

The kvdefinekeys package

Heiko Oberdiek
<heiko.oberdiek at gmail.com>

2010/03/01 v1.0

Abstract

Package kvdefinekeys provides `\kv@define@key` to define keys the same way as keyval's `\define@key`. However, it works also using ini-TeX.

Contents

1	Documentation	1
1.1	Motivation	1
2	Implementation	2
2.1	Identification	2
2.2	Package loading	3
2.3	Provide key defining macro	3
3	Test	4
3.1	Catcode checks for loading	4
4	Installation	5
4.1	Download	5
4.2	Bundle installation	5
4.3	Package installation	5
4.4	Refresh file name databases	6
4.5	Some details for the interested	6
5	References	6
6	History	6
	[2010/03/01 v1.0]	6
7	Index	7

1 Documentation

1.1 Motivation

`\kvsetkeys` serves as replacement for keyval's `\setkeys`. This package adds macros to define keys, closing the gap `\kvsetkeys` leaves.

`\kv@define@key {family} {key},[default]`

Macro `\kv@define@key` reimplements keyval's `\define@key`. As difference to the original the defined keys also allow `\par` inside values.

2 Implementation

2.1 Identification

```
1 (*package)
```

Reload check, especially if the package is not used with L^AT_EX.

```
2 \begingroup
3 \catcode44 12 % ,
4 \catcode45 12 % -
5 \catcode46 12 % .
6 \catcode58 12 % :
7 \catcode64 11 % @
8 \catcode123 1 % {
9 \catcode125 2 % }
10 \expandafter\let\expandafter\x\csname ver@kvdefinekeys.sty\endcsname
11 \ifx\x\relax % plain-TeX, first loading
12 \else
13 \def\empty{}%
14 \ifx\x\empty % LaTeX, first loading,
15 % variable is initialized, but \ProvidesPackage not yet seen
16 \else
17 \catcode35 6 % #
18 \expandafter\ifx\csname PackageInfo\endcsname\relax
19 \def\x#1#2{%
20 \immediate\write-1{Package #1 Info: #2.}%
21 }%
22 \else
23 \def\x#1#2{\PackageInfo{#1}{#2, stopped}}%
24 \fi
25 \x{kvdefinekeys}{The package is already loaded}%
26 \aftergroup\endinput
27 \fi
28 \fi
29 \endgroup
```

Package identification:

```
30 \begingroup
31 \catcode35 6 % #
32 \catcode40 12 % (
33 \catcode41 12 % )
34 \catcode44 12 % ,
35 \catcode45 12 % -
36 \catcode46 12 % .
37 \catcode47 12 % /
38 \catcode58 12 % :
39 \catcode64 11 % @
40 \catcode91 12 % [
41 \catcode93 12 % ]
42 \catcode123 1 % {
43 \catcode125 2 % }
44 \expandafter\ifx\csname ProvidesPackage\endcsname\relax
45 \def\x#1#2#3[#4]{\endgroup
46 \immediate\write-1{Package: #3 #4}%
47 \xdef#1{#4}%
48 }%
49 \else
50 \def\x#1#2[#3]{\endgroup
51 #2[#3]}%
52 \ifx#1@undefined
53 \xdef#1{#3}%
54 \fi
55 \ifx#1\relax
56 \xdef#1{#3}%
```

```

57     \fi
58   }%
59   \fi
60 \expandafter\x\csname ver@kvdefinekeys.sty\endcsname
61 \ProvidesPackage[kvdefinekeys]%
62 [2010/03/01 v1.0 Defining keys (H0)]
63 \begingroup
64 \catcode123 1 % {
65 \catcode125 2 % }
66 \def\x{\endgroup
67   \expandafter\edef\csname KVD@AtEnd\endcsname{%
68     \catcode35 \the\catcode35\relax
69     \catcode64 \the\catcode64\relax
70     \catcode123 \the\catcode123\relax
71     \catcode125 \the\catcode125\relax
72   }%
73 }%
74 \x
75 \catcode35 6 % #
76 \catcode64 11 % @
77 \catcode123 1 % {
78 \catcode125 2 % }
79 \def\TMP@EnsureCode#1#2{%
80   \edef\KVD@AtEnd{%
81     \KVD@AtEnd
82     \catcode#1 \the\catcode#1\relax
83   }%
84   \catcode#1 #2\relax
85 }
86 \TMP@EnsureCode{46}{12}% .
87 \TMP@EnsureCode{47}{12}% /

```

2.2 Package loading

```

88 \begingroup\expandafter\expandafter\expandafter\endgroup
89 \expandafter\ifx\csname RequirePackage\endcsname\relax
90   \input ltxcmds.sty\relax
91 \else
92   \RequirePackage{ltxcmds}[2010/03/01]%
93 \fi

```

2.3 Provide key defining macro

`\kv@define@key`

```

94 \def\kv@define@key#1#2{%
95   \ltx@ifnextchar [{%
96     \KVD@DefineKeyWithDefault{#1}{#2}%
97   }{%
98     \long\expandafter\def\csname KV@#1@#2\endcsname##1%
99   }%
100 }

```

`\KVD@DefineKeyWithDefault`

```

101 \long\def\KVD@DefineKeyWithDefault#1#2[#3]{%
102   \expandafter\def\csname KV@#1@#2@default\expandafter\endcsname
103   \expandafter{%
104     \csname KV@#1@#2\endcsname{#3}%
105   }%
106   \long\expandafter\def\csname KV@#1@#2\endcsname##1%
107 }

108 \KVD@AtEnd
109 \</package>

```

3 Test

3.1 Catcode checks for loading

```
110 <*test1>
111 \catcode'\{=1 %
112 \catcode'\}=2 %
113 \catcode'\#=6 %
114 \catcode'\@=11 %
115 \expandafter\ifx\csname count@\endcsname\relax
116   \countdef\count@=255 %
117 \fi
118 \expandafter\ifx\csname @gobble\endcsname\relax
119   \long\def\@gobble#1{}%
120 \fi
121 \expandafter\ifx\csname @firstofone\endcsname\relax
122   \long\def\@firstofone#1{#1}%
123 \fi
124 \expandafter\ifx\csname loop\endcsname\relax
125   \expandafter\@firstofone
126 \else
127   \expandafter\@gobble
128 \fi
129 {%
130   \def\loop#1\repeat{%
131     \def\body{#1}%
132     \iterate
133   }%
134   \def\iterate{%
135     \body
136     \let\next\iterate
137   \else
138     \let\next\relax
139   \fi
140   \next
141 }%
142 \let\repeat=\fi
143 }%
144 \def\RestoreCatcodes{}
145 \count@=0 %
146 \loop
147   \edef\RestoreCatcodes{%
148     \RestoreCatcodes
149     \catcode\the\count@=\the\catcode\count@\relax
150   }%
151 \ifnum\count@<255 %
152   \advance\count@ 1 %
153 \repeat
154
155 \def\RangeCatcodeInvalid#1#2{%
156   \count@=#1\relax
157   \loop
158     \catcode\count@=15 %
159   \ifnum\count@<#2\relax
160     \advance\count@ 1 %
161   \repeat
162 }
163 \expandafter\ifx\csname LoadCommand\endcsname\relax
164   \def\LoadCommand{\input kvdefinekeys.sty\relax}%
165 \fi
166 \def\Test{%
167   \RangeCatcodeInvalid{0}{47}%
```

```

168 \RangeCatcodeInvalid{58}{64}%
169 \RangeCatcodeInvalid{91}{96}%
170 \RangeCatcodeInvalid{123}{255}%
171 \catcode'\@=12 %
172 \catcode'\=0 %
173 \catcode'\{=1 %
174 \catcode'\}=2 %
175 \catcode'\#=6 %
176 \catcode'\[=12 %
177 \catcode'\]=12 %
178 \catcode'\%=14 %
179 \catcode'\ =10 %
180 \catcode13=5 %
181 \LoadCommand
182 \RestoreCatcodes
183 }
184 \Test
185 \csname @@end\endcsname
186 \end
187 </test1>

```

4 Installation

4.1 Download

Package. This package is available on CTAN¹:

[CTAN:macros/latex/contrib/oberdiek/kvdefinekeys.dtx](#) The source file.

[CTAN:macros/latex/contrib/oberdiek/kvdefinekeys.pdf](#) Documentation.

Bundle. All the packages of the bundle ‘oberdiek’ are also available in a TDS compliant ZIP archive. There the packages are already unpacked and the documentation files are generated. The files and directories obey the TDS standard.

[CTAN:install/macros/latex/contrib/oberdiek.tds.zip](#)

TDS refers to the standard “A Directory Structure for \TeX Files” ([CTAN:tds/tds.pdf](#)). Directories with `texmf` in their name are usually organized this way.

4.2 Bundle installation

Unpacking. Unpack the `oberdiek.tds.zip` in the TDS tree (also known as `texmf` tree) of your choice. Example (linux):

```
unzip oberdiek.tds.zip -d ~/texmf
```

Script installation. Check the directory `TDS:scripts/oberdiek/` for scripts that need further installation steps. Package `attachfile2` comes with the Perl script `pdfatfi.pl` that should be installed in such a way that it can be called as `pdfatfi`. Example (linux):

```
chmod +x scripts/oberdiek/pdfatfi.pl
cp scripts/oberdiek/pdfatfi.pl /usr/local/bin/
```

4.3 Package installation

Unpacking. The `.dtx` file is a self-extracting docstrip archive. The files are extracted by running the `.dtx` through plain \TeX :

```
tex kvdefinekeys.dtx
```

¹[ftp://ftp.ctan.org/tex-archive/](http://ftp.ctan.org/tex-archive/)

TDS. Now the different files must be moved into the different directories in your installation TDS tree (also known as `texmf` tree):

```
kvdefinekeys.sty      → tex/generic/oberdiek/kvdefinekeys.sty
kvdefinekeys.pdf      → doc/latex/oberdiek/kvdefinekeys.pdf
test/kvdefinekeys-test1.tex → doc/latex/oberdiek/test/kvdefinekeys-test1.tex
kvdefinekeys.dtx      → source/latex/oberdiek/kvdefinekeys.dtx
```

If you have a `docstrip.cfg` that configures and enables `docstrip`'s TDS installing feature, then some files can already be in the right place, see the documentation of `docstrip`.

4.4 Refresh file name databases

If your `TEX` distribution (`teTEX`, `mikTEX`, ...) relies on file name databases, you must refresh these. For example, `teTEX` users run `texhash` or `mktextlsr`.

4.5 Some details for the interested

Attached source. The PDF documentation on CTAN also includes the `.dtx` source file. It can be extracted by AcrobatReader 6 or higher. Another option is `pdftk`, e.g. unpack the file into the current directory:

```
pdftk kvdefinekeys.pdf unpack_files output .
```

Unpacking with L^AT_EX. The `.dtx` chooses its action depending on the format:

plain T_EX: Run `docstrip` and extract the files.

L^AT_EX: Generate the documentation.

If you insist on using L^AT_EX for `docstrip` (really, `docstrip` does not need L^AT_EX), then inform the autodetect routine about your intention:

```
latex \let\install=y\input{kvdefinekeys.dtx}
```

Do not forget to quote the argument according to the demands of your shell.

Generating the documentation. You can use both the `.dtx` or the `.drv` to generate the documentation. The process can be configured by the configuration file `ltxdoc.cfg`. For instance, put this line into this file, if you want to have A4 as paper format:

```
\PassOptionsToClass{a4paper}{article}
```

An example follows how to generate the documentation with `pdfLATEX`:

```
pdflatex kvdefinekeys.dtx
makeindex -s gind.ist kvdefinekeys.idx
pdflatex kvdefinekeys.dtx
makeindex -s gind.ist kvdefinekeys.idx
pdflatex kvdefinekeys.dtx
```

5 References

- [1] David Carlisle: *The keyval package*; 1999/03/16 v1.13; [CTAN:macros/latex/required/graphics/keyval.dtx](#).

6 History

[2010/03/01 v1.0]

- First version.

7 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; plain numbers refer to the code lines where the entry is used.

Symbols	
<code>\#</code>	113, 175
<code>\%</code>	178
<code>\@</code>	114, 171
<code>\@firstofone</code>	122, 125
<code>\@gobble</code>	119, 127
<code>\@undefined</code>	52
<code>\[</code>	176
<code>\]</code>	172
<code>\{</code>	111, 173
<code>\}</code>	112, 174
<code>\]</code>	177
<code>_</code>	179
A	
<code>\advance</code>	152, 160
<code>\aftergroup</code>	26
B	
<code>\body</code>	131, 135
C	
<code>\catcode</code> <i>3, 4, 5, 6, 7, 8, 9, 17, 31, 32,</i> <i>33, 34, 35, 36, 37, 38, 39, 40, 41,</i> <i>42, 43, 64, 65, 68, 69, 70, 71, 75,</i> <i>76, 77, 78, 82, 84, 111, 112, 113,</i> <i>114, 149, 158, 171, 172, 173,</i> <i>174, 175, 176, 177, 178, 179, 180</i>	
<code>\count@</code>	116, 145, 149, 151, 152, 156, 158, 159, 160
<code>\countdef</code>	116
<code>\csname</code>	10, 18, 44, 60, 67, 89, 98, 102, 104, 106, 115, 118, 121, 124, 163, 185
E	
<code>\empty</code>	13, 14
<code>\end</code>	186
<code>\endcsname</code>	10, 18, 44, 60, 67, 89, 98, 102, 104, 106, 115, 118, 121, 124, 163, 185
<code>\endinput</code>	26
I	
<code>\ifnum</code>	151, 159
<code>\ifx</code>	11, 14, 18, 44, 52, 55, 89, 115, 118, 121, 124, 163
<code>\immediate</code>	20, 46
<code>\input</code>	90, 164
<code>\iterate</code>	132, 134, 136
K	
<code>\kv@define@key</code>	1, 94
<code>\KVD@AtEnd</code>	80, 81, 108
<code>\KVD@DefineKeyWithDefault</code> ...	96, 101
L	
<code>\LoadCommand</code>	164, 181
<code>\loop</code>	130, 146, 157
<code>\ltx@ifnextchar</code>	95
N	
<code>\next</code>	136, 138, 140
P	
<code>\PackageInfo</code>	23
<code>\ProvidesPackage</code>	15, 61
R	
<code>\RangeCatcodeInvalid</code>	155, 167, 168, 169, 170
<code>\repeat</code>	130, 142, 153, 161
<code>\RequirePackage</code>	92
<code>\RestoreCatcodes</code> ..	144, 147, 148, 182
T	
<code>\Test</code>	166, 184
<code>\the</code>	68, 69, 70, 71, 82, 149
<code>\TMP@EnsureCode</code>	79, 86, 87
W	
<code>\write</code>	20, 46
X	
<code>\x</code> 10, 11, 14, 19, 23, 25, 45, 50, 60, 66, 74	