

# Introduction to bibTeX

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References:

- <https://www.latex-tutorial.com/>
- Manolis Christodoulakis, KEDIMA 2012

- Citing in text and referencing in  $\text{\LaTeX}$  can be done in several ways
  - ▶ The boring way, by writing everything yourself
  - ▶ The slightly less boring way, by adding references at the end of your document
  - ▶ The cool way! By using BIBTEX
- BIBTEX is a separate program, like pdf $\text{\LaTeX}$ , that is run from command line or through a shortcut in your editor
- It uses a plain text file (.bib) in which references are stored

The general way BIBTEX works:

- In one or more .bib files all references are stored in a special syntax, called an entry. These all are also given a keyword
  - ▶ This .bib file must be in the same folder as your .tex file
- In your text these keywords can be used through cite commands  
`\cite{keyword}`
- Magic occurs, and the correct citation plus the correctly formatted reference list are added to your document
- The .bib file may contain many entries, but only the ones you actually cite in the document are included in the reference list

```
@TYPE{KEY,  
title={TITLE},  
author={AUTHOR and AUTHOR and AUTHOR},  
FIELD={VALUE},  
... FIELD={VALUE}  
}
```

A bibTEX entry consists of :

- ▶ The **type** of publication
- ▶ A **key** which is used for citing
- ▶ A **list of fields** separated by commas

## Types of bibliography entries

```
@TYPE{KEY ,  
  title={TITLE},  
  author={AUTHOR and AUTHOR and AUTHOR},  
  FIELD={VALUE},  
  ... FIELD={VALUE}  
}
```

The most common TYPEs available are

- **article** An article published in a periodical
- **book** A book with a defined author(s) and publisher
- **conference** An article printed in the proceedings of a conference
- **inproceedings** Same as conference
- **manual** A technical document or reference manual
- **mastersthesis** A thesis for a masters degree
- **misc** For works that are hard to categorize (i.e., websites)
- **phdthesis** Like mastersthesis, but for doctoral theses

# Data fields

```
@TYPE{KEY,  
title={TITLE},  
author={AUTHOR and AUTHOR and AUTHOR},  
FIELD={VALUE},  
... FIELD={VALUE}  
}
```

- **KEY** is a unique name for the particular bibliography entry, which is used to cite this entry
- **FIELD** is one of  
*title, author, year, edition, editor, journal, booktitle, month, note, publisher, address, url, volume*
- The list of required and optional fields varies with the entry type
- You can add additional fields, e.g. as comments for yourself. Any field which is not required or optional will simply be ignored
- The order in which we add field-value pairs does not matter

## A bibliography entry example

```
@article{borsboom2011transdiagnostic,  
title={Transdiagnostic Networks},  
author={Borsboom, D. and Epskamp, S. and Kievit, R.  
A. and Cramer, A.O.J. and Schmittmann, V.D.},  
journal={Perspectives on Psychological Science},  
volume={6},  
number={6},  
pages={610--614},  
year={2011},  
publisher={SAGE Publications} }
```

Notice:

- The key can be anything, as long as it is unique
- All authors are separated by **and**
- Page numbers are normally separated by double-dash
- The last pair of field-value is not followed by comma
- *VALUES* may be enclosed in double quotes instead of {}
- Each entry type has different compulsory and optional fields

## Maintaining capitalization

```
@article{borsboom2011transdiagnostic,  
title={{Transdiagnostic Networks}},  
author={Borsboom, D. and Epskamp, S. and Kievit, R.  
A. and Cramer, A.O.J. and Schmittmann, V.D.},  
journal={Perspectives on Psychological Science},  
volume={6},  
number={6},  
pages={610--614},  
year={2011},  
publisher={SAGE Publications}  
}
```

- Bibtex automatically switches all letters in the title to small case, except for the very first letter
- Add the title inside an extra pair of brackets to maintain the capitalization



## Including a bibliography

- To include a bibliography we need to set two commands at the end of the document right before `\end{document}`
- The `\bibliographystyle{}` command specifies the style used in the reference list and citations
- The `\bibliography{}` command specifies the name of the bibliography file without the .bib extension
  - ▶ Or multiple files separated by a comma
- Given that the bibliography is called bibfile.bib:

```
\documentclass{article}
```

```
\begin{document}
```

```
Here is some very interesting text
```

```
\bibliographystyle{ plain}
```

```
\bibliography{bibfile}
```

```
\end{document}
```

# Generic Bibliography styles

BIBTEX comes with four predefined styles:

- **plain** Alphabetically sorted entries, labelled with numbers
- **unsrt** Entries appear in the order they are first referenced, labelled with numbers
- **alpha** Like plain, but with the reference markers based on authors' initials and publication year
- **abbrv** Like plain, but with first names and names of journals and months abbreviated

## Abbrv Style

### References

- [1] A. Einstein. Zur Elektrodynamik bewegter Körper. (German) [On the electrodynamics of moving bodies]. *Annalen der Physik*, 322(10):891–921, 1905.
- [2] M. Goossens, F. Mittelbach, and A. Samarin. *The L<sup>A</sup>T<sub>E</sub>X Companion*. Addison-Wesley, Reading, Massachusetts, 1993.

## Unstr Style

### References

- [1] Michel Goossens, Frank Mittelbach, and Alexander Samarin. *The L<sup>A</sup>T<sub>E</sub>X Companion*. Addison-Wesley, Reading, Massachusetts, 1993.
- [2] Albert Einstein. Zur Elektrodynamik bewegter Körper. (German) [On the electrodynamics of moving bodies]. *Annalen der Physik*, 322(10):891–921, 1905.

## Alpha Style

### References

- [Ein05] Albert Einstein. Zur Elektrodynamik bewegter Körper. (German) [On the electrodynamics of moving bodies]. *Annalen der Physik*, 322(10):891–921, 1905.
- [GMS93] Michel Goossens, Frank Mittelbach, and Alexander Samarin. *The L<sup>A</sup>T<sub>E</sub>X Companion*. Addison-Wesley, Reading, Massachusetts, 1993.

## Plain Style

### References

- [1] Albert Einstein. Zur Elektrodynamik bewegter Körper. (German) [On the electrodynamics of moving bodies]. *Annalen der Physik*, 322(10):891–921, 1905.
- [2] Michel Goossens, Frank Mittelbach, and Alexander Samarin. *The L<sup>A</sup>T<sub>E</sub>X Companion*. Addison-Wesley, Reading, Massachusetts, 1993.

## Adding bibliographic entries without citations

- Notice: your `BIBTEX` file may contain many entries, however only those cited in the document will be printed in the bibliography
- If you want some entry of the `bibtex` file to be included in the bibliography without being cited anywhere in the document, you can use `\nocite`
- Example: `\nocite{Icompanion}`
- You can have all entries of the `BIBTEX` file listed in the bibliography with the `\nocite{*}` command

```
\documentclass{article}
\begin{document}
\nocite{*}
\bibliographystyle{plain}
\bibliography{your_bibtex_file}
\end{document}
```

## Editing bibtex files with TexStudio

- In TexStudio/Texmaker you can create BIBTEX entries through the menu. When you click on an item from the Bibliography menu, you get a list of all available fields; optional fields are preceded with the prefix OPT and you will need to remove this prefix or the field will be ignored.
- By clicking on the menu item *Bibliography* → *Clean* all unused optional fields are removed

```
@article{ID,  
  author = {author},  
  title = {title},  
  journaltitle={journaltitle},  
  date = {date},  
}
```

# Bibtex file editors

- There exist editors specifically for editing bibtex files
- A very popular one is **Jabref**

The screenshot displays the JabRef application window. The main window title is "Tutorial\KEDIMA Earino 2018\Latex\Material\LatexTuto...". The menu bar includes "File", "Edit", "Search", "Groups", "View", "BibTeX", "Tools", "Options", and "Help". The toolbar contains various icons for file operations, search, and editing. Below the toolbar, there are two tabs: "beamerExample.bb" and "TCST\_bibliography.bb". A search bar is present with a "Search..." placeholder, a "Clear" button, and checkboxes for "regular expression" and "Case sensitive". A "Filter" button and a "Search globally" checkbox are also visible. The main area shows a table of bibliographic entries:

#	entry...	author/edtor	title	year	journal/boo...	bibtexkey	Ranking
1	InProc...	Kyriacou et al.	(Multi-constraint building partitioning formulati...	2016	Proceeding...	kyriacou2...	
2	Article	Keliris et al.	A distributed fault detection filtering approach fo...	2013	IEEE Trans...	keliris20...	
3	InProc...	Kyriacou et al.	Automatic building partitioning for effective cont...	2016	Proceeding...	kyriacou2...	
4	Article	Kyriacou et al.	Partitioning of Intelligent Buildings for Distribut...	2017	IEEE Trans...	7843607	

Below the table, there is a detailed view of the selected entry (entry 2). The tabs are "Required fields", "Optional fields", "General", "Abstract", "Review", and "BibTeX source". The "General" tab is active, showing the following fields:

- Author: Keliris, Christodoulos and Polycarpou, Marios M and Partisini, Thomas
- Title: A distributed fault detection filtering approach for a class of interconnected continuous-time nonlinear systems
- Journal: IEEE Transactions on Automatic Control (Toggle abbreviation)
- Year: 2013
- Bibtexkey: keliris2013distributed

Status: Saved database E:\University of Cyprus\Stelios Vrahimis - Stelios Alexis\latex Tutorial\KEDIMA Earino 2018\latex\Material\Latex Tutorial - Alexis\beamerExample...

# The apalike bibliography style

- First you need to load the **apalike** package
- The command `\bibliographystyle{apalike}` uses a special construction for labels, generally called **author-year**
- [Kyriacou et al., 2016a][Kyriacou et al., 2016b]



Kyriacou, A., Michaelides, M., and Panayiotou, C. (2016a).

## **Automatic building partitioning for effective contaminant detection and isolation.**

In *Proceedings of IEEE 18th Mediterranean Electrotechnical Conference (MELECON)*, pages 1–6.



Kyriacou, A., Timotheou, S., Michaelides, M., Panayiotou, C., and Polycarpou, M. (2016b).

## **Multi-constraint building partitioning formulation for effective contaminant detection and isolation.**

In *Proceedings of IEEE Evolutionary Computation (CEC)*, pages 4675–4682.

# The natbib package

- The **natbib** package is a reimplementation of the  $\text{\LaTeX}$  `\cite` command, to work with both author-year and numerical citations.
- It is compatible with the standard bibliographic style files, such as *plain*, as well as with those for *harvard*, *apalike*, *chicago*, *astron*, *authordate*, and of course *natbib*
- Load with the command `\usepackage[options]{natbib}`; the complete list of options can be found in (P.W.Daly, Natural Sciences Citations and References)
- It provides three bibliographic styles to replace the standard  $\text{\LaTeX}$  numerical ones:

**plainnat**

**abbrvnat**

**unsrtnat**

# The natbib citation commands

- It provides two basic citation commands
  - ▶ `\citet` for textual citations
  - ▶ `\citep` for parenthetical citations
- There also exist the starred versions `\citet*` and `\citep*` that print the full author list, and not just the abbreviated one
- All of these may take one or two optional arguments to add some text before and after the citation
  - ▶ If only one optional argument is given, it will added after the citation

<code>\citet{jon90}</code>	⇒	Jones et al. (1990)
<code>\citet[chap.~2]{jon90}</code>	⇒	Jones et al. (1990, chap. 2)
<code>\citep{jon90}</code>	⇒	(Jones et al., 1990)
<code>\citep[chap.~2]{jon90}</code>	⇒	(Jones et al., 1990, chap. 2)
<code>\citep[see] []{jon90}</code>	⇒	(see Jones et al., 1990)
<code>\citep[see] [chap.~2]{jon90}</code>	⇒	(see Jones et al., 1990, chap. 2)
<code>\citet*{jon90}</code>	⇒	Jones, Baker, and Williams (1990)
<code>\citep*{jon90}</code>	⇒	(Jones, Baker, and Williams, 1990)



Reproduce the following document using the `apalike` bibliography style:

On page 384 of (Goossens et al., 1993), youll find a complete example of what the `apalike` bibliography style looks like.

## References

Goossens, M., Mittelbach, F., and Samarin, A. (1993). *The L<sup>A</sup>T<sub>E</sub>X companion*. Addison-Wesley.

Lamport, L. (1997). *L<sup>A</sup>T<sub>E</sub>X: A Document Preparation System*. Addison-Wesley.

Using the `natbib` package, change the document you created in the previous exercise so that the output will look as follows:

On page 384 of Goossens et al. [1993], youll find a complete example of what the `apalike` bibliography style looks like.

## References

M. Goossens, F. Mittelbach, and A. Samarin. *The L<sup>A</sup>T<sub>E</sub>X companion*. Addison-Wesley, 1993.

L. Lamport. *L<sup>A</sup>T<sub>E</sub>X: A Document Preparation System*. Addison-Wesley, 1997.

## Where to go next

- ▶ Nicolas Markey. Tame the BeaST. Exhaustive BibTeX tutorial [http://www.lsv.ens-cachan.fr/~markey/BibTeX/doc/ttb\\_en.pdf](http://www.lsv.ens-cachan.fr/~markey/BibTeX/doc/ttb_en.pdf)
- ▶ Wikibooks. L<sup>A</sup>T<sub>E</sub>X/Bibliography Management [http://en.wikibooks.org/wiki/LaTeX/Bibliography\\_Management#BibTeX](http://en.wikibooks.org/wiki/LaTeX/Bibliography_Management#BibTeX)
- ▶ Patrick W. Daly. Natural Sciences Citations and References <http://ftp.cc.uoc.gr/mirrors/CTAN/macros/latex/contrib/natbib/natbib.pdf>

- ▶ Sacha Epskamp. LATEX for Psychological Researchers, Lecture 3: bibTEX, APA style and Beamer, University of Amsterdam, Department of Psychological Methods, 2011
- ▶ Fernand S. Garin. bibTEX Math 98/198, Lecture 10. 2007 University of Groningen. bibTEX. 2011
- ▶ BibTeX: bibliography styles <http://amath.colorado.edu/documentation/LaTeX/basics/steps/bibstyles.html>