Ludwig-Maximilians-Universität München
Department of Statistics

A Gentle Introduction to LaTeX

Bibliography

Nikolay Robinzonov

25–28 February 2013

Bibliography and citation

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

> Lamport L (1994). *LaTeX User's Guide & Reference Manual.* Second 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 Lamport (1994). 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 BibTeX.

BibTeX

BibTeX is not another LaTeX command – it is a separate program.

BibTeX 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 LaTeX.

BibTeX

- To use BibTeX you must include `\bibliography{literatur}` in your source file.
  - Note than 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`.
  - The suffix `.bib` should be omitted from `\bibliography{...}`.
- To use BibTeX you also need to provide `\bibliographystyle{somestyle}` command which controls the bibliography style of your literature references.

\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 the 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 asa or jss for example.

```
\bibliographystyle{abbrv}
```

References

[1] P. H. C. Eilers and B. D. Marx. Flexible smoothing with B-splines and penalties. *Statistical Science*, 11(2):89–121, 1996.

[2] T. Hastie and R. Tibshirani. *Generalized Additive Models*. Chapman & Hall/CRC, 1990.

[3] T. Hastie, R. Tibshirani, and J. Friedman. *The Elements of Statistical Learning: Data Mining, Inference, and Prediction*. Springer-Verlag, Berlin, 2nd edition, 2009.

[4] L. Lamport. *LATEX User's Guide & Reference Manual*. Addison-Wesley Publishing Company, Inc., second edition, 1994.

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

[6] L. Madsen. Avoid eqnarray! *PracTeX Journal*, 2006.

```
\bibliographystyle{acm}
```

References

[1] Eilers, P. H. C., and Marx, B. D. Flexible smoothing with B-splines and penalties. *Statistical Science 11*, 2 (1996), 89–121.

[2] Hastie, T., and Tibshirani, R. *Generalized Additive Models*. Chapman & Hall/CRC, 1990.

[3] Hastie, T., Tibshirani, R., and Friedman, J. *The Elements of Statistical Learning: Data Mining, Inference, and Prediction*, 2nd ed. Springer-Verlag, Berlin, 2009.

[4] Lamport, L. *LATEX User's Guide & Reference Manual*, second ed. Addison-Wesley Publishing Company, Inc., 1994.

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

[6] Madsen, L. Avoid eqnarray! *PracTeX Journal* (2006).

```
\bibliographystyle{unsrt}
```

References

Leslie Lamport. *LATEX User's Guide & Reference Manual*. Addison-Wesley Publishing Company, Inc., second edition, 1994.

Trevor Hastie and Robert Tibshirani. *Generalized Additive Models*. Chapman & Hall/CRC, 1990.

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

Paul H. C. Eilers and Brian D. Marx. Flexible smoothing with B-splines and penalties. *Statistical Science*, 11(2):89–121, 1996.

Lars Madsen. Avoid eqnarray! *PracTeX Journal*, 2006.

Trevor Hastie, Robert Tibshirani, and Jerome Friedman. *The Elements of Statistical Learning: Data Mining, Inference, and Prediction*. Springer-Verlag, Berlin, 2nd edition, 2009.

```
\bibliographystyle{chicago}
```

References

Eilers, P. H. C. and B. D. Marx (1996). Flexible smoothing with B-splines and penalties. *Statistical Science 11*(2), 89–121.

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

Hastie, T., R. Tibshirani, and J. Friedman (2009). *The Elements of Statistical Learning: Data Mining, Inference, and Prediction* (2nd ed.). Springer-Verlag, Berlin.

Lamport, L. (1994). *LATEX User's Guide & Reference Manual* (Second ed.). 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*.

`\bibliographystyle{asa}`

References

Eilers, P. H. C. and Marx, B. D. (1996), "Flexible Smoothing with B-Splines and Penalties," *Statistical Science*, 11, 89–121.

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

Hastie, T., Tibshirani, R., and Friedman, J. (2009), *The Elements of Statistical Learning: Data Mining, Inference, and Prediction*, Springer-Verlag, Berlin, 2nd ed.

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

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

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

`asa`, `jss`, or `dcu` is my recommendation for writing your thesis.

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

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}
}
```

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}
}
```

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}
}

@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}
}
```

Write in title style

This is title style:

```
title={Classification and Regression Trees}
```

This is sentence style:

```
title={Classification and regression trees}
```

Conversion from title to sentence style can be done automatically by a machine, i.e. by the bibliography style. Hence, always write your BibTeX data base in title style!

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.

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

Fields

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

And many more.

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

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
- colon to use semicolons 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.

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): Hastie et al. (2009)
5. Suppress et al: Hastie, Tibshirani, and Friedman (2009)
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{hastie.tibshirani.etal:2009}` and `\nocite{*}`

```
1. Citations in parentheses: \citep{madsen:2006}, \citep{lamp:1994}
2. ``Usual'' citations:  \citet{madsen:2006}, \citet{lamp:1994}
3. Multiple citations:  \citet{madsen:2006, lamp:1994}
4. And others (et al):  \citet{hastie.tibshirani.etal:2009}
5. Suppress et al:      \citet*{hastie.tibshirani.etal:2009}
6. Affixed citations:   \citep[e.g.][]{madsen:2006},
                        \citep[see][chap. 2]{lamp:1994}
7. Cite year (...):     \citeyear{lamp:1994}
                        \citeyearpar{lamp:1994}
8. Aliased citation:    \defcitealias{madsen:2006}{Paper I}
                        \citetalias{madsen:2006}, \citepalias{madsen:2006}
9.                      \nocite{hastie.tibshirani.etal:2009}, \nocite{*}
```

BibTeX compilation

1. `pdflatex`
2. BibTeX
3. `pdflatex`
4. `pdflatex`

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.
   1. `R> citation()`
   2. `R> citation("mgcv")`
   3. `R> toBibtex(citation("mgcv"))`

Tips & Tricks

1. You can make your Digital Object Identifier clickable:[1]
   `url = {http://dx.doi.org/<your-doi>}`
2. An automatic bibtex data base generator for R packages by Achim Zeileis: Rpackages2bib.R
3. `bibtool` for a nice indentation, sort or key generation in your data base. Highly recommended.
   `http://www.gerd-neugebauer.de/software/TeX/BibTool/bibtool.pdf`
4. `latex makebst` for individual `bst` files.

[1] `\usepackage{hyperref}` is required

Exercise

Please find `07bibexercise.pdf` on the web page and try to reproduce Section 1.

- First use the `plainnat` bibliography style. Then change it to `asa`.
- Put this in your preamble:

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

References

Eilers, P. H. C. and Marx, B. D. (1996), "Flexible Smoothing with B-Splines and Penalties," *Statistical Science*, 11, 89–121.

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

Hastie, T., Tibshirani, R., and Friedman, J. (2009), *The Elements of Statistical Learning: Data Mining, Inference, and Prediction*, Springer-Verlag, Berlin, 2nd ed.

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

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

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