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!' '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:

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

2.1.3 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\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 lov	w quote	U+201E	\dedouble	,,[]
Single quote	straight	U+0027	\dqone	'0
Double quote	straight	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 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: 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{1.1}
\ProvidesPackage{dev-lua}

[2022/10/25\luaquotesversionnumber smart quotes with lua]

% !TeX program = lualatex

% !TeX encoding = utf8

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thtp://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'.

The Current Maintainer of this work is Elijah Z Granet
```

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
        \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
 \ 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}[
    frame=lines,
    framesep=2mm,
    baselinestretch=1.2,
    bgcolor=LightGray,
57
    fontsize=\footnotesize,
    linenos,
    breaklines,
    firstnumber=last
62
   local uchar = unicode.utf8.char
64
     fonts.handlers.otf.addfeature{
      name = "qtbye",
      type = "substitution",
      data =
68
       {
     = 0x0022,
70
   " = 0x0022,
71
    ' = 0x0027
     = 0x0022, 
73
     = 0x0022, 
74
    < = 0x0027,
```

6.4 Quote replacement functions

```
function doublequotes ( s )

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

```
99
     function singlequotelinestart ( s )
                 return (s:gsub ("^\","") )
100
101
              }
102
      \luaexec{
103
          \begin{minted}[
     frame=lines,
     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 )
125
                 return ( s:gsub ( " '", " '" ) )
```

127

6.5 Activation commands

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

```
150
151
           }}
152
       \verb|\newcommand|| abbrevsingle of f \{ \verb|\directlua| \}
153
154
       {\tt luatexbase.remove\_from\_callback} \ (
155
           "process_input_buffer" ,
"abbrevsingle" )
156
157
158
           }}
159
160
       \verb|\newcommand| single quote line start on \{\verb|\directlua||
163
164
       luatexbase.add_to_callback (
           \hbox{\ensuremath{$^{\prime\prime}$}} process\_input\_buffer\hbox{\ensuremath{$^{\prime\prime}$}} \ , \ singlequotelinestart\hbox{\ensuremath{$^{\prime\prime}$}} \ )
165
           }}
166
       luatexbase.remove_from_callback (
167
           "process_input_buffer" , "singlequotelinestart" )
169
       \verb|\newcommand\singlequoteson{|\directlua|}
       luatexbase.add_to_callback (
171
```

```
}}
172
    \verb|\newcommand| single quotes of f \{ \verb|\directlua| \}
173
    luatexbase.remove_from_callback (
174
       "process_input_buffer" , "singlequotes" )
    }}
176
       177
    178
    % global functions, useful for things like this
    \newcommand{\smartquotes}{%
182
    \doublequoteson%
183
    \singlequotelinestarton%
    \abbrevsingleon%
185
    \singlequoteson}
186
       \verb|\newcommand{\{ \ | \ dumbquotes \} \{ }
       \doublequotesoff
188
    \abbrevsingleoff
```

6.6 English option

 \slash single quote line start of f\singlequotesoff}

189

191

```
192
              \DeclareOption{en}{
193
    \AtBeginDocument{
194
    \frsmartquotes
    \frac{frdumbquotes}{}
    \delta des mart quotes
    \dedumbquotes\smartquotes}
198
    \hookrightarrow \quad \texttt{\#1}\}\}
200
201
```

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}}}

    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}\} \hspace{-0.1cm} \setminus \hspace{-0.1cm} \mathsf{symbol} \{ \texttt{"0027} \} \}
  \newcommand{\dqtwo}{{\addfontfeature{RawFeature={-qtbye,-

    tlig}}\symbol{"0022}}}

  241
```

```
% Prime, mostly for
243
  % Feet and inches
244
  245
  246
  \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}}\addfontfeature}
269
  270
  271
  272
```

6.8 The German option

```
function dedoublequotes ( s )
280
                 return ( s:gsub ( ["(..-)"]" , ", [%1"" ) )
281
282
               }
283
     \luaexec{
284
     function desinglequotelinestart ( s )
285
                 return (s:gsub ("^\",",") )
286
              end
287
             }
288
     \luaexec{
289
     function desinglequotesclose( s )
290
     return ( s:gsub ( " )(..-)'", " ,\%1`" ) )
291
               end
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
     300
        "process_input_buffer" , "dedoublequotes" )  
301
     }}
     \verb|\newcommand| desingle quote line start on \{\verb|\directlua||
303
     luatexbase.add_to_callback (
        }}
305
     \verb|\newcommand| desingle quoteline start of f{\directlua}|
306
     luatexbase.remove_from_callback (
307
        "process_input_buffer" , "desinglequotelinestart" )
308
        }}
309
     \verb|\newcommand| desingle quotesclose on \{\verb|\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
     \delta desingle quote line start on
319
     \desinglequotescloseon}
320
         \verb|\newcommand{\dedumbquotes}| \{ \verb|\dedoublequotes| of f
     \desinglequotelinestartoff
322
     \desinglequotescloseoff}
         \verb|\DeclareOption{de}| \{
     \AtBeginDocument{
325
     \frsmartquotes
326
     \frac{frdumbquotes}{}
     \smartquotes
     \dot dumbquotes \dot dumbquotes
     \delta des mart quotes \}
     \hookrightarrow \quad \texttt{\#1}\}\}
332
```

6.9 The French option

```
function frdoublequotes ( s )

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

end
```

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

```
}}
 361
                                            \verb|\newcommand| fr single quote line start on \{\verb|\directlua| \}
                                            luatexbase.add_to_callback (
 363
                                                                 \begin{tabular}{ll} \P process\_input\_buffer \begin{tabular}{ll} \ref{tabular} & \r
                                                                  }}
 365
                                            \verb|\newcommand| fr single quote line start of f \{ \verb|\directlua| \} |
 366
                                            luatexbase.remove_from_callback (
 367
                                                                 "process_input_buffer" , "frsinglequotelinestart" )
368
                                                                  }}
 369
                                                                  \verb|\newcommand| fr single quotesclose on \{\verb|\directlua| \}
 370
                                                                  luatexbase.add_to_callback (
 371
                                                                 \begin{tabular}{ll} \beg
 372
                                          }}
 373
                                            \verb|\newcommand| fr single quotes close of f \{ \verb|\directlua| \}
 374
                                          luatexbase.remove_from_callback (
375
                                                                 "process_input_buffer" , "frsinglequotesclose" )
 376
```

```
}}
  377
                               \frsinglequotelinestarton
 378
                                 \frsinglequotescloseon}
379
                                                   \footnote{\colored}{\colored} \footnote{\colored} \footnote{\colored}{\colored} \footnote{\colored} \footnote{\colored}{\colored} \footnote{\colored}{\col
                                 \frsinglequotescloseoff}
  382
                                                     \DeclareOption{fr}{
  383
                                 384
                                 386
```

6.10 Process Options

7 Version History

```
7.1 1.1.0
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