

Package hvqrurl

Creating a QR-code of an URL in the margin

ver 0.09

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This package allows to draw an URL as a QR code into the margin of a one- or twosided document. The following packages are loaded by default: qrcode, marginnote, url, xcolor, and xkeyval.

1 Package option

There is only one package option `forget`. If it is used, then all qrcodes are always created new and the already existing codes in the `.aux` file are not used. The default is not to use this option. For example: 100 qrcodes needs about 30 seconds with option `forget`, but only 4 seconds without it. It is obvious that for the first \LaTeX run the codes will always be created new. If a qrcode is created, e.g. for <https://pkks.de>, then there is something like



```
\qr@savematrix{https://pkks.de}{2}{3}{11111110001010011011111110000010011101101010000011011101000001110101110110111010101000100010111011011101000111111010101010111111000000001111001110000000011000100000111010110100000001001101011000110101100100111001110010101110110110010111001110010001111001110010001110010100001011010000100100101001011011010001110111011111110001101001010000001001111100011100011000101011111100100000000111011101000100111111100110011010101000110000010010110011000100111011101000101001111110000101110100011001011001001010000011101110000010111010100110000111111001001011100001001}
```

in the `.aux` file (all in one line!). This is always used in following \LaTeX runs and created only new if the URL changes or the option `forget` is used.

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2 The macros

```
\hvqrset{key=value, ...}  
\hvqrurl [key=value, ...] {URL}  
\hvqrurl* [key=value, ...] {URL}
```



With the default macro `\hvqrurl` the URL is printed as as QR code into the margin and in the text as usual with the macro `\url`, for example <https://mirror.ctan.org/pkg/hvqrurl>. With `hyperref` you'll get the the same color for the QR code as for the URL link and, of course, it is also a link. This example shows the output of the QR code with the default setting and an active `hyperref`. The star version of the command prints only the QR code but not the URL in the text.

With `\hvqrset` one can set the optional arguments globally. For example if one do not want all QR codes not as a link when using `hyperref`:

```
\hvqrset{qrlink=nolink}
```

3 Optional arguments

3.1 No link with `hyperref`

This needs package `hyperref`, which is loaded by default. With the optional argument `nohyperref` you can prevent the loading of this package.

```
With qrlink=nolink the QR code is no link: \hvqrurl[qrlink=nolink]{https://mirror.ctan.org/pkg/hvqrurl}.  
The default setting is qrlink=link.
```



With `qrlink=nolink` the QR code is no link: <https://mirror.ctan.org/pkg/hvqrurl>. The default setting is `qrlink=link`. Without using `hyperref` this optional argument has no meaning. The optional argument `linktext` is also only valid, if `hyperref` is aktive.

3.2 Color of the QR code



The default color is black. It can be changed by the optional argument `qrcolor`. The package `xcolor` is loaded by default, the reason why an extended color definition is possible. For this example we used

```
The package xcolor\hvqrurl*[qrcolor=red!40!white]{https://mirror.ctan.org/pkg/xcolor}  
is loaded by default, ...
```

3.3 Vertical position of the QR code

By default the baseline of the QR code is nearly at the same height as the baseline of the text. However, when changing the size of the QR code it may be nessesary to move up or down the QR code. The default value of `qradjust` is `-1.5\normalbaselineskip`. Setting the value to `0pt` the QR code <https://latex.texnik.de/tutorials/packages/#header-footer> is moved down which is the default setting without a vertical adjustment.



The default value of `qradjust` is `\verb|-1.5\normalbaselineskip|`. Setting the value to `0pt` the QR code `\hvqrurl[qradjust=0pt]{https://latex.texnik.de/tutorials/packages/#header-footer}` is moved down which is the default setting without a vertical adjustment.

3.4 Size of the QR code

By default the QR code is a square with height and width of 1cm. it can be changed by setting `qrheight` to another value, for example to 2cm: This is an extremely long url where it may make sense to use a larger QR code.



it can be changed by setting `qrheight` to another value, for example to 2cm: `\hvqrurl*[qrheight=2cm]{https://identity.fu-berlin.de/idp-fub/profile/SAML2/Redirect/SSO;jsessionid=71C984647E3B8F2E716CA067CB13387E?execution=els1}`
This is an extremely long url where it may make sense to use a larger QR code.

3.5 QR code level

The QR code specification includes four levels of encoding: Low (L) (<https://www.tug.org/>), Medium (M), Quality (Q), and High (H) (<https://www.tug.org/>), in increasing order of error-correction capability. In general, for a given text a higher error-correction level requires more bits of information in the QR code.



The QR code specification includes four levels of encoding:
Low (L) (`\hvqrurl{https://www.tug.org/}`), Medium (M), Quality (Q),
and High (H) (`\hvqrurl[qradjust=0pt,qrlevel=H]{https://www.tug.org/}`),
in increasing order of error-correction capability.

The first QR code has the default level M and the last one the level H. In general the user has not to set this keyword it will be controlled internally by the package.

3.6 Inner or outer margin for the QR code



By default the QR code is set in the right (oneside document) or outer margin (twoside) of the document. This one (<https://hvoss.org>) is at the default position. With the optional argument `qrreverse` it can be placed in the left or inner margin. This one (<https://latex.texnik.de>) is in the other margin.



This one (`\hvqrurl{https://hvoss.org}`) is at the default position.
With the optional argument `\Lkeyword{qrreverse}` it can be placed in the left or inner margin.
This one (`\hvqrurl[qrreverse]{https://latex.texnik.de}`) is in the other margin.

3.7 Alternative link text

By default the QR code is set with the given text. If the link is too long, one can use a short link with the optional argument `linktext` for the text and the long link for the `qr`code, like this

3 Optional arguments



one: https://www.uni-bonn.de/de/studium/studienangebot/studiengaenge-a-z/kunstgeschichte-bazf?set_language=de.

By default the QR code is set with the given text. If the link is too long, one can use a short link with the optional argument `\Lkeyword{linktext}` for the text and the long link for the qrcode, like

```
this one: \hvqrurl[linktext=https://www.uni-bonn.de]%  
{https://www.uni-bonn.de/de/studium/studienangebot/studiengaenge-a-z/kunstgeschichte-bazf?set_language=  
de}.
```

It makes no sense to use the star version `\hvqrurl*` together with the optional argument `linktext`!

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4 The Package Source

```
1 %% $Id: hvqrurl.sty 895 2024-05-14 19:22:17Z herbert $
2 %%
3 %% This file is distributed under the terms of the LaTeX Project Public
4 %% License from CTAN archives in directory macros/latex/base/lppl.txt.
5 %% Either version 1.3 or, at your option, any later version.
6 %%
7 % Copyright 2019,21,23,24 Herbert Voss hvoss@tug.org
8 %%
9 \ProvidesPackage{hvqrurl}[%
10 2024/05/26 v.0.09 (Herbert Voss) Supports qr images into the margin (hv)]
11 %
12 \NeedsTeXFormat{LaTeX2e}
13 \RequirePackage{url}
14 \RequirePackage{xcolor}
15 \RequirePackage{marginnote}
```

4 The Package Source

```
16 %\RequirePackage{qrcode}
17 \RequirePackage{xkeyval}
18
19 \newif\if@hv@forget
20 \@hv@forgetfalse
21 \DeclareOption{forget}{\@hv@forgettrue}
22
23 \newif\if@no@hyperref
24 \@no@hyperreffalse
25 \DeclareOption{nohyperref}{\@no@hyperreftrue}
26 \ProcessOptions
27
28 \if@hv@forget\RequirePackage[forget]{qrcode}\else\RequirePackage{qrcode}\fi
29 \if@no@hyperref\else\RequirePackage{hyperref}\fi
30
31 \newlength\qr@url@qrheight
32 \newlength\qr@url@qradjust
33
34 \define@key{hvqr}{qrheight}[1cm]{\setlength\qr@url@qrheight{#1}}
35 \define@key{hvqr}{qradjust}[-1.5\normalbaselineskip]{\setlength\qr@url@qradjust{#1}}
36 \define@key{hvqr}{qrcolor}[black]{\colorlet\qr@url@qrcolor{#1}}
37 \define@key{hvqr}{qrlevel}[M]{\def\qr@url@qrlevel{#1}}
38 \define@key{hvqr}{qrlink}[link]{\def\qr@url@qrlink{#1}}
39 \define@key{hvqr}{linktext}[]{\def\qr@url@linktext{#1}}
40 \define@boolkey{hvqr}[hv@]{qrreverse}[true]{}
41
42 \newcommand*\qr@url@qr@nolink{nolink}
43
44 \setkeys{hvqr}{qrheight,qrcolor=black,qradjust,qrlevel,qrlink=link,
45 qrreverse=false,linktext={}}% the default setting
46
47 \newcommand*\hvqrset[1]{\setkeys{hvqr}{#1}}
48
49 \def\hvqrurl{\ifnextchar*{\@tempswafalse\hvqr@url}{\@tempswatrue\hvqr@url}}
50
51 \def\hvqr@url*{\hvqr@url}
52
53
54 \newcommand*\hvqr@url[2][]{%
55 \bgroup
56 \providecommand*\qr@blank{0}%
57 \if@tempswa
58 \ifx\@empty\qr@url@linktext % alternative link text?
59 \edef\hv@foo{\detokenize\expandafter{#2}}%
60 \url{\hv@foo}%
61 \else
62 % \href[options]{URL}{text}
63 \typeout{>>>(\hvqrurl) Alternative URL text}%
64 \edef\hv@fooA{\detokenize\expandafter{#2}}%
65 \edef\hv@fooB{\detokenize\expandafter{\qr@url@linktext}}%
66 \href{\hv@fooA}{\hv@fooB}%
67 \fi
68 \fi
69 % \endgroup
```

```

70 % \begingroup
71 \ifx\relax#1\relax \else\hvqrcode{#1}\fi
72 % Set options for package qrcode
73 \expandafter\qrcode\expandafter{\qr@url@qrcode,height=\qr@url@qrheight,level=\qr@url@qrlevel}%
74 \ifhv\qrcode\reverse\reversemarginpar\fi
75 \if@no@hyperref
76 \color{qr@url@qrcodecolor}%
77 \else
78 \ifx\qr@url@qrcode\qr@url@qr@nolink
79 \color{qr@url@qrcodecolor}%
80 \else
81 \hypersetup{urlcolor=qr@url@qrcodecolor}%
82 \fi
83 \fi
84 \edef\reserved@a{\noexpand\marginnote{\noexpand\qrcode{#1}}[\qr@url@qrcodeadjust]}%
85 \detokenize\expandafter{#2}}[\qr@url@qrcodeadjust]}%
86 \reserved@a
87 \endgroup
88 }
89
90 \endinput

```