The \texttt{fnumprint} package\footnote{This document corresponds to \texttt{fnumprint} v1.1a, dated 2012/08/27.}

Robin Schneider
ypid23@aol.de

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Abstract

The \texttt{fnumprint} package can decide to typeset a number either as number or as word name (only in English or German).

Information site on CTAN: \url{http://www.ctan.org/pkg/fnumprint}
Fork me on GitHub: \url{https://github.com/ypid/latex-packages/tree/master/fnumprint}

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1 Introduction

The \texttt{fnumprint} package defines two macros which decide to typeset a number either as Arabic number or as word name for the number. If the number is between zero and twelve (including zero and twelve) then the word name will be used. This package uses the \texttt{zahl2string} package to convert a number in the word name in German. The conversion of a number (0–12) to the English word name is implemented by this package. If the number is outside of the range then it will be typesetted with the \texttt{numprint} package.
2 Usage

Just load the package placing

\usepackage{fnumprint}

in the preamble of your \LaTeX source file. In this case the last by fnumprint supported language given as class option will be used. You can overwrite this with a package option like this:

\usepackage[english]{fnumprint}

\fnumprintc \{\langle eins\rangle\} \{\langle LaTeX\ counter\ name\ \rangle\} takes a name of a LaTeX\ counter as not optional parameter and typesets it’s value. The optional parameter is only active if the German language was selected. In this case it can be used to typeset “ein” instead of “eins”. This is for example necessary if you would like to typeset “ein Jahr”.

\fnumprint \{\langle eins\rangle\} \{\langle number\ \rangle\} is like the \fnumprintc\ macro but it takes a number or a macro that expands to a number. A \TeX\ counter can also be used with this macro.

3 Examples

<table>
<thead>
<tr>
<th>macro</th>
<th>expanded macro</th>
</tr>
</thead>
<tbody>
<tr>
<td>\fnumprint{-1}</td>
<td>-1</td>
</tr>
<tr>
<td>\fnumprint{0}</td>
<td>zero</td>
</tr>
<tr>
<td>\fnumprint{1}</td>
<td>one</td>
</tr>
<tr>
<td>\fnumprint{3.14}</td>
<td>3.14</td>
</tr>
<tr>
<td>\fnumprint{10}</td>
<td>ten</td>
</tr>
<tr>
<td>\fnumprint{12}</td>
<td>twelve</td>
</tr>
<tr>
<td>\fnumprint{13}</td>
<td>13</td>
</tr>
<tr>
<td>\fnumprint{\the\month}</td>
<td>two</td>
</tr>
<tr>
<td>\fnumprint{\the\day}</td>
<td>18</td>
</tr>
<tr>
<td>\fnumprintc{page}</td>
<td>two</td>
</tr>
</tbody>
</table>

4 ToDo

Here are some things that could be useful.

- Provide more features implemented by the zahl2string package and create macros which implement these features for the English language.

5 Implementation

This package depends on these packages.

1 \RequirePackage{xifthen}
2 \RequirePackage[autolanguage]{numprint}
5.1 Language checking

I used the counter \fnumprint@language to save the (last) selected language. Meaning from the counter values:

<table>
<thead>
<tr>
<th>value</th>
<th>meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>no supported language selected</td>
</tr>
<tr>
<td>1</td>
<td>German selected</td>
</tr>
<tr>
<td>2</td>
<td>English selected</td>
</tr>
</tbody>
</table>

\newcounter{fnumprint@language}
\setcounter{fnumprint@language}{0}
\DeclareOption{german}{\setcounter{fnumprint@language}{1}}
\DeclareOption{ngerman}{\setcounter{fnumprint@language}{1}}
\DeclareOption{english}{\setcounter{fnumprint@language}{2}}
\DeclareOption{USenglish}{\setcounter{fnumprint@language}{2}}
\DeclareOption{american}{\setcounter{fnumprint@language}{2}}
\DeclareOption{UKenglish}{\setcounter{fnumprint@language}{2}}
\DeclareOption{british}{\setcounter{fnumprint@language}{2}}
\DeclareOption{canadian}{\setcounter{fnumprint@language}{2}}
\DeclareOption{australian}{\setcounter{fnumprint@language}{2}}
\DeclareOption{newzealand}{\setcounter{fnumprint@language}{2}}
\ProcessOptions\relax

If none of the supported languages was selected a package warning will appear.

\ifcase\value{fnumprint@language}
\PackageWarning{\@currname}{No supported language selected}
\MessageBreak
This package supports only English and German
\MessageBreak
There will be no word names printed}
\or
\RequirePackage{zahl2string}
\fi

\ns@en@neunzehn

This internal marco expands to the English word name for a number. It only goes from 0 to 19. It will only be defined if it is necessary.
\or
\newcommand{\ns@en@neunzehn}[1]{%
  \ifcase#1 zero\or one\or two\or three\or four\or five\or six\or seven\or eight\or nine\or ten\or eleven\or twelve\or thirteen\or fourteen\or fifteen\or sixteen\or seventeen\or eighteen\or nineteen\fi%
}
\fi

5.2 Macro definition

\fnumprint

Here is the \fnumprint macro definition. It takes one not optional parameter. The parameter must be a number or a macro which expands to a number. It can also take a optional parameter which replaces the German word “eins” with “ein”.

\fnumprint
Here is the \texttt{\fnumprintc} macro definition. It takes one not optional parameter. The parameter must be the name of a \LaTeX{} counter. It can also take a optional parameter which replaces the German word “eins” with “ein”.

\begin{quote}
\texttt{\DeclareRobustCommand{\fnumprintc}[2][]{%}
  \ifthenelse{-1 < \value{#2} \AND \value{#2} < 13}{%}
    \ifthenelse{\value{fnumprint@language} = 1}{%}
      \ifthenelse{\equal{#1}{ein} \AND \value{#2} = 1}{ein}{\numstring{#2}}%}
    {\ns@en@neunzehn{\value{#2}}}%}
  {\cntprint{#2}}%}
%}
\end{quote}

\fnumprintc

\endinput

\section*{Change History}

\begin{center}
\begin{tabular}{ll}
\textbf{v0.1} & \textbf{v1.1} \\
General: Initial version & General: Added optional parameter \textit{\texttt{\fnumprintc}} \quad 1 & “ein” \quad \underline{1} \\
& General: Wrote this documentation and the \LaTeX{}-package and added support for English \quad 1 & General: Added support for real numbers \quad \underline{1} \\
\textbf{v1.0} & \textbf{v1.1a} \\
\end{tabular}
\end{center}

\section*{Index}

Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.

\begin{center}
\begin{tabular}{lll}
\textbf{C} & \textbf{F} & \textbf{\fnumprintc} \\
\texttt{\cntprint} & \texttt{\fnumprint} & \underline{2, 32} \\
\texttt{\fnumprintc} & & \underline{2, 44} \\
\end{tabular}
\end{center}
<table>
<thead>
<tr>
<th>Function</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
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<td>I</td>
<td>N</td>
</tr>
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<td>\texttt{\texttt{\textbackslash{numprint}}}</td>
<td>40, 42</td>
</tr>
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<td>\texttt{\texttt{\textbackslash{numstr}}}</td>
<td>36</td>
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<td>\texttt{\texttt{\textbackslash{isin}}}</td>
<td>33, 24, 39, 49</td>
</tr>
<tr>
<td>\texttt{\texttt{\textbackslash{numstring}}}</td>
<td>47</td>
</tr>
</tbody>
</table>