LuaQuotes: A package for smart quotation marks

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Contents

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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!'
```

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
\usepackage[degm]{luaquotes} % German with French-style quotes
```

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!
```

2.1.4 The German (degm) option

The German (degm) 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
\degmdumbquotes %German with French-style quotes
```

The following commands re-activate the smart quotes function:

```
\smartquotes %English
\frsmartquotes %French
\desmartquotes % German
\degmsmartquotes % German with French-style quotes
```

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\ightarrow\square\ightarrow\square\ightarrow\ightarro

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	'[]
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	« []
Right guillemet [w/space]	U+00BB	\glmtr	>>
degm left guillemet	U+00BB	\degmtl	»[]
degm right guille- met	U+00AB	\degmtr	<u> </u>
Single left guille- met [w/space]	U+2039	\sglmtl	< □
Single right guille- met [w/ space]	U+203A	\sglmtr	
degm single left guillemet	U+203A	\desgmtl	> []
degm single right	U+2039	\desgmtr	□

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

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6 Implementation

```
\def\\uadhauquotesversionnumber{1.1}
\ProvidesPackage{dev-lua}

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

%!TeX program = lualatex

!TeX encoding = utf8

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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
        \verb|\MessageBreak with LuaTeX|| \{ \}
27
   \else\ifXeTeX{
                 \PackageError{luaquotes}
29
        {You are using XeTeX but this package only works
        \verb|\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"" ) )
```

```
99
     function singlequotelinestart ( s )
                 return (s:gsub ("^\","") )
100
101
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 )
125
                 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
                         \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
       \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
    \doublequoteson%
183
    \singlequotelinestarton%
    %\abbrevsingleon%
185
    \singlequoteson}
       \verb|\newcommand{\dumbquotes}| \{
       \doublequotesoff
    %\abbrevsingleoff
189
       \verb|\singlequotelinestartoff|
       \singlequotesoff}
```

6.6 English option

```
203 }
```

6.7 Auxiliary punctuation

```
205
  206
  % auxiliary punctuation
  209
  210
  % Essentially to be used where the
  % thing fails to provide the
212
  % quotation or
213
  % quote like punctuation
215
  216
  217
  219
  220
  222
  223
  % German quotations
  225
  226

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

  \newcommand{\dedouble}{{\addfontfeature{RawFeature={-qtbye,-
228

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

  230
  % backtick
  233
  \newcommand{\bcktck}{{\addfontfeature{RawFeature={-qtbye,-tlig}}`}}
234
  236
  % Straight double
237
  % and single quotes
238
  240
241
```

```
242
          243
           \hookrightarrow tlig}}\symbol{"0022}}}
          245
          % Prime, mostly for
246
          % Feet and inches
247
248
          249
          \newcommand{\lqprime}{'}
250
          \newcommand{\lqdoubleprime}{"}
          252
          253
          % The Okina, for typing
          % Hawaiʻi
255
          256
          257
          \newcommand{\okina}{'}
          259
          260
          % The individual smart quotes
261
          263
          264
          266
          \newcommand{\sqtwoleft}{{\addfontfeature{RawFeature={-qtbye,-tlig}}"}}
267
          \newcommand{\sqtworight}{{\addfontfeature{RawFeature={-qtbye,-tlig}}"}}
268
          \newcommand{\sqoneright}{{\addfontfeature{RawFeature={-qtbye,-tlig}}'}}
269
          \newcommand{\apost}{{\addfontfeature{RawFeature={-qtbye,-tlig}}'}}
          272
          \\ \noindent \n
273
          274
          \newcommand{\sglmtr}{{\addfontfeature{RawFeature={-qtbye,-tlig}}\,,\}}
275
```

6.8 The German option

```
281
                                  \luaexec{
 282
                                   function dedoublequotes ( s )
283
                                                                                                  return ( s:gsub ( ""(..-)" , ", %1"" ) )
284
  285
                                                                             }
 286
                                  \luaexec{
  287
                                   function desinglequotelinestart ( s )
288
                                                                                          return (s:gsub ("^'",",") )
 289
                                                                                  end
  290
                                                                          }
  291
                                  \luaexec{
  292
                                  function desingle
quotesclose( s ) return ( s:gsub ( \ ^{\ \ \ } \ ^{\ \ \ } (..-)'", " ,\ ^{\ \ \ \ \ } ) )
  293
 294
  295
                                                                                      }
 296
 297
                                  %% Two utility macros to activate/deactivate the Lua function:
 298
                                  \verb|\newcommand| dedouble quotes on {\normalized | directlua { | directl
```

```
300
      luatexbase.add_to_callback (
          \hbox{\ensuremath{\rlap{''}}process\_input\_buffer}\hbox{\ensuremath{\rlap{''}}}\ ,\ dedouble quotes\ ,\ \hbox{\ensuremath{\rlap{''}}}\hbox{\ensuremath{\rlap{''}}}dedouble quotes \ensuremath{\rlap{''}}\ )
301
          }}
302
      \verb|\newcommand| dedouble quotes off {\verb|\directlua| fluatexbase.remove_from_callback||} (
303
          "process_input_buffer" , "dedoublequotes" )  
304
      }}
305
      \verb|\newcommand| desingle quoteline start on {\newcommand} |
      luatexbase.add_to_callback (
307
         }}
      \verb|\newcommand\desinglequotelinestartoff{\directlua}|
309
      luatexbase.remove_from_callback (
310
          "process_input_buffer" , "desinglequotelinestart" )
311
          }}
312
      \verb|\newcommand| desingle quotesclose on {\normal| directlua{}}
313
          luatexbase.add_to_callback (
314
          315
```

```
}}
316
     \verb|\newcommand| desingle quotesclose of f{\directlua}|
317
     luatexbase.remove_from_callback (
318
       "process_input_buffer" , "desinglequotesclose" )
319
320
       \verb|\newcommand{\desmartquotes}| \{ \dedouble quotes on \\
321
     \desinglequotelinestarton
322
     \desinglequotescloseon}
323
       \verb|\newcommand{\dedumbquotes|}{\dedoublequotesoff}
     \desinglequotelinestartoff
325
     \desinglequotescloseoff}
326
       \verb|\DeclareOption{de}| \{
     \AtBeginDocument{
328
     329
     \frdumbquotes
     \smartquotes
331
     \dumbquotes\dumbquotes
332
     \desmartquotes}
333
     334
335
```

6.9 The German with French-style quotes (degm) option

```
function degmdoublequotes ( s )
343
                     return ( s:gsub ( ""(..-)" , "»\%1«" ) )
344
345
                   }
346
       \luaexec{
347
       function degmsinglequotelinestart ( s )
348
                     return (s:gsub ("^\","\") )
349
                 end
350
                 }
351
       \luaexec{
352
353
       function degmsinglequotesclose( s )
       return ( s:gsub ( " (..-)", " , \%1<" ) )
354
355
356
357
       %% Two utility macros to activate/deactivate the Lua function:
358
       \newcommand\degmdoublequoteson{\directlua{
359
       luatexbase.add_to_callback (
360
           \hbox{\ensuremath{\rlap/}\rlap/}{} process\_input\_buffer \hbox{\ensuremath{\rlap/}\rlap/}{} \ , \ \ degmdoublequotes \ , \ \hbox{\ensuremath{\rlap/}\rlap/}{} \ \hbox{\ensuremath{\rlap/} degmdoublequotes} \ )
361
```

```
}}
 362
363
                                           \verb|\newcommand/degmdoublequotesoff| \label{luatexbase.remove_from_callback (luatexbase.remove_from_callback (luatexbase.remove_from
                                                                 "process_input_buffer" , "degmdoublequotes" )  
 364
                                          }}
 365
                                           \newcommand\degmsinglequotelinestarton{\directlua{
 366
                                          luatexbase.add_to_callback (
                                                                }}
 368
                                          \verb|\newcommand| degmsingle quoteline start of f{\directlua}|
 369
                                          luatexbase.remove_from_callback (
 370
                                                                "process_input_buffer" , "degmsinglequotelinestart" )
 371
                                                                 }}
 372
                                           \verb|\newcommand| degmsingle quotesclose on {\newcommand} | directlua { | linear content of the c
 373
                                                                 luatexbase.add_to_callback (
 374
                                                                 "process_input_buffer" , degmsinglequotesclose , "degmsinglequotesclose" )
 375
                                                                 }}
376
                                          \verb|\newcommand| degmsingle quotesclose of f{\directlua}|
377
```

```
380
                                              \newcommand{\degmsmartquotes}{\degmdoublequoteson
381
                              \degmsinglequotelinestarton
382
                              \degmsinglequotescloseon}
383
                                              \verb|\newcommand{\degmdumbquotes}{\degmdoublequotesoff}|
                              \degmsinglequotelinestartoff
385
                              \verb|\degmsinglequotescloseoff||
                                              \DeclareOption{degm}{
                              \AtBeginDocument{
388
                             389
                             \verb|\frdumbquotes|
                             \space{-0.05cm} \space{-0.05
                             \verb|\dumbquotes| dumbquotes|
                              \verb|\degmsmartquotes||
                              \hookrightarrow \quad \texttt{\#1}\}\}
395
```

6.10 The French option

```
function frdoublequotes ( s )
return ( s:gsub ( ""(..-)")", "«\\,\%1\\,»"))
end
```

```
406
407
      \luaexec{
      function frsinglequotelinestart ( s )
408
                    return (s:gsub ("^\","") )
410
      \luaexec{
      function frsinglequotesclose( s )
return ( s:gsub ( ( (..-)'", " (\\,\)%1\\,\" ) )
412
413
414
415
416
      \ensuremath{\text{\%}} Two utility macros to activate/deactivate the Lua function:
      \verb|\newcommand| frdouble quotes on {\normaliset directlua}|
417
      luatexbase.add_to_callback (
418
          "process_input_buffer" ,frdoublequotes , "frdoublequotes" )
419
         }}
420
      \verb|\newcommand| frdouble quotes of f{\directlua}|
421
      {\tt luatexbase.remove\_from\_callback} \ (
422
          "process_input_buffer" , "frdoublequotes" )
423
```

```
}}
 424
                                           \verb|\newcommand| frsingle quoteline start on {\newcommand} \\
 425
                                           luatexbase.add_to_callback (
  426
                                                              427
                                                                }}
  428
                                           \verb|\newcommand| frsingle quoteline start of f{\directlua}|
                                           luatexbase.remove_from_callback (
 430
                                                              "process_input_buffer" , "frsinglequotelinestart" )
  431
                                                                }}
  432
                                                                \verb|\newcommand| frsingle quotesclose on {\normalised | directlua | for the content of the conte
  433
                                                                {\tt luatexbase.add\_to\_callback} \ (
434
                                                              \begin{tabular}{ll} \beg
 435
                                         }}
  436
                                           \verb|\newcommand\frsinglequotescloseoff{\directlua}|
  437
                                         luatexbase.remove_from_callback (
 438
                                                              "process_input_buffer" , "frsinglequotesclose" )
 439
```

```
}}
440
    \frsinglequotelinestarton
441
     \frsinglequotescloseon}
442
        \verb|\newcommand{\frdumbquotes}| \{ \texttt| frdouble quotes of f
443
     \verb|\frsinglequotelinestartoff|
     \frsinglequotescloseoff}
445
        \DeclareOption{fr}{
446
     \label{thm:local-prop} $$ AtBeginDocument{\desmartquotes\dedumbquotes\smartquotes\defumbquotes\from artquotes} $$
447
     449
```

6.11 Process Options

7 Version History

```
7.1 1.2.2
```

Added the "degm" option

7.2 1.2.1

Suspended automatic elision support due to implementation issues

7.3 1.1.0

25 October 2022: Added support for elision

7.4 1.0.1

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

7.5 1.0.1

28 August 2022: Change bug preventing non-English usage

7.6 1.0.0

21 August 2022: Package creation