
valuta Documentation

Release 0.1

Artur Barseghyan <artur.barseghyan@gmail.com>

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Currencies done right

In most payment systems that went international, amounts are represented in integers, instead of decimals, as they are represented in minor currency units (smallest units possible).

For *EUR* it is *cent*, which is 1/100 of a single *Euro*. For *MRU* it is *khoums*, which is 1/5 of a single *Ouguiya*.

List of currencies is generated from a single CSV dump obtained from the [list of circulating currencies](#) Wikipedia page using the awesome [wikitable2csv](#).

PREREQUISITES

- Core package requires Python 3.6, 3.7, 3.8 or 3.9.
- Django integration package (`valuta.contrib.django_integration`) requires Django 2.2, 3.0, 3.1 or 3.2.
- SQLAlchemy integration package (`valuta.contrib.sqlalchemy_integration`) has been tested with SQLAlchemy 1.4.x.

DOCUMENTATION

Documentation is available on [Read the Docs](#).

INSTALLATION

Latest stable version on PyPI:

```
pip install valuta
```

Or development version from GitHub:

```
pip install https://github.com/barseghyanartur/valuta/archive/master.tar.gz
```


USAGE EXAMPLES

4.1 Pure Python

4.1.1 Using currency classes directly

4.1.1.1 If you need numbers back for further calculations

```
import valuta

valuta.EUR.convert_to_currency_units(1_000)
# 10.0

valuta.UGX.convert_to_currency_units(1_000)
# 1000.0

valuta.MRU.convert_to_currency_units(1_000)
# 200.0

valuta.VND.convert_to_currency_units(1_000)
# 100.0

valuta.TND.convert_to_currency_units(1_000)
# 1.0

valuta.JPY.convert_to_currency_units(1_000)
# 10.0
```

4.1.1.2 If you need to display the values and want a nice string back

```
import valuta

valuta.EUR.display_in_currency_units(1_000)
# '€10.00'

valuta.UGX.display_in_currency_units(1_000)
# 'UGX1,000'

valuta.MRU.display_in_currency_units(1_000)
```

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```
# 'MRU200.00'

valuta.VND.display_in_currency_units(1_000)
# '₫100'

valuta.TND.display_in_currency_units(1_000)
# 'TND1.000'

valuta.JPY.display_in_currency_units(1_000)
# '¥10'
```

4.1.1.2.1 Custom string formatting

Based on the specifics of the given currency, displayed numbers may have or not may have decimal points.

The `display_in_currency_units` method accepts optional `format`, `locale` and `decimal_quantization` arguments. Most common values for `format` are listed in the `valuta.constants`.

4.1.1.2.1.1 format

DISPLAY_FORMAT_NUMBER

Example values: '10000' or '10000.00'.

DISPLAY_FORMAT_HUMAN_READABLE

Displays a human readable number.

Example values: '10,000' or '10,000.00'.

DISPLAY_FORMAT_HUMAN_READABLE_WITH_CURRENCY_CODE

Displays a human readable number with currency code.

Example values: 'JPY 10,000' or 'EUR 10,000.00'.

DISPLAY_FORMAT_HUMAN_READABLE_WITH_CURRENCY_SYMBOL

Displays a human readable number with currency symbol.

Example values: '¥ 10,000' or '€ 10,000.00'.

A couple of examples:

```
from valuta.constants import *

valuta.JPY.display_in_currency_units(
    1_000_000,
    format=DISPLAY_FORMAT_HUMAN_READABLE
)
# '10,000'

valuta.JPY.display_in_currency_units(
    1_000_000,
    format=DISPLAY_FORMAT_HUMAN_READABLE_WITH_CURRENCY_CODE
)
```

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```

# 'JPY 10,000'

valuta.JPY.display_in_currency_units(
    1_000_000,
    format=DISPLAY_FORMAT_HUMAN_READABLE_WITH_CURRENCY_SYMBOL
)
# '¥ 10,000'

valuta.EUR.display_in_currency_units(
    1_000_000,
    format=DISPLAY_FORMAT_HUMAN_READABLE
)
# '10,000.00'

valuta.EUR.display_in_currency_units(
    1_000_000,
    format=DISPLAY_FORMAT_HUMAN_READABLE_WITH_CURRENCY_CODE
)
# 'EUR 10,000.00'

valuta.EUR.display_in_currency_units(
    1_000_000,
    format=DISPLAY_FORMAT_HUMAN_READABLE_WITH_CURRENCY_SYMBOL
)
# '€ 10,000.00'

```

4.1.1.2.1.2 locale

```

valuta.JPY.display_in_currency_units(1_000_000_000, locale="nl_NL")
# 'JP¥\xa010.000.000'

valuta.JPY.display_in_currency_units(1_000_000_000, locale="en_US")
# '¥10,000,000'

valuta.EUR.display_in_currency_units(1_000_000_000, locale="nl_NL")
# '€\xa010.000.000,00'

valuta.EUR.display_in_currency_units(1_000_000_000, locale="en_US")
# '€10,000,000.00'

valuta.AMD.display_in_currency_units(1_000_000_000, locale="en_US")
# 'AMD10,000,000.00'

valuta.AMD.display_in_currency_units(1_000_000_000, locale="hy_AM")
# '10 000 000,00 '

```

4.1.2 Working with string representations of the (ISO-4217) currency codes

4.1.2.1 If you need numbers back for further calculations

```
from valuta.shortcuts import convert_to_currency_units

convert_to_currency_units("EUR", 1_000)
# 10.0

convert_to_currency_units("UGX", 1_000)
# 1000.0

convert_to_currency_units("MRU", 1_000)
# 200.0

convert_to_currency_units("VND", 1_000)
# 100.0

convert_to_currency_units("TND", 1_000)
# 1.0

convert_to_currency_units("JPY", 1_000)
# 10.0
```

4.1.2.2 If you need to display the values and want a nice string back

```
from valuta.shortcuts import display_in_currency_units

display_in_currency_units("EUR", 1_000)
# '€10.00'

display_in_currency_units("UGX", 1_000)
# 'UGX1,000'

display_in_currency_units("MRU", 1_000)
# 'MRU200.00'

display_in_currency_units("VND", 1_000)
# '₫100'

display_in_currency_units("TND", 1_000)
# 'TND1.000'

display_in_currency_units("JPY", 1_000)
# '¥10'
```

By default, exceptions arising from invalid currency codes are suppressed (None will be returned on invalid currency codes).

If you want to throw exception on invalid currency codes, set `fail_silently` to `False`. The following example will throw a `valuta.exceptions.InvalidCurrency` exception.

```
convert_to_currency_units("i-dont-exist", 1_000, fail_silently=False)
```

The `display_in_currency_units` shortcut function also accepts optional `format` argument.

4.2 Django integration

In its basis, Django integration package is a `CurrencyField` representing the ISO-4217 codes of the currencies. If bound to certain number fields (`SmallIntegerField`, `IntegerField`, `BigIntegerField`) holding the amount in minor currency units, it adds up (magic) methods to the model class for converting field amounts to major currency units (often simply called `currency units`).

There are also *template tags and filters* for when you need to render non-model data (for instance, JSON) in templates without prior pre-processing.

4.2.1 Model field

4.2.1.1 Model definition

Sample model

product/models.py

```
from django.db import models
from valuta.contrib.django_integration.models import CurrencyField

class Product(models.Model):

    name = models.CharField(max_length=255)
    price = models.IntegerField() # Amount in minor currency units
    price_with_tax = models.IntegerField() # Amount in minor currency units
    currency = CurrencyField(amount_fields=["price", "price_with_tax"])
```

Sample data

```
import valuta
from product.models import Product
product = Product.objects.create(
    name="My test product",
    price=100,
    price_with_tax=120,
    currency=valuta.AMD.uid,
)
```

4.2.1.2 Converting amounts using *magic methods*

You could then refer to the *price* and *price_with_tax* as follows:

```
product.price_in_currency_units()
# 1.0
product.price_with_tax_in_currency_units()
# 1.2
```

Note, that every field listed in the `amount_fields` gets a correspondent model method with suffix `_in_currency_units` for converting the field amounts to (major) currency units.

4.2.1.3 Converting amounts for display using *magic methods*

You could then refer to the *price* and *price_with_tax* as follows:

```
product.price_display_in_currency_units()
# 'AMD1.00'
product.price_with_tax_display_in_currency_units()
# 'AMD1.20'
```

Note, that every field listed in the `amount_fields` gets a correspondent model method with suffix `_display_in_currency_units` for converting the field amounts to (major) currency units.

Magic methods also accept optional `format` argument.

```
product = Product.objects.create(
    name="My test product",
    price=100_000,
    price_with_tax=120_000,
    currency=valuta.EUR.uid,
)

product.price_display_in_currency_units(
    format=DISPLAY_FORMAT_HUMAN_READABLE_WITH_CURRENCY_SYMBOL
)
# '€ 1,000.00'
product.price_with_tax_display_in_currency_units(
    format=DISPLAY_FORMAT_HUMAN_READABLE_WITH_CURRENCY_CODE
)
# 'EUR 1,200.00'
```

Combining `format` and `locale` arguments.

```
product.price_display_in_currency_units(
    format=DISPLAY_FORMAT_HUMAN_READABLE_WITH_CURRENCY_SYMBOL,
    locale="nl_NL"
)
# '€ 1.000,00'
product.price_with_tax_display_in_currency_units(
    format=DISPLAY_FORMAT_HUMAN_READABLE_WITH_CURRENCY_CODE,
    locale="nl_NL"
)
# 'EUR 1.200,00'
```

4.2.1.4 Limiting the currency choices

4.2.1.4.1 On the field level

You could limit the currency choices as follows:

```
currency = CurrencyField(  
    amount_fields=["price", "price_with_tax"],  
    limit_choices_to=[valuta.AMD.uid, valuta.EUR.uid],  
)
```

4.2.1.4.2 Globally

You could also override the `CurrencyField` choices in the Django settings:

settings.py

```
VALUTA_FIELD_LIMIT_CHOICES_TO=(  
    valuta.AMD.uid,  
    valuta.EUR.uid,  
)
```

4.2.1.5 Casting the converted values

If you want to explicitly cast the result value to a certain type, provide a callable `cast_to` for the `CurrencyField`.

4.2.1.5.1 For *int* it would be

```
currency = CurrencyField(  
    amount_fields=("price", "price_with_tax"),  
    cast_to=int,  
)
```

4.2.1.5.2 For *float* it would be

```
currency = CurrencyField(  
    amount_fields=("price", "price_with_tax"),  
    cast_to=float,  
)
```

4.2.1.5.3 For *decimal.Decimal* it would be

```
currency = CurrencyField(
    amount_fields=("price", "price_with_tax"),
    cast_to=lambda __v: Decimal(str(__v)),
)
```

4.2.1.6 Customize the choices display format

By default, the following format is used (`valuta.utils.get_currency_choices_with_code`):

```
[
    ("AMD", "Armenian Dram (AMD)"),
    ("EUR", "Euro (EUR)"),
]
```

If you want to customize that, provide a callable `get_choices_func` along:

```
from valuta.utils import get_currency_choices

currency = CurrencyField(
    amount_fields=("price", "price_with_tax"),
    get_choices_func=get_currency_choices,
)
```

It would then have the following format:

```
[
    ("AMD", "Armenian Dram"),
    ("EUR", "Euro"),
]
```

Take both `valuta.utils.get_currency_choices` and `valuta.utils.get_currency_choices_with_code` as a good example of how to customize. You could for instance do something like this:

```
import operator
from typing import List, Tuple, Set, Union

from babel.numbers import get_currency_symbol
from valuta.base import Registry

def get_currency_choices_with_sign(
    limit_choices_to: Union[Tuple[str, ...], List[str], Set[str]] = None,
    sort_by_key: bool = False,
) -> List[Tuple[str, str]]:
    """Get currency choices with code.

    List of choices in the following format::

        [
            ("AMD", "AMD - Armenian Dram"),
            ("EUR", "€ - Euro"),
```

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```

        ("USD", "$ - US Dollar"),
    """
]
if limit_choices_to is None:
    values = [
        (__key, f"{get_currency_symbol(__key)} - {__value.name}")
        for __key, __value in Registry.REGISTRY.items()
    ]
else:
    values = [
        (__key, f"{get_currency_symbol(__key)} - {__value.name}")
        for __key, __value in Registry.REGISTRY.items()
        if __key in limit_choices_to
    ]
if sort_by_key:
    values.sort(key=operator.itemgetter(0))
else:
    values.sort(key=operator.itemgetter(1))
return values

```

And then use it as follows:

```

currency = CurrencyField(
    amount_fields=("price", "price_with_tax",),
    get_choices_func=get_currency_choices_with_sign,
)

```

4.2.2 Template tags and filters

Most of the cases would be covered by the *Model field*, but it could be that you will have non-model data (for instance, JSON) that you need to properly render in the templates (without prior pre-processing). In that case *valuta_tags* template tags/filters library might help.

4.2.2.1 Template tags prerequisites

If you want to use *templatetags* library, you need to add *valuta.contrib.django_integration* to your `INSTALLED_APPS`:

```

INSTALLED_APPS = (
    # ...
    "valuta.contrib.django_integration",
    # ...
)

```

If you want to make use of pre-defined rendering formats, it might be useful to add *valuta.contrib.django_integration.context_processors.constants* to the `context_processors`.

```

TEMPLATES = [{
    # ...
    "OPTIONS": {

```

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```
# ...
"context_processors": [
    "django.template.context_processors.debug",
    "django.template.context_processors.request",
    "django.contrib.auth.context_processors.auth",
    "django.contrib.messages.context_processors.messages",
    "valuta.contrib.django_integration.context_processors.constants",
],
# ...
},
# ...
}]
```

4.2.2.2 Sample data

```
instance = {
    "price": 1_000,
    "price_with_tax": 1_200,
    "currency_code": "EUR",
}
```

4.2.2.3 Without formatting

4.2.2.3.1 Sample template filters template

template_filter_price_in_currency_units.html

```
{% load valuta_tags %}

{{ instance.price|convert_to_currency_units:instance.currency_code }}
```

4.2.2.3.2 Sample template filters renderer

```
from django.template.loader import render_to_string

render_to_string(
    "template_filter_price_in_currency_units.html", {"instance": instance}
)
```

4.2.2.3.3 Sample template tags template

template_tag_price_in_currency_units.html

```
{% load valuta_tags %}

{% convert_to_currency_units instance.price instance.currency_code %}
```

4.2.2.3.4 Sample template tags renderer

```
from django.template.loader import render_to_string

render_to_string(
    "template_tag_price_in_currency_units.html", {"instance": instance}
)
```

4.2.2.4 With formatting

4.2.2.4.1 Sample template filters template

template_filter_price_display_in_currency_units.html

```
{% load valuta_tags %}

{{ instance.price|display_in_currency_units:instance.currency_code }}
```

4.2.2.4.2 Sample template filters renderer

```
from django.template.loader import render_to_string

render_to_string(
    "template_filter_price_display_in_currency_units.html", {"instance": instance}
)
```

4.2.2.4.3 Sample template tags template

template_tag_price_display_in_currency_units.html

```
{% load valuta_tags %}

{% display_in_currency_units instance.price instance.currency_code %}
```

You can also display units in specific format (including the currency symbol). Most common use-cases are pre-defined in `valuta.constants` and if you have included the correspondent context processor as instructed above, you could use it as follows:

```
{% load valuta_tags %}

{% display_in_currency_units instance.price instance.currency_code DISPLAY_FORMAT_HUMAN_
↳READABLE_WITH_CURRENCY_CODE %}
```

For the full list of options, see *Custom string formatting*.

4.2.2.4.4 Sample template tags renderer

```
from django.template.loader import render_to_string

render_to_string(
    "template_tag_price_display_in_currency_units.html", {"instance": instance}
)
```

4.3 SQLAlchemy integration

Similarly to Django integration package, the SQLAlchemy integration package is a simple `CurrencyType` representing the ISO-4217 codes of the currencies.

No magic methods are implemented yet (although planned to). What you get is a simple SQLAlchemy type for storing the data. For the rest you will have to make use of the `valuta.shortcuts`.

See `examples/sqlalchemy_example/valuta_admin/models.py` as a good example.

4.3.1 Model definition

Sample model

product/models.py

```
from valuta.contrib.sqlalchemy_integration.types import CurrencyType
from . import db # Standard SQLAlchemy way

class Product(db.Model):

    id = db.Column(db.Integer, primary_key=True)
    name = db.Column(db.Unicode(64), unique=True)
    price = db.Column(db.Integer())
    price_with_tax = db.Column(db.Integer())
    currency = db.Column(CurrencyType())
```

Sample data

```
import valuta
from product.models import Product
product = Product(
    name="My test product",
    price=100,
    price_with_tax=120,
```

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```
) currency=valuta.AMD.uid,
```


SUPPORTED CURRENCIES

Currencies marked with (*) are custom (added manually). The rest is obtained from the already mentioned [list of circulating currencies](#).

ISO code	Currency
AED	United Arab Emirates Dirham
AFN	Afghan Afghani
ALL	Albanian Lek
AMD	Armenian Dram
ANG	Netherlands Antillean Guilder
AOA	Angolan Kwanza
ARS	Argentine Peso
AUD	Australian Dollar
AWG	Aruban Florin
AZN	Azerbaijani Manat
BAM	Bosnia-Herzegovina Convertible Mark
BBD	Barbadian Dollar
BDT	Bangladeshi Taka
BGN	Bulgarian Lev
BHD	Bahraini Dinar
BIF	Burundian Franc
BMD	Bermudan Dollar

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BND	Brunei Dollar	
BOB	Bolivian Boliviano	
BRL	Brazilian Real	
BSD	Bahamian Dollar	
BTC	Bitcoin (*)	
BTN	Bhutanese Ngultrum	
BWP	Botswanan Pula	
BYN	Belarusian Ruble	
BZD	Belize Dollar	
CAD	Canadian Dollar	
CDF	Congolese Franc	
CHF	Swiss Franc	
CKD	CKD	
CLP	Chilean Peso	
CNY	Chinese Yuan	
COP	Colombian Peso	
CRC	Costa Rican Colón	
CUP	Cuban Peso	
CVE	Cape Verdean Escudo	
CZK	Czech Koruna	
DJF	Djiboutian Franc	
DKK	Danish Krone	
DOP	Dominican Peso	
DZD	Algerian Dinar	
EGP	Egyptian Pound	
ERN	Eritrean Nakfa	

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ETB	Ethiopian Birr	
EUR	Euro	
FJD	Fijian Dollar	
FKP	Falkland Islands Pound	
FOK	FOK	
GBP	British Pound	
GEL	Georgian Lari	
GGP	GGP	
GHS	Ghanaian Cedi	
GIP	Gibraltar Pound	
GMD	Gambian Dalasi	
GNF	Guinean Franc	
GTQ	Guatemalan Quetzal	
GYP	Guyanaese Dollar	
HKD	Hong Kong Dollar	
HNL	Honduran Lempira	
HRK	Croatian Kuna	
HTG	Haitian Gourde	
HUF	Hungarian Forint	
IDR	Indonesian Rupiah	
ILS	Israeli New Shekel	
IMP	IMP	
INR	Indian Rupee	
IQD	Iraqi Dinar	
IRR	Iranian Rial	
ISK	Icelandic Króna	

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JEP	JEP	
JMD	Jamaican Dollar	
JOD	Jordanian Dinar	
JPY	Japanese Yen	
KES	Kenyan Shilling	
KGS	Kyrgystani Som	
KHR	Cambodian Riel	
KID	KID	
KMF	Comorian Franc	
KPW	North Korean Won	
KRW	South Korean Won	
KWD	Kuwaiti Dinar	
KYD	Cayman Islands Dollar	
KZT	Kazakhstani Tenge	
LAK	Laotian Kip	
LBP	Lebanese Pound	
LKR	Sri Lankan Rupee	
LRD	Liberian Dollar	
LSL	Lesotho Loti	
LYD	Libyan Dinar	
MAD	Moroccan Dirham	
MDL	Moldovan Leu	
MGA	Malagasy Ariary	
MKD	Macedonian Denar	
MMK	Myanmar Kyat	
MNT	Mongolian Tugrik	

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MOP	Macanese Pataca	
MRU	Mauritanian Ouguiya	
MUR	Mauritian Rupee	
MVR	Maldivian Rufiyaa	
MWK	Malawian Kwacha	
MXN	Mexican Peso	
MYR	Malaysian Ringgit	
MZN	Mozambican Metical	
NAD	Namibian Dollar	
NGN	Nigerian Naira	
NIO	Nicaraguan Córdoba	
NOK	Norwegian Krone	
NPR	Nepalese Rupee	
NZD	New Zealand Dollar	
OMR	Omani Rial	
PAB	Panamanian Balboa	
PEN	Peruvian Sol	
PGK	Papua New Guinean Kina	
PHP	Philippine Piso	
PKR	Pakistani Rupee	
PLN	Polish Zloty	
PND	PND	
PRB	PRB	
PYG	Paraguayan Guarani	
QAR	Qatari Rial	
RON	Romanian Leu	

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RSD	Serbian Dinar	
RUB	Russian Ruble	
RWF	Rwandan Franc	
SAR	Saudi Riyal	
SBD	Solomon Islands Dollar	
SCR	Seychellois Rupee	
SDG	Sudanese Pound	
SEK	Swedish Krona	
SGD	Singapore Dollar	
SHP	St. Helena Pound	
SLL	Sierra Leonean Leone	
SLS	SLS	
SOS	Somali Shilling	
SRD	Surinamese Dollar	
SSP	South Sudanese Pound	
STN	São Tomé & Príncipe Dobra	
SYP	Syrian Pound	
SZL	Swazi Lilangeni	
THB	Thai Baht	
TJS	Tajikistani Somoni	
TMT	Turkmenistani Manat	
TND	Tunisian Dinar	
TOP	Tongan Paanga	
TRY	Turkish Lira	
TTD	Trinidad & Tobago Dollar	
TVD	TVD	

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TWD	New Taiwan Dollar
TZS	Tanzanian Shilling
UAH	Ukrainian Hryvnia
UGX	Ugandan Shilling
USD	US Dollar
UYU	Uruguayan Peso
UZS	Uzbekistani Som
VES	Venezuelan Bolívar
VND	Vietnamese Dong
VUV	Vanuatu Vatu
WST	Samoa Tala
XAF	Central African CFA Franc
XCD	East Caribbean Dollar
XOF	West African CFA Franc
XPF	CFP Franc
YER	Yemeni Rial
ZAR	South African Rand
ZMW	Zambian Kwacha
ZWB	ZWB

Run the following command in terminal to list all available currencies:

```
valuta-list-currencies
```


CUSTOM CURRENCIES

To register a new custom currency, do as follows:

```
from valuta.base import BaseCurrency

class XYZ(BaseCurrency):
    """XYZ - The XYZ currency."""

    uid: str = "XYZ"
    rate: int = 100_000_000
```


GENERATING CURRENCIES FROM A CSV DUMP

If `list of circulating currencies` is ever updated, grab it the same way, save as `list_of_circulating_currencies.csv` in the source and run the following command:

```
valuta-generate-currencies --skip-first-line
```


TESTING

Simply type:

```
pytest -vvv
```

Or use tox:

```
tox
```

Or use tox to check specific env:

```
tox -e py39-django32
```


WRITING DOCUMENTATION

Keep the following hierarchy.

```
=====  
title  
=====  
  
header  
=====  
  
sub-header  
-----  
  
sub-sub-header  
~~~~~  
  
sub-sub-sub-header  
^^^^^^^^^^^^^^^^  
  
sub-sub-sub-sub-header  
+++++++  
  
sub-sub-sub-sub-sub-header  
*****
```


LICENSE

GPL-2.0-only OR LGPL-2.1-or-later

CHAPTER
ELEVEN

SUPPORT

For any issues contact me at the e-mail given in the *Author* section.

CHAPTER
TWELVE

AUTHOR

Artur Barseghyan <artur.barseghyan@gmail.com>

PROJECT DOCUMENTATION

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13.1 Release history and notes

Sequence based identifiers are used for versioning (schema follows below):

```
major.minor[.revision]
```

- It's always safe to upgrade within the same minor version (for example, from 0.3 to 0.3.4).
- Minor version changes might be backwards incompatible. Read the release notes carefully before upgrading (for example, when upgrading from 0.3.4 to 0.4).
- All backwards incompatible changes are mentioned in this document.

13.1.1 0.3.2

2021-07-13

- Add basic SQLAlchemy support.

13.1.2 0.3.1

2021-07-01

- Suppress weirdest bug with a strange character `\xa0` appearing when using template tags without providing a locale on GitHub actions (locally everything passes without the bug).

13.1.3 0.3

2021-06-29

Note: This release is somewhat incompatible with previous versions for what's related to the displaying value in currency units (using any `display_in_currency_units` or shortcuts). If you want old behaviour, add `format=DISPLAY_FORMAT_NUMBER` to places where you used `display_in_currency_units` method or a correspondent shortcut function.

- Add locale and `decimal_quantization` args to the `format_currency` everywhere.
- Do not provide a default value for `format` (follow the babel defaults approach).

13.1.4 0.2.1

2021-06-25

- Added `valuta.contrib.django_integration.context_processors.constants` context processor module.
- Documentation improvements.

13.1.5 0.2

2021-06-24

- Added `display_in_currency_units` method, `shortcuts` module function and a magic method to the Django integration package, as well as the template tags library.

13.1.6 0.1.9

2021-06-15

- Minor fixes in the Django app (for Django 2.2).

13.1.7 0.1.8

2021-06-15

- Added `templatetags` library for Django integration app.

13.1.8 0.1.7

2021-06-05

- Replace all imports from `valuta.registry` with imports from `valuta.base`.
- Documentation improvements.

13.1.9 0.1.6

2021-06-04

- Move `Registry` class from `valuta.registry` to `valuta.base`.
- Add `valuta.shortcuts` module as shorthand for when you have a string representation of the currency code and the value to convert and don't want to handle possible exceptions.

13.1.10 0.1.5

2021-05-23

- Add more tests.
- Add an argument `--sort-by-value` for `valuta-list-ccurrencies` command.

13.1.11 0.1.4

2021-05-20

- Add more tests.

13.1.12 0.1.3

2021-05-19

- Minor fixes.

13.1.13 0.1.2

2021-05-19

- Change of the default display format in the Django integration app.
- Allow customization of the display format in the Django integration app.

13.1.14 0.1.1

2021-05-19

- Improve docs.
- Clean up.
- Minor fixes.

13.1.15 0.1

2021-05-17

- Initial beta release.

13.2 valuta package

13.2.1 Subpackages

13.2.1.1 valuta.contrib package

13.2.1.1.1 Subpackages

13.2.1.1.1.1 valuta.contrib.django_integration package

13.2.1.1.1.2 Subpackages

13.2.1.1.1.3 valuta.contrib.django_integration.tests package

13.2.1.1.1.4 Submodules

13.2.1.1.1.5 valuta.contrib.django_integration.tests.test_models module

`class valuta.contrib.django_integration.tests.test_models.DjangoIntegrationTestCase(methodName='runTest')`

Bases: `django.test.testcases.TestCase`

`test_1()`

`test_10()`

`test_100()`

`test_1000()`

`test_5()`

`test_cast_to_decimal()`

`test_cast_to_float()`

`test_cast_to_int()`

`test_display_1000_format_number()`

`test_display_100_format_number()`

`test_display_10_format_number()`

`test_display_1_format_number()`

`test_display_5_format_number()`

`test_display_empty_currency_value()`

`test_display_invalid_currency_value()`

`test_display_jpy_format_number()`

`test_empty_currency_value()`

`test_get_choices_func_is_none()`

`test_get_currency_cls()`

`test_get_currency_cls_empty_currency_value()`

```

test_get_currency_cls_invalid_currency_value()
test_invalid_currency_value()
test_limit_choices_to()
test_limit_choices_to_from_django_settings()
test_no_cast()

```

13.2.1.1.1.6 Module contents

13.2.1.1.1.7 Submodules

13.2.1.1.1.8 valuta.contrib.django_integration.models module

```

class valuta.contrib.django_integration.models.CurrencyField(*args, amount_fields:
    Optional[Union[List[str], Tuple[str,
    ...], Set[str]]] = None,
    limit_choices_to:
    Optional[Union[List[str], Tuple[str,
    ...], Set[str]]] = None,
    get_choices_func: Callable =
    <function
    get_currency_choices_with_code>,
    cast_to: Optional[Callable] = None,
    **kwargs)

```

Bases: django.db.models.fields.CharField

Currency field.

contribute_to_class(cls, name, **kwargs)

Register the field with the model class it belongs to.

If private_only is True, create a separate instance of this field for every subclass of cls, even if cls is not an abstract model.

13.2.1.1.1.9 Module contents

13.2.1.1.2 Module contents

13.2.1.2 valuta.currencies package

13.2.1.2.1 Submodules

13.2.1.2.2 valuta.currencies.aed module

```

class valuta.currencies.aed.AED
    Bases: valuta.base.BaseCurrency
    AED - United Arab Emirates dirham.
    rate: int = 100
    uid: str = 'AED'

```

13.2.1.2.3 valuta.currencies.afn module

```
class valuta.currencies.afn.AFN
    Bases: valuta.base.BaseCurrency
    AFN - Afghan afghani.
    rate: int = 100
    uid: str = 'AFN'
```

13.2.1.2.4 valuta.currencies.all module

```
class valuta.currencies.all.ALL
    Bases: valuta.base.BaseCurrency
    ALL - Albanian lek.
    rate: int = 100
    uid: str = 'ALL'
```

13.2.1.2.5 valuta.currencies.amd module

```
class valuta.currencies.amd.AMD
    Bases: valuta.base.BaseCurrency
    AMD - Armenian dram.
    rate: int = 100
    uid: str = 'AMD'
```

13.2.1.2.6 valuta.currencies.ang module

```
class valuta.currencies.ang.ANG
    Bases: valuta.base.BaseCurrency
    ANG - Netherlands Antillean guilder.
    rate: int = 100
    uid: str = 'ANG'
```

13.2.1.2.7 valuta.currencies.aoa module

```
class valuta.currencies.aoa.AOA
    Bases: valuta.base.BaseCurrency
    AOA - Angolan kwanza.
    rate: int = 100
    uid: str = 'AOA'
```

13.2.1.2.8 valuta.currencies.ars module

```
class valuta.currencies.ars.ARS
    Bases: valuta.base.BaseCurrency
    ARS - Argentine peso.
    rate: int = 100
    uid: str = 'ARS'
```

13.2.1.2.9 valuta.currencies.aud module

```
class valuta.currencies.aud.AUD
    Bases: valuta.base.BaseCurrency
    AUD - Australian dollar.
    rate: int = 100
    uid: str = 'AUD'
```

13.2.1.2.10 valuta.currencies.awg module

```
class valuta.currencies.awg.AWG
    Bases: valuta.base.BaseCurrency
    AWG - Aruban florin.
    rate: int = 100
    uid: str = 'AWG'
```

13.2.1.2.11 valuta.currencies.azn module

```
class valuta.currencies.azn.AZN
    Bases: valuta.base.BaseCurrency
    AZN - Azerbaijani manat.
    rate: int = 100
    uid: str = 'AZN'
```

13.2.1.2.12 valuta.currencies.bam module

```
class valuta.currencies.bam.BAM
    Bases: valuta.base.BaseCurrency
    BAM - Bosnia and Herzegovina convertible mark.
    rate: int = 100
    uid: str = 'BAM'
```

13.2.1.2.13 valuta.currencies.bbd module

```
class valuta.currencies.bbd.BBD
    Bases: valuta.base.BaseCurrency
    BBD - Barbadian dollar.
    rate: int = 100
    uid: str = 'BBD'
```

13.2.1.2.14 valuta.currencies.bdt module

```
class valuta.currencies.bdt.BDT
    Bases: valuta.base.BaseCurrency
    BDT - Bangladeshi taka.
    rate: int = 100
    uid: str = 'BDT'
```

13.2.1.2.15 valuta.currencies.bgn module

```
class valuta.currencies.bgn.BGN
    Bases: valuta.base.BaseCurrency
    BGN - Bulgarian lev.
    rate: int = 100
    uid: str = 'BGN'
```

13.2.1.2.16 valuta.currencies.bhd module

```
class valuta.currencies.bhd.BHD
    Bases: valuta.base.BaseCurrency
    BHD - Bahraini dinar.
    rate: int = 1000
    uid: str = 'BHD'
```

13.2.1.2.17 valuta.currencies.bif module

```
class valuta.currencies.bif.BIF
    Bases: valuta.base.BaseCurrency
    BIF - Burundian franc.
    rate: int = 100
    uid: str = 'BIF'
```

13.2.1.2.18 valuta.currencies.bmd module

```
class valuta.currencies.bmd.BMD
    Bases: valuta.base.BaseCurrency
    BMD - Bermudian dollar.
    rate: int = 100
    uid: str = 'BMD'
```

13.2.1.2.19 valuta.currencies.bnd module

```
class valuta.currencies.bnd.BND
    Bases: valuta.base.BaseCurrency
    BND - Brunei dollar.
    rate: int = 100
    uid: str = 'BND'
```

13.2.1.2.20 valuta.currencies.bob module

```
class valuta.currencies.bob.BOB
    Bases: valuta.base.BaseCurrency
    BOB - Bolivian boliviano.
    rate: int = 100
    uid: str = 'BOB'
```

13.2.1.2.21 valuta.currencies.brl module

```
class valuta.currencies.brl.BRL
    Bases: valuta.base.BaseCurrency
    BRL - Brazilian real.
    rate: int = 100
    uid: str = 'BRL'
```

13.2.1.2.22 valuta.currencies.bsd module

```
class valuta.currencies.bsd.BSD
    Bases: valuta.base.BaseCurrency
    BSD - Bahamian dollar.
    rate: int = 100
    uid: str = 'BSD'
```

13.2.1.2.23 valuta.currencies.btc module

```
class valuta.currencies.btc.BTC
    Bases: valuta.base.BaseCurrency
    BTC - Bitcoin.
    name: str = 'Bitcoin'
    rate: int = 1000000000
    uid: str = 'BTC'
```

13.2.1.2.24 valuta.currencies.btn module

```
class valuta.currencies.btn.BTN
    Bases: valuta.base.BaseCurrency
    BTN - Bhutanese ngultrum.
    rate: int = 100
    uid: str = 'BTN'
```

13.2.1.2.25 valuta.currencies.bwp module

```
class valuta.currencies.bwp.BWP
    Bases: valuta.base.BaseCurrency
    BWP - Botswana pula.
    rate: int = 100
    uid: str = 'BWP'
```

13.2.1.2.26 valuta.currencies.byn module

```
class valuta.currencies.byn.BYN
    Bases: valuta.base.BaseCurrency
    BYN - Belarusian ruble.
    rate: int = 100
    uid: str = 'BYN'
```

13.2.1.2.27 valuta.currencies.bzd module

```
class valuta.currencies.bzd.BZD
    Bases: valuta.base.BaseCurrency
    BZD - Belize dollar.
    rate: int = 100
    uid: str = 'BZD'
```


13.2.1.2.28 valuta.currencies.cad module

```
class valuta.currencies.cad.CAD
    Bases: valuta.base.BaseCurrency
    CAD - Canadian dollar.
    rate: int = 100
    uid: str = 'CAD'
```

13.2.1.2.29 valuta.currencies.cdf module

```
class valuta.currencies.cdf.CDF
    Bases: valuta.base.BaseCurrency
    CDF - Congolese franc.
    rate: int = 100
    uid: str = 'CDF'
```

13.2.1.2.30 valuta.currencies.chf module

```
class valuta.currencies.chf.CHF
    Bases: valuta.base.BaseCurrency
    CHF - Swiss franc.
    rate: int = 100
    uid: str = 'CHF'
```

13.2.1.2.31 valuta.currencies.ckd module

```
class valuta.currencies.ckd.CKD
    Bases: valuta.base.BaseCurrency
    CKD - Cook Islands dollar.
    rate: int = 100
    uid: str = 'CKD'
```

13.2.1.2.32 valuta.currencies.clp module

```
class valuta.currencies.clp.CLP
    Bases: valuta.base.BaseCurrency
    CLP - Chilean peso.
    rate: int = 100
    uid: str = 'CLP'
```

13.2.1.2.33 valuta.currencies.cny module

```
class valuta.currencies.cny.CNY
    Bases: valuta.base.BaseCurrency
    CNY - Chinese yuan.
    rate: int = 10
    uid: str = 'CNY'
```

13.2.1.2.34 valuta.currencies.cop module

```
class valuta.currencies.cop.COP
    Bases: valuta.base.BaseCurrency
    COP - Colombian peso.
    rate: int = 100
    uid: str = 'COP'
```

13.2.1.2.35 valuta.currencies.crc module

```
class valuta.currencies.crc.CRC
    Bases: valuta.base.BaseCurrency
    CRC - Costa Rican colón.
    rate: int = 100
    uid: str = 'CRC'
```

13.2.1.2.36 valuta.currencies.cup module

```
class valuta.currencies.cup.CUP
    Bases: valuta.base.BaseCurrency
    CUP - Cuban peso.
    rate: int = 100
    uid: str = 'CUP'
```

13.2.1.2.37 valuta.currencies.cve module

```
class valuta.currencies.cve.CVE
    Bases: valuta.base.BaseCurrency
    CVE - Cape Verdean escudo.
    rate: int = 100
    uid: str = 'CVE'
```

13.2.1.2.38 valuta.currencies.czkk module

```
class valuta.currencies.czkk.CZK
    Bases: valuta.base.BaseCurrency
    CZK - Czech koruna.
    rate: int = 100
    uid: str = 'CZK'
```

13.2.1.2.39 valuta.currencies.djfk module

```
class valuta.currencies.djfk.DJF
    Bases: valuta.base.BaseCurrency
    DJF - Djiboutian franc.
    rate: int = 100
    uid: str = 'DJF'
```

13.2.1.2.40 valuta.currencies.dkk module

```
class valuta.currencies.dkk.DKK
    Bases: valuta.base.BaseCurrency
    DKK - Danish krone.
    rate: int = 100
    uid: str = 'DKK'
```

13.2.1.2.41 valuta.currencies.dop module

```
class valuta.currencies.dop.DOP
    Bases: valuta.base.BaseCurrency
    DOP - Dominican peso.
    rate: int = 100
    uid: str = 'DOP'
```

13.2.1.2.42 valuta.currencies.dzd module

```
class valuta.currencies.dzd.DZD
    Bases: valuta.base.BaseCurrency
    DZD - Algerian dinar.
    rate: int = 100
    uid: str = 'DZD'
```

13.2.1.2.43 valuta.currencies.egp module

```
class valuta.currencies.egp.EGP
    Bases: valuta.base.BaseCurrency
    EGP - Egyptian pound.
    rate: int = 100
    uid: str = 'EGP'
```

13.2.1.2.44 valuta.currencies.ern module

```
class valuta.currencies.ern.ERN
    Bases: valuta.base.BaseCurrency
    ERN - Eritrean nakfa.
    rate: int = 100
    uid: str = 'ERN'
```

13.2.1.2.45 valuta.currencies.etb module

```
class valuta.currencies.etb.ETB
    Bases: valuta.base.BaseCurrency
    ETB - Ethiopian birr.
    rate: int = 100
    uid: str = 'ETB'
```

13.2.1.2.46 valuta.currencies.eur module

```
class valuta.currencies.eur.EUR
    Bases: valuta.base.BaseCurrency
    EUR - Euro.
    rate: int = 100
    uid: str = 'EUR'
```

13.2.1.2.47 valuta.currencies.fjd module

```
class valuta.currencies.fjd.FJD
    Bases: valuta.base.BaseCurrency
    FJD - Fijian dollar.
    rate: int = 100
    uid: str = 'FJD'
```

13.2.1.2.48 valuta.currencies.fkp module

```
class valuta.currencies.fkp.FKP
    Bases: valuta.base.BaseCurrency
    FKP - Falkland Islands pound.
    rate: int = 100
    uid: str = 'FKP'
```

13.2.1.2.49 valuta.currencies.fok module

```
class valuta.currencies.fok.FOK
    Bases: valuta.base.BaseCurrency
    FOK - Faroese króna.
    rate: int = 100
    uid: str = 'FOK'
```

13.2.1.2.50 valuta.currencies.gbp module

```
class valuta.currencies.gbp.GBP
    Bases: valuta.base.BaseCurrency
    GBP - British pound[F].
    rate: int = 100
    uid: str = 'GBP'
```

13.2.1.2.51 valuta.currencies.gel module

```
class valuta.currencies.gel.GEL
    Bases: valuta.base.BaseCurrency
    GEL - Georgian lari.
    rate: int = 100
    uid: str = 'GEL'
```

13.2.1.2.52 valuta.currencies.ggp module

```
class valuta.currencies.ggp.GGP
    Bases: valuta.base.BaseCurrency
    GGP - Guernsey pound.
    rate: int = 100
    uid: str = 'GGP'
```

13.2.1.2.53 valuta.currencies.ghs module

```
class valuta.currencies.ghs.GHS
    Bases: valuta.base.BaseCurrency
    GHS - Ghanaian cedi.
    rate: int = 100
    uid: str = 'GHS'
```

13.2.1.2.54 valuta.currencies.gip module

```
class valuta.currencies.gip.GIP
    Bases: valuta.base.BaseCurrency
    GIP - Gibraltar pound.
    rate: int = 100
    uid: str = 'GIP'
```

13.2.1.2.55 valuta.currencies.gmd module

```
class valuta.currencies.gmd.GMD
    Bases: valuta.base.BaseCurrency
    GMD - Gambian dalasi.
    rate: int = 100
    uid: str = 'GMD'
```

13.2.1.2.56 valuta.currencies.gnf module

```
class valuta.currencies.gnf.GNF
    Bases: valuta.base.BaseCurrency
    GNF - Guinean franc.
    rate: int = 100
    uid: str = 'GNF'
```

13.2.1.2.57 valuta.currencies.gtq module

```
class valuta.currencies.gtq.GTQ
    Bases: valuta.base.BaseCurrency
    GTQ - Guatemalan quetzal.
    rate: int = 100
    uid: str = 'GTQ'
```

13.2.1.2.58 valuta.currencies.gyd module

```
class valuta.currencies.gyd.GYD
    Bases: valuta.base.BaseCurrency
    GYD - Guyanese dollar.
    rate: int = 100
    uid: str = 'GYD'
```

13.2.1.2.59 valuta.currencies.hkd module

```
class valuta.currencies.hkd.HKD
    Bases: valuta.base.BaseCurrency
    HKD - Hong Kong dollar.
    rate: int = 100
    uid: str = 'HKD'
```

13.2.1.2.60 valuta.currencies.hnl module

```
class valuta.currencies.hnl.HNL
    Bases: valuta.base.BaseCurrency
    HNL - Honduran lempira.
    rate: int = 100
    uid: str = 'HNL'
```

13.2.1.2.61 valuta.currencies.hrk module

```
class valuta.currencies.hrk.HRK
    Bases: valuta.base.BaseCurrency
    HRK - Croatian kuna.
    rate: int = 100
    uid: str = 'HRK'
```

13.2.1.2.62 valuta.currencies.htg module

```
class valuta.currencies.htg.HTG
    Bases: valuta.base.BaseCurrency
    HTG - Haitian gourde.
    rate: int = 100
    uid: str = 'HTG'
```

13.2.1.2.63 valuta.currencies.huf module

```
class valuta.currencies.huf.HUF
    Bases: valuta.base.BaseCurrency
    HUF - Hungarian forint.
    rate: int = 100
    uid: str = 'HUF'
```

13.2.1.2.64 valuta.currencies.idr module

```
class valuta.currencies.idr.IDR
    Bases: valuta.base.BaseCurrency
    IDR - Indonesian rupiah.
    rate: int = 100
    uid: str = 'IDR'
```

13.2.1.2.65 valuta.currencies.ils module

```
class valuta.currencies.ils.ILS
    Bases: valuta.base.BaseCurrency
    ILS - Israeli new shekel.
    rate: int = 100
    uid: str = 'ILS'
```

13.2.1.2.66 valuta.currencies.imp module

```
class valuta.currencies.imp.IMP
    Bases: valuta.base.BaseCurrency
    IMP - Manx pound.
    rate: int = 100
    uid: str = 'IMP'
```

13.2.1.2.67 valuta.currencies.inr module

```
class valuta.currencies.inr.INR
    Bases: valuta.base.BaseCurrency
    INR - Indian rupee.
    rate: int = 100
    uid: str = 'INR'
```


13.2.1.2.68 valuta.currencies.iqd module

```
class valuta.currencies.iqd.IQD
    Bases: valuta.base.BaseCurrency
    IQD - Iraqi dinar.
    rate: int = 1000
    uid: str = 'IQD'
```

13.2.1.2.69 valuta.currencies.irr module

```
class valuta.currencies.irr.IRR
    Bases: valuta.base.BaseCurrency
    IRR - Iranian rial.
    rate: int = 100
    uid: str = 'IRR'
```

13.2.1.2.70 valuta.currencies.isk module

```
class valuta.currencies.isk.ISK
    Bases: valuta.base.BaseCurrency
    ISK - Icelandic króna.
    rate: int = 100
    uid: str = 'ISK'
```

13.2.1.2.71 valuta.currencies.jep module

```
class valuta.currencies.jep.JEP
    Bases: valuta.base.BaseCurrency
    JEP - Jersey pound.
    rate: int = 100
    uid: str = 'JEP'
```

13.2.1.2.72 valuta.currencies.jmd module

```
class valuta.currencies.jmd.JMD
    Bases: valuta.base.BaseCurrency
    JMD - Jamaican dollar.
    rate: int = 100
    uid: str = 'JMD'
```

13.2.1.2.73 valuta.currencies.jod module

```
class valuta.currencies.jod.JOD
    Bases: valuta.base.BaseCurrency
    JOD - Jordanian dinar.
    rate: int = 100
    uid: str = 'JOD'
```

13.2.1.2.74 valuta.currencies.jpy module

```
class valuta.currencies.jpy.JPY
    Bases: valuta.base.BaseCurrency
    JPY - Japanese yen.
    rate: int = 100
    uid: str = 'JPY'
```

13.2.1.2.75 valuta.currencies.kes module

```
class valuta.currencies.kes.KES
    Bases: valuta.base.BaseCurrency
    KES - Kenyan shilling.
    rate: int = 100
    uid: str = 'KES'
```

13.2.1.2.76 valuta.currencies.kgs module

```
class valuta.currencies.kgs.KGS
    Bases: valuta.base.BaseCurrency
    KGS - Kyrgyzstani som.
    rate: int = 100
    uid: str = 'KGS'
```

13.2.1.2.77 valuta.currencies.khr module

```
class valuta.currencies.khr.KHR
    Bases: valuta.base.BaseCurrency
    KHR - Cambodian riel.
    rate: int = 100
    uid: str = 'KHR'
```

13.2.1.2.78 valuta.currencies.kid module

```
class valuta.currencies.kid.KID
    Bases: valuta.base.BaseCurrency
    KID - Kiribati dollar[E].
    rate: int = 100
    uid: str = 'KID'
```

13.2.1.2.79 valuta.currencies.kmf module

```
class valuta.currencies.kmf.KMF
    Bases: valuta.base.BaseCurrency
    KMF - Comorian franc.
    rate: int = 100
    uid: str = 'KMF'
```

13.2.1.2.80 valuta.currencies.kpw module

```
class valuta.currencies.kpw.KPW
    Bases: valuta.base.BaseCurrency
    KPW - North Korean won.
    rate: int = 100
    uid: str = 'KPW'
```

13.2.1.2.81 valuta.currencies.krw module

```
class valuta.currencies.krw.KRW
    Bases: valuta.base.BaseCurrency
    KRW - South Korean won.
    rate: int = 100
    uid: str = 'KRW'
```

13.2.1.2.82 valuta.currencies.kwd module

```
class valuta.currencies.kwd.KWD
    Bases: valuta.base.BaseCurrency
    KWD - Kuwaiti dinar.
    rate: int = 1000
    uid: str = 'KWD'
```

13.2.1.2.83 valuta.currencies.kyd module

```
class valuta.currencies.kyd.KYD
    Bases: valuta.base.BaseCurrency
    KYD - Cayman Islands dollar.
    rate: int = 100
    uid: str = 'KYD'
```

13.2.1.2.84 valuta.currencies.kzt module

```
class valuta.currencies.kzt.KZT
    Bases: valuta.base.BaseCurrency
    KZT - Kazakhstani tenge.
    rate: int = 100
    uid: str = 'KZT'
```

13.2.1.2.85 valuta.currencies.lak module

```
class valuta.currencies.lak.LAK
    Bases: valuta.base.BaseCurrency
    LAK - Lao kip.
    rate: int = 100
    uid: str = 'LAK'
```

13.2.1.2.86 valuta.currencies.lbp module

```
class valuta.currencies.lbp.LBP
    Bases: valuta.base.BaseCurrency
    LBP - Lebanese pound.
    rate: int = 100
    uid: str = 'LBP'
```

13.2.1.2.87 valuta.currencies.lkr module

```
class valuta.currencies.lkr.LKR
    Bases: valuta.base.BaseCurrency
    LKR - Sri Lankan rupee.
    rate: int = 100
    uid: str = 'LKR'
```

13.2.1.2.88 valuta.currencies.lrd module

```
class valuta.currencies.lrd.LRD
    Bases: valuta.base.BaseCurrency
    LRD - Liberian dollar.
    rate: int = 100
    uid: str = 'LRD'
```

13.2.1.2.89 valuta.currencies.lsl module

```
class valuta.currencies.lsl.LSL
    Bases: valuta.base.BaseCurrency
    LSL - Lesotho loti.
    rate: int = 100
    uid: str = 'LSL'
```

13.2.1.2.90 valuta.currencies.lyd module

```
class valuta.currencies.lyd.LYD
    Bases: valuta.base.BaseCurrency
    LYD - Libyan dinar.
    rate: int = 1000
    uid: str = 'LYD'
```

13.2.1.2.91 valuta.currencies.mad module

```
class valuta.currencies.mad.MAD
    Bases: valuta.base.BaseCurrency
    MAD - Moroccan dirham.
    rate: int = 100
    uid: str = 'MAD'
```

13.2.1.2.92 valuta.currencies.mdl module

```
class valuta.currencies.mdl.MDL
    Bases: valuta.base.BaseCurrency
    MDL - Moldovan leu.
    rate: int = 100
    uid: str = 'MDL'
```

13.2.1.2.93 valuta.currencies.mga module

```
class valuta.currencies.mga.MGA
    Bases: valuta.base.BaseCurrency
    MGA - Malagasy ariary.
    rate: int = 5
    uid: str = 'MGA'
```

13.2.1.2.94 valuta.currencies.mkd module

```
class valuta.currencies.mkd.MKD
    Bases: valuta.base.BaseCurrency
    MKD - Macedonian denar.
    rate: int = 100
    uid: str = 'MKD'
```

13.2.1.2.95 valuta.currencies.mmk module

```
class valuta.currencies.mmk.MMK
    Bases: valuta.base.BaseCurrency
    MMK - Burmese kyat.
    rate: int = 100
    uid: str = 'MMK'
```

13.2.1.2.96 valuta.currencies.mnt module

```
class valuta.currencies.mnt.MNT
    Bases: valuta.base.BaseCurrency
    MNT - Mongolian tögrög.
    rate: int = 100
    uid: str = 'MNT'
```

13.2.1.2.97 valuta.currencies.mop module

```
class valuta.currencies.mop.MOP
    Bases: valuta.base.BaseCurrency
    MOP - Macanese pataca.
    rate: int = 100
    uid: str = 'MOP'
```

13.2.1.2.98 valuta.currencies.mru module

```
class valuta.currencies.mru.MRU
    Bases: valuta.base.BaseCurrency
    MRU - Mauritanian ouguiya.
    rate: int = 5
    uid: str = 'MRU'
```

13.2.1.2.99 valuta.currencies.mur module

```
class valuta.currencies.mur.MUR
    Bases: valuta.base.BaseCurrency
    MUR - Mauritian rupee.
    rate: int = 100
    uid: str = 'MUR'
```

13.2.1.2.100 valuta.currencies.mvr module

```
class valuta.currencies.mvr.MVR
    Bases: valuta.base.BaseCurrency
    MVR - Maldivian rufiyaa.
    rate: int = 100
    uid: str = 'MVR'
```

13.2.1.2.101 valuta.currencies.mwk module

```
class valuta.currencies.mwk.MWK
    Bases: valuta.base.BaseCurrency
    MWK - Malawian kwacha.
    rate: int = 100
    uid: str = 'MWK'
```

13.2.1.2.102 valuta.currencies.mxn module

```
class valuta.currencies.mxn.MXN
    Bases: valuta.base.BaseCurrency
    MXN - Mexican peso.
    rate: int = 100
    uid: str = 'MXN'
```

13.2.1.2.103 valuta.currencies.myr module

```
class valuta.currencies.myr.MYR
    Bases: valuta.base.BaseCurrency
    MYR - Malaysian ringgit.
    rate: int = 100
    uid: str = 'MYR'
```

13.2.1.2.104 valuta.currencies.mzn module

```
class valuta.currencies.mzn.MZN
    Bases: valuta.base.BaseCurrency
    MZN - Mozambican metical.
    rate: int = 100
    uid: str = 'MZN'
```

13.2.1.2.105 valuta.currencies.nad module

```
class valuta.currencies.nad.NAD
    Bases: valuta.base.BaseCurrency
    NAD - Namibian dollar.
    rate: int = 100
    uid: str = 'NAD'
```

13.2.1.2.106 valuta.currencies.ngn module

```
class valuta.currencies.ngn.NGN
    Bases: valuta.base.BaseCurrency
    NGN - Nigerian naira.
    rate: int = 100
    uid: str = 'NGN'
```

13.2.1.2.107 valuta.currencies.nio module

```
class valuta.currencies.nio.NIO
    Bases: valuta.base.BaseCurrency
    NIO - Nicaraguan córdoba.
    rate: int = 100
    uid: str = 'NIO'
```


13.2.1.2.108 valuta.currencies.nok module

```
class valuta.currencies.nok.NOK
    Bases: valuta.base.BaseCurrency
    NOK - Norwegian krone.
    rate: int = 100
    uid: str = 'NOK'
```

13.2.1.2.109 valuta.currencies.npr module

```
class valuta.currencies.npr.NPR
    Bases: valuta.base.BaseCurrency
    NPR - Nepalese rupee.
    rate: int = 100
    uid: str = 'NPR'
```

13.2.1.2.110 valuta.currencies.nzd module

```
class valuta.currencies.nzd.NZD
    Bases: valuta.base.BaseCurrency
    NZD - New Zealand dollar.
    rate: int = 100
    uid: str = 'NZD'
```

13.2.1.2.111 valuta.currencies.omr module

```
class valuta.currencies.omr.OMR
    Bases: valuta.base.BaseCurrency
    OMR - Omani rial.
    rate: int = 1000
    uid: str = 'OMR'
```

13.2.1.2.112 valuta.currencies.pab module

```
class valuta.currencies.pab.PAB
    Bases: valuta.base.BaseCurrency
    PAB - Panamanian balboa.
    rate: int = 100
    uid: str = 'PAB'
```

13.2.1.2.113 valuta.currencies.pen module

```
class valuta.currencies.pen.PEN
    Bases: valuta.base.BaseCurrency
    PEN - Peruvian sol.
    rate: int = 100
    uid: str = 'PEN'
```

13.2.1.2.114 valuta.currencies.pgk module

```
class valuta.currencies.pgk.PGK
    Bases: valuta.base.BaseCurrency
    PGK - Papua New Guinean kina.
    rate: int = 100
    uid: str = 'PGK'
```

13.2.1.2.115 valuta.currencies.php module

```
class valuta.currencies.php.PHP
    Bases: valuta.base.BaseCurrency
    PHP - Philippine peso.
    rate: int = 100
    uid: str = 'PHP'
```

13.2.1.2.116 valuta.currencies.pkr module

```
class valuta.currencies.pkr.PKR
    Bases: valuta.base.BaseCurrency
    PKR - Pakistani rupee.
    rate: int = 100
    uid: str = 'PKR'
```

13.2.1.2.117 valuta.currencies.pln module

```
class valuta.currencies.pln.PLN
    Bases: valuta.base.BaseCurrency
    PLN - Polish złoty.
    rate: int = 100
    uid: str = 'PLN'
```

13.2.1.2.118 valuta.currencies.pnd module

```
class valuta.currencies.pnd.PND
    Bases: valuta.base.BaseCurrency
    PND - Pitcairn Islands dollar[E].
    rate: int = 100
    uid: str = 'PND'
```

13.2.1.2.119 valuta.currencies.prb module

```
class valuta.currencies.prb.PRB
    Bases: valuta.base.BaseCurrency
    PRB - Transnistrian ruble.
    rate: int = 100
    uid: str = 'PRB'
```

13.2.1.2.120 valuta.currencies.pyg module

```
class valuta.currencies.pyg.PYG
    Bases: valuta.base.BaseCurrency
    PYG - Paraguayan guaraní.
    rate: int = 100
    uid: str = 'PYG'
```

13.2.1.2.121 valuta.currencies.qar module

```
class valuta.currencies.qar.QAR
    Bases: valuta.base.BaseCurrency
    QAR - Qatari riyal.
    rate: int = 100
    uid: str = 'QAR'
```

13.2.1.2.122 valuta.currencies.ron module

```
class valuta.currencies.ron.RON
    Bases: valuta.base.BaseCurrency
    RON - Romanian leu.
    rate: int = 100
    uid: str = 'RON'
```

13.2.1.2.123 valuta.currencies.rsd module

```
class valuta.currencies.rsd.RSD
    Bases: valuta.base.BaseCurrency
    RSD - Serbian dinar.
    rate: int = 100
    uid: str = 'RSD'
```

13.2.1.2.124 valuta.currencies.rub module

```
class valuta.currencies.rub.RUB
    Bases: valuta.base.BaseCurrency
    RUB - Russian ruble.
    rate: int = 100
    uid: str = 'RUB'
```

13.2.1.2.125 valuta.currencies.rwf module

```
class valuta.currencies.rwf.RWF
    Bases: valuta.base.BaseCurrency
    RWF - Rwandan franc.
    rate: int = 100
    uid: str = 'RWF'
```

13.2.1.2.126 valuta.currencies.sar module

```
class valuta.currencies.sar.SAR
    Bases: valuta.base.BaseCurrency
    SAR - Saudi riyal.
    rate: int = 100
    uid: str = 'SAR'
```

13.2.1.2.127 valuta.currencies.sbd module

```
class valuta.currencies.sbd.SBD
    Bases: valuta.base.BaseCurrency
    SBD - Solomon Islands dollar.
    rate: int = 100
    uid: str = 'SBD'
```

13.2.1.2.128 valuta.currencies.scr module

```
class valuta.currencies.scr.SCR
    Bases: valuta.base.BaseCurrency
    SCR - Seychellois rupee.
    rate: int = 100
    uid: str = 'SCR'
```

13.2.1.2.129 valuta.currencies.sdg module

```
class valuta.currencies.sdg.SDG
    Bases: valuta.base.BaseCurrency
    SDG - Sudanese pound.
    rate: int = 100
    uid: str = 'SDG'
```

13.2.1.2.130 valuta.currencies.sek module

```
class valuta.currencies.sek.SEK
    Bases: valuta.base.BaseCurrency
    SEK - Swedish krona.
    rate: int = 100
    uid: str = 'SEK'
```

13.2.1.2.131 valuta.currencies.sgd module

```
class valuta.currencies.sgd.SGD
    Bases: valuta.base.BaseCurrency
    SGD - Singapore dollar.
    rate: int = 100
    uid: str = 'SGD'
```

13.2.1.2.132 valuta.currencies.shp module

```
class valuta.currencies.shp.SHP
    Bases: valuta.base.BaseCurrency
    SHP - Saint Helena pound.
    rate: int = 100
    uid: str = 'SHP'
```

13.2.1.2.133 valuta.currencies.sll module

```
class valuta.currencies.sll.SLL
    Bases: valuta.base.BaseCurrency
    SLL - Sierra Leonean leone.
    rate: int = 100
    uid: str = 'SLL'
```

13.2.1.2.134 valuta.currencies.sls module

```
class valuta.currencies.sls.SLS
    Bases: valuta.base.BaseCurrency
    SLS - Somaliland shilling.
    rate: int = 100
    uid: str = 'SLS'
```

13.2.1.2.135 valuta.currencies.sos module

```
class valuta.currencies.sos.SOS
    Bases: valuta.base.BaseCurrency
    SOS - Somali shilling.
    rate: int = 100
    uid: str = 'SOS'
```

13.2.1.2.136 valuta.currencies.srd module

```
class valuta.currencies.srd.SRD
    Bases: valuta.base.BaseCurrency
    SRD - Surinamese dollar.
    rate: int = 100
    uid: str = 'SRD'
```

13.2.1.2.137 valuta.currencies.ssp module

```
class valuta.currencies.ssp.SSP
    Bases: valuta.base.BaseCurrency
    SSP - South Sudanese pound.
    rate: int = 100
    uid: str = 'SSP'
```

13.2.1.2.138 valuta.currencies.stn module

```
class valuta.currencies.stn.STN
    Bases: valuta.base.BaseCurrency
    STN - São Tomé and Príncipe dobra.
    rate: int = 100
    uid: str = 'STN'
```

13.2.1.2.139 valuta.currencies.syp module

```
class valuta.currencies.syp.SYP
    Bases: valuta.base.BaseCurrency
    SYP - Syrian pound.
    rate: int = 100
    uid: str = 'SYP'
```

13.2.1.2.140 valuta.currencies.szl module

```
class valuta.currencies.szl.SZL
    Bases: valuta.base.BaseCurrency
    SZL - Swazi lilangeni.
    rate: int = 100
    uid: str = 'SZL'
```

13.2.1.2.141 valuta.currencies.thb module

```
class valuta.currencies.thb.THB
    Bases: valuta.base.BaseCurrency
    THB - Thai baht.
    rate: int = 100
    uid: str = 'THB'
```

13.2.1.2.142 valuta.currencies.tjs module

```
class valuta.currencies.tjs.TJS
    Bases: valuta.base.BaseCurrency
    TJS - Tajikistani somoni.
    rate: int = 100
    uid: str = 'TJS'
```

13.2.1.2.143 valuta.currencies.tmt module

```
class valuta.currencies.tmt.TMT
    Bases: valuta.base.BaseCurrency
    TMT - Turkmenistan manat.
    rate: int = 100
    uid: str = 'TMT'
```

13.2.1.2.144 valuta.currencies.tnd module

```
class valuta.currencies.tnd.TND
    Bases: valuta.base.BaseCurrency
    TND - Tunisian dinar.
    rate: int = 1000
    uid: str = 'TND'
```

13.2.1.2.145 valuta.currencies.top module

```
class valuta.currencies.top.TOP
    Bases: valuta.base.BaseCurrency
    TOP - Tongan paanga[P].
    rate: int = 100
    uid: str = 'TOP'
```

13.2.1.2.146 valuta.currencies.try module

```
class valuta.currencies.try.TRY
    Bases: valuta.base.BaseCurrency
    TRY - Turkish lira.
    rate: int = 100
    uid: str = 'TRY'
```

13.2.1.2.147 valuta.currencies.ttd module

```
class valuta.currencies.ttd.TTD
    Bases: valuta.base.BaseCurrency
    TTD - Trinidad and Tobago dollar.
    rate: int = 100
    uid: str = 'TTD'
```


13.2.1.2.148 valuta.currencies.tvd module

```
class valuta.currencies.tvd.TVD
    Bases: valuta.base.BaseCurrency
    TVD - Tuvaluan dollar.
    rate: int = 100
    uid: str = 'TVD'
```

13.2.1.2.149 valuta.currencies.twd module

```
class valuta.currencies.twd.TWD
    Bases: valuta.base.BaseCurrency
    TWD - New Taiwan dollar.
    rate: int = 100
    uid: str = 'TWD'
```

13.2.1.2.150 valuta.currencies.tzs module

```
class valuta.currencies.tzs.TZS
    Bases: valuta.base.BaseCurrency
    TZS - Tanzanian shilling.
    rate: int = 100
    uid: str = 'TZS'
```

13.2.1.2.151 valuta.currencies.uah module

```
class valuta.currencies.uah.UAH
    Bases: valuta.base.BaseCurrency
    UAH - Ukrainian hryvnia.
    rate: int = 100
    uid: str = 'UAH'
```

13.2.1.2.152 valuta.currencies.ugx module

```
class valuta.currencies.ugx.UGX
    Bases: valuta.base.BaseCurrency
    UGX - Ugandan shilling.
    rate: int = 1
    uid: str = 'UGX'
```

13.2.1.2.153 valuta.currencies.usd module

```
class valuta.currencies.usd.USD
    Bases: valuta.base.BaseCurrency
    USD - United States dollar[H].
    rate: int = 100
    uid: str = 'USD'
```

13.2.1.2.154 valuta.currencies.uyu module

```
class valuta.currencies.uyu.UYU
    Bases: valuta.base.BaseCurrency
    UYU - Uruguayan peso.
    rate: int = 100
    uid: str = 'UYU'
```

13.2.1.2.155 valuta.currencies.uzs module

```
class valuta.currencies.uzs.UZS
    Bases: valuta.base.BaseCurrency
    UZS - Uzbekistani som.
    rate: int = 100
    uid: str = 'UZS'
```

13.2.1.2.156 valuta.currencies.ves module

```
class valuta.currencies.ves.VES
    Bases: valuta.base.BaseCurrency
    VES - Venezuelan bolívar soberano.
    rate: int = 100
    uid: str = 'VES'
```

13.2.1.2.157 valuta.currencies.vnd module

```
class valuta.currencies.vnd.VND
    Bases: valuta.base.BaseCurrency
    VND - Vietnamese đng.
    rate: int = 10
    uid: str = 'VND'
```

13.2.1.2.158 valuta.currencies.vuv module

```
class valuta.currencies.vuv.VUV
    Bases: valuta.base.BaseCurrency
    VUV - Vanuatu vatu.
    rate: int = 1
    uid: str = 'VUV'
```

13.2.1.2.159 valuta.currencies.wst module

```
class valuta.currencies.wst.WST
    Bases: valuta.base.BaseCurrency
    WST - Samoan tālā.
    rate: int = 100
    uid: str = 'WST'
```

13.2.1.2.160 valuta.currencies.xaf module

```
class valuta.currencies.xaf.XAF
    Bases: valuta.base.BaseCurrency
    XAF - Central African CFA franc.
    rate: int = 100
    uid: str = 'XAF'
```

13.2.1.2.161 valuta.currencies.xcd module

```
class valuta.currencies.xcd.XCD
    Bases: valuta.base.BaseCurrency
    XCD - Eastern Caribbean dollar.
    rate: int = 100
    uid: str = 'XCD'
```

13.2.1.2.162 valuta.currencies.xof module

```
class valuta.currencies.xof.XOF
    Bases: valuta.base.BaseCurrency
    XOF - West African CFA franc.
    rate: int = 100
    uid: str = 'XOF'
```

13.2.1.2.163 valuta.currencies.xpf module

```
class valuta.currencies.xpf.XPF
    Bases: valuta.base.BaseCurrency
    XPF - CFP franc.
    rate: int = 100
    uid: str = 'XPF'
```

13.2.1.2.164 valuta.currencies.yer module

```
class valuta.currencies.yer.YER
    Bases: valuta.base.BaseCurrency
    YER - Yemeni rial.
    rate: int = 100
    uid: str = 'YER'
```

13.2.1.2.165 valuta.currencies.zar module

```
class valuta.currencies.zar.ZAR
    Bases: valuta.base.BaseCurrency
    ZAR - South African rand.
    rate: int = 100
    uid: str = 'ZAR'
```

13.2.1.2.166 valuta.currencies.zmw module

```
class valuta.currencies.zmw.ZMW
    Bases: valuta.base.BaseCurrency
    ZMW - Zambian kwacha.
    rate: int = 100
    uid: str = 'ZMW'
```

13.2.1.2.167 valuta.currencies.zwb module

```
class valuta.currencies.zwb.ZWB
    Bases: valuta.base.BaseCurrency
    ZWB - RTGS dollar[5].
    rate: int = 1
    uid: str = 'ZWB'
```

13.2.1.2.168 Module contents

```
class valuta.currencies.AED
    Bases: valuta.base.BaseCurrency
    AED - United Arab Emirates dirham.
    rate: int = 100
    uid: str = 'AED'

class valuta.currencies.AFN
    Bases: valuta.base.BaseCurrency
    AFN - Afghan afghani.
    rate: int = 100
    uid: str = 'AFN'

class valuta.currencies.ALL
    Bases: valuta.base.BaseCurrency
    ALL - Albanian lek.
    rate: int = 100
    uid: str = 'ALL'

class valuta.currencies.AMD
    Bases: valuta.base.BaseCurrency
    AMD - Armenian dram.
    rate: int = 100
    uid: str = 'AMD'

class valuta.currencies.ANG
    Bases: valuta.base.BaseCurrency
    ANG - Netherlands Antillean guilder.
    rate: int = 100
    uid: str = 'ANG'

class valuta.currencies.AOA
    Bases: valuta.base.BaseCurrency
    AOA - Angolan kwanza.
    rate: int = 100
    uid: str = 'AOA'

class valuta.currencies.ARS
    Bases: valuta.base.BaseCurrency
    ARS - Argentine peso.
    rate: int = 100
    uid: str = 'ARS'
```

```
class valuta.currencies.AUD
    Bases: valuta.base.BaseCurrency
    AUD - Australian dollar.
    rate: int = 100
    uid: str = 'AUD'

class valuta.currencies.AWG
    Bases: valuta.base.BaseCurrency
    AWG - Aruban florin.
    rate: int = 100
    uid: str = 'AWG'

class valuta.currencies.AZN
    Bases: valuta.base.BaseCurrency
    AZN - Azerbaijani manat.
    rate: int = 100
    uid: str = 'AZN'

class valuta.currencies.BAM
    Bases: valuta.base.BaseCurrency
    BAM - Bosnia and Herzegovina convertible mark.
    rate: int = 100
    uid: str = 'BAM'

class valuta.currencies.BBD
    Bases: valuta.base.BaseCurrency
    BBD - Barbadian dollar.
    rate: int = 100
    uid: str = 'BBD'

class valuta.currencies.BDT
    Bases: valuta.base.BaseCurrency
    BDT - Bangladeshi taka.
    rate: int = 100
    uid: str = 'BDT'

class valuta.currencies.BGN
    Bases: valuta.base.BaseCurrency
    BGN - Bulgarian lev.
    rate: int = 100
    uid: str = 'BGN'

class valuta.currencies.BHD
    Bases: valuta.base.BaseCurrency
    BHD - Bahraini dinar.
    rate: int = 1000
```

```
    uid: str = 'BHD'  
class valuta.currencies.BIF  
    Bases: valuta.base.BaseCurrency  
    BIF - Burundian franc.  
    rate: int = 100  
    uid: str = 'BIF'  
class valuta.currencies.BMD  
    Bases: valuta.base.BaseCurrency  
    BMD - Bermudian dollar.  
    rate: int = 100  
    uid: str = 'BMD'  
class valuta.currencies.BND  
    Bases: valuta.base.BaseCurrency  
    BND - Brunei dollar.  
    rate: int = 100  
    uid: str = 'BND'  
class valuta.currencies.BOB  
    Bases: valuta.base.BaseCurrency  
    BOB - Bolivian boliviano.  
    rate: int = 100  
    uid: str = 'BOB'  
class valuta.currencies.BRL  
    Bases: valuta.base.BaseCurrency  
    BRL - Brazilian real.  
    rate: int = 100  
    uid: str = 'BRL'  
class valuta.currencies.BSD  
    Bases: valuta.base.BaseCurrency  
    BSD - Bahamian dollar.  
    rate: int = 100  
    uid: str = 'BSD'  
class valuta.currencies.BTC  
    Bases: valuta.base.BaseCurrency  
    BTC - Bitcoin.  
    name: str = 'Bitcoin'  
    rate: int = 100000000  
    uid: str = 'BTC'
```

```
class valuta.currencies.BTN
    Bases: valuta.base.BaseCurrency
    BTN - Bhutanese ngultrum.
    rate: int = 100
    uid: str = 'BTN'

class valuta.currencies.BWP
    Bases: valuta.base.BaseCurrency
    BWP - Botswana pula.
    rate: int = 100
    uid: str = 'BWP'

class valuta.currencies.BYN
    Bases: valuta.base.BaseCurrency
    BYN - Belarusian ruble.
    rate: int = 100
    uid: str = 'BYN'

class valuta.currencies.BZD
    Bases: valuta.base.BaseCurrency
    BZD - Belize dollar.
    rate: int = 100
    uid: str = 'BZD'

class valuta.currencies.CAD
    Bases: valuta.base.BaseCurrency
    CAD - Canadian dollar.
    rate: int = 100
    uid: str = 'CAD'

class valuta.currencies.CDF
    Bases: valuta.base.BaseCurrency
    CDF - Congolese franc.
    rate: int = 100
    uid: str = 'CDF'

class valuta.currencies.CHF
    Bases: valuta.base.BaseCurrency
    CHF - Swiss franc.
    rate: int = 100
    uid: str = 'CHF'

class valuta.currencies.CKD
    Bases: valuta.base.BaseCurrency
    CKD - Cook Islands dollar.
    rate: int = 100
```



```
    uid: str = 'CKD'  
class valuta.currencies.CLP  
    Bases: valuta.base.BaseCurrency  
    CLP - Chilean peso.  
    rate: int = 100  
    uid: str = 'CLP'  
class valuta.currencies.CNY  
    Bases: valuta.base.BaseCurrency  
    CNY - Chinese yuan.  
    rate: int = 10  
    uid: str = 'CNY'  
class valuta.currencies.COP  
    Bases: valuta.base.BaseCurrency  
    COP - Colombian peso.  
    rate: int = 100  
    uid: str = 'COP'  
class valuta.currencies.CRC  
    Bases: valuta.base.BaseCurrency  
    CRC - Costa Rican colón.  
    rate: int = 100  
    uid: str = 'CRC'  
class valuta.currencies.CUP  
    Bases: valuta.base.BaseCurrency  
    CUP - Cuban peso.  
    rate: int = 100  
    uid: str = 'CUP'  
class valuta.currencies.CVE  
    Bases: valuta.base.BaseCurrency  
    CVE - Cape Verdean escudo.  
    rate: int = 100  
    uid: str = 'CVE'  
class valuta.currencies.CZK  
    Bases: valuta.base.BaseCurrency  
    CZK - Czech koruna.  
    rate: int = 100  
    uid: str = 'CZK'  
class valuta.currencies.DJF  
    Bases: valuta.base.BaseCurrency  
    DJF - Djiboutian franc.
```

```
rate: int = 100
```

```
uid: str = 'DJF'
```

```
class valuta.currencies.DKK
```

```
Bases: valuta.base.BaseCurrency
```

```
DKK - Danish krone.
```

```
rate: int = 100
```

```
uid: str = 'DKK'
```

```
class valuta.currencies.DOP
```

```
Bases: valuta.base.BaseCurrency
```

```
DOP - Dominican peso.
```

```
rate: int = 100
```

```
uid: str = 'DOP'
```

```
class valuta.currencies.DZD
```

```
Bases: valuta.base.BaseCurrency
```

```
DZD - Algerian dinar.
```

```
rate: int = 100
```

```
uid: str = 'DZD'
```

```
class valuta.currencies.EGP
```

```
Bases: valuta.base.BaseCurrency
```

```
EGP - Egyptian pound.
```

```
rate: int = 100
```

```
uid: str = 'EGP'
```

```
class valuta.currencies.ERN
```

```
Bases: valuta.base.BaseCurrency
```

```
ERN - Eritrean nakfa.
```

```
rate: int = 100
```

```
uid: str = 'ERN'
```

```
class valuta.currencies.ETB
```

```
Bases: valuta.base.BaseCurrency
```

```
ETB - Ethiopian birr.
```

```
rate: int = 100
```

```
uid: str = 'ETB'
```

```
class valuta.currencies.EUR
```

```
Bases: valuta.base.BaseCurrency
```

```
EUR - Euro.
```

```
rate: int = 100
```

```
uid: str = 'EUR'
```

```
class valuta.currencies.FJD
    Bases: valuta.base.BaseCurrency
    FJD - Fijian dollar.
    rate: int = 100
    uid: str = 'FJD'

class valuta.currencies.FKP
    Bases: valuta.base.BaseCurrency
    FKP - Falkland Islands pound.
    rate: int = 100
    uid: str = 'FKP'

class valuta.currencies.FOK
    Bases: valuta.base.BaseCurrency
    FOK - Faroese króna.
    rate: int = 100
    uid: str = 'FOK'

class valuta.currencies.GBP
    Bases: valuta.base.BaseCurrency
    GBP - British pound[F].
    rate: int = 100
    uid: str = 'GBP'

class valuta.currencies.GEL
    Bases: valuta.base.BaseCurrency
    GEL - Georgian lari.
    rate: int = 100
    uid: str = 'GEL'

class valuta.currencies.GGP
    Bases: valuta.base.BaseCurrency
    GGP - Guernsey pound.
    rate: int = 100
    uid: str = 'GGP'

class valuta.currencies.GHS
    Bases: valuta.base.BaseCurrency
    GHS - Ghanaian cedi.
    rate: int = 100
    uid: str = 'GHS'

class valuta.currencies.GIP
    Bases: valuta.base.BaseCurrency
    GIP - Gibraltar pound.
    rate: int = 100
```

```
    uid: str = 'GIP'
class valuta.currencies.GMD
    Bases: valuta.base.BaseCurrency
    GMD - Gambian dalasi.
    rate: int = 100
    uid: str = 'GMD'
class valuta.currencies.GNF
    Bases: valuta.base.BaseCurrency
    GNF - Guinean franc.
    rate: int = 100
    uid: str = 'GNF'
class valuta.currencies.GTQ
    Bases: valuta.base.BaseCurrency
    GTQ - Guatemalan quetzal.
    rate: int = 100
    uid: str = 'GTQ'
class valuta.currencies.GYD
    Bases: valuta.base.BaseCurrency
    GYD - Guyanese dollar.
    rate: int = 100
    uid: str = 'GYD'
class valuta.currencies.HKD
    Bases: valuta.base.BaseCurrency
    HKD - Hong Kong dollar.
    rate: int = 100
    uid: str = 'HKD'
class valuta.currencies.HNL
    Bases: valuta.base.BaseCurrency
    HNL - Honduran lempira.
    rate: int = 100
    uid: str = 'HNL'
class valuta.currencies.HRK
    Bases: valuta.base.BaseCurrency
    HRK - Croatian kuna.
    rate: int = 100
    uid: str = 'HRK'
class valuta.currencies.HTG
    Bases: valuta.base.BaseCurrency
    HTG - Haitian gourde.
```

```
    rate: int = 100
    uid: str = 'HTG'
class valuta.currencies.HUF
    Bases: valuta.base.BaseCurrency
    HUF - Hungarian forint.
    rate: int = 100
    uid: str = 'HUF'
class valuta.currencies.IDR
    Bases: valuta.base.BaseCurrency
    IDR - Indonesian rupiah.
    rate: int = 100
    uid: str = 'IDR'
class valuta.currencies.ILS
    Bases: valuta.base.BaseCurrency
    ILS - Israeli new shekel.
    rate: int = 100
    uid: str = 'ILS'
class valuta.currencies.IMP
    Bases: valuta.base.BaseCurrency
    IMP - Manx pound.
    rate: int = 100
    uid: str = 'IMP'
class valuta.currencies.INR
    Bases: valuta.base.BaseCurrency
    INR - Indian rupee.
    rate: int = 100
    uid: str = 'INR'
class valuta.currencies.IQD
    Bases: valuta.base.BaseCurrency
    IQD - Iraqi dinar.
    rate: int = 1000
    uid: str = 'IQD'
class valuta.currencies.IRR
    Bases: valuta.base.BaseCurrency
    IRR - Iranian rial.
    rate: int = 100
    uid: str = 'IRR'
```

```
class valuta.currencies.ISK
    Bases: valuta.base.BaseCurrency
    ISK - Icelandic króna.
    rate: int = 100
    uid: str = 'ISK'

class valuta.currencies.JEP
    Bases: valuta.base.BaseCurrency
    JEP - Jersey pound.
    rate: int = 100
    uid: str = 'JEP'

class valuta.currencies.JMD
    Bases: valuta.base.BaseCurrency
    JMD - Jamaican dollar.
    rate: int = 100
    uid: str = 'JMD'

class valuta.currencies.JOD
    Bases: valuta.base.BaseCurrency
    JOD - Jordanian dinar.
    rate: int = 100
    uid: str = 'JOD'

class valuta.currencies.JPY
    Bases: valuta.base.BaseCurrency
    JPY - Japanese yen.
    rate: int = 100
    uid: str = 'JPY'

class valuta.currencies.KES
    Bases: valuta.base.BaseCurrency
    KES - Kenyan shilling.
    rate: int = 100
    uid: str = 'KES'

class valuta.currencies.KGS
    Bases: valuta.base.BaseCurrency
    KGS - Kyrgyzstani som.
    rate: int = 100
    uid: str = 'KGS'

class valuta.currencies.KHR
    Bases: valuta.base.BaseCurrency
    KHR - Cambodian riel.
    rate: int = 100
```

```
    uid: str = 'KHR'  
class valuta.currencies.KID  
    Bases: valuta.base.BaseCurrency  
    KID - Kiribati dollar[E].  
    rate: int = 100  
    uid: str = 'KID'  
class valuta.currencies.KMF  
    Bases: valuta.base.BaseCurrency  
    KMF - Comorian franc.  
    rate: int = 100  
    uid: str = 'KMF'  
class valuta.currencies.KPW  
    Bases: valuta.base.BaseCurrency  
    KPW - North Korean won.  
    rate: int = 100  
    uid: str = 'KPW'  
class valuta.currencies.KRW  
    Bases: valuta.base.BaseCurrency  
    KRW - South Korean won.  
    rate: int = 100  
    uid: str = 'KRW'  
class valuta.currencies.KWD  
    Bases: valuta.base.BaseCurrency  
    KWD - Kuwaiti dinar.  
    rate: int = 1000  
    uid: str = 'KWD'  
class valuta.currencies.KYD  
    Bases: valuta.base.BaseCurrency  
    KYD - Cayman Islands dollar.  
    rate: int = 100  
    uid: str = 'KYD'  
class valuta.currencies.KZT  
    Bases: valuta.base.BaseCurrency  
    KZT - Kazakhstani tenge.  
    rate: int = 100  
    uid: str = 'KZT'  
class valuta.currencies.LAK  
    Bases: valuta.base.BaseCurrency  
    LAK - Lao kip.
```

```
rate: int = 100
```

```
uid: str = 'LAK'
```

```
class valuta.currencies.LBP
```

```
Bases: valuta.base.BaseCurrency
```

```
LBP - Lebanese pound.
```

```
rate: int = 100
```

```
uid: str = 'LBP'
```

```
class valuta.currencies.LKR
```

```
Bases: valuta.base.BaseCurrency
```

```
LKR - Sri Lankan rupee.
```

```
rate: int = 100
```

```
uid: str = 'LKR'
```

```
class valuta.currencies.LRD
```

```
Bases: valuta.base.BaseCurrency
```

```
LRD - Liberian dollar.
```

```
rate: int = 100
```

```
uid: str = 'LRD'
```

```
class valuta.currencies.LSL
```

```
Bases: valuta.base.BaseCurrency
```

```
LSL - Lesotho loti.
```

```
rate: int = 100
```

```
uid: str = 'LSL'
```

```
class valuta.currencies.LYD
```

```
Bases: valuta.base.BaseCurrency
```

```
LYD - Libyan dinar.
```

```
rate: int = 1000
```

```
uid: str = 'LYD'
```

```
class valuta.currencies.MAD
```

```
Bases: valuta.base.BaseCurrency
```

```
MAD - Moroccan dirham.
```

```
rate: int = 100
```

```
uid: str = 'MAD'
```

```
class valuta.currencies.MDL
```

```
Bases: valuta.base.BaseCurrency
```

```
MDL - Moldovan leu.
```

```
rate: int = 100
```

```
uid: str = 'MDL'
```



```
class valuta.currencies.MGA
    Bases: valuta.base.BaseCurrency
    MGA - Malagasy ariary.
    rate: int = 5
    uid: str = 'MGA'

class valuta.currencies.MKD
    Bases: valuta.base.BaseCurrency
    MKD - Macedonian denar.
    rate: int = 100
    uid: str = 'MKD'

class valuta.currencies.MMK
    Bases: valuta.base.BaseCurrency
    MMK - Burmese kyat.
    rate: int = 100
    uid: str = 'MMK'

class valuta.currencies.MNT
    Bases: valuta.base.BaseCurrency
    MNT - Mongolian tögrög.
    rate: int = 100
    uid: str = 'MNT'

class valuta.currencies.MOP
    Bases: valuta.base.BaseCurrency
    MOP - Macanese pataca.
    rate: int = 100
    uid: str = 'MOP'

class valuta.currencies.MRU
    Bases: valuta.base.BaseCurrency
    MRU - Mauritanian ouguiya.
    rate: int = 5
    uid: str = 'MRU'

class valuta.currencies.MUR
    Bases: valuta.base.BaseCurrency
    MUR - Mauritian rupee.
    rate: int = 100
    uid: str = 'MUR'

class valuta.currencies.MVR
    Bases: valuta.base.BaseCurrency
    MVR - Maldivian rufiyaa.
    rate: int = 100
```

```
    uid: str = 'MVR'
```

class valuta.currencies.MWK
Bases: *valuta.base.BaseCurrency*
MWK - Malawian kwacha.

```
    rate: int = 100
    uid: str = 'MWK'
```

class valuta.currencies.MXN
Bases: *valuta.base.BaseCurrency*
MXN - Mexican peso.

```
    rate: int = 100
    uid: str = 'MXN'
```

class valuta.currencies.MYR
Bases: *valuta.base.BaseCurrency*
MYR - Malaysian ringgit.

```
    rate: int = 100
    uid: str = 'MYR'
```

class valuta.currencies.MZN
Bases: *valuta.base.BaseCurrency*
MZN - Mozambican metical.

```
    rate: int = 100
    uid: str = 'MZN'
```

class valuta.currencies.NAD
Bases: *valuta.base.BaseCurrency*
NAD - Namibian dollar.

```
    rate: int = 100
    uid: str = 'NAD'
```

class valuta.currencies.NGN
Bases: *valuta.base.BaseCurrency*
NGN - Nigerian naira.

```
    rate: int = 100
    uid: str = 'NGN'
```

class valuta.currencies.NIO
Bases: *valuta.base.BaseCurrency*
NIO - Nicaraguan córdoba.

```
    rate: int = 100
    uid: str = 'NIO'
```

class valuta.currencies.NOK
Bases: *valuta.base.BaseCurrency*
NOK - Norwegian krone.

```
    rate: int = 100
    uid: str = 'NOK'
class valuta.currencies.NPR
    Bases: valuta.base.BaseCurrency
    NPR - Nepalese rupee.
    rate: int = 100
    uid: str = 'NPR'
class valuta.currencies.NZD
    Bases: valuta.base.BaseCurrency
    NZD - New Zealand dollar.
    rate: int = 100
    uid: str = 'NZD'
class valuta.currencies.OMR
    Bases: valuta.base.BaseCurrency
    OMR - Omani rial.
    rate: int = 1000
    uid: str = 'OMR'
class valuta.currencies.PAB
    Bases: valuta.base.BaseCurrency
    PAB - Panamanian balboa.
    rate: int = 100
    uid: str = 'PAB'
class valuta.currencies.PEN
    Bases: valuta.base.BaseCurrency
    PEN - Peruvian sol.
    rate: int = 100
    uid: str = 'PEN'
class valuta.currencies.PGK
    Bases: valuta.base.BaseCurrency
    PGK - Papua New Guinean kina.
    rate: int = 100
    uid: str = 'PGK'
class valuta.currencies.PHP
    Bases: valuta.base.BaseCurrency
    PHP - Philippine peso.
    rate: int = 100
    uid: str = 'PHP'
```

```
class valuta.currencies.PKR
    Bases: valuta.base.BaseCurrency
    PKR - Pakistani rupee.
    rate: int = 100
    uid: str = 'PKR'

class valuta.currencies.PLN
    Bases: valuta.base.BaseCurrency
    PLN - Polish złoty.
    rate: int = 100
    uid: str = 'PLN'

class valuta.currencies.PND
    Bases: valuta.base.BaseCurrency
    PND - Pitcairn Islands dollar[E].
    rate: int = 100
    uid: str = 'PND'

class valuta.currencies.PRB
    Bases: valuta.base.BaseCurrency
    PRB - Transnistrian ruble.
    rate: int = 100
    uid: str = 'PRB'

class valuta.currencies.PYG
    Bases: valuta.base.BaseCurrency
    PYG - Paraguayan guaraní.
    rate: int = 100
    uid: str = 'PYG'

class valuta.currencies.QAR
    Bases: valuta.base.BaseCurrency
    QAR - Qatari riyal.
    rate: int = 100
    uid: str = 'QAR'

class valuta.currencies.RON
    Bases: valuta.base.BaseCurrency
    RON - Romanian leu.
    rate: int = 100
    uid: str = 'RON'

class valuta.currencies.RSD
    Bases: valuta.base.BaseCurrency
    RSD - Serbian dinar.
    rate: int = 100
```

```
    uid: str = 'RSD'
```

class valuta.currencies.RUB
Bases: *valuta.base.BaseCurrency*
RUB - Russian ruble.

```
    rate: int = 100
    uid: str = 'RUB'
```

class valuta.currencies.RWF
Bases: *valuta.base.BaseCurrency*
RWF - Rwandan franc.

```
    rate: int = 100
    uid: str = 'RWF'
```

class valuta.currencies.SAR
Bases: *valuta.base.BaseCurrency*
SAR - Saudi riyal.

```
    rate: int = 100
    uid: str = 'SAR'
```

class valuta.currencies.SBD
Bases: *valuta.base.BaseCurrency*
SBD - Solomon Islands dollar.

```
    rate: int = 100
    uid: str = 'SBD'
```

class valuta.currencies.SCR
Bases: *valuta.base.BaseCurrency*
SCR - Seychellois rupee.

```
    rate: int = 100
    uid: str = 'SCR'
```

class valuta.currencies.SDG
Bases: *valuta.base.BaseCurrency*
SDG - Sudanese pound.

```
    rate: int = 100
    uid: str = 'SDG'
```

class valuta.currencies.SEK
Bases: *valuta.base.BaseCurrency*
SEK - Swedish krona.

```
    rate: int = 100
    uid: str = 'SEK'
```

class valuta.currencies.SGD
Bases: *valuta.base.BaseCurrency*
SGD - Singapore dollar.

```
rate: int = 100
```

```
uid: str = 'SGD'
```

```
class valuta.currencies.SHP
```

```
Bases: valuta.base.BaseCurrency
```

```
SHP - Saint Helena pound.
```

```
rate: int = 100
```

```
uid: str = 'SHP'
```

```
class valuta.currencies.SLL
```

```
Bases: valuta.base.BaseCurrency
```

```
SLL - Sierra Leonean leone.
```

```
rate: int = 100
```

```
uid: str = 'SLL'
```

```
class valuta.currencies.SLS
```

```
Bases: valuta.base.BaseCurrency
```

```
SLS - Somaliland shilling.
```

```
rate: int = 100
```

```
uid: str = 'SLS'
```

```
class valuta.currencies.SOS
```

```
Bases: valuta.base.BaseCurrency
```

```
SOS - Somali shilling.
```

```
rate: int = 100
```

```
uid: str = 'SOS'
```

```
class valuta.currencies.SRD
```

```
Bases: valuta.base.BaseCurrency
```

```
SRD - Surinamese dollar.
```

```
rate: int = 100
```

```
uid: str = 'SRD'
```

```
class valuta.currencies.SSP
```

```
Bases: valuta.base.BaseCurrency
```

```
SSP - South Sudanese pound.
```

```
rate: int = 100
```

```
uid: str = 'SSP'
```

```
class valuta.currencies.STN
```

```
Bases: valuta.base.BaseCurrency
```

```
STN - São Tomé and Príncipe dobra.
```

```
rate: int = 100
```

```
uid: str = 'STN'
```

```
class valuta.currencies.SYP
    Bases: valuta.base.BaseCurrency
    SYP - Syrian pound.
    rate: int = 100
    uid: str = 'SYP'

class valuta.currencies.SZL
    Bases: valuta.base.BaseCurrency
    SZL - Swazi lilangeni.
    rate: int = 100
    uid: str = 'SZL'

class valuta.currencies.THB
    Bases: valuta.base.BaseCurrency
    THB - Thai baht.
    rate: int = 100
    uid: str = 'THB'

class valuta.currencies.TJS
    Bases: valuta.base.BaseCurrency
    TJS - Tajikistani somoni.
    rate: int = 100
    uid: str = 'TJS'

class valuta.currencies.TMT
    Bases: valuta.base.BaseCurrency
    TMT - Turkmenistan manat.
    rate: int = 100
    uid: str = 'TMT'

class valuta.currencies.TND
    Bases: valuta.base.BaseCurrency
    TND - Tunisian dinar.
    rate: int = 1000
    uid: str = 'TND'

class valuta.currencies.TOP
    Bases: valuta.base.BaseCurrency
    TOP - Tongan paanga[P].
    rate: int = 100
    uid: str = 'TOP'

class valuta.currencies.TRY
    Bases: valuta.base.BaseCurrency
    TRY - Turkish lira.
    rate: int = 100
```

```
    uid: str = 'TRY'
class valuta.currencies.TTD
    Bases: valuta.base.BaseCurrency
    TTD - Trinidad and Tobago dollar.
    rate: int = 100
    uid: str = 'TTD'
class valuta.currencies.TVD
    Bases: valuta.base.BaseCurrency
    TVD - Tuvaluan dollar.
    rate: int = 100
    uid: str = 'TVD'
class valuta.currencies.TWD
    Bases: valuta.base.BaseCurrency
    TWD - New Taiwan dollar.
    rate: int = 100
    uid: str = 'TWD'
class valuta.currencies.TZS
    Bases: valuta.base.BaseCurrency
    TZS - Tanzanian shilling.
    rate: int = 100
    uid: str = 'TZS'
class valuta.currencies.UAH
    Bases: valuta.base.BaseCurrency
    UAH - Ukrainian hryvnia.
    rate: int = 100
    uid: str = 'UAH'
class valuta.currencies.UGX
    Bases: valuta.base.BaseCurrency
    UGX - Ugandan shilling.
    rate: int = 1
    uid: str = 'UGX'
class valuta.currencies.USD
    Bases: valuta.base.BaseCurrency
    USD - United States dollar[H].
    rate: int = 100
    uid: str = 'USD'
class valuta.currencies.UYU
    Bases: valuta.base.BaseCurrency
    UYU - Uruguayan peso.
```



```
    rate: int = 100
    uid: str = 'UYU'
class valuta.currencies.UZS
    Bases: valuta.base.BaseCurrency
    UZS - Uzbekistani som.
    rate: int = 100
    uid: str = 'UZS'
class valuta.currencies.VES
    Bases: valuta.base.BaseCurrency
    VES - Venezuelan bolívar soberano.
    rate: int = 100
    uid: str = 'VES'
class valuta.currencies.VND
    Bases: valuta.base.BaseCurrency
    VND - Vietnamese đng.
    rate: int = 10
    uid: str = 'VND'
class valuta.currencies.VUV
    Bases: valuta.base.BaseCurrency
    VUV - Vanuatu vatu.
    rate: int = 1
    uid: str = 'VUV'
class valuta.currencies.WST
    Bases: valuta.base.BaseCurrency
    WST - Samoan tālā.
    rate: int = 100
    uid: str = 'WST'
class valuta.currencies.XAF
    Bases: valuta.base.BaseCurrency
    XAF - Central African CFA franc.
    rate: int = 100
    uid: str = 'XAF'
class valuta.currencies.XCD
    Bases: valuta.base.BaseCurrency
    XCD - Eastern Caribbean dollar.
    rate: int = 100
    uid: str = 'XCD'
```

```
class valuta.currencies.XOF
    Bases: valuta.base.BaseCurrency
```

XOF - West African CFA franc.

```
rate: int = 100
```

```
uid: str = 'XOF'
```

```
class valuta.currencies.XPF
    Bases: valuta.base.BaseCurrency
```

XPF - CFP franc.

```
rate: int = 100
```

```
uid: str = 'XPF'
```

```
class valuta.currencies.YER
    Bases: valuta.base.BaseCurrency
```

YER - Yemeni rial.

```
rate: int = 100
```

```
uid: str = 'YER'
```

```
class valuta.currencies.ZAR
    Bases: valuta.base.BaseCurrency
```

ZAR - South African rand.

```
rate: int = 100
```

```
uid: str = 'ZAR'
```

```
class valuta.currencies.ZMW
    Bases: valuta.base.BaseCurrency
```

ZMW - Zambian kwacha.

```
rate: int = 100
```

```
uid: str = 'ZMW'
```

```
class valuta.currencies.ZWB
    Bases: valuta.base.BaseCurrency
```

ZWB - RTGS dollar[5].

```
rate: int = 1
```

```
uid: str = 'ZWB'
```

13.2.1.3 valuta.tests package

13.2.1.3.1 Submodules

13.2.1.3.2 valuta.tests.data module

13.2.1.3.3 valuta.tests.test_base module

```
class valuta.tests.test_base.TestBase(methodName='runTest')
    Bases: unittest.case.TestCase
```

Base tests.

setUp() → None

Hook method for setting up the test fixture before exercising it.

tearDown() → None

Hook method for deconstructing the test fixture after testing it.

test_1()

test_10()

test_100()

test_1000()

test_5()

test_subclass()

Test subclass.

test_subclass_no_rate()

Test subclass no *rate*.

test_symbol()

Test symbol.

13.2.1.3.4 `valuta.tests.test_cli` module

class `valuta.tests.test_cli.TestCLI`(*methodName='runTest'*)

Bases: `unittest.case.TestCase`

CLI tests.

test_generate_currencies()

Test generate currencies CLI.

test_list_currencies()

Test list currencies CLI.

test_list_currencies_sort_by_value()

Test list currencies CLI, sorted byvalue.

13.2.1.3.5 `valuta.tests.test_registry` module

class `valuta.tests.test_registry.TestRegistry`(*methodName='runTest'*)

Bases: `unittest.case.TestCase`

Test registry.

test_import_from_registry()

Test import from deprecated `valuta.registry` module.

13.2.1.3.6 valuta.tests.test_scaffolding module

```
class valuta.tests.test_scaffolding.TestScaffolding(methodName='runTest')
    Bases: unittest.case.TestCase

    Scaffolding tests.

    test_generate_currencies()
        Test generate currency modules.

    test_generate_currencies_rel_path()
        Test generate currency modules relative paths.
```

13.2.1.3.7 valuta.tests.test_shortcuts module

```
class valuta.tests.test_shortcuts.TestShortcuts(methodName='runTest')
    Bases: unittest.case.TestCase

    Test shortcuts.

    test_convert_to_currency_units()
        Test convert_to_currency_units with valid codes.

    test_display_in_currency_units()
        Test display_in_currency_units with valid codes.

    test_display_in_currency_units_with_locale()
        Test display_in_currency_units with valid codes and locale.

    test_test_convert_to_currency_units_invalid_currency_code()
        Test convert_to_currency_units with invalid codes.

    test_test_display_in_currency_units_invalid_currency_code()
        Test convert_to_currency_units with invalid codes.
```

13.2.1.3.8 valuta.tests.test_utils module

```
class valuta.tests.test_utils.TestUtils(methodName='runTest')
    Bases: unittest.case.TestCase

    Test utils.

    setUp()
        Set up.

    test_get_currency_choices()
        Test get_currency_choices.

    test_get_currency_choices_sort_by_key()
        Test get_currency_choices sort_by_key=True.

    test_get_currency_choices_with_code()
        Test get_currency_choices_with_code.

    test_get_currency_choices_with_code_sort_by_key()
        Test get_currency_choices_with_code sort_by_key=True.
```

13.2.1.3.9 Module contents

13.2.2 Submodules

13.2.3 valuta.base module

class valuta.base.BaseCurrency

Bases: object

Base currency.

Each currency typically has a main currency unit (the dollar, for example, or the euro) and a fractional unit, often defined as 1/100 of the main unit: 100 cents = 1 dollar, 100 centimes = 1 franc, 100 pence = 1 pound, although units of 1/10 or 1/1000 occasionally also occur. Some currencies do not have any smaller units at all, such as the Icelandic krona.

<https://en.wikipedia.org/wiki/Currency>

classmethod convert_to_currency_units(*value: int*) → Union[int, float, decimal.Decimal]

Convert to amount in currency units.

classmethod display_in_currency_units(*value: int, format: Optional[str] = None, locale: Optional[str] = None, decimal_quantization: bool = True*) → str

Convert to amount in currency units.

name = None

rate: Union[int, float, decimal.Decimal]

symbol = None

uid: Optional[str] = None

classmethod validate()

Constructor.

class valuta.base.Registry(*name, bases, attrs*)

Bases: type

```

REGISTRY: Dict[str, valuta.base.BaseCurrency] = {'AED': <class
'valuta.currencies.aed.AED'>, 'AFN': <class 'valuta.currencies.afn.AFN'>, 'ALL':
<class 'valuta.currencies.all.ALL'>, 'AMD': <class 'valuta.currencies.amd.AMD'>,
'ANG': <class 'valuta.currencies.ang.ANG'>, 'AOA': <class
'valuta.currencies.aoa.AOA'>, 'ARS': <class 'valuta.currencies.ars.ARS'>, 'AUD':
<class 'valuta.currencies.aud.AUD'>, 'AWG': <class 'valuta.currencies.awg.AWG'>,
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<class 'valuta.currencies.mkd.MKD'>, 'MMK': <class 'valuta.currencies.mmk.MMK'>,
'MNT': <class 'valuta.currencies.mnt.MNT'>, 'MOP': <class
'valuta.currencies.mop.MOP'>, 'MRU': <class 'valuta.currencies.mru.MRU'>, 'MUR':
<class 'valuta.currencies.mur.MUR'>, 'MVR': <class 'valuta.currencies.mvr.MVR'>,

```

```

classmethod get(key: str, default: Optional[valuta.base.BaseCurrency] = None) →
    Optional[valuta.base.BaseCurrency]
classmethod items() → ItemsView[str, valuta.base.BaseCurrency]
classmethod reset() → None
classmethod values(limit_choices_to: Optional[Union[List[str], Tuple[str, ...], Set[str]]] = None,
    sort_by_key: bool = False) → List[Tuple[str, str]]
classmethod values_with_code(limit_choices_to: Optional[Union[List[str], Tuple[str, ...], Set[str]]] =
    None, sort_by_key: bool = False) → List[Tuple[str, str]]

```

13.2.4 valuta.cli module

`valuta.cli.generate_currencies()`
Generate currency modules.

`valuta.cli.list_currencies()`
List currency modules.

13.2.5 valuta.exceptions module

exception `valuta.exceptions.ImproperlyConfigured`
Bases: `Exception`
`ImproperlyConfigured`.
Supposed to be thrown when code is improperly configured.

exception `valuta.exceptions.InvalidCurrency`
Bases: `ValueError`
Invalid currency exception.

13.2.6 valuta.helpers module

class `valuta.helpers.ClassProperty(fget=None, fset=None, fdel=None, doc=None)`
Bases: `property`
`ClassProperty`.
How to use:

```

class Something:
    @classproperty
    def default_value(cls):
        return 10 # Some value

```

Can be replaced with the following in Python 3.9:

```

class Something:
    @classmethod
    @property
    def default_value(cls):
        return 10 # Some value

```

`valuta.helpers.classproperty`

alias of `valuta.helpers.ClassProperty`

`valuta.helpers.project_dir`(*base: str*) → str

Absolute path to a file from current directory.

13.2.7 `valuta.registry` module

`class valuta.registry.Registry`(*name, bases, attrs*)

Bases: type


```

REGISTRY: Dict[str, valuta.base.BaseCurrency] = {'AED': <class
'valuta.currencies.aed.AED'>, 'AFN': <class 'valuta.currencies.afn.AFN'>, 'ALL':
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'valuta.currencies.jmd.JMD'>, 'JOD': <class 'valuta.currencies.jod.JOD'>, 'JPY':
<class 'valuta.currencies.jpy.JPY'>, 'KES': <class 'valuta.currencies.kes.KES'>,
'KGS': <class 'valuta.currencies.kgs.KGS'>, 'KHR': <class
'valuta.currencies.khr.KHR'>, 'KID': <class 'valuta.currencies.kid.KID'>, 'KMF':
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'MNT': <class 'valuta.currencies.mnt.MNT'>, 'MOP': <class
'valuta.currencies.mop.MOP'>, 'MRU': <class 'valuta.currencies.mru.MRU'>, 'MUR':
<class 'valuta.currencies.mur.MUR'>, 'MVR': <class 'valuta.currencies.mvr.MVR'>,

```

```

classmethod get(key: str, default: Optional[valuta.base.BaseCurrency] = None) →
    Optional[valuta.base.BaseCurrency]
classmethod items() → ItemsView[str, valuta.base.BaseCurrency]
classmethod reset() → None
classmethod values(limit_choices_to: Optional[Union[List[str], Tuple[str, ...], Set[str]]] = None,
    sort_by_key: bool = False) → List[Tuple[str, str]]
classmethod values_with_code(limit_choices_to: Optional[Union[List[str], Tuple[str, ...], Set[str]]] =
    None, sort_by_key: bool = False) → List[Tuple[str, str]]

```

13.2.8 valuta.scaffolding module

```

valuta.scaffolding.generate_contents(iso_code: str, number_to_basic: str, currency: str) → str
    Generate the contents for the given currency.
valuta.scaffolding.read_csv_and_write_output(in_file: str = 'list_of_circulating_currencies.csv', out_dir:
    str = 'currencies', skip_first_line: bool = False) → str
    Read CSV.

```

13.2.9 valuta.shortcuts module

```

valuta.shortcuts.convert_to_currency_units(currency_code: str, value: int, fail_silently: bool = True) →
    Optional[Union[int, float, decimal.Decimal]]
    Convert value represented in minor currency to major currency units.
valuta.shortcuts.display_in_currency_units(currency_code: str, value: int, format: Optional[str] =
    None, locale: Optional[str] = None, decimal_quantization:
    bool = True, fail_silently: bool = True) → Optional[str]
    Convert value represented in minor currency to major currency units.

```

13.2.10 valuta.utils module

```

valuta.utils.get_currency_choices(limit_choices_to: Optional[Union[List[str], Tuple[str, ...], Set[str]]] =
    None, sort_by_key: bool = False) → List[Tuple[str, str]]

```

Get currency choices.

List of choices in the following format:

```

[
    ("AMD", "Armenian Dram"),
    ("EUR", "Euro"),
]

```

```

valuta.utils.get_currency_choices_with_code(limit_choices_to: Optional[Union[List[str], Tuple[str, ...],
    Set[str]]] = None, sort_by_key: bool = False) →
    List[Tuple[str, str]]

```

Get currency choices with code.

List of choices in the following format:

```
[  
  ("AMD", "Armenian Dram (AMD)" ),  
  ("EUR", "Euro (EUR)" ),  
]
```

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