

# IDXCMDS

VO.1a 2013/04/11

create commands for adding formatted index entries

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English documentation

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## 1 Licence and Requirements

Permission is granted to copy, distribute and/or modify this software under the terms of the L<sup>A</sup>T<sub>E</sub>X Project Public License, version 1.3 or later (<http://www.latex-project.org/lppl.txt>). The package has the status “maintained.”

**IDXCMDS** loads and needs the the packages etoolbox<sup>1</sup> [Leh11] and pgfplots<sup>2</sup> [Wri11].

## 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:

---

<sup>1</sup> CTAN: etoolbox    <sup>2</sup> CTAN: pgfplots

```

1 \makeatletter
2 \newcommand*\cmd{\@ifstar\cmd@star\cmd@nostar}
3 \newcommand*\cmd@star[1]{\cmd@base{#1}}
4 \newcommand*\cmd@nostar[1]{\cmd@base{#1}\cmd@idx{#1}}
5 \newcommand*\cmd@base[1]{\textit{#1}}
6 \newcommand*\cmd@idx[1]{\index{#1@\cmd@base{#1}}}
7 \makeatother

```

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

`IDXCMS` provides these commands:

`\newidxcmd`[<index cs>]{\cmd}{<formatting specs>}[<app to idx entry>]

Defines a command `\cmd`. See next section for a description. Default for <index cs> is `\index`.

`\newsubmainidxcmd`[<index cs>]{\cmd}{<formatting specs>}[<app to i.e.>]

Defines a command `\cmd`. See next section for a description. Default for <index cs> is `\index`.

`\newsubidxcmd`\*[<index cs>]{\cmd}{<main entry>}{<formatting specs>}[<app to i.e.>]

Defines a command `\cmd`. See next section for a description. Default for <index cs> is `\index`.

The commands defined this way are robust but their formatting is not placed in a group. Keep this in mind when you use `\bfseries` or something in a definition.

### 3.2 Command Usage

`\newidxcmd` will define a new command with the following syntax:

`\cmd`\*{<text>}

format <text> according to specifications, no index entry.

`\cmd`{<text>}

format <text> according to specifications, add formatted index entry, sorted according to <text>.

`\cmd[<srt idx>]{<text>}`

format <text> according to specifications, add formatted index entry, sorted according to <srt idx>.

Let's see an example:

```

1 % preamble:
2 % \newidxcmd\acr{\textsc{#1}}
3 % \newidxcmd[\index[examples]]\environ{\texttt{#1}}[ (Environment)]
4 % \newidxcmd\name{\textsf{#1}}
5 \acr{cd}, \acr{id}
6
7 \environ{center}, \environ{flushleft}
8
9 \name*{Albert Einstein}, \name[Heisenberg]{Werner Heisenberg}

CD, ID
center, flushleft
Albert Einstein, Werner Heisenberg

```

You will find these examples in the index or the examples index, 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. This document uses `imakeidx`<sup>3</sup> [BG13] for this purpose.

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

```

1 % \acr{cd} =>
2 \textsc{cd}\index{cd@\textsc{cd}}
3 % \name*{Albert Einstein} =>
4 \textsf{Albert Einstein}
5 % \environ{center} =>
6 \texttt{center}\index[examples]{center@\texttt{center} (Environment)}

```

`\newsubmainidxcmd` will define a new command with the following syntax:

`\cmd*{<text>}`

format <text> according to specifications, no index entry.

`\cmd{<text>}{<main entry>}`

format <text> according to specifications, add formatted index entry, sorted according to <text>.

`\cmd[<srt idx>]{<text>}{<main entry>}`

format <text> according to specifications, add formatted index entry, sorted according to <srt idx>.

---

<sup>3</sup> CTAN: imakeidx

```

1 % preamble
2 % \newsubmainidxcmd\file{\textsf{#1}}
3 \file{article}{classes} is a standard \LaTeX{} class.
4 \file{scrartcl}{KOMA-Script@KOMAScript} is part of the \KOMAScript{}
  bundle.
5 \file*{test} is a dummy.

article is a standard LATEX class. scrartcl is part of the KOMA-Script bundle. test is a dummy.

```

`\newsubidxcmd` will define a new command with the same syntax as `\newidxcmd` does. However, `\newsubidxcmd` has an additional argument that specifies the main entry this group of sub entries belongs to. In the unstarred variant this argument can be some arbitrary main entry. In the starred variant it demands a command plus argument defined by `\newidxcmd` as argument.

```

1 % preamble:
2 % \newsubidxcmd\test{Test}{\textcolor{red}{#1}}
3 % \newsubidxcmd*\hsnbg{\name[Heisenberg]{Werner Heisenberg}}{#1}
4 \name[Heisenberg]{Werner Heisenberg} was born in \hsnbg{W"urzburg
5 (Germany)}. He worked as a professor in \hsnbg{Leipzig (Germany)}.
6 And this is a \test{test}.

Werner Heisenberg was born in Würzburg (Germany). He worked as a professor in Leipzig
(Germany). And this is a test.

```

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

### 3.3 Options

`IDXCMDs` has these option:

- `sort-sep` = <symbol> Default: @  
 set makeindex symbol to separate the index into sorting and typesetting part as specified in the index style file.
- `sub-sep` = <symbol> Default: !  
 set makeindex symbol to add a sub entry as specified in the index style file.

## References

- [BG13] Claudio Beccari and Enrico Gregorio. imakeidx. Version 1.3, Mar. 26, 2013. URL: <http://mirror.ctan.org/macros/latex/contrib/imakeidx>.
- [Leh11] Philipp Lehman. etoolbox. Version 2.1, Jan. 21, 2011. URL: <http://mirror.ctan.org/macros/latex/contrib/etoolbox>.

[Wri11] Joseph Wright. pgfopts. Version 2.1, June 2, 2011. URL: <http://mirror.ctan.org/macros/latex/contrib/pgfopts>.

## 4 Implementation

In the following code the lines 1–32 have been omitted. They only repeat the license statement which has already been mentioned in section 1.

```

33 \def\@idxcmds@date{2013/04/11}
34 \def\@idxcmds@version{v0.1a}
35
36 \ProvidesPackage{idxcmds}[\@idxcmds@date\space \@idxcmds@version\space
37   create commands for adding formatted index entries (CN)]
38 \RequirePackage{etoolbox,pgfopts}
39
40 % -----
41 % package options:
42 \def\@idxcmds@sortsep{@}
43 \def\@idxcmds@subsep{!}
44 \pgfkeys{
45   idxcmds/.cd,
46   sort-sep/.code = \def\@idxcmds@sortsep{#1} ,
47   sub-sep/.code  = \def\@idxcmds@subsep{#1}
48 }
49 \ProcessPgfoptions*
50
51 % -----
52 % a few helpers:
53 \def\@idxcmds@stripbs{\expandafter\@gobble\string}
54 \def\@idxcmds@csdef#1{\csdef{\@idxcmds@stripbs#1}}
55 \def\@idxcmds@csedef#1{\csedef{\@idxcmds@stripbs#1}}
56 \def\@idxcmds@csuse#1{\csuse{\@idxcmds@stripbs#1}}
57 \def\@idxcmds@appdef#1[#2]{\@idxcmds@csdef{#1@idx@app}{#2}}
58 \def\@idxcmds@newcommand{%
59   \@ifstar
60     {\@idxcmds@newcommand@star}
61     {\@idxcmds@newcommand@nostar}%
62 }
63 \def\@idxcmds@newcommand@nostar#1{%
64   \expandafter\newrobustcmd\csname\@idxcmds@stripbs#1\endcsname}
65 \def\@idxcmds@newcommand@star#1{%
66   \expandafter\newrobustcmd\expandafter*\csname\@idxcmds@stripbs#1\endcsname}
67
68 % -----
69 % \newidxcmd[<index cmd>]{<cs>}{<formatting specs>}[<app to idx entry>]
70 % new commands will have the syntax
71 %   \cmd*{<text>}           => no index entry
72 %   \cmd{<text>}           => index entry
73 %   \cmd[<sort idx>]{<text>} => alt. sort index

```

## 4 Implementation

```

74 %
75
76 \newrobustcmd\newidxcmd[3][\index]{%
77   \@idxcmds@csdef{#2@base}##1{#3}%
78   \@idxcmds@csdef{#2@idx}##1##2{%
79     \ifblank{##1}
80       {%
81         #1{%
82           ##2\@idxcmds@sortsep
83           \@idxcmds@csuse{#2@base}{##2}%
84           \@idxcmds@csuse{#2@idx@app}
85         }%
86       }
87     {%
88       #1{%
89         ##1\@idxcmds@sortsep
90         \@idxcmds@csuse{#2@base}{##2}%
91         \@idxcmds@csuse{#2@idx@app}
92       }%
93     }%
94   }%
95   \@idxcmds@csdef{#2@star}##1{\@idxcmds@csuse{#2@base}{##1}}%
96   \@idxcmds@csdef{#2@nostar}{%
97     \@ifnextchar[%
98       {\@idxcmds@csuse{#2@nostar@opt}}
99       {\@idxcmds@csuse{#2@nostar@opt}[]}%
100   \@idxcmds@csdef{#2@nostar@opt}[##1]##2{%
101     \@idxcmds@csuse{#2@base}{##2}%
102     \@idxcmds@csuse{#2@idx}{##1}{##2}}%
103   \newrobustcmd*#2{%
104     \@ifstar
105       {\@idxcmds@csuse{#2@star}}
106       {\@idxcmds@csuse{#2@nostar}}}%
107   \@idxcmds@newcommand*{#2idx}[2][{\@idxcmds@csuse{#2@idx}{##1}{##2}}%
108   \@ifnextchar[%
109     {\@idxcmds@appdef{#2}}
110     {\@idxcmds@appdef{#2}[]}%
111 }
112
113 % -----
114 % \newsbmainidxcmd[<indexcmd>]{<cs>}{<formatting specs>}[<app to idx entry>]
115 \newrobustcmd\newsbmainidxcmd[3][\index]{%
116   \@idxcmds@csdef{#2@base}##1{#3}%
117   \@idxcmds@csdef{#2@idx}##1##2##3{%
118     \ifblank{##1}
119       {%
120         #1{%
121           ##3\@idxcmds@subsep##2\@idxcmds@sortsep
122           \@idxcmds@csuse{#2@base}{##2}%

```

## 4 Implementation

```

123     \@idxcmds@csuse{#2@idx@app}%
124 }%
125 }{%
126 #1{%
127   ##3\@idxcmds@subsep##1\@idxcmds@sortsep
128   \@idxcmds@csuse{#2@base}{##2}%
129   \@idxcmds@csuse{#2@idx@app}}%
130 }%
131 }%
132 \@idxcmds@csdef{#2@star}##1{\@idxcmds@csuse{#2@base}{##1}}%
133 \@idxcmds@csdef{#2@nostar}{%
134   \@ifnextchar[%
135     {\@idxcmds@csuse{#2@nostar@opt}}
136     {\@idxcmds@csuse{#2@nostar@opt}[]}}%
137 \@idxcmds@csdef{#2@nostar@opt}[##1]##2##3{%
138   \@idxcmds@csuse{#2@base}{##2}\@idxcmds@csuse{#2@idx}{##1}{##2}{##3}}%
139 \newrobustcmd*#2{%
140   \@ifstar
141     {\@idxcmds@csuse{#2@star}}
142     {\@idxcmds@csuse{#2@nostar}}}%
143 \@idxcmds@newcommand*{#2idx}[3][]{%
144   \@idxcmds@csuse{#2@idx}{##1}{##2}{##3}}%
145 \@ifnextchar[%
146   {\@idxcmds@appdef{#2}}
147   {\@idxcmds@appdef{#2}[]}]%
148 }
149
150 % -----
151 % \newsubidxcmd[<index cmd>]{<cs>}{<idx cmd>}{<formatting specs>}[<app to idx
152   entry>]
153 % \newsubidxcmd* [<index cmd>]{<cs>}{<main entry>}{<formatting specs>}[<app to
154   idx entry>]
155 \newif\if@idxcmds@sub@star
156
157 % get main if starred
158 \def\@idxcmds@extract@main#1#2{%
159   \@ifnextchar[%
160     {\@idxcmds@extract@main@aux{#1}{#2}}
161     {\@idxcmds@extract@main@aux{#1}{#2}[]}}
162 \def\@idxcmds@extract@main@aux#1#2[#3]#4{%
163   \@idxcmds@csdef{#1@main}{\@idxcmds@csuse{#2@base}{#4}}%
164   \ifstrempy{#3}
165     {\@idxcmds@csdef{#1@main@sort}{#4}}
166     {\@idxcmds@csdef{#1@main@sort}{#3}}}%
167
168 \newcommand*\newsubidxcmd{%
169   \@ifstar
170     {\@idxcmds@sub@startrue\@idxcmds@subidx}
171     {\@idxcmds@sub@starfalse\@idxcmds@subidx}}

```

## 4 Implementation

```
170 \newrobustcmd\@idxcmds@subidx[4][\index]{%
171   \@idxcmds@csdef{#2@base}##1{#4}%
172   \if@idxcmds@sub@star
173     \@idxcmds@extract@main#2#3%
174     \@idxcmds@csdef{#2@idx}##1##2{%
175       \ifblank{##1}
176         {%
177           #1{%
178             \@idxcmds@csuse{#2@main@sort}\@idxcmds@sortsep
179             \@idxcmds@csuse{#2@main}%
180             \@idxcmds@subsep##2\@idxcmds@sortsep
181             \@idxcmds@csuse{#2@base}{##2}%
182             \@idxcmds@csuse{#2@idx@app}%
183           }%
184         }{%
185           #1{%
186             \@idxcmds@csuse{#2@main@sort}\@idxcmds@sortsep
187             \@idxcmds@csuse{#2@main}%
188             \@idxcmds@subsep##1\@idxcmds@sortsep
189             \@idxcmds@csuse{#2@base}{##2}%
190             \@idxcmds@csuse{#2@idx@app}%
191           }%
192         }}%
193   \else
194     \@idxcmds@csdef{#2@idx}##1##2{%
195       \ifblank{##1}
196         {%
197           #1{%
198             #3%
199             \@idxcmds@subsep##2\@idxcmds@sortsep
200             \@idxcmds@csuse{#2@base}{##2}%
201             \@idxcmds@csuse{#2@idx@app}%
202           }%
203         }{%
204           #1{%
205             #3%
206             \@idxcmds@subsep##1\@idxcmds@sortsep
207             \@idxcmds@csuse{#2@base}{##2}%
208             \@idxcmds@csuse{#2@idx@app}%
209           }%
210         }}%
211   \fi
212   \@idxcmds@csdef{#2@star}##1{\@idxcmds@csuse{#2@base}{##1}}%
213   \@idxcmds@csdef{#2@nostar}{%
214     \@ifnextchar{%
215       {\@idxcmds@csuse{#2@nostar@opt}}
216       {\@idxcmds@csuse{#2@nostar@opt}[]}%
217     \@idxcmds@csdef{#2@nostar@opt}[##1]##2{%
218       \@idxcmds@csuse{#2@base}{##2}\@idxcmds@csuse{#2@idx}{##1}{##2}}%
```



```

219 \newrobustcmd*#2{%
220   \@ifstar
221     {\@idxcmds@csuse{#2@star}}
222     {\@idxcmds@csuse{#2@nostar}}}%
223 \@idxcmds@newcommand*{#2idx}[2][]{%
224   \@idxcmds@csuse{#2@idx}{##1}{##2}}%
225 \@ifnextchar[%
226   {\@idxcmds@appdef{#2}}
227   {\@idxcmds@appdef{#2}[]}%
228 }
229
230 \endinput
231 % -----
232 % HISTORY:
233 2012/11/02 v0.1 - first working version
234 2013/04/11 v0.1a - made \newidxcmd, \newsubmainidxcmd and \newsubidxcmd robust

```

## Index

This index has some peculiar entries in addition to the ones you would normally expect. But actually they are the corresponding entries to the examples shown in section 3.

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