

The `amsmidx` package

American Mathematical Society
Barbara Beeton

Version 2.02, 2007/09/25

1 Introduction

This package provides the facility to produce multiple indexes with \mathcal{AMS} - \LaTeX 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{AMS} - \LaTeX 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}[2007/09/25 v2.02 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 \LaTeX 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

- `\makeindex` Redefine `\makeindex` to create a new `.idx` file with the name provided by argument #1.
- ```

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}

```
- `\index` Redefine `\index` 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.
- ```

10 \renewcommand{\index}[1]{%
11   \@sphack
12   \begingroup
13     \def\protect##1{\string##1\space}\@sanitize\@wrindex{#1}}

```
- `\@wrindex` `\@wrindex` checks to make sure that the requested file is available, and writes an entry into the file or emits an error message.
- ```

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 written out.%
21 }%
22 }%
23 \expandafter\write\csname #1@idxfile\endcsname
24 {\string\indexentry{#2}{\thepage}}%
25 }%
26 }%
27 \endgroup\@gtempa
28 \if@nobeak \ifvmode\nobeak\fi\fi
29 \@esphack
30 }

```
- `\printindex` Redefine `\printindex` to specify the file to be included; provide an alternate command `\Printindex` 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.
- ```

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 }

```

`\indexcomment` Format comments in a block somewhat narrower than the full page width, and
`\indexchap` redefine `\indexchap` to insert the block below the title, before starting the 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 *italics* 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	<code>\bfseries</code> 61	<code>\hyphenpenalty</code> 37
<code>.idx</code> <i>1, 1, 1, 2</i>		
<code>.ind</code> <i>1</i>	C	I
<code>\@gtempa</code> <i>16, 27</i>	<code>\centering</code> 61	<code>\index</code> <i>1, 2, 10</i>
<code>\@indexcommentwidth</code>	<code>\cleardoublepage</code> . . 34	<code>\indexchap</code> <i>3, 43</i>
. 43,	D	<code>\indexcomment</code> <i>1, 1, 3, 43</i>
<i>44, 45, 46, 48, 53</i>	<code>docstrip</code> <i>3</i>	<code>\indexentry</code> 24
<code>\@packagename</code> 18	E	<code>\indexname</code> 35
<code>\@sanitize</code> 13	<code>\endinput</code> <i>3</i>	M
<code>\@wrindex</code> <i>2, 13, 14</i>	F	<code>\makeindex</code> <i>1, 2, 3</i>
<code>\@xivpt</code> 59	<code>filename-a.idx</code> 1	<code>\mdseries</code> 53
A	<code>\fontsize</code> 59	<code>\MessageBreak</code> 19
<code>amsbook</code> <i>1</i>	H	<code>multind.sty</code> package . . 1
<code>AMSMIDX</code> package <i>2</i>	<code>\hbox</code> 60	N
<code>amsmidx</code> package <i>1</i>	<code>\hspace</code> 39	<code>\NeedsTeXFormat</code> 1
B		<code>\newdimen</code> 43
<code>\backmatter</code> <i>1</i>		

<code>\normalsize</code>	53	<code>\ProvidesPackage</code> . . .	2	T	
				<code>\textwidth</code>	44
		P		R	
<code>\PackageError</code>	18	<code>\raggedright</code>	36	<code>\theindexcomment</code> .	
<code>\parbox</code>	53			. 51, 56, 62, 63, 64	
<code>\Printindex</code>	1	S		<code>\topskip</code> . . .	58, 60, 67
<code>\Printindex</code> . 1, 1, 2, <u>31</u>		<code>\seename</code>	38	<code>\typeout</code>	8
<code>\printindex</code>	2, <u>31</u>	<code>\subitem</code>	39		