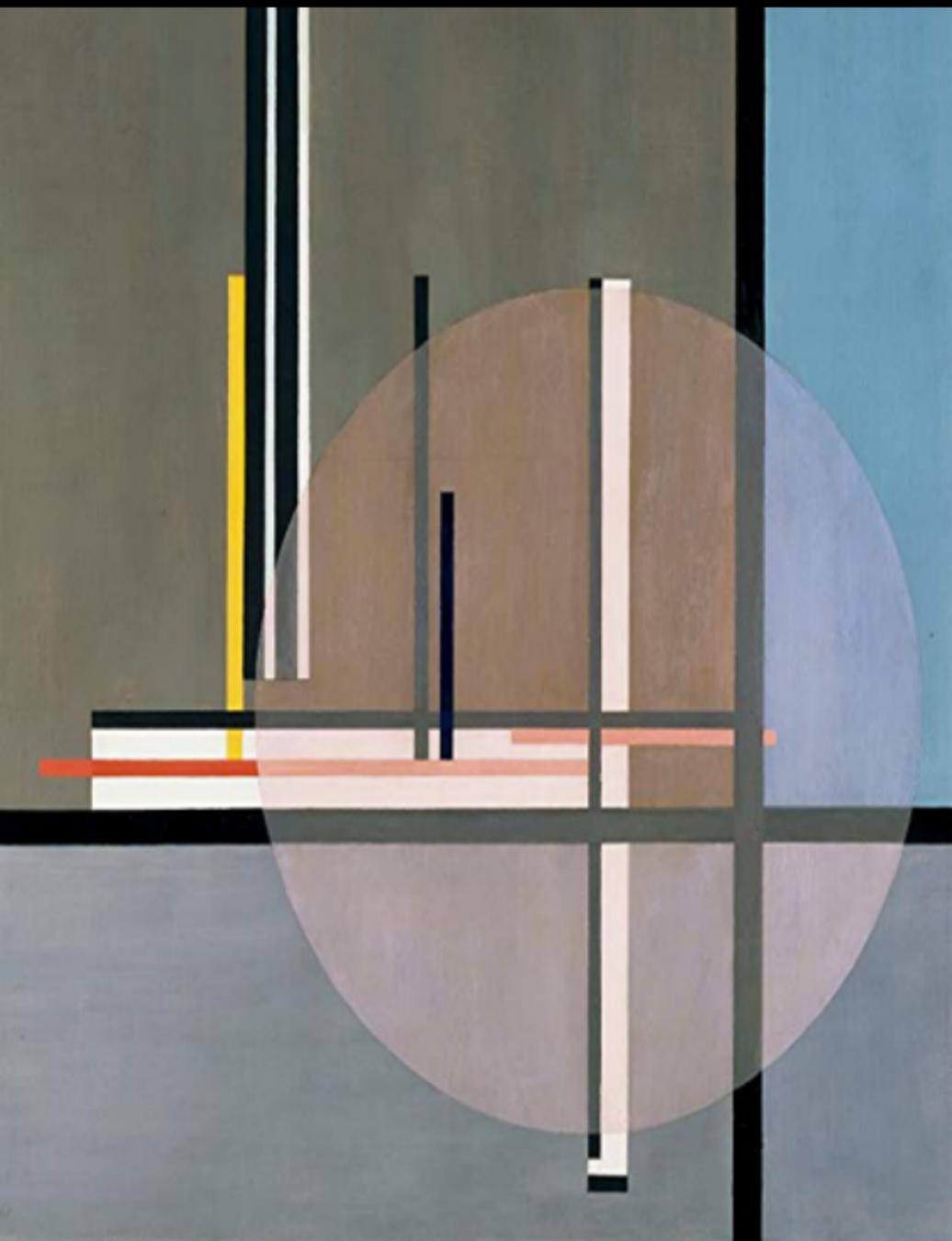


BIBLIOGRAPHY MANAGEMENT
WITH BIB_TE_X
APU V



Bibliography Management with BibT_EX

Apu V

(English: Tech. notes)

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The electronic versions were generated from sources marked up in [L^AT_EX](#) after incorporating all the sketches provided by the author, in a computer running GNU/LINUX operating system. PDF was typeset using [X_YT_EX](#) from [T_EXLive](#) 2020. The base font used is Cormarant Garamond Medium at 10 pt.

Cover: LIS by László Moholy-Nagy

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Bibliography management with BibTeX

For academic and research papers, incorporating references and their citation into the document is a critical task. BibTeX is a bibliography management system which is widely used by L^AT_EX authors to generate reference lists conveniently according to the publishing standards.

The BibTeX system

In BibTeX system Bibliography data is kept in a style independent text-based file format file with extension `bib`. It is commonly referred as **BibTeX database** or simply `bib` file. The style information like formatting, punctuation and algorithm for sorting reference items are kept in the **BibTeX style file** with extension `bst`. The L^AT_EX manuscript contains commands which specifies what bibliography database and reference style to be used. BibTeX uses this information in the manuscript to generate reference list from the BibTeX database file using the the BibTeX style file.

Structure of BibTeX Database

BibTeX database contains bibliography entries, each of which correspond to a reference list item. A typical bibliography entry is given below.

```
@Book{abramowitz+stegun,
  author   = "Milton {Abramowitz} and
             Irene A. {Stegun}",
  title    = "Handbook of Mathematical
             Functions with Formulas,
             Graphs, and Mathematical
             Tables",
  publisher = "Dover",
  year     = 1964,
  address  = "New York City",
  edition  = "ninth Dover printing,
             tenth GPO printing"
}
```

Each entry consists of a reference entry type, label and the bibliography data specified in key value pairs.

The **entry type** specifies what type of reference is it. For example, article, book or proceedings. Entry type always starts with ‘@’ symbol. The label should be a unique string for each entry which is used for citing the reference entry in manuscript text. The **data** for reference item is kept as key value pairs with keys or **fields** indicating what kind of data it is. For example, author, title, pages etc. The label and reference data are kept in curly braces. There should be a comma after the label and after each key value pairs.

Complete list of BibTeX entry types are [listed here](#).

BibTeX entry fields are listed [in this URL](#).

BibTeX style files

BibTeX provides style files for commonly used reference styles such as numbered, apa, ieetr, unsrt etc. Also, most of the journals that accept L^AT_EX manuscripts provide their own style files for author’s convenience.

List of bibliography style files available are at [this site](#).

Generating Reference list using BibTeX

The BibTeX system is included in all major L^AT_EX distributions. L^AT_EX comes with two commands to select bibliography reference style and the database file in the document. `\bibliographystyle` command selects which style file is to be used for formatting the reference list. Command’s argument is the style file name without `bst` extension. For example `\bibliographystyle{plain}` will use the style file `plain.bst` to format bibliography database. `\bibliography` command selects the BibTeX database file. Its argument is the database file name without `bib` extension. Multiple bib files can be used, separated by commas. Example: `\bibliography{refs}`. These commands are placed at the end of the L^AT_EX document where the reference list is to be printed.

Most L^AT_EX Editors like [TeXworks](#) or [TeXstudio](#) make using BibTeX even easier than it already is. You can generate the reference list with a click of a button or a menu item. In case you want to process `myarticle.tex` on the command line execute following commands

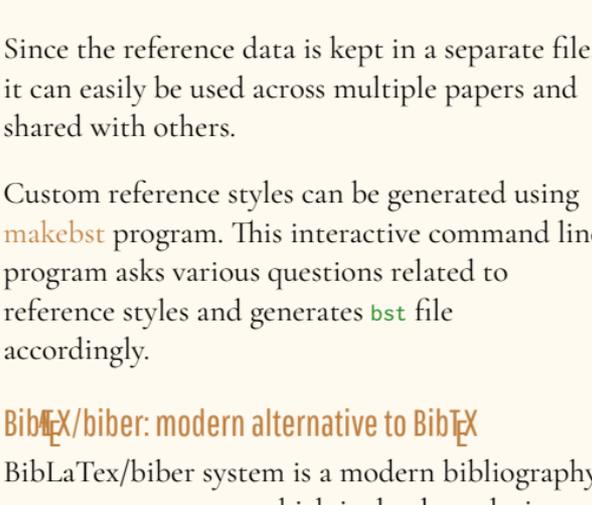
```
latex myarticle
bibtex myarticle
latex myarticle
latex myarticle
```

During the first compilation L^AT_EX will read the `\bibliographystyle` and `\bibliography` commands and the files to be loaded are saved in the auxiliary file `mydocument.aux`. Also, the reference labels used in the cite commands are saved in the auxiliary file. Then run the BibTeX command with manuscript name as argument. Now BibTeX reads the auxiliary file and generates reference list and saves to a file with name of the document and extension `bb1`. The `bb1` file contains the L^AT_EX bibliography environment comprising sorted `\bibitem` list with formatting commands and definitions according to the style.

When we run `pdfLATEX` again L^AT_EX reads `bb1` file and inserts bibliography at the place of `\bibliography` command. In the next compilation L^AT_EX replaces the cite commands used in the manuscript with the reference numbers or author name/years from the reference list.

The `bb1` file will contain only the references that are cited In the text. If all reference entries in the `bib` file needs to be in the reference list use `\nocite{*}` command before `\bibliography` command in the manuscript.

A graphical description of the reference generation procedure using BibTeX is shown below.



Natbib Package

By default, L^AT_EX provides `\cite` command for numerical reference citation. For advanced numerical citation and author-year citation styles `natbib` package is used with BibTeX. `natbib` package can also be used without BibTeX, but using it with BibTeX provides for a very convenient reference citation management scheme. `natbib` provides following command to cite references in text.

Citation command	Output
<code>\cite{goossens93}</code>	[1]
<code>\citet{goossens93}</code>	Goossens et al. (1993)
<code>\citep{goossens93}</code>	(Goossens et al., 1993)
<code>\citet*{goossens93}</code>	Goossens, Mittlebach, and Samarin (1993)
<code>\citep*{goossens93}</code>	(Goossens, Mittlebach, and Samarin, 1993)
<code>\citeauthor{goossens93}</code>	Goossens et al.
<code>\citeauthor*{goossens93}</code>	Goossens, Mittlebach, and Samarin
<code>\citeyear{goossens93}</code>	1993
<code>\citeyearpar{goossens93}</code>	(1993)
<code>\citealt{goossens93}</code>	Goossens et al. 1993
<code>\citealp{goossens93}</code>	Goossens et al., 1993
<code>\citetext{priv.\ comm.}</code>	(priv. comm.)

`natbib` supports various numerical and author-year citation styles. This package can automatically sorts numerical citations and compress ranged citations according to style requirements.

`natbib` package and documentation are available at [CTAN](#).

Advantages of using BibTeX

BibTeX together with `natbib` package allows generation of reference lists and citations according to the publication standards conveniently without manual editing.

Obtaining bibliographic information for BibTeX is very easy since most reference database services allow exporting citation data to BibTeX format. Few examples are [Google Scholar](#), [Web of science](#) and [Refworks](#).

Since the reference data is kept in a separate file, it can easily be used across multiple papers and shared with others.

Custom reference styles can be generated using `makebst` program. This interactive command line program asks various questions related to reference styles and generates `bst` file accordingly.

BibLaTeX/biber: modern alternative to BibTeX

BibLaTeX/biber system is a modern bibliography management system which is slowly replacing BibTeX. The BibTeX program is not actively developed anymore. Due to the custom stack-based language used, BibTeX style customization is not an easy task for common T_EX users. BibL^AT_EX/biber system uses the same database file structure as BibTeX. So existing BibTeX database files are compatible. In this system a program named `biber` is used for parsing database instead of BibTeX. `biblatex` package is used to format reference lists and citations instead of style files and `natbib` package. With the `biblatex` L^AT_EX macros can be used for customization of bibliography styles which is more convenient for L^AT_EX authors. Also, BibL^AT_EX/biber provides better support for UTF-8 encoding compared to BibTeX system.

Find more information about BibL^AT_EX at [CTAN](#).

Epilog

- The content that Sayahna includes in these Phone PDFs are those that can be read in under thirty to forty minutes. Computers or Desktop applications are not necessary for reading them.
- The PDFs are made available in beautiful, rich formats and can be easily read from your smart phones. They are customized to adhere perfectly with the dimensions of your phone screen.
- Most smartphones these days are equipped with in-built readers for PDF content. However, the free Adobe Acrobat Reader application offers the best reading experience. We would recommend that you install Adobe readers in your phones and use them for reading our content.
- Anybody who is interested in open access publishing and want to submit their work to Sayahna may do so by mailing it to [<info@sayahna.org>](mailto:info@sayahna.org). The work could be anything from stories, memoirs, articles, interviews, movie reviews, poems, plays, sketches or paintings; the only stipulation being that they should be succinct enough to be read under thirty to sixty minutes.
- Sayahna welcomes all your thoughts on our efforts! You may either mail them to [<info@sayahna.org>](mailto:info@sayahna.org) or post them under the Comments section in this [web page](#). We eagerly await your feedbacks and hope to derive from them the necessary impetus to drive Sayahna to new heights.