# LuaQuotes: A package for smart quotation marks

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4 November 2022 Version 1.2.0

## Contents

1	Ove	rview	2
	1.1	Purpose	2
2	Sma	rt quotes	2
	2.1	Options	2
		2.1.1 English Features	2
		2.1.2 French option	3
		2.1.3 The German option	3
	2.2	Activation and De-activation	3
	2.3	Monospace	4
3	Aux	iliary Punctuation	4
	3.1	Standalone quotes	4
	3.2	Additional symbols	6
4	Futu	re Development and Localisation	7
5	Lice	nce	7
6	Imp	lementation	8
	6.1	LuaTeX check	8
	6.2	Dependencies	8
	6.3	Avoiding smart quotes in monospace	9
	6.4	Quote replacement functions	10
	6.5	Activation commands	12
	6.6	English option	۱4
	6.7	Auxiliary punctuation	15

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	6.8	The German option	16
		The French option	
	6.10	Process Options	22
7	Vers	sion History	22
	7.1	1.1.0	22
	7.2	1.0.1	22
	7.3	1.0.1	22
	7.4	1.0.0	23

#### 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 English Features

The English features are designed to smartly recognise English punctuation:

Feature	User input	Output
Double Quotes	"Salut!"	"Hello"
Single Quotes	'Hello!'	'Hello'
Contractions	Don't	Don't
Elision	'ello	'ello

#### 2.1.2 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!>

#### 2.1.3 The German option

The German option produces the following outpu:

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
\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<sub>E</sub>X quote ligatures (but not other T<sub>E</sub>X 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.

Name	UTF-8	Command	Produces
Single low quote	U+201A	\desingle	, []
Double low quote	U+201E	\dedouble	,,[]
Single straight quote	U+0027	\dqone	'0
Double straight quote	U+0022	\dqtwo	"0
Left single quote	U+2018	\sqoneleft	"[]
Right single quote	U+2019	\sqoneright	□'
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- met [w/ space]	U+2039	\sglmtl	< []
Single right guille- met [w/ space]	U+203A	\sglmtr	] >

#### 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	́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

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

```
\def\luaquotesversionnumber{1.1}
2
    \ProvidesPackage{dev-lua}
3
     [2022/10/25\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 \,
    % 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

	222222222222222222222222222222222222222
18	\$\$\$C\$\$C\$\$C\$\$C\$\$C\$\$C\$\$C\$\$C\$\$C\$\$C\$\$C\$\$C\$
19	9 <i>6</i> 969969696969696969696969696969696969
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	\ <i>MessageBreak</i> with LuaTeX}{}
28	}
29	\else\ifXeTeX{ \PackageError{luaquotes}
30	{You are using XeTeX but this package only works
31	\ <i>MessageBreak</i> 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
    bgcolor=LightGray,
57
    fontsize=\footnotesize,
58
    linenos,
59
    breaklines,
60
    firstnumber=last
61
    ]
62
    {lua}
63
    local uchar = unicode.utf8.char
64
     fonts.handlers.otf.addfeature{
65
       name = "qtbye",
66
       type = "substitution",
67
       data =
68
       {
69
     = 0 \times 0022,
70
    " = 0 \times 0022,
71
    ' = 0 \times 0027,
72
     = 0 \times 0022 ,
73
     = 0 \times 0022 ,
74
    < = 0 \times 0027,
75
```

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

78

\*end*{luacode}

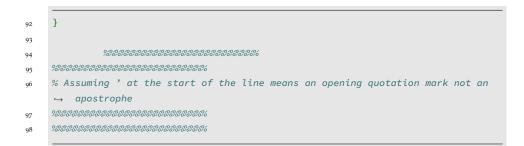
## 6.4 Quote replacement functions

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-
	→ single-and-double-quotes-in-tex
87	0,7,7,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0

88

```
89
```

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



```
        99
        function singlequotelinestart (s)

        100
        return (s:gsub ("^^ ", ", "))

        101
        end
```

```
}
102
      \luaexec{
103
           \begin{minted}[
104
     frame=lines,
105
     framesep=2mm,
106
     baselinestretch=1.2,
107
     bgcolor=LightGray,
108
     fontsize=\footnotesize,
109
     linenos,
110
     breaklines,
111
     firstnumber=last
112
     ]
113
     \{lua\}
114
115
116
     function abbrevsingle ( s )
117
                 return ( s:gsub ( " '(..-) " , " '\%1 " ) )
118
               end
119
```



```
      125
      function singlequotes (s)

      126
      return (s:gsub ("""," ("")))
```

}

## 6.5 Activation commands

134 135 136

luatexbase.add_to_callback (		
"process_input_buffer" , doublequotes	,	"doublequotes <mark>"</mark> )

137 }}
138 \newcommand\doublequotesoff{\directlua{

139 luatexbase.remove\_from\_callback ( 140 "process\_input\_buffer", 141 "doublequotes"))

142 143 }}

\newcommand\abbrevsingleon{\directlua{

144
145
146
147
<sup>40</sup> "process\_input\_buffer",
148
abbrevsingle,
149
<sup>40</sup> abbrevsingle")

153

154

155

156 157 }}

 $\verb|newcommand|abbrevsingleoff{|directlua{}$ 

luatexbase.remove\_from\_callback (
 "process\_input\_buffer",
 "abbrevsingle")

 158
 }

 159
 }}

 160

 161

 162

 163
 /newcommand\singlequotelinestarton{\directlua{

```
164 luatexbase.add_to_callback (
165 "process_input_buffer", singlequotelinestart, "singlequotelinestart")
```

}}

169 }} 170 \**newc** 

166

\newcommand\singlequoteson{\directlua{

171 luatexbase.add\_to\_callback (

}}

newcommand	singlequotesoff	{
------------	-----------------	---

174 175 

#### }} 176 177 178 % global functions, useful for things like this 179 180 181 \newcommand{\smartquotes}{% 182 \doublequoteson% 183 \singlequotelinestarton% 184 \abbrevsingleon% 185 \singlequoteson} 186 \newcommand{\dumbquotes}{ 187 \doublequotesoff 188 \abbrevsingleoff 189 $\single quote line start of f$ 190 \singlequotesoff} 191

## 6.6 English option

192	
193	\DeclareOption{en}{
194	
195	\frsmartquotes
196	\frdumbquotes
197	\desmartquotes
198	\dedumbquotes\smartquotes}
199	$\label{eq:command} $$ \renewcommand{\texttt}[1]{{\texttt}[a]} add font feature{RawFeature}_{\texttt}] $$$
	$\leftrightarrow$ #1}}
200	}
201	

# 6.7 Auxiliary punctuation

202	
203	<u></u>
204	?&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&
205	% auxiliary punctuation
206	?&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&
207	?&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&
208	% Essentially to be used where the
209	% thing fails to provide the
210	% quotation or
211	% quote like punctuation
212	% needed
213	Ŷ&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&
214	Ŷ&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&
215	0, N,
216	0, N,
217	9x2x3x6x6x2x6x2x6x6x6x6x6x6x6x6x6x6x6x6x6
218	9x2x3x6x6x2x6x2x6x6x6x6x6x6x6x6x6x6x6x6x6
219	9x2x3x6x6x2x6x2x6x6x6x6x6x6x6x6x6x6x6x6x6
220	0, N,
221	% German quotations
222	0 ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
223	0,0,7,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
224	<pre>\newcommand{\desingle}{{RawFeature={-qtbye,-</pre>
	$\rightarrow$ tlig}}\symbol{"201A}}
225	<pre>\newcommand{\dedouble}{{RawFeature={-qtbye,-</pre>
	$\rightarrow$ tlig}}\symbol{"201E}}}
226	??~???????????????????????????????????
227	?&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&
228	% backtick
229	?\$\$\$?\$ ?\$\$\$\$?\$\$\$\$\$\$
230	?&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&
231	<pre>\newcommand{\bcktck}{{\addfontfeature{RawFeature={-qtbye,-tlig}}`}}</pre>
232	?\$\$\$?\$ ?\$\$\$\$?\$\$\$\$\$\$
233	?&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&
234	% Straight double
235	% and single quotes
236	?\$\$\$?\$ ?\$\$\$\$?\$\$\$\$\$\$
237	?&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&
238	
239	<pre>\newcommand{\dqone}{{RawFeature={-qtbye,-</pre>
	$\rightarrow$ tlig}}\symbol{"0027}}}
240	<pre>\newcommand{\dqtwo}{{RawFeature={-qtbye,-</pre>
	$\rightarrow$ tlig}}\symbol{"0022}}
241	??~~??~???~???~???????????????????????
242	?8888888888888888888888888888888888888

```
% Prime, mostly for
243
    % Feet and inches
244
    245
    246
    \newcommand{\lqprime}{'}
247
    \newcommand{\lqdoubleprime}{"}
248
    249
    250
251
    % The Okina, for typing
    % Hawaiʻi
252
    253
    254
    \newcommand{\okina}{'}
255
    256
    257
    % The individual smart quotes
258
    %
259
    260
    261
    262
    263
    \newcommand{\sqtwoleft}{{\addfontfeature{RawFeature={-qtbye,-tlig}}"}}
264
    \newcommand{\sqtworight}{{\addfontfeature{RawFeature{-qtbye,-tlig}}"}}
265
    \newcommand{\sqoneright}{{\addfontfeature{RawFeature{-qtbye,-tlig}}'}
266
    \newcommand{\apost}{{\addfontfeature{RawFeature={-qtbye,-tlig}}'}}
267
    \newcommand{\sqoneleft}{{\addfontfeature{RawFeature={-qtbye,-tlig}}'}}
268
    \newcommand{\glmtl}{{\addfontfeature{RawFeature={-qtbye,-tlig}}«\,}}
269
    \newcommand{\glmtr}{{\addfontfeature{RawFeature={-qtbye,-tlig}}\,»}}
270
    \newcommand{\sglmtl}{{\addfontfeature{RawFeature={-qtbye,-tlig}}<\,}}</pre>
271
    \newcommand{\sglmtr}{{\addfontfeature{RawFeature={-qtbye,-tlig}}\,,}}
272
```

#### 6.8 The German option

%&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&
\$&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&
% DEUTSCH
\$&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&
\$8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,

```
280
281
282
```

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

283 \luaexec{ 284

285

286

287

}

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

} 288 \luaexec{ 289

function desinglequotesclose( s ) 290 return ( s:gsub ( " '(..-)'", ", \phi'") ) 291 end 292

293

}

```
294
     %% Two utility macros to activate/deactivate the Lua function:
295
     \newcommand\dedoublequoteson{\directlua{
296
```

297 298 luatexbase.add\_to\_callback ( "process\_input\_buffer" , dedoublequotes , "dedoublequotes" )

```
299
300
301
```

}}

```
\newcommand\dedoublequotesoff{\directlua{luatexbase.remove_from_callback (
    "process_input_buffer" , "dedoublequotes" )
```

```
302
```

303

}}

\newcommand\desinglequotelinestarton{\directlua{

 $_{3^{04}}$  luatexbase.add\_to\_callback (

305 }} 306 \newcommand\desinglequotelinestartoff{\directlua{

```
307 luatexbase.remove_from_callback (
308 "process_input_buffer", "desinglequotelinestart")
```

309 310 }}

}}

\newcommand\desinglequotescloseon{\directlua{

311 312 luatexbase.add\_to\_callback (
"process\_input\_buffer", desinglequotesclose, "desinglequotesclose")

313 314

\newcommand\desinglequotescloseoff{\directlua{

317	}}
318	\newcommand{\desmartquotes}{\dedoublequoteson
319	\desinglequotelinestarton
320	\desinglequotescloseon}
321	<pre>\newcommand{\dedumbquotes}{\dedoublequotesoff</pre>
322	\desinglequotelinestartoff
323	\desinglequotescloseoff}
324	\DeclareOption{de}{
325	
326	\frsmartquotes
327	\frdumbquotes
328	\smartquotes
329	\dumbquotes\dumbquotes
330	\desmartquotes}
331	$\label{eq:command} $$ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $
	$\leftrightarrow$ #1}}
332	}

# 6.9 The French option



```
      340
      function frdoublequotes ( s )

      341
      return ( s:gsub ( '"(..-)"' , "«\\,\\"%1\\,»" ) )

      342
      end
```

345

346

} 344 \luaexec{

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

347 348 }

\luaexec{

function frsinglequotesclose( s )
return ( s:gsub ( []);(..-)'", " <\\,\\%1\\,>" ) ) 349 350 end 351

352	}
353	%% Two utility macros to activate/deactivate the Lua function:
354	\newcommand\directlua{

355 356 luatexbase.add\_to\_callback ( "process\_input\_buffer" ,frdoublequotes , "frdoublequotes" )

}} 357  $\verb|newcommand|frdoublequotesoff{|directlua{}$ 358

359 360  $\verb|luatexbase.remove_from_callback| ($ "process\_input\_buffer" , "frdoublequotes" )

361	}}
362	\newcommand\directlua{

365 366

}}	
\newcommand\directlu	<b>a</b> {

367 luatexbase.remove\_from\_callback ( 368 "process\_input\_buffer", "frsinglequotelinestart")

369 }} 370 \newcommand\frsinglequotescloseon{\directlua{

371 372 luatexbase.add\_to\_callback( "process\_input\_buffer",frsinglequotesclose ,"frsinglequotesclose")

373 }}
374 \newcommand\frsinglequotescloseoff{\directlua{

375 376 

```
}}
  377
                                \frsinglequotelinestarton
 378
                                  \frsinglequotescloseon}
379
                                                     \newcommand{\frdumbquotes}{\frdoublequotesoff
  380
                                  \frsinglequotelinestartoff
  381
                                  \frsinglequotescloseoff}
  382
                                                       \DeclareOption{fr}{
  383
                                  \label{eq:label_state} At {\it BeginDocument} of the state and the state
  384
                                  \renewcommand{\texttt}[1]{{\ttfamily\addfontfeature{RawFeature={+qtbye,-tlig}}
  385
                                    \hookrightarrow
                                                          #1}}
  386
                                  }
  387
```

#### 6.10 Process Options

## 7 Version History

```
7.1 1.1.0
```

396

25 October 2022: Added support for elision

7.2 1.0.1

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

7.3 1.0.1

28 August 2022: Change bug preventing non-English usage

7.4 1.0.0

21 August 2022: Package creation