# BibTeX2HTML

A translator of BibTeX bibliographies into HTML

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## 1 Introduction

BibTeX2HTML is a collection of tools for producing automatically HTML documents from bibliographies written in the BibTeX format. It consists in three command line tools:

• bib2bib is a filter tool that reads one or several bibliography files, filters the entries with respect to a given criterion, and outputs the list of selected keys together with a new bibliography file containing only the selected entries;

- bibtex2html is a translator that reads a bibliography file and outputs two HTML documents that contains respectively the cited bibliography in a nice presentation, and the original BibTeX file augmented with several transparent HTML links to allow easy navigation. bibtex2html can handle any BibTeX style file, including those producing multiple bibliographies.
- aux2bib reads a .aux file as produced by LATEX and writes to standard output a BibTeX file containing exactly the BibTeX entries refereed in the .aux file.

## 2 The bibtex2html command tool

bibtex2html is a BibTeX to HTML translator. It is invocated as

bibtex2html [options] [file.bib]

where the possible options are described below and where file.bib is the name of the BibTeX file, which must have a .bib suffix. If this file is not given, then entries are input from standard input.

Then two HTML documents are created (unless option -nobibsource is selected or input is standard input, see below):

- file.html which is the bibliography in HTML format;
- file\_bib.html which contains all the entries in ASCII format.

bibtex is called on file.bib in order to produce the a LaTeX document, and then this LaTeX document is translated into an HTML document. The BibTeX file file.bib is also parsed in order to collect additional fields (abstract, url, ps, http, etc.) that will be used in the translation.

If input is standard input and option --output is not given, the first file is output to standard output, and the second is not created.

#### 2.1 Additional fields and automatic web links

The main interest of bibtex2html with respect to a traditional LaTeX to HTML translator is the use of additional fields in the BibTeX database and the automatic insertion of web links.

A link is inserted:

- at each cross-reference inside the bibliography entries;
- when the \url LaTeX macro is used in the text;
- for each BibTeX field whose name is "ftp", "http", "url", "ps", "dvi", "rtf", "pdf", "documenturl", "urlps" or "urldvi". The name of this link depends on the nature of the link:
  - it is the file suffix, whenever this suffix is .dvi, .ps, .pdf, .rtf, .txt or .html, possibly followed by a compression sufix, .gz, .Z or .zip;
  - otherwise the name of the link is either http or ftp depending on the protocol.

You can insert web link for other fields and/or specify alternative names for the links using the options -f and -nf (see below).

#### 2.1.1 Abstracts

If a BibTeX entry contains a field abstract then its contents is quoted right after the bibliography entry .

This behavior may be suppressed with the option --no-abstract.

If you want both versions with and without abstracts, use the option --both. In that case, links named "Abstract" will be inserted from the page without abstracts to the page with abstracts,

#### 2.1.2 Keywords

If a BibTeX entry contains a field keywords then its contents is displayed after the bibliography entry (and after the abstract if any).

This behavior may be suppressed with the option --no-keywords.

## 2.2 Command line options

Most of the command line options have a short version of one character (e.g. -r) and an easy-to-remember/understand long version (e.g. --reverse-sort).

### 2.2.1 General aspect of the HTML document

#### -t string, --title string

specify the title of the HTML file (default is the file name).

#### --header string

give an additional header for the HTML document.

#### --footer string

give an additional footer for the HTML document.

## -s string, --style string

use BibTeX style string (plain, alpha, etc.). Default style is plain.

## -noabstract, --no-abstract

do not print the abstracts (if any).

## -nokeywords, --no-keywords

do not print the keywords (if any).

## -both, --both

produce both pages with and without abstracts. If the BibTeX file is foo.bib then the two pages will be respectively foo.html and foo\_abstracts.html (The suffix may be different, see option --suffix). Links are inserted from the page without abstracts to the page with abstracts.

#### -nokeys, --no-keys

do not print the cite keys. Note: this option implicitly suppresses the use of HTML tables to format the entries; to enforce the use of tables, use option -use-table (passing it after option -nokeys on the command line).

#### -use-keys, --use-keys

use the cite keys from the BibTeX input file (and not the ones generated by the BibTeX style file).

#### -rawurl, --raw-url

print URLs instead of files' types.

#### -heveaurl, --hevea-url

interpret the macro \url as HeVeA's one, i.e. with two arguments, the first one being the url and the second one the text to print. The default behavior is to interpret the macro \url as the one from the package url, which has only one argument (the url itself).

#### -f field, --field field

add a web link for that BibTeX field.

## -nf field string, --named-field field string

similar to -f but specifies the way to display the link (e.g. -nf springer "At Springer's").

#### -note field, --note field

declare that a field must be treated like the abstract field, i.e. is an annotation to be displayed as a text paragraph below the entry.

## -multiple, --multiple

make a separate web page for each entry. Beware: this option produces as many HTML files as BibTeX entries!

#### -single, --single

produce a single document, inserting each BibTeX entry (the input) right after its BibTeX output

## -bg color, --background color

set the background color of the HTML file (default is none).

#### -css file, --style-sheet file

set a style sheet file for the HTML document (default is none).

#### -dl, --dl

use HTML DL lists instead of HTML tables to format entries.

## -unicode, --unicode

use Unicode entities for the following macros:

\models \curlyvee \curlywedge \bigcirc \varepsilon
\not{\models}

## -html-entities, --html-entities

use HTML entities for the following macros:

\= \Im \Leftarrow \Re \Rightarrow \aleph \ang \angle \approx
\ast \cdot \cdots \cong \copyright \cup \dagger \diamond \emptyset
\equiv \exists \forall \ge \geq \in \infty \int \land \lang
\lceil \le \leftarrow \leftrightarrow \leq \lfloor \longleftarrow
\longrightarrow \lor \lozenge \nabla \ne \neg \neq \ni \notin
\oplus \otimes \partial \perp \pm \prod \propto \rang \rceil
\rfloor \rightarrow \sim \simeq \sqrt \subset \subseteq
\sum \supset \supseteq \therefore \times \tm \to \vartheta
\vee \wedge \wp

## 2.2.2 Controlling the translation

#### -m file, --macros-from file

read the LATEX macros in the given file. Note: bibtex2html does not handle macros arguments; arguments are simply discarded.

#### -noexpand --no-expand

do not expand the abbreviation strings, leave them in the output file.

## 2.2.3 Selecting the entries

#### -citefile filename, --citefile filename

Select only keys appearing in *filename*. To be used manually or in conjonction with bib2bib.

#### -e key, --exclude key

exclude an particular entry.

#### 2.2.4 Sorting the entries

## -d, --sort-by-date

sort by date.

#### -a, --sort-as-bibtex

sort as BibTeX (usually by author).

#### -u, --unsorted

unsorted i.e. same order as in .bib file (default).

#### -r, --reverse-sort

reverse the sort.

#### --revkevs

number entries in reverse order (i.e. from n to 1 in plain style).

#### 2.2.5 Miscellaneous options

#### -nodoc, --nodoc

do not produce a full HTML document but only its body (useful to merge the HTML bibliography in a bigger HTML document).

#### -nobibsource, --nobibsource

do not produce the \_bib.html file. In that case, no "BibTeX entry" link are inserted in the HTML file.

#### -suffix string, --suffix string

give an alternate suffix string for both HTML files and links (default is .html).

## -fsuffix string, --file-suffix string

give an alternate suffix string for HTML files (default is .html).

## -lsuffix string, --link-suffix string

give an alternate suffix string for HTML links (default is .html).

## -o file, --output file

specifies the output file. If file is -, then the standard output is selected.

#### -c command, --command command

specify the BibTeX command (default is bibtex -min-crossrefs=1000). May be useful for example if you need to specify the full path of the bibtex command.

## --print-keys

print the BibTeX entries on the standard output (one per line), as selected and sorted by bibtex2html. This is useful if you want to use the selection and sorting facilities of bibtex2html in another program. Note: you may need to set also the -q option (quiet) to suppress the usual output.

#### -i, --ignore-errors

ignore BibTeX errors.

## -q, --quiet

be quiet.

## -w, --warn-error

stop at the first warning.

#### -h, --help

print a short usage and exit.

#### -v, --version

print the version and exit.

#### -noheader, --no-header

do not insert the bibtex2html command in the HTML document (default is to insert it as a comment at the beginning).

## 3 The bib2bib command line tool

bib2bib is a tool for extracting some entries from a list of bibliography files. It is invocated as bib2bib [options] file1.bib · · · filen.bib

where the possible options are described below and where  $file1.bib \cdots filen.bib$  are the names of the BibTeX files, which must have a .bib suffix. If no files at all are given on the command line, then input is taken from standard input.

The options allow to specify a filter condition to test against each references read from bib files. The result will be a new BibTeX file containing all the entries of the input files that satisfy the condition. Notice that this output file contains all the necessary informations: each string and each cross-reference needed will be also in that file.

Additionally, bib2bib may output a file containing all the keys of entries that satisfy the condition. This second file is suitable for input as option -citefile to bibtex2html.

#### 3.1 Command line options

#### -c condition

specify a condition for selecting the entries. The output will retain only the entries that satisfy this condition. If several such condition are given, then only the entries that satisfy all the conditions are selected. The syntax of conditions is given below, notice that it is better to escape shell expansions in that conditions, in other words, you should write conditions between quotes.

#### -ob filename

specify the filename where the selected entries are output. If not given, it defaults to standard output.

## -oc filename

specify the filename where the list of selected keys is output. If not given, this file is not created.

Notice that the two output files above are suitable for use with bibtex2html. A typical use would be

```
bib2bib -oc citefile -ob bibfile.bib -c condition file1.bib file2.bib ... bibtex2html -citefile citefile bibfile.bib
```

which will produce exactly the HTML file for the selected references.

## --expand

expand all abbreviations in the output file.

## --expand-xrefs

expand all crossrefs in the output file. Notice that the meaning of such an expansion is not completely obvious: it's better to let bibtex (via bibtex2html) handle the cross-references itself, depending on the style considered.

Notice that bibtex2html itself will expand the strings (by default, unless you specify the -noexpand option) but not the cross-references.

#### --no-comment

prevent generation of extra comments at beginning of output bib file.

#### --remove f

remove all occurrences of field f. This option can be used several times to remove several fields.

## --rename f1 f2

rename all occurrences of field f1 into f2. This option can be used several times to rename several fields. Beware that if an entry already has both fields f1 and f2, this will result in two fields f2, and BibTeX styles usually take only the first occurrence into account.

Example:

bib2bib --remove abstract --remove copyright --rename x-pdf url bibfile.bib

removes all abstract and copyright fields and rename all x-pdf fields into name url.

#### -s f

sorts the entries of the bibliography with respect to the given field f, which may also be **\$key** or **\$type** to refer to the key or to the entry type, as for filter conditions. It may also be **\$date**, to ask for sorting from oldest to newest, as for option -d of bibtex2html.

This option may be used several times to specify a lexicographic order, such as by author, then by type, then by date:

When sorting, the resulting bibliography will always contains the comments first, then the preambles, then the abbreviations, and finally the regular entries. Be warned that such a sort may put cross-references before entries that refer to them, so be cautious.

#### -r

reverses the sort order.

#### -q, --quiet

be quiet.

#### -w, --warn-error

stop at the first warning.

#### --php-output file

outputs the bib file as a two-dimensional array in PHP syntax, in file.

#### 3.2 Filter conditions

A filter condition is a boolean expression that is evaluated against a BibTeX entry to decide whether this entry should be selected. A condition is either:

- a comparison between two expressions, written as  $e_1$  op  $e_2$ ;
- a matching of a field name with respect to a regular expression, written as field: regexp;

- a conjunction of two conditions, written as  $c_1$  and  $c_2$  (or  $c_1$  &  $c_2$ );
- a disjunction of two conditions, written as  $c_1$  or  $c_2$  (or  $c_1 \mid c_2$ );
- a negation of a condition, written as **not** c (or ! c);
- a test of existence of a field, written as exists f (or ? f) where f is a field name;

where an expression is either:

- a string constant, written either between double quotes or single quotes;
- an integer constant;
- a field name;
- the special ident \$key which corresponds to the key of an entry.
- the special ident **\$type** which corresponds to the type of an entry (ARTICLE, INPROCEEDINGS, etc.). Notice that an entry type is always written in uppercase letters.

Comparison operators are the usual ones: =, <, >, <=, >= and <>.

The field names are any sequences of lowercase or uppercase letters (but no distinction is made between lowercase and uppercase letters).

Be careful when writing conditions in a shell command: the shell must not interpret anything in a condition, such as \$key. So usually you need to put conditions inside quote characters that forbid shell interpretation: single quotes under Unix shell, or double quotes under Microsoft Windows shell. This is why strings in conditions may be put indifferently between single or double quotes: you will use the ones which are not the ones you use to forbid shell interpretation. In examples below, we will use Unix convention, so under Windows you have to permute the use of single and double quotes.

Note that within Makefiles you have to escape the \$ character in \$key or \$type (using \$\$key and \$\$type instead, at least with GNU make).

Regular expressions must be put between single or double quotes, and must follow the GNU syntax of regular expressions, as for example in GNU Emacs. Any character other than \$\^.\*+?[] matches itself, see Table 1 for the meaning of the special characters.

Notice that if several conditions are given with option -c on the command line, then they are understood as the conjunction of them, in other words

```
bib2bib -c 'c_1' \cdots -c 'c_n' is equivalent to bib2bib -c 'c_1 and \cdots and c_n'
```

Table 2 shows a formal grammar for conditions.

#### Remarks on evaluation of conditions

• According to BibTeX conventions, entry types, keys and field names have to be considered case insensitive, that is no distinction is made between uppercase and lowercase letters. Inside bib2bib, these are always converted to uppercase, so you may take this into account when writting conditions (see below).

| •                  | matches any character except newline                       |
|--------------------|--|
| []                 | character set; ranges are denoted with -, as in [a-z]; an  |
|                    | initial ^, as in [^0-9], complements the set               |
| ^                  | matches the beginning of the string matched                |
| \$                 | matches the end of the string matched                      |
| \r                 | matches a carriage return                                  |
| \n                 | matches a linefeed   |
| \t                 | matches a tabulation                                       |
| \b                 | matches word boundaries                                    |
| ∖ddd               | matches character with ASCII code ddd in decimal           |
| \char              | quotes special character <i>char</i> among \$^.*+?[]\      |
| regexp*            | matches regexp zero, one or several times                  |
| regexp+            | matches regexp one or several times                        |
| regexp?            | matches regexp once or not at all                          |
| regexp1 \  regexp2 | alternative between two regular expressions, this operator |
|                    | has low priority against *, + and ?                        |
| \( regexp \)       | grouping regular expression                                |

Table 1: Syntax of regular expressions

```
\begin{array}{lll} Cond & \rightarrow & Cond \text{ and } Cond \mid Cond \mid \text{not } Cond \mid \text{ exists } Id \\ Cond & \rightarrow & Cond \& Cond \mid Cond \mid ! Cond \mid ? Id \\ & \mid Expr \ Comp \ Expr \mid Expr : String \mid ( \ Cond \ ) \\ Comp & \rightarrow & = \mid > \mid < \mid > = \mid < \mid < \rangle \\ Expr & \rightarrow & Id \mid String \mid Int \mid \&ey \mid \&eype \\ & Id & \rightarrow & [a-zA-Z]^+ \\ String & \rightarrow & "([^"\] \mid \" \mid \")^*" \mid '([^"\] \mid \" \mid \")^*, \\ Integer & \rightarrow & [0-9]^+ \end{array}
```

Table 2: Syntax of conditions

- On the other hand, case matters when comparing strings, or matching them against regular expressions. For example, title: "Computer" may return true if the title contains the word Computer with a capital letter, whereas title: "computer" would return false.
- A consequence of the two previous remarks, is that if you want for example to check equality of the entry type and a string value, put the value in uppercase, as for example \$type = "INPROCEEDINGS", otherwise the condition would be always false.
- When performing a comparison with an non-existent field, the result is always false; beware that this means that for example not (f = "value") and f <> "value" are not equivalent: for an entry that does not have a field f, the first condition is true whereas the second is false.
- As usual, not has higher priority than and, which itself has higher priority than or. and and or associate to the left.

- Comparison using >, <, >= and <= may only be used between integer values. In any other case, a warning is displayed and the result is false.
- There is a special handling for strings containing LaTeX accented letters (or for backward compatibility, ISO-Latin1 accented characters): each variant of writing such letters are considered the same, and equivalent to their HTML entity form, for example strings "Filli\^atre", "Filli\^a\tre", "Filli\^a\tre" and "Filli\textre" are considered identical and indeed equal to "Filli\textre". Note that when using such a string as a regular expression, there is no need to escape the backslash, since interpretation of LaTeX accenting commands is made before interpretation into a regexp. Using HTML entities for matching accented names is thus considered as the safest method.

## 3.3 Examples

Here are some examples to help you writing the filter conditions you are interested in.

## 3.3.1 Selecting entries of a given year

The following command reads input files biblio1.bib and biblio2.bib, and select only entries that appeared in 1999:

```
bib2bib -oc cite1999 -ob 1999.bib -c 'year=1999' biblio1.bib biblio2.bib
```

The resulting file cite1999 contains the list of keys selected. You can then produce the HTML file by

```
bibtex2html -citefile cite1999 1999.bib
```

You may also select references appeared after and/or before a given year. For example, references after 1997:

```
bib2bib -oc citeaft1997 -ob aft1997.bib -c 'year>1997' biblio.bib or between 1990 and 1995:
```

```
bib2bib -oc cite90-95 -ob 90-95.bib -c 'year>=1990 and year<=1995' biblio.bib
```

#### 3.3.2 Selecting references of a given author

The following command reads input files biblio.bib and select only entries whose (co)author is Donald Knuth:

```
bib2bib -oc knuth-citations -ob knuth.bib -c 'author : "Knuth", biblio.bib
```

More complicated, if you would like to have only the references whose author is Knuth only, you may try

```
bib2bib -oc knuth-citations -ob knuth.bib \
  -c 'author : "^\(Donald \(E. \)?Knuth\|Knuth, Donald \(E. \)?\)$"' biblio.bib
or equivalently but missing the possible "E.":
bib2bib -oc knuth-citations -ob knuth.bib -c 'author = "Donald Knuth"
or author = "Knuth, Donald"' biblio.bib
```

#### 3.3.3 Other examples

Any boolean combination of comparison and/or matching are possible. For example, the following command extract the references that appeared since 1995 and have lambda-calculus in their title, with anything between "lambda" and "calculus":

bib2bib -oc lambda -c 'year >= 1995 and title : "lambda.\*calculus"' biblio.bib for example, it will select a title containing \$\lambda\$-calculus.

## 3.4 Note on duplicates entries

bib2bib has the effect of merging several bib files into a single one. This process may result in duplicate entries in the resulting files, which is considered as erroneous by bibtex. Of course, this is not really a bug of bib2bib since it is of your own to take care not having entries with the same key.

However, there are two particular cases when this occurs naturally: when two bib files share common abbreviations, or when they share common cross-references.

In order to make bib2bib behaves correctly in such a case, it is designed as follows: for repeated abbrevs, the first abbrev is kept and the others are ignored, and for repeated regular entries, the last entry is kept and the others are ignored. With this behaviour, everything works well as soon as repeated abbrevs are really duplicate abbrevs of the same sentence, and repeated keys are really duplicate entries.

## 4 The aux2bib command line tool

 $\verb"aux2bib"$  is a tool extracting the BibTeX references from a .aux file (as produced by LATEX) and building the corresponding BibTeX file. It is invocated as

aux2bib file.aux

The BibTeX file is written on the standard output.

## 5 Frequently Asked Questions

#### 1. How may I tell bibtex2html to expand cross-references?

By default, all entries of the input BibTeX file are translated into HTML, including cross-references. Since the latter are there, bibtex will never expand them. If you want them to be expanded, you have to tell bibtex2html that crossref entries need not be in the resulting file. To do that you have to use the option -citefile to give the exact list of entries you want to see. If a cross-reference is not in that list, then its fields will be expanded into all entries that cross-refers to it. (Technically, this work because bibtex2html calls bibtex with option -min-crossrefs=1000 by default.)

#### 2. When running

bib2bib -oc knuth-citations -ob knuth.bib -c 'author : "Knuth"' biblio.bib

I get "Lexical error in condition: Unterminated string". What's going wrong? You are probably running bib2bib under Microsoft Windows, hence you should permute the use of single quotes and double quotes, as explained in Section 3.2:

bib2bib -oc knuth-citations -ob knuth.bib -c "author : 'Knuth'" biblio.bib