The amsldoc and amsdtx document classes

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Contents

1 Introduction 1
2 Implementation 1
3 Indexing primitives 2
4 amsldoc style modifications for sectioning commands 8
5 amsdtx style modifications for sectioning commands 10
6 Float placement parameters 12

1 Introduction

This file is the source for two documentclasses, amsldoc (used for the $\mathcal{AMS}$-LaTeX user's guide) and amsdtx (used for printing AMS .dtx files). The generic book class is used as a base, but the amsdtx class is modified to serve as an article-type class. This affects the form of documentation files mainly in the use of \maketitle and \chapter.

Standard starting pieces. (Note: the reason each \ProvidesClass command is placed on a line by itself, with separate begin and end guards for docstripping, is to make automatic update of file date and version slightly easier and more robust.)

```
\NeedsTeXFormat{LaTeX2e}% LaTeX 2.09 can't be used (nor non-LaTeX)
[1995/06/01]% LaTeX date must be June 1995 or later
⟨*amsldoc⟩
\ProvidesClass{amsldoc}[2004/08/06 v2.06]
⟨/amsldoc⟩
⟨*amsdtx⟩
\ProvidesClass{amsdtx}[2004/08/06 v2.06]
⟨/amsdtx⟩
```

2 Implementation

Start with the generic book class as a base.

```
\DeclareOption*{\PassOptionsToClass{\CurrentOption}{book}}
\ProcessOptions
\LoadClass{book}
\IfFileExists{url.sty}{%
    \RequirePackage{url}\relax
    \@gobble
}{%
    \@firstofone
}
{
    \DeclareRobustCommand{\url}[1]{%
        \def\@tempa{#1}%
```

Table 1. Features of the amsldoc and amsdtx classes

Command Name	Purpose
\cn	To print a user command name: \cn{title}; leading backslash can be optionally included for control symbols: \cn{\%}. The \cn command works properly even in macro arguments (compare to, e.g., \verb'\newif'). But beware of a fragile control symbol (are there any?) in a moving argument.
\cs	'Control sequence': to print an internal command name, not intended for the end user
\env	To print an environment name: \env{table}
\pkg	To print a package name: \pkg{eufrak}
\cls	To print a class name: \cls{book}
\opt	To print the name of a class or package option: \opt{twocolumn}
\bst	To print the name of a BibTEX style \bst{amsalpha}
\fn	To print a file name or font name: \fn{T1enc.def}, \fn{cmsy10}
\fnt	To print a font name: \fn{cmsy10}
\cnt	To print a counter name: \fn{topnumber}
\qc	To quote a single character: \qc{\%}; this works properly for special characters, even in macro arguments, unlike e.g., \verb'%'
\latex/ etc.	Convenient forms of \LaTeX, \TeX, \BibTeX, etc. that are easier to type and have a trailing slash to eliminate the following-space problem (without needing different markup in different contexts)

```
        \texttt{\urlsetup $\expandafter\strip@prefix\meaning\@tempa$}%
    }%
    \def\urlsetup{%
        \check@mathfonts \textfont\@ne\the\font \textfont\z@\the\font
        \urlfix +\urlfix\=\urlfix\:\urlfix\-\urlfix\.\urlfix\,\urlfix\;%
        \urlbreak\&\urlbreak\/\urlbreak\?%
    }%
    \def\urlbreak#1{%
        \mathcode`#1="8000
        \begingroup \lccode`\~=`#1 \lowercase{\endgroup \edef~}%
        {\mathchar\number`#1\penalty\hyphenpenalty}%
    }%
    \def\urlfix#1{%
        \mathcode`#1=`#1\relax
    }%
}
\providecommand{\qq}[1]{\textquotedblleft#1\/\textquotedblright}
\providecommand{\mdash}{\textemdash\penalty\exhyphenpenalty}
\providecommand{\ndash}{\textendash\penalty\exhyphenpenalty}
\let\@xp\expandafter
```

3 Indexing primitives

Unlike amsdtx, amsldoc doesn't load the doc package, so we need to provide the following logical names. The values are consistent with makeindex's default

conventions.

```
⟨*amsldoc⟩
\def\actualchar{@}
\def\quotechar{"}
\def\levelchar{!}
\def\encapchar{|}
\def\verbatimchar{+}
```

We also need the `\ifcodeline@index` switch.

```
\newif\ifcodeline@index
⟨/amsldoc⟩
```

`\autoindex` When generating a codeline index, this encapsulates the page number in italics.

```
\newcommand*{\autoindex}[1]{%
    \index{#1\ifcodeline@index\encapchar usage\fi}%
}
```

`\ntt` To avoid font substitution warnings we make the tt font always print in the normal weight and shape.

```
\newcommand{\ntt}{\normalfont\ttfamily}
```

`\indexcs` Index a control sequence without printing it. Note non-long. The `\@nobslash` strips off an optional leading backslash before passing the control sequence name to `\@indexcs`. This means that `\indexcs{\cs}` and `\indexcs{cs}` produce the same index entry.

```
\newcommand*{\indexcs}[1]{%
    \@xp\@xp\@xp\@indexcs\@xp\@nobslash\string#1\@nil
}
```

`\@indexcs` Given `cs` as an argument, this writes something like `cs@\verb"*+\cs+` to the `.idx` file (or `cs=\verb!*+\cs+` if using `doc.sty`).

```
\def\@indexcs#1\@nil{%
    \autoindex{#1\actualchar
        \string\verb\quotechar*\verbatimchar
            \@xp\@bothoftwo\string\ #1\@empty
        \verbatimchar
    }%
}
```

`\@bothoftwo` This has the effect of removing spaces before each of the arguments. In particular, it removes the space generated by `\string\␣` above.

```
\def\@bothoftwo#1#2{#1#2}
```

`\category@index`

```
\def\category@index#1#2{%
    {\ntt#2}%
    \@category@index{#1}{#2}%
}
```

`\@category@index`

```
\def\@category@index#1#2{%
    \autoindex{%
        #2\actualchar\string\texttt{#2}%
        \ifx\@nil#1\@nil\else\space#1\fi
    }%
}
```

Some functions to support \cn etc. For most of these commands we don't really want them to be \long! But in some early releases of LaTeX 2ε the * form of \newcommand was not yet available.

We use the name \bslchar instead of \bslash to avoid potential conflict with the doc package \bslash command. Unlike \bslash, \bslchar survives unlimited writing/expansion because it is a chardef.

```
\chardef\bslchar=`\\ % p. 424, TeXbook
\newcommand{\addbslash}{\expandafter\@addbslash\string}
\def\@addbslash#1{\bslchar\@nobslash#1}
\newcommand{\nobslash}{\expandafter\@nobslash\string}
\def\@nobslash#1{\ifnum`#1=\bslchar\else#1\fi}
```

\@boxorbreak Start up for a \cs or \cn command, adds an \hbox if in math, or an allowbreak penalty if the preceding item is not a space. (In case two such commands are used side-by-side.)

```
\def\@boxorbreak{%
    \leavevmode
    \ifmmode\hbox\else\ifdim\lastskip=\z@\penalty9999 \fi\fi
}
```

Control sequence. The function \addbslash makes this command also usable for some special control sequences like \% \} \{: instead of writing \cs{%} which doesn't work, you can write \cs{\%}.

```
\DeclareRobustCommand{\cs}[1]{%
    \@boxorbreak{%
        \ntt
        \addbslash#1\@empty
        \@xp\@xp\@xp\@indexcs\@xp\@nobslash\string#1\@nil
    }%
}
```

Allow distinguishing non-private 'command names' that will be visible to the user from internal (mostly private) 'control sequences'.

```
\let\cn\cs
```

The following items should not normally appear in math mode so they don't need to call \@boxorbreak.

LaTeX documentclass name.

```
\DeclareRobustCommand{\cls}{\category@index{class}}
```

LaTeX package name.

```
\DeclareRobustCommand{\pkg}{\category@index{package}}
```

LaTeX option name.

```
\DeclareRobustCommand{\opt}{\category@index{option}}
```

Environment name.

```
⟨amsdtx⟩\DeclareRobustCommand{\env}[1]{{\ntt#1}\SpecialEnvIndex{#1}}
⟨amsldoc⟩\DeclareRobustCommand{\env}{\category@index{environment}}
```

File name.

```
\DeclareRobustCommand{\fn}{\category@index{}}
```

BibTeX style.

```
\DeclareRobustCommand{\bst}{\category@index{\string\BibTeX{} style}}
```

```
\DeclareRobustCommand{\cnt}{\category@index{counter}}
\DeclareRobustCommand{\fnt}{\category@index{font}}
```

With long command names or file names we sometimes prefer to allow hyphenation in the tt font (in combination with suitable `\hyphenation` statements for individual documents). To make this work we must turn off the feature of LaTeX that disables the hyphenchar of the tt fonts.

The method shown here depends on the assumption that OT1 encoding will be used for the tt fonts. An encoding-independent method would be more awkward: You'd have to explicitly load the relevant fonts, let's say by using `\AtBeginDocument`, and undo the hyphenchar change individually for each font.

Instead we force loading, or possibly reloading (depending on the preload options used locally for creating the LaTeX format file), of the `OT1/cmtt` fd file, and then clear the macro `\OT1+cmtt` which contains code to execute whenever a font of this family is first loaded. The default value is to turn off the hyphenchar, and that's what we don't want.

This method is not especially palatable but other methods that don't involve loading the fd file are significantly less reliable.

```
\def\allowtthyphens{\begingroup
  \fontencoding{OT1}\fontfamily{cmtt}%
```

Undefine the csname that `\try@load@fontshape` tests to determine whether the fd file needs loading. Then call `\try@load@fontshape`. Then we can remove the 'turn off hyphenation' code, which as it happens resides in the same csname that was tested.

```
  \expandafter\let\csname OT1+cmtt\endcsname\relax
  \try@load@fontshape
  \endgroup
  \expandafter\let\csname OT1+cmtt\endcsname\@empty
}
```

We allow some slop at the right margin because we have some long control sequence names and verbatim text to deal with. Also ignore underfull hboxes and vboxes unless they are really bad.

```
\hfuzz2pc
\vbadness9999 \hbadness5000
\def\AmS{{\protect\usefont{OMS}{cmsy}{m}{n}%
  A\kern-.1667em\lower.5ex\hbox{M}\kern-.125emS}}
\def\latex/{{\protect\LaTeX}}
\def\amslatex/{{\protect\AmS-\protect\LaTeX}}
\def\tex/{{\protect\TeX}}
\def\amstex/{{\protect\AmS-\protect\TeX}}
\def\bibtex/{{Bib\protect\TeX}}
```

`\makeindex` command is already used for other purposes.

```
\def\makeindx/{MakeIndex}
```

Don't allow a break after the hyphen:

```
\def\xypic/{XY\mbox{-}pic}
\newcommand{\Textures}{\textit{Textures}}
```

'Meta' macro.

```
\def\<#1>{\textit{$\langle$#1\/$\rangle$}}
```

Reduce itemsep in lists.

```
\def\@listi{%
  \leftmargin\leftmargini
  \topsep 3\p@ \@plus2\p@ \@minus\p@
  \parsep \p@ \@plus\p@ \itemsep\parsep
}
\let\@listI\@listi
```

```
\@listi
\def\@listii{%
  \leftmargin\leftmarginii
  \labelwidth\leftmarginii \advance\labelwidth-\labelsep
  \topsep\p@\@plus\p@ \@minus\p@
  \parsep\z@skip \itemsep\z@skip
}
\def\@listiii{%
  \leftmargin\leftmarginiii
  \labelwidth\leftmarginiii \advance\labelwidth-\labelsep
  \topsep\z@skip \parsep\z@skip \itemsep\z@skip
}
```

An environment to encapsulate remarks relevant to old versions but not essential for the current version.

```
\newenvironment{histnote}{%
  \trivlist\item[\hspace{\labelsep}\bfseries Historical Note:]%
}{%
  \endtrivlist
}
```

Turn off `\autoindex` during `\tableofcontents` or similar.

```
\def\@starttoc#1{\begingroup
  \let\autoindex\@gobble
  \makeatletter
  \@input{\jobname.#1}\if@filesw
  \expandafter\newwrite\csname tf@#1\endcsname
              \immediate\openout
                  \csname tf@#1\endcsname \jobname.#1\relax
  \fi \global\@nobreakfalse \endgroup}
```

Make glossary commands a no-op for the moment. [mjd,1994/10/03] Provide a `\secref` command for section references.

```
⟨*amsldoc⟩
\newcommand{\gloss}[1]{}
⟨/amsldoc⟩
\newcommand*{\secref}[1]{\S\ref{#1}}
```

We can write `\qc{\%}` to quote a single character in situations where `\verb"%"` would not work, mainly when text is read as a macro argument (e.g., footnotes).

```
\newcommand{\qc}[1]{}% check for prior definition
\edef\qc#1{\noexpand\protect\expandafter\noexpand\csname qc \endcsname
  \noexpand\protect#1}
```

For this function the first argument is `\protect` and just needs to be discarded. The method for removing a leading backslash is to turn off `\escapechar`; this is more forgiving of variations like `\qc{$}`. If the argument is '`\ `' we print a cmtt visible-space character, ␣.

```
\@namedef{qc }#1#2{\begingroup\ntt
  \ifx\ #2\char`\ \else\escapechar\m@ne\string#2\fi\endgroup}
```

Declare a few character names to avoid e.g., indexing difficulties.

```
\DeclareRobustCommand{\qcat}{\qc\@}%
\DeclareRobustCommand{\qcamp}{\qc\&}%
\DeclareRobustCommand{\qcbang}{\qc\!}%
```

`\arg` Change `\arg` to print a macro argument number:

```
\DeclareRobustCommand{\arg}[1]{{\ntt\##1}}
```

We need to emulate the `amsthm` `\qedsymbol` for the $\mathcal{A}_{\mathcal{M}}\mathcal{S}$-LaTeX user's guide.

```
⟨*amsldoc⟩
\newcommand{\openbox}{\leavevmode
  \hbox to.77778em{%
  \hfil\vrule
  \vbox to.675em{\hrule width.6em\vfil\hrule}%
  \vrule\hfil}}
\newcommand{\qedsymbol}{\openbox}
⟨/amsldoc⟩
```

Logical markup for e-mail address:

```
⟨amsldoc⟩\def\mail{\texttt}
```

Shorthand for indexing:

```
⟨*amsldoc⟩
\def\*#1{\def\@tempa{#1}\def\@tempb{*}%
  \ifx\@tempa\@tempb \expandafter\index
  \else #1\index{#1}\fi}
⟨/amsldoc⟩
```

Non-indexed `\cn` (maybe call this `\cn*`?)

```
\def\ncn#1{{\let\index\@gobble\cn{#1}}}
```

Indexing difficulties with !, @.

```

\DeclareRobustCommand{\cnbang}{%
  \ncn{\!}\index{"!@{\ntt\bslchar\qcbang}}}
\DeclareRobustCommand{\cnat}{%
  \ncn{\!}\index{"@@{\ntt\bslchar\qcat}}}
```

Shorthand for a discouraged, but not forbidden, line break:

```
\def\5{\penalty500 }
```

Environment for error message examples. Use `\meaning` to allow reading the error message text as an ordinary brace-delimited arg but still be able to print embedded braces; and first change the backslash catcode to prevent extra spaces after control words.

```
⟨*amsldoc⟩
\newenvironment{error}{%
  \begingroup\catcode`\\=12 \expandafter\endgroup\errora
}{%
  \endtrivlist
}

\newcommand{\errora}[1]{%
  \trivlist
  \item[\hskip\labelsep\errorbullet\enspace
    \ntt\frenchspacing\def\@tempa{#1}%
    \expandafter\strip@prefix\meaning\@tempa]\leavevmode\par
}
```

`\errorbullet` is just an attempt at a simple graphic device that doesn't require any special fonts.

```
\newcommand{\errorbullet}{\rule[-.5pt]{2.5pt}{7.5pt}%
  \rule[-.5pt]{5pt}{2.5pt}\kern-2.5pt%
  \rule[4.5pt]{2.5pt}{2.5pt}}
⟨/amsldoc⟩
```

A couple of subheading commands:

```
\newcommand{\errexa}{\par\noindent\textit{Example}:\ }
\newcommand{\errexpl}{\par\noindent\textit{Explanation}:\ }
```

4 amsldoc style modifications for sectioning commands

The following section deals with book commands (part, chapter, frontmatter, ...).

⟨*amsldoc⟩

Modifications of sectioning commands from `book.cls`, mostly reducing font sizes and vertical spacing.

```
\renewcommand\frontmatter{\clearpage
            \@mainmatterfalse\pagenumbering{roman}}
\renewcommand\mainmatter{\clearpage
       \@mainmattertrue\pagenumbering{arabic}}
\renewcommand\backmatter{\clearpage \@mainmatterfalse}
\renewcommand\part{\clearpage
                  \thispagestyle{plain}%
                  \if@twocolumn
                      \onecolumn
                      \@tempswatrue
                    \else
                      \@tempswafalse
                  \fi
                  \hbox{}\vfil
                  \secdef\@part\@spart}
\def\@part[#1]#2{%
    \ifnum \c@secnumdepth >-2\relax
      \refstepcounter{part}%
      \addcontentsline{toc}{part}{\thepart\hspace{1em}#1}%
    \else
      \addcontentsline{toc}{part}{#1}%
    \fi
    \markboth{}{}%
    {\centering
     \interlinepenalty \@M
     \reset@font
     \ifnum \c@secnumdepth >-2\relax
       \Large\bfseries \partname~\thepart
       \par
       \vskip 20\p@
     \fi
     \Large \bfseries #2\par}%
    \@endpart}
\def\@spart#1{%
    {\centering
     \interlinepenalty \@M
     \reset@font
     \Large \bfseries #1\par}%
    \@endpart}
\def\@endpart{\vfil\newpage
              \if@twoside
                \hbox{}%
                \thispagestyle{empty}%
                \newpage
              \fi
              \if@tempswa
                \twocolumn
              \fi}
```

⟨/amsldoc⟩

```
\renewcommand\chapter{\par \@afterindentfalse
                      \secdef\@chapter\@schapter}
\def\@chapter[#1]#2{\ifnum \c@secnumdepth >\m@ne
                        \if@mainmatter
                          \refstepcounter{chapter}%
                          \typeout{\@chapapp\space\thechapter.}%
                          \addcontentsline{toc}{chapter}%
                                    {\protect\numberline{\thechapter}#1}%
                        \else
                          \addcontentsline{toc}{chapter}{#1}\fi
                      \else
                        \addcontentsline{toc}{chapter}{#1}
                      \fi
                      \chaptermark{#1}%
                      \addtocontents{lof}{\protect\addvspace{10\p@}}%
                      \addtocontents{lot}{\protect\addvspace{10\p@}}%
                      \if@twocolumn
                        \@topnewpage[\@makechapterhead{#2}]%
                      \else
                        \@makechapterhead{#2}%
                        \@afterheading
                      \fi}
\def\@makechapterhead#1{%
  \vspace{1.5\baselineskip}%
  {\parindent \z@ \raggedright \reset@font
    \ifnum \c@secnumdepth >\m@ne
      \large\bfseries \@chapapp\space\thechapter
      \par\nobreak
      \vskip.5\baselineskip\relax
    \fi
    #1\par\nobreak
    \vskip\baselineskip
  }}
\def\@schapter#1{\if@twocolumn
                    \@topnewpage[\@makeschapterhead{#1}]%
                  \else
                    \@makeschapterhead{#1}%
                    \@afterheading
                  \fi}
\def\@makeschapterhead#1{%
  \vspace*{1.5\baselineskip}%
  {\parindent \z@ \raggedright
    \reset@font
    \large \bfseries  #1\par\nobreak
    \vskip\baselineskip
  }}
```

Add Donald Arseneau's `\@removefromreset`; used to decouple the footnote counter from `\chapter`, since chapters here do not automatically start on a new page. [bnb, 1999/09/27]

```
\@removefromreset{FOO}{BAR} : Removes counter FOO from the list of
                    counters \cl@BAR to be reset when counter BAR
                    is stepped.  The opposite of \@addtoreset.
```

```
\def\@removefromreset#1#2{\let\@tempb\@elt
   \expandafter\let\expandafter\@tempa\csname c@#1\endcsname
   \def\@elt##1{\expandafter\ifx\csname c@##1\endcsname\@tempa\else
         \noexpand\@elt{##1}\fi}%
   \expandafter\edef\csname cl@#2\endcsname{\csname cl@#2\endcsname}%
```

```
  \let\@elt\@tempb}
\@removefromreset{footnote}{chapter}
```

Change running head font to `\footnotesize`, nonslanted.

```
\def\ps@headings{%
  \let\@oddfoot\@empty\let\@evenfoot\@empty
  \def\@evenhead{\thepage\hfil{\footnotesize\leftmark{}{}}}%
  \def\@oddhead{{\footnotesize\rightmark{}{}}\hfil\thepage}%
  \let\@mkboth\markboth
  \def\chaptermark##1{%
    \markboth {\uppercase{\ifnum \c@secnumdepth >\m@ne
      \if@mainmatter
        \@chapapp\ \thechapter. \ \fi
      \fi
        ##1}}{}}%
  \def\sectionmark##1{%
    \markright {\uppercase{\ifnum \c@secnumdepth >\z@
        \thesection. \ \fi
        ##1}}}}
```

5 amsdtx style modifications for sectioning commands

These definitions for `\maketitle` are from `article.cls`.

```
⟨*amsdtx⟩
\renewcommand\maketitle{\par
  \begingroup
    \renewcommand\thefootnote{\fnsymbol{footnote}}%
    \def\@makefnmark{\hbox to\z@{$\m@th^{\@thefnmark}$\hss}}%
    \long\def\@makefntext##1{\parindent 1em\noindent
            \hbox to1.8em{\hss$\m@th^{\@thefnmark}$}##1}%
    \if@twocolumn
      \ifnum \col@number=\@ne
        \@maketitle
      \else
        \twocolumn[\@maketitle]%
      \fi
    \else
      \newpage
      \global\@topnum\z@   % Prevents figures from going at top of page.
      \@maketitle
    \fi
    \thispagestyle{plain}\@thanks
  \endgroup
  \setcounter{footnote}{0}%
  \let\thanks\relax
  \let\maketitle\relax\let\@maketitle\relax
  \gdef\@thanks{}\gdef\@author{}\gdef\@title{}}
%
\def\@maketitle{%
  \newpage
  \null
  \vskip 2em%
  \begin{center}%
    {\LARGE \@title \par}%
    \vskip 1.5em%
    {\large
      \lineskip .5em%
      \begin{tabular}[t]{c}%
```

```
        \@author
      \end{tabular}\par}%
    \vskip 1em%
    {\large \@date}%
  \end{center}%
  \par
```

Put the title into both running heads.

```
  \uppercase\expandafter{\expandafter\toks@\expandafter{\@title}}%
  \edef\@tempa{\noexpand\markboth{\the\toks@}{\the\toks@}}%
  \@tempa
  \vskip 1.5em}
⟨/amsdtx⟩
```

Edit the table of contents.

```
⟨*amsdtx⟩
\renewcommand\tableofcontents{%
    \if@twocolumn
      \@restonecoltrue\onecolumn
    \else
      \@restonecolfalse
    \fi
    \subsection*{\contentsname}%
    \@starttoc{toc}%
    \if@restonecol\twocolumn\fi
    }
⟨/amsdtx⟩
```

Edit the sectioning commands.

```
\renewcommand\section{\@startsection {section}{1}{\z@}%
                                    {-.6\baselineskip \@plus -3\p@}%
                                    {.4\baselineskip}
⟨amsdtx⟩                           {\reset@font\Large\bfseries}}
⟨amsldoc⟩                          {\reset@font\normalsize\bfseries}}
\renewcommand\subsection{\@startsection{subsection}{2}{\z@}%
                                       {-.3\baselineskip\@plus -2\p@}%
                                       {.2\baselineskip}%
⟨amsdtx⟩                           {\reset@font\large\bfseries}}
⟨amsldoc⟩                          {\reset@font\normalsize\bfseries}}
\renewcommand\subsubsection{\@startsection{subsubsection}{3}{\z@}%
                                       {-.2\baselineskip\@plus -2\p@}%
                                       {.2\baselineskip}%
                                       {\reset@font\normalsize\bfseries}}
```

Change index environment to turn off `\autoindex`.

```
\renewenvironment{theindex}{%
  \if@twocolumn \@restonecolfalse \else \@restonecoltrue \fi
  \columnseprule \z@ \columnsep 35\p@
  \let\autoindex\@gobble
⟨amsdtx⟩  \twocolumn[\section*{\indexname}]%
⟨amsldoc⟩  \twocolumn[\@makeschapterhead{\indexname}]%
  \addcontentsline{toc}{chapter}{\indexname}%
  \@mkboth{\uppercase{\indexname}}{\uppercase{\indexname}}%
  \thispagestyle{plain}\parindent\z@
  \parskip\z@ \@plus .3\p@\relax
  \let\item\@idxitem
}{%
  \if@restonecol\onecolumn\else\clearpage\fi
}
```

Take out `\thechapter` from `\thesection`.

```
⟨amsdtx⟩\renewcommand{\thesection}{\arabic{section}}
```

Change the style of captions slightly. Also incorporate some caption improvements from Donald Arseneau (comp.text.tex, 11 Oct 1994).

```
\long\def\@makecaption#1#2{%
  \addvspace\abovecaptionskip
  \begingroup
    \countdef\@parcycles=8 % local count register
    \@parcycles\z@
    \@setpar{\advance\@parcycles\@ne \ifnum\@parcycles>999
      \@@par\@parcycles\z@\fi
      \ifhmode \unskip\hskip\parfillskip\penalty-\@M\fi}%
    \@hangfrom{\textbf{#1.} }\vadjust{\penalty\m@ne}#2%
  \endgroup
  \ifhmode\unpenalty\fi\par
  \ifnum\lastpenalty=\m@ne % only one line in the caption
    \unpenalty \setbox\@tempboxa\lastbox
    \nointerlineskip
    \hbox to\hsize{\hfill\unhbox\@tempboxa\unskip\hfill}%
  \fi
  \nobreak\vskip\belowcaptionskip
}
```

For table captions, assume top captions and so put space below the caption rather than above:

```
\renewenvironment{table}{%
  \belowcaptionskip\abovecaptionskip \abovecaptionskip\z@skip
  \@float{table}%
}{%
  \end@float
}
\renewenvironment{table*}{%
  \belowcaptionskip\abovecaptionskip \abovecaptionskip\z@skip
  \@dblfloat{table}%
}{%
  \end@dblfloat
}
```

6 Float placement parameters

These control the placing of floating objects like tables and figures. The values here, which are much more tolerant than the LaTeX defaults, are more or less copied from amsclass.dtx.

```
\setcounter{topnumber}{4}\setcounter{bottomnumber}{4}
\setcounter{totalnumber}{4}\setcounter{dbltopnumber}{4}
\renewcommand{\topfraction}{.97}\renewcommand{\bottomfraction}{.97}
\renewcommand{\textfraction}{.03}\renewcommand{\floatpagefraction}{.9}
\renewcommand{\dbltopfraction}{.97}
\renewcommand{\dblfloatpagefraction}{.9}
\setlength{\floatsep}{8pt plus6pt}
\setlength{\textfloatsep}{10pt plus8pt}
\setlength{\intextsep}{8pt plus6pt}
\setlength{\dblfloatsep}{8pt plus6pt}
\setlength{\dbltextfloatsep}{10pt plus8pt}
\setlength{\@fptop}{0pt}\setlength{\@fpsep}{8pt}%
\setlength{\@fpbot}{0pt plus 1fil}
\setlength{\@dblfptop}{0pt}\setlength{\@dblfpsep}{8pt}%
\setlength{\@dblfpbot}{0pt plus 1fil}

\pagestyle{headings}
```

Make `|...|` shorthand for verbatim fragments. In the case of the `amsldoc` class, we avoid requiring an extra package (`doc` or `shortvrb`), to reduce the possibility of package files not being found at run time.

```
⟨*amsldoc⟩
\AtBeginDocument{\catcode`\|=\active }
\def\activevert{\verb|}
\expandafter\gdef\expandafter\dospecials\expandafter
  {\dospecials \do\|}%
\expandafter\gdef\expandafter\@sanitize\expandafter
  {\@sanitize \@makeother\|}
\begingroup\catcode`\|=\active \gdef|{\protect\activevert{}}\endgroup
⟨/amsldoc⟩
```

`\arrayargpatch` If the column-specs arg of array or tabular contains a vert bar character, and we have made vert bars active, it will cause trouble. The following command, used in the ctab environment, prevents the trouble.

```
\newcommand{\arrayargpatch}{%
  \let\@oldarray\@array
  \edef\@array[##1]##2{\catcode\number`\|=\number\catcode`\|
    \catcode\number`\@=\number\catcode`\@ \relax
    \let\noexpand\@array\noexpand\@oldarray
    \noexpand\@array[##1]{##2}}%
  \catcode`\|=12 \catcode`\@=12 \relax
}
```

`ctab` An environment for centered tables.

```
\newenvironment{ctab}{%
  \par\topsep\medskipamount
  \trivlist\centering
  \item[]%
  \arrayargpatch
  \begin{tabular}%
}{%
  \end{tabular}%
  \endtrivlist
}
```

Load `doc` package, reset `\AltMacroFont` to be the same as `\MacroFont` (when there are large sections of conditional code I think it looks better not to have it all slanted).

```
⟨*amsdtx⟩
\RequirePackage{doc}
\def\AltMacroFont{\MacroFont}
```

`\SpecialMainEnvIndex` Override `doc.sty`'s main environment indexing to get rid of the parens around "environment", for compatibility with our `\env` command.

```
\def\SpecialMainEnvIndex#1{%
    \@bsphack
    \special@index{%
        #1\actualchar\string\texttt{#1} environment\encapchar main%
    }%
    \special@index{%
        environments:\levelchar#1%
        \actualchar\string\texttt{#1}%
        \encapchar main}%
    \@esphack
}
```

\SpecialEnvIndex

```
\def\SpecialEnvIndex#1{%
    \@bsphack
    \index{#1\actualchar\string\texttt{#1} environment\encapchar usage}%
    \index{%
        environments:\levelchar#1%
        \actualchar\string\texttt{#1}%
        \encapchar usage}%
    \@esphack
}
```

\DescribeOption

```
\def\DescribeOption{%
    \leavevmode
    \@bsphack
    \begingroup
        \MakePrivateLetters
    \Describe@Option
}
```

\Describe@Option

```
\def\Describe@Option#1{%
    \endgroup
    \marginpar{\raggedleft\PrintDescribeOption{#1}}%
    \SpecialOptionIndex{#1}%
    \@esphack
    \ignorespaces
}
```

\PrintDescribeOption

```
\def\PrintDescribeOption#1{\strut \MacroFont #1\ }
```

\option

```
\def\option{%
    \let\SpecialMainEnvIndex\SpecialMainOptionIndex
\begingroup
   \catcode`\\12
   \MakePrivateLetters \m@cro@ \iffalse}
```

\SpecialMainOptionIndex

```
\def\SpecialMainOptionIndex#1{%
    \@bsphack
    \special@index{#1\actualchar\string\texttt{#1} option\encapchar main}%
    \@esphack
}
```

\SpecialOptionIndex

```
\def\SpecialOptionIndex{\@category@index{option}}
```

Ordinary \DocInput doesn't handle standardized file headers unless you enclose them in \iffalse ... \fi which I don't care to do. So instead here's an alternate version of \DocInput, called \hDocInput.

```
\def\hDocInput#1{\MakePercentIgnore
  \begingroup
```

Define active `@` which should be the first non-percent, non-equal-sign character when a file header is present. (If a file header is not present, `\hDocInput` should not be used.)

```
  \begingroup \lccode`\~=`\@
  \lowercase{\endgroup\long\def ~}##1##{%
    \catcode`\==12 \skipfileheader{##1}}%
  \catcode`\@=\active \catcode`\==14 % comment
  \def\filename{#1}%
  \@@input#1 \MakePercentComment}

\def\skipfileheader#1#2 {\endgroup
  \hGetFileInfo#2 version = "??" date = "??"\@nil
  \begingroup\catcode`\==9 \catcode`\ =9 \futurelet\0\endgroup
}

\long\def\hGetFileInfo#1 version = "#2"#3 date = "#4"#5\@nil{%
  \def\fileversion{#2}\def\filedate{#4}}
⟨/amsdtx⟩
```

A bunch of stuff we don't want in code indexes:

```
⟨*amsdtx⟩
\DoNotIndex{\@xp,\@nx,\@empty,\newcommand,\renewcommand}
\DoNotIndex{\newenvironment,\renewenvironment,\providecommand}
\DoNotIndex{\if,\fi,\ifnum,\fi,\@let@token,\futurelet,\fsa@n}
\DoNotIndex{\ignorespaces,\@tempcnta,\@tempcntb,\count@}
\DoNotIndex{\toks@,\@ne,\advance}
\DoNotIndex{\!,\/,\?,\@,\^,\_}
\DoNotIndex{\@@par,\@M,\@auxout,\@bsphack,\@esphack,\@depth,\@ehc}
\DoNotIndex{\@for,\@flushglue,\@gobble,\@gobbletwo,\@height,\@idxitem}
\DoNotIndex{\@ifnextchar,\@ifstar,\@ifundefined,\@input,\@latexerr}
\DoNotIndex{\@makeschapterhead,\@namedef,\@nameuse,\@nil}
\DoNotIndex{\@nobreakfalse,\@restonecolfalse,\@restonecoltrue}
\DoNotIndex{\@tempa,\@tempb,\@tempc,\@tempf,\@temptokena,\@themark,\@width}
\DoNotIndex{\active,\aindex,\baselineskip,\begin,\begingroup,\box}
\DoNotIndex{\c@page,\catcode,\chapter,\char,\chardef,\closeout}
\DoNotIndex{\CodelineIndex,\sp,\sb,\label,\leavevmode,\mark}
\DoNotIndex{\mark,\newinsert,\newwrite,\newtoks,\xdef}
\DoNotIndex{\columnsep,\columnseprule,\columnwidth,\csname,\def}
\DoNotIndex{\dimen,\do,\DocInput,\documentstyle,\edef,\em}
\DoNotIndex{\EnableCrossrefs,\end,\endcsname,\endgroup,\endinput}
\DoNotIndex{\everypar,\expandafter,\filedate,\fileversion}
\DoNotIndex{\footnotesize,\gdef,\global,\glossary,\hangindent}
\DoNotIndex{\if@filesw,\else,\fi}
\DoNotIndex{\if@nobreak,\if@twocolumn,\if@twoside,\fi,\fi,\fi}
\DoNotIndex{\hsize,\hskip}
\DoNotIndex{\ifhmode,\ifmmode,\ifodd,\ifvmode,\ifx,\fi,\fi,\fi,\fi,\fi}
\DoNotIndex{\ifcase,\ifdim,\ifeof,\iffalse,\iftrue,\fi,\fi,\fi,\fi,\fi}
\DoNotIndex{\ifcat,\fi}
\DoNotIndex{\immediate,\insert,\item,\jobname,\long}
\DoNotIndex{\let,\lineskip,\marginparsep,\marginparwidth,\maxdimen}
\DoNotIndex{\makeatletter,\noexpand,\openout,\protect,\rlap}
\DoNotIndex{\min,\newpage,\nobreak,\normalbaselineskip}
\DoNotIndex{\normallineskip,\p@,\par,\parfillskip,\parindent,\parskip}
\DoNotIndex{\penalty,\relax,\section,\sin,\sloppy,\space,\string}
\DoNotIndex{\tableofcontents,\the,\thepage,\thispagestyle,\toks,\tt}
\DoNotIndex{\twocolumn,\uppercase,\vbox,\vrule,\vskip,\vss}
\DoNotIndex{\write,\z@,\z@skip}
⟨/amsdtx⟩
```

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

583 \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

\# 163
\% *4*
\& 26, 161
* 174
\, ... 25
\- 25
\. 25
.dtx *1*
.idx *3*
\: 25
\; 25
\< 119
\= . . . 25, 534, 535, 540
\@@input 537
\@addbslash 75, 76
\@afterheading 273, 290
\@afterindentfalse 253
\@array 464, 465, 467, 468
\@author 344, 356
\@bothoftwo 59, 63
\@boxorbreak . *4*, 79, 84
\@category@index 66, 68, 529
\@chapapp 258, 279, 314
\@chapter . . . 254, 255
\@date 359
\@dblfloat 434
\@dblfpbot 452
\@dblfpsep 451
\@dblfptop 451
\@elt 299, 301, 302, 304
\@endpart 236, 242, 243
\@evenfoot 307
\@evenhead 308
\@firstofone 16
\@float 428
\@fpbot 450
\@fpsep 449
\@fptop 449
\@hangfrom 416
\@indexcs . *3*, 54, 56, 87
\@listI 125
\@listi . . 120, 125, 126
\@listii 127
\@listiii 133
\@mainmatterfalse 205, 208
\@mainmattertrue . 207
\@makecaption 408
\@makechapterhead 270, 272, 275
\@makefnmark 325
\@makefntext 326
\@makeother 460
\@maketitle . . . 330, 332, 337, 343, 346
\@minus 122, 130
\@mkboth 310, 400
\@nobslash *3*, 54, 76, 77, 78, 87
\@oddfoot 307
\@oddhead 309
\@oldarray . . 464, 467
\@parcycles 411, 412, 413, 414
\@part 218, 219
\@plus 122, 123, 130, 380, 385, 390, 402
\@removefromreset *9*, 299, 305
\@sanitize . . 459, 460
\@schapter . . 254, 286
\@setpar 413
\@spart 218, 237
\@startsection 379, 384, 389
\@starttoc . . 143, 375
\@tempboxa . . 420, 422
\@tempswafalse . . . 215
\@tempswatrue 213
\@thanks 339, 344
\@thefnmark . . 325, 327
\@title . . 344, 351, 362
\@topnewpage . 270, 287
\@topnum 336
\\ 74, 187, 522
\^ 551
_ 551
\| 455, 458, 460, 461, 465, 469
\~ 30, 532

Numbers

\0 540
\5 184

\␣ 59, 159, 201, 202, 314, 319, 518, 540

A

\abovecaptionskip 409, 427, 433
\activevert . . 456, 461
\actualchar 42, 57, 70, 487, 491, 497, 500, 526
\addbslash . . *4*, 75, 86
\addcontentsline 222, 224, 259, 262, 264, 399
\addtocontents 267, 268
\addvspace 267, 268, 409
\allowtthyphens . . 100
\AltMacroFont . *13*, 483
\AmS 109, 112, 114
amsclass.dtx *12*
AMSDTX class . . . *2*, *4*, *6*, *8*, *10*, *11*, *12*, *14*
amsdtx class *1*, *1*, *1*, *2*, *10*
amsdtx package *2*
\amslatex 112
AMSLDOC class . . *2*, *4*, *6*, *8*, *9*, *10*, *12*, *14*
amsldoc class *1*, *1*, *2*, *8*, *13*
amsldoc package *2*
\amstex 114
amsthm package *7*
\arabic 407
\arg *6*, 163
\arrayargpatch 463, 475
article.cls *10*
\AtBeginDocument *5*, 455
\autoindex . . *6*, *11*, 49, 57, 69, 144, 396

B

\backmatter 208
\belowcaptionskip 424, 427, 433
\bfseries 139, 231, 235, 241, 279, 296, 382, 383, 387, 388, 392
\BibTeX *2*, 97
\bibtex 115
book class *1*
book.cls *8*
\bottomfraction . . 440
\bslash *4*, *4*, *4*

\bslchar 4, 4, 74, 76, 78, 181, 183
\bst 2, 97

C

\c@secnumdepth 220, 230, 255, 278, 312, 318
\category@index . . 64, 91, 92, 93, 95, 96, 97, 98, 99
\centering 227, 238, 473
\chapter 1, 9
\chaptermark . 266, 311
\check@mathfonts . . 24
\clearpage . . . 204, 206, 208, 209, 405
\cls 2, 91
\cn 2, 2, 4, 4, 7, 90, 178
\cnat 182
\cnbang 180
\cnt 2, 98
\col@number 329
comp.text.tex 12
\contentsname 374
\countdef 411
\cs 2, 4, 83, 90
ctab environment . . 471
\CurrentOption 9

D

\dblfloatpagefraction 443
\dblfloatsep 447
\dbltextfloatsep . 448
\dbltopfraction . . 442
\DeclareOption 9
\DeclareRobustCommand 19, 83, 91, 92, 93, 94, 95, 96, 97, 98, 99, 160, 161, 162, 163, 180, 182
\Describe@Option 509, 511
\DescribeOption . . 504
doc package 2, 4, 13, 13
doc.sty 3, 13
\DocInput 14, 14
docstrip 15
\DoNotIndex 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581
\dospecials . . 457, 458

E

\encapchar 45, 50, 487, 492, 497, 501, 526
\end@dblfloat 436
\end@float 430
\endinput 15
\endtrivlist 141, 189, 479
\enspace 193
\env 2, 13, 94, 95
environments:
ctab 471
\errexa 201
\errexpl 202
\errora 187, 191
\errorbullet 7, 193, 197
\escapechar 6, 159
\exhyphenpenalty 38, 39

F

\fi 14
\filename 536
\floatpagefraction 441
\floatsep 444
\fn 2, 96
\fnsymbol 324
\fnt 2, 99
\font 24
\fontencoding 101
\fontfamily 101
\footnotesize 10
\frenchspacing . . . 194
\frontmatter 204

G

\gloss 152

H

\hbadness 108
\hbox 4, 81, 110, 166, 217, 245, 325, 327, 422
\hDocInput . 14, 15, 530
\hfil 167, 169, 308, 309
\hfill 422
\hfuzz 107
\hGetFileInfo 539, 542
\hrule 168
\hspace 139, 222
\hss 325, 327
\hyphenation 5
\hyphenpenalty 31

I

\if@mainmatter 256, 313
\if@restonecol 376, 405
\if@tempswa 249
\ifcodeline@index 3, 47, 50
\iffalse 14
\IfFileExists 12
\index 50, 175, 176, 178, 181, 183, 497, 498
\indexcs 53
\indexname 397, 398, 399, 400
\interlinepenalty 228, 239
\intextsep 446
\itemsep . 123, 131, 136

K

\kern 110, 198

L

\labelsep 129, 135, 139, 193
\labelwidth . . 129, 135
\langle 119
\LARGE 351
\Large 231, 235, 241, 382
\large 279, 296, 353, 359, 387
\lastbox 420
\lastpenalty 419
\lastskip 81
\LaTeX 2, 111, 112
\latex 111
\latex/ 2
\lccode 30, 532
\leftmargin 121, 128, 134
\leftmargini 121
\leftmarginii 128, 129
\leftmarginiii 134, 135
\leftmark 308
\levelchar 44, 490, 499
\LoadClass 11
\long 4
\lower 110
\lowercase . . . 30, 533

M

\m@cro@ 523
\m@ne 159, 255, 278, 312, 416, 419
\m@th 325, 327
\MacroFont 13, 483, 518
\mail 172
\mainmatter 206
makeindex 2
\makeindex 5
\makeindx 116

\MakePercentComment 537
\MakePercentIgnore 530
\MakePrivateLetters 508, 523
\maketitle *1*, *10*, 322, 343
\marginpar 513
\markboth 226, 310, 312, 363
\markright 318
\mathchar 31
\mathcode 29, 34
\mbox 117
\mdash 38
\meaning . . . *7*, 21, 195
\medskipamount . . . 472

N

\ncn 178, 181, 183
\ndash 39
\NeedsTeXFormat 1
\newcommand *4*
\newif 47
\nobslash 77
\noindent 201, 202, 326
\nointerlineskip . 421
\normalfont 52
\normalsize 383, 388, 392
\ntt 52, 65, 85, 94, 158, 163, 181, 183, 194
\null 348
\number . . . 31, 465, 466
\numberline 260

O

\onecolumn 212, 370, 405
\openbox 165, 170
\opt *2*, 93
\option 519
\OT1cmtt+ *5*
OT1/cmtt *5*

P

\pagenumbering 205, 207
\pagestyle 453
\parsep . . 123, 131, 136
\part 209
\partname 231
\PassOptionsToClass . 9
\pkg *2*, 92
\PrintDescribeOption 513, 518
\ProcessOptions . . . 10
\protect *6*
\ProvidesClass . *1*, 4, 7
\ps@headings 306

Q

\qc *2*, 155, 156, 160, 161, 162
\qcamp 161
\qcat 160, 183
\qcbang 162, 181
\qedsymbol *7*, 170
\qq 37
\quotechar 43, 58

R

\raggedleft 513
\raggedright . 277, 294
\rangle 119
\ref 154
\refstepcounter 221, 257
\RequirePackage 13, 482
\reset@font 229, 240, 277, 295, 382, 383, 387, 388, 392
\rightmark 309
\rule 197, 198, 199

S

\S 154
\secdef 218, 254
\secref *6*, 154
\sectionmark 317
\setbox 420
\setcounter 341, 438, 439
\setlength 444, 445, 446, 447, 448, 449, 450, 451, 452
shortvrb package . . . *13*
\skipfileheader 534, 538
\special@index 486, 489, 526
\SpecialEnvIndex 94, 495
\SpecialMainEnvIndex 484, 520
\SpecialMainOptionIndex 520, 524
\SpecialOptionIndex 514, 529
\strip@prefix . 21, 195
\strut 518
\subsection . . 374, 384
\subsubsection . . . 389

T

\tableofcontents . . . *6*
\TeX . . . *2*, 113, 114, 115
\tex 113
\textbf 416
\textemdash 38
\textendash 39
\textfloatsep 445
\textfont 24
\textfraction 441
\textit 118, 119, 201, 202
\textquotedblleft . 37
\textquotedblright . 37
\texttt 21, 70, 172, 487, 491, 497, 500, 526
\Textures 118
\thanks 342
\thechapter *11*, 258, 260, 279, 314
\thefootnote 324
\thepart 222, 231
\thesection *11*, 319, 407
\topfraction 440
\topsep 122, 130, 136, 472
\trivlist 139, 192, 473
\try@load@fontshape *5*, *5*, 103
\ttfamily 52
\typeout 258

U

\unhbox 422
\unpenalty . . 418, 420
\unskip 415, 422
\url 19
\urlbreak 26, 28
\urlfix 25, 33
\urlsetup 21, 23
\usefont 109

V

\vadjust 416
\vbadness 108
\verb *2*, 58, 456
\verbatimchar 46, 58, 60
\vfil 168, 217, 243
\vspace 276, 293

X

\xypic 117