Introduction to BibLaTEX
IFI master’s week

Martin Helsø

January 12, 2018
Creating a reference list

Manually:

```
\begin{thebibliography}{9}

\bibitem{knuth74}
Donald E. Knuth, 
Computer Programming as an Art. 
\textit{Communications of the ACM}, 17 (\textbf{12}) 
1974.

\bibitem{lamport94}
Leslie Lamport, 
\textit{\LaTeX: a document preparation system}, 
Addison Wesley, Massachusetts, 
2nd edition, 
1994.
\end{thebibliography}
```
Creating a reference list

Manually:

■ Complete control over formatting
■ Time-consuming
■ Difficult to change style

Created automatically from a database, using a package together with an auxiliary program:

Do not have to think about formatting
Quick and easy to use
Easy to change style

Possible packages: Natbib, Bib\LaTeX
Creating a reference list

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Possible packages: Natbib, Bib\TeX, Bib\LaTeX
The basics

**bibliography.bib**

```latex
@article{
  key1,
  author = {...},
  title = {...},
  ...
}

@book{
  key2,
  author = {...},
  title = {...},
  ...
}
```

**filename.tex**

```latex
\documentclass{memoir}
\usepackage[backend = biber]{biblatex}
\addbibresource{bibliography.bib}
\begin{document}

Some text and a citation \cite{key1}.

More text and a new citation \cite{key2}.

\printbibliography
\end{document}
```
# The basics

**filename.tex**

```latex
\documentclass{memoir}
\usepackage-backend=biber]{biblatex}
\addbibresource{bibliography.bib}
\begin{document}

Some text and a citation \cite{key1}.

More text and a new citation \cite{key2}.

\printbibliography

\end{document}
```

**bibliography.bib**

```biblatex
@article{
key1,
author = {...},
title = {...},
...
}

@book{
key2,
author = {...},
title = {...},
...
}
```
Compilation

Compile with the backend in between two ordinary compilations:

\texttt{pdflatex filename.tex}
\texttt{biber filename}
\texttt{pdflatex filename.tex}

Three possible values for the backend:

\texttt{biber} — written for Bib\LaTeX
\texttt{bibtex} — written for the older package Bib\TeX
\texttt{bibtex8} — 8 bit reimplementation of \texttt{bibtex}
BibLaTEX vs. BibTeX

1. BibLaTEX supports UTF-8
2. BibLaTEX has more predefined reference types, e.g., *online/www* for web pages
3. BibLaTEX is easier to customize
4. Databases export to BibTeX, but the output can also be read by BibLaTEX
5. Some journals require BibTeX
Library subject page

Lists databases, many of which export metadata to Bib\TeX

Can extract metadata from all databases using Zotero

http://www.ub.uio.no/english/subjects/informatics-mathematics/informatics/
The Turing Computational Model

Full Text: [Mp4]

see [source materials] below for [more options]

Authors: Juris Hartmanis
Stephen Cook
William Kahan
Richard E. Stearns
Andrew C. Yao

Published in:
- Proceeding
  ACM-TURING '12 ACM Turing Centenary Celebration
  Article No. 8

San Francisco, California, USA — June 15 - 16, 2012

[ACM] New York, NY, USA ©2012
[ACM] New York, NY, USA ©2012

[BibTeX]
Google Scholar

[BOOK] Algebraic geometry
R Hartshorne - 2013 - books.google.com
Robin Hartshorne studied algebraic geometry with Oscar Zariski and David Mumford at Harvard, and with J.-P. Serre and A. Grothendieck in Paris. After receiving his Ph. D. from Princeton in 1963, Hartshorne became a Junior Fellow at Harvard, then taught there for

Cited by 15826  Related articles  All 9 versions  »

Any time
Since 2018
Since 2017
Since 2014
Custom range...
Google Scholar

[BOOK] Algebraic geometry
R Hartshorne - 2013 - books.google.com
Robin Hartshorne studied algebraic geometry with Oscar Zariski and David Mumford at Harvard, and with J. P. Serre and A. Grothendieck in Paris. After receiving his Ph. D. from Princeton in 1963, Hartshorne became a Junior Fellow at Harvard, then taught there for...

[BOOK] Commutative Algebra: with a view toward algebraic geometry
D. Eisenbud - 2013 - books.google.com
... HARTSHORNE, Algebraic Geometry. MANIN ... Page 4. David Eisenbud: Commutative Algebra: With a View Toward Algebraic Geometry With 90 Illustrations Springer-Verlag, New York, Heidelberg London Paris Tokyo Hong Kong Barcelona Budapest Page 5 ...

[HTML] Algebraic geometry over groups I. Algebraic sets and varieties
... HR; R. Hartshorne, Algebraic Geometry, Springer-Verlag, New York (1977) variables, Hebrew University, Jerusalem, 1966, preprint. RA1; A. Razborov, ... of finitely generated free groups. Algebra 1 Logika, 8 (1969), pp. 72–76.

[BOOK] Principles of algebraic geometry
P. Griffiths, J. Harris - 2014 - books.google.com
... of Residues 3.Rudiments of Commutative and Homological Algebra with a Discussion of the ... of Algebraic Geometry. Bill Clemens, Robert Hartshorne, Bill Hoffman ... topology, and differential geometry that will be used in our study of algebraic geometry.
Zotero

Export .bib file:
Zotero

Export .bib file:
Zotero with Better Bib\TeX

https://github.com/retorquere/zotero-better-bibtex

Customize export and automatically sync .bib file
Zotero with Better Bib\LaTeX

https://github.com/retorquere/zotero-better-bibtex

Customize export and automatically sync .bib file

Specify cite key as bibtex:key in the extra field
Citation notes

Input:
\cite[postnote]{key}
\cite[prenote][postnote]{key2}
\cite[prenote][]{key3}

Output (depends on style): 
[1, postnote]
[prenote 2, postnote]
[prenote 3]
Citation notes

Input:
\cite[postnote]{key}
\cite[prenote][postnote]{key2}
\cite[prenote][]{key3}

Output (depends on style):
[1, postnote]
[prenote 2, postnote]
[prenote 3]

Postnotes are used to specify which part of the source your are referencing:
\cite[Algorithm~3.2]{key}
\cite[i--vi]{key}
Citation notes

Input:
\cite[postnote]{key}
\cite[prenote][postnote]{key2}
\cite[prenote][]{key3}

Output (depends on style):
[1, postnote]
[prenote 2, postnote]
[prenote 3]

Postnotes are used to specify which part of the source your are referencing:
\cite[Algorithm~3.2]{key} [1, Algorithm 3.2]
\cite[i--vi]{key} [1, pp. i–vi]
Notes in optional arguments

Say we have defined the environment example (using, e.g., thmtools).

Then this works:

\begin{example}\cite{key}\end{example}

But this fails:

\begin{example}\cite[Example~7]{key}\end{example}
Notes in optional arguments

Say we have defined the environment \texttt{example} (using, e.g., \texttt{thmtools}). Then this works:

\begin{example}\cite{key}\end{example}

...\end{example}

But this fails:

\begin{example}\cite{Example~7}{key}\end{example}

...\end{example}
Notes in optional arguments

Say we have defined the environment `example` (using, e.g., `thmtools`). Then this works:

\begin{example}\cite{key}\end{example}

But this works:

\begin{example}\cite[Example 7]{key}\end{example}
Citation commands

\cite bare
\parencite cite in parentheses
\footcite cite in footnote
\authorcite cite only author
\titlecite cite only title
\yearcite cite only year
\urlcite cite only url
Styles

\usepackage[style = alphabetic]{biblatex}

numeric [1]
alphabetic [Har77]
authoryear Hartshorne 1977
authortitle Hartshorne, Algebraic geometry
Styles

\usepackage[style = alphabetic]{biblatex}

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alphabetic [Har77]
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authortitle Hartshorne, Algebraic geometry

style affects both appearance in bibliography and in-text citations unless citestyle is used (make sure they match!)
Styles

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authortitle Hartshorne, Algebraic geometry

style affects both appearance in bibliography and in-text citations unless citestyle is used (make sure they match!)

You can define your own style or import one (e.g, APA, Chicago, Nature, Science)
Shorthand

...was computed with [1]
...was computed with *Macaulay2* [1]
...was computed with [Macaulay2]
Sorthand

...was computed with [1]
...was computed with *Macaulay2* [1]
...was computed with ![Macaulay2]

Overrule the citation style for individual references by adding a shorthand to its entry in the .bib file:

```latex
@misc{M2,
  shorthand = {Macaulay2},
  author = {Grayson, Daniel R. and Stillman, Michael E.},
  title = {Macaulay2},
  howpublished = {Available at \url{http://www.math.uiuc.edu/Macaulay2/}}
}
```
Further customization

Omit information from the bibliography:

\usepackage[doi = false, 
isbn = false, 
url = false]{biblatex}

Issuing \texttt{url = false} does not remove the URL from the \texttt{online} reference type
Further customization

Omit information from the bibliography:

\usepackage[doi = false,
             isbn = false,
             url  = false]{biblatex}

Issuing url = false does not remove the URL from the online reference type.

Use initials for given names with giveninits = true
Further customization

Omit information from the bibliography:

\usepackage[doi = false, 
            isbn = false, 
            url = false]{biblatex}

Issuing url = false does not remove the URL from the online reference type

Use initials for given names with giveninits = true

Specify how many author names are printed before they are replaced by ‘et al.’ with maxcitenames = n and maxbibnames = m
Further customization

Omit information from the bibliography:

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Specify how many author names are printed before they are replaced by ‘et al.’ with maxcitenames = n and maxbibnames = m

Print last names first:

\DeclareNameAlias{sortname}{family-given}
\DeclareNameAlias{default}{family-given}
Showkeys

\usepackage{showkeys}

Display cite keys (and label keys) in margin

Bibliography


Showkeys

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Display cite keys (and label keys) in margin

Bibliography


Aggressive output, prefer loading

\usepackage[notref, notcite]{showkeys}
Showkeys

\usepackage{showkeys}

Display cite keys (and label keys) in margin

Bibliography


Aggressive output, prefer loading

\usepackage[notref, notcite]{showkeys}

Disable by passing final to document class
Further reading

**BibLaTeX cheat sheet**
http://mirror.hmc.edu/ctan/info/biblatex-cheatsheet/biblatex-cheatsheet.pdf

**BibLaTeX manual**

**Knut Hegna: BibLaTeX — course notes**

**Dag Langmyhr & Knut Hegna: Local guide to BibLaTeX**
http://dag.at.ifi.uio.no/latex-links/biblatex-guide.pdf
Hands-on courses

Wednesday January 17 (English)
http://www.ub.uio.no/english/courses-events/courses/study-programs/mn/master/informatics-biblatex/index.html

Thursday January 18 (Norwegian)
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