

Standard L^AT_EX 2_ε packages `makeidx` and `showidx`

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1 Description

1.1 Makeidx

The package `makeidx` provides two new commands, `\see` and `\printindex`.

`\see` The command `\see` can be used in the index to cross reference to other items.
`\printindex` This command can be used to include the sorted and formatted index in the document.

1.2 Showidx

The package `showidx` changes a number of internal L^AT_EX 2_ε commands in such a way that each index entry is shown in the margin on the page where the entry appears. This package was originally meant to be used with the `report` and `book` document classes, but works with other classes as well. It makes `\flushbottom` the default.

2 The DOCSTRIP modules

The following modules are used in the implementation to direct DOCSTRIP in generating the external files:

<code>makeidx</code>	produce <code>makeidx.sty</code>
<code>showidx</code>	produce <code>showidx.sty</code>
<code>driver</code>	produce a documentation driver file

3 The documentation driver file

The next bit of code contains the documentation driver file for T_EX, i.e., the file that will produce the documentation you are currently reading. It can be extracted from this file by the DOCSTRIP program.

```
1 <*/driver>
2 \documentclass{ltxdoc}
3 \begin{document}
4 \DocInput{makeindx.dtx}
5 \end{document}
6 </driver>
```

4 Implementation

4.1 Identification

Announce the package and its version:

```
7 <makeidx>\ProvidesPackage{makeidx}
8 <showidx>\ProvidesPackage{showidx}
9 [2014/09/29 v1.0m Standard LaTeX package]
```

4.2 Makeidx

- `\see` This macro discards its second argument (typically a page number) and just prints `\seename` together with the entry the reader is pointed to.
- ```
10 <*makeidx>
11 \newcommand*{\see[2]{\emph{\seename} #1}
```
- `\seealso` This macro discards its second argument (typically a page number) and just prints `\alsoname` together with the entry the reader is pointed to. We use `\providecommand` to retain compatibility with existing files that define this macro.
- ```
12 \providecommand*{\seealso[2]{\emph{\alsoname} #1}
```
- `\printindex` This command simply inputs the (formatted) index if it exists, otherwise a warning is issued.
- ```
13 \newcommand\printindex{\@input@{\jobname.ind}}
```
- `\seename` This package is for documents prepared in the English language. To prepare a version for another language, various English words must be replaced. All the English words that require replacement are defined below in command names.
- ```
14 \providecommand\seename{see}
```
- We used `\providecommand` in case the command is already defined by a package loaded earlier.
- `\alsoname` This macro discards its second argument (typically a page number) and just prints `\alsoname` together with the entry the reader is pointed to. We use `\providecommand` to retain compatibility with existing files that define this macro.
- ```
15 \providecommand*\alsoname{see also}
16 </makeidx>
```

### 4.3 showidx

- `\indexbox` This package uses  $\TeX$ 's insert mechanism, therefore it needs to allocate an insert register.
- ```
17 <*showidx>
18 \newinsert\indexbox
19 \dimen\indexbox=\maxdimen
```
- `\index` This is a modified default definition for the user level `\index` command. The difference is the change of the category code of the space character.
- ```
20 \renewcommand\index{\@bsphack\beginngroup
21 \@sanitize\catcode32=10\relax\@index}
```
- `\makeindex` The same change has to be included in the user level `\makeindex` command, which changes the definition of `\index` to actually write index entries to an external file.
- ```
22 \renewcommand\makeindex{\if@filesw \newwrite\@indexfile
23 \immediate\openout\@indexfile=\jobname.idx
24 \def\index{\@bsphack\beginngroup
25 \def\protect####1{\string####1\space}\@sanitize
26 \catcode32=10 \@wrindex\@indexfile}\typeout
27 {Writing index file \jobname.idx }\fi}
```

`\@wrindex` This macro takes care of writing the index entries to a file. The definition is modified to call `\@showidx`.

```

28 \def\@wrindex#1#2{\let\thepage\relax
29   \xdef\@gtempa{\write#1{\string
30     \indexentry{#2}{\thepage}}}\endgroup\@gtempa
31   \@showidx{#2}\if@nobeak \ifvmode\nobreak\fi\fi\@esphack}

```

`\@index` When the user didn't use the `\makeindex` command, the `\index` macro calls `\@index`, which normally does basically nothing. This package changes the definition to call `\@showidx`, which includes the entry in the list of indexentries on the current page.

```

32 \def\@index#1{\@showidx{#1}\endgroup\@esphack}

```

`\@showidx` This macro adds the current index entry to the insert `\indexbox`. The `\indexbox` is typeset as a flushleft paragraph.

```

33 \def\@showidx#1{%
34   \insert\indexbox{\small
35     \hspace\marginparwidth
36     \hangindent\marginparsep \parindent\z@
37     \everypar{}\let\par\@par \parfillskip\@flushglue
38     \lineskip\normallineskip
39     \baselineskip .8\normalbaselineskip\sloppy
40     \raggedright \leavevmode
41     \vrule \@height .7\normalbaselineskip \@width \z@\relax
42     #1\relax
43     \vrule \@height \z@ \@depth .3\normalbaselineskip \@width \z@}}

```

`\raggedbottom` The definition of these macros from `latex.dtx` is changed here to add the execution of `\@mkidx` to `\@texttop`, which is executed at the top of each page.

```

44 \renewcommand\raggedbottom{\def\@textbottom{\vskip
45   \z@ plus.0001fil}\let\@texttop\@mkidx}
46 \renewcommand\flushbottom{\let\@textbottom\relax
47   \let\@texttop\@mkidx}

```

`\@mkidx` This macro actually typesets the box containing all the index entries on the current page. They will occur on the left or the right side of the text, or both, depending on the setting of the switches `\if@twocolumn` and `\if@twoside`.

```

48 \def\@mkidx{\vbox to \z@{\hbox{\if@twocolumn
49   \if@firstcolumn \@leftidx \else \@rightidx \fi
50   \else \if@twoside \ifodd\c@page \@rightidx
51     \else \@leftidx \fi
52   \else \@rightidx \fi
53   \fi
54   \box\indexbox}\vss}}

```

`\@leftidx` These macros give the amount of displacement for the `\indexbox`.

```

55 \def\@leftidx{\hskip-\marginparsep \hskip-\marginparwidth}
56 \def\@rightidx{\hskip\columnwidth \hskip\marginparsep}

```

To make this work we have to execute either `\raggedbottom` or `\flushbottom`. Assuming this package is used most often with the document classes `report` and `book`, we execute `\flushbottom`.

```

57 \flushbottom
58 </showidx>

```