create commands for adding formatted index entries (CN)

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create commands for adding formatted index entries

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1 Licence and Requirements

Permission is granted to copy, distribute and/or modify this software under the terms of the \LaTeX Project Public License (\LPPL), version 1.3 or later (http://www.latex-project.org/lppl.txt). The software has the status “maintained.”

\IDXCMDS loads and needs the the packages etoolbox [Leh15], pgfopts [Wri11] and \ltxcmds [Obe11].

2 Motivation

When working on a larger document and designing and writing the macros for various bits and pieces I was going to use I found myself repeatedly writing the same kind of macros again and again that had some kind of semantic meaning, maybe some markup definitions that also created an index entry and had a star form for omitting the index entry. They all had more or less the following structure:
After having copied and pasted this code for the fourth time I thought: you should have a command that does this for you. That was when \newidxcmd was born. This command soon enough got some extensions, e. g., giving the commands thus defined an optional argument that allowed specifying the sorting. It wasn’t long before I realized that I might want to use this \newidxcmd again in other documents which was when I wrote the first draft of this package.

I added other commands, \newsubmainidxcmd and \newsubidxcmd, which I didn’t (and still don’t) really use or need but of which I thought they could be useful for others, and here we are.

3 Usage

3.1 Available Commands

\newidxcmd[\langle index cs \rangle]{\langle cs \rangle}{\langle formatting specs \rangle}{\langle append \rangle}

Defines a command \langle cs \rangle that formats its argument according to \langle formatting specs \rangle and creates an index entry with \langle index cs \rangle that gets \langle append \rangle appended. Refer to the argument of \langle cs \rangle in \langle formatting specs \rangle with #1.

Also defines a command \langle cs \rangle idx that allows to only create an index entry. See section 3.2.1 for examples and further description of its functionality. Default for \langle index cs \rangle is \index.

\newsubidxcmd*[\langle index cs \rangle]{\langle cs \rangle}{\langle main entry \rangle}{\langle form. specs \rangle}{\langle append \rangle}

Defines a command \langle cs \rangle that formats its argument according to \langle form. specs \rangle and creates an index sub-entry to \langle main entry \rangle with \langle index cs \rangle that gets \langle append \rangle appended. Refer to the argument of \langle cs \rangle in \langle form. specs \rangle with #1.

Also defines a command \langle cs \rangle idx that allows to only create an index entry. See section 3.2.2 for further description of its functionality. Default for \langle index cs \rangle is \index.

\newsubmainidxcmd[\langle index cs \rangle]{\langle cs \rangle}{\langle form. specs \rangle}{\langle append \rangle}

Defines a command \langle cs \rangle that formats its argument according to \langle form. specs \rangle and creates an index sub-entry to a main entry with \langle index cs \rangle that gets \langle append \rangle appended. Refer to the argument of \langle cs \rangle in \langle form. specs \rangle with #1.

Also defines a command \langle cs \rangle idx that allows to only create an index entry. The main entry is specified at use time. See section 3.2.3 for examples and further description of its functionality. Default for \langle index cs \rangle is \index.
The commands \texttt{⟨cs⟩} defined this way are robust but their formatting argument is not placed in a group. Keep this in mind when you use \texttt{\bfseries} or something in a definition. \texttt{⟨cs⟩} will be defined using etoolbox' \texttt{\newrobustcmd} which means an error will be thrown if \texttt{⟨cs⟩} is already defined.

Of course these commands cannot cover all possible use cases for index entries but that is not the intention of this package, anyway.

### 3.2 Command Usage

#### 3.2.1 \newidxcmd

The command \texttt{\newidxcmd{\foo}{⟨formatting specs⟩}} will define a new command \texttt{\foo} with the following syntax:

\begin{verbatim}
\foo*{⟨text⟩}
format ⟨text⟩ according to specifications, no index entry.
\foo[⟨sort idx⟩]{⟨text⟩}{⟨append⟩}
format ⟨text⟩ according to specifications, add formatted index entry, sorted according to ⟨sort idx⟩ or, if the optional argument is left out, sorted according to ⟨text⟩. ⟨append⟩ is added to the index entry if the trailing optional argument is used (this can be useful for instance for getting formatted page numbers).
\fooidx[⟨sort idx⟩]{⟨text⟩}{⟨append⟩}
add formatted index entry, sorted according to ⟨sort idx⟩ or, if the optional argument is left out, sorted according to ⟨text⟩. ⟨append⟩ is added to the index entry if the trailing optional argument is used.
\end{verbatim}

Let’s see an example:

\begin{verbatim}
\% in the preamble, probably:
\% \newidxcmd{\acr}{\textsc{#1}}
\% \newidxcmd[\index[environments]]{\environ}{\texttt{#1}}[ (Environment)]
\% \newidxcmd[\scientist]{\textsf{#1}}
\acr{cd}, \acr{id}
\\environ{center}, \environ{flushleft}
\\scientist*{Albert Einstein}, \scientist[Heisenberg]{Werner Heisenberg}
\end{verbatim}

\begin{tabular}{ll}
CD, ID \\
center, flushleft \\
Albert Einstein, Werner Heisenberg
\end{tabular}
You will find these examples in the index of examples or the index of environments, respectively. The second set of examples shows the purpose of the first optional argument: if you have several indexes – like this documentation has for demonstration purposes – you might need to specify the index command used. If you want to prove if the example worked: Albert Einstein should not be found in the index and Werner Heisenberg should be sorted under Heisenberg. Both center and flushleft should be found in the examples index.

Now let’s dissect the example a bit. The uses of \acr{cd}, \scientist*{Albert Einstein} and \environ{center} will essentially expand to

\begin{verbatim}
\% \acr{cd} =>
\textsc{cd}\index{cd@	extsc{cd}}
\% and in \jobname.idx =>
\indexentry{cd@	extsc{cd}}{3}
\% \scientist*{Albert Einstein} =>
\textsf{Albert Einstein}
\% \environ{center} =>
\texttt{center}\index[environments]{center@	exttt{center} (Environment)}
\% and in examples.idx =>
\indexentry{center@	exttt{center} (Environment)}{3}
\end{verbatim}

3.2.2 newsubidxcmd

The command \newsubidxcmd*{\foo}{⟨main entry⟩}{⟨form. specs⟩} will define a new command \foo with the same syntax as \newidxcmd does. However, \newsubidxcmd has an additional argument that specifies the main index entry this group of sub entries belongs to. For the unstarrred variant this argument can be some arbitrary main entry. For the starred variant it demands a command plus argument defined by \newidxcmd as argument.

\begin{verbatim}
\% preamble:
\% \newsubidxcmd*{\test}{Test}{\textcolor{red}{#1}}
\% \newsubidxcmd*{\hsnbg}{\scientist[Heisenberg]{Werner Heisenberg}}{#1}
\% \scientist[Heisenberg]{Werner Heisenberg} was born in
\% \hsnbg[Wuerzburg]{W"urzburg (Germany)}. He worked as a
\% professor in \hsnbg{Leipzig (Germany)}. And this is a
\% \test{test}.
\end{verbatim}

1. This document uses imakeidx [Gre15] for this purpose.
Werner Heisenberg was born in Würzburg (Germany). He worked as a professor in Leipzig (Germany). And this is a test.

3.2.3 \texttt{\newsubmainidxcmd}

The command \texttt{\newsubmainidxcmd{\texttt{\textbackslash foo}}{(form. specs)}} will define a new command \texttt{\textbackslash foo} similar to \texttt{\newsubidxcmd} but where the main index entry is specified for every use case in the running text. \texttt{\textbackslash foo} will have the following syntax:

\texttt{\textbackslash foo*{(text)}}

format \texttt{(text)} according to specifications, no index entry.

\texttt{\textbackslash foo{(sort idx)1{(text)}{(main entry)}{(append)}}}

format \texttt{(text)} according to specifications, add formatted index sub-entry to the main index entry \texttt{(main entry)}, sorted according to \texttt{(sort idx)} or, if the optional argument is left out, sorted according to \texttt{(text)}. \texttt{(append)} is added to the index entry if the trailing optional argument is used (this can be useful for instance for getting formatted page numbers).

\texttt{\textbackslash fooidx{(sort idx)1{(text)}{(main entry)}{(append)}}}

add formatted index sub-entry to the main index entry \texttt{(main entry)}, sorted according to \texttt{(sort idx)} or, if the optional argument is left out, sorted according to \texttt{(text)}. \texttt{(append)} is added to the index entry if the trailing optional argument is used.

\begin{quote}
% in the preamble, probably:
% \texttt{\newsubmainidxcmd{\texttt{\textbackslash file}}{\texttt{\textbackslash textsf{#1}}}}
\texttt{\textbackslash file{article}{classes}} is a standard \LaTeX{} class.
\texttt{\textbackslash file{scrartcl}{KOMA-Script\textbackslash KOMAScript}} is part of the \texttt{\textbackslash KOMAScript} bundle.
\texttt{\textbackslash file*{test}} is a dummy.
\end{quote}

3.3 Options

\texttt{\textbackslash idxcmds} has the following options – either setable as package option or with the setup command \texttt{\textbackslash setidxcmds{(options)}} which takes a comma separated list of options:

\texttt{\textbackslash sort-sep} = \texttt{:\{\texttt{\langle symbol\rangle}\}} \hspace{1cm} \text{Default: @}

set makeindex symbol to separate the index into sorting and typesetting part as specified in the index style file.

\texttt{\textbackslash sub-sep} = \texttt{:\{\texttt{\langle symbol\rangle}\}} \hspace{1cm} \text{Default: !}

set makeindex symbol to add a sub entry as specified in the index style file.
The default indexing command that is used by `idxcmds`.

**References**

url: http://mirror.ctan.org/macros/latex/contrib/imakeidx/.

etoolbox. version 2.2, Apr. 4, 2015.  
url: http://mirror.ctan.org/macros/latex/contrib/etoolbox/.

url: http://mirror.ctan.org/macros/latex/contrib/oberdiek/.

url: http://mirror.ctan.org/macros/latex/contrib/pgfopts/.

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<th>article</th>
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<th>KOMA-Script</th>
<th>Werner Heisenberg</th>
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</thead>
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<td>scrartcl</td>
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