biblatex Quickstart Guide

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1 Introduction

biblatex is a bibliography system for LaTeX users. It surpasses the facilities provided by BibTeX and provides a very large feature set which can be somewhat overwhelming to the new user. This quick start guide aims to demonstrate the basic setup of biblatex along with a selection of "how to" guides for common things which users typically need to do.

biblatex tracks the citations made in a document and the options set to control how the citations are managed. It passes these to a backend processor biber[1] which performs some tasks and then writes out a sorted representation of the bibliography data. biblatex then uses this information on subsequent runs of LaTeX to format and print a bibliography. You can see the general workflow in figure 1.

See the appendix § A for some history about how biblatex started, and how it differs from BibTeX. References to the main biblatex documentation file are formatted as follows below: B??.

2 Getting Started

Firstly, it is important to mention the user community http://tex.stackexchange.com. biblatex has its own question tag, is in the top ten of active question areas and the developers visit it regularly. There is a large body of already answered questions there which will cover many of the issues which beginning users face and new questions are always welcome.

Using biblatex is easy. Here is a basic example:

```
\documentclass{article}

% Load the package
\usepackage{biblatex}

% Tell biblatex the name of the
% bibliography database file
\addbibresource{refs.bib}
\begin{document}

% Mention some bibliography items
% in the text ...
Someone said something interesting
in \cite{work1} and also in \cite{work2}.

% Print the bibliography
\printbibliography
\end{document}
```

[1] At time of writing, biblatex supports two backend processors, biber and legacy BibTeX. New users, who are the focus audience for this guide, should use biber.

You would run the LaTeX engine of choice[2] on this file, then run `biber` on the `.bcf` file this produces and then the LaTeX engine once more[3]. The commands to run would look like this assuming the file above was called `test.tex`.

```
latex test
biber test
latex test
latex test
```

Notice that we didn't need to specify the file extensions as LaTeX knows to look for the `.tex` file and `biber` knows to look for the `.bcf` file. So, this is all equivalent to doing:

```
latex test.tex
biber test.bcf
latex test.tex
latex test.tex
```

Many people will be using LaTeX editing applications which hide these commands from the user anyway and which will be activated by keyboard shortcuts or menu items.

One thing that `biblatex` is good at is *localisation*, that is, knowing what to do when switching between languages. If using a language other than basic English, loading `inputenc` (`pdflatex`) or `fontspec` (`xelatex` or `lualatex`) is recommended and then one or other of the `babel` or `polyglossia` packages for multi-language support. `biblatex` knows how to connect with `babel` and `polyglossia` and can use their facilities for switching language handling and even font scripts dynamically in the bibliography and in citations. For example if writing in French, using `lualatex` as the engine and `polyglossia` as the language support package, the basic document would look like this:

```
\documentclass{article}
\usepackage{polyglossia}
\setdefaultlanguage{french}
\usepackage{fontspec}
\usepackage{biblatex}
\addbibresource{refs.bib}

\begin{document}

Someone said something interesting
in \cite{work1} and also in \cite{work2}.

\printbibliography
\end{document}
```

Language packages like `babel` and `polyglossia` should be loaded *before* `biblatex` so that it can detect which one is being used.

[2] Typically one of `pdflatex`, `xelatex` or `lualatex`

[3] Often two or more times in fact, depending on the `biblatex` options chosen which may require more runs to resolve various references.

It is also recommended to use the csquotes package as this integrates with biblatex to provide sophisticated combined citation/quotation macros are also multi-lingual aware. A document skeleton for biblatex use with xelatex or lualatex might look like this:

```
\documentclass{article}
\usepackage{polyglossia}
\setdefaultlanguage{english}
\usepackage{fontspec}
\usepackage{biblatex}
\usepackage{csquotes}
\addbibresource{refs.bib}

\begin{document}

Someone said something interesting
in \cite{work1} and also in \cite{work2}.

\printbibliography
\end{document}
```

Or with pdflatex, like this:

```
\documentclass{article}
\usepackage{polyglossia}
\setdefaultlanguage{english}
\usepackage[T1]{fontenc}
\usepackage[utf8]{inputenc}
\usepackage{biblatex}
\addbibresource{refs.bib}

\begin{document}

Someone said something interesting
in \cite{work1} and also in \cite{work2}.

\printbibliography
\end{document}
```

See B?? for details about required, recommended or incompatible packages. biblatex comes with many example files which are placed in the doc/latex/biblatex/examples subdirectory of the texmf tree. These are annotated and very useful for learning how to do various things.

3 Changing Things ...

The biblatex package options are detailed in the biblatex manual (B??).

3.1 Choosing a style

The first option most users will want to specify is the `style` option. This decides the formatting of the bibliography and citations. There are several standard styles which `biblatex` offers (B??).

```
\usepackage[style=authoryear]{biblatex}
```

You may have separate styles for the bibliograpy and citations by using the `bibstyle` and `citestyle` options respectively. `style` sets both `bibstyle` and `citestyle`:

```
\usepackage[citestyle=authoryear, bibstyle=authortitle
   ↪ ]{biblatex}
```

3.2 Migrating from natbib

`biblatex` has a compatibility setting which can be used to emulate standard `natbib` commands (B??) and it is enabled like this:

```
\usepackage[natbib=true]{biblatex}
```

3.3 Sorting the bibliography

One of the main purposes of a bibliography system is to sort the bibliography correctly. This might be by author names in a humanties paper or by a label or number for a physical sciences paper, for example. Sorting with `biblatex` is completely customisable and very sophisticated, supporting full Unicode[4] Sorting is done by defining a sorting "scheme", which is given a name. The scheme name is then used as the value of the sorting options. To set the default, global sorting scheme, use the `sorting` package option:

```
\usepackage[sorting=ynt]{biblatex}
```

There are several pre-defined sorting schemes (B??). It is possible to define custom sorting schemes (B??) or override the global sorting scheme and use different sorting schemes for different bibliography lists (B??). Most custom styles will automatically use a particular sorting scheme mandated by the style.

3.4 Citations

Citations are fundamental to a bibliography system. `biblatex` has a rich set of such commands described in B?? and also allows the user to define custom citation commands. Typically the chosen style will dictate which type of citation and therefore which citation command should be used. Commands for citing multiple works in the same citation with local or global pre/postnotes are provided. To begin with, it is recommended to try the style-independent `\autocite` command and its variants will suffice as these make switching between styles easier. If something

[4] Using an implementation of the Unicode Collation Algorithm (UCA) with Common Locale Data Repository (CLDR) tailoring.

more specific is needed, look into \parencite, \textcite and \footcite and their variants.

3.5 Printing the bibliography

The bibliography is printed by issuing the \printbibliography command. The options for the \printbibliography command can be found in B??. Here are some examples of the most commonly used options.

The title of the bibliography may be customised by changing or defining the heading or by overriding the title which the heading uses.

```
\printbibliography[title=References]
```

The general layout of the bibliography is controlled by a "bibliography environment". Custom layouts may be defined (B??) and used via the env option:

```
\printbibliography[env=customenv]
```

Bibliographies may be filtered and split so that, for example, it is possible to have separate bibliographies for books vs articles, primary vs secondary sources etc. The filtering can be done using various criteria and complex custom filters can be defined (B??). There are several interfaces for bibliography filtering, depending on the use-case. See B?? for examples.

Appendix

A History

biblatex was developed in order to allow bibliography styles to be created using TEX macros, which apply to a .bbl file treated as a sorted database rather than as a typset bibliography. biblatex does this by using only one special BibTeX .bst "style" file which describes the special .bbl file format.

In a sense, biblatex abused BibTeX for its data reading and sorting functions while ignoring arguably its main function of formatting bibliographic data. In 2008, development on biber started which aimed to provide a dedicated and customised backend for biblatex to remove the dependency on BibTeX. The goals were:

- Full Unicode support, which is lacking in all BibTeX (the program) variants to some degree
- Better, more flexible sorting algorithm
- Customisable interface file format to allow far more options than are possible with BibTeX (the progam)

biber now fulfills these goals along with a large additional feature set. biblatex with biber still supports (and always will) the BibTeX file format (.bib) as this is the most widely used format in the LaTeX world. However, it is not limited to this and supports other data formats with a modular internal design to allow relatively easy addition of other data formats.

biber takes over all of the tasks previously done by BibTeX for biblatex. One change is that biber does not read the .aux file but reads a more complex and

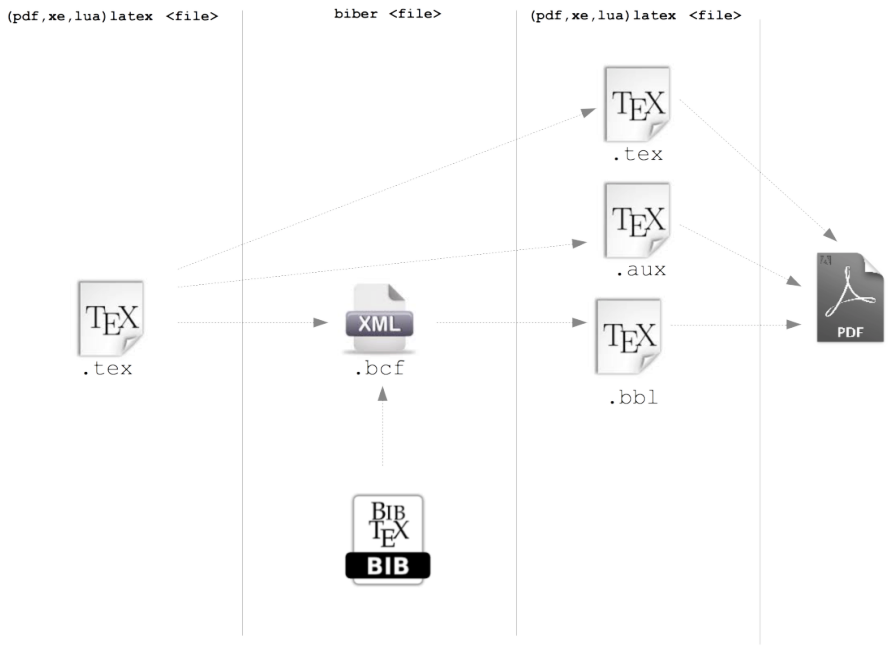

Figure 1: biblatex workflow

structured file which `biblatex` uses to pass information to `biber`. This is the XML format `.bcf`, the Biblatex Control File. See Figure 1 for an overview.