Bibtex Entry Types, Field Types and Usage Hints

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This document is simply a corrected version of Appendix B.2 of the LaTeX book [2], © 1986, by Addison-Wesley. The basic scheme is the same, only a few details have changed.

[These are the defacto standard for bibliographic data types.

The advise is for the use of the LaTeX text processing application but there is some general hints as well. - David Wilson]

1 Entry Types

When entering a reference in the database, the first thing to decide is what type of entry it is. No fixed classification scheme can be complete, but provides enough entry types to handle almost any reference reasonably well.

References to different types of publications contain different information; a reference to a journal article might include the volume and number of the journal, which is usually not meaningful for a book. Therefore, database entries of different types have different fields. For each entry type, the fields are divided into three classes:

required
: Omitting the field will produce a warning message and, rarely, a badly formatted bibliography entry. If the required information is not meaningful, you are using the wrong entry type. However, if the required information is meaningful but, say, already included is some other field, simply ignore the warning.

optional
: The field's information will be used if present, but can be omitted without causing any formatting problems. You should include the optional field if it will help the reader.

ignored

: The field is ignored. Ignores any field that is not required or optional, so you can include any fields you want in a `bib` file entry. It's a good idea to put all relevant information about a reference in its `bib` file entry--even information that may never appear in the bibliography. For example, if you want to keep an abstract of a paper in a computer file, put it in an `abstract` field in the paper's `bib` file entry. The `bib` file is likely to be as good a place as any for the abstract, and it is possible to design a bibliography style for printing selected abstracts. Note: Misspelling a field name will result in its being ignored, so watch out for typos (especially for optional fields, since won't warn you when those are missing).

The following are the standard entry types, along with their required and optional fields, that are used by the standard bibliography styles. The fields within each class (required or optional) are listed in order of occurrence in the output, except that a few entry types may perturb the order slightly, depending on what fields are missing. These entry types are similar to those adapted by Brian Reid from the classification scheme of van Leunen [4] for use in the *Scribe* system. The meanings of the individual fields are explained in the next section. Some nonstandard bibliography styles may ignore some optional fields in creating the reference. Remember that, when used in the `bib` file, the entry-type name is preceded by an `@` character.

article
: An article from a journal or magazine. Required fields: `author`, `title`, `journal`, `year`. Optional fields: `volume`, `number`, `pages`, `month`, `note`.

book
: A book with an explicit publisher. Required fields: `author` or `editor`, `title`, `publisher`, `year`. Optional fields: `volume` or `number`, `series`, `address`, `edition`, `month`, `note`.

booklet
: A work that is printed and bound, but without a named publisher or sponsoring institution. Required field: `title`. Optional fields: `author`, `howpublished`, `address`, `month`, `year`, `note`.

conference
: The same as `INPROCEEDINGS`, included for *Scribe* compatibility.

inbook
: A part of a book, which may be a chapter (or section or whatever) and/or a range of pages. Required fields: `author` or `editor`, `title`, `chapter` and/or `pages`, `publisher`, `year`. Optional fields: `volume` or `number`, `series`, `type`, `address`, `edition`, `month`, `note`.

incollection
: A part of a book having its own title. Required fields: `author`, `title`, `booktitle`, `publisher`, `year`. Optional fields: `editor`, `volume` or `number`, `series`, `type`, `chapter`, `pages`, `address`, `edition`, `month`, `note`.

inproceedings
: An article in a conference proceedings. Required fields: `author`, `title`, `booktitle`, `year`. Optional fields: `editor`, `volume` or `number`, `series`, `pages`, `address`, `month`, `organization`, `publisher`, `note`.

manual
: Technical documentation. Required field: `title`. Optional fields: `author`, `organization`, `address`, `edition`, `month`, `year`, `note`.

mastersthesis
: A Master's thesis. Required fields: `author`, `title`, `school`, `year`. Optional fields: `type`, `address`, `month`, `note`.

misc
: Use this type when nothing else fits. Required fields: none. Optional fields: `author`, `title`, `howpublished`, `month`, `year`, `note`.

phdthesis
: A PhD thesis. Required fields: `author`, `title`, `school`, `year`. Optional fields: `type`, `address`, `month`, `note`.

proceedings
: The proceedings of a conference. Required fields: `title`, `year`. Optional fields: `editor`, `volume` or `number`, `series`, `address`, `month`, `organization`, `publisher`, `note`.

techreport
: A report published by a school or other institution, usually numbered within a series. Required fields: `author`, `title`, `institution`, `year`. Optional fields: `type`, `number`, `address`, `month`, `note`.

unpublished

: A document having an author and title, but not formally published. Required fields: `author`, `title`, `note`. Optional fields: `month`, `year`.

In addition to the fields listed above, each entry type also has an optional `key` field, used in some styles for alphabetizing, for cross referencing, or for forming a `\bibitem` label. You should include a `key` field for any entry whose ‘‘author’’ information is missing; the ‘‘author’’ information is usually the `author` field, but for some entry types it can be the `editor` or even the `organization` field (Section 4 describes this in more detail). Do not confuse the `key` field with the key that appears in the `\cite` command and at the beginning of the database entry; this field is named ‘‘key’’ only for compatibility with *Scribe*.

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2 Fields

Below is a description of all fields recognized by the standard bibliography styles. An entry can also contain other fields, which are ignored by those styles.

address
: Usually the address of the `publisher` or other type of institution. For major publishing houses, van Leunen recommends omitting the information entirely. For small publishers, on the other hand, you can help the reader by giving the complete address.

annote
: An annotation. It is not used by the standard bibliography styles, but may be used by others that produce an annotated bibliography.

author
: The name(s) of the author(s), in the format described in the LaTeX book.

booktitle
: Title of a book, part of which is being cited. See the LaTeX book for how to type titles. For book entries, use the `title` field instead.

chapter
: A chapter (or section or whatever) number.

crossref
: The database key of the entry being cross referenced.

edition
: The edition of a book--for example, ‘‘Second’’. This should be an ordinal, and should have the first letter capitalized, as shown here; the standard styles convert to lower case when necessary.

editor
: Name(s) of editor(s), typed as indicated in the LaTeX book. If there is also an `author` field, then the `editor` field gives the editor of the book or collection in which the reference appears.

howpublished
: How something strange has been published. The first word should be capitalized.

institution
: The sponsoring institution of a technical report.

journal
: A journal name. Abbreviations are provided for many journals; see the *Local Guide*.

key
: Used for alphabetizing, cross referencing, and creating a label when the ‘‘author’’ information (described in Section 4) is missing. This field should not be confused with the key that appears in the `\cite` command and at the beginning of the database entry.

month
: The month in which the work was published or, for an unpublished work, in which it was written. You should use the standard three-letter abbreviation, as described in Appendix B.1.3 of the

LaTeX book.

note
Any additional information that can help the reader. The first word should be capitalized.

number
The number of a journal, magazine, technical report, or of a work in a series. An issue of a journal or magazine is usually identified by its volume and number; the organization that issues a technical report usually gives it a number; and sometimes books are given numbers in a named series.

organization
The organization that sponsors a conference or that publishes a manual.

pages
One or more page numbers or range of numbers, such as `42--111` or `7,41,73--97` or `43+` (the '+' in this last example indicates pages following that don't form a simple range). To make it easier to maintain *Scribe*-compatible databases, the standard styles convert a single dash (as in `7-33`) to the double dash used in TEX to denote number ranges (as in `7--33`).

publisher
The publisher's name.

school
The name of the school where a thesis was written.

series
The name of a series or set of books. When citing an entire book, the the `title` field gives its title and an optional `series` field gives the name of a series or multi-volume set in which the book is published.

title
The work's title, typed as explained in the LaTeX book.

type
The type of a technical report--for example, ''Research Note''.

volume
The volume of a journal or multivolume book.

year

The year of publication or, for an unpublished work, the year it was written. Generally it should consist of four numerals, such as `1984`, although the standard styles can handle any `year` whose last four nonpunctuation characters are numerals, such as '(about 1984)'.

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3 Helpful Hints

This section gives some random tips that aren't documented elsewhere, at least not in this detail. They are, roughly, in order of least esoteric to most. First, however, a brief spiel.

I understand that there's often little choice in choosing a bibliography style--journal says you must use 2018;style2019; and that's that. If you have a choice, however, I strongly recommend that you choose something like the `plain` standard style. Such a style, van Leunen [4] argues convincingly, encourages better writing than the alternatives--more concrete, more vivid.

The Chicago Manual of Style [1], on the other hand, espouse the author-date system, in which the citation might appear in the text as '(Jones, 1986)'. I argue that this system, besides cluttering up the text with information that may or may not be relevant, encourages the passive voice and vague

writing. Furthermore the strongest arguments for using the author-date system--like ‘‘it’s the most practical’’--fall flat on their face with the advent of computer-typesetting technology. For instance the *Chicago Manual* contains, right in the middle of page 401, this anachronism: ‘‘The chief disadvantage of [a style like `plain`] is that additions or deletions cannot be made after the manuscript is typed without changing numbers in both text references and list.’’ LaTeX, obviously, sidesteps the disadvantage.

Finally, the logical deficiencies of the author-date style are quite evident once you’ve written a program to implement it. For example, in a large bibliography, using the standard alphabetizing scheme, the entry for ‘(Aho et al., 1983b)’ might be half a page later than the one for ‘(Aho et al., 1983a)’. Fixing this problem results in even worse ones. What a mess. (I have, unfortunately, programmed such a style, and if you’re saddled with an unenlightened publisher or if you don’t buy my propaganda, it’s available from the Rochester style collection.)

Ok, so the spiel wasn’t very brief; but it made me feel better, and now my blood pressure is back to normal. Here are the tips for using with the standard styles (although many of them hold for nonstandard styles, too).

1. With ’s style-designing language you can program general database manipulations, in addition to bibliography styles. For example it’s a fairly easy task for someone familiar with the language to produce a database-key/author index of all the entries in a database. Consult the *Local Guide* to see what tools are available on your system.
2. The standard style’s thirteen entry types do reasonably well at formatting most entries, but no scheme with just thirteen formats can do everything perfectly. Thus, you should feel free to be creative in how you use these entry types (but if you have to be too creative, there’s a good chance you’re using the wrong entry type).
3. Don’t take the field names too seriously. Sometimes, for instance, you might have to include the publisher’s address along with the publisher’s name in the `publisher` field, rather than putting it in the `address` field. Or sometimes, difficult entries work best when you make judicious use of the `note` field.
4. Don’t take the warning messages too seriously. Sometimes, for instance, the year appears in the title, as in *The 1966 World Gnus Almanac*. In this case it’s best to omit the `year` field and to ignore ’s warning message.
5. If you have too many names to list in an `author` or `editor` field, you can end the list with ‘‘and others’’; the standard styles appropriately append an ‘‘et al.’’

6. In general, if you want to keep from changing something to lower case, you enclose it in braces. You might not get the effect you want, however, if the very first character after the left brace is a backslash. The ‘‘special characters’’ item later in this section explains.

7. For *Scribe* compatibility, the database files allow an `@COMMENT` command; it’s not really needed because

   allows in the database files any comment that’s not within an entry. If you want to comment out an entry, simply remove the ‘`@`’ character preceding the entry type.

8. The standard styles have journal abbreviations that are computer-science oriented; these are in the style files primarily for the example. If you have a different set of journal abbreviations, it’s sensible to put them in `@STRING` commands in their own database file and to list this database file as an argument to LaTeX’s `\bibliography` command (but you should list this argument before the ones that specify real database entries).

9. It's best to use the three-letter abbreviations for the month, rather than spelling out the month yourself. This lets the bibliography style be consistent. And if you want to include information for the day of the month, the `month` field is usually the best place. For example

```
month = jul # "~4,"
```

will probably produce just what you want.

10.

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11. If you're using the `unsrt` style (references are listed in order of citation) along with the `\nocite{*}` feature (all entries in the database are included), the placement of the `\nocite{*}` command within your document file will determine the reference order. According to the rule given in Section 2.1: If the command is placed at the beginning of the document, the entries will be listed in exactly the order they occur in the database; if it's placed at the end, the entries that you explicitly `\cite` or `\nocite` will occur in citation order, and the remaining database entries will be in database order.
12. For theses, van Leunen recommends not giving the school's department after the name of the degree, since schools, not departments, issue degrees. If you really think that giving the department information will help the reader find the thesis, put that information in the `address` field.
13. The `MASTERSTHESIS` and `PHDTHESIS` entry types are so named for *Scribe* compatibility; `MINORTHESIS` and `MAJORTHESIS` probably would have been better names. Keep this in mind when trying to classify a non-U.S. thesis.

14. Here's yet another suggestion for what to do when an author's name appears slightly differently in two publications. Suppose, for example, two journals articles use these fields.

```
author = "Donald E. Knuth"
.  .  .
author = "D. E. Knuth"
```

There are two possibilities. You could (1) simply leave them as is, or (2) assuming you know for sure that these authors are one and the same person, you could list both in the form that the author prefers (say, 'Donald E. Knuth'). In the first case, the entries might be alphabetized incorrectly, and in the second, the slightly altered name might foul up somebody's electronic library search. But there's a third possibility, which is the one I prefer. You could convert the second journal's field to

```
author = "D[onald] E. Knuth"
```

This avoids the pitfalls of the previous two solutions, since alphabetizes this as if the brackets weren't there, and since the brackets clue the reader in that a full first name was missing from the original. Of course it introduces another pitfall--'D[onald] E. Knuth' looks ugly--but in this case I think the increase in accuracy outweighs the loss in aesthetics.

15. LaTeX's comment character '`%`' is not a comment character in the database files.
16. Here's a more complete description of the ''author'' information referred to in previous sections. For most entry types the ''author'' information is simply the `author` field. However: For the `BOOK` and `INBOOK` entry types it's the `author` field, but if there's no author then it's the `editor` field; for the `MANUAL` entry type it's the `author` field, but if there's no author then it's the `organization` field; and for the `PROCEEDINGS` entry type it's the `editor` field, but if

there's no editor then it's the `organization` field.

17. When creating a label, the `alpha` style uses the ''author'' information described above, but with a slight change--for the `MANUAL` and `PROCEEDINGS` entry types, the `key` field takes precedence over the `organization` field. Here's a situation where this is useful.

```
organization = "The Association for Computing Machinery",
key = "ACM"
```

    Without the `key` field, the `alpha` style would make a label from the first three letters of information in the `organization` field; `alpha` knows to strip off the '`The` ', but it would still form a label like '[Ass86]', which, however intriguing, is uninformative. Including the `key` field, as above, would yield the better label '[ACM86]'.

    You won't always need the `key` field to override the `organization`, though: With

```
organization = "Unilogic, Ltd.",
```

    for instance, the `alpha` style would form the perfectly reasonable label '[Uni86]'.

18. Section 2.1 discusses accented characters. To , an accented character is really a special case of a ''special character'', which consists of everything from a left brace at the top-most level, immediately followed by a backslash, up through the matching right brace. For example in the field

```
author = "\AA{ke} {Jos{\'{e}} {\'{E}douard} G{\"o}del"
```

    there are just two special characters, '`{\'{E}douard}`' and '`{\"o}`' (the same would be true if the pair of double quotes delimiting the field were braces instead). In general,

    will not do any processing of a TEX or LaTEX control sequence inside a special character, but it *will* process other characters. Thus a style that converts all titles to lower case would convert

```
The {\TeX BOOK\NOOP} Experience
```

    to

```
The {\TeX book\NOOP} experience
```

    (the '`The`' is still capitalized because it's the first word of the title). This special-character scheme is useful for handling accented characters, for getting 's alphabetizing to do what you want, and, since counts an entire special character as just one letter, for stuffing extra characters inside labels. The file `XAMPL.BIB` distributed with gives examples of all three uses.

19. This final item of the section describes 's names (which appear in the `author` or `editor` field) in slightly more detail than what appears in Appendix B of the LaTEX book. In what follows, a ''name'' corresponds to a person. (Recall that you separate multiple names in a single field with the word ''and'', surrounded by spaces, and not enclosed in braces. This item concerns itself with the structure of a single name.)

    Each name consists of four parts: First, von, Last, and Jr; each part consists of a (possibly empty) list of name-tokens. The Last part will be nonempty if any part is, so if there's just one token, it's always a Last token.

Recall that Per Brinch Hansen's name should be typed

```
"Brinch Hansen, Per"
```

The First part of his name has the single token ‘‘Per’’; the Last part has two tokens, ‘‘Brinch’’ and ‘‘Hansen’’; and the von and Jr parts are empty. If you had typed

```
"Per Brinch Hansen"
```

instead, would (erroneously) think ‘‘Brinch’’ were a First-part token, just as ‘‘Paul’’ is a First-part token in ‘‘John Paul Jones’’, so this erroneous form would have two First tokens and one Last token.

Here's another example:

```
"Charles Louis Xavier Joseph de la Vall{\'e}e Poussin"
```

This name has four tokens in the First part, two in the von, and two in the Last. Here

knows where one part ends and the other begins because the tokens in the von part begin with lower-case letters.

In general, it's a von token if the first letter at brace-level 0 is in lower case. Since technically everything in a ‘‘special character’’ is at brace-level 0, you can trick

into thinking that a token is or is not a von token by prepending a dummy special character whose first letter past the TEX control sequence is in the desired case, upper or lower.

To summarize,

allows three possible forms for the name:

```
"First von Last"
"von Last, First"
"von Last, Jr, First"
```

You may almost always use the first form; you shouldn't if either there's a Jr part, or the Last part has multiple tokens but there's no von part.

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