LuaQuotes: A package for smart quotation marks

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Contents

1		Overview				
	1.1	Purpose	3			
2	Sma	Smart quotes				
	2.1	Options	3			
		2.1.1 English Features	3			
		2.1.2 French option	4			
		2.1.3 The German option	4			
	2.2	Activation and De-activation	4			
	2.3	Monospace	5			
3	Aux	Auxiliary Punctuation				
	3.1	Standalone quotes	5			
	3.2	Additional symbols	7			
4	Futu	are Development and Localisation	8			
5	Lice	ence	8			
6	Imp	lementation	9			
		LuaTeX check	9			
	6.2	Dependencies	9			
	6.3		10			
	6.4		11			
	6.5		13			
	6.6		15			
	6.7	0 1	16			

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	6.9	The German option	20
7	Vers	on History	23
	7.1	1.2.1	23
	7.2	1.1.0	23
	7.3	1.0.1	23
	7.4	1.0.1	24
	7.5	1.0.0	24

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 English Features

The English features are designed to smartly recognise English punctuation:

```
Double Quotes "Salut!" "Hello"
Single Quotes 'Hello!' 'Hello'
Contractions Don't Don't
```

2.1.2 French option

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

```
"Salut!" «Salut!»
'Salut!' «Salut!»
```

2.1.3 The German option

The German option produces the following 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 \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={+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\ightarrow\ightarrow\square\ightarrow\square\ightarrow\square\ightarrow\square\ightarrow\square\ightarrow\square\ightarrow\square\ightarrow\ight

Name	UTF-8	Command	Produces
Single low quote	U+201A	\desingle	,□
Double low quote	U+201E	\dedouble	,,□
Single straight quote	U+0027	\dqone	' □
Double straight quote	U+0022	\dqtwo	"
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	« <u> </u>
Right guillemet [w/space]	U+00BB	\glmtr	>>
Single left guillemet [w/space]	U+2039	\sglmtl	< []
Single right guillemet [w/space]	U+203A	\sglmtr	<u> </u>

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:

https://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 1.3c. This documentation is copyright of the author but licensed under CC-BY-SA 3.0.

6 Implementation

```
\def\\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\understand\under
```

6.1 LuaTeX check

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

6.2 Dependencies

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

6.3 Avoiding smart quotes in monospace

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

6.4 Quote replacement functions

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

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

```
102
      \luaexec{
103
         \begin{minted}[
     frame=lines,
     {\sf framesep=2mm}\,,
     baselinestretch=1.2,
     bgcolor=LightGray,
     fontsize=\footnotesize,
     linenos,
110
     breaklines,
     \verb|firstnumber=last|
113
     {lua}
114
115
116
     %function abbrevsingle ( s )
117
     % return ( s:gsub ( " '(..-) " , " '\%1 " ) )
118
119
```

```
120
121 }
122
123
124 \luaexec{
```

```
function singlequotes ( s )
return ( s:gsub ( " ", " " ) )
```

```
127 }
```

6.5 Activation commands

```
129
                        % activation and deactivation
                        131
                        132
                        \verb|\newcommand| double quotes on {\normalfootnotestime directlum and the content of the content
133
134
                        {\tt luatexbase.add\_to\_callback} \ \ (
135
                                     "process_input_buffer" , doublequotes , "doublequotes" )
                                     }}
137
                         \verb|\newcommand\doublequotesoff{\directlua}| |
138
                         luatexbase.remove_from_callback (
139
                                     "process_input_buffer" ,
"doublequotes" )
140
141
                        }}
142
                        %\newcommand\abbrevsingleon{\directlua{}}
143
144
145
                        %luatexbase.add_to_callback (
146
                                          "process_input_buffer" ,
147
                                          abbrevsingle ,
148
                                         "abbrevsingle" )
149
```

```
150
151
       % }}
152
       \% \backslash newcommand \backslash abbrevsingle off \{ \backslash directlua \{
153
154
       %luatexbase.remove\_from\_callback (
155
             "process_input_buffer" ,
"abbrevsingle" )
156
157
158
           }}
159
       \verb|\newcommand\singlequotelinestarton{\directlua{}}
163
164
       luatexbase.add_to_callback (
           \begin{tabular}{ll} \P process\_input\_buffer\begin{tabular}{ll} " & single quote line start" \\ \end{tabular} \ , \ \begin{tabular}{ll} " & single quote line start" \\ \end{tabular} \ )
165
           }}
166
       luatexbase.remove_from_callback (
167
           "process_input_buffer" , "singlequotelinestart" )
169
       \verb|\newcommand\singlequoteson{\directlua{}}
       {\tt luatexbase.add\_to\_callback} \ (
171
```

```
}}
172
    \verb|\newcommand\singlequotesoff{\directlua}| \\
173
    {\tt luatexbase.remove\_from\_callback} \ (
174
       "process_input_buffer" , "singlequotes" )
    }}
176
       177
    178
    % global functions, useful for things like this
    \newcommand{\smartquotes}{%
182
    \verb|\doublequoteson||%
183
    \singlequotelinestarton%
    %\abbrevsingleon%
    \singlequoteson}
       \verb|\newcommand{\dumbquotes}| \{
       \doublequotesoff
188
    %\abbrevsingleoff
189
       \singlequotelinestartoff
       \singlequotesoff}
191
```

6.6 English option

```
| DeclareOption{en}{
| AtBeginDocument{
| Instruction{for the properties of the prop
```

6.7 Auxiliary punctuation

```
202
  204
  % auxiliary punctuation
  % Essentially to be used where the
208
  % thing fails to provide the
209
  % quotation or
210
   % quote like punctuation
211
   % needed
212
   214
   215
  216
  217
  218
  % German quotations
221
   222
  \newcommand{\desingle}{{\addfontfeature{RawFeature={-qtbye,-
224

    tlig}}\symbol{"201A}}}

   \newcommand{\dedouble}{{\addfontfeature{RawFeature={-qtbye,-

    tlig}}\symbol{"201E}}}

   226
   227
   % backtick
  229
   \newcommand{\bcktck}{{\addfontfeature{RawFeature={-qtbye,-tlig}}`}}
   232
   233
   % Straight double
234
   % and single quotes
235
   236
   \newcommand{\dgone}{{\addfontfeature{RawFeature={-qtbye,-
239
   \ \hookrightarrow \ \ \mathsf{tlig}} \} \ \mathsf{symbol} \{ \texttt{"0027} \} \} \}
  \newcommand{\dqtwo}{{\addfontfeature{RawFeature={-qtbye,-

    tlig}}\symbol{"0022}}}

  241
```

```
% Prime, mostly for
243
  % Feet and inches
244
  245
  246
  \verb|\newcommand{\lqprime}| \{ ' \} 
  \newcommand{\lqdoubleprime}{"}
  249
  250
  % The Okina, for typing
252
  253
  \newcommand{\okina}{'}
255
  256
  257
  % The individual smart quotes
258
259
  263
  \newcommand{\sqtwoleft}{{\addfontfeature{RawFeature={-qtbye,-tlig}}"}}
264
  \newcommand{\sqtworight}{{\addfontfeature{RawFeature={-qtbye,-tlig}}"}}
265
  \newcommand{\sqoneright}{{\addfontfeature{RawFeature={-qtbye,-tlig}}'}}
266
  267
  \newcommand{\glmtl}{{\addfontfeature{RawFeature={-qtbye,-tlig}}«\,}}
269
  270
  271
  \newcommand{\sglmtr}{{\addfontfeature{RawFeature={-qtbye,-tlig}}\,,\)}
272
```

6.8 The German option

```
function dedoublequotes ( s )
280
                  return ( s:gsub ( ""(..-)" , ",\%1"" ) )
281
282
283
      \luaexec{
284
      \textbf{function} \ \ \text{desingle} \\ \text{quotelinestart} \ \ ( \ \ \text{s} \ \ )
285
                  return (s:gsub ("^\",",") )
286
               end
287
288
      \luaexec{
289
      function desinglequotesclose( s )
290
      return ( s:gsub ( " (..-)'", " ,\%1`" ) )
291
292
293
294
      %% Two utility macros to activate/deactivate the Lua function:
295
      \newcommand\dedoublequoteson{\directlua{
296
      luatexbase.add_to_callback (
297
         "process_input_buffer" , dedoublequotes , "dedoublequotes" )
298
```

```
}}
299
                          \verb|\newcommand| dedouble quotes off \{ \verb|\directlua| \{ luatexbase.remove\_from\_callback \ (luatexbase.remove\_from\_callback \ (luatexbase.remove\_from\_callback
300
                                        "process_input_buffer" , "dedoublequotes" )  
301
                         }}
                          \newcommand\desinglequotelinestarton{\directlua{
303
                         luatexbase.add_to_callback (
                                       }}
305
                         \verb|\newcommand\desinglequotelinestartoff{\directlua}|
306
                         luatexbase.remove_from_callback (
307
                                       "process_input_buffer" , "desinglequotelinestart" )
308
                                        }}
309
                          \verb|\newcommand\desinglequotescloseon{\directlua{}}
                                        luatexbase.add_to_callback (
311
                                        "process_input_buffer" , desinglequotesclose , "desinglequotesclose" )
312
                                       }}
313
                         \verb|\newcommand| desingle quotes close of f{\directlua}|
314
```

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

```
317
        \newcommand{\desmartquotes}{\dedoublequoteson
318
     \desinglequotelinestarton
319
     \desinglequotescloseon}
320
        \verb|\newcommand{\dedumbquotes}| \{ \verb|\dedoublequotesoff| \\
     \desinglequotelinestartoff
322
     \desinglequotescloseoff}
        \DeclareOption{de}{
     \AtBeginDocument{
325
     \frsmartquotes
326
     \verb|\frdumbquotes|
     \smartquotes
     \verb|\dumbquotes| dumbquotes|
     \verb|\desmartquotes||
     \hookrightarrow \quad \texttt{\#1}\}\}
332
```

6.9 The French option

```
333
334
$$\int_{\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}\text{\circle}
```

```
function frdoublequotes ( s )

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

end
```

```
343
344
                             \luaexec{
                             function frsinglequotelinestart ( s )
345
                                                                                     return (s:gsub ("^\","") )
346
347
348
                             \label{luaexec} \
                            function frsinglequotesclose( s )
return ( s:gsub ( ( ( ..-)'", " (\\,\)%1\\,\" ) )
349
350
 351
 352
353
                             %% Two utility macros to activate/deactivate the Lua function:
                             \verb|\newcommand| frdouble quotes on {\normaliset \normaliset \norm
354
                             luatexbase.add_to_callback (
 355
                                           "process_input_buffer" ,frdoublequotes , "frdoublequotes" )
 356
                                         }}
357
                              \verb|\newcommand| frdouble quotes of f{\directlua}|
 358
                             {\tt luatexbase.remove\_from\_callback} \ (
 359
                                           "process_input_buffer" , "frdoublequotes" )
 360
```

```
}}
361
                       \verb|\newcommand\frsinglequotelinestarton{\directlua{}}
                       luatexbase.add_to_callback (
363
                                  }}
365
                       \verb|\newcommand| fr single quoteline start of f{\directlua}|
366
                       luatexbase.remove_from_callback (
367
                                  "process_input_buffer" , "frsinglequotelinestart" )
368
                                   }}
369
                                   \verb|\newcommand| frsingle quotesclose on {\normaliset luain} |
370
                                   luatexbase.add_to_callback (
371
                                  \begin{tabular}{ll} \beg
372
                       }}
373
                       \verb|\newcommand| frsingle quotesclose of f{\directlua}|
374
                       luatexbase.remove_from_callback (
375
                                  "process_input_buffer" , "frsinglequotesclose" )
376
```

```
}}
  377
                                 \frsinglequotelinestarton
 378
                                   \frsinglequotescloseon}
379
                                                      \verb|\newcommand{\frdumbquotes}| \{ \verb|\frdumbquotes|| \} | |
                                   \frsinglequotelinestartoff
                                   \frsinglequotescloseoff}
  382
                                                      \DeclareOption{fr}{
  383
                                   \label{thm:local_def} $$ At Begin Document {\design bounded \def} smart quotes \def umb quot
  384
                                   386
```

6.10 Process Options

7 Version History

7.1 1.2.1

Suspended automatic elision support due to implementation issues

7.2 1.1.0

25 October 2022: Added support for elision

7.3 1.0.1

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

7.4 1.0.1

28 August 2022: Change bug preventing non-English usage

7.5 1.0.0

21 August 2022: Package creation