Quick guide to BibTeX

Physics 2010

February 1, 2010

1 Intro

BibTeXis a wonderful tool for larger research projects in physics, like the E&M in the public sphere project, the final project in Contemporary, and Comps. The basic idea of BibTeX is to write bibliographies neatly, outside of your main LaTeX document.

2 File Formats

There are a few file formats you should be aware of and their basic functionality.

`.tex`–This is your main document where you write your paper, add figures, pretty pictures, tables, etc.

`.bib`–This is the file in which you keep all of your bibliography information, i.e. names of articles, authors, dates published, etc.

`.bbl`–When LaTeX runs on all your various input files, this is the file that actually contains your physical bibliography. You shouldn't need to concern yourself with this file if you're new to LaTeX, especially when nothing goes wrong.

`.bst`–This is the file that tells BibTeX exactly how to format your bibliography so you don't have to worry about it. On the physics department website, download the file `aip.bst` to have BibTeX format your bibliography according to the AIP convention.

An Important Note: This file was written specifically for Carleton College Physics 2010. It includes arguments for URLs as sources as well as annotations. If you are using the aip.bst file from CTAN.org, these two important options and several others will not be available.

3 Format of your `.bib` file

The `.bib` file is fairly simple in format and easy to write from scratch. It will look like a long list of entries that look something like this:

```
@article{experiments,
    Annote = {Explosions are awesome!},
    Author = {John Doe},
    Date-Added = {2010-01-24 15:27:46 -0600},
    Date-Modified = {2010-01-31 15:10:57 -0600},
    Journal = {Scientific American},
    Month = {January},
    Pages = {46-62},
    Title = {Why Do We Learn Physics?},
    Year = {2010}}
```

The kinds of documents you will encounter are probably `@article`, `@book`, and `@url`. The fields you may want to know are Title, Url, Author, Journal, Publisher, Year, and Annote. For more information, try
`http://en.wikipedia.org/wiki/Bibtex`
for more basic use knowledge or
`http://www.lsv.ens-cachan.fr/~markey/BibTeX/doc/ttb_en.pdf` for more in–depth issues. Google is an amazing resource as well.

If you have a mac or access to one, you may consider using the BibDesk program. It's pretty much like endnote in that it organizes your bibliography for you, and saves as a `.bib` file.

4 Adding a bibliography to your document

You've written your `.bib` file. Yay! But now you want to add it into your `.tex` file so the `.pdf` you get in the end has your bibliography in it. Here's how to do that. Add the following lines of code to your `.tex` file where you want your bibliography to appear:

```
\bibliographystyle{aip}
\bibliography{mybibliography.bib}
```

Of course, your bibliography (`.bib` file) might not be called the same thing, so be sure to change that. Also be sure that your `.bib` file and `aip.bst` are all in the same folder/directory as your `.tex` file is.

5 Typesetting with a bibliography

5.1 The Easy Way

If you're using TeXShop to edit your `.tex` file, I highly recommend doing this. At the top of your editor window, pull down the "Macros" menu to "Apple-Script", and select "Bibliography". It will do everything you need it to do, without any of the fuss.

Alternatively you could use the pull–down menu that says LaTeX, select your typesetter (either LaTeX or BibTeX), and press the typeset button a few times, as per the order below. But there's not much of a point to doing it this way.

5.2 The Not–so–easy way

If you are not using TexShop, but have a Mac or Linux computer, go into your command line and navigate to the directory that has all of your LaTeX files in it. Type:

```
PATH=$PATH:/usr/texbin
latex myfile
bibtex myfile
latex myfile
latex myfile
```

The first line is to add LaTeX to your path, and the other four commands are to typeset your document. Be warned, LaTeXmight be somewhere else on your computer. Also be warned, don't type your file extensions in these commands.

6 Basic Troubleshooting

Once you're done typesetting your document, you should have a `.pdf` file right alongside your `.tex` file. If you got error messages you should try the following:

- Just try again. BibTEX is sometimes temperamental and doesn't work the first time.

- In the LaTeX console there's a button that says "Trash .aux files". Try pressing that, then trying to typeset again.

Between those two things, that should solve your problems. If not, check the syntax in your `.tex` and `.bib` files.