BibTeX

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1 What is BibTeX?

BibTeX is a reference management software used with LaTeX to create in-text citations and bibliographies. With BibTeX, the bibliographic information is stored separately from the citation style information.

2 How does BibTeX work?

BibTeX requires three files in addition to a `.tex` file:

1. `.bib` file A plain-text file that contains a list of reference entries that you can cite in your document.
2. `.bst` file The bibliographic style file, it includes information about the citation style that you want to use.
3. `.aux` file This is a file generated when you compile a LaTeX document that stores information associated with references.

3 The `.bib` file

A `.bib` file is a plain-text document that includes a list of entries for different references. An entry includes a key (or name) for an item and a list of fields (e.g. author, title, year) which varies depending on the item type. Some common item types include `book`, `article`, `proceedings`, `inproceedings`, `incollection`, `mastersthesis`, `phdthesis`, `techreport`, `unpublished`, and `misc`. To create a `.bib` file, create a new file in your LaTeX editor and save it as `[filename].bib`. There are several different way of generating reference information for your `.bib` file:

- Export a reference from a database or journal website using an **Export** or **Cite** option and choosing BibTeX format.
- Export a reference from Google Scholar using the **Cite** option and choosing BibTeX format. Note that you may need to adjust your Google Scholar settings if this option is not available.

- Type a reference manually.
- Export a reference from a citation manager such as RefWorks, EndNote, Mendeley, or Zotero.
- Use **text2bib** to convert a plain-text list of references to BibTeX format.

4 The `.bst` file

The bibliography style file, or `.bst` file, defines the style of bibliography and references that is applied to your document. BibTeX comes with many standard style files, such as `abbrv`, `acm`, `apalike`, `ieeetr`, `plain`, `siam`, and `unsrt`. Many journals and publishers that support LaTeX will provide a customized `.bst` file which is used for their journals. Many more can be found online. If you need to create a custom `.bst` file, you can use the `custom-bib` package.

5 The `.aux` file

The `.aux` file is created when you compile your LaTeX document. It transports information from one compiler run to the next, and stores information associated with cross-references.

6 In your LaTeX document

To cite a reference in-text use

```
\cite{key}
```

where `key` is the name of the reference used in your `.bib` file. In the place where you want to put your bibliography, type the following commands:

```
\bibliographystyle{plain}
\bibliography{myrefs}
```

where `plain` is the name of a `.bst` file and `myrefs` is the name of your `.bib` file.

You can also include references in your bibliography which you have not cited in text. To include references to key1, key2, and keyn in your bibliography, use:

```
\nocite{key1,key2,keyn}
```

Alternatively, if you wish to include every reference in your `.bib` file in your bibliography, use

```
\nocite{*}
```

7 Compiling your document

There are a number of steps to compile a document with BibTeX:

1. `latex`
2. `bibtex`
3. `latex`
4. `latex`

8 `natbib`

The `natbib` package can add extra functionality to BibTeX and give you some more options for your citations and bibliography. To use `natbib`, include the following in your preamble:

```
\usepackage{natbib}
```

You can add optional arguments to this command in order to change the citatoin and bibliography formats for the document (e.g. `[square]` for citations in square brackets, `[semicolon]` to separate multiple citations with semi-colons, or `[numbers]` for numerical citations).

`natbib` has commands for different types of in-text citations.

```
\citep
```

can be used for *parenthetical* citations. For example, (Einstein, 1932) and

```
\citet
```

can be used for *textual* citations. For example, Einstein (1932).

9 An alternative option: `biber` and `biblatex`

`biblatex` and `biber` are useful for creating bibliographies for multi-section documents, as they can create multiple bibliographies for a document with different sorting. These are also useful if the `.bst` files that are available often do not meet your needs, as it is much easier to create new bibliography and citation styles with `biblatex`.