Package `hvqrurl`
Creating a QR-code of an URL in the margin
ver 0.07

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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 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 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 `hyppref`. 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}
```

2 Optional arguments

2.1 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.

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```
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.

2.2 Color of the QR code

Without using `hyperref` 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, ...
```

2.3 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.
```

2.4 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=71C
    984647E3B8F2E716CA067CB13387E?execution=e1s1}
This is an extremely long url where it may make sense to use a larger QR code.
```

2.5 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.

2.6 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.
```

2.7 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 qrcode, like this one: https://www.uni-bonn.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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3 The Package Source

```
1   %% $Id: hvqrurl.sty 871 2024-02-05 19:16:58Z 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    2024/02/06 v.0.07 (Herbert Voss) Supports qr images into the margin (hv)]
11  %
12  \NeedsTeXFormat{LaTeX2e}
13  \RequirePackage{url}
14  \RequirePackage{xcolor}
15  \RequirePackage{marginnote}
16  \RequirePackage{qrcode}
17  \RequirePackage{xkeyval}
18
```

```
19  \newif\if@no@hyperref \@no@hyperreffalse
20  \DeclareOption{nohyperref}{\@no@hyperreftrue}
21  \ProcessOptions

23  \if@no@hyperref\else\RequirePackage{hyperref}\fi

25  \newlength\qr@url@qrheight
26  \newlength\qr@url@qradjust

28  \define@key{hvqr}{qrheight}[1cm]{\setlength\qr@url@qrheight{#1}}
29  \define@key{hvqr}{qradjust}[-1.5\normalbaselineskip]{\setlength\qr@url@qradjust{#1}}
30  \define@key{hvqr}{qrcolor}[black]{\colorlet{qr@url@qrcolor}{#1}}
31  \define@key{hvqr}{qrlevel}[M]{\def\qr@url@qrlevel{#1}}
32  \define@key{hvqr}{qrlink}[link]{\def\qr@url@qrlink{#1}}
33  \define@key{hvqr}{linktext}[]{\def\qr@url@linktext{#1}}
34  \define@boolkey{hvqr}[hv@]{qrreverse}[true]{}

36  \setkeys{hvqr}{qrheight,qrcolor=black,qradjust,qrlevel,qrlink=link,
37    qrreverse=false,linktext={}}% the default setting

39  \newcommand*\hvqrset[1]{\setkeys{hvqr}{#1}}

41  \def\hvqrurl{\@ifnextchar*{\@tempswafalse\hvqr@url}{\@tempswatrue\hvqr@@url}}

43  \def\hvqr@url*{\hvqr@@url}


46  \newcommand*\hvqr@@url[2][]{%
47    \begingroup
48    \providecommand*\qr@blank{0}%
49    \ifx\relax#1\relax \else\hvqrset{#1}\fi
50    % Set options for package qrcode
51    \expandafter\qrset\expandafter{\qr@url@qrlink,height=\qr@url@qrheight,level=\qr@url@qrlevel}%
52    \ifhv@qrreverse\reversemarginpar\fi
53    \if@tempswa
54      \ifx\@empty\qr@url@linktext % alternative link text?
55        \edef\hv@foo{\detokenize\expandafter{#2}}%
56        \url{\hv@foo}%
57      \else
58        % \href[options]{URL}{text}
59        \typeout{>>>(hvqrurl) Alternative URL text}%
60        \edef\hv@fooA{\detokenize\expandafter{#2}}%
61        \edef\hv@fooB{\detokenize\expandafter{\qr@url@linktext}}%
62        \href{\hv@fooA}{\hv@fooB}%
63      \fi
64    \fi
65    \edef\reserved@a{\noexpand\marginnote{\noexpand\color{qr@url@qrcolor}\noexpand\qrcode{%
66      \detokenize\expandafter{#2}}}[\qr@url@qradjust]}%
67    \reserved@a
68    \endgroup
69  }

71  \endinput
```