

Tutorial 6: Bibliography and citations in L^AT_EX 2_ε

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If I have seen a little further it is by standing on the shoulders of Giants.

Isaac Newton

It is essential, especially in academia, to support your work with appropriate citations that recognise the contribution of others. This tutorial provides training in the production of bibliographies and accompanying citations with Bib_TE_X and L^AT_EX.

It assumes you use the `natbib` package and declares `apalike`¹ as the style of bibliography. The `natbib` package is used for citing your bibliographic references and is necessary for the `apalike` style.

As an aside, you need to be careful about the type of work you reference. Material that is not *peer reviewed*, in particular Wiki-thing-me-bobs, is not considered as acceptable supporting evidence. From Wikipedia itself² “Wikis, including Wikipedia and other wikis sponsored by the Wikimedia Foundation, are not regarded as reliable sources. However, wikis are excellent places to locate primary and secondary sources.”³.

1 Basic structure of the `tex` document

Open a new document, save it as `tut6.tex` in a working directory and type in the following:

¹A style developed by the American Psychological Association (APA) and now prominent in sciences.

²source: http://en.wikipedia.org/wiki/Wikipedia:Reliable_source_examples

³A word to the wise is enough!

```
% Document for tutorial 6
\documentclass[12pt]{scrartcl}
\usepackage{natbib}
\usepackage{hyperref}
\hypersetup{colorlinks=false,pdfborderstyle={/S/U/W 1}}
\title{Referencing and citing}
\author{John Student}
\bibliographystyle{apalike}
\begin{document}
\maketitle
% name of bibliography file
\bibliography{mybibfile}
\end{document}
```

The preamble command `\bibliographystyle{apalike}` declares the bibliography style. \LaTeX provides an environment called `thebibliography` that enables to directly include a bibliography in your \LaTeX file, but I completely discourage you to use it as you are bound to make formatting mistakes. A much better solution is the one you are going to see in this tutorial. This involves using the BibTeX tool that processes a \LaTeX document together with a bibliography database (`.bib` file) to produce a PDF file with a bibliography and well-formatted citations.

You create a bibliography database in a separate file⁴. At the end of the document, the command `\bibliography{mybibfile}` indicates that your references are extracted from the file `mybibfile.bib`. The `\bibliography{mybibfile}` command must be placed just before the `\end{document}` command. Obviously you can give the name of your choice to your database. The `bib` file `mybibfile.bib` must be placed in the same directory as your `tex` file.

The package `hyperref` loaded by the command `\usepackage` enables the provision of links. The command starting with `\hypersetup` specifies that all links are underlined (as in this document). However, these lines do not show when you print your document. The links are clickable and can be followed.

2 Creating a `bib` file

Open a new file and save it as `mybibfile.bib` in the same directory as your \LaTeX file.

⁴Many researchers simply have one big file where they keep all their bibliographic references.

Now you are going to populate your bib file. In T_EXstudio you can use the menu Bibliography. Select Article in Journal. You should get something similar to the following⁵:

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

The field ID is an identifier of your choice that you use when citing the piece of work corresponding to the record. A field whose name start with OPT is optional. Next you need to populate the fields. Do it as follows

```
@Article{HamAndBurger2010,  
author = {Ham, Peter and Burger, King},  
title = {Brian's Theorem},  
journal = {Journal of Sandwich Mathematics},  
year = {2010},  
volume = {3},  
number = {5},  
pages = {10-15},  
}
```

and save your file. Note you have to remove the OPT at the start of the meaningful fields. If you leave a field name that starts with OPT the corresponding field is ignored by the system. The compulsory fields ensure a minimum amount of details must be provided.

Many scientific journal sites and bibliographic databases enable you to get the BibTeX records of publications⁶. The DBLP Computer Science Bibliography database is a major resource for researchers in the field of computing science. Please access it through

⁵In fact you get many more OPT fields.

⁶Google scholar enables to get BibTeX record of articles; but they are often approximative and sometimes incorrect!

the following link <http://dblp.uni-trier.de/>. In the search box provided type *Richard W. Harvey*. You should get one reference co-authored with Dan Smith in 2011. Hover over the second icon from the right at the front of the citation and select “export record as BibTeX”. Then copy the record provided; paste it in your `bib` file. As the ID of the record is a bit long reduce it to `SmithH11` and save the file.

3 Citing

The `natbib` package, loaded by your document (preamble line 2) provides various ways of citing references.

Modify your `tex` file by including the following text after `\maketitle`:

```
According to \citet{HamAndBurger2010}
Brian's theorem is one of the most
important in Sandwich Mathematics.

Brian made considerable advances in
the theory of Sandwiches
\citep{HamAndBurger2010}.
```

Process this file⁷ using the `Build & View` button. I'll explain in a minute why we use this button. You should get the following output:

```
According to Ham and Burger (2010) Brian's theorem is one of the most impor-
tant in Sandwich Mathematics.
    Brian made considerable advances in the theory of Sandwiches (Ham and Burger,
    2010).
```

The first way of citing was by using `\citet` — the `t` at the end of `citet` means textual — whereas the second way was by using `\citep` — the `p` at the end of `citep` means parenthetical.

Avoid a common mistake⁸: make sure your sentence's full stop is **after** the `\citep` command when this command is at the end of the sentence.

⁷Make sure the active window is the `tex` file window, not the `bib` file window.

⁸This is a really annoying one, and I expect careless students to be penalised if they make it.

You can also use multiple citations, more commonly with `\citep`. For example⁹

```
Many authors have improved the way of  
making Sandwiches  
\citep{HamAndBurger2010,SmithH11}.
```

After processing you should get the following output

```
Many authors have improved the way of making Sandwiches (Ham and Burger,  
2010; Smith and Harvey, 2011).
```

There are many other variations. Please google `natbib` and see what you can produce.

4 Processing

The processing of your document (I assume it is called `tut6.tex`) consists of the following steps:

1. PDFLaTeX `tut6` creates a `.aux` file which includes keywords of any citations,
2. BibTeX `tut6` uses the `.aux` file to extract cited publications from the database in the `.bib` file, formats them according to the indicated style, and puts the results in a `.bbl` file,
3. PDFLaTeX `tut6` inserts appropriate reference indicators at each point of citation, according to the indicated bibliography style,
4. PDFLaTeX `tut6` refines citation references and other cross-references, page formatting and page numbers.

All these commands are launched in sequence by `Build & View`. However, sometimes this can be problematic as the sequence gets out of order. For example, suppose you get an error because of a mistake in your bib file and that you correct it. If you use `Build & View` the first call to PDFLaTeX may fail. As a consequence BibTeX

⁹It is clear that the author of this tutorial got very confused as one of these two publications has nothing to do with Sandwiches.

is not called and the correction you made is not taken into account. You are stuck! To solve the problem you have to select `Tools>Bibliography` that calls BibTeX first. Then you can run `Build & View` or `PDFLaTeX` twice. If you get stuck because the various intermediate files that L^AT_EX needs get out of sync then, instead of wondering where you need to start, the simplest thing to do is to use the menu selection `Tools>Clean Auxiliary files` to delete all these files, and then to rebuild with `Build & View`. You may think that executing `Build & View` each time is a waste of time, and you would be right if not for the fact that `Build & View` executes only step 4 of the above process (i.e. a call to `PDFLaTeX`) if the `bib` file has not been changed between compilations.

5 Formatting of fields

This section addresses a few issues in the formatting of fields in the `bib` records.

5.1 The names of the game

BibTeX field format for authors and editors' names follows a syntax that must be respected. Names in a list of names should be separated by "and", and each name should be expressed in one of the following formats:

- `FirstName LastName`
- `LastName, FirstName`
- `LastName, Suffix, FirstName`

BibTeX processes the first format by scanning the content from left to right and treating words encountered as part of `FirstName` until a word that start with a lower case letter is found or the last word is found. So it interprets `John Doe, Beatriz de la Iglesia` and `Donald E. Knuth` correctly, but `Kenneth A. De Jong` incorrectly. In the latter case you have to introduce curly brackets to tell BibTeX how to group the words, i.e. the entry would be `Kenneth A. {De Jong}`.

Unfortunately some databases such as the DPLB database use this format without including the necessary internal curly brackets and as a consequence their BibTeX records are sometimes incorrect. For example go to <http://dblp.uni-trier.de/> and search for `Kenneth A. De Jong`. Import the BibTeX record associated with the article "[c69]" from Bassett and De Jong (2011) and examine the format of the author field. Use the Back button of your browser to go back to the list of articles. Select the icon "View" in front of the article, and click "electronic edition @ acm.org" to go to the ACM Digital Library. Once there, select BibTeX in the `tools and resources` menu. Copy the record, paste it into your `bib` file and save.

```
@Book{HBM01,  
  author = {Peter Ham, King Burger and Ronald McDonald},  
  title = {One thousand and one ways of making Sandwiches},  
  publisher = {Good Food Academic Publisher},  
  note = {\url{http://www.very_long_address_that_  
    should_correctly_be_broken_across_lines.com}},  
  year = {2001}  
}
```

Figure 1: writing a long web address

Now look at the author field. The ACM uses the more sensible second format mentioned above. To test it you need to cite the work from Bassett and De Jong in your tex file, process with `Build & View` and examine the result. The authors' names should be correct. However even the ACM got it slightly wrong! We'll see that later.

The third form of referencing an author's name, where a suffix is used, is relatively rare. An example of suffix could be "Jr" as in the reference to Doe's work 2011. By the way the code for the end of the previous sentence is

```
\citeauthor{JD11}'s work \citeyear{JD11}
```

where JD11 is my choice of key for the reference. Try to reproduce this reference — Remember that a bibliography entry is produced only when the work is cited in your tex file. Use the menu `Bibliography > Book` to produce a new entry in your bib database. You should get something similar to¹⁰.

```
@Book{ID,  
  ALTAuthor = {author},  
  ALTeditor = {editor},  
  title = {title},  
  publisher = {publisher},  
  year = {year},  
  OPTkey = {key},  
  OPTvolume = {volume},  
  OPTnumber = {number},  
  OPTseries = {series},  
  OPTaddress = {address},  
  OPTedition = {edition},
```

¹⁰In fact there are many more OPT fields.

```
OPTmonth = {month},  
OPTnote = {note},  
OPTannote = {annote},  
}
```

The fields starting with ALT are alternate fields. This means that at least one of them must be present. Populate the fields as shown in figure 1 and mention in your `tex` file that “making Sandwiches has become an art form (Ham et al., 2001).” Note that the field `note` is used to include a `url`¹¹. But look at your PDF. What is happening here? Look also at the reference at the end of your PDF. Because of the misplaced comma in the `author` field, BibTeX interprets Peter Ham as the last name and King Burger as the first name of the first author.

So update the `author` field as follows:

```
author = {Ham, Peter and  
          Burger, King and  
          McDonald, Ronald}
```

or as follows

```
author = {Peter Ham and  
          King Burger and  
          Ronald McDonald},
```

and reprocess.

5.2 Das Kapital

BibTeX has its own rules to decide about capitalisation in reference’s titles. Try to create the reference to Van Hire (2010). You’ll observe that BibTeX changed “AVIS” to “avis”. To avoid that you have to put this name between curly brackets as follows:

```
TITLE = {Fleet management at {AVIS}},
```

Reprocess and examine the result.

Now look at the title in your `bib` file entry for Bassett and De Jong (2011) and the corresponding reference in your PDF. Is there a small correction to make?

You can find the bibliographic record for Lamport’s book in the DPLB database. Include it in your `bib` file and test it by citing the work. This would be better if the reference were to use the L^AT_EX logo. So replace `LaTeX` in the title record with `\LaTeX{ }` and reprocess.

¹¹Do not use the `OPTurl` field.

5.3 Accents

A common difficulty is the typing of accents in BibTeX record's fields, but this seems to be largely alleviated by using the `natbib` package (as we do in this document). So the authors for Ducasse et al. (2005) can be obtained by entering the authors' names as follows:

```
author = {St\'ephane Ducasse and  
          Nathanael Sch\"arli and Roel Wuyts},
```

Also the title is produced as follows:

```
journal = {Computer Languages, Systems \&  
          Structures},
```

6 Tussenvoegsel

You will notice that in your bibliography Van Hire (2010) is cited under “V”. That is not the convention for Dutch names. In the Dutch telephone directory the surname “Van Hire” is listed under “H”, not “V”. In addition you should get “van” in the bibliography and “Van” when citing the author. To take this convention into account you need to do the following¹²:

- In your preamble, just before the `\maketitle` command add the line
`\DeclareRobustCommand{\TV}[3]{#2}`
- In your tex file just before the `\bibliography{mybibfile}` command add the line `\DeclareRobustCommand{\TV}[3]{#3}`
- Modify the author field of the bibliography for Van Hire (2010) as follows:

```
AUTHOR =  
  { {\TV{Hire}{Van}{van}} Hire, Rijk},
```

and reprocess after “cleaning auxiliary files”. Look at the *References* section of the PDF produced.

But wait a minute! De Jong is another Dutch name with the tussenvoegsel “de” which should be treated as “van”. Please correct your bibliography and reprocess.

¹²Thanks to `tex.stackexchange.com`.

7 Citing when no author or no date

If you have a bib record without a year field or an author field that you cite in your LaTeX document you will get an error when you try to process the LaTeX file because the APA(-like) bibliography format requires that both author and year be present. So what should you do if you do not know the author or the publication year?

7.1 Unknown author

If you are citing a report or web page of an organization use the acronym for the organization as author. For example create the following entry in your bibliography file:

```
@techreport{KGB60,
author = {KGB},
title = {The Bulgarian umbrella user manual},
type = {Field operative series},
institution = {Komitet Gosudarstvenno Bezopasnosti},
year = {1960}
}
```

Then you may use the citation in your report as follows: “These are well-known techniques for murdering political opponents KGB (1960)”. However the first time you cite the organisation you need to explain the acronym. To do so you may use `\citep` with an option in your LaTeX, e.g. if your bib record ID is KGB60 then you may use

```
\citep[KGB stands for Komitet Gosudarstvenno Bezopasnosti]
{KGB60}
```

This will produce: (KGB, 1960, KGB stands for Komitet Gosudarstvenno Bezopasnosti).

If you do not know the organisation you may use the first few words of the title (or a key phrase) as author. Put them between quotes. For example in your bib file you could have

```
author = {{'\LaTeX\ Help'}},
title = {The \LaTeX\ Help Sheet},
```

Note that you must double the curly brackets in the author field so that words are grouped to form the “name” of the author and the quote characters are properly treated.

In general, however, *you should avoid citing documents that cannot be attributed to an individual or some form of organisation.*

There is also the rare case when no one knows the author or the work was published anonymously. Then use “Anonymous” as author. For example in your bib file you could have

```
author = {Anonymous},  
title = {Beowulf}.
```

Probably this won’t apply to your project!

7.2 Unknown date

In this case use `year = {n.d.}` for the year of publication, Latex will remove the dots in the text, so you’ll get (nd) when citing, but (n.d.) in the list of references. Also include a “note” field in your bib record to tell the reader when you retrieved the page: for example `note = {Retrieved on 20/10/10}.`

If you need more information on the APA referencing standard have a look at: <http://www.usq.edu.au/library/referencing/apa-referencing-guide>.

8 Final comments

You’ll have noticed that the `apalike` style reduces first names to initials. Other styles don’t, but I won’t say more about it as `apalike` is the style of choice for CMP reports.

The `natbib` documentation is available at: <http://www.tex.ac.uk/tex-archive/help/Catalogue/entries/natbib.html>.

Finally, you’ll have noticed there are some references in this tutorial that were invented for your amusement. Don’t do that in your reports!

References

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