



Editorial

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Basic elements of the BibTeX file structure

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Abstract. BibTeX is used to prepare bibliographic information for our journals. This article describes the basic structure of BibTeX files.

Key words and phrases: bibliography typesetting, LaTeX, BibTeX

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1. Introduction

When preparing manuscripts for the journal, BibTeX is used to format bibliographies [1]. BibTeX is a file format for storing bibliographic data. BibTeX files have the extension `.bib` and contain records, each describing a single source (book, article, report, etc.).

2. Entry

- The record type (e.g., `@article`, `@book`, `@misc`) indicates the type of source.
- The unique key is the record identifier, which is used to cite the source in the document text.
- Each record begins with the source type and a unique key.

A BibTeX record begins with the `@` sign, followed by the record type name. Everything pertaining to the record is enclosed in curly braces:

@book { ... }

BibTeX offers 14 record types. Record type names are case-insensitive.

List of BibTeX record types:

- *article*: an article published in a periodical, such as a journal article or magazine article;
- *book*: a book;
- *booklet*: like a book, but without a publisher;
- *conference*: conference proceedings;
- *inbook*: a section or chapter in a book;
- *incollection*: an article in a collection;
- *inproceedings*: a conference paper (same as the *conference* record type);

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- *manual*: technical manual;
- *masterthesis*: master’s thesis;
- *misc*: used when nothing else applies;
- *phdthesis*: Ph.D. thesis;
- *proceedings*: conference proceedings (full);
- *techreport*: technical report, government report, or white paper;
- *unpublished*: proceedings that have not been formally published.

3. Fields

- These are record attributes containing specific information about the source (author, title, year of publication, etc.).
- Fields are separated by commas.
- Some fields may be required for certain record types, while others are optional.

3.1. Standard field types

Let’s list the standard BibTeX field types:

- *address*: publisher or institution address;
- *annote*: annotation;
- *author*: list of authors of the work;
- *booktitle*: book title;
- *chapter*: chapter number in the book;
- *edition*: book edition number;
- *editor*: list of book editors;
- *howpublished*: publication date for non-standard publications;
- *institution*: name of the institution that published and/or sponsored the report;
- *journal*: name of the journal or magazine in which the article was published;
- *month*: month of publication of the work;
- *note*: notes;
- *number*: report number or issue number of the journal article;
- *organization*: name of the institution that organized or sponsored the conference or published the guideline;
- *pages*: page numbers or page range;
- *publisher*: publisher;
- *school*: name of the university or institution awarding the degree;
- *series*: name of the series or book set;
- *title*: title of the work;
- *type*: type of technical report or dissertation;
- *volume*: volume number;
- *year*: year of publication of the work.

3.2. Custom field types

Not all BibTeX styles support non-standard fields:

- *doi*: DOI number;
- *issn*: ISSN number;

- *isbn*: ISBN number;
- *url*: URL of a web page.

3.3. Structure of the author field

Let's describe the structure of the most frequently used field — *author*.

Authors' names are written in the following format:

- Lastname, Firstname Patronymic;
- Firstname Patronymic Lastname;
- Lastname, Initials;
- Initials Lastname.

Basic rules:

- To separate multiple authors, use the *and* operator.
- If the author's last name is written before the initials, a comma is placed after the last name (,).
- Initials are separated by periods.
- Spaces are placed between initials.

Examples:

- Single author: *author* = {Ivanov, I. I.}
- Multiple authors: *author* = {Petrov, P. P. and Ivanov, I. I.}.

3.3.1. Format: {Firstname Lastname}

First name, then last name. This format is widely used, but may not provide the necessary distinction between first and last names, especially with complex last names.

```
@article{Doe2023,
title = {Title of the Article},
year  = 2023,
author = {Isaac Newton},
...}
```

3.3.2. Format: {Lastname, Firstname}

List the last name first, then the first name, separated by a comma. This format is recommended as it clearly separates the first and last names.

```
@article{Doe2023,
title = {Title of the Article},
year  = 2023,
author = {Newton, Isaac},
...}
```

3.3.3. Format: {Lastname, Suffix, Firstname}

This format is useful when a suffix (e.g., Jr., Sr., III, etc.) is required. It is important to strictly follow the order to accurately reflect the author's name.

```
@article{Doe2023, title = {Title of the Article}, year = 2023, author
= {King, Jr, Martin Luther}, ...}
```

3.3.4. Names of multiple authors

If a work has multiple authors, BibTeX allows you to specify them using the *and* separator. This separator is used to clearly list the authors according to the selected format.

```
@article{Doe2023,  
  title = {Title of the Article},  
  year  = 2023,  
  author = {Fisher, James and Clark, John},  
  ...}
```

4. Values

- This is the data stored in the fields.
- Values are enclosed in curly braces {...} or double quotes "...".
- Using curly braces is preferred as it avoids problems with interpreting special characters.

5. Example entry in a BibTeX file

Example bibtex entry:

```
@book{ivanov2023book,  
  author = {Ivanov, I. I.},  
  title = {Book title},  
  year = {2023},  
  publisher = {Publisher},  
  address = {City}  
}
```

Here:

- @book: record type (book);
- ivanov2023book: record unique key;
- author, title, year, publisher, address: record fields;
- {Ivanov, I. I.}, {Book Title}, etc.: field values.

6. Recommendations for working with BibTeX files

- Uniqueness of keys: Each entry key must be unique within the file to avoid confusion when citing.
- Using comments: Comments can be added to a BibTeX file, starting them with a percent sign.
- A BibTeX file can contain multiple entries, each describing a separate bibliographic source.

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Основные элементы структуры файла BibTeX

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Аннотация. BibTeX используется для подготовки библиографической информации для журнала. В статье описывается базовая структура файлов BibTeX.

Ключевые слова: набор библиографии, LaTeX, BibTeX