Bibliography and References Management

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Contents

1 Basic concepts

You should maintain one or more bibliographic databases, which centralize all the information about a specific paper or other publication. There exist several tools that you can use. Among them are:

- EndNote (commercial)

- Mendeley (`www.mendeley.com`)

- Zotero (`www.zotero.org`)

- Jabref (`http://www.jabref.org/`) – more LaTeX-oriented

- A text editor with a mode that handles BibTeX files

BibTex is a processor that formats a list of references using as input an auxiliary file created by LaTeX, a style description (a `bst` file) and a set of database files (`bib` files). In order to have an up-to-date reference you need to run: LaTeX, BibTex, and LaTeXagain.

The basic usage is:

```
\documentclass{article}
\begin{document}
  \bibliographystyle{plain}
   ...
   The works of~\cite{krill_efficient_2010,dehon_nanowire_2010,fahmy_generic_2009}
   are very important.
   The description in~\cite[chapter 3]{dehon_nanowire_2010}
    is particularly noteworthy.
    \nocite{sudarshan_dril_2005}
   ...
   \bibliography{DynRec,Nanocomputing}
\end{document}
```

This results in something like this file

The article Managing Citations and Your Bibliography with BibTEX by Jürgen Fenn gives a good overview of the process.

You can also add an entru to the references section without actually citing it in the text using the `\nocite{ }` command. Using `\nocite{*}` adds all entries in the database to the bibliography section of the document.

2 Format of a BibTeX database

The main reference is BibTeXing, by Oren Patashnick.

2.1 Entry types

The standard entry types are (from the reference above):

article	An article from a journal or magazine
book	A book with an explicit publisher.
booklet	A work that is printed and bound, but without a named publisher or sponsoring institution.
conference	The same as inproceedings.
inbook	A part of a book, which may be a chapter (or section or whatever) and/or a range of pages.
incollection	A part of a book having its own title.
inproceedings	An article in a conference proceedings.
manual	Technical documentation.
mastersthesis	A Master's thesis
misc	Use this type when nothing else fits.
phdthesis	A PhD thesis.
proceedings	The proceedings of a conference.
techreport	A report published by a school or other institution, usually numbered within a series.
unpublished	A document having an author and title, but not formally published.

2.2   Standard fields

From the BibTex documentation:

address	Usually the address of the publisher or other type of institution. For major publishing houses, van Leunen recommends omitting the information entirely. For small publishers, on the other hand, you can help the reader by giving the complete address.
annote	An annotation. It is not used by the standard bibliography styles, but may be used by others that produce an annotated bibliography.
author	The name(s) of the author(s), in the format described in the LaTeX book.
booktitle	Title of a book, part of which is being cited. See the LaTeX book for how to type titles. For book entries, use the title field instead.
chapter	A chapter (or section or whatever) number.
crossref	The database key of the entry being cross referenced. Any fields that are missing from the current record are inherited from the field being cross referenced.
edition	The edition of a book—for example, "Second". This should be an ordinal, and should have the first letter capitalized, as shown here; the standard styles convert to lower case when necessary.
editor	Name(s) of editor(s), typed as indicated in the LaTeX book. If there is also an author field, then the editor field gives the editor of the book or collection in which the reference appears.
howpublished	How something strange has been published. The first word should be capitalized.
institution	The sponsoring institution of a technical report.
journal	A journal name. Abbreviations are provided for many journals.
key	Used for alphabetizing, cross referencing, and creating a label when the "author" information is missing. This field should not be confused with the key that appears in the cite command and at the beginning of the database entry.
month	The month in which the work was published or, for an unpublished work, in which it was written. You should use the standard three-letter abbreviations.
note	Any additional information that can help the reader. The first word should be capitalized.
number	The number of a journal, magazine, technical report, or of a work in a series. An issue of a journal or magazine is usually identified by its volume and number; the organization that issues a technical report usually gives it a number; and sometimes books are given numbers in a named series.
organization	The organization that sponsors a conference or that publishes a manual.
pages	One or more page numbers or range of numbers, such as 42–111 or 7,41,73–97 or 43+ (the '+' in this last example indicates pages following that don't form a simple range). The standard styles convert a single dash (as in 7-33) to the double dash used in TeX to denote number ranges (as in 7–33).
publisher	The publisher's name.
school	The name of the school where a thesis was written.
series	The name of a series or set of books. When citing an entire book, the the title field gives its title and an optional series field gives the name of a series or multi-volume set in which the book is published.
title	The work's title.
type	The type of a technical report—for example, "Research Note".
volume	The volume of a journal or multi-volume book.
year	The year of publication or, for an unpublished work, the year it was written. Generally it should consist of four numerals, such as 1984, although the standard styles can handle any year whose last four nonpunctuation characters are numerals, such as '(about 1984)'.

Unknown fields are ignored by the style files. Since BibTeX is extremely popular, many people have used its database to store information. Here is a

list of some of the more common fields, which may be or not be supported
by the style file.

URL	The WWW Universal Resource Locator that points to the item being referenced. This often is used for technical reports to point to the ftp site where the postscript source of the report is located.
ISBN	The International Standard Book Number.
ISSN	The International Standard Serial Number.
abstract	An abstract of the work.
keywords	Key words used for searching or possibly for annotation.
copyright	Copyright information.

2.3 Author names

The author names are separated by `and`. You can write the names in normal
order or last-name-first. Examples:

```
author = {Fahmy, S.A. and Lotze, J. and Noguera, J. and Doyle, L.
          and Esser, R.}
```

```
author = {Wei Wang and Andrew Hsu and Jo\~{a}o Smith}
```

2.4 Capitalization

In general, you should write titles with capitals as they appear in the original
publication.

```
title = {Generic Software
        Framework for Adaptive Applications on FPGAs}
```

The style file may then choose how to actually capitalize words (some
style files downcase all words). So, you might end up with:

References

[1] S.A. Fahmy, J. Lotze, J. Noguera, L. Doyle, and R. Esser. Generic software framework for adaptive applications on fpgas. In *17th IEEE Symposium on Field Programmable Custom Computing Machines, 2009. FCCM '09*, pages 55--62, April 2009.

To preserve capitalization, use an additional pair of braces:

```
title = {Generic Software
        Framework for Adaptive Applications on {FPGA}s}
```

This will produce:

References

[1] S.A. Fahmy, J. Lotze, J. Noguera, L. Doyle, and R. Esser. Generic software framework for adaptive applications on FPGAs. In *17th IEEE Symposium on Field Programmable Custom Computing Machines, 2009. FCCM '09*, pages 55--62, April 2009.

2.5   Strings

The three entries in this example are from the same conference.

```
\documentclass{article}
\begin{document}
\biliographystyle{plain}
The works
of~\cite{tan_rrbox:_2015,yan_unistream:_2015,oomen_automated_2015}
are very important.


\bibliography{DynRec}
...
\end{document}
```

The result is 06-sample6.pdf.
Instead of repeating the `booktitle` field:

```
booktitle =  {2015 25th International Conference on Field
        Programmable Logic and Applications ({FPL})}
```

you can define an abbreviation:

```
@string { fpl15 = {2015 25th International Conference on Field
                   Programmable Logic and Applications ({FPL})}
```

and use it in the entry (without braces):

Instead of repeating the entire contents of the `booktitle` field, just use:

```
booktitle =  fpl15,
```

The result is 06-sample7.pdf.

You can use these abbreviations for anything of interest. There are lists of standard journal abbreviations on the internet.

2.6   Cross-references

Sometimes you want to cite multiple papers from a single conference proceedings. In that case, it is best to create an entry for the entire proceedings and use cross references in the citations. BibTeX can handle this automatically.

```
@inproceedings{tan_rrbox:_2015,
title =  {{rrBox}: {A} remote dynamically reconfigurable
network processing middlebox},
doi =  {10.1109/FPL.2015.7293971},
crossref =   {fpl15proc},
author =  {Tan, Tze Hon and Ooi, Chia Yee and Marsono, M.N.},
pages =  {1--4}
}
...
@proceedings{fpl15proc,
editor = {Peter Cheung and Wayne Luk and Cristina Silvano},
title = {25th International Conference on
   Field Programmable Logic and Applications},
booktitle = {25th International Conference
   on Field Programmable Logic and Applications},
month = sep,
year = 2015
```

If you just refer to one paper of the proceedings, you get 06-sample9.pdf.

If you just refer to more than one paper of the proceedings, you get 06-sample8.pdf.

3 Standard styles

The standard styles are:

plain Sorted be author and numbered references: 06-sample1.pdf

unsrt Sorted by order of citation and using numbered references: 06-sample2.pdf

abbrv Sorted by author with abbreviated names and numbered references 06-sample3.pdf

alpha Sorted by author with alphabetic short references: 06-sample4.pdf

4 Other styles

Journals and publishers often have their own style files. You need to add them to your folder and use the corresponding name in the `bibliographystyle` command. There are also a lot of bibliography style files in CTAN.

The package `natbib` is a very versatile class that implements both author-year and numbered references, as well as much detailed of support for other bibliography use. It also provides versions of the standard BibTEX styles that are compatible with `natbib`: `plainnat`, `unsrtnat`,`abbrnat`.

For numbered citations:

```
\documentclass{article}
\usepackage[square,comma,numbers]{natbib}
\begin{document}
\bibliographystyle{plainnat} % or other compatible styles
\section{First section}

The work
of~\cite{tan_rrbox:_2015,biazus_reducing_2015}
is very important.

There is an important work~\citep{beckhoff_portable_2014}
that you should read.


\bibliography{DynRec}
\end{document}
```

The final result is 06-sample10.pdf

For author-year citations:

```
\documentclass{article}
\usepackage{lipsum}
\usepackage{color}
\usepackage[authoryear,round]{natbib}

\begin{document}
\section{First section}
    \bibliographystyle{plainnat} % or other compatible styles
    \lipsum[5]

    The works
    of~\textcolor{blue}{\citet{tan_rrbox:_2015,salvador_self_2013}}
    are very important.

    There is other important work
    that you should read~\citep{beckhoff_portable_2014} .

    A more complete citation
    of~\textcolor{blue}{\citet*{salvador_self_2013}}.

    There is other important work
    that you should read~\citep*{beckhoff_portable_2014} .

    \bibliography{DynRec}
\end{document
```

The final result is 06-sample11.pdf

Package `natbib` are a lot more formatting options.

5   Some packages for bibliographies

Here is a list of packages that help working with bibliographies. They are all available from CTAN.

cite The package supports compressed, sorted lists of numerical citations, and also deals with various punctuation and other issues of representation, including comprehensive management of break points. Includes the `overcite` package.

multibib The package supports the creation of references to multiple bibliographies within one single document.

bibunits The package provides a mechanism to generate separate bibliographies for different units (chapters, sections or bibunit-environments) of a text.

multibibliography Conventional standards for bibliography styles impose a forced choice between index and name/year citations, and corresponding references. The package avoids this choice, by providing alphabetic, sequenced, and even chronological orderings of references. Inline citations, that integrate these heterogeneous styles, are also supported (and work with other bibliography packages).

6 The future

A new package `biblatex` is under active development (`http://www.ctan.org/pkg/biblatex`). BibLaTeX supports split bibliographies and multiple bibliographies within one document, and separate lists of bibliographical shorthands. Bibliographies may be subdivided into parts (by chapter, by section, etc.) and/or segmented by topics (by type, by keyword, etc.). There is an growing number of packages for entry formatting using `BibLaTeX`.

The new package can use BibTeX, but also works (preferably) with a replacement for BibTeX called `bieber` (`http://biblatex-biber.sourceforge.net/`). Biber supports full UTF-8, can (re)-encode input and output, supports highly configurable sorting, dynamic bibliography sets and many other features.