

# Bibliographies in $\text{\LaTeX}$ & $\text{\BibTeX}$

$\text{\LaTeX}$  includes basic support for Bibliographies without any extra packages or software. This is fine for relatively small documents with a small number of references.

For more complicated documents (most papers and theses) you will want to use  $\text{\BibTeX}$

## $\text{\LaTeX}$ Bibliographies

The `thebibliography` environment allows us to specify a basic bibliography. It usually comes at the end of the document, before the `\end{document}` command.

```
\begin{thebibliography}{9}

\bibitem{lamport94}
  Leslie Lamport,
  \emph{\LaTeX: A Document Preparation System}.
  Addison Wesley, Massachusetts,
  2nd Edition,
  1994.

\end{thebibliography}
```



Leslie Lamport,  *$\text{\LaTeX}$ : A Document Preparation System*. Addison Wesley, Massachusetts, 2nd Edition, 1994.

# L<sup>A</sup>T<sub>E</sub>X Bibliographies

Once we have a bibliography item we can cite it within our text with the `\cite` command.

```
We refer to items from our bibliography using the cite  
command~\cite{lamport94}.
```

We can refer to multiple items in the same citation:

```
\cite{lamport94, anotherref12, someref2013}
```

# $\text{\LaTeX}$ Bibliographies - `natbib`

$\text{\LaTeX}$  bibliography support can be extended simply using the `natbib` package.

This allows you to specify the format of references and citations, and other options associated with bibliographies and referencing.

However, we won't be covering it today.

BIB<sub>T</sub>EX allows us to store our bibliographies as separate files (`.bib`), so keeping our L<sub>A</sub>T<sub>E</sub>X source and bibliographic information separate.

This allows us to re-use `.bib` files in different documents, or refer to items from many different bibliographies within the same document.

# BIBTEX - data

BIBTEX files are plain text files in which the data representing the bibliography is structured.

```
@article{greenwade93,  
  author   = "George D. Greenwade",  
  title    = "The {C}omprehensive {T}ex {A}rchive {N}  
  etwork ({CTAN})",  
  year     = "1993",  
  journal  = "TUGBoat",  
  volume   = "14",  
  number   = "3",  
  pages    = "342--351"  
}
```

## BIBTEX - data

BIBTEX recognises many different types of references, including:

Type	Use
article	An article from a journal or magazine
book	A book
conference	The same as inproceedings
incollection	Part of a book
inproceedings	An article in a conference proceedings
manual	Technical documentation
mastersthesis	A Masters degree thesis
misc	For when nothing else is applicable
phdthesis	A PhD degree thesis
proceedings	The proceedings of a conference
techreport	A report published by an institution
unpublished	A document that has not been formally published

# BIBTEX - @article

An @article from a magazine or journal.

**Required Fields** author, title, journal, year

**Optional Fields** volume, number, pages, month, note

```
@article{bibtexkey ,  
  author   = "",  
  title    = "",  
  year     = "",  
  journal  = "",  
}
```



# BIBTEX - @book

A @book that has been published.

**Required Fields** author/editor, title, publisher, year

**Optional Fields** volume/number, series, address, edition, month, note

```
@book{bibtexkey ,  
  author      = "",  
  title       = "",  
  publisher   = "",  
  year        = "",  
}
```

# BibTeX - @inproceedings

An article in a conference proceedings

**Required Fields** author, title, booktitle, year

**Optional Fields** editor, volume/number, series, pages, address, month, organization, publisher, note.

```
@inproceedings{bibtexkey ,  
  author      = "",  
  title       = "",  
  booktitle   = "",  
  year        = "",  
}
```

# BibTeX - @techreport

A technical report from an institution (university, standardisation institute etc).

**Required Fields** author, title, institution, year

**Optional Fields** type, number, address, month, note

```
@techreport{bibtexkey,  
  author      = "",  
  title       = "",  
  institution = "",  
  year        = "",  
}
```

## BIBTEX - @misc

Anything that doesn't fit under any of the other types

**Required Fields** none

**Optional Fields** author, title, how published, month, year, note

```
@techreport{bibtexkey,  
  author      = "",  
  title       = "",  
  howpublished = "",  
  year        = "",  
}
```

## B<sub>I</sub>B<sub>T</sub>E<sub>X</sub> - Capitalisation

Occasionally, depending on the bibliography style being used, B<sub>I</sub>B<sub>T</sub>E<sub>X</sub> may remove capitalisation in titles of bibliography items.

To preserve capitalisation, surround the items to be capitalised in curly braces.

```
title = "The {LaTeX} Companion",
```

or

```
title = {\{"The LaTeX Companion"\}},
```

# BIBTEX - Authors

BIBTEX is able to deal with multiple authors for bibliographic items elegantly.

Names can be added either as *Forename Surname* or *Surname, Forename*.

To add multiple authors, use 'and' between each author name

```
author = "Michel Goossens and Frank Mittelbach and  
Alexander Samarin"
```

or

```
author = "Goossens, Michel and Mittelbach, Frank and  
Samarin, Alexander"
```

# BIBTEX - Authors

The *Surname, Forename* structure is more flexible in general.

Last name prefixes (*von, van, der*) are usually handled automatically, but if BIBTEX gets it wrong they can be grouped with the surname using curly braces.

```
author = "John {von Neumann}"
```

or

```
author = "von Neumann , John"
```

## B<sub>I</sub>B<sub>T</sub>E<sub>X</sub> - Urls

There is no B<sub>I</sub>B<sub>T</sub>E<sub>X</sub> field for URLs. To cite a website, you can use the @misc type and put the URL in the howpublished field. Alternatively, use the note field of @techreport, @article, or @book,

It is a good idea to use the url package and the url command when including URLs in L<sup>A</sup>T<sub>E</sub>X to ensure proper formatting.



## Using BibTeX

Once we have a .bib file full of bibliographic information, using it in L<sup>A</sup>T<sub>E</sub>X is relatively straightforward.

Throughout our document we use the `\cite` command to reference items from our bibliography by their BibTeX keys.

We use the `\bibliographystyle` command at the end of our document to let BibTeX what style of reference we would like to use.

We use the `\bibliography` command to tell BibTeX which file contains our bibliographic information

# Using BibTeX

We then need to compile our documents a number of times in order to get references inserted in the correct place.

1. We first run `latex/pdflatex` to find where there are missing references in the document
2. We then run `bibtex` to extract the correct references from our `.bib` file.
3. We then run `latex/pdflatex` to compile the document with the bibliography inserted
4. We then run `latex/pdflatex` again to ensure all references are correct.

# Using BibT<sub>E</sub>X- Example

Demonstration of using BibT<sub>E</sub>X within a document.

# B<sub>I</sub>B<sub>T</sub>E<sub>X</sub> Styles

There are many different bibliography styles which control how the references within the document and in the bibliography at the end of the document are presented.

Which style to use will often be specified by a journal publisher/conference organiser.

# BIBTEX Tools

BIBTEX is a pretty powerful tool for handling referencing within L<sup>A</sup>T<sub>E</sub>X documents.

However, it can be annoying having to maintain .bib files for all your papers, your thesis, and so on.

Fortunately, many tools will handle .bib files for you, automatically.

# BIBTEX Tools

Some suggestions:

**Zotero** a web browser plugin for handling references that can output .bib files

**Mendeley** A reference management application that can export .bib files

**Google Scholar** can provide BIBTEX for any documents you find through it

## Exercise 3

Experiment with adding references into your document.

Create and fill a `.bib` file.

Explore `BIBTEX` styles and usage.