The **currency** package[*]

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October 24, 2018

1   Introduction

This package creates macros for defined currencies which follow the ISO 4217 codes, with various formatting options for both the currency (code, symbols, names, ...) and the numbers (using `siunitx`).

The currency code ISO 4217 specifies the code of the currency as a three-letters code. The first two ones are the code of the country according to ISO 3166. The last one is the name of the currency name.

2   Licence

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This work has the LPPL maintenance status 'maintained'.

The Current Maintainer of this work is Antoine Lejay.

3   Documentation and sources

This package is documented in `currency_doc`.

A source of this package is hosted in

`https://github.com/antoinelejay/currency`

4   Implementation

4.1   Dependencies

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[*]This document corresponds to currency v0.4, dated 2018/10/22.

```
1 \RequirePackage{siunitx}
2 \RequirePackage{pgfkeys}
3 \RequirePackage{etoolbox}
4 \RequirePackage{xparse}
5 \RequirePackage{expl3}
6 \RequirePackage{textcomp}
7 \RequirePackage{eurosym}
```

The unit could be printed before or after

```
 8 \newif\ifcurrencynumber
 9 \pgfkeys{/currency/.cd,number/.is if=currencynumber,number=true}
10 \newif\ifprintbefore
11 \pgfkeys{/currency/pre/.is if=printbefore}
12 \pgfkeys{/currency/name/.initial=ZZZ}
13 \pgfkeys{/currency/symbol/.initial=\textcurrency}
```

Defines a style currency, which is general and empty. The styles are then called in order - the currency style - currency (initially empty) - the options passed to the command

```
14 \pgfkeys{/currency/currency/.style={}}
```

```
15 \newcommand{\CurrencySetup}[1]{%
16     \pgfkeys{/currency/currency/.style={#1}}%
17 }
18 \newcommand{\CurrencySetupAppend}[1]{%
19     \pgfkeys{/currency/currency/.append style={#1}}%
20 }
```

4.2   Names and symbols definitions

The commands `\currencyName`, `\currencyNames`, `\currencyISO` and `\currencySymbol` are used internally every time a currency is called to define the name, the plural, the ISO code and the symbol associated to a currency.

```
21 \pgfkeys{/currency/name/.store in=\currencyName}
22 \pgfkeys{/currency/plural/.store in=\currencyNames}
23 \pgfkeys{/currency/plural/.initial=\currencyName s}
24 \pgfkeys{/currency/iso/.store in=\currencyISO}
25 \pgfkeys{/currency/symbol/.store in=\currencySymbol}
```

4.3   Keys for formatting

Several keys are devoted to insert tokens before or after th unit and the amount, set up the font, ...

```
26 % between the symbol and the num if before
27 \pgfkeys{/currency/pre-between/.initial={~}}
28 % between the symbol and the num if after
29 \pgfkeys{/currency/post-between/.initial={~}}
30 % tokens that are inserted before
31 \pgfkeys{/currency/before/.initial={}}
32 % append to before
33 \pgfkeys{/currency/before+/.code={\pgfkeys{/currency/before/.append={#1}}}}
```

```
34 % prepend to before
35 \pgfkeys{/currency/before</.code={\pgfkeys{/currency/before/.prefix={#1}}}}
36 \pgfkeys{/currency/after/.initial={}} % tokens that are inserted after
37 % append to after
38 \pgfkeys{/currency/after+/.code={\pgfkeys{/currency/after/.append={#1}}}}
39 % prepend to after
40 \pgfkeys{/currency/after</.code={\pgfkeys{/currency/after/.prefix={#1}}}}
41 \pgfkeys{/currency/font/.initial={}} % for setting up the fonts
42 % append to the font definition
43 \pgfkeys{/currency/font+/.code={\pgfkeys{/currency/font/.append={#1}}}}
44 % the prefix before the name
45 \pgfkeys{/currency/prefix/.initial={}}
```

Several options are given for printing the kind of unit (`iso`, `plural`, `name`, `symbol`).

```
46 %
47 \pgfkeys{/currency/kind/.is choice}
48 \pgfkeys{/currency/kind/iso/.code=%
49     {\def\currencyunit{\currencyISO}}}
50 \pgfkeys{/currency/kind/plural/.code=%
51     {\def\currencyunit{\currencyNames}\printbeforefalse}}
52 \pgfkeys{/currency/kind/name/.code=%
53     {\def\currencyunit{\currencyName}\printbeforefalse}}
54 \pgfkeys{/currency/kind/symbol/.code=%
55     {\def\currencyunit{\currencySymbol}}}
56 \pgfkeys{/currency/kind=iso}
```

Options are also define for printing the cents (`true`, `false`, `always`).

```
57 \pgfkeys{/currency/cents/.is choice}
58 \pgfkeys{/currency/cents/true/.code=%
59     {\sisetup{zero-decimal-to-integer=true}}}
60 \pgfkeys{/currency/cents/false/.code=%
61     {\sisetup{zero-decimal-to-integer=true,round-precision=0}}}
62 \pgfkeys{/currency/cents/always/.code=%
63     {\sisetup{zero-decimal-to-integer=false,round-integer-to-decimal=true}}}
64 \pgfkeys{/currency/cents=true}
```

4.4 Dealing with unknown keys

The unknown keys are passed to the `\num` command of `siunitx`, which use the LaTeX3 syntax and not the pgf one.

```
65 \ExplSyntaxOn
66 \pgfkeys{/currency/.unknown/.code={%
67 \edef\Unknown{\pgfkeyscurrentname=\pgfkeyscurrentvalue}%
68 \keys_set:nV {siunitx} {\Unknown}%
69     }}%
70 \ExplSyntaxOff
```

4.5 Setting the precision

The key `base` is used to set the precision. Its value is passed to the key `round-precision` of `siunitx`.

```
71 \ExplSyntaxOn
72 \pgfkeys{/currency/base/.code={%
73 \edef\SetPrecision{round-precision=\pgfkeyscurrentvalue}%
74 \keys_set:nV {siunitx} {\SetPrecision}%
75     }}%
76 \ExplSyntaxOff
```

4.6 Defining new currencies

The first argument is the name of the currency, normally its ISO symbol (3 letters). This commands defines two global commands.

\displayCurrency This is a generic macro for displaying the currency symbol and amount. This macro does not aim at being called directly.

```
77 \ExplSyntaxOn
78 \DeclareDocumentCommand{\displayCurrency}{m o m}{
79 \begingroup%
80 % default parameters, to put outside
81 \sisetup{round-mode=places,round-precision=2}
82 \IfNoValueTF{#2}%
83     {\pgfkeys{/currency/.cd,#1,currency}}%
84     {\pgfkeys{/currency/.cd,#1,currency,#2}}%
85 \ifbool{currencynumber}%
86     {\sisetup{parse-numbers=true}}%
87     {\sisetup{parse-numbers=false}}%
88 \edef\value{#3}% store the value of the currency
89 %
90 \ifprintbefore%
91 % true clause / print the unit before
92 \pgfkeys{/currency/font}%
93 \pgfkeys{/currency/before}%
94 \text{\pgfkeys{/currency/prefix}\currencyunit}%
95 \pgfkeys{/currency/pre-between}%
96 \num{\value}\pgfkeys{/currency/after}%
97 \else% print the unit after
98 \pgfkeys{/currency/font}%
99 \pgfkeys{/currency/before}%
100 \num{\value}%
101 \pgfkeys{/currency/post-between}%
102 \text{\pgfkeys{/currency/prefix}\currencyunit}%
103 \pgfkeys{/currency/after}%
104 \fi%
105 \endgroup%
106 }
```

`\displayCurrencySymbol` This is a generic macro for displaying the currency symbol. This macro does not aim at being called directly.

```
107 \DeclareDocumentCommand{\displayCurrencySymbol}{m o}{
108 \begingroup%
109     \IfNoValueTF{#2}%
110 {\pgfkeys{/currency/.cd,#1,currency}}%
111 {\pgfkeys{/currency/.cd,#1,currency,#2}}%
112     \pgfkeys{/currency/font}%
113     \pgfkeys{/currency/before}%
114     \text{\pgfkeys{/currency/prefix}\currencyunit}%
115 \pgfkeys{/currency/after}%
116 \endgroup%
117 }
```

`\DefineCurrency` Define the parameters for a new currency. The first parameter is a three letters code of type `XXX` (actually, it should by any suitable word). Global commands `\dXXX` (for printing currency with an amount) and `\cXXX` (for printing only the symbols) are then defined, as well as a style under the pgfkey `/currency/XXX`.

```
118 \newcommand{\DefineCurrency}[2]{%
119 \pgfkeys{/currency/#1/.style={#2}}%%
120 % define the currency with digits as \dXXX
121 \csgdef{d#1}{\displayCurrency{#1}}
122 % end of \dXXX definition
123 % define the currency symbol as \cXXX with one optional argument
124 % \global\expandafter\DeclareDocumentCommand\csname c#1\endcsname{o}{%
125 \csgdef{c#1}{\displayCurrencySymbol{#1}}
126 % end of \cXXX definition
127 }%
```

4.7 Predefined styles

Some styles are defined to shorten the typesetting.

```
128 \pgfkeys{/currency/@iso/.style={kind=iso}}
129 \pgfkeys{/currency/@symb/.style={kind=symbol}}
130 \pgfkeys{/currency/@sy/.style={kind=symbol}}
131 \pgfkeys{/currency/@name/.style={kind=name}}
132 \pgfkeys{/currency/@na/.style={kind=name}}
133 \pgfkeys{/currency/@plural/.style={kind=plural}}
134 \pgfkeys{/currency/@pl/.style={kind=plural}}
135 \pgfkeys{/currency/no-parse/.style={number=false}}
```

Change History

v0.1

General: Initial version 1

v0.2

General: Adding vXXX as an alias for dXXX 1

v0.3

v0.4

General: Dropping spurious space in the definition of cXXX 1

General: Change DeclareDocumentCommand for compability with TexLive 2018   1

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.