

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 Lua^{LT}_EX. 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:

User input	Smart Quotes Off	Smart Quotes On
"Howdy!"	”Howdy!”	“Howdy!”
'Don't!'	’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:

User input	Output
"Salut!"	«Salut!»
'Salut!'	〈Salut!〉

2.1.2 The German option

The German option produces the following output:

User input	Output
"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
\fsmartquotes %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 `\texttt` environment 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={+qtbeye}
```

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 `\sqonright` 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	<code>\desingle</code>	,
Double low quote	U+201E	<code>\dedouble</code>	,,

Single straight U+0027 \dqone ' 

Double straight U+0022 \dqtwo " 

Left single quote U+2018 \sqoneleft ‘ 

Right single quote U+2019 \sqoneringt ’ 

Apostrophe U+2019 \apost ‘ ’ 

Left double quote U+201C \sqtwoleft “ 

Right double quote U+201D \sqtworight ” 

Left guillemet [w/
space] U+00AB \glmtl « 

Right guillemet [w/
space] U+00BB \glmtr » 

Single left guille- U+2039 \sglmtl < 
met [w/ space]

Single right guille- U+203A \sglmt
met [w/ space] >

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	"

For certain Polynesian languages, 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	'

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

```
2  \def\luaquotesversionnumber{1.0.2}
3  \ProvidesPackage{luaquotes}
4      [2022/08/01\luaquotesversionnumber smart quotes with lua]
5      % !TeX program = lualatex
6      % !TeX encoding = utf8
7      % This work may be distributed and/or modified under the
8      % conditions of the LaTeX Project Public License, either version 1.3
9      % of this license or (at your option) any later version.
10     % The latest version of this license is in
11     %   http://www.latex-project.org/lppl.txt
12     % and version 1.3 or later is part of all distributions of LaTeX
13     % version 2005/12/01 or later.
14     %
15     % This work has the LPPL maintenance status `maintained'.
16     %
17     % The Current Maintainer of this work is Elijah Z Granet
```

6.1 LuaTeX check

```
18  %%%
19  %%%
20  % to show the package only works with Lua
21  %%%
22  %%%
23  \RequirePackage{iftex}
24  \ifPDFTeX {
25      \PackageError{luaquotes}{%
26          {You are using pdfTeX but this package only works
27          \MessageBreak with LuaTeX}{}}
28  }
29  \else\ifXeTeX{    \PackageError{luaquotes}{%
30      {You are using XeTeX but this package only works
31      \MessageBreak with LuaTeX}{}}
32  }\fi\fi
```

6.2 Dependencies

```
33  %%%
34  %%%
```

```
35 % Dependency
36 %
37 %
38 \RequirePackage{luacode}
39 %
40 %
41 % fontspec for the auxiliary
42 % quotes where tligs need
43 % to be disabled
44 %
45 %
46 \RequirePackage{fontspec}
47 %
```

6.3 Avoiding smart quotes in monospace

```
48 %
49 %
50 % removing the effects for monospace
51 %
52 \begin{luacode}
53 \begin{minted}[
54 frame=lines,
55 framesep=2mm,
56 baselinestretch=1.2,
57 bgcolor=LightGray,
58 fontsize=\footnotesize,
59 linenos,
60 breaklines,
61 firstnumber=last
62 ]
63 \lua{
64 local uchar = unicode.utf8.char
65     fonts.handlers.otf.addfeature{
66         name = "qbye",
67         type = "substitution",
68         data =
69         {
70             " = 0x0022,
71             " = 0x0022,
72             ' = 0x0027,
73             « = 0x0022,
74             » = 0x0022,
75             < = 0x0027,
```

```
76 > = 0x0027  
77 },
```

```
78 \end{luacode}
```

6.4 Quote replacement functions

```
79 %%  
80 %%  
81 %%  
82 %%  
83 % Code here and throughout similar  
84 %functions partly adapted from TeX.SE user  
85 % Mico  
86 % https://tex.stackexchange.com/questions/499953/how-to-generate-correct-  
87 %  
88 %%  
89 %%
```

```
90 function doublequotes ( s )  
91     return ( s:gsub ( '“(..-)”' , ““\%1”” ) )
```

```
92 }  
93 %%  
94 %%  
95 %%  
96 % Assuming ‘ at the start of the line means an opening quotation mark not an  
97 % apostrophe  
98 %%
```

```
99     function singlequotelinestart ( s )
100        return (s:gsub ("^!", ""))
101    end
```

```
102    }
103
104 \luaexec{
```

```
105     function singlequotes ( s )
106        return ( s:gsub ("'", "'") )
```

```
107 }
```

6.5 Activation commands

```
108 %
109 %
110 % activation and deactivation
111 %
112 %
113 \newcommand\doublequotes{\directlua{
```

```
114 luatexbase.add_to_callback (
115   "process_input_buffer", doublequotes, "doublequotes" )
```

```
117   }})
118 \newcommand\doublequotesoff{\directlua{
```

```
119 luatexbase.remove_from_callback (
120     "process_input_buffer" ,
121     "doublequotes" )
```

```
122 }
123 \newcommand\singlequotelinestart{\directlua{
```

```
124 luatexbase.add_to_callback (
125     "process_input_buffer" , singlequotelinestart , "singlequotelinestart" )
```

```
126 }}
```

```
127 luatexbase.remove_from_callback (
128     "process_input_buffer" , "singlequotelinestart" )
```

```
129 }}
130 \newcommand\singlequoteson{\directlua{
131 luatexbase.add_to_callback (
```

```
132 })
133 \newcommand\singlequotesoff{\directlua{
```

```
134 luatexbase.remove_from_callback (
135     "process_input_buffer" , "singlequotes" )
```

```

136   }
137   %%%%
138   %%%%
139   % global functions, useful for things like this
140   %%%%
141   %%%%
142   \newcommand{\smartquotes}{%
143     \doublequoteson%
144     \singlequotelinestarton%
145     \singlequoteson}
146     \newcommand{\dumbquotes}{\doublequotesoff
147     \singlequotelinestartoff
148     \singlequotesoff}

```

6.6 English option

```

149
150   \DeclareOption{en}{
151     \AtBeginDocument{
152       \frsmartquotes
153       \frdumbquotes
154       \desmartquotes
155       \dedumbquotes\smartquotes
156       \renewcommand{\texttt}[1]{\{\ttfamily\addfontfeature[RawFeature={+qtby,-tlig}]{#1}\}}
157     }
158

```

6.7 Auxiliary punctuation

```

159
160   %%%%
161   %%%%
162   % auxiliary punctuation
163   %%%%
164   %%%%
165   % Essentially to be used where the
166   % thing fails to provide the
167   % quotation or

```

```

168 % quote like punctuation
169 % needed
170 %%%%%%
171 %%%%%%
172 %%%%%%
173 %%%%%%
174 %%%%%%
175 %%%%%%
176 %%%%%%
177 %%%%%%
178 % German quotations
179 %%%%%%
180 %%%%%%
181 \newcommand{\desingle}{\addfontfeature{RawFeature={-qtbye,-
182   tlig}}\symbol{"201A}}
183 \newcommand{\dedouble}{\addfontfeature{RawFeature={-qtbye,-
184   tlig}}\symbol{"201E}}
185 % backtick
186 %%%%%%
187 %%%%%%
188 \newcommand{\bcktck}{\addfontfeature{RawFeature={-qtbye,-tlig}}`}
189 %%%%%%
190 %%%%%%
191 % Straight double
192 % and single quotes
193 %%%%%%
194 %%%%%%
195 %%%%%%
196 \newcommand{\dqone}{\addfontfeature{RawFeature={-qtbye,-
197   tlig}}\symbol{"0027}}
198 \newcommand{\dqtwo}{\addfontfeature{RawFeature={-qtbye,-
199   tlig}}\symbol{"0022}}
200 % Prime, mostly for
201 % Feet and inches
202 %%%%%%
203 %%%%%%
204 \newcommand{\lqprime}{'}
205 \newcommand{\lqdoubleprime}{"}
206 %%%%%%
207 %%%%%%
208 % The Okina, for typing
209 % Hawaii'i
210 %%%%%%

```

```

211 %
212 \newcommand{\okina}{`}
213 %
214 %
215 % The individual smart quotes
216 %
217 %
218 %
219 %
220 %
221 \newcommand{\sqtwoleft}{{\addfontfeature{RawFeature={-qtbeye,-tlig}}`}}
222 \newcommand{\sqtworight}{{\addfontfeature{RawFeature={-qtbeye,-tlig}}"}}
223 \newcommand{\sqoneright}{{\addfontfeature{RawFeature={-qtbeye,-tlig}}'}}
```

6.8 The German option

```

230 %
231 %
232 %
233 % DEUTSCH
234 %
235 %
236 \luaexec{
```

```

237     function dedoublequotes ( s )
238         return ( s:gsub ( [[(.-)"]], [",\%1"] ) )
239     end
```

```

240     }
241 \luaexec{
```

```
242     function desinglequotelinestart( s )
243         return (s:gsub ("^!",","))
244     end
```

```
245 }
246 \luaexec{
```

```
247     function desinglequotesclose( s )
248         return (s:gsub ("([.-])\"", " ,\\%1"))
249     end
```

```
250 }
251 %%% Two utility macros to activate/deactivate the Lua function:
252 \newcommand\dedoublequoteson{\directlua{
```

```
254 luatexbase.add_to_callback(
255     "process_input_buffer", dedoublequotes, "dedoublequotes" )
```

```
256   })
257 \newcommand\dedoublequotesoff{\directlua{luatexbase.remove_from_callback(
258     "process_input_buffer", "dedoublequotes" )}
```

```
259   })
260 \newcommand\desinglequotelinestart{\directlua{
```

```

261 luatexbase.add_to_callback (
262   }
263   \newcommand{\desinglequotelinestartoff}{\directlua{
264     luatexbase.remove_from_callback (
265       "process_input_buffer" , "desinglequotelinestart" )
266   }
267   \newcommand{\desinglequotescloseon}{\directlua{
268     luatexbase.add_to_callback (
269       "process_input_buffer" , desinglequotesclose , "desinglequotesclose" )
270   }
271   \newcommand{\desinglequotescloseoff}{\directlua{
272     luatexbase.remove_from_callback (
273       "process_input_buffer" , "desinglequotesclose" )
274   }
275   \newcommand{\desmartquotes}{\dedoublequoteson
276   \desinglequotelinestarton
277   \desinglequotescloseon}
278   \newcommand{\dedumbquotes}{\dedoublequotesoff
279   \desinglequotelinestartoff

```

```

280 \desinglequotescloseoff}
281     \DeclareOption{de}{
282 \AtBeginDocument{
283     \frsmartquotes
284     \frdumbquotes
285     \smartquotes
286     \dumbquotes\dumbquotes
287     \desmartquotes}
288 \renewcommand{\texttt}[1]{{\ttfamily\addfontfeature{RawFeature={+qtbeye,-tlig}}}
289     \relax#1\relax}
290 }
```

6.9 The French option

```

290 %French encoding
291 %French encoding
292 % Fran ais
293 %French encoding
294 %French encoding
295 %French encoding
296 \luaexec{
```

```

297 function frdoublequotes ( s )
298     return ( s:gsub ( [=[([.-])"]' , ““\\",%1\\,»” ) ) )
299 end
```

```

300 }
301 \luaexec{
```

```

302 function frsinglequotelinesstart ( s )
303     return ( s:gsub ( [^"],' ) )
```

```
304 }
305 \luaexec{
```

```
306     function frsinglequotesclose( s )
307         return ( s:gsub ( "([.-])", " \\",%1\\," ) )
308             end
```

```
309 }
310 %% Two utility macros to activate/deactivate the Lua function:
311 \newcommand\frdoublequoteson{\directlua{
```

```
312 luatexbase.add_to_callback (
313     "process_input_buffer",frdoublequotes , "frdoublequotes" )
```

```
314 }}
315 \newcommand\frdoublequotesoff{\directlua{
```

```
316 luatexbase.remove_from_callback (
317     "process_input_buffer" , "frdoublequotes" )
```

```
318 }}
319 \newcommand\frsinglequotelinestart{\directlua{
```

```
320 luatexbase.add_to_callback (
321     "process_input_buffer" ,frsinglequotelinestart , "frsinglequotelinestart" )
```

```

322     }}
323 \newcommand{\frsinglequotelinestartoff}{\directlua{
324
325 luatexbase.remove_from_callback (
326     "process_input_buffer" , "frsinglequotelinestart" )
327
328     }}
329 \newcommand{\frsinglequotescloseon}{\directlua{
330
331 luatexbase.add_to_callback (
332     "process_input_buffer" , frsinglequotesclose , "frsinglequotesclose" )
333
334     }}
335 \frsinglequotelinestarton
336 \frsinglequotescloseon}
337     \newcommand{\frdumbquotes}{\frdoublequotesoff
338 \frsinglequotelinestartoff
339 \frsinglequotescloseoff}
340     \DeclareOption{fr}{
341 \AtBeginDocument{\desmartquotes\dedumbquotes\smartquotes\dumbquotes\smartquotes\frsmartquotes}
342 \renewcommand{\texttt}[1]{{\ttfamily\addfontfeature{RawFeature={+qtb,-tlig}}}
343     \#1}}

```

```
343
344 }
```

6.10 Process Options

```
345 %<><><><><><><><><><><>
346 % Default option is English
347 %<><><><><><><><><><><>
348 %<><><><><><><><><><><>
349 \ExecuteOptions{en}%
350   \ProcessOptions*
351
352
353
```

7 Version History

7.1 1.0.1

30 August 2022: Further corrections to bug preventing non-English usage

7.2 1.0.1

28 August 2022: Change bug preventing non-English usage

7.3 1.0.0

21 August 2022: Package creation