

The `amsmidx` package

American Mathematical Society
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1 Introduction

This package provides the facility to produce multiple indexes with $\mathcal{A}\mathcal{M}\mathcal{S}$ - $\mathcal{L}\mathcal{A}\mathcal{T}\mathcal{E}\mathcal{X}$ document classes (particularly `amsbook` and the AMS author packages for books), superseding the built-in index facility which can accommodate only one index. This may in the future be incorporated as an option into the $\mathcal{A}\mathcal{M}\mathcal{S}$ - $\mathcal{L}\mathcal{A}\mathcal{T}\mathcal{E}\mathcal{X}$ document classes.

This package is based on `multind.sty` by F.W. Long.

Standard file identification.

```
1 \NeedsTeXFormat{LaTeX2e}[1995/06/01]
2 \ProvidesPackage{amsmidx}[2004/08/03 v2.01 multiple indexes for AMS classes]
```

2 User instructions

In the preamble, invoke `\makeindex` with a file name to provide as many indexes as desired:

```
\makeindex{filename-a}
\makeindex{filename-b}
```

This will initiate the creation of `filename-a.idx` etc.

In the body of the text, use the `\index` command with two arguments

```
\index{filename-a}{index term}
```

as appropriate to populate the `.idx` files.

In the `\backmatter` segment of the driver file, insert the `\Printindex` command to print the indexes; the second argument gives the title to be printed at the top of the index:

```
\Printindex{filename-a}{First Index}
\Printindex{filename-b}{Second Index}
```

On the first pass, the `.idx` files will be created. Process each `.idx` file with *MakeIndex* to generate an `.ind` file, which will then be read in by `\Printindex`. Whenever any page references change, be sure to run *MakeIndex* again, and process the entire job with $\mathcal{L}\mathcal{A}\mathcal{T}\mathcal{E}\mathcal{X}$ once more to get the correct page references in the indexes.

To include a paragraph of comments below the index title, insert the text as an `\indexcomment` before the relevant `\Printindex`:

```
\indexcomment{Text of comments}
\Printindex{...}{...}
```

The `\indexcomment` text will be cleared after use.

3 Implementation

<code>makeindex</code>	<p>Redefine <code>\makeindex</code> to create a new <code>.idx</code> file with the name provided by argument #1.</p> <pre> 3 \renewcommand{\makeindex}[1]{% 4 \begingroup 5 \makeatletter 6 \if@filesw \expandafter\newwrite\csname #1@idxfile\endcsname 7 \expandafter\immediate\openout \csname #1@idxfile\endcsname #1.idx\relax 8 \typeout{Writing index file #1.idx }\fi 9 \endgroup}</pre>
<code>index</code>	<p>Redefine <code>\index</code> to specify into which file/index the term is to be placed. Argument #1 identifies the file, #2 provides the text of the term to be indexed.</p> <pre> 10 \renewcommand{\index}[1]{% 11 \@bsphack 12 \begingroup 13 \def\protect##1{\string##1\space}\@sanitize\@wrindex{#1}}</pre>
<code>@wrindex</code>	<p><code>\@wrindex</code> checks to make sure that the requested file is available, and writes an entry into the file or emits an error message.</p> <pre> 14 \renewcommand{\@wrindex}[2]{% 15 \let\thepage\relax 16 \xdef\@gtempa{% 17 \ifundefined{#1@idxfile}{% 18 \PackageError{\@packagename}{% 19 The requested file, #1@idxfile.idx, does not exist;\MessageBreak 20 index term #2 will not be be written out.% 21 }% 22 }{% 23 \expandafter\write\csname #1@idxfile\endcsname 24 {\string\indexentry{#2}{\thepage}}% 25 }% 26 }% 27 \endgroup\@gtempa 28 \if@nobreak \ifvmode\nobreak\fi\fi 29 \@esphack 30 }</pre>
<code>printindex</code> <code>Printindex</code>	<p>Redefine <code>\printindex</code> to specify the file to be included; provide an alternate command <code>\Printindex</code> that specifies both the file and the index title to be printed. Argument #1 identifies the file, #2 provides the title. Also modify some formatting commands to improve the appearance of index entries, especially long ones in the presence of three index levels.</p> <pre> 31 \renewcommand{\printindex}[1]{\@input{#1.ind}} 32 \newcommand{\Printindex}[2]{% 33 \begingroup 34 \cleardoublepage 35 \def\indexname{#2}% 36 \raggedright 37 \hyphenpenalty=10000 38 \renewcommand{\seename}{see-also} 39 \renewcommand{\subitem}{\par\hangindent 3em\hspace*{1em}} 40 \@input{#1.ind}% 41 \endgroup 42 }</pre>
<code>indexcomment</code> <code>indexchap</code>	<p>Format comments in a block somewhat narrower than the full page width, and redefine <code>\indexchap</code> to insert the block below the title, before starting the</p>

two-column index. Clear out `\indexcomment` after use.

```

43 \newdimen\@indexcommentwidth
44 \@indexcommentwidth=\textwidth
45 \ifdim\@indexcommentwidth > 26pc
46   \advance\@indexcommentwidth-6pc
47 \else
48   \advance\@indexcommentwidth-4pc
49 \fi
50 \newcommand{\indexcomment}[1]{%
51   \def\theindexcomment{%
52     \vskip\baselineskip
53     \parbox[t]{\@indexcommentwidth}{\normalsize\mdseries#1}%
54   }%
55 }
56 \let\theindexcomment\@empty
57 \renewcommand{\indexchap}[1]{%
58   \global\topskip 7.5pc\relax
59   \twocolumn[\fontsize{\@xivpt}{18}%
60     \vskip\topskip\vskip-\baselineskip\hbox{}% adjust top space
61     \bfseries\centering #1\par
62     \ifx\theindexcomment\@empty
63       \else \theindexcomment
64     \global\let\theindexcomment\@empty
65   \fi
66   ]%
67   \global\topskip 34\p@
68 }
```

The usual `\endinput` to ensure that random garbage at the end of the file doesn't get copied by `docstrip`.

```
69 \endinput
```

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.

Symbols	C	<code>\indexchap</code> ... <i>2, <u>43</u>, 57</i>
<code>.idx</code> <i>1, 1, 1, 2</i>	<code>\centering</code> <i>61</i>	<code>\indexcomment</code>
<code>.ind</code> <i>1</i>	<code>\cleardoublepage</code> .. <i>34</i>	... <i>1, 1, 3, <u>43</u>, 50</i>
<code>\@gtempa</code> <i>16, 27</i>	D	<code>\indexentry</code> <i>24</i>
<code>\@indexcommentwidth</code>	<code>docstrip</code> <i>3</i>	<code>\indexname</code> <i>35</i>
..... <i>43,</i>	E	M
<i>44, 45, 46, 48, 53</i>	<code>\endinput</code> <i>3</i>	<code>\makeindex</code> .. <i>1, 2, <u>3</u>, 3</i>
<code>\@packagename</code> <i>18</i>	F	<code>\mdseries</code> <i>53</i>
<code>\@sanitize</code> <i>13</i>	<code>filename-a.idx</code> <i>1</i>	<code>\MessageBreak</code> <i>19</i>
<code>\@wrindex</code> . <i>2, 13, <u>14</u>, 14</i>	<code>\fontsize</code> <i>59</i>	<code>multind.sty</code> package . <i>1</i>
<code>\@xivpt</code> <i>59</i>	H	N
A	<code>\hbox</code> <i>60</i>	<code>\NeedsTeXFormat</code> <i>1</i>
<code>amsbook</code> <i>1</i>	<code>\hspace</code> <i>39</i>	<code>\newdimen</code> <i>43</i>
<code>AMSMIDX</code> package <i>2</i>	<code>\hyphenpenalty</code> <i>37</i>	<code>\normalsize</code> <i>53</i>
<code>amsmidx</code> package <i>1</i>	I	P
B	<code>\index</code> <i>1, 2, <u>10</u>, 10</i>	<code>\PackageError</code> <i>18</i>
<code>\backmatter</code> <i>1</i>		<code>\parbox</code> <i>53</i>
<code>\bfseries</code> <i>61</i>		<code>\Printindex</code> <i>1</i>

\Printindex		R	T
... 1 , 1 , 2 , 31 , 32	\raggedright	36	\textwidth
			44
			\theindexcomment ..
\printindex .. 2 , 31 , 31	S		.. 51 , 56 , 62 , 63 , 64
	\seename	38	\topskip 58 , 60 , 67
\ProvidesPackage ... 2	\subitem	39	\typeout
			8