niceverb.sty

Minimizing Markup for Documenting LATEX packages*

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Abstract

niceverb.sty provides very decent syntax (through active characters) for describing \LaTeX packages and the syntax of macros conforming to \LaTeX syntax conventions.

 $\mathbf{Keywords:}\;\;$ literate programming, syntactic sugar, .txt to .tex enhancement, macro programming

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^{*}This document describes version v0.44 of niceverb.sty as of 2011/11/05.

 $^{^\}dagger \texttt{http://contact-ednotes.sty.de.vu}$

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Presenting niceverb 1

1.1 Purpose

The niceverb package provides "minimal" markup for documenting LATEX packages, reducing the number of keystrokes/visible characters needed (kind of poor man's WYSIWYG). It conveniently handles command names in arguments of macros such as \footnote or even of sectioning commands. If you use makedoc.sty additionally, commands for typesetting a package's code are inserted automatically (just using T_FX). As opposed to tools that are rather common on UNIX/Linux, this operation should work at any T_FX installation, irrespective of platform.

Both packages may at least be useful while working at a very new package and may suffice with small, simple packages. After having edited your package's code (typically in a .sty file—(jobname).sty), you just "latex" the manual file (maybe some .tex file— $\langle jobname \rangle$.tex) and get instantly the corresponding updated documentation.

niceverb and makedoc may also help to generate without much effort documentations of nowadays commonly expected typographical quality for packages that so far only had plain text documentations.

1.2Acknowledgement/Basic Ideas

Four ideas of Stephan I. Böttcher's in documenting his lineno inspired the present work:

- 1. The markup and its definitions are short and simple, markup commands are placed at the right "margin" of the ASCII file, so you hardly see them in reading the source file, you rather just read the text that will be printed.
- 2. An awk script removes the %s starting documentation lines and inserts the commands for typesetting the package's code (you don't see these commands in the source).²

[&]quot;What you see is what you get." Novices are always warned that WYSIWYG is essentially

- 3. An active character ('1') issues a \string and switches to typewriter typeface for typesetting a command verbatim—so this works without changing category codes (which is the usual idea of typesetting code), therefore it works even in macro arguments.
- 4. '<meta-variable>' produces '(meta-variable)'. ('\lessthan' stores the original '<'.)

1.3 The Commands and Features of niceverb

Actually, it is the main purpose of niceverb to save you from "commands" ... Single quotes ', ', "less than" < (accompanied with >), the "vertical" |, the hash mark #, ampersand &, and in an extended "auto mode" even backslash \ become \active characters with "special effects."

The package mainly aims at typesetting commands and descriptions of their syntax if the latter is "standard \LaTeX ", using "meta-variables." A string to be typeset "verbatim" thus is assumed to start with a single command like \foo, maybe followed by stars ('*') and pairs of square brackets (' $\lceil \langle opt\text{-}arg \rangle \rceil$ ') or curly braces (' $\lceil \langle mand\text{-}arg \rangle \rceil$ '), where those pairs contain strings indicating the typical kinds of contents for the respective arguments of that command. A typical example is this:

$$\lceil \frac{(opt-arg)}{(mand-arg)} \rceil$$

This was achieved by typing

In "auto mode" of the package, even typing

would have sufficed—WYSIWYG! I call such mixtures of *verbatim* and "meta-variables" 'meta-code'.

Outside macro arguments, you obtain the same by typing

Details:

"Meta-variables:" The package supports the "angle brackets" style of "meta-variables" (as with $\langle meta-variable \rangle$). You just type ' $\langle bar \rangle$ ' to get ' $\langle bar \rangle$ '.

This works due to a sloppy variant \NVerb of \verb which doesn't care about possible ligatures and definitions of active characters. Instead, it assumes that the "verbatim" font doesn't contain ligatures anyway. \'\verb+<foo>+', by contrast, just yields '<foo>'.

Almost the same feature is offered by ltxguide.cls which formats the basic guides from the LATEX Project Team. The present feature, however, also works in plain text outside verbatim mode.

 $^{^3}$ On the other hand, \NVerb is more careful with niceverb's special characters.

Single quotes (left/right) for "short verb:" The package "assumes" that quoting refers to code, therefore ''foo'' is typeset as 'foo', or (generally) '(content)' turns (content) into meta-code with the meta-variable feature as above. This somewhat resembles the \MakeShortVerb feature of doc.sty. You can "abuse" our feature just to get typewriter typeface.

Problems with this feature will typically arise when you try to typeset commands (and their syntax) in macro arguments—e.g.,

\footnote{'\bar' is a celebrated fake example!}

will try to execute \bar instead of typesetting it, giving an "undefined" error or so. \verb fails in the same situation, for the same reason. '&' (\footnote{&\bar\remaining\}}) or "auto mode" (see below) may then work better.⁴ More generally, the quoting feature still works in macro arguments in the sense that you then have to mark difficult characters with & (simply as short for \string). However, it still won't work with curly braces that don't follow a command name (such pairs of braces will simply get lost, single braces will give errors or so).

Double quotes and apostrophes should still work the usual way. For difficult cases, you can still use the standard \verb command from IATEX. To get usual single quotes, you can use their standard substitutes \lq and \rq, or for pairs of them, $\sqrt{qtd\{\langle text\rangle\}}$ in place of \sqrt{text} rq—or even \sqrt{qtd} . To get single quotes around some verbatim $\langle verb\rangle$, often \sqrt{text} works. It is for this reason that I have refrained from different solutions as in newverbs (so far).

Single right quotes for \textsf: Package names are (by some convention I often yet not always see working) typeset with \textsf; it was natural to use a remaining case of using single quotes for abbreviating

$\text{textsf}\{\langle text \rangle\}$

by $\lceil \langle text \rangle \rceil$. This idea of switching fonts continues font switching of wiki.sty which uses the syntax for editing *Wikipedia* pages (font switching by sequences of right single quotes).

Verticals for setting-off command descriptions: $\lceil \langle code \rangle \rceil$ works like " $\langle code \rangle$ " except putting the result into a framed box (just as all around here)—or something else that you can achieve using some hooks described with the implementation. There are variants like $\lceil code \rangle \rceil$.

Ampersand shows command syntax &c. even in arguments: E.g., type '&\foo{<arg>}' to get '\foo{\arg>}'. This may be even more convenient for typing than the single quotes method, although looking somewhat strange. However, in macro arguments this does not work with private letters (@ and _ here), for this case, use \c \cs{\argle characters}} or \c \cstx{\argle characters}\}\argle parameters\].

⁴\bar indeed!

 $^{^5\}mathrm{Moreover},\,\&$ currently has a limited x space functionality only.

This choice of & rests on the assumption that there won't be many tables in the documenation. You can restore the usual meaning of & by \MakeNormal\& and turn the present special meaning on again by

\MakeActive\& or \MakeActiveLet\&\CmdSyntaxVerb

You could also redefine (\renewcommand) \descriptionlabel using \CmdSyntaxVerb (the "normal command" that is equivalent to &, its "permanent alias") so \item[\foo] works as wanted.

Another feature of niceverb's & is getting (some of the) special characters (as listed in the standard macro \dospecials) verbatim in arguments (where \verb and the like fail). It just acts similarly as TEX's primitive \string (which it actually invokes—cf. discussion on the left quote feature above).

"Auto mode" typesets commands verbatim unless ... In "auto mode," the backslash '\' is an active character that builds a command name from the ensuing letters and typesets the command (and its syntax, allowing meta-variables) verbatim. However, there are some exceptions, which are collected in a macro \niceverbNoVerbList. \begin, \end, and \item belong to this list, you can redefine (\renewcommand) it, or add \langle macros \to it by \AddToNoVerbList}{\macros} There is also a command \NormalCommand{\lefters} instead of typesetting it. Since auto mode is somewhat dangerous, you have to start it explicitly by \AutoCmdSyntaxVerb. You can end it by \EndAutoCmdSyntaxVerb. \AutoCmdInput{\leftafle}} is probably most important.

Auto mode is motivated by the observation that there are package files containing their documentation as pure (well-readable) ASCII text—containing the names of the new commands without any kind of quotation marks or verbatim commands. Auto mode should typeset such documentation just from the same ASCII text.

Hash mark '#' comes verbatim. No macro definitions are expected in the document environment.⁶ Rather, '#' is an active character for taking the next character (assuming it is a digit) to form a reference to a macro parameter—'#1' becomes '#1'-WYSIWYG indeed! (So the general syntax is $\boxed{\#\langle digit \rangle}$.)

Escaping from niceverb (generally). To get rid of the functionality of some active character $\langle char \rangle$ ('&', single quote, ampersand, hash mark—not "auto mode," see above) here, use \[\MakeNormal\\ \langle char \rangle \] —may be within a group. To revive it again, use \[\MakeActive\\ \langle char \rangle \]. This may fail when a different package overtook the active \(\langle char \rangle \) (but I expect more failures

 $^{^{-6}}$ This idea appeared 2009 on the LATEX-L mailing list. It may be wrong, as I have sometimes experienced . . .

then), in this case $[\mbox{MakeActiveLet}\\char\\\char\\\char\\\\char}\\char\\\char\\\char\\ch$

Right Quotes: Disabling/reviving replacement of \textsf by single right quotes requires

\nvRightQuoteNormal or \nvRightQuoteSansSerif

respectively.

1.4 Examples

The file mdoccorr.cfg providing some .txt→E^AT_EX functionality—i.e., typographical corrections—documents itself using niceverb syntax. Its code and the documentation that is typeset from it are in the 'examples' section of makedoc.pdf.—Moreover, the documentation niceverb.pdf of niceverb.sty was typeset from niceverb.tex and niceverb.sty using niceverb syntax, likewise fifinddo.pdf and makedoc.pdf. The example of niceverb shows the most frequent use of the & feature.

nicetext bundle release v0.4 contains a file substr.tex that should typeset the documentation of the version of Harald Harders' substr.sty⁷ that your TEX finds first, as well as arseneau.tex typesetting a few packages by Donald Arseneau. The outcomes (with me) are substr.pdf and arseneau.pdf. These are the first applications of niceverb's "auto mode" to (unmodified) third-party package files. (I also made a more ambitious documentation of Donald Arseneau's import.sty v3.0 before I found that CTAN already has a nicely typeset documentation of import.sty v5.2.)

1.5 What is Wrong with the Present Version

1. niceverb.sty should be an extension of wiki.sty; yet their font selection mechanisms are currently not compatible. Especially, the feature of

replacing text or $\texttt{emph}\{\langle text \rangle\}$ may be considered missing.

- 2. Font switching or horizontal spacing may fail in certain situations. You can correct spacing by '_'.
- 3. The "vertical" character '|' produces inline boxes only at present. It might as well provide a version of the decl tabular environment of ltxguide.cls.

⁷http://ctan.org/pkg/substr

The inline boxes badly deal with long command names and many arguments. Doubled verticals could ensure the decl mode. Moreover, such a box might issue an *index* entry.

- 4. One may have *opposite* ideas about using quotes—maybe rather " $\langle code \rangle$ " should typeset $\langle code \rangle$ verbatim. There might be a package option for this. If ordinary ''' $\langle text \rangle$ "' still should work, awful tricks as now with the right quote feature would be needed.
- 5. "auto mode" seems not to work in section titles. (2011/01/26)
- 6. Certain difficulties with type setting code in macro arguments may be overcome easily using ε -TFX features, I need to find out ...

2 Implementation of the Markup Syntax

```
\NeedsTeXFormat{LaTeX2e}[1994/12/01]
    \ProvidesPackage{niceverb}[2011/11/05 v0.44
3
                                minimize doc markup (UL)]
4
    %% Copyright (C) 2009-2011 Uwe Lueck,
    %% http://www.contact-ednotes.sty.de.vu
    %% -- author-maintained in the sense of LPPL below --
    %% This file can be redistributed and/or modified under
9
    %% the terms of the LaTeX Project Public License; either
10
    %% version 1.3a of the License, or any later version.
    %% The latest version of this license is in
13
           http://www.latex-project.org/lppl.txt
14
    %% We did our best to help you, but there is NO WARRANTY.
15
    %% Please report bugs, problems, and suggestions via
16
17
18
    %%
         http://www.contact-ednotes.sty.de.vu
19
    %%
```

2.1 Switching Category Codes

v0.3 introduces \AssignCatCodeTo and \MakeNormal.

```
20 \newcommand*{\CatCode}{\catcode'}
21  % \newcommand*{\CatCode}[1]{\catcode'#1 } %% no better 2010/02/27
```

With $\Lambda signCatCodeTo\{\langle number\rangle\}\{\langle char\rangle\}\$, $\Lambda catCode$ may still be useful for displaying (debugging or playing). Note that $\Lambda char$ is the second argument here.

22 \newcommand*{\AssignCatCodeTo}[2]{\catcode'#2=#1\relax}

 $\mbox{\constraint} \mbox{\constraint} \mbox{\cons$

- 23 \newcommand*\MakeLetter{\AssignCatCodeTo{11}}
- 24 \def \MakeOther {\AssignCatCodeTo{12}}

... overriding fifinddo if ...

 $\mbox{\begin{tabular}{l} $\backslash AakeActive \char \end{tabular} just revives the meaning of $\langle char \end{tabular}$ it had most recently (as an \active character ... maybe "Undefined control sequence" unless ...) This is fine for reviving niceverb functionality after having disabled it by \AakeNormal—provided no other package used $\langle char \end{tabular}$ actively in the meantime ...$

25 \providecommand*{\MakeActive}{\AssignCatCodeTo\active} %% used v0.3

We take a copy \MakeActiveHere of \MakeActive as the latter may become a dangerous thing for compatibility with hyperref.

- 26 \@ifdefinable\MakeActiveHere{%
- 27 \let\MakeActiveHere\MakeActive}

[\MakeActiveLet\ $\langle char \rangle \langle macro_name \rangle$] activates $\langle char \rangle$ and then gives it the meaning of $\langle macro_name \rangle$.

- 29 \newcommand*{\MakeActiveLet}[2]{\% cf. \@sverb/\do@noligs (doc.sty)
- 30 \MakeActiveHere#1% %% 2010/03/12
- 31 \begingroup
- 32 \lccode'\~'#1\relax \lowercase{\endgroup \let~#2}}

We take a copy \MakeActiveLetHere as well.

- 33 \@ifdefinable\MakeActiveLetHere{%
- 34 \let\MakeActiveLetHere\MakeActiveLet}

We use the "underscore" as a private letter (the LATEX2 Project Team likes it as well). Its usual meaning can be restored by [\MakeNormal_] For restoring the usual category codes of TEX's special characters later, we store them now. (I.e., these characters are listed in the macro \dospecials that expands to

```
\do\\do\\do\\do\\do\\do\\\do\\
```

their category codes are 10, 0, 1, 2, 3, 4, 6, 7, 8, 14, 13 respectively; "end of line", "ignored", "letter", "other", and "invalid" are missing—cf. *TeXbook* Chap. 7.)

```
35 \def\do#1{\expandafter
```

- 36 \chardef \csname normal_catcode_\string#1\expandafter \endcsname
- 37 \CatCode#1\relax}
- 88 \dospecials

Tests: "normal category code" of $\$ is 0, "normal category code" of $\$ is 3; "normal category code" of $\$ is 4.8

Here we switch to the "underscore" as a "letter" indeed (for the rest of the package):

```
39
    \MakeLetter\_
40
    41
      %% <- replaced 2009/04/05
42
  \overline{\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ } saves you from remembering ...
43
    \newcommand*{\MakeNormal}[1]{%
      \@ifundefined{\norm_catc_str#1}%
44
                {\MakeOther#1}%
45
                {\AssignCatCodeTo{\csname\norm_catc_str#1\endcsname}#1}}
46
47
    \newcommand*{\norm_catc_str}{normal_catcode_\string}
48
      %% TODO add ^^I and ^^M
 We take a copy \MakeNormalHere of \MakeNormal as with \MakeActive.
```

49 \@ifdefinable\MakeNormalHere{\let\MakeNormalHere\MakeNormal}

2.2 Robustness by \IfTypesetting

It seems we need some own ways to achieve various compatibilities—using $\lceil f(if) \rceil$. It also saves some $\ensuremath{\mbox{compatibilities}}$.

```
50 \providecommand*{\IfTypesetting}{% 
51 % \relax
```

This \relax suppressed ligatures of single right quotes!

```
52 \ifx \protect\@typeset@protect
53 \expandafter \@firstoftwo
54 \else \expandafter \@secondoftwo \fi}
```

2.3 \NVerb

\begin_min_verb is a beginning shared by some macros here. It begins like LATEX's \verb, apart from the final \tt.

```
% \newcommand*{\begin_min_verb}{% \relax \ifmode \hbox \else \leavevmode \null \fi \bgroup \tt} \  \NVerb\langle char \rangle \langle code \rangle \langle char \rangle \newcommand*{\NVerb}{% \newcommand*{\NVerb}-false \nice_maybe_meta_verb}
```

⁸LATEX's \nfss@catcodes is similar, but it makes space-like characters ignored. Also cf. ltfinal.dtx. TODO: \RestoreNormalCatcodes.

```
60 \newcommand*{\HardNVerb}{%
61 \_no_nice_meta_verb_true \nice_maybe_meta_verb}
62 \newif\if_no_nice_meta_verb
63 \newcommand*{\nice_maybe_meta_verb}[1]{%
```

Mainly avoid \verb's noligs list which overrides definitions of some active characters, while cmtt doesn't have any ligatures anyway.

```
64 \IfTypesetting{%
65 \begin_min_verb
66 \let\do\MakeOther \dospecials
```

Turn off niceverb specials:

```
\MakeOther\|\MakeOther\'\MakeOther\',%
67
           \if_no_nice_meta_verb_ \MakeOther\<%
68
           %%% \else
                        \MakeActiveLet\<\MetaVar
                                                      %% 2010/12/31
69
                        \MakeActiveLetHere\<\MetaVar %% 2011/06/20
           \else
70
71
           \fi
72
           \MakeActiveLetHere #1\niceverb_egroup
73
           \verb@eol@error \% TODO change message 2009/04/09
74
       }{\string\NVerb \string#1}}
 2009/04/11: about etc. [preceding a box!? 2010/03/14]
```

75 \newcommand*{\niceverh normal egroup}{\gamma}

```
75 \newcommand*{\niceverb_normal_egroup}{%
76 \egroup
```

2011/09/09 adding \niceverb_maybe_rq for \AddQuotes:

```
77 \niceverb_maybe_rq
78 \ifmmode\else\@\fi}
79 \@ifdefinable\niceverb_egroup
80 {\let\niceverb_egroup\niceverb_normal_egroup}
```

2.4 Single Quotes Typeset Meta-Code

\LQverb | will be a "permanent alias" for the active left single quote.

The verbatim feature must not act when another single left quote is ahead—we assume a double quote is intended then (thus the left quote feature does not allow to typeset something verbatim that starts with a single left quote). Rather, double quotes should be typeset then. In page headers, a \protect may be in the way. (A hook for \relaxing certain things in \markboth and \markright would have been an alternative.)

```
81 \MakeActive\'
82 \newcommand*{\LQverb}{%}
83 \IfTypesetting{\lq_double_test}{\protect'}}
84 \MakeOther\'
85 \newcommand*{\lq_double_test}{%}
```

This test settles the next catcode, so better switch to "other" in advance (won't harm if left quote isn't next):

```
86
       \begingroup
87
         \let\do\MakeOther \dospecials
         \MakeOther\\\% 2010/03/09!
88
         \futurelet\let_token \lq_double_decide}
89
     \newcommand*{\lq_double_decide}{%
90
       \ifx\let_token\LQverb
91
92
         \endgroup
         ''\expandafter \@gobble
93
```

Corresponding right quotes will become "other" due to having no space at the left. TODO to be changed with wiki.sty.

```
94
       \else
         \ifx\let_token\protect
95
           \expandafter\expandafter\expandafter \lq_double_decide_ii
96
         \else
97
98
           \endgroup
                                                         %% 2011/09/09
           \niceverb_maybe_qs
99
           \expandafter\expandafter \NVerb
100
101
             \expandafter\expandafter\rangle \','%
102
         \fi
103
       \fi}
```

\lq_double_decide_ii continues test behind \protect.

```
104 \newcommand*{\lq_double_decide_ii}[1]{%
105 \futurelet\let_token \lq_double_decide}
```

2.5 Ampersand (or \cstx) Typesets Meta-Code

\CmdSyntaxVerb will be a permanent alias for the active &.

```
106 \MakeActive\&
107 \newcommand*{\CmdSyntaxVerb}{%}
108 \IfTypesetting{%}
109 \begin_min_verb
```

v0.3 moves the previous line from \cmd_syntax_verb where it is too late to establish private letters according to next line which was in \begin_min_verb earlier—an important bug fix!

```
110 \MakeLetter\@\MakeLetter\_%
111 \cmd_syntax_verb
112 \{\protect&\string}\}
113 \MakeNormal\&
114 \newcommand*{\cmd_syntax_verb}[1]{%
115 \string#1\futurelet\let_token \after_cs}
```

However, & (or \CmdSyntaxVerb) may fail with private letters (there should be a hook for them), especially in *macro arguments* and with hyperref in titles of *sections bearing* \labels, so we provide something like $\cs{\langle characters \rangle}$ from tugboat.sty.

```
116 \DeclareRobustCommand*{\cs}[1]{%
117 \begin_min_verb \backslash_verb #1\egroup}
118 \newcommand*{\backslash_verb}{\char'\}
```

Moreover, typing &\par in "short" macro arguments fails, you better type \cs{par} then. Likewise, \cs{if}\{letters}\} and \cs{fi}\ is safer in case you want to skip some part of the documentation (e.g., a package option skips commented code) by \if\{letters}\fi. Finally, there will be PDF bookmarks support for \cs rather than for a real & or \CmdSyntaxVerb analogue like \\cstx{\charcters}*[\copt]\{\charcters}\] as follows.

```
\DeclareRobustCommand*{\cstx}[1]{%
                                                       %% corr. 2010/03/17
119
       \begin_min_verb \backslash_verb #1\futurelet\let_token \after_cs}
120
121
     \newcommand*{\after_cs}{%
122
       \ifcat\noexpand\let_token a\egroup \space
       \else \expandafter \decide_verb \fi}
123
     \newcommand*{\test_more_verb}{\futurelet\let_token \decide_verb}
124
     \newcommand*{\decide_verb}{%
125
          \jumpteg_on_with\bgroup\braces_verb
126
127
          \jumpteg_on_with[\brackets_verb
         \jumpteg_on_with*\star_verb
128
129
        \egroup}
         %% CAUTION/TODO wrong before (... if cmd without arg
130
         %%
                     use \ then or choose usual verb...
131
         %%
                     or \MakeLetter\( etc. ... or \xspace
132
     \newcommand*{\jumpteg_on_with}[2]{%
133
134
       \ifx\let_token#1\do_jumpteg_with#2\fi}
  TODO cf. xfor, xspace (\break@loop); \DoOrBranch#1...#1 or so.
     \def\do_jumpteg_with#1#2\egroup{\fi#1}
135
     \def\braces_verb#1{\string{#1\string}\test_more_verb}
136
     \def\brackets_verb[#1]{[#1]\test_more_verb}
137
     \def\star_verb*{*\test_more_verb}
138
139
       %% not needed with \Auto... OTHERWISE useful in args!
```

As latex.ltx has \endgraf as a permanent alias for the primitive version of \par and \endline for \cr, we offer \endcell as a replacement for the original &:

140 \let\endcell&

2.6 Escape Character Typesets Meta-Code

\BuildCsSyntax will be a permanent alias for the active escape character.

```
\DeclareRobustCommand*{\BuildCsSyntax}{%
141
       \futurelet\let_token \build_cs_syntax_sp}
142
     \newcommand*{\build_cs_syntax_sp}{%
143
       \ifx\let_token\@sptoken
144
          \@%
                                               %% 2010/12/30
145
146
       \else %% TODO ^^M!?
147
          \expandafter \start_build_cs_syntax
148
     \newcommand*{\start_build_cs_syntax}[1]{%
149
       \edef\string_built{\string#1}%
150
  #1 may be active.—With Donald Arseneau's import.sty (e.g.), '_' may be needed
  to be \active with the meaning of \textunderscore, therefore restoring its
  category code needs some more care than with v0.32 and earlier:
       \edef\before_build_cs_sub{\the\CatCode\_}%
151
        \MakeLetter\_\MakeLetter\@%% CAUTION, cf. ...
152
       \test_more_cs}
153
     \newcommand*{\test_more_cs}{%
154
       \futurelet\let_token \decide_more_cs}
155
     \newcommand*{\decide_more_cs}{%
156
       \ifcat\noexpand\let_token a\expandafter \add_to_cs
157
        \else
158
     %
            \MakeNormalHere\
159
  Restoring '_' more carefully with v0.4 (\begingroup ... \endgroup!?):
          \CatCode\_\before_build_cs_sub
160
          \MakeOther\@%
161
          \expandafter \in0 \expandafter
162
            {\csname \string_built \expandafter \endcsname
163
164
              \expandafter}\expandafter{\niceverbNoVerbList}%
          \ifin@
165
            \csname \string_built
166
              \expandafter\expandafter\expandafter \endcsname
167
168
            \begin_min_verb \backslash_verb\string_built
169
              \expandafter\expandafter\expandafter \test_more_verb
170
171
          \fi
172
       \fi}
       %% TODO such \if nestings with ifthen!?
173
      %% cf.:
174
     % \let\let_token,\typeout{\meaning\let_token}
175
       %% TEST TODO fuer xspace!? (\ifin@)
176
177
     \newcommand*{\add_to_cs}[1]{%
       \edef\string_built{\string_built#1}\test_more_cs}
   \AutoCmdSyntaxVerb | starts, |\EndAutoCmdSyntaxVerb | ends "auto mode."
     \newcommand*{\AutoCmdSyntaxVerb}{%
179
180
          \MakeActiveLetHere\\BuildCsSyntax}
     \newcommand*{\EndAutoCmdSyntaxVerb}{\CatCode\\\z@}
```

```
\lceil \text{NormalCommand}\{\langle characters \rangle\} \rceil executes \backslash \langle characters \rangle in "auto mode."
```

182 \newcommand*{\NormalCommand}{} \let\NormalCommand\@nameuse

Once I may want to use this feature in *Wikipedia*-like section titles as supported by makedoc, yet I cannot really apply the present feature soon, so this must wait ... (There is a special problem with \newlabel and hyperref ...)

Former tests:

- 183 % \futurelet\LetToken\relax \relax
- 184 % \show\LetToken \typeout{\ifcat\noexpand\LetToken aa\else x\fi}

\\niceverbNoVerbList\] is the list of macros that will be executed instead of being typeset.

- 185 \newcommand*{\niceverbNoVerbList}{%
- 186 \begin\end\item\verb\EndAutoCmdSyntaxVerb\NormalCommand
- 187 \section\subsection\subsubsection\ \% TODO!?

\AddToMacro{\niceverbNoVerbList}{ $\langle macros \rangle$ } can be used to add $\langle macros \rangle$ to that list

```
188 \providecommand*{\AddToMacro}[2]{% %% TODO move to ... 2010/03/05
189 \expandafter \def \expandafter #1\expandafter {#1#2}}
190 %% <- was very wrong 2010/03/18
```

Hey, or just $\Lambda ddToNoVerbList{\langle macros \rangle}$:

191 \newcommand*{\AddToNoVerbList}{\AddToMacro\niceverbNoVerbList}

"Auto mode" probably ain't mean a thing if it ain't invoked using

\land AutoCmdInput $\{\langle file \rangle\}$

for typesetting $\langle file \rangle$ in "auto mode:"

```
\newcommand*{\AutoCmdInput}[1]{%
192
193
          \begingroup
194
            \AddToMacro\niceverbNoVerbList{\ProvidesFile}%
            %% <- removed '\endinput', will be code! 2010/04/05
195
            \AutoCmdSyntaxVerb
196
            \input{#1}%
197
            \EndAutoCmdSyntaxVerb
198
199
          \endgroup
     }
200
```

2.7 Meta-Variables

 $\mbox{\color{MetaVar}(var-id)>}$ will be a permanent alias for the active '<'.

```
201 \def\MetaVar#1>{%
202 \mbox{\normalfont\itshape $\langle$#1\/$\rangle$}}
203  %% TODO offer without angles as well
```

As opposed to ltxguide.cls, this works outside verbatim as well.

2.8 Hash Mark is Code

```
204 \newcommand*{\HashVerb}[1]{{\tt\##1}}
```

2.9 Single Right Quotes for \textsf

\RQsansserif will be a permanent alias for the active single right quote.

The basic problem with the "single right quote feature" is that a single right quote may be meant to be an apostrophe. This is certainly the case at the right of a letter. On the other hand, we assume that it is *not* an apostrophe (i) in vertical mode (opening a new paragraph), (ii) after a horizontal skip.

For page headers, in expanding without typesetting, the expansion of \RQsansserif must contain another active single right quote.

```
205 \MakeActive\'
206 \newcommand*{\RQsansserif}{%
207 \IfTypesetting{\niceverb_rq_sf_test}{\protect'}}
208 \MakeOther\'
```

Another macro just to avoid more sequences of \expandafter:

```
\newcommand*{\niceverb_rq_sf_test}{%
209
210
        \ifhmode
          \ifdim\lastskip>\z@
211
            \expandafter\expandafter\expandafter \DoRQsansserif
212
213
          \else
214
            \ifnum\niceverb_spacefactor
215
              \expandafter\expandafter\expandafter\expandafter
216
                \expandafter\expandafter\expandafter
                   \DoRQsansserif
217
            \else '\fi
218
219
          \fi
220
        \else \ifvmode
221
          \expandafter\expandafter\expandafter \DoRQsansserif
222
          \else '\fi
223
        \fi}
```

 $\fbox{\color{local}{\color{local$

```
224 \MakeActive\'
225 \@ifdefinable\DoRQsansserif
226 {\def\DoRQsansserif#1'{\textsf{#1}}}
227 \MakeOther\'
```

The following cases are typical and cannot be decided by the previous criteria: (i) parenthesis, (ii) footnotes and after "horizontal" environments like $\[(math)\]$, (iii) section titles, (iv) $\$ noindent. We introduce some dangerous tricks—redefinitions of LATEX's internal $\$ 0sect and of TEX's primitives

\noindent and \ignorespaces as well as by a signal \spacefactor value of 1001. In page headers, LATEX equips the single right quote with the meaning of \active@math@prime which must be overridden.

These and the entire right quote functionality are activated by

```
\nvRightQuoteSansSerif and disabled by \nvRightQuoteNormal
```

—at \begin{document}—where we collect previous settings—or later:

```
231 \AtBeginDocument{%
232 \edef\before_niceverb_parenthesis{\the\sfcode'\(\)}%
233 \let \before_niceverb_ignore \ignorespaces %% 2010/03/16
234 \let \before_niceverb_sect \@sect
235 \let \before_niceverb_noindent \noindent} %% 2010/03/08
```

We assume that \@sect has the same parameters there as in LATEX (even if redefined by another package, like hyperref).

```
236 \def\niceverb_sect#1#2#3#4#5#6[#7]#8{%

237 \before_niceverb_sect{#1}{#2}{#3}{#4}{#5}{#6}%

238 [{\protect\nvAllowRQSS #7}]%

239 {\protect\nvAllowRQSS #8}}
```

2010/03/20:

```
240  \newcommand*{\niceverb_spacefactor}{\spacefactor=1001\relax}
241  \newcommand*{\niceverb_noindent}{%
242  \before_niceverb_noindent \niceverb_spacefactor}
243  \newcommand*{\niceverb_ignore}{%
244  \ifhmode \niceverb_spacefactor \fi \before_niceverb_ignore}
```

Here are the main switches:

```
245 \newcommand*{\nvRightQuoteSansSerif}{%
246 \MakeActiveLet\'\RQsansserif
247 \sfcode'\(=1001 \%\'\end{a}\) enable in parentheses 2009/04/10
```

I also added \sfcode'/=1001 in the preamble of makedoc.tex.

```
\let\@footnotetext\niceverb_footnotetext
248
                                                   %% 2010/03/16
          \let\ignorespaces\niceverb_ignore
249
250
          \let\@sect\niceverb_sect
          \let\noindent\niceverb_noindent}
                                                   %% 2010/03/08
251
     \newcommand*{\nvRightQuoteNormal}{%
252
          \MakeNormal\'%
                                                               %% 2010/03/21
253
          \sfcode'\(=\before_niceverb_parenthesis\relax
254
          \let\ignorespaces\before_niceverb_ignore
                                                               %% 2010/03/16
255
256
          \let\@sect\before_niceverb_sect
257
         \let\noindent\before_niceverb_noindent}
                                                               %% 2010/03/08
```

[\nvAllRightQuotesSansSerif] (after \begin{document}!) forces the \textsf feature without testing for apostrophes. You then must be sure—DANGER! CARE!—to use '\rq' only for obtaining an apostrophe and the double quote character '"' for closing double quotes, or our \dqtd{ $\langle text \rangle$ } for the entire quoting.

```
258 \newcommand*{\nvAllRightQuotesSansSerif}{%
259 \nvRightQuoteNormal
260 \MakeActiveLet\'\DoRQsansserif}
```

I started v0.31 (signal \sfcode=1000, lowercase letters get \sfcode=1001) because \href{http://ctan.org/pkg/ $\langle pkg \rangle$ } failed. However, what I actually needed was \ctanpkgref{ $\langle pack-name \rangle$ }:

```
261  % \DeclareRobustCommand*{\ctanpkgref}[1]{%
262  % \href{http://ctan.org/pkg/#1}{\textsf{#1}}}
```

 \dots moves to texlinks.sty 2011/01/24.

2.10 Command-Highlighting Boxes

With v0.3, we include one kind of command syntax boxes whose $\langle content \rangle$ is (in niceverb syntax) delimited as $\lceil |\langle content \rangle \rceil \rceil$.

263 \newsavebox\niceverb_savebox

 $\label{lem:content} $$ \operatorname{Content}(\operatorname{char})$$ works like <math>\operatorname{NVerb}(\operatorname{char})(\operatorname{content})(\operatorname{char})$$ except putting the latter's result into a framed (or coloured or ...) box.$

```
264 \newcommand*{\GenCmdBox} {\_no_nice_meta_verb_false \gen_cmd_box}
```

\[\\ \ArdVerbBox \] is a variant of \\ \GenCmdBox with the meta-variable feature disabled (for the documentation of the present package).

```
265
     \newcommand*{\HardVerbBox}{\_no_nice_meta_verb_true \gen_cmd_box}
266
     \newcommand*{\gen_cmd_box}{%
267
         \ifvmode\let\niceverb_boxtype\VerticalCmdBox
                                                              %% 2011/11/05
             \else\let\niceverb_boxtype\InlineCmdBox
268
       \let\niceverb_egroup\nice_collect_verb_egroup
269
270
       \setbox\niceverb_savebox \hbox\bgroup
          \if_no_nice_meta_verb_
271
272
                \expandafter \HardNVerb
          \else \expandafter \NVerb
273
274
     \newcommand*{\nice_collect_verb_egroup}{%
         \egroup \egroup
275
276
       \ifvmode \expandafter \VerticalCmdBox
277
                 \ifmmode \hbox \fi
278
                 \expandafter \InlineCmdBox \fi
         \ifmmode\hbox\fi \niceverb_boxtype
                                                              %% 2011/11/05
279
280
        {\box\niceverb_savebox}%
```

Modifying invocation of \niceverb_normal_egroup 2011/11/05 according to remark of 2010/03/15 for saving nesting level:

```
281 \ifmmode\else\@\fi
282 \let\niceverb_egroup\niceverb_normal_egroup
283 }
    \[\nvCmdBox\] will be the permanent alias for '|'.
```

 $284 \ \mbox{newcommand}{\mbox}{\mbox}{\mbox}{\mbox}$

\\VerticalCmdBox{\langle content\rangle}\] may eventually start a decl environment as in ltxguide.cls, looking ahead for another '|' in order to (perhaps) append another row. Another possibility is first to do some

```
\if@nobreak\else_\pagebreak[2]\fi
```

etc. and then invoke \InlineCmdBox. The user can choose later by some \renewcommand. We do the perhaps most essential thing here (again cf. \begin_min_verb):

```
285 \newcommand*{\VerticalCmdBox}{\leavevmode\InlineCmdBox}
```

 $(2011/11/05 \text{ removing } \mathbb{1})$ The command declaration boxes in the documentation of Nicola Talbot's datatool would be an especially nice realization of \mathbb{V}

\InlineCmdBox{\(\circ\content\)\}\), according to our idea, should not change baseline skip, even with some \fboxsep and \fboxrule. (However, it may be a good idea to increase the overall normal baseline skip.) We therefore replace actual height and depth of the content by the height and depth of math parentheses.

```
\newcommand*{\InlineCmdBox}[1]{%
286
287
       \bgroup
  ... needed in math mode with \begin_min_verb.
          \fboxsep 1pt
288
          \kern\SetOffInlineCmdBoxOuter
289
          \smash{\SetOffInlineCmdBox{\kern\SetOffInlineCmdBoxInner
290
                                      \InlineCmdBoxArea{#1}%
291
                                      \kern\SetOffInlineCmdBoxInner}}%
292
          \mathstrut
293
294
          \kern\SetOffInlineCmdBoxOuter
295
        \egroup
296
```

The default choice for \SetOffInlineCmdBox is \fbox:

```
\tt 297 $$ \end{array} $$ \end{array} $$ \end{array} array $$ $$ \end{array}
```

You can \renewcommand it to change \fboxsep, \fboxrule etc. or to use a \colorbox with the color package, e.g., I used the following setting so far:

\SetOffInlineCmdBoxInner enables controlling the inner horizontal space to the box margin independently of \fboxsep.

```
298 \newcommand*{\SetOffInlineCmdBoxInner}{-\fboxsep\thinspace}
```

This choice is inspired by \cstok for "boxed" things in Knuth's manmac.tex which formats *The TFXbook*.

\SetOffInlineCmdBoxOuter allows that the box hangs out into the margin horizontally. We set it to 0 pt as default (it is a macro only, for a while).

```
299 \newcommand*{\SetOffInlineCmdBoxOuter}{\z0}
```

The height and depth of the frame should be the same for all inline boxes, we think. The present choice \[\InnerCmdBoxArea\] for the spacing respects code characters rather than the height and depth of the angle brackets that surround meta-variable names.

```
300 \newcommand*{\InlineCmdBoxArea}[1]{%
301 \smash{#1}\vphantom{gjpq\backslash_verb}}
```

\cmdboxitem|\(\chi\content\)| is another variant of \GenCmdBox. It should replace \item[\(\chi\content\)\] in the description environment.

```
\newcommand*{\cmdboxitem}{%
302
        \bgroup
303
         \let\niceverb_egroup\cmd_item_egroup
304
         \global %% TODO!? 2010/03/15
305
         \setbox\niceverb_savebox \hbox\bgroup
306
307
           \NVerb}
     \newcommand*{\cmd_item_egroup}{%
308
           \egroup \egroup
309
       \item[\InlineCmdBox{\box\niceverb_savebox}]}
310
```

2.11 When niceverb Gets Nasty

These things are new with v0.3.

2.11.1 Meta-Variables

This is even newer than v0.3.

In case you actually need < and > in math mode, \t 1t and \t 3r "provided" as aliases:

```
311 \providecommand*{\gt}{>}
312 \providecommand*{\lt}{<}</pre>
```

2.11.2 Quotes

In order to get real single quotes, you could use $\q_{\q} \langle text \rangle \q$, maybe appending a \q , but the code \q may look better and be easier to type.

```
313 \newcommand*{\qtd}[1]{'#1'}
```

However, here we get the problem that the left quote in \qtd{'\code\'} will be unable to switch into verbatim mode entirely—then use &, e.g., '\qtd{&&}' typesets "&", i.e., the ampersand in single (non-verbatim) quotes.

```
314 % TODO \qtdverb!? alternative meaning for \LQverb!? 2010/03/06 315 % rather rare, & takes less space 2010/03/09
```

[\AddQuotes] automatically surrounds code with single quotes. I have so often felt that it was a design mistake to drop them (2011/09/09):

```
316 \newcommand*{\AddQuotes}{%
317 \let\niceverb_maybe_qs\niceverb_add_qs}
318 \newcommand*{\niceverb_add_qs}{%
```

In a math display, quotes are suppressed even with \AddQuotes:

You can undo this by \DontAddQuotes:

324 \newcommand*{\DontAddQuotes}{\let\niceverb_maybe_qs\relax}

The default will be the behaviour that we had before:

325 \DontAddQuotes

```
326 \newcommand*{\dqtd}[1]{''#1"}
```

2.11.3 hyperref

This is for/about compatibility with the hyperref package. (One preliminary thing: in doubt, don't load niceverb earlier than hyperref.)

We need some substitutions for PDF bookmarks with hyperref. We issue them at \begin{document} when we know if hyperref is at work.⁹

⁹An alternative approach would be using afterpackage by Alex Rozhenko.

```
\AtBeginDocument{%
327
       \@ifpackageloaded{hyperref}{%
328
          \newcommand*{\PDFcstring}{%
                                               %% moved here 2010/03/09
329
            \134\expandafter\@gobble\string}% %% ASCII octal encoding
330
          \pdfstringdefDisableCommands{%
331
332
            \let\nvAllowRQSS\empty
                                               %% not \relax 2010/03/12
333
            %% 2010/03/12
            \MakeActiveLetHere\'\lq \MakeActiveLetHere\'\rq
334
            \MakeActiveLetHere\&\PDFcstring
335
                                               %% 2010/03/17, 2011/06/27
            \def\cs{134}%
336
         }%
337
```

Moreover, in order to avoid spurious Label(s) may have changed with hyperref, a single right quote must be read as active by a \newlabel if and only if it has been active when \@currentlabelname was formed. \alpha as \active. We use \protected@write as this cares for \nofiles. \@auxout may be \@partaux for \include.

```
%% 2010/03/14
338
          \newcommand*{\niceverb_aux_cat}[2]{%
              \protected@write\@auxout{}{\string#1\string#2}}%
339
          \renewcommand*{\MakeActive}[1]{%
340
              \MakeActiveHere#1%
341
342
              \niceverb_aux_cat\MakeActiveHere#1}%
          \renewcommand*{\MakeActiveLet}[2]{%
343
              \MakeActiveLetHere#1#2%
344
              \niceverb_aux_cat\MakeActiveHere#1}%
345
          \renewcommand*{\MakeNormal}[1]{%
346
347
              \MakeNormalHere#1%
348
              \niceverb_aux_cat\MakeNormalHere#1}%
349
        }{}%
     }
350
```

TODO doesn't babel have the same problem? 2010/03/12

2.11.4 hyper-xr

With the hyper-xr package creating links into external documents, preceding $\text{\ensuremath{\sc NakeActiveLet}\ensuremath{\sc CmdSyntaxVerb}}$ may be needed. I do not want to redefine something here right now as I have too little experience with this situation.

2.11.5 Turning off and on altogether

```
These commands are new with v0.3.

[\noNiceVerb] disables all niceverb features.

351 \newcommand*{\noNiceVerb} {\MakeNormal\'%
352 \MakeNormal\&%
```

 $^{^{10}\}mathrm{This}$ uses \@onelevelsanitize, therefore \protect doesn't change the behaviour of "active" characters.

353	\MakeNormal\<%
354	\MakeNormal\#%
355	$\verb \nvRightQuoteNormal $
356	\MakeNormal\ }

\useNiceVerb | activates all the niceverb features (apart from "auto mode").

357 \newcommand*{\useNiceVerb}{\MakeActiveLet\'\LQverb

TODO to be changed with wiki.sty v0.2

358	\MakeActiveLet\&\CmdSyntaxVerb
359	\MakeActiveLet\<\MetaVar
360	\MakeActiveLet\#\HashVerb
361	\nvRightQuoteSansSerif
362	\MakeActiveLet\ \nvCmdBox}

2.12 Activating the niceverb Syntax

niceverb features are activated at \begin{document} so (some) other packages can be loaded *after* niceverb. For v0.3, we do this after possible settings for compatibility with hyperref.

363 \AtBeginDocument{\useNiceVerb}

2.13 Leave Package Mode

2.14 VERSION HISTORY

366	v0.1	2009/02/21	very first, sent to CTAN
367	v0.2	2009/04/04	NoVerbList: \subsubsection, \AddToMacro,
368		2009/04/05	\SimpleVerb makes more other than iii
369		2009/04/06	just uses \dospecials
370		2009/04/08	debugging code for rq/sf, +\relax
371		2009/04/09	+\verb@eol@error, prepared for new doc method,
372			removed spurious \makeat, -\relax (ligature),
373		2009/04/10	('-trick
374		2009/04/11	<pre>\@ after \SimpleVerb</pre>
375		2009/04/14	noted TODO below
376		2009/04/15	change v0.1 to 2009/02/21
377	v0.30	2010/02/27	<pre>short, more explained, \AssignCatCodeTo,</pre>
378			use \MakeActive for re-activating, \MakeNormal
379		2010/02/28	fixed @ and _ with & by moving \begin_min_verb;
380			replaced \lq by '; Capitals in Titles
381		2010/03/05	\SimpleVerb -> \NVerb;
382			<pre>use \MakeActive + \MakeNormal; \rq -> ';</pre>
383			renamed some sections: \lq verb -> \LQverb.

```
\niceverb_meta -> \MetaVar,
384
385
                          \param_verb -> \HashVerb
             2010/03/06
                          removed \MakeAlign; removed @ and _ todo below;
386
                          \NVerb makes ' and ' other;
387
                          \nvAllowRQSF allows ' in column titles,
388
389
             2010/03/08
                          \LQverb and & work in column titles,
390
                          \RQverb works with \noindent;
391
                          bookmark substitutions
392
             2010/03/09
                          extended notes on 'hyperref' (in)compatibility;
                          \MakeLetter\@ in \CmdSyntaxVerb only;
393
                          |...| implemented as \prepareCmdBox etc.!
394
             2010/03/10
395
                          \colorbox example, \thinspace; ltxguide!;
                          removed todo; ..._exec -> \DoRQsansserif;
396
                          minor doc changes in "Nasty"
397
                          doc changes in "Escape Character ... " and
             2010/03/11
398
                          ''Ampersand"
399
             2010/03/12
                          \niceverb_aux_cat, \MakeActiveHere etc.,
400
                          \IfTypesetting, \noNiceVerb, \useNiceVerb,
401
402
                          corr. bracing mistake in \MakeNormal!
403
             2010/03/14
                          0.31 -> 0.3; \HardNVerb, \GenCmdBox,
                          \prepareCmdBox -> \nvCmdBox
404
             2010/03/15
                          \endcell; \cmdboxitem; remark on \sfcode'/
405
             2010/03/16
                          corr. -> \endline;
406
                          advice on \cs{par}, \cs{if...}, \cs{fi};
407
                          redefined \ignorespaces for RQ feature
408
             2010/03/17
409
                          corr. '\fututelet', corr. \cs PDF substitution
             2010/03/18
                          |\niceverbNoVerbList|, |\AddToMacro| etc.;
410
                          corr. \AddToMacro;
411
                          \lastskip-fix of \niceverb_ignore,
412
                          another fix of \niceverb_noindent
413
             2010/03/19
                          another fix of \niceverb_ignore: \spacefactor
414
415
             2010/03/20
                          ... again: \niceverb_spacefactor
416
     NOT DISTRIBUTED, just stored saved as separate version
417
418
419
     v0.31 2010/03/20
                          right quote feauture: letters get \sfcode=1001
                          'column title' -> 'page headers', \ctanpkgref
420
421
422
     NOT DISTRIBUTED, just stored as separate version
423
424
     v0.32 2010/03/21
                          taking best things from v0.30 and v0.31
425
             2010/03/23
                          removed \relax from \IfTypesetting
     SENT TO CTAN
426
427
428
     v0.4
            2010/03/27
                          restoring '_' with "auto mode" safer
429
             2010/03/28
                          \AddToNoVerbList
430
             2010/03/29
                          note above, renamed v0.4
431
     SENT TO CTAN
432
     v0.41 2010/04/03 v0.33 -> v0.4
433
```

```
434
             2010/04/05 corrected \AutoCmdInput list
     SENT TO CTAN as part of NICETEXT release r0.41
435
436
     v0.41a 2010/11/09 typo corrected
437
     \text{v0.42} \quad 2010/12/30 \quad \text{corr. `\ '} \quad \text{emulation in auto mode}
438
439
             2010/12/31 \MetaVar in ...maybe_meta...
440
             2011/01/19 '...' fix
             2011/01/24 \ctanpkgref moves to texlinks.sty
441
             2011/01/26 update (C)
442
443 with nicetext RELEASE r0.42
     v0.43 2011/05/09 \gt, \lt
444
             2011/05/27 \cs uses \@backslashchar
445
             2011/06/20 \MakeActiveLetHere in \nice_maybe_meta_verb !!! 2011/06/27 2011/05/27 undone
446
447
             2011/08/20 'r0.42', 'v0.43'
448
     with nicetext RELEASE r0.43
449
     v0.44 2011/09/09
                         \AddQuotes, \DontAddQuotes
450
     with nicetext RELEASE r0.44
451
     v0.45 2011/11/05 mod. \niceverb_collect_egroup/\VerticalCmdBox,
452
453
                          tried \output problem without avail
           2011/12/05 clarified "r0.44"
454
455
```