The `amsmidx` package

American Mathematical Society
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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.

```
\NeedsTeXFormat{LaTeX2e}[1995/06/01]
\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 `\Printendex` 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.

```
\renewcommand{\makeindex}[1]{%
  \begingroup
    \makeatletter
    \if@filesw \expandafter\newwrite\csname #1@idxfile\endcsname
    \expandafter\immediate\openout \csname #1@idxfile\endcsname #1.idx\relax
    \typeout{Writing index file #1.idx }\fi
  \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.

```
\renewcommand{\index}[1]{%
  \@bsphack
  \begingroup
    \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.

```
\renewcommand{\@wrindex}[2]{%
  \let\thepage\relax
  \xdef\@gtempa{%
    \@ifundefined{#1@idxfile}{%
      \PackageError{\@packagename}{%
        The requested file, #1@idxfile.idx, does not exist;\MessageBreak
        index term #2 will not be be written out.%
      }%
    }{%
      \expandafter\write\csname #1@idxfile\endcsname
        {\string\indexentry{#2}{\thepage}}%
    }%
  }%
  \endgroup\@gtempa
  \if@nobreak \ifvmode\nobreak\fi\fi
  \@esphack
  }
```

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

```
\renewcommand{\printindex}[1]{\@input{#1.ind}}
\newcommand{\Printindex}[2]{%
  \begingroup
    \cleardoublepage
    \def\indexname{#2}%
    \raggedright
    \hyphenpenalty=10000
    \renewcommand{\seename}{see~also}
    \renewcommand{\subitem}{\par\hangindent 3em\hspace*{1em}}
    \@input{#1.ind}%
  \endgroup
  }
```

\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.

```
\newdimen\@indexcommentwidth
\@indexcommentwidth=\textwidth
\ifdim\@indexcommentwidth > 26pc
  \advance\@indexcommentwidth-6pc
\else
  \advance\@indexcommentwidth-4pc
\fi
\newcommand{\indexcomment}[1]{%
  \def\theindexcomment{%
    \vskip\baselineskip
    \parbox[t]{\@indexcommentwidth}{\normalsize\mdseries#1}%
    }%
  }
\let\theindexcomment\@empty
\renewcommand{\indexchap}[1]{%
  \global\topskip 7.5pc\relax
  \twocolumn[\fontsize{\@xivpt}{18}%
    \vskip\topskip\vskip-\baselineskip\hbox{}% adjust top space
    \bfseries\centering #1\par
    \ifx\theindexcomment\@empty
    \else \theindexcomment
      \global\let\theindexcomment\@empty
    \fi
    ]%
  \global\topskip 34\p@
}
```

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

```
\endinput
```