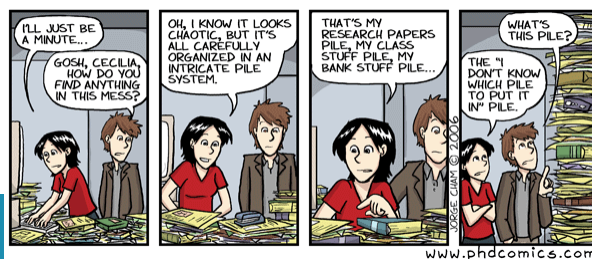


# Introduction to LaTeX

bibliography

## Contents

- `thebibliography`
- Work with a bibliographic database
- Reference managers
- BibTeX
- BibLaTeX



# Bibliography

- A bibliography is a list of the literature that has been used for writing the document.
- Requirements:
  - **Correct:** All the information (especially authors, title, and year) should be correct.
  - **Complete:** All the literature that is referred to, should appear in the bibliography
  - **Uniform:** All the information should be displayed in the same style.

<http://www.ankehimmelreich.de/latex.php>

# Bibliography

- A bibliography can be:
  - Included **manually** (DIY)
    - Not really an option
  - Embedded, using `thebibliography` environment
    - Simple method
    - Can be used for short reference lists, or when the formatting is very special
  - Automatically generated from a **bibliographic database**
    - Should be the way to go

[https://en.wikibooks.org/wiki/LaTeX/Bibliography\\_Management](https://en.wikibooks.org/wiki/LaTeX/Bibliography_Management)

# thebibliography

The basics of generating the bibliography

# thebibliography

- Syntax

```
\begin{thebibliography}{widest_label}  
\bibitem[label]{key} reference  
...  
\end{thebibliography}
```

- *widest\_label*: should be as wide as the widest label. Will help LaTeX to align the references correctly.
- *label*: overrides the default label (a running number).
- *key*: reference key used in text.
- *reference*: author, title, etc. information (may include formatting).

## thebibliography

- `thebibliography` environment produces a bibliography or reference list.
  - In the article style, this reference list is labeled "References";
  - in the report style, it is labeled "Bibliography".
- similar to the `enumerate` environment, except that items are associated with a `\bibitem` command and can be cross-referenced with the `\cite{key}` command.
- *File: demo\_thebibliography\_1.tex*

## thebibliography

- By default, the bibliography items are given consecutive numeric labels, set in square brackets. [1], [2], [3], [4].
- Also allowed
  - `\cite{Erdos01,Simpson}`
  - `\cite[pages~2--15]{Knuth92}`
- Explicit labels.
  - Use mnemonic labels instead of the default numeric labels.
  - label the items [Er01], [GKP89], [Kn92], and [Si03]. Label this explicitly in `bibitem`:  
`\bibitem[Er01]{Erdos01} .... \bibitem[Si03]{Simpson} ....`
- *File: demo\_thebibliography\_2.tex*

# Hands-on

- Use *handson\_thebibliography\_1*, compile it and check the output. Change the bibitem entries, such that a label is shown instead of a number

For more information about writing bibliographies see Goossens *et al.* [3].

For more information about writing bibliographies see Goossens *et al.* [3].

For more information about writing bibliographies see [2, 3].

For more information about writing bibliographies see Goossens *et al.* [3, Chapter 13].

Luckily, many text editors include the ability to switch end-of-line codes; some even do so automatically”[4]

## References

[1] “ $\text{\LaTeX}$  : a document preparation system”, Leslie Lamport, 2nd edition (updated for  $\text{\LaTeX}$ 2e), Addison-Wesley (1994).

[2] “A Guide to  $\text{\LaTeX}$ 2e: document preparation for beginners and advanced users”, Helmut Kopka and Patrick W. Daly, Addison-Wesley (1995).

# BibTeX .bib

Work with a bibliographic database

## Some terminology

- BibTeX is often used to refer to various distinct things: the program or the .bib file
- **.bib** file: bibliography file, references are stored in a plain text database with a simple format (BibTeX syntax)
- **bibtex** and **biber** are external programs that process bibliography information and act (roughly) as the interface between your .bib file and your LaTeX document.
- **natbib** and **biblatex** are LaTeX packages that format citations and bibliographies; natbib works only with bibtex, while biblatex (at the moment) works with both bibtex and biber.)

<https://tex.stackexchange.com/questions/25701/bibtex-vs-biber-and-biblatex-vs-natbib>

## Big picture

- 3 bibliography management processing packages in LaTeX:
  - **BibTeX** (included in LaTeX by default),
  - **natbib** (a package based on BibTeX),
  - **BibLaTeX**.
- BibTeX and natbib (widely used, no longer developed)
- BibTeX is still the de-facto standard that most users know. Moreover, not all academic publishers (that support LaTeX) do support BibLaTeX
- Biblatex and biber (the future)
  - BibLaTeX provides a more flexible interface and a better language support

# Big picture

- Best practice: keep all of your references in a database.
- 2 steps to create a bibliography in a LaTeX document.
  1. Create a separate **.bib** file.
  2. Integrate the information from the .bib file into your main LaTeX document.
    - Indicate to include a bibliography and specify the style you want
    - Cite using a simple command (`\cite{key}`)
      - Use a *unique* “key” linking what you want to cite with an entry in the database (.bib) file.
    - All of the formatting and inserting the actual citation will be taken care of.

<https://jabranham.com/blog/2015/09/reference-management.html>

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# Big picture

**what they are**

**who they are**

**what they do**

LaTeX package

biblatex

natbib

Defines macros (e.g. `\cite`, `\printbibliography`) in your .tex document

.bb1 file

processing program

biber

BibTeX

Bridge between your .bib and your .tex files

database file

other  
(RIS, Endnote XML, Zotero RDFXML, ...)

features available for biber only (e.g. utf8, crossref, 'urdate', 'inbook'...)

.bib

Stores all data about your references (author, year, etc.) in a structured way

database management system

generic software for reference management  
(Zotero, Mendeley, Papers, ...)

.bib-specific DBMS

(Jabref, Referencer, ...)

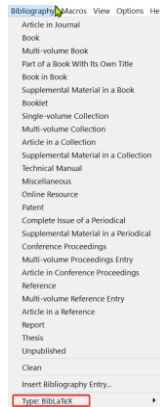
Enables you to manage your database entries (i.e. to edit your .bib-file)

<https://tex.stackexchange.com/questions/25701/bibtex-vs-biber-and-biblatex-vs-natbib>

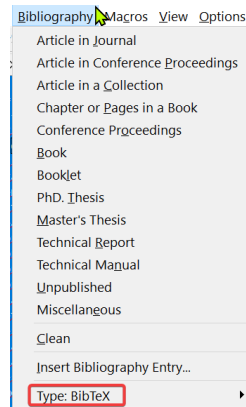
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# .bib bibliography file (texstudio)

## BibLaTeX



## BibTeX



# .bib bibliography file (texstudio)

## BibLaTeX

```
@article{ID,
  author = {author},
  journaltitle = {journaltitle},
  OPTtranslator = {translator},
  OPTcommentator = {commentator},
  OPTtitleaddon = {titleaddon},
  OPTeditors = {editors},
  OPTeditorc = {editorc},
  OPTissuesubtitle = {issuesubtitle},
  OPTlanguage = {language},
  OPTseries = {series},
  OPTnumber = {number},
  OPTissue = {issue},
  OPTpages = {pages},
  OPTnote = {note},
  OPTaddendum = {addendum},
  OPTdoi = {doi},
  OPTeprintclass = {eprintclass},
  OPTurl = {url},
  title = {title},
  date = {date},
  OPTannotator = {annotator},
  OPTsubtitle = {subtitle},
  OPTeditor = {editor},
  OPTeditorb = {editorb},
  OPTjournaltitle = {journaltitle},
  OPTissuesubtitle = {issuesubtitle},
  OPToriglanguage = {origlanguage},
  OPTvolume = {volume},
  OPTeid = {eid},
  OPTmonth = {month},
  OPTversion = {version},
  OPTissn = {issn},
  OPTpubstate = {pubstate},
  OPTeprint = {eprint},
  OPTeprinttype = {eprinttype},
  OPTurldate = {urldate}, }
```

## BibTeX

```
@Article{ID,
  author = {author},
  title = {title},
  journal = {journal},
  year = {year},
  OPTkey = {key},
  OPTvolume = {volume},
  OPTnumber = {number},
  OPTpages = {pages},
  OPTmonth = {month},
  OPTnote = {note},
  OPTannote = {annote}, }
```



# A Sample BibTeX Database Entry

```
@book{luyben2013distillation,  
  title={Distillation design and control using Aspen  
simulation},  
  author={Luyben, William L},  
  year={2013},  
  publisher={John Wiley & Sons}  
}
```

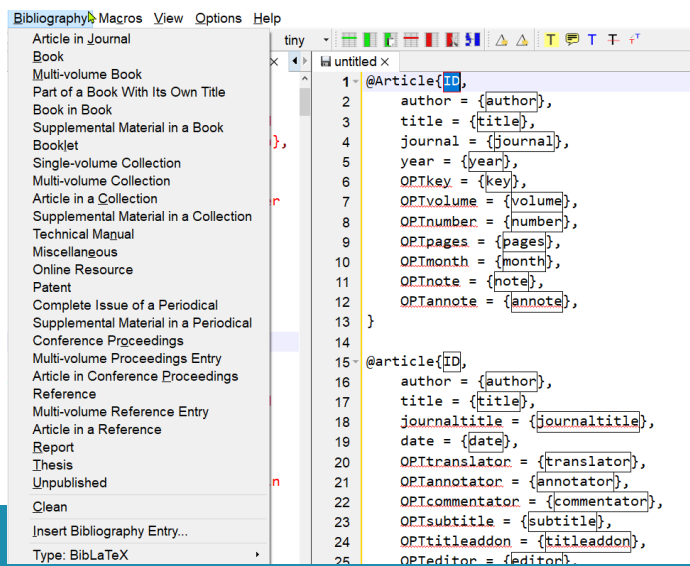
```
@article{munoz2006separation,  
  title={Separation of isobutyl alcohol and isobutyl acetate  
by extractive distillation and pressure-swing distillation:  
Simulation and optimization},  
  author={Munoz, R and Mont{\o}n, JB and Burguet, MC  
and De la Torre, J},  
  journal={Separation and purification technology},  
  volume={50},  
  number={2},  
  pages={175--183},  
  year={2006},  
  publisher={Elsevier}  
}
```

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## DIY .bib database

- DIY building the .bib-file
  - Can be complex
  - Editor can help

```
@Article{tarladgis1960distillation,  
  author = {Tarladgis, Basil G and Watts, Betty M and  
Younathan, Margaret T and Dugan, Leroy},  
  title = {A distillation method for the quantitative  
determination of malonaldehyde in rancid foods},  
  journal = {Journal of the American Oil Chemists'  
Society},  
  year = {1960},  
  volume = {37},  
  number = {1},  
  pages = {44--48},  
  publisher = {Springer},  
}
```



## Working with reference managers

Minimal requirements:

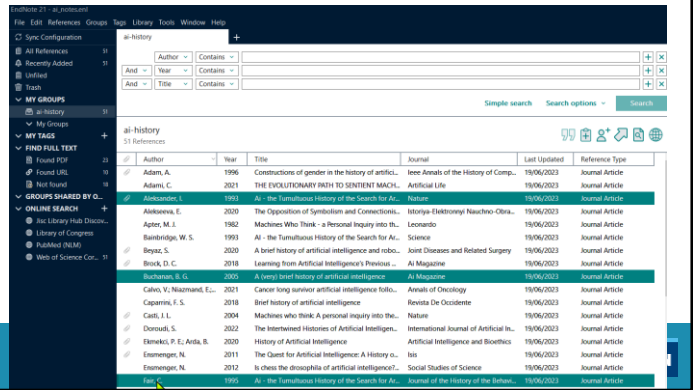
- Database
- Unique keys

## Workflow in LaTeX

- Collect / organize your references in Reference management software.
  - Endnote
  - Zotero
  - Mendeley
  - JabRef
- Reformat the database(s) to Bibtex/BibLaTeX (.bib) format, if necessary.
- Use the .bib files in LaTeX.
  - BibTeX/BibLaTeX translates bibliographic databases into a properly formatted citation list according to a pre-defined bibliographic style that you choose

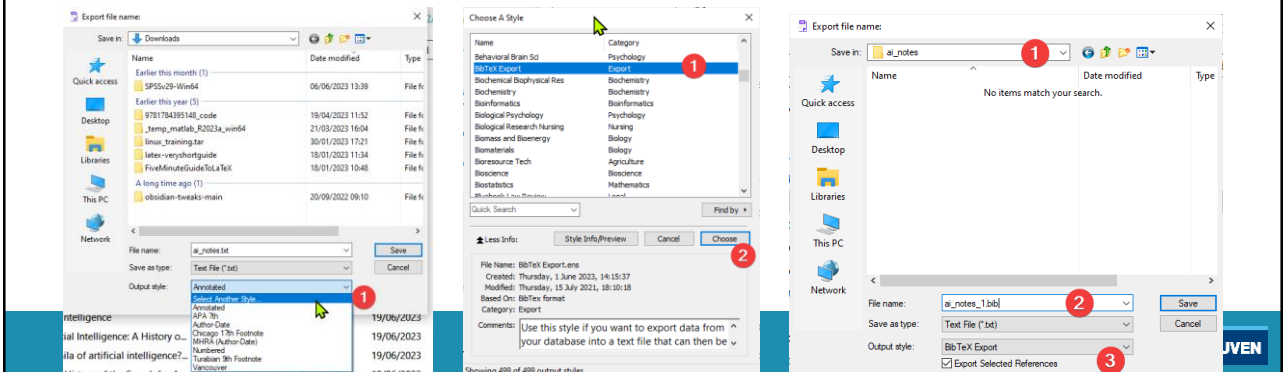
# EndNote

- To use an EndNote library in LaTeX, you need to export your references from EndNote in a compatible format (.bib).
- Select the references (ctrl-click , select all ctrl-a)



# EndNote

1. Select the location to export
2. Give the export file a meaningful name (.bib extension!)
3. Choose the output style: **Bib TeX Export**



# EndNote export and keys

- Endnote has a *default* BibTeX Export style using Record Number as the citekey: {RN6}, {RN17}

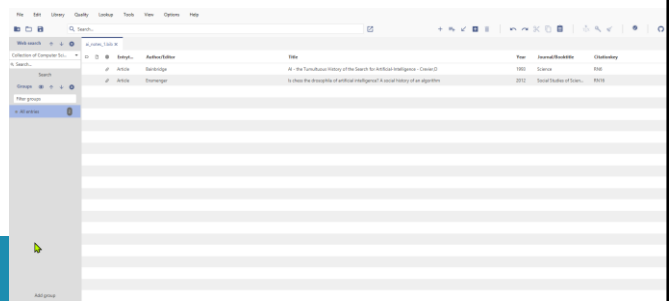
```
@article{RN6,  
  author = (Bainbridge, W. S.),  
  title = (AI - the Tumultuous History of the Search for Artificial-Intelligence - Crevier,D),  
  journal = (Science),  
  volume = (261),  
  number = (5125),  
  pages = (1186-1186),  
  note = (Lu586  
Times Cited:1  
Cited References Count:1),  
  ISSN = (0036-8075),  
  DOI = (DOI 10.1126/science.261.5125.1186),  
  url = (<Go to ISI>://WOS:A1993LU58600037),  
  year = (1993),  
  type = (Journal Article)  
}  
  
@article{RN17,  
  author = (Fair, C.),  
  title = (AI - the Tumultuous History of the Search for Artificial-Intelligence - Crevier,D),  
  journal = (Journal of the History of the Behavioral Sciences),  
  volume = (31),  
  number = (3),  
  pages = (273-278),  
  note = (Rm087  
Times Cited:0  
Cited References Count:5),  
  ISSN = (0022-5061),  
  url = (<Go to ISI>://WOS:A1995RM08700021),  
  year = (1995),  
  type = (Journal Article)  
}
```

# EndNote export and keys

- Tips to set the citation key in the EndNote export
- Tweak EndNote to define the key-value
  - Info: <https://library.unimelb.edu.au/recite/reference-management-software/latex-and-bibtex/endnote>
- Use JabRef to change the key values

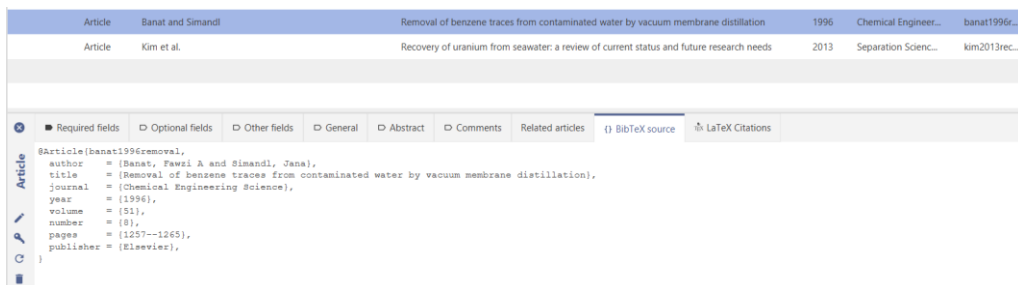
# JabRef

- <https://docs.jabref.org/> and <https://www.jabref.org/>
- JabRef is a reference manager that acts as an interface to the BibTeX bibliography file format.
- Open source and is freely downloadable.
- The graphical interface allows the user to easily import, edit, search, and group citations in the BibTeX format.
- Offers automatic key generation.
- Cross-platform
- PDF-documents can be linked



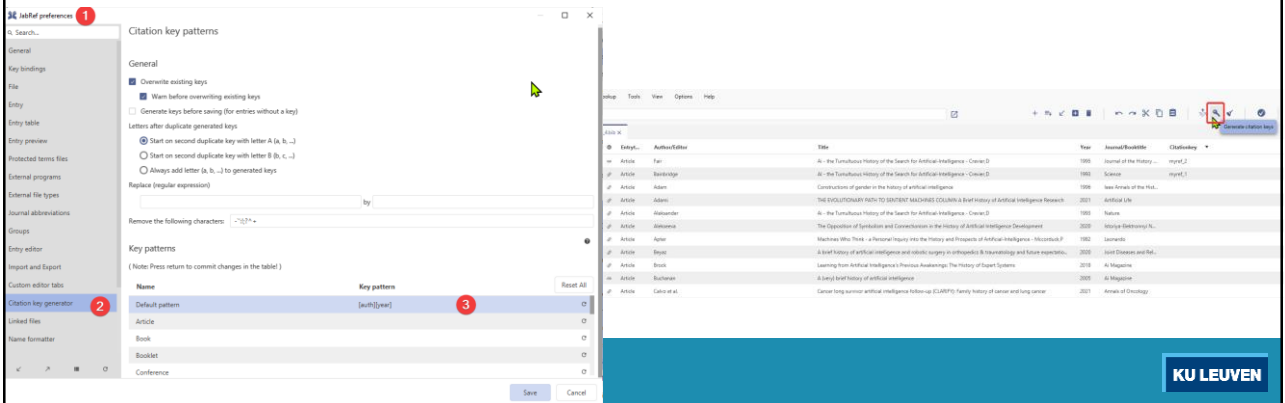
# JabRef

- Add data manually in JabRef GUI
- Paste the BibTeX code into the BibTeX source field



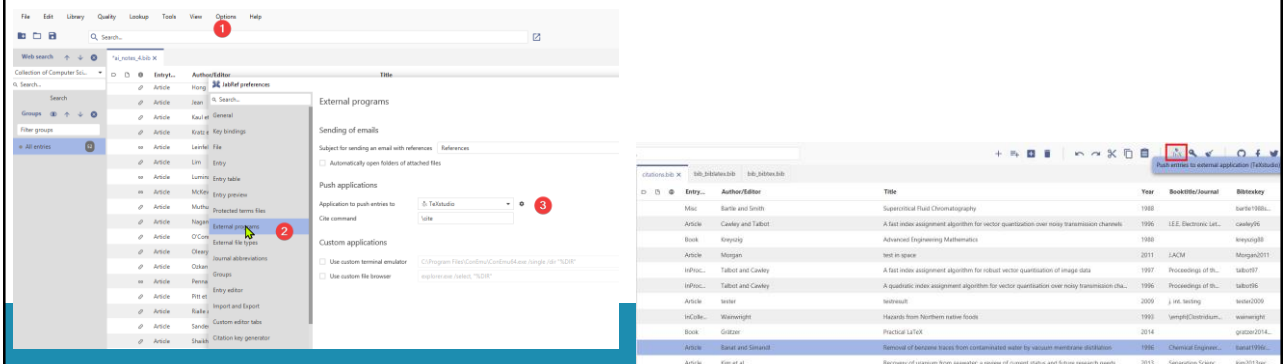
# JabRef: generate Citationkey

- JabRef can create a BibTeX citation key in the manner of {author surname year} with no gaps e.g. Gratzner2011



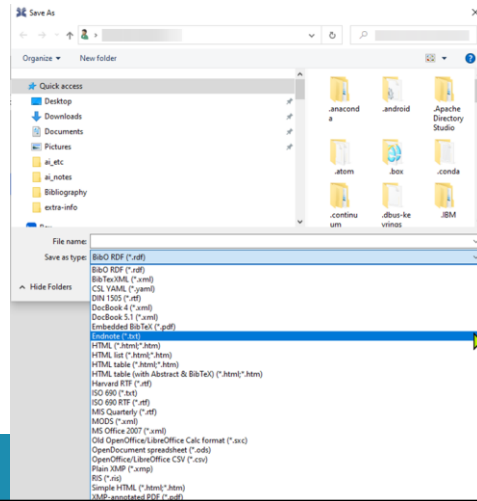
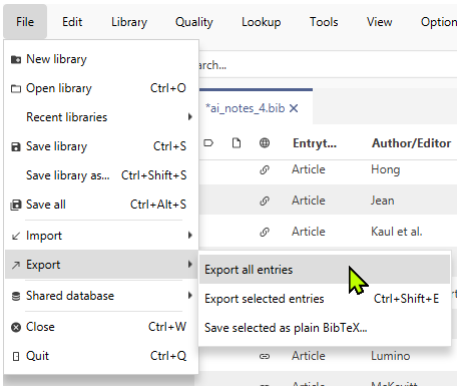
# TeXstudio & JabRef: Cite While You Write

- Setup LaTeX editor (TeXstudio) in Options
- Select in JabRef the document
  - 'copy paste' **ctrl + k**  
Paste the citation with **ctrl + v**
  - Push citation



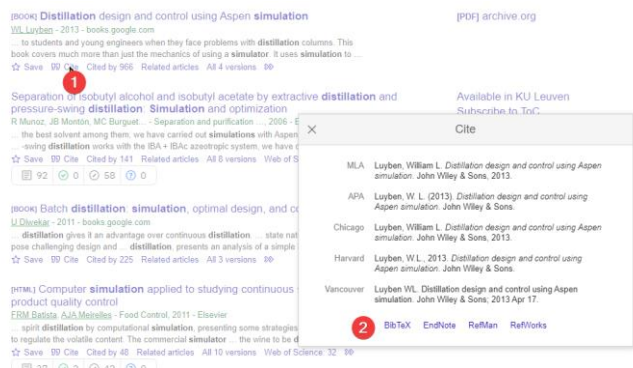
# JabRef

- JabRef can export files that can be imported into EndNote.



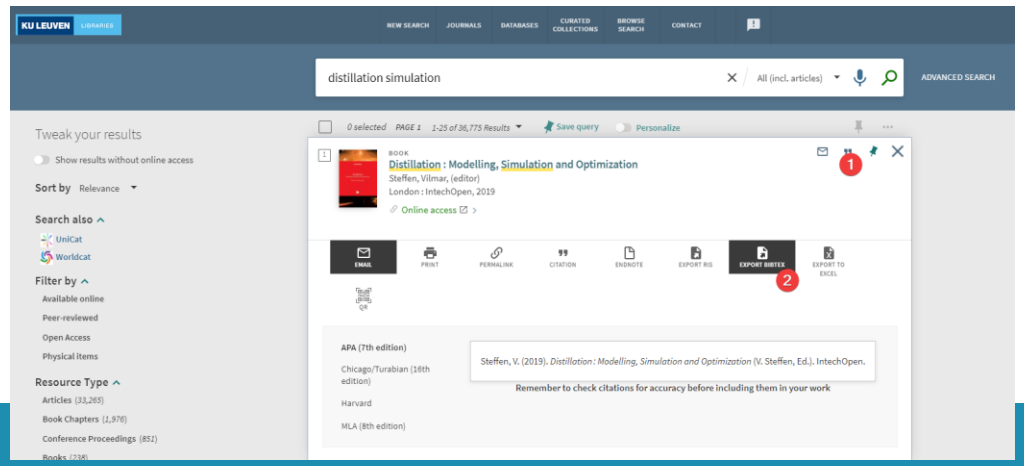
# BibTeX & Google Scholar

- <https://scholar.google.be>
- Select BibTeX



# BibTeX & Limo

- Search in limo



## Running BibTeX

BibTeX	
Packages Needed	None
In document command for citation	<code>\cite{bibID}</code>
Specify bib files Specify the filename(s) in	<code>\bibliography</code> (different bibfiles separated with comma, no spaces)
Bibliography styles	Use command (place in body): <code>\bibliographystyle{stylename}</code> Common Style names: abbrv acm alpha apalike ieeetr plain siam unsrt
Print bibliography command	<code>\bibliography{bibfilename}</code>



# BibTeX basic commands

- Link the .bib file to any LaTeX .tex document, and cite any reference in the .bib file.
- `\cite{XYZ}`
  - Reference keyword
  - Unique identifier of a bibliographic entry in a .bib file
- `\bibliography{bib_file_name}`
  - Where bib\_file\_name is the name of a .bib file.
- `\bibliographystyle{citation_STYLE}`
  - Choose a citation style
  - `\bibliographystyle{plain}`
  - `\bibliographystyle{acm}`
  - `\bibliographystyle{ieeetr}`

# BibTeX

- BibTeX automatically includes all cited references and includes them in the reference section.
  - Citations are included in the text using`\cite{label}`
  - Additional references can be included in the reference section using`\nocite{label}`

# BibTeX cycle

- Run the sequence:
  - latex
  - bibtex
  - latex
  - latex
- File: *demo\_bibtex\_1.tex*
- Tip: BibTeX is creating a list of bibitem's (check the corresponding .bbl file)

- Goosens, Mittelbach, and Samarin (1994) *The LaTeX Companion*

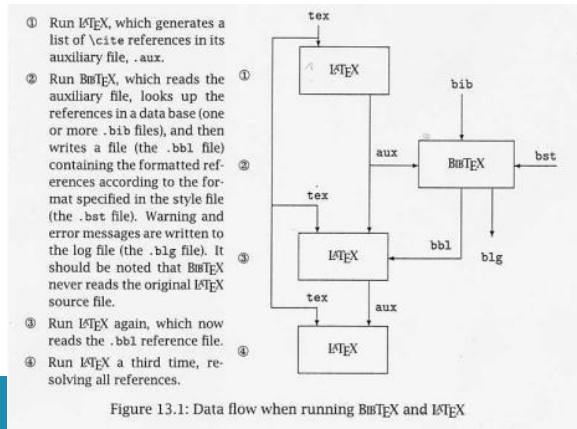


Figure 13.1: Data flow when running  $\text{\BibTeX}$  and  $\text{\LaTeX}$

# BibTeX styles

- [https://www.overleaf.com/learn/latex/Bibtex\\_bibliography\\_styles](https://www.overleaf.com/learn/latex/Bibtex_bibliography_styles)
- `plain` Sorts entries alphabetically, with numeric labels.
- `abbrv` First names, month names, and journal names are abbreviated.
- `acm` Names are printed in small caps. `alpha` Alphanumeric labels, e.g., 'Knu66'.
- `apalike` No labels at all; instead, the year appears in parentheses after the author. Should be used in conjunction with `\apalike.tex` (plain  $\text{\TeX}$ ) or `\apalike.sty` (LaTeX), which also changes the citations in the text to be `(author, year)`.
- `ieeetr` Numeric labels, entries in citation order, IEEE abbreviations, article titles in quotes.
- `unsrt` Lists entries in citation order, i.e., unsorted.

# Hands-on

- Use the file *handson\_biblio\_1*, compile and check the result.
- Change the style of the referencing.
- Add more text and references, use also the `\nocite` command

## Running BibLaTeX

BibLaTeX	
Packages Needed	biblatex
In document command for citation	<code>\cite{bibID}</code>
Specify bib files Specify the filename(s) in	<code>\addbibresource</code> ( <code>\addbibresource</code> for each bib file)
Bibliography styles	Optional Argument of <code>\usepackage{style=stylename,}[{biblatex}]</code> Common Stylenames: numeric alphabetic authoryear authortitle verbose reading draft
Print bibliography command	<code>\printbibliography</code>

# BibLaTeX

- The `biblatex` package is a reimplementation of LaTeX's bibliographic facilities.
- The formatting of the bibliography is governed by LaTeX commands instead of selecting a BibTeX style ( `\bibliographystyle` ).
- uses `biber` instead of BibTeX to process the bibliographic database and sort the entries.
  - Legacy BibTeX is also supported, but with a reduced feature set.
  - `biber` is the new parser for `.bib` files (replacement for BibTeX)

[https://www.overleaf.com/learn/latex/Articles/Getting\\_started\\_with\\_BibLaTeX](https://www.overleaf.com/learn/latex/Articles/Getting_started_with_BibLaTeX)

<https://www.ub.uio.no/english/writing-publishing/referencing/biblatex/>

## BibLaTeX basic commands

- Load the package `biblatex`
  - `\usepackage{biblatex}`
- Specify the bib file(s) with `\addbibresource`  
(multiple lines when using multiple files)
- Insert a citation with `\cite`
- Insert the bibliography with `\printbibliography`

# BibLaTeX

- different citation commands:
- `\cite` - the most basic one. Prints without any brackets except when using the alphabetic or numeric style,
- `\parencite` - prints citations in parentheses except when using the alphabetic or numeric style when it uses square brackets.
- `\footcite` - puts the citation in a footnote.
- *File: demo\_biblatex\_1.tex*

# BibLaTeX

Style	Command	Result
authoryear	<code>\parencite{fg}</code>	(Fothergill, 1929)
authoryear	<code>\textcite{fg}</code>	Fothergill (1929)
authoryear	<code>\footcite{fg}</code>	<sup>1</sup>
numeric	<code>\cite{fg}</code>	[42]
alphabetic	<code>\cite{fg}</code>	[Fot29]
authoryear	<code>\cite{fg}</code>	Fothergill 1929

<http://latex.silmaril.ie/formattinginformation/xrefs.html#citcomm>