

Indian T_EX Users Group

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On-line Tutorial on L^AT_EX

The Tutorial Team

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2000

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*This document is generated from L^AT_EX sources compiled with pdfL^AT_EX v. 14e in
an INTEL Pentium III 700 MHz system running Linux kernel version 2.2.14-12. The
packages used are hyperref.sty and pdfscreen.sty*

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10 Bibliography

10.1 Introduction

Bibliography is the environment, which helps the author to cross-reference one publication from the list of sources at the end of the document. Bibliography needs consistency, \LaTeX helps author to write well structured bibliography, because this is how \LaTeX works—by specifying structure.

It is easy to convert the style of bibliography to publisher's require, without touching the code inside the bibliography. We can maintain a bibliographic data base using the program `BIB \TeX` . While preparing the articles, we can extract the needed references in needed style from this data base. Harvard and natbib are widely used packages for generating bibliography.

To produce bibliography, we have the environment `thebibliography`¹, which acts similar to `enumerate` environment. Here we use `\bibitem` and `\cite` commands, which do the operation similar to `\label` and `\ref`. That means in the place of citation, it will produce number or author-year code connected with list of references at the end.

```
\begin{thebibliography}[widest-label]
\bibitem{key1}
\bibitem{key2}
\end{thebibliography}
```

The `\begin{thebibliography}` command requires an argument that indicates its width, i.e., width of the widest label in the bibliography. If you know you have between 10 and 99 publications, you should start with `\begin{thebibliography}[99]`. Use any two digit number in the argument, since all numerals are the same width. If you are using customized labels, put the longest label in argument, i.e., type `\begin{thebibliography}[Long-name]`. Each entry in the environment should starts with

```
\bibitem{key1}
```

Let the author name be **Alex** and year **1991**, the key can be coded as **ale91** or else² as you wish. The **key** is used to cite publication inside the document. To cite a publication from the bibliography in the text, use the `\cite` command, which takes a key for an argument. However, the argument to `\cite` may be one key, or two or more keys, separated by commas.

```
\cite{key1}
\cite{key1,key2}
```

In bibliography, numbering of the entries is generated automatically. You may also add a note to your citation, such as page number, chapter number, etc, by using an optional argument to the `\cite` command. Whatever text appears to this argument will be placed within the square brackets, after the label.

¹ Bibliography environment need two compilation. In first compilation it will generate file with aux extension, where `citation` and `bibcite` will be marked and in second compilation `\cite` will be replaced by numeral or author-year code.

² Key can be any sequence of letters, digits and punctuation characters, except that it may not contain a comma (maximum 256 characters).

```
\cite[page 25]{key1}
```

input—file

It is hard to write unstructured and disorganised documents using \LaTeX `\cite{les85}`. It is interesting to type set one equation `\cite[Sec 3.3]{les85}` rather than setting 10 pages of running matter `\cite{don89,rondon89}`.

```
\begin{thebibliography}{9}
\bibitem{les85}Leslie Lamport, 1985. \emph{\LaTeX---A Document
Preparation System---User's Guide and Reference Manual},
Addison-Wesley, Reading.

\bibitem{don89}Donald E. Knuth, 1989. \emph{Typesetting Concrete
Mathematics}, TUGBoat, 10(1):31-36.

\bibitem{rondon89}Ronald L. Graham, Donald E. Knuth, and Ore
Patashnik, 1989. \emph{Concrete Mathematics: A Foundation for
Computer Science}, Addison-Wesley, Reading.
\end{thebibliography}
```

output—dvi

It is hard to write unstructured and disorganised documents using \LaTeX [1]. It is interesting to type set one equation [1, Sec 3.3] rather than setting 10 pages of running matter [2,3].

Bibliography

- [1] Leslie Lamport, 1985. *\LaTeX —A Document Preparation System—User's Guide and Reference Manual*, Addison-Wesley, Reading.
- [2] Donald E. Knuth, 1989. *Typesetting Concrete Mathematics*, TUGBoat, 10(1):31-36.
- [3] Ronald L. Graham, Donald E. Knuth, and Ore Patashnik, 1989. *Concrete Mathematics: A Foundation for Computer Science*, Addison-Wesley, Reading.

10.2 natbib

The natbib package is widely used for generating bibliography, because of its flexible interface for most of the available bibliographic styles. The natbib.sty package is a re-implementation of the \LaTeX `\cite` command, to work with both author–year and numerical citations. It is compatible with the standard bibliographic style files, such as plain.bst, as well as with those for harvard, apalike, chicago, astron, authordate, and of course natbib.sty. To load the package:

```
\usepackage[options]{natbib}
```

Options for natbib

- round** (default) for round parentheses;
- square** for square brackets;
- curly** for curly braces;
- angle** for angle brackets;
- colon** (default) to separate multiple citations with colons;
- comma** to use commas as separators;
- authoryear** (default) for author–year citations;
- numbers** for numerical citations;
- super** for superscripted numerical citations, as in *Nature*;
- sort** orders multiple citations into the sequence in which they appear in the list of references;
- sort&compress** as **sort** but in addition multiple numerical citations are compressed if possible (as 3–6, 15);
- longnamesfirst** makes the first citation of any reference the equivalent of the starred variant (full author list) and subsequent citations normal (abbreviated list);
- sectionbib** redefines `\thebibliography` to issue `\section*` instead of `\chapter*`; valid only for classes with a `\chapter` command; to be used with the `chapterbib` package;
- nonamebreak** keeps all the authors' names in a citation on one line; causes overfull hboxes but helps with some `hyperref` problems.

If we want to set references in the *Nature* style of citations (superscripts)

```
\documentclass{article}
\usepackage{natbib}
\citestyle{nature}
\begin{document}
. . . . .
. . . . .
\end{document}
```

10.2.1 Basic commands

The `natbib.sty` package has two basic citation commands, `\citet` and `\citep` for *textual* and *parenthetical* citations, respectively. There also exist the starred versions `\citet*` and `\citep*` that print the full author list, and not just the abbreviated one. All of these may take one or two optional arguments to add some text before and after the citation.

Normally we use author name and year for labeling the bibliography.

```

\begin{thebibliography}[widest-label]
\bibitem[Leslie(1985)]{les85}Leslie Lamport, 1985. TeX—A Document Preparation...
\bibitem[Donale(00)]{don89}Donald E. Knuth, 1989. Typesetting Concrete Mathematics...
\bibitem[Ronald, Donald and Ore(1989)]{rondon89}Ronald L. Graham, ...
\end{thebibliography}

```

Year in parentheses is mandatory in optional argument for `bibitem`. If year missing in any of the `bibitem`, the whole author-year citation will be changed to numerical citation. To avoid this, give ‘(0000)’ for year in optional argument and use partial citations (`\citeauthor`) in text.

Don’t put ‘space character’ before opening bracket of year in optional argument.

<code>\citet{ale91}</code>	⇒	Alex et al. (1991)
<code>\citet[chap.~4]{ale91}</code>	⇒	Alex et al. (1991, chap. 4)
<code>\citep{ale91}</code>	⇒	(Alex et al., 1991)
<code>\citep[chap.~4]{ale91}</code>	⇒	(Alex et al., 1991, chap. 4)
<code>\citep[see][]{ale91}</code>	⇒	(see Alex et al., 1991)
<code>\citep[see][chap.~4]{jon91}</code>	⇒	(see Alex et al., 1991, chap. 4)
<code>\citet*{ale91}</code>	⇒	Alex, Mathew, and Ravi (1991)
<code>\citep*{ale91}</code>	⇒	(Alex, Mathew, and Ravi, 1991)

10.2.2 Multiple citations

Multiple citations may be made as usual, by including more than one citation key in the `\cite` command argument.

<code>\citet{ale91,rav92}</code>	⇒	Alex et al. (1991); Ravi et al. (1992)
<code>\citep{ale91,rav92}</code>	⇒	(Alex et al., 1991; Ravi et al. 1992)
<code>\citep{ale91,ale92}</code>	⇒	(Alex et al., 1991, 1992)
<code>\citep{ale91a,ale91b}</code>	⇒	(Alex et al., 1991a,b)

10.2.3 Numerical mode

These examples are for author–year citation mode. In numerical mode, the results are different.

<code>\citet{ale91}</code>	⇒	Alex et al. [5]
<code>\citet[chap.~4]{ale91}</code>	⇒	Alex et al. [5, chap. 4]
<code>\citep{ale91}</code>	⇒	[5]
<code>\citep[chap.~4]{ale91}</code>	⇒	[5, chap. 4]
<code>\citep[see][]{ale91}</code>	⇒	[see 5]
<code>\citep[see][chap.~4]{ale91}</code>	⇒	[see 5, chap. 4]
<code>\citep{ale91a,ale91b}</code>	⇒	[5, 12]

10.2.4 Suppressed parentheses

As an alternative form of citation, `\citealt` is the same as `\citet` but *without any parentheses*. Similarly, `\citealp` is `\citep` with the parentheses turned off. Multiple references, notes, and the starred variants also exist.

<code>\citealt{ale91}</code>	⇒	Alex et al. 1991
<code>\citealt*{ale91}</code>	⇒	Alex, Mathew, and Ravi 1991
<code>\citealp{ale91}</code>	⇒	Alex., 1991
<code>\citealp*{ale91}</code>	⇒	Alex, Mathew, and Ravi, 1991
<code>\citealp{ale91,ale92}</code>	⇒	Alex et al., 1991; Alex et al., 1992
<code>\citealp[pg.~7]{ale91}</code>	⇒	Alex., 1991, pg. 7
<code>\citetext{short comm.}</code>	⇒	(short comm.)

The `\citetext` command allows arbitrary text to be placed in the current citation parentheses. This may be used in combination with `\citealp`.

10.2.5 Partial citations

In author–year schemes, it is sometimes desirable to be able to refer to the authors without the year, or vice versa. This is provided with the extra commands

<code>\citeauthor{ale91}</code>	⇒	Alex et al.
<code>\citeauthor*{ale91}</code>	⇒	Alex, Mathew, and Ravi
<code>\citeyear{ale91}</code>	⇒	1991
<code>\citeyearpar{ale91}</code>	⇒	(1991)

10.2.6 Citations aliasing

Sometimes one wants to refer to a reference with a special designation, rather than by the authors, i.e. as Paper I, Paper II. Such aliases can be defined and used, textual and/or parenthetical with:

```
\defcitealias{jon90}{Paper~I}
```

<code>\citetalias{ale91}</code>	⇒	Paper I
<code>\citepalias{ale91}</code>	⇒	(Paper I)

These citation commands function much like `\citet` and `\citep`: they may take multiple keys in the argument, may contain notes, and are marked as hyperlinks.

10.2.7 Selecting citation style and punctuation

Use the command `\bibpunct` with one optional and 6 mandatory arguments:

- (1) the opening bracket symbol, default = (
- (2) the closing bracket symbol, default =)
- (3) the punctuation between multiple citations, default = ;
- (4) the letter ‘n’ for numerical style, or ‘s’ for numerical superscript style, any other letter for author–year, default = author–year;
- (5) the punctuation that comes between the author names and the year
- (6) the punctuation that comes between years or numbers when common author lists are suppressed (default = ,);

The optional argument is the character preceding a post-note, default is a comma plus space. In redefining this character, one must include a space if that is one is wanted.

Example 1 `\bibpunct{[]}{,}{a}{-}{,}` changes the output of `\citep{jon90,jon91,jam92}` into [Jones et al. 1990; 1991, James et al. 1992].

Example 2 `\bibpunct[;]{()}{,}{a}{-}{,}` changes the output of `\citep[and references therein]{jon90}` into (Jones et al. 1990; and references therein).