LuaQuotes: A package for smart quotation marks

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1 Overview

1.1 Purpose

This package provides a function to automatically have 'smart quotes' in LualATEX. By 'smart quotes', I refer to the automatic insertion of curved or 'typographer's' quotation marks when the user types straight quotation marks. The below figure illustrates the distinction in English typography:

```
"Howdy!" "Howdy!" "Howdy!" "Don't!' 'Don't!'
```

2 Smart quotes

2.1 Options

The default option, for English quotation marks, is called by:

```
\usepackage{luaquotes}
```

The French and German options, for those languages' punctuation, are called by the following respective commands.

```
\usepackage[fr]{luaquotes} %French
\usepackage[de]{luaquotes} % German
```

2.1.1 French option

The French option produces the following output, including the extra space around punctuation prescribed by French typography:

```
"Salut!" «Salut!»
'Salut!' <Salut!>
```

2.1.2 The German option

The German option produces the following outpu:

```
"Hallo!" ,Hallo!"
'Hallo!' ,Hallo!
```

2.2 Activation and De-activation

The package automatically activates the smart quotes function at the beginning of the document. To deactivate the smart quotes function within a document, the following commands are used:

```
\dumbquotes %English
\frdumbquotes %French
\dedumbquotes %German
```

The following commands re-activate the smart quotes function:

```
\smartquotes %English
\frsmartquotes %French
\desmartquotes % German
```

A limitation on the (de-)activation of the package is that the Lua filters will not deactivate within the same paragraph, so the function can only be changed across paragraphs.

2.3 Monospace

As a general rule, smart quotes are rather undesirable in monospace text, and therefore, within the \textttenvironment the package does not apply smart quotes. Thus, the same input produces in roman face "Hello World" but in monospace "Hello World".

As the example above shows, the default behaviour of this package forces straight quotes in monospace, and disables TEX quote ligatures (but not other TEX ligatures) to do so, on the assumption that any form of curved quotes are undesirable.

For extended periods of monospaced text called by \ttfamily, the activation and de-activation methods above should be used. I considered altering the \ttfamily command to always call on \dumbquotes, but I thought it best to avoid messing with the command. This may change in future development.

If a user desires to disable the smart quotes for other faces, this is easily done globally by adding the following line to the font's configuration in fontspec:

```
RawFeature={+qtbye}
```

This will, however, result in the font using straight quotes rather than the standard TeX quote ligatures, making it a distinct option than the activation and deactivation options *supra*.

3 Auxiliary Punctuation

The smart quotes feature covers the 'standard' usage of quotes, but there are many instances where quotation mark or quote-mark like features are needed outside the automatic formatting. The package provides several commands for this.

3.1 Standalone quotes

The marks in this section are the set of quotation marks used generally in writing and require little explanation. However, it should be noted that the commands \square ight and \apost (which produce identical output) are very useful for aphetic words by which the first syllable is clipped, as in the sequence 'bout the smart quotes function will incorrectly produce an opening quote instead of the correct closing quote to indicate the elision. Thus, the incorrect result of 'bout is produced. The solution is to use the code \apost bout which produces 'bout.

Name	UTF-8	Command	Produces
Single low quote	U+201A	\desingle	,□
Double low quote	U+201E	\dedouble	,,□

Single quote	straight	U+0027	\dqone	'□
Double quote	straight	U+0022	\dqtwo	"[
Left single	quote	U+2018	\sqoneleft	' []
Right sing	le quote	U+2019	\sqoneright	['
Apostroph	ne	U+2019	\apost	['
Left doubl	e quote	U+201C	\sqtwoleft	"
Right doul	ble quote	U+201D	\sqtworight	"
Left guille space]	emet [w/	U+00AB	\glmtl	« []
Right { [w/space]	guillemet]	U+00BB	\glmtr	[] »
Single lef met [w/s]		U+2039	\sglmtl	< []

Single right guillemet [w/space]	U+203A	\sglmtr	<pre> ></pre>
0 0	U+203A	\sgtmtr	⊔ ′

3.2 Additional symbols

These are quote like symbols which are useful for precise punctuation, since standard smart quotation marks do not work well in their specialised use cases.

Name	UTF-8	Command	Produces
Backtick	U+0060	\bcktck	`[

For typesetting US/Imperial measurements like feet and inches, the correct symbol is a prime and double prime. Many modern typefaces have these symbols, and they are thus useful for typesetting feet and inch measurements (like 6'4").

Name	UTF-8	Command	Produces
Single Prime	U+2032	\lqprime	
Double Prime	U+2033	\lqdoubleprime	. U

For certain Polynesian langauges, a letter called the 'Okina is used; while this appears identical to a left single quotation mark in many fonts, it is encoded differently in Unicode because it is properly a letter, not a punctuation mark.

Name	UTF-8	Command	Produces
Okina	U+022B	\okina	'П

4 Future Development and Localisation

The package's online repository is the best place to report bugs, feature requests, or other contributions, and is located at: github.com/ezgranet/luaquotes.

One obvious point of future development is the addition of other language localisations; this is technologically easy in principle but difficult for me to accomplish without assistance because it requires detailed knowledge of typographic conventions for any given language standard, and therefore the aid of contributors and collaborators.

5 Licence

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6 Implementation

```
\def\luaquotesversionnumber{1.0.1}
    \ProvidesPackage{luaquotes}
      [2022/08/01\luaquotesversionnumber smart quotes with lua]
     % !TeX program = lualatex
    % !TeX encoding = utf8
    % This work may be distributed and/or modified under the
    % conditions of the LaTeX Project Public License, either version 1.3
    % of this license or (at your option) any later version.
    % The latest version of this license is in
10
    % http://www.latex-project.org/lppl.txt
    % and version 1.3 or later is part of all distributions of LaTeX
    % version 2005/12/01 or later.
    % This work has the LPPL maintenance status `maintained'.
16
    % The Current Maintainer of this work is Elijah Z Granet
17
```

6.1 LuaTeX check

```
18
   19
   % to show the package only works with Lua
20
   21
   \RequirePackage{iftex}
23
    \ifPDFTeX {
      \ PackageError { luaquotes}
        {You are using pdfTeX but this package only works
26
        \MessageBreak with LuaTeX}{}
27
28
   \else\ifXeTeX{
                 \PackageError{luaquotes}
29
        {You are using XeTeX but this package only works
30
        \MessageBreak with LuaTeX}{}
31
   }\fi\fi
```

6.2 Dependencies

```
% Dependency
35
 36
 37
  \ RequirePackage { luacode }
  39
 40
 % fontspec for the auxiliary
 % quotes where tligs need
42
 % to be disabled
43
 45
  \RequirePackage{fontspec}
  47
```

6.3 Avoiding smart quotes in monospace

```
48
   49
   % removing the effects for monospace
   \begin{luacode}
    \begin{minted}[
    frame=lines,
   framesep=2mm,
55
    baselinestretch=1.2,
    bgcolor=LightGray,
    fontsize=\footnotesize,
    linenos,
    breaklines,
    firstnumber=last
61
62
   local uchar = unicode.utf8.char
     fonts.handlers.otf.addfeature{
65
      name = "qtbye",
      type = "substitution",
      data =
68
      {
69
     = 0x0022,
   " = 0x0022,
71
    ' = 0x0027
72
     = 0x0022, 
73
     = 0x0022, 
    < = 0x0027,
```

6.4 Quote replacement functions

```
function doublequotes ( s )

return ( s:gsub ( ""(..-)" ', ""\%1"" ) )
```

```
function singlequotelinestart ( s )
99
              return (s:gsub ("^\","") )
100
101
102
103
    \luaexec{
104
    function singlequotes ( s )
105
              return ( s:gsub ( " ["," ["]) )
106
107
         Activation commands
    108
    109
110
    % activation and deactivation
    111
    112
    \verb|\newcommand| double quotes on \{ \verb|\directlua| |
113
114
    luatexbase.add_to_callback (
115
       "process_input_buffer" , doublequotes , "doublequotes" )
116
       }}
117
118
    \verb|\newcommand| double quotes of f \{ \verb|\directlua| \}
```

```
{\tt luatexbase.remove\_from\_callback} \ \ (
119
         "process_input_buffer" ,
"doublequotes" )
120
121
      }}
122
      \verb|\newcommand| single quote line start on \{\verb|\directlua||
123
124
      luatexbase.add_to_callback (
         "process_input_buffer" , singlequotelinestart , "singlequotelinestart" )
125
126
         }}
      luatexbase.remove_from_callback (
127
         "process_input_buffer" , "singlequotelinestart" )
128
129
      \verb|\newcommand\singlequoteson{|\directlua|}
130
      {\tt luatexbase.add\_to\_callback} \ (
131
         }}
132
      \verb|\newcommand| single quotes of f{\directlua}|
133
      {\tt luatexbase.remove\_from\_callback} \ (
134
         "process_input_buffer" , "singlequotes" )
135
```

```
}}
136
    137
   138
   % global functions, useful for things like this
139
   \newcommand{\smartquotes}{%
142
    \doublequoteson%
143
    \singlequotelinestarton%
145
    \singlequoteson}
      \verb|\newcommand{\dumbquotes}| \{ \verb|\double quotes of f|
146
147
      \singlequotelinestartoff
      \singlequotesoff}
```

6.6 English option

```
149
                       \DeclareOption{en}{
150
       \AtBeginDocument{
151
       \frsmartquotes
152
       \frac{frdumbquotes}{}
153
       \delta des mart quotes
       \dedumbquotes\smartquotes}
155
       \label{lem:command} $$\operatorname{ll}_{\{\ttfamily\addfontfeature}(\operatorname{RawFeature}_{+qtbye,-tlig})$$
156
       \hookrightarrow \quad \texttt{\#1}\}\}
157
158
```

6.7 Auxiliary punctuation

```
% quote like punctuation
168
  % needed
169
170
  171
  172
  175
176
  % German quotations
178
  179
  \newcommand{\desingle}{{\addfontfeature{RawFeature={-qtbye,-
181
  182
  \ \hookrightarrow \ \ \mathsf{tlig}\} \setminus \mathit{symbol}\{\texttt{"201E}\}\}
  183
  % backtick
  186
  187
  \newcommand{\bcktck}{{\addfontfeature{RawFeature={-qtbye,-tlig}}`}}
  189
  190
  % Straight double
192
  % and single quotes
  193
  194
195
  196
  \hookrightarrow tlig}}\symbol{"0022}}}
  198
  % Prime, mostly for
200
  % Feet and inches
201
  202
  203
  \newcommand{\lqprime}{'}
204
  \verb|\newcommand{| lqdoubleprime}{{|}}{|}
205
  206
  207
  % The Okina, for typing
208
  % Hawaiʻi
  210
```

```
211
 \newcommand{\okina}{'}
212
213
 214
 % The individual smart quotes
215
 217
 218
219
 220
 \newcommand{\sqtwoleft}{{\addfontfeature{RawFeature={-qtbye,-tlig}}"}}
221
 222
 \newcommand{\apost}{{\addfontfeature{RawFeature={-qtbye,-tlig}}'}}
224
 225
 226
 227
 228
 229
```

6.8 The German option

```
240 }
241 \luaexec{
```

```
function desinglequotelinestart ( s )
242
               return (s:gsub ("^\",",") )
243
            end
244
            }
245
     \luaexec{
246
     function desinglequotesclose( s )
247
     return ( s:gsub ( " (..-)'", " , %1`" ) )
248
249
250
251
     %% Two utility macros to activate/deactivate the Lua function:
252
     \newcommand\dedoublequoteson{\directlua{
     luatexbase.add_to_callback (
254
       "process_input_buffer" , dedoublequotes , "dedoublequotes" )
255
        }}
256
     257
        "process_input_buffer" , "dedoublequotes" )
258
     }}
259
     \verb|\newcommand| desingle quote line start on \{\verb|\directlua||
260
```

```
{\tt luatexbase.add\_to\_callback} \ (
261
262
          }}
       \verb|\newcommand| desingle quote line start of f \{ \verb|\directlua| \} |
263
      luatexbase.remove_from_callback (
264
          "process_input_buffer" , "desinglequotelinestart" )
265
          }}
266
       \verb|\newcommand| desingle quotesclose on \{\verb|\directlua||
267
          luatexbase.add_to_callback (
268
          \hbox{``process\_input\_buffer''} \ , \ desingle quotesclose \ , \ \hbox{``desingle quotesclose''} \ )
          }}
270
       \verb|\newcommand| desingle quotesclose of f{\directlua}|
271
      {\tt luatexbase.remove\_from\_callback} \ (
272
          "process_input_buffer" , "desinglequotesclose" )
273
274
          \verb|\newcommand{\desmartquotes}| \{ \verb|\dedouble quotes on |
275
       276
277
       \desinglequotescloseon}
          \verb|\newcommand{\dedumbquotes}| \{ \verb|\dedoublequotes| of f
278
       \verb|\| desingle quote line start of f
279
```

```
\desinglequotescloseoff\
281 \DeclareOption{de}{
282 \AtBeginDocument{\desmartquotes}
283 \renewcommand{\texttt}[1]{{\ttfamily\addfontfeature{RawFeature={+qtbye,-tlig}}}
\to #1}}

284 }
```

6.9 The French option

```
function frdoublequotes ( s )

return ( s:gsub ( ""(..-)" , ""(\\,\\%1\\,\\" ) )

end
```

```
295 }
296 \luaexec{
```

```
function frsinglequotelinestart ( s )
return (s:gsub ( "^", "')" ) )
```

```
299 }
300 \luaexec{
```

```
function frsinglequotesclose( s )
 301
                        return ( s:gsub ( \[ \] \[ \] \] (\dots -) )", " \[ \] \[ \] \[ \] \] \] )
 302
 303
 304
                        %% Two utility macros to activate/deactivate the Lua function:
 305
                         \newcommand\frdoublequoteson{\directlua{
 306
                         luatexbase.add_to_callback (
 307
                                     "process_input_buffer" ,frdoublequotes , "frdoublequotes" )
 308
 309
                                      }}
                         \newcommand\frdoublequotesoff{\directlua{
310
311
                         luatexbase.remove_from_callback (
                                      "process_input_buffer" , "frdoublequotes" )
312
313
                                      }}
                         \verb|\newcommand| fr single quote line start on \{\verb|\directlua| \}
314
                        luatexbase.add_to_callback (
 315
                                     \begin{tabular}{ll} \P process\_input\_buffer \begin{tabular}{ll} \ref{process}\_input\_buffer \begin{tabular}{ll} \ref{process} \ref{process}\_input\_buffer \begin{tabular}{ll} \ref{process} \ref{process}\_input\_buffer \begin{tabular}{ll} \ref{process} \ref{proces
316
                                    }}
 317
                         \verb|\newcommand| fr single quote line start of f \{ \verb|\directlua| \} |
318
```

```
luatexbase.remove_from_callback (
 319
                                                    "process_input_buffer" , "frsinglequotelinestart" )
 320
                                                     }}
321
                                                      \verb|\newcommand| fr single quotes close on \{\verb|\directlua||
 322
323
                                                     luatexbase.add_to_callback (
                                                     "process_input_buffer" ,frsinglequotesclose , "frsinglequotesclose" )
 324
                                  }}
 325
                                   \newcommand\frsinglequotescloseoff{\directlua{
326
                                   luatexbase.remove_from_callback (
 327
                                                     "process_input_buffer" , "frsinglequotesclose" )
 328
 329
                                  \fint from the first on the first open start open s
 330
                                   \frsinglequotescloseon}
 331
                                                     \newcommand{\frdumbquotes}{\frdumbquotesoff}
                                  \five frequency for the start of figure for the star
 333
                                   \verb| frsingle quotesclose of f| \\
                                                       \DeclareOption{fr}{
                                   336
                                   337
                                    \hookrightarrow \quad \texttt{\#1}\}\}
 338
 339
```

6.10 Process Options

7 Version History

7.1 1.0.1

28 August 2022: Change bug preventing non-English usage

7.2 1.0.0

21 August 2022: Package creation