

## A Gentle Introduction to $\text{\LaTeX}$ (bibliography)

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## Bibliography and Citation

A citation is a cross-reference to another publication. For example Lampport (1994) is a reference to

Lampport, L. (1994). LATEX User's Guide & Reference Manual, 2nd Edition, Addison-Wesley Publishing Company, Inc.

which usually appears at the end of your paper.

In the example above we type `\cite{lamp:latex}` which produced Lampport (1994).  $\text{\LaTeX}$  needs to know what corresponds to the citation key `lamp:latex`. The best way to tell it is in a separate database which makes the task complex enough. Therefore, it is handled by a separate program called Bib $\text{\TeX}$ .

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## Bib $\text{\TeX}$

Bib $\text{\TeX}$  is not another  $\text{\LaTeX}$  command – it is a separate program.

Bib $\text{\TeX}$  is a good thing because it:

- ▶ formats all references consistently
- ▶ sorts the bibliography alphabetically
- ▶ works with plain text files and is therefore portable and easily accessible
- ▶ allows merging of many `bib` files
- ▶ is the standard in the world of  $\text{\LaTeX}$ .

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## Bib $\text{\TeX}$

- ▶ To use Bib $\text{\TeX}$  you must include `\bibliography{literatur}` in your source file.
  - ▶ Note that the argument `literatur` is the name of the database file. The database file contains all references. In our case, the database file is to be found under the name `literatur.bib`.
  - ▶ `.bib` should be omitted from `\bibliography{...}`.
- ▶ To use Bib $\text{\TeX}$  you also need to provide `\bibliographystyle{somestyle}` command which controls the bibliography style of your literature references.

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## `\bibliographystyle{somestyle}`

There is a vast amount of bibliography styles. We consider the most common among them. `somestyle` can be:

`plain` - alphabetically sorted entries labeled with numbers.

`abbrv` - the same as plain except that the entries are more compact because of abbreviation. First names are abbreviated to their first letters.

`unsrt` - Like `plain` but not alphabetically sorted.

! `chicago`, `dcu`, `jss` - Alphabetically sorted entries, not numbered.

The bibliography style is packaged in a `bst` file. For example, if you intend to use some exotic style, say

`\bibliographystyle{exotic}`, you need to install the `exotic.bst` file on the right place. I use `dcu` or `jss` for example.

## plain

### References

- [1] Leo Breiman, Jerome H. Friedman, R.A. Olshen, and C.J. Stone. Classification and regression trees. Wadsworth, Belmont, California, 1983.
- [2] Trevor Hastie and Robert Tibshirani. Generalized Additive Models. Chapman & Hall/CRC, 1990.
- [3] Leslie Lamport. LATEX User's Guide & Reference Manual, 2nd Edition. Addison-Wesley Publishing Company, Inc., 1994.
- [4] Friedrich Leisch. Sweave, part I: Mixing R and LaTeX. R News, 2(3):28–31, 2002.
- [5] Lars Madsen. Avoid eqnarray! PracTeX Journal, 2006.

Figure 1: `\bibliographystyle{plain}`

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## abbrv

### References

- [1] L. Breiman, J. H. Friedman, R. Olshen, and C. Stone. Classification and regression trees. Wadsworth, Belmont, California, 1983.
- [2] T. Hastie and R. Tibshirani. Generalized Additive Models. Chapman & Hall/CRC, 1990.
- [3] L. Lamport. LATEX User's Guide & Reference Manual, 2nd Edition. Addison-Wesley Publishing Company, Inc., 1994.
- [4] F. Leisch. Sweave, part I: Mixing R and LaTeX. R News, 2(3):28–31, 2002.
- [5] L. Madsen. Avoid eqnarray! PracTeX Journal, 2006.

Figure 2: `\bibliographystyle{abbrv}`

## unsrt

### References

- [1] Leslie Lamport. LATEX User's Guide & Reference Manual, 2nd Edition. Addison-Wesley Publishing Company, Inc., 1994.
- [2] Trevor Hastie and Robert Tibshirani. Generalized Additive Models. Chapman & Hall/CRC, 1990.
- [3] Friedrich Leisch. Sweave, part I: Mixing R and LaTeX. R News, 2(3):28–31, 2002.
- [4] Lars Madsen. Avoid eqnarray! PracTeX Journal, 2006.
- [5] Leo Breiman, Jerome H. Friedman, R.A. Olshen, and C.J. Stone. Classification and regression trees. Wadsworth, Belmont, California, 1983.

Figure 3: `\bibliographystyle{unsrt}`

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## References

Breiman, L., Friedman, J. H., Olshen, R. and Stone, C. (1983). Classification and regression trees, Wadsworth, Belmont, California .

Hastie, T. and Tibshirani, R. (1990). Generalized Additive Models, Chapman & Hall/CRC.

Lamport, L. (1994). LATEX User's Guide & Reference Manual, 2nd Edition, Addison-Wesley Publishing Company, Inc.

Leisch, F. (2002). Sweave, part I: Mixing R and LaTeX, R News 2(3): 28–31.

Madsen, L. (2006). Avoid eqnarray!, PracTeX Journal .  
**URL:** <http://home.imf.au.dk/daleif/>

Figure 4: `\bibliographystyle{dcu}`.

This (or jss) is my recommendation for writing your thesis.

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## References

Breiman, L., J. H. Friedman, R. Olshen, and C. Stone (1983). Classification and regression trees. Wadsworth, Belmont, California.

Hastie, T. and R. Tibshirani (1990). Generalized Additive Models. Chapman & Hall/CRC.

Lamport, L. (1994). LATEX User's Guide & Reference Manual, 2nd Edition. Addison-Wesley Publishing Company, Inc.

Leisch, F. (2002). Sweave, part I: Mixing R and LaTeX. R News 2(3), 28–31.

Madsen, L. (2006). Avoid eqnarray! PracTeX Journal.

Figure 5: `\bibliographystyle{chicago}`

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## The bib File

The `bib` file contains your database references. It contains entries, the entries contain fields.

► `@book` is an entry. `title`, `year`, `author`, `publisher` are its fields.

```
@book{lamp:latex,
  title   = {LATEX User's Guide \& Reference Manual},
  author  = {Leslie Lamport},
  year    = {1994},
  edition = {Second},
  publisher = {Addison-Wesley Publishing Company, Inc.}
}
```

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## The Wrong bib File

```
@article{lamoureux1990,
  title={{Persistence in variance, structural change, and the GARCH model}},
  author={Lamoureux, C.G. and others},
  journal={Journ. of business \& economic statistics},
  volume={8},
  number={2},
  pages={225-234},
  year={1990},
  publisher={JSTOR}
}
```

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## The Wrong bib File

```
@article{lamoureux1990,  
  title={{Persistence in variance, structural change, and the GARCH model}},  
  author={Lamoureux, C.G. and others},  
  journal={Journ. of business \& economic statistics},  
  volume={8},  
  number={2},  
  pages={225-234},  
  year={1990},  
  publisher={JSTOR}  
}
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```
@article{lamoureux1990,  
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  journal={Journ. of business \& economic statistics},  
  volume={8},  
  number={2},  
  pages={225-234},  
  year={1990},  
  publisher={JSTOR}  
}  
  
@article{lamoureux1990,  
  title={Persistence in Variance, Structural Change, and the {GARCH} Model},  
  author={Christopher G. Lamoureux and William D. Lastrapes},  
  journal={Journal of Business \& Economic Statistics},  
  volume={8},  
  number={2},  
  pages={225--234},  
  year={1990},  
  publisher={JSTOR},  
  url={http://www.jstor.org/stable/1391985}  
}
```

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## The bib File

The fields are divided into three classes:

**required** Omitting a required field will produce an error message.

You're missing a field name---line 4 of file literatur.bib

`title`, `author` and `year` are (almost) always required.

**optional** The field's information will be used if available, otherwise will be omitted with no errors.

**ignored** The field is ignored.

A misspelled field's name will be ignored.

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## Entry Types

The `@book` states that this is an entry of type book. The entry type is always preceded by an `@` character. `lamp:latex` is the key that appears in the argument of the command `\citet`. You can replace `book` by:

entry	required fields	description
<code>article</code>	author, title, journal, year	An article from a journal.
<code>book</code>	author, title, publisher, year	A book with an explicit publisher.
<code>booklet</code>	title	A printed book without publisher.
<code>inproceeding</code>	author, title, booktitle, year	An article in a conference proceeding.
<code>manual</code>	title	Technical documentation.
<code>masterthesis</code>	author, title, school, year	Pretty obvious, isn't it?
<code>misc</code>	<none>	Use this when nothing else fits.

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## Fields

field	description
<code>author</code>	The name of the author. Several authors are separated by the word <code>and</code> .
<code>title</code>	The title. We aware of <u>sentence &amp; title style</u> !
<code>journal</code>	A journal name.
<code>volume</code>	The volume of a journal.
<code>number</code>	The number of a journal, magazine, technical report.
<code>pages</code>	Example: <code>pages = {716--723}</code>
<code>year</code>	Year.
<code>publisher</code>	Publisher's name.
<code>abstract</code>	The whole abstract can fit here.

And many more.

See Lamport (1994, B.2.2) for further details.

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## The natbib Package

`\usepackage[options]{natbib}`

where `options` can be:

`round` (default) for round parentheses

`square` for square brackets

`curly` for curly braces

`comma` to use commas as separators

and many more. We use `\usepackage[round,comma]{natbib}` in this course.

Consider <http://merkel.zoneo.net/Latex/natbib.php> for further details.

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Citations are available in the following forms:

1. Citations in parentheses: (Madsen, 2006), (Lamport, 1994)
2. "Usual" citations: Madsen (2006), Lamport (1994)
3. Multiple citations: Madsen (2006), Lamport (1994)
4. And others (et al): Breiman et al. (1983)
5. Suppress et al: Breiman, Friedman, Olshen and Stone (1983)
6. Affixed citations: (e.g. Madsen, 2006), (see Lamport, 1994, chap. 2)
7. Cite year (in parentheses): 1994, (1994)
8. Aliased citation: Paper I, (Paper I)
9. Silent citation: `\nocite{hastie1990gam}` and `\nocite{*}`

1. Citations in parentheses: `\citep{madsen2006avoid}, \citep{lamp:latex}`
2. "Usual" citations: `\citet{madsen2006avoid}, \citet{lamp:latex}`
3. Multiple citations: `\citet{madsen2006avoid, lamp:latex}`
4. And others (et al): `\citet{breiman1984classification}`
5. Suppress et al: `\citet{*breiman1984classification}`
6. Affixed citations: `\citep[e.g.][] {madsen2006avoid}, \citep[see][chap. 2]{lamp:latex}`
7. Cite year (...): `\citeyear{lamp:latex}`  
`\citeyearpar{lamp:latex}`
8. Aliased citation: `\defcitealias{madsen2006avoid}{Paper I}`  
`\citetalias{madsen2006avoid},`  
`\citepalias{madsen2006avoid}`
9. `\nocite{hastie1990gam}, \nocite{*}`

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## BibTeX Utilities


1. Current Index to Statistics:

<http://www.statindex.org/CIS/psqlQuery>

2. You can use  :

<http://scholar.google.de/>

It produces wrong citations more often than never. Use it on your own risk.

3. JabRef  is a good helper too:

<http://jabref.sourceforge.net/>

4. Of course you can use  to cite R, its packages or related articles.

4.1 `R> citation()`

4.2 `R> citation("mgcv")`

4.3 `R> toBibtex(citation("mgcv"))`

See the automatic generator here: <http://www.mentby.com/achim-zeileis/creating-bibtex-file-of-all-installed-packages.html>

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1. pdf<sub>l</sub>at<sub>e</sub>x
2. BibT<sub>E</sub>X
3. pdf<sub>l</sub>at<sub>e</sub>x
4. pdf<sub>l</sub>at<sub>e</sub>x

Please find [07bibexercise.pdf](#) on the web page and try to reproduce Section 1.

- ▶ Use the [dcu.bst](#) style from the course homepage.
- ▶ Put this in your preamble:

```
\usepackage[round,comma]{natbib}
\usepackage{geometry}
\usepackage{hyperref}
```

## References

- Breiman, L., Friedman, J. H., Olshen, R. and Stone, C. (1983). Classification and regression trees, Wadsworth, Belmont, California .
- Hastie, T. and Tibshirani, R. (1990). Generalized Additive Models, Chapman & Hall/CRC.
- Lamport, L. (1994). L<sup>A</sup>T<sub>E</sub>X User's Guide & Reference Manual, second edn, Addison-Wesley Publishing Company, Inc.
- Leisch, F. (2002). Sweave, part I: Mixing R and LaTeX, R News 2(3): 28–31.
- Madsen, L. (2006). Avoid eqnarray!, PracTeX Journal .  
**URL:** <http://home.imf.au.dk/daleif/>