LuaQuotes: A package for smart quotation marks

Elijah Z Granet*

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^{*}e-mail: ezg21@cantab.ac.uk

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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:

```
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
```

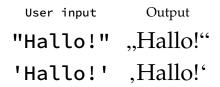
2.1.1 French option

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

User input	Output
"Salut!"	«Salut!»
'Salut!'	<salut!></salut!>

2.1.2 The German option

The German option produces the following outpu:



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 T_EX quote ligatures (but not other T_EX 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}

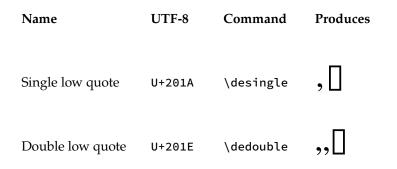
This will, however, result in the font using straight quotes rather than the standard TeX quote ligatures, making it a distinct option than the activation and deactivation options *supra*.

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 \sqoneright 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.



Single quote	straight	U+0027	\dqone	'0
Double quote	straight	U+0022	\dqtwo	"0
Left single	quote	U+2018	\sqoneleft	"[]
Right sing	le quote	U+2019	\sqoneright	□'
Apostrophe		U+2019	\apost	[]'
Left doubl	e quote	U+201C	\sqtwoleft	"[]
Right doul	ole quote	U+201D	\sqtworight	□"
Left guille space]	met [w/	U+00AB	\glmtl	« []
Right { [w/ space]	guillemet 	U+00BB	\glmtr	[] »
Single lef met [w/ sp		U+2039	\sglmtl	< []

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

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:

 $\verb"github.com/ezgranet/luaquotes".$

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

This project is licensed under the Latex Public Project Licence version 1.3*c*. This documentation is copyright of the author but licensed under CC-BY-SA 3.0.

6 Implementation

```
2
    \def\luaquotesversionnumber{1.0.0}
    \ProvidesPackage{luaquotes}
3
     [2022/08/01\luaquotesversionnumber smart quotes with lua]
4
     % !TeX program = lualatex
5
    % !TeX encoding = utf8
6
    % This work may be distributed and/or modified under the
7
    % conditions of the LaTeX Project Public License, either version 1.3
8
    % of this license or (at your option) any later version.
9
    % The latest version of this license is in
10
    % http://www.latex-project.org/lppl.txt
11
    % and version 1.3 or later is part of all distributions of LaTeX
12
    % version 2005/12/01 or later.
13
    %
14
    % This work has the LPPL maintenance status `maintained'.
15
16
    %
    % The Current Maintainer of this work is Elijah Z Granet
17
```

6.1 LuaTeX check

18	100000000000000000000000000000000000000
19	°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°
20	% to show the package only works with Lua
21	%&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&
22	%&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&
23	\ <i>RequirePackage</i> {iftex}
24	\ifPDFTeX {
25	\ <i>PackageError</i> {luaquotes}
26	{You are using pdfTeX but this package only works
27	\MessageBreak with LuaTeX}{}
28	}
29	<pre>\else\ifXeTeX{ \PackageError{luaquotes}</pre>
30	{You are using XeTeX but this package only works
31	\MessageBreak with LuaTeX}{}
32	}\fi\fi

6.2 Dependencies

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

6.3 Avoiding smart quotes in monospace

```
48
   49
   % removing the effects for monospace
50
   51
   \begin{luacode}
52
    \begin{minted}[
53
    frame=lines,
54
    framesep=2mm,
55
    baselinestretch=1.2,
56
57
    bgcolor=LightGray,
    fontsize=\footnotesize,
58
    linenos,
59
60
    breaklines,
61
    firstnumber=last
    ]
62
   {lua}
63
   local uchar = unicode.utf8.char
64
     fonts.handlers.otf.addfeature{
65
       name = "qtbye",
66
       type = "substitution",
67
       data =
68
69
       {
      " = 0x0022,
70
   " = 0 \times 0022,
71
    ' = 0 \times 0027,
72
     = 0 \times 0022 ,
73
74
     = 0 \times 0022 ,
    < = 0 \times 0027,
75
```

> = 0x0027 76 },

77

78

end{luacode}

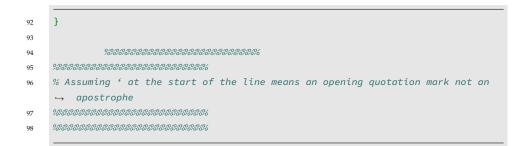
6.4 Quote replacement functions

79	00000000000000000000000000000000000000
80	0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,
81	0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,
82	°,0°,0°,0°,0°,0°,0°,0°,0°,0°,0°,0°,0°,0°
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-
	→ single-and-double-quotes-in-tex
87	0 ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~

88

```
89
```

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



```
99
100
101
```

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

104 *luaexec*{

}

 105
 function singlequotes (s)

 106
 return (s:gsub (" ", " "))

```
107 }
```

6.5 Activation commands

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

117 118 }}

\newcommand\doublequotesoff{\directlua{

```
119
120
121
```

```
luatexbase.remove_from_callback (
    "process_input_buffer",
    "doublequotes"))
```

}}

\newcommand\singlequotelinestarton{\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

134

135

}}

\newcommand\singlequoteson{\directlua{

131 luatexbase.add_to_callback (

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

136	}}		
137	0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,		
138	\$#\$#\$\$#\$#\$#\$#\$#\$#\$#\$#\$#\$#\$#\$#\$#\$#\$#\$#\$		
139	% global functions, useful for things like this		
140	\$		
141	^0/0/0/0/0/0/0/0/0/0/0/0/0/0/0/0/0/0/0/		
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

      152
      \AtBeginDocument{\smartquotes}

      153
      \renewcommand{\texttt}[1]{{\ttfamily\addfontfeature{RawFeature={+qtbye,-

      ...
      tlig}}\dumbquotes

      ...
      #1}}

      154
      ...

      155
      }
```

6.7 Auxiliary punctuation

156	
157	07070707070707070707070707070707070707
158	0/0/0/0/0/0/0/0/0/0/0/0/0/0/0/0/0/0/0/
159	% auxiliary punctuati
160	0.0.10.10.10.10.10.10.10.10.10.10.10.10.
161	07070707070707070707070707070707070707
162	% Essentially to be us
163	% thing fails to provid
164	% quotation or
165	% quote like punctuation
166	% needed

```
167
   168
169
   170
   171
172
   173
   174
175
   % German quotations
176
   177
   \newcommand{\desingle}{{\addfontfeature{RawFeature={-qtbye,-
178
   \hookrightarrow tlig}}\symbol{"201A}}
   \newcommand{\dedouble}{{\addfontfeature{RawFeature={-qtbye,-
179
   \hookrightarrow \quad \texttt{tlig}\} \\ \texttt{symbol} \\ \texttt{"201E} \\ \} \\ \}
   180
   181
   % backtick
182
   183
   184
   \newcommand{\bcktck}{{\addfontfeature{RawFeature={-qtbye,-tlig}}`}}
185
   186
   187
   % Straight double
188
   % and single quotes
189
190
   191
   192
   \newcommand{\dqone}{{\addfontfeature{RawFeature={-qtbye,-
193
   \leftrightarrow tlig}}\symbol{"0027}}
   \newcommand{\dqtwo}{{\addfontfeature{RawFeature={-qtbye,-
194
   \leftrightarrow tlig}}\symbol{"0022}}
195
   196
   % Prime, mostly for
197
   % Feet and inches
198
   199
   200
   \newcommand{\lqprime}{'}
201
   \newcommand{\lqdoubleprime}{"}
202
   203
   204
   % The Okina, for typing
205
   % Hawaiʻi
206
   207
208
   \newcommand{\okina}{'}
209
```

```
210
    211
212
    % The individual smart quotes
    %
213
    214
215
    216
    217
218
    \newcommand{\sqtwoleft}{{\addfontfeature{RawFeature={-qtbye,-tlig}}"}}
219
    \newcommand{\sqtworight}{{\addfontfeature{RawFeature{-qtbye,-tlig}}"}}
    \newcommand{\sqoneright}{{\addfontfeature{RawFeature={-qtbye,-tlig}}'}}
220
    \newcommand{\apost}{{\addfontfeature{RawFeature={-qtbye,-tlig}}'}}
221
    \newcommand{\sqoneleft}{{\addfontfeature{RawFeature={-qtbye,-tlig}}'}}
222
    \newcommand{\glmtl}{{\addfontfeature{RawFeature={-qtbye,-tlig}}«\,}}
223
    \newcommand{\glmtr}{{\addfontfeature{RawFeature={-qtbye,-tlig}}\,»}}
224
    \newcommand{\sglmtl}{{\addfontfeature{RawFeature={-qtbye,-tlig}}<\,}}</pre>
225
    \newcommand{\sglmtr}{{\addfontfeature{RawFeature={-qtbye,-tlig}}\,,}}
226
```

6.8 The German option

 227
 228
 ?&&&?>
 ?&&
 ?

 228
 ?&&&?>
 ?&&
 ?

 229
 ?&&&?>
 ?
 ?

 230
 %
 DEUTSCH
 ?

 231
 ?&&&?>
 ?
 ?

 232
 ?&&&?>
 ?
 ?

 233
 \luaexec{

234 235 236

```
function dedoublequotes ( s )
     return ( s:gsub ( '''(..-)"'', ""[%1"" ) )
     end
```

```
237 }
238 \luaexec{
```

```
239
240
241
```

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

242 243 \luaexec{

}

function desinglequotesclose(s) 244 return (s:gsub (" '(..-)'", ", \%1`")) 245 end 246

} 247 248 %% Two utility macros to activate/deactivate the Lua function: 249 \newcommand\dedoublequoteson{\directlua{ 250

```
luatexbase.add_to_callback (
251
        "process_input_buffer" , dedoublequotes , "dedoublequotes" )
252
```

}} 253 \newcommand\dedoublequotesoff{\directlua{luatexbase.remove_from_callback (254 "process_input_buffer" , "dedoublequotes") 255

256 257 }}

\newcommand\desinglequotelinestarton{\directlua{

258 luatexbase.add_to_callback (

259 }}
260 \newcommand\desinglequotelinestartoff{\directlua{

265

266

261 luatexbase.remove_from_callback (
262 "process_input_buffer", "desinglequotelinestart"))

263 }}
264 \newcommand\desinglequotescloseon{\directlua{

luatexbase.add_to_callback([@]process_input_buffer<mark>"</mark>,desinglequotesclose,[@]desinglequotesclose<mark>"</mark>)

267 }} 268 \newcommand\desinglequotescloseoff{\directlua{

269 luatexbase.remove_from_callback (
270 "process_input_buffer", "desinglequotesclose")

271 }}
272 }}
273 \newcommand{\desmartquotes}{\dedoublequoteson
274 \desinglequotelinestarton
275 \desinglequotescloseon
276 \newcommand{\dedumbquotes}{\dedoublequotesoff

```
\desinglequotelinestartoff
277
      \desinglequotesoff
278
      \desinglequotescloseoff}
279
         \DeclareOption{de}{
280
281
      \AtBeginDocument{\desmartquotes}
282
283
      \renewcommand{\texttt}[1]{{\ttfamily\addfontfeature{RawFeature={+qtbye,-
      \leftrightarrow tlig}}\dedumbquotes
      \hookrightarrow #1}}
284
285
286
      }
```

6.9 The French option

 294
 function frdoublequotes (s)

 295
 return (s:gsub (```(..-)"' , ``<\\,\\$1\\,»"))</td>

 296
 end

297	}
298	

299 300

```
301 }
302 \luaexec{
```

```
      303
      function frsinglequotesclose(s)

      304
      return (s:gsub ( f (..-)'", " <\\,\%1\\,"))</td>

      305
      end
```

```
306 }
307 %% Two utility macros to activate/deactivate the Lua function:
308 \newcommand\frdoublequoteson{\directlua{
```

```
309 luatexbase.add_to_callback (
310 "process_input_buffer", frdoublequotes, "frdoublequotes")
```

```
311 }}
312 \newcommand\frdoublequotesoff{\directlua{
```

luatexbase.remove_from_callback (
 "process_input_buffer", "frdoublequotes")

315 }}
316 \newcommand\frsinglequotelinestarton{\directlua{

317 318 luatexbase.add_to_callback (
 "process_input_buffer", frsinglequotelinestart, "frsinglequotelinestart")

```
319
320
```

322

323

324

}}

\newcommand\frsinglequotelinestartoff{\directlua{

}}
\newcommand\frsinglequotescloseon{\directlua{

325 luatexbase.add_to_callback (
326 "process_input_buffer", frsinglequotesclose, "frsinglequotesclose")

```
327 }}
328 \newcommand\frsinglequotescloseoff{\directlua{
```

329 luatexbase.remove_from_callback (
330 "process_input_buffer", "frsinglequotesclose")

```
}}
331
                                                     \verb|newcommand{\frsmartquotes}{\frdoublequoteson}|
332
                                  \final degree for the second degree degree
333
                                  \frsinglequotescloseon}
334
                                                      335
336
                                  \frsinglequotelinestartoff
337
                                  \frsinglequotescloseoff}
                                                                                                                                                                                                             \DeclareOption{fr}{
338
                                  \AtBeginDocument{\frsmartquotes}
339
340
                                  \renewcommand{\texttt}[1]{{\ttfamily\addfontfeature{RawFeature={+qtbye,-
                                  → tlig}}\frdumbquotes
                                   \hookrightarrow
                                                         #1}}
```

}

6.10 Process Options

7 Version History

7.1 1.0.0

21 August 2022: Package creation