

bibview: A graphical user interface to Bib_TE_X

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Abstract

This paper describes an X Window application for manipulating Bib_TE_X databases. The application provides the following facilities: creation of new entries, deletion and editing of entries, searching for entries, sorting and printing Bib_TE_X databases or subsets of them. It is possible to work with several Bib_TE_X databases simultaneously and copy entries between databases. Entry types other than the standard Bib_TE_X types can be defined in a configuration file. The paper describes the features of the program. It contains a comparison of *bibview* with similar tools and discusses some useful improvements.

1 The windows of *bibview*

bibview uses the following types of windows:

- The *main window* contains five menus described in Section 1.1.
- A *bibliography window* is displayed for each Bib_TE_X database loaded. It offers features to manipulate a single Bib_TE_X database, such as making new entries, sorting the database, etc.
- A *list window* shows a list of all entries of a Bib_TE_X database or the entries resulting from a search, respectively.
- A *card window* provides a template to edit the fields of an entry or to create a new entry.
- A *macro window* is used to edit the @STRING and @PREAMBLE parts of a Bib_TE_X database.
- In a *search window* the user can specify (using regular expressions) the entries he/she is looking for.
- An *error window* can be used to correct syntax errors in a Bib_TE_X database. An additional window contains information concerning the syntax errors.
- *Help windows* show help information.

1.1 Main window

The *main window* of *bibview* (see Figure 1) provides the following menus:

- **File** – Open a Bib_TE_X database, create a new Bib_TE_X database, or close/save an open Bib_TE_X database. The name of the database is chosen through a file selection box.
- **Services** – The following services are available:
 - *Consistency Check*: The entries not containing all fields required by Bib_TE_X are displayed in a *list window*. Note, however,

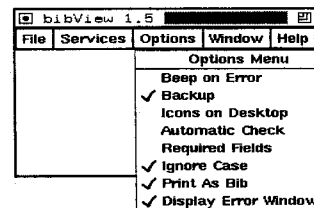


Figure 1: Main Window

that cross references are not checked, i.e., an entry is regarded as complete if it contains a cross reference.

- *Unify*: All entries of a Bib_TE_X database are inserted into another loaded Bib_TE_X database. If key conflicts occur, a new unique key is generated by appending a letter (a-z, A-Z) to the conflicting key.
- *Print*: Print a Bib_TE_X database. The database can be printed as a L^AT_EX file with \nocite commands or in a fixed format defined by *bibview*.
- *Edit Macros*: A window is displayed for editing the @STRING and @PREAMBLE parts of a Bib_TE_X database.
- *Load Configuration*: A configuration file is evaluated. The structure of a configuration file is described in Section 2. The [Options] part of the configuration file is not evaluated.
- **Options** – *bibview* can be customized according to the preferences of the user. The default of the options can be changed in the configuration file. If an option is set, it is marked by a tick (see Figure 1). The following options are available:
 - *Beep on Error*: Beep if an error occurs (default: true).
 - *Backup*: Before an existing database is written to disk, a backup of the database is created with the suffix .bak.<i>i</i> where <i>i</i> is the number of the last backup incremented by one (default: true).
 - *Icons on Desktop*: Icons of list and card windows are placed within the corresponding bibliography window (default: false).
 - *Automatic Check*: A consistency check takes place whenever a Bib_TE_X database is loaded (default: true).
 - *Required Fields*: A warning message is displayed if an entry is saved that does not contain all fields required by Bib_TE_X (default: false).
 - *Ignore Case*: In a search the case of the letters is ignored (default: true).

- *Print As Bib*: When printing a database, a L^AT_EX file containing \nocite commands is created. The style file is alpha. This default can be changed in the [StyleFile] part of the configuration file.
- *Display Error Window*: If a syntax error is found while loading a BIB_TE_X database, a window is displayed for possible corrections of the error (default: true).
- **Window** - Windows belonging to the same BIB_TE_X database are grouped together.
- **Help** - A *help window* is displayed containing help information.

1.2 Bibliography Window

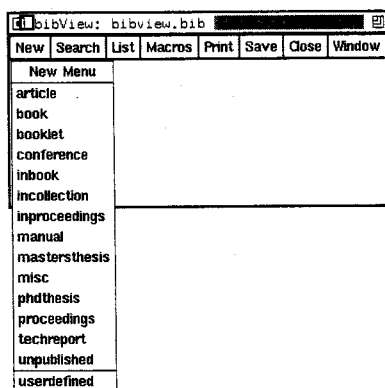


Figure 2: Bibliography Window

The *bibliography window* (see Figure 2) provides the following commands:

- **New**: Select the type of a new entry from a menu. Entries of a type other than the standard BIB_TE_X types or the types defined in the configuration file can be created by selecting *userdefined*. A *card window* is displayed for making the new entry.
- **Search**: A *search window* is displayed in which a search for entries can be initiated. The result of the search is shown in the *list window*.
- **List**: A list with all entries of the BIB_TE_X database is displayed.
- **Macros**: A *macro window* is displayed.
- **Print**: A L^AT_EX file with the entries of the database is produced.
- **Save**: The BIB_TE_X database is saved on secondary storage in a format conforming to BIB_TE_X's specification.
- **Close**: Close the BIB_TE_X database.

1.3 Card Window

The *card window* provides a template of the required as well as optional fields for each entry type defined by BIB_TE_X or in the configuration file. Figure 3 shows the card window for the type 'article'. Required fields are marked by bold lines. A card window is used to make a new entry or to edit an entry (eg to correct spelling errors). A card window for editing an entry is displayed after the corresponding entry has been clicked in the list window. It is possible to have several card windows displayed simultaneously. This is useful to cut and paste information between different entries.

Figure 3: Card Window

Macros are entered with a preceding '@', otherwise *bibview* automatically surrounds the entry with brackets. In our example, *bibview* will produce

```
@article{zara68,
  key      = {Zara68},
  author   = {Zarate, Luz Angela},
  title    = {This is the title},
  journal  = jgg1,
  year     = {1968},
  month    = nov # {7th},
  pages    = {7--11},
  mycomment = {not about Gnats and Gnus}
}
```

The *card window* provides the following commands:

- **Duplicate:** Duplicate an (already saved) entry. The type of the new entry can be chosen in the menu. Fields that are not standard fields of the new type become user-defined fields. This feature is useful if one wants to make a new entry that has many fields in common with an existing entry. It can also be used to change the type of an entry.
- **UserData:** Additional fields not used by BIBTEX can be entered in the section *Userdefined Fields* of the *card window*.
- **Annotate:** Edit the 'annotate' field of an entry in a window. This field can be used to contain an abstract.
- **Delete:** Delete an entry. This is useful if one discovers a duplicate entry in a BIBTEX database.
- **Save:** Save an entry. If the option *Required Fields* is chosen, a warning message is displayed if not all fields required by BIBTEX were entered. If no BIBTEX key exists, *bibview* generates it. If key conflicts occur, a letter (a-z,A-Z) is appended in a unique way. This allows 52 different entries with the same BIBTEX key. As no check for syntax errors occurs when an entry is saved, it is the task of the user to care for the correctness of the entry.
- **Copy:** Insert an entry into another loaded BIBTEX database. Key conflicts are solved as described above.
- **Close:** Close the *card window*.

1.4 List Window

author	title
Uwe M. Borghoff	Design of Optimal Distributed File Systems: A Fran
Uwe M. Borghoff	Catalogue of distributed file/operating systems
Uwe M. Borghoff	Fehlertoleranz in verteilten Dateisystemen: Eine \
Uwe M. Borghoff	Dynamische Dataallokation innerhalb eines volltr
Liebl, Arwin	Authentication in Distributed Systems: A Bibliogra
Liebl, Arwin and Bis	Die Sicherheit des UNIX-Betriebssystems
Liebl, Arwin and Bis	Sicherheitsaspekte des Betriebssystems UNIX
Neumann, Christof R.	Computerviren — Grundlagen, Entdeckung und Abwehr
Johann H. Schlichter	Collaboration in Distributed Document Processing
Johann H. Schlichter	Task Management in FolioPub System2
Johann H. Schlichter	Architecture of the Appleset Server
Gunnar Teege	Ein System zur Repräsentation von deklarativen G
Gunnar Teege	The Activity Support System TRACTS
F. Vojtk and U.M. Bo	Autonome Replikationssteuerung für verteilte Sys
Zarate, Luz Angela	This is the title

Figure 4: List Window

The *list window* is displayed after the *List* button of the *bibliography window* has been pressed or as a result of a search or consistency check. As there is not more than one list window per BIBTEX database, an already existing list is overwritten.

The list contains by default information concerning *author*, *title*, *year*, *BIBTEX key*, *category* and *BIBTEX type* of an entry. This is useful if one wants to browse through BIBTEX databases.

The information displayed in the list and the layout of the list can be changed in the configuration file.

The following commands are provided:

- **Save:** Save the entries of the list as a new BIBTEX database. This feature can be used to partition a BIBTEX database.
- **Sort:** Sort the entries of the list. By default the list can be sorted by all standard BibTeX fields. The author and editor fields are sorted by "last name". The sort order is used when the list is saved or printed.
- **Copy:** Insert all entries of the list into another loaded BIBTEX database. Key conflicts are solved in the way described in Section 1.3.
- **Print:** Produce a L^AT_EX file with the entries of the list.
- **Close:** Close the *list window*.

1.5 Search Window

Figure 5: Search Window

bibview allows to search for entries matching regular expressions in certain fields. The result of the

search are the entries whose fields match all regular expressions specified in the search window.

If a regular expression is entered in the box *AllFields*, the entries that match the expression in any field (including the user-defined fields) are displayed in the list window. It is possible to use the *AllFields* box in combination with the other boxes.

It is possible to use (not more than two) user-defined fields in a search. In the left box of the "Userdefined Fields" part of the search window the exact name of the user-defined field is entered, in the right box a regular expression is entered.

In our example (Figure 5), we search for all articles by author *Zarate* that were published in 1968 and for which the 'mycomment' field contains the string *Gnus*.

Regular expressions for each field can be defined in the configuration file. A predefined expression is selected by pressing the left mouse button in the box belonging to the field. In Figure 5 the expressions 'Zarate' and 'Liebl' were defined for the 'author' field.

The fields that are available in the search window can be defined in the configuration file. By default, all standard BIBTEX fields can be used.

1.6 Macro Window

A *macro window* is used to edit the @STRING and @PREAMBLE parts of a BIBTEX file. As the content of the *macro window* is not checked for syntax errors when the database is written, it is the task of the user to care for a syntactically correct definition of the macros. An example of a *macro window* is shown in Figure 6.

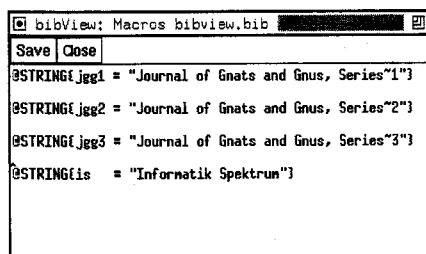


Figure 6: Macro Window

1.7 Error Window

An *error window* is used to correct syntax errors in BIBTEX databases. If syntax errors are found when a database is loaded, *bibview* reads the correct entries of the BIBTEX database, but the incorrect entries will be lost. To avoid this, the user should correct the syntax errors, save the database and load it again. A help window shows the BIBTEX keys of

the incorrect entries (see Figure 7). LINE refers to the line number in the database, and OFFSET refers to the line within the entry. With this information it is easy to correct errors by searching for the key and using OFFSET to find the erroneous line.

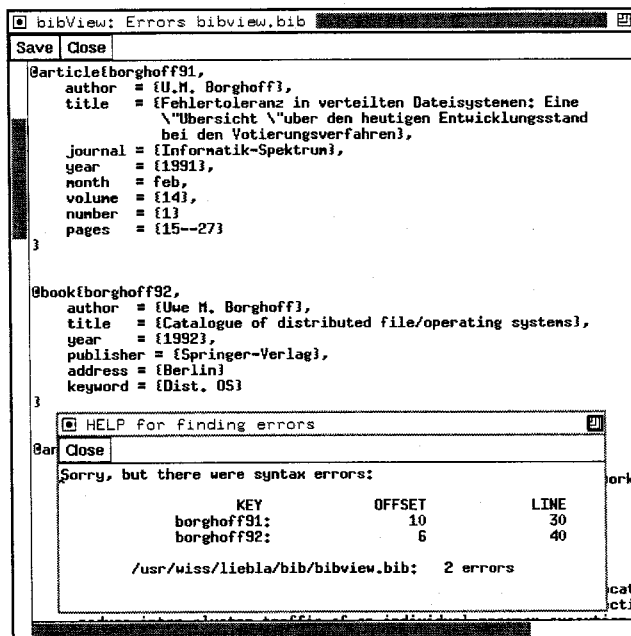


Figure 7: Error Window

2 The configuration file

When *bibview* is started, it looks for a configuration file with the name *.bibviewrc* in the user's home directory. In this file, some user-specific default values can be specified. The following sections are allowed:

- [Options]: The default options can be customized to the preferences of the user.
- [Types]: New BIBTEX types can be defined and additional fields can be added to existing types. An example of a type definition is:

```
t : isonorm
rf : title
rf : number
f : year
f : note
```

t is used to define a new type or to add fields to an already defined type. With *tc* the fields of an already defined type are undefined.

Additional fields to all already defined types can be defined with *t : all* followed by the descriptions of the fields.

rf indicates that the following field is a required field for the defined type.

In the example above, a type 'isonorm' is defined with fields 'year' and 'note' and required fields 'title' and 'number'.

- [ListFields]: The fields that are displayed in the list window and the layout of the list are defined. The definition for the list shown in Figure 4 is:

```
author : 20
title : 50
mainkey : 10
cardtype : 10
```

The field names `mainkey` and `cardtype` are used for the `BIBTEX` key and `BIBTEX` type of an entry. Following the colon, the number of characters is given that is used for displaying the field.

- [SearchFields]: The fields that are displayed in the search window are defined. With `$clear$` the fields that are displayed in a search window by default (all standard `BIBTEX` fields) are overridden. The definition for the search fields of Figure 5 is:

```
$clear$
author
title
booktitle
journal
year
```

- [SortFields]: The fields that are offered in the sort menu of the list window can be chosen. With `$clear$` the fields that are used by default (all standard `BIBTEX` fields) are overridden. A line in the [SortFields] part has the form

```
<field name>
```

or

```
<field name> : <sort order>
```

<sort order> can be `n` if the field contains a name or `d` if the field contains a date of the form `dd.mm.yyyy`.

- [UserFields]: User defined field names can be defined for certain types or for all types. A field name for <type> is defined by

```
<type> : <field name>
```

A field name for all fields is defined by

```
<type> : all
```

- [Predefines]: Data can be predefined for use in the *search window*. The field names `mainkey` and `cardtype` are used for the `BIBTEX` key and `BIBTEX` type of an entry. `allfields` defines data for the *Allfields* box of the search window. The definition for the predefined data of Figure 5 is:

```
author: Zarate
```

```
author: Liebl
```

- [LatexHeader]: A `LATEX` header is defined to be used in the `LATEX` file produced by the *Print* command.
- [LatexFooter]: A `LATEX` footer is defined to be used in the `LATEX` file produced by the *Print* command.
- [BibDir]: This section contains the directory that is initially used by the file select box.
- [StyleFile]: This section contains the name of the `BIBTEX` style that is used in the `LATEX` file produced by the *Print* command.
- [AnnoteField]: The name of the field that is used for annotations is entered. In most cases, this will be 'abstract' or 'annote'. The default name is 'annote'.
- [SortedBy]: The name of the field by which a `BIBTEX` file should be sorted by default.
- [Indent]: The format used when saving a `BIBTEX` database can be specified.

A configuration file can be loaded from within the *Services* menu of the *main window*. In this case the [Options] part is not evaluated.

The distribution of *bibview* contains an example of a configuration file. The syntax of the configuration file can be seen in this example.

3 Comparison with similar tools

In the last few years some tools have been developed for manipulating `BIBTEX` databases.

bibcard is a graphical interface to `BIBTEX` with features similar to *bibview*. Its user interface follows the OpenLook style. *bibview* provides additional facilities like printing a database and correcting syntax errors in an error window. An important advantage of *bibview* is the mechanism to define new types in a configuration file, because `BIBTEX` allows to create styles with new types. The searching and sorting facilities of *bibview* are more comfortable.

`XBIBTEX` (described in *TUGboat* 13, no. 4) is an X Window interface for inserting entries into a `BIBTEX` database. There are no features like sorting, searching or moving entries between databases.

The `lookbibtex` Perl script is intended for searching in `BIBTEX` databases. Its searching facilities are comparable to those of *bibview*.

`bibadd`, `bibsort` and `bibgrep` are tools for inserting entries, sorting `BIBTEX` databases by `BIBTEX` key and searching for entries with a given key word.

The advantage of *bibview* is that it offers the features of other tools in one single graphical user interface.

4 Limitations of *bibview*

bibview is intended for small personal databases. There may be problems with databases consisting of more than 1000 entries.

It is desirable to search in more than one database.

The consistency check should be more sophisticated and, for example, look for duplicate entries.

The algorithm for key generation is fixed. The user should be able to define his own method for key generation.

Comments in BIBTEX databases are accepted but ignored. They will be lost in the output produced by *bibview*.

5 How to Obtain *bibview*

The source for *bibview* can be obtained via anonymous ftp from `ftp.informatik.tu-muenchen.de` (current Internet address: 131.159.0.110) as `/pub/comp/typesetting/tex/bibview-1.5.tar.Z`. It must be transferred in 'binary' mode.

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Bibliography Prettyprinting and Syntax Checking

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1 Introduction

BIBTEX [18, Appendix B] is a convenient tool for solving the vexing issue of bibliography formatting. The user identifies fields of bibliography entries via field/value pairs and provides a unique citation key and a document type for each entry. A simple string substitution facility makes it easy to reuse frequently-occurring strings. A typical example looks like this:

```
@String{pub-AW =
    "Ad{\-d}i{\-s}on-Wes{\-l}ey"}

@Book{Lampport:LDP85,
  author = "Leslie Lamport",
  title = "{\LaTeX}---A Document
    Preparation System---User's
    Guide and Reference Manual",
  publisher = pub-AW,
  year = "1985",
  ISBN = "0-201-15790-X",
}
```

The T_EX file contains citations of the form `\cite{Lampport:LDP85}`, together with a `\bibliographystyle` command to choose a citation and bibliography style, and a `\bibliography` command to specify which BIBTEX files are to be used. T_EX records this information in an auxiliary file.