BibTeX
A tutorial

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The standard bibliography

It was shown in \cite{b1} ...

\begin{thebibliography}{99}
...
\bibitem{b1} Max Meier, \textsl{The final theory}, Springer 1999
...
\end{thebibliography}

References
...

The standard bibliography II

It was shown in \cite{b1} ...

\begin{thebibliography}{99}
...
\bibitem[MM99]{b1} Max Meier, \textsl{The final theory}, Springer 1999
...
\end{thebibliography}

It was shown in [MM99] ...

References
...

[MM99] Max Meier, \textit{The final theory}, Springer 1999
Appearance of citations

number-only ... as shown in [34] ... \usepackage{cite}
author-date ... as shown in (Maier 2003) ... \usepackage{natbib}
short-title as shown in *Maier, Final Theory* ... \usepackage{jurabib}
footnotes jurabib, footbib
several bibliographies multibib, chapterbib, bibunit

...
The cite package

\usepackage[...]{cite}

- without this package, "see \cite{wbl1, book3, meier3}" results in, e.g., see [2,1,3]
- with the package: see [1–3]

**Options**

- **space**, **nospace** – more or less space after comma between citations [1, 3, 5] or [1,3,5] or default: [1, 3, 5]
- **nocompress** – [1, 2, 3, 4, 7, 9, 10, 11] instead of [1-4, 7, 9-11]
- **nosort** – switch off sorting of entries
- **nobreak** – forbid linebreaks before and in the citation (default: strongly discouraged, but not forbidden)
- **superscript** – formats citations as superscript: see$^{1–3}$
optional argument: \cite[pp.\,35--67]{book3} provides [3, pp. 35–67]

\renewcommand\citeleft{}
\renewcommand\citeright{}

provides (3, pp. 35–67)
The `natbib` package

\usepackage[...]{natbib}

**Textual citation**

\citet{jon90}  
Jones et al. (1990)
\citet[chap. 2]{jon90}  
Jones et al. (1990, chap. 2)

**Parenthetical citation**

\citep{jon90}  
(Jones et al., 1990)
\citep[ chap. 2]{jon90}  
(Jones et al., 1990, chap. 2)
\citep[see][]{jon90}  
(see Jones et al., 1990)
\citep[see][chap. 2]{jon90}  
(see Jones et al., 1990, chap. 2)

**Multiple citations**

\citet{jon90,jam91}  
Jones et al. (1990); James et al. (1991)
\citep{jon90,jam91}  
(Jones et al., 1990; James et al. 1991)
\citep{jon90,jon91}  
(Jones et al., 1990, 1991)
\citep{jon90a,jon90b}  
(Jones et al., 1990a,b)
The natbib package II

Suppressed parentheses
\citealt{jon90} Jones et al. 1990
\citealp{jon90} Jones et al., 1990
\citealp{jon90,jam91} Jones et al., 1990; James et al., 1991
\citealp[p. 32]{jon90} Jones et al., 1990, p. 32

Partial citations
\citeauthor{jon90} Jones et al.
\citeyear{jon90} 1990

Forcing upper case
when \citet{dRob98} della Robbia (1998)
then \Citet{dRob98} Della Robbia (1998)

Options
- round, square, curly, angle – parentheses ( ), [ ], { }, < >
- colon, comma – separator for multiple citations: ; or ,
The natbib package III

- natbib should be used with \texttt{Bib\TeX}
- Manual use: put the necessary data into the optional \texttt{\bibitem} argument:
  \begin{verbatim}
  \bibitem[{\textit{Bennett et\textit{al.}(1996)}}]{BenFucSmo96}
  Ch. H. Bennett, D. P. DiVincenzo and W. K. Wootters,
  \textsl{Mixed state entanglement},
  Physical Review A54 (1996)3824
  \end{verbatim}
Bib\TeX: generate bibliography from a database

- Collect all bibliographical data into (one or several) .bib file(s)

**mypapers.bib**

```latex
@Book{petz08,
   author = {D\'enes Petz},
   title = {Quantum Information Theory and Statistics},
   publisher = {Springer},
   year = 2008
}

@Article{Woo01,
   author = {W. K. Wootters},
   title = {Entanglement of formation and concurrence},
   journal = {Quantum Information and Computation},
   year = 2001,
   volume = 1,
   pages = {27--47}
}
```
Select a bibliographystyle, e.g., plain
(bibliographystyles are defined through a .bst file: plain.bst)

In your \LaTeX{} document paper2.tex, replace
\begin{thebibliography} ... \end{thebibliography} by
\begin{verbatim}
bibliographystyle{plain}
bibliography{mypapers,mybooks}
end
\end{verbatim}

Run

latex paper2.tex
bibtex8 paper2
latex paper2.tex
latex paper2.tex
The .bib database

- text file, pure ASCII, \TeX-encoded: \{r U\{\~n\}iv{\~e}rs\{\‘i\}t\{"a\}t \→ \texttt{bibtex}
- or: 8 bit text file Ūñivērsītāt \→ \texttt{bibtex8}
- entries in the .bib file:

\begin{verbatim}
@string { ... } \\
    (defines an abbreviation)

the other entries define a bibliographic item:
@book { ... \\
    ... } \\
@article {...} \\
@BOOK { ... } \\
    (identical to book) \\
@inbook { .....} \\
Everything outside an item (like this) is an comment \\
and ignored by bibtex.
\end{verbatim}
Abbreviations

@string{ jgr = "Journal of Geophysical Research"}
@string {PRL = "Physical Review Letters"}

A typical (overcomplete) entry

@Article{ HilWoo97,
title = {Entanglement of a Pair of Quantum Bits},
author = {Hill, Scott and Wootters, William K.},
journal = PRL,
volume = 78,
number = 26,
pages = {5022--5025},
numpages = 3,
year = 1997,
month = {Jun},
doi = {10.1103/PhysRevLett.78.5022},
publisher = {American Physical Society},
eprint={quant-ph/9703041},
}
@Article{ HilWoo97,
    title = {Entanglement of a Pair of Quantum Bits},
    author = "Hill, Scott and Wootters, William K.",
    journal = PRL,
    Volume = 78,
    PAGES = {5022},
    year = 1997,
}

- comma-separated fields
- first field: internal key, to be used for citation: \cite{HilWoo97}
- further fields: key = value pairs
- Values are strings enclosed by {...} or "...". Strings of digits can be written without enclosing {...} or "...".
- mandatory, optional and self-defined fields
  myremarks = {Very cool paper, in ChemLib}
  myfile = "C:\Papers\Math\paper34.pdf"
- field and item names (title, @book, ...): upper/lowercase doesn't matter
- spaces and linebreaks do not matter
<table>
<thead>
<tr>
<th>entry type</th>
<th>mandatory fields</th>
<th>optional fields</th>
</tr>
</thead>
<tbody>
<tr>
<td>@article</td>
<td>author, title, year, journal</td>
<td>volume, number, pages, month, note</td>
</tr>
<tr>
<td>@book</td>
<td>author or editor, title, publisher, year</td>
<td>volume or number, series, address, edition, month, note</td>
</tr>
<tr>
<td>@booklet</td>
<td>title</td>
<td>author, howpublished, address, month, year, note</td>
</tr>
<tr>
<td>@conference</td>
<td>author, title, booktitle, year</td>
<td>editor, volume or number, series, pages, address, publisher, organization,...</td>
</tr>
<tr>
<td>@inbook</td>
<td>author or editor, title, chapter or pages</td>
<td>volume, number, series, edition,...</td>
</tr>
<tr>
<td>@phdthesis</td>
<td>author, title, school, year</td>
<td>type, address, note, month</td>
</tr>
<tr>
<td>@unpublished</td>
<td>author, title, note</td>
<td>month, year</td>
</tr>
<tr>
<td>@misc</td>
<td>at least one of the optional fields</td>
<td>author, title, howpublished, year, month,note</td>
</tr>
<tr>
<td>@manual</td>
<td>title</td>
<td>author, organization, year, address, edition, month, note</td>
</tr>
<tr>
<td>@proceedings</td>
<td>title, year</td>
<td>editor, volume, series,...</td>
</tr>
</tbody>
</table>

Further entry types: @incollection, @mastersthesis, @inproceedings, @techreport
Strings (in "...") can be concatenated by the # operator. Useful for abbreviations:

```latex
@string { ich = "Hellmund, Meik" }
@string { AU = "Uhlmann, Armin" }
...
author = ich # " and " # AU
```

TEX math mode is allowed:

```latex
title = {The equation $x^2=0$ solved by application of $\text{C}_2\text{H}_5\text{OH}$}
```

**title** field: Some bibliography styles make changes to the string, e.g., uppercase ↔ lowercase conversions. Avoid this by bracketing:

```latex
title = {The \text{I}sing model and \LaTeX}
```

**author** field:

- list several authors by **and**
- if name has more than 2 parts, use the form
  ```latex
de la Cierva \{y\} Codorniu, Juan and von Neumann, John
  ```
cross references

@InCollection{pda80,  
  author = {Michael E. Fisher and Jing-Huei Chen},  
  title = {Bicriticality and partial differential approximants},  
  booktitle = {Phase Transitions: Cargèse 1980},  
  crossref = {cargese80},  
  pages = {169--216} 
}

@Proceedings{ cargese80,  
  title = {Phase Transitions: Cargèse 1980},  
  year = 1982,  
  editor = {M. Lévy and Le Guillou, J. C. and J. Zinn-Justin},  
  address = {New York},  
  publisher = {Plenum} 
}
Bibliography styles

- Bibliography styles are defined via `.bst` files (written in a special programming language)
- Examples: `abbrv`, `abbrvnat`, `alpha`, `harvard`, `jurabib`, `plain`, `unsrt`, ...
- Many publisher/Journals provide `.bst` files.
- Create your own: use `custom-bib` package
  ```latex
  latex makebst.tex
  ... answer many questions, e.g.,
  Name of language definition file?
  answer: german
  ... creates `.bst` file
  (if last answer was "y")
  ```
- last resort: hand-edit the `.bbl` file written by `bibtex` and copy it into your `\LaTeX` document
Example BibTeX styles:
http://www.cs.stir.ac.uk/~kjt/software/latex/showbst.html