The ltb2bib package

Laurent Bartholdi

`laurent.bartholdi@gmail.com`

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1 Introduction

The amsrefs package is a wonderful, pure-LaTeX implementation of bibliographical databases. In a format close to BibTeX's, one writes entries in database files (say `ltbsource.ltb`); LaTeX extracts from these files the entries required for the document (say `myarticle.tex`), writes them to myarticle.bbl and incorporates them in the document's bibliography section. The file `myarticle.bbl` can be sent to the publisher along with `myarticle.tex`, or can be directly incorporated into it.

It happens, sometimes, that one needs the bibliographical entries in BibTeX format:

- Some publishers (Taylor & Francis, for example) refuse to process amsrefs files, and require the authors to manually retype them;

- amsrefs cannot sort entries, so it may be useful to convert a amsrefs database to BibTeX format to feed them to bibliography management software;

- emacs's RefTeX mode, for example, requires the database in BibTeX format.

For these purposes, I have written this short LaTeX package that converts an amsrefs bibliography file to BibTeX.

Note that the inverse operation, namely producing a amsrefs bibliographical database out of a BibTeX one, is implemented by the `amsxport` option of amsrefs.

2 Usage

The only command supplied by this package is `\writebib`. It is typically used in a driver-document `doltb2bib.tex` such as the following:

```
\documentclass{article}
\usepackage{ltb2bib}
\begin{document}
\writebib{ltbsource}{bibdest}
\end{document}
```

which, when invoked with 'latex doltb2bib', produces from `ltbsource.ltb` the file `bibdest.bib`.

This command takes two arguments: an input and an output filename. If the input filename is given without extension, then the actual filename may have the extension `.ltb`; and similarly the output will be written to a file with the `.bib` extension added.

This command reads all `\bib` entries from the input file, and writes corresponding BibTeX entries to the output file. It produces no output.

3   Implementation

```
1 \ProvidesPackage{ltb2bib}[2017/04/03 v0.01]
2 \@ifundefined{thebibliography}{\newenvironment{thebibliography}{}{}}{}
3 \@ifundefined{footnotesize}{\let\footnotesize\relax}{}
4 \RequirePackage{amsrefs}
5 \RequirePackage{xpatch}
6 \newwrite\@bibfile
```

make a copy of protected@iwrite, and patch it to add `\immediate`

```
7 \let\protected@iwrite\protected@write
8 \xpatchcmd{\protected@iwrite}{\write}{\immediate\write}{}{}
9 \def\bib@write#1{\protected@iwrite\@bibfile{\let~\relax\def\ndash{--}}{#1}}
10 \gdef\space{ }
11 \gdef\spsp{\space\space}
```

treat the multiple entries to be coalesced, with `\name` prepended to names

\@author

```
12 \def\@author#1{\toks0={}\toks1={}%
13   \def\name##1{\toks0=\expandafter{\the\toks0\the\toks1{##1}}\toks1={\spsp and }}%
14   #1
15   \bib@write{\spsp author={\the\toks0},}%
16 }
```

\@editor

```
17 \def\@editor#1{\toks0={}\toks1={}%
18   \def\name##1{\toks0=\expandafter{\the\toks0\the\toks1{##1}}\toks1={\spsp and }}%
19   #1
20   \bib@write{\spsp editor={\the\toks0},}%
21 }
```

\@translator

```
22 \def\@translator#1{\toks0={}\toks1={}%
23   \def\name##1{\toks0=\expandafter{\the\toks0\the\toks1{##1}}\toks1={\spsp and }}%
24   #1
25   \bib@write{\spsp translator={\the\toks0},}%
26 }
```

Keys which may appear multiply, but which we don't coalesce

```
27 \def\@contribution#1{\bib@write{\spsp contribution=\@charlb#1\@charrb,}}
28 \def\@isbn#1{\def\fld@elt##1{\bib@write{\spsp isbn=\@charlb##1\@charrb,}}#1}
29 \def\@issn#1{\def\fld@elt##1{\bib@write{\spsp issn=\@charlb##1\@charrb,}}#1}
30 \def\@review#1{\def\MR##1{\let\MR\relax\bib@write{\spsp review={\MR{##1}},}}#1}
31 \def\@partial#1{\bib@write{\spsp partial=\@charlb#1\@charrb,}}
```

Keys which translate directly to simple keys

```
32 \def\@accessdate#1{\bib@write{\spsp accessdate=\@charlb#1\@charrb,}}
33 \def\@address#1{\bib@write{\spsp address=\@charlb#1\@charrb,}}
34 \def\@book#1{\bib@write{\spsp book=\@charlb#1\@charrb,}}
35 \def\@booktitle#1{\bib@write{\spsp booktitle=\@charlb#1\@charrb,}}
36 \def\@conference#1{\bib@write{\spsp conference=\@charlb#1\@charrb,}}
37 \def\@copula#1{\bib@write{\spsp copula=\@charlb#1\@charrb,}}
38 \def\@date#1{\bib@write{\spsp year=\@charlb#1\@charrb,}}
39 \def\@doi#1{\bib@write{\spsp doi=\@charlb#1\@charrb,}}
40 \def\@edition#1{\bib@write{\spsp edition=\@charlb#1\@charrb,}}
41 \def\@eprint#1{\bib@write{\spsp eprint=\@charlb#1\@charrb,}}
42 \def\@fulljournal#1{\bib@write{\spsp fulljournal=\@charlb#1\@charrb,}}
43 \def\@hyphenation#1{\bib@write{\spsp hyphenation=\@charlb#1\@charrb,}}
44 \def\@institution#1{\bib@write{\spsp institution=\@charlb#1\@charrb,}}
45 \def\@journal#1{\bib@write{\spsp journal=\@charlb#1\@charrb,}}
46 \def\@label#1{\bib@write{\spsp label=\@charlb#1\@charrb,}}
47 \def\@language#1{\bib@write{\spsp language=\@charlb#1\@charrb,}}
48 \def\@name#1{\bib@write{\spsp name=\@charlb#1\@charrb,}}
49 \def\@note#1{\bib@write{\spsp note=\@charlb#1\@charrb,}}
50 \def\@number#1{\bib@write{\spsp number=\@charlb#1\@charrb,}}
51 \def\@organization#1{\bib@write{\spsp organization=\@charlb#1\@charrb,}}
52 \def\@pages#1{\bib@write{\spsp pages=\@charlb#1\@charrb,}}
53 \def\@part#1{\bib@write{\spsp part=\@charlb#1\@charrb,}}
54 \def\@place#1{\bib@write{\spsp place=\@charlb#1\@charrb,}}
55 \def\@publisher#1{\bib@write{\spsp publisher=\@charlb#1\@charrb,}}
56 \def\@reprint#1{\bib@write{\spsp reprint=\@charlb#1\@charrb,}}
57 \def\@school#1{\bib@write{\spsp school=\@charlb#1\@charrb,}}
58 \def\@series#1{\bib@write{\spsp series=\@charlb#1\@charrb,}}
59 \def\@setup#1{\bib@write{\spsp setup=\@charlb#1\@charrb,}}
60 \def\@status#1{\bib@write{\spsp status=\@charlb#1\@charrb,}}
61 \def\@subtitle#1{\bib@write{\spsp subtitle=\@charlb#1\@charrb,}}
62 \def\@title#1{\bib@write{\spsp title=\@charlb#1\@charrb,}}
63 \def\@translation#1{\bib@write{\spsp translation=\@charlb#1\@charrb,}}
64 \def\@type#1{\bib@write{\spsp type=\@charlb#1\@charrb,}}
65 \def\@url#1{\bib@write{\spsp url=\@charlb#1\@charrb,}}
66 \def\@volume#1{\bib@write{\spsp volume=\@charlb#1\@charrb,}}
67 \def\@xref#1{\bib@write{\spsp xref=\@charlb#1\@charrb,}}
68 \def\@year#1{\bib@write{\spsp year=\@charlb#1\@charrb,}}
```

We create a bib specification to output the data in BibTeX format, rather than as a formatted bibliography.

```
\make@bibspec
```

```
69 \def\make@bibspec#1#2{\BibSpec{#1}{%
70     +{}{\bib@write{@#2\@charlb\current@citekey,}}{transition}
71     +{}{\@author}        {author}
72     +{}{\@editor}        {editor}
73     +{}{\@translator}    {translator}
74     +{}{\@contribution}  {contribution}
75     +{}{\@isbn}          {isbn}
76     +{}{\@issn}          {issn}
77     +{}{\@review}        {review}
78     +{}{\@partial}       {partial}
79     +{}{\@accessdate}    {accessdate}
80     +{}{\@address}       {address}
81     +{}{\@book}          {book}
82     +{}{\@booktitle}     {booktitle}
83     +{}{\@conference}    {conference}
84     +{}{\@copula}        {copula}
85     +{}{\@date}          {date}
86     +{}{\@doi}           {doi}
87     +{}{\@edition}       {edition}
88     +{}{\@eprint}        {eprint}
89     +{}{\@fulljournal}   {fulljournal}
90     +{}{\@hyphenation}   {hyphenation}
91     +{}{\@institution}   {institution}
92     +{}{\@journal}       {journal}
93     +{}{\@label}         {label}
94     +{}{\@language}      {language}
95     +{}{\@name}          {name}
96     +{}{\@note}          {note}
97     +{}{\@number}        {number}
98     +{}{\@organization}  {organization}
99     +{}{\@pages}         {pages}
100    +{}{\@part}          {part}
101    +{}{\@place}         {place}
102    +{}{\@publisher}     {publisher}
103    +{}{\@reprint}       {reprint}
104    +{}{\@school}        {school}
105    +{}{\@series}        {series}
106    +{}{\@setup}         {setup}
107    +{}{\@status}        {status}
108    +{}{\@subtitle}      {subtitle}
109    +{}{\@title}         {title}
110    +{}{\@translation}   {translation}
111    +{}{\@type}          {type}
112    +{}{\@url}           {url}
113    +{}{\@volume}        {volume}
114    +{}{\@xref}          {xref}
115    +{}{\@year}          {year}
116  +{}{\bib@write{\@charrb^^J}}{transition}
117 }}
```

amsrefs treats bib entries as items in an enumeration. We'll just make sure nothing is produced in the output, and set the paragraph skips between items to be 0.

```
118 \newskip\ltb@baselineskip
119 \newskip\ltb@parskip
```

The main command: just run `bibselect` on the input file, after having set up the desired bibspec.

\writebib

```
120 \newcommand\writebib[2]{%
121   \immediate\openout\@bibfile=#2.bib
122   \bib@write{\@percentchar\space Converted bibliography from #1[.ltb] to #2.bib}%
123   \typeout{Writing bibliography to #2.bib...}%
124   \make@bibspec{article}{Article}%
125   \make@bibspec{partial}{InCollection}%
126   \make@bibspec{contribution}{InCollection}%
127   \make@bibspec{book}{Book}%
128   \make@bibspec{collection.article}{InCollection}%
129   \make@bibspec{conference}{Conference}%
130   \make@bibspec{innerbook}{InBook}%
131   \make@bibspec{report}{TechReport}%
132   \make@bibspec{thesis}{PhdThesis}%
133   \make@bibspec{webpage}{Misc}
```

Set paragraph separation to 0, so that all `\items` produced by amsrefs appear superimposed in the output:

```
134   \ltb@parskip=\parskip
135   \ltb@baselineskip=\baselineskip
136   \let\ltb@item=\item
137   \parskip=0pt
138   \baselineskip=0pt
139   \let\item=\relax
```

`\fld@elt` is defined to be "?" by amsrefs. Sometimes this character gets shipped out; we simply remove it by redefining `\fld@elt`.

```
140   \let\fld@elt=\relax
141   \bibselect*{#1}%
142   \bib@write{\@percentchar\space End of #2.bib}%
143   \immediate\closeout\@bibfile
144   \parskip=\ltb@parskip
145   \baselineskip=\ltb@baselineskip
146   \let\item=\ltb@item
147 }
```

Index

Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.

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