suitable for use with `indxcite`.

With `dcu_ic.bst` index entries are generated for the authors of papers as they appear in the bibliography, i.e., the bibliography is indexed. This feature could

be disabled by creating a new BIB<sub>T</sub>E<sub>X</sub> style file lacking the `output.bibindex` function of `dcu_ic.bst`.

A new BIB<sub>T</sub>E<sub>X</sub> entry field `indexkey` is defined for `indxcite`. It is defined to allow the key used to order an author's name within the index to be different from the author's name. This may be necessary where special characters are present in a name or to handle unusual sorting conventions, e.g., for names beginning 'Mc'. If a cited work has multiple authors and the use of `indexkey` is required, the number and order of names in `indexkey` must match those in `author`. An example follows:

```
author = "K. J. {\AA}strom and B. Wittenmark",
indexkey = "K. J. Astrom and B. Wittenmark",
```

Where a cited work has no author, editors are indexed instead. The `indexkey` field can be used with the `editor` field in this case.

It may be necessary to recompile BIB<sub>T</sub>E<sub>X</sub> to increase the maximum function space and the maximum number of global strings. Have a local wizard do this if required. Setting `wiz_fn_space=4000` and `max_glob_strs=15` should be adequate.

### 3 User interface

|  |   |
|--|---|
| <code>\citationindex</code>                      | This command controls which index will be used to index authors of cited works. Its one argument must be the <i>tag</i> of the index used. See the documentation for the <code>index</code> package for more information. In the absence of <code>\citationindex</code> the <code>default</code> index is used.   |
| <code>\citationformat</code>                     | Use <code>\citationformat</code> to control the format of the page numbers appearing in the index. An optional argument makes it possible to control the format of the text in the index as well. Thus, <code>\citationformat[<b>textbf</b>]{textit}</code> would generate entries like <b>Ashton, J.</b> , <i>12</i> .   |
| <code>\indexcite</code>                          | <code>\indexcite</code> acts exactly like the <code>\cite</code> command except that it causes author index entries to be generated <i>instead</i> of a citation. Since <code>\indexcite</code> doesn't generate a citation it's mainly useful where there is a need to access the page range feature of <code>index</code> . This is done via an optional argument, e.g., <code>\indexcite[<i>{}{tag}</i>]</code> is equivalent to <code>\index{author   <i>{}{}</i>}</code> . Where the page range feature is not needed, the following commands are more convenient: |
| <code>\cite</code>                               | These commands all generate both a citation and one or more index entries. Except for their index generation feature, they mirror the function of the <code>harvard</code> package functions with similar names. Their argument should match the tag of a work described in a bibliographical database ( <code>.bib</code> file). An optional argument can be used to provide additional text to be included with the citation although this will not fit in well with the text of a document when used with commands like <code>\citeasnoun</code> .                   |
| <code>\citeaffixed</code>                        |   |
| <code>\citeasnoun</code>                         |   |
| <code>\ipossessivecite</code>                    |   |
| <code>\citename</code><br><code>\citeyear</code> |   |

## 4 An example

The following is a small example which illustrates a few of the features of the package. Just run it through L<sup>A</sup>T<sub>E</sub>X twice, then use `makeindex` (with the arguments noted in the comment in the file, and finally run L<sup>A</sup>T<sub>E</sub>X again.

```
(*example)
\documentclass{article}
\usepackage{indxcite}
\newindex{aut}{adx}{and}{Author Index} % makeindex -o example.and example.adx
\begin{document}
\bibliographystyle{dcu_ic}
\citationstyle{dcu}
\citationindex{aut}
\citationformat{textit}
This is a small example demonstrating the use of the \texttt{indxcite}
package.
It is possible, with a single command, to both make a citation and
generate index entries for the authors of the cited word,
for example, \iciteasnoun{latexcomp}.
```

```
\pagebreak
```

Unusual effects are possible. If you want you can have the authors' names to appear in small caps in the index with a typewriter font used for the page numbers thusly.

```
\citationformat[textsc]{texttt}
And make the citation \icite[Chapter 5]{latexcomp}.
You can then reset the format back to a more conventional setting.
\citationformat{textit}
Using a format other than roman can be a good idea so that automatically
generated index entries are distinguishable from manually generated
ones\index[aut]{Goossens, M.}.
```

Note that if the authors' names are indexed with more than one format as in this document (i.e., usually in roman but once in small caps) then multiple index entries will be generated.

```
\pagebreak
```

```
\indexcite[()]{latexcomp}
If a citation is referred to over several paragraphs you may want to
index the whole range of text.
In this case you need to use three commands: one to generate the
citation\cite{latexcomp}; one to mark the beginning of the text to
be indexed and one to mark the end of the text to be indexed.
```

```
\pagebreak
```

Then, if the indexed text runs over multiple pages, this will be

reflected in the index entry`\indexcite[]`{*latexcomp*}.

It is a good idea to reset the citation format before the bibliography is processed so that index entries for the bibliography can be easily distinguished for those for the rest of the document.

```
\citationformat{textbf}
\begin{thebibliography}{xx}

\harvarditem[Goossens et~al.]{Goossens, Mittelbach \harvardand\
Samarin}{1993}{latexcomp}{\{Goossens, M.\}\{Mittelbach, F.\}\{Samarin, A.\}}
Goossens, M., Mittelbach, F. \harvardand\ Samarin, A. \harvardyearleft
1993\harvardyearright .
\newblock {\em The {\LaTeX{}} Companion}, Addison-Wesley, Reading,
Massachusetts.\indexcite{latexcomp}

\end{thebibliography}
\printindex[aut]
\end{document}
</example>
```

## 5 Modifying .bst files

As noted earlier, examining the differences between `dcu.bst` (from the `harvard` package) and `dcu_ic.bst` gives an indication of how to write other `.bst` files for use with `indexcite`. This section provides some more details of the process. The simplest procedure is to modify an existing `harvard` package file. The main change required is to provide an additional argument for the `\harvarditem` command. This argument provides a list of authors (or editors) to be indexed with each citation. The list is simply a sequence of `\{` commands each with the author's name as the argument. If an `indexkey` field is present then it is given as an optional argument. The example of `indexkey` usage given above results in the following as the last argument to `\harvarditem`.

```
{\{AA\}strom, K.~J.}\{Wittenmark, B.}}
```

The functions `make.indx.label` and `format.indx.names.full` from `dcu_ic.bst` can be used to generate this argument. Code is then added to `output.bibitem` to call the new functions. Note that `format.indx.names.full` requires two additional global strings (called `u` and `v` which must be declared in the `STRINGS` statement).

To allow the use of the `indexkey` `BIBTEX` field the field name must be added to the `ENTRY` list

If the index is to include entries for references appearing in the bibliography the simplest technique is to insert a call to `\indexcite` after the each `\harvarditem`. In `dcu_ic.bst` this is done by the function `output.bibindex` which is called by `fin.entry`.