\LaTeX\ Bibliography and Citation

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Outline

1. Creating Bibliography with \LaTeX
   - Manually Creating a Bibliography

2. Creating a Bibliography Automatically Using Bib\TeX
   - Bib \TeX
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   - Manually Creating a Bibliography

2. Creating a Bibliography Automatically Using Bib\TeX
   - Bib \TeX
The bibliography is produced manually with the environment.

\begin{thebibliography}{widest-entry}
\bibitem[label1]{cite_key1} %bibliographic information
...
\end{thebibliography}

- *label* is an optional argument and *cite_key* is a mandatory argument
- Without the optional argument label, *\bibitem* produces a running number in square brackets as the label for the reference in the text. The citation numbers are defined by the order in which the keys appear on the *\bibitem* commands inside “thebibliography” environment.
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With label, you can give whatever indicator you wish to see when you cite a reference, i.e. an abbreviation of the author’s name and last two digits of the year.

For the standard application with running numbers, widest entry is a dummy number with as many digits as the largest.

The citation in the text itself is made with the command \cite{cite_key} where cite_key is the reference keyword that appears in the \bibitem command.
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BIBLIOGRAPHY


Problems of this method.

- User is burdened with deciding how to format article titles, journal names, proceeding references.
- Difficult to reuse references in other documents.
Outline

1. Creating Bibliography with LaTeX
   - Manually Creating a Bibliography

2. Creating a Bibliography Automatically Using BibTeX
   - BibTeX
With BibTEX, you can maintain a single database of bibliographic references and generate the references for your paper automatically, and apply a bibliographic style matching the requirements of the publisher.

The bibliographic database is a plain text file, which you can create and maintain e.g. with TEXnicCenter.

A BibTEX database is stored as a .bib file. It is a plain text file, and so can be viewed and edited easily.

Each entry begins with the declaration of the reference type, in the form of @type. BibTEX knows of practically all types you can think of, common ones are: book, article, and for papers presented at conferences, there is inproceedings.
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Example Database Entries.

<table>
<thead>
<tr>
<th>Type</th>
<th>Author</th>
<th>Title</th>
<th>Year</th>
<th>Publisher</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Article</td>
<td>George D. Greenwade</td>
<td>The Comprehensive TeX Archive Network (CTAN)</td>
<td>1993</td>
<td>Addison-Wesley</td>
<td>Reading, Massachusetts</td>
</tr>
<tr>
<td>Book</td>
<td>Michel Goossens, Frank Mittlebach, Alexander Samarín</td>
<td>The LaTeX Companion</td>
<td>1993</td>
<td>Addison-Wesley</td>
<td></td>
</tr>
</tbody>
</table>
Standard Templates

@article An article from a magazine or a journal.
* Required fields: author, title, journal, year.
* Optional fields: volume, number, pages, month, note.

@book A published book
* Required fields: author/editor, title, publisher, year.
* Optional fields: volume/number, series, address, edition, month, note.

@booklet A bound work without a named publisher or sponsor.
* Required fields: title.
* Optional fields: author, howpublished, address, month, year, note.

@conference Equal to inproceedings
* Required fields: author, title, booktitle, year.
* Optional fields: editor, volume/number, series, pages, address, month, organization, publisher, note.
Getting current \LaTeX document to use your .bib file

- you need to place the following commands:
  \bibliographystyle{plain}
  \bibliography{sample1,sample2,...,samplen}

  Note the lack of whitespace between the commas and the next bib file.

- Bibliography styles are files recognized by Bib\TeX that tell it how to format the information stored in the .bib file when processed for output. The style file in this instance is plain.bst

- The .bib file should be in the same directory as the \LaTeX Document. If your .bib file was elsewhere, you need to specify the path as well, e.g \bibliography{/some/where/sample}

- In order to get the references actually included, the Bib\TeX program has to be run, and after that \LaTeX has to be run at least twice. In \TeXnicCenter, this will be accomplished by just pressing the Build button a few times.
Types Of Documents Bib \TeX\ Can Handle

- Article
- Book
- Booklet
- Inbook
- Incollection
- Inproceedings
- Manual
- Misc
- PhDThesis
- Proceedings
- Techreport
- Unpublished
Bibliography Style

- In \LaTeX{}, one can use a number of different bibliography styles. This style defines the layout of the pointers in the body text (e.g. “[1]”), as well as the layout of the reference list.
- Most common are abbrv, acm, alpha, apalike, ieeetr, plain, siam and unsrt.
- This is how the \LaTeX{}-source might look like:

```latex
\bibliographystyle{ieeetr}
\begin{document} ...
\cite{fanty:icassp93}, to an article
\cite{linde:tcom80}, and to a book
\cite{abut:book90}. ...
\bibliography{abbr_long,pubext} % expansion macro’s + entries from pubext.bib ...
\end{document}
```
Example outputs

\textbf{LaTeX}

Reference to a paper in proceedings [1], to an article [2], and to a book [3].

References


\textbf{plain, abbrv}

Reference to a paper in proceedings [2], to an article [3], and to a book [1].

References


Creating Bibliography Automatically Using Bib\TeX

Example Outputs

\begin{itemize}
  \item \texttt{sort}
  \begin{itemize}
    \item Reference to a paper in proceedings [1], to an article [2], and to a book [3].
  \end{itemize}
  \begin{itemize}
    \item \textbf{References}
    \begin{itemize}
    \end{itemize}
  \end{itemize}

  \item \texttt{alpha}
  \begin{itemize}
    \item Reference to a paper in proceedings [FSC93], to an article [LBC60], and to a book [Abu90].
  \end{itemize}
  \begin{itemize}
    \item \textbf{References}
    \begin{itemize}
    \end{itemize}
  \end{itemize}
\end{itemize}
Creating a Bibliography Automatically Using Bib\TeX

**Styles Description**

plain.bst  The entries in the bibliography are ordered alphabetically; each is assigned a running number in square brackets as the in-text reference marker, printed where \cite commands are issued.

alpha.bst  Entries ordered alphabetically (same as plain), and markers are an abbreviation of the author’s name with year of publication. For instance, a reference to Smith (1987) would appear as [Smi87].
Tips on Bibliography

Including URLs in bibliography

- There is no field for URLs. One possibility is to include Internet addresses in `howpublished` field of `@misc` or `note` field of `@techreport`, `@article`, `@book`:
  
  ```latex
  \text{HOWPUBLISHED} = \\
  "\url{http://www.fermentas.com/techinfo/nucleicacids/maplambda.htm}
  
  \text{Note} \text{ the usage of } \url \text{ command to ensure proper appearance of URLs.}
  
  \text{You need to use } \usepackage{url}
  ```

Cross referencing

- Bib\TeX allows referring to other publications via the `crossref` field. In the following example
Tips on Bibliography

```bibtex
@INPROCEEDINGS {author:06,
title = {Some publication title},
author = {First Author and Second Author},
crossref = {conference:06},
pages = {330–331},
}

@PROCEEDINGS {conference:06,
editor = {First Editor and Second Editor},
title = {Proceedings of the Xth Conference on XYZ},
booktitle = {Proceedings of the Xth Conference on XYZ},
year = {2006},
month = oct,
}
```
Creating Bibliography with \LaTeX

Creating a Bibliography Automatically Using \textproc{BibTeX}

Tips on Bibliography

Customizing bibliography appearance

- A bibliography style file (.bst) will tell \LaTeX how to format each attribute, what order to put them in, what punctuation to use in between particular attributes etc. Unfortunately, creating such a style by hand is not a trivial task. Which is why Makebst (also known as custom-bib) is the tool we need.

- Makebst can be used to automatically generate a .bst file based on your needs. It is very simple, and actually asks you a series of questions about your preferences. Once complete, it will then output the appropriate style file for you to use.

Citation

- Go to the point where you want the citation to appear, and use the following: \cite{cite_key}, where the cite_key is that of the bibitem you wish to cite.
- When \LaTeX processes the document, the citation will be cross-referenced with the bibitems and replaced with the appropriate number citation. The advantage here, once again, is that \LaTeX looks after the numbering for you.

Referring More Specific

- Sometimes you want to refer to a certain page, figure or theorem in a text book. For that you can use the arguments to the \cite command:

  \cite[p.215]{citation01}

- The argument, "p. 215", will show up inside the same brackets
Creating a Bibliography Automatically Using Bib\TeX

Citation

Multiple Citations

- When a sequence of multiple citations are needed, you should use a single \cite{} command. The citations are then separated by commas. Here’s an example:
\cite{citation01,citation02,citation03}

No cite

- If you only want a reference to appear in the bibliography, but not where it is referenced in the main text, then the \nocite{} command can be used, for example:
  - Lamport showed in 1995 something... \nocite{lamport95}.
  - \nocite{*}, includes all entries from the database, whether they are referenced in the document or not.
Natbib

- Using the standard LaTeX bibliography support, you will see that each reference is numbered and each citation corresponds to the numbers. The numeric style of citation is quite common in scientific writing. In other disciplines, the author-year style, e.g., (Roberts, 2003), such as Harvard is preferred.

\usepackage{natbib}

- you need to change the bibliography style file to be used, so edit the appropriate line at the bottom of the file so that it reads: \bibliographystyle{plainnat}

- for further reference
  http://merkel.zoneo.net/Latex/natbib.php
# Natbib commands

<table>
<thead>
<tr>
<th>Citation command</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>\citet{goossens93}</td>
<td>Goossens et al. (1993)</td>
</tr>
<tr>
<td>\citep{goossens93}</td>
<td>(Goossens et al., 1993)</td>
</tr>
<tr>
<td>\citet*{goossens93}</td>
<td>Goossens, Mittlebach, and Samarain (1993)</td>
</tr>
<tr>
<td>\citep*{goossens93}</td>
<td>(Goossens, Mittlebach, and Samarain, 1993)</td>
</tr>
<tr>
<td>\citeauthor{goossens93}</td>
<td>Goossens et al.</td>
</tr>
<tr>
<td>\citeauthor*{goossens93}</td>
<td>Goossens, Mittlebach, and Samarain</td>
</tr>
<tr>
<td>\citeyear{goossens93}</td>
<td>1993</td>
</tr>
<tr>
<td>\citeyearpar{goossens93}</td>
<td>(1993)</td>
</tr>
<tr>
<td>\citealt{goossens93}</td>
<td>Goossens et al. 1993</td>
</tr>
<tr>
<td>\citealp{goossens93}</td>
<td>Goossens et al., 1993</td>
</tr>
</tbody>
</table>
**Natbib Compatible styles**

<table>
<thead>
<tr>
<th>Style</th>
<th>Source</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>plainnat</td>
<td>Provided</td>
<td>natbib-compatible version of plain</td>
</tr>
<tr>
<td>abbrvnat</td>
<td>Provided</td>
<td>natbib-compatible version of abbrv</td>
</tr>
<tr>
<td>unsrtnat</td>
<td>Provided</td>
<td>natbib-compatible version of unsrt</td>
</tr>
<tr>
<td>apsrev</td>
<td>REVTeX 4 home page</td>
<td>natbib-compatible style for Physical Review journals</td>
</tr>
<tr>
<td>rmpaps</td>
<td>REVTeX 4 home page</td>
<td>natbib-compatible style for Review of Modern Physics journals</td>
</tr>
<tr>
<td>IEEEtranN</td>
<td>TeX Catalogue entry</td>
<td>natbib-compatible style for IEEE publications</td>
</tr>
<tr>
<td>achemso</td>
<td>TeX Catalogue entry</td>
<td>natbib-compatible style for American Chemical Society journals</td>
</tr>
<tr>
<td>rsc</td>
<td>TeX Catalogue entry</td>
<td>natbib-compatible style for Royal Society of Chemistry journals</td>
</tr>
</tbody>
</table>