default$_{values}$

Release 0.1.0

Dominic Davis-Foster

Sep 15, 2020

CONTENTS

Sphinx extension to show default values in documentation.

Docs	
Tests	
PyPI	
Activity	
Other	

CHAPTER

ONE

INSTALLATION

from PyPI

```
$ python3 -m pip install default_values --user
```

from GitHub

```
$ python3 -m pip install git+https://github.com/domdfcoding/default_values@master --user
```

Enable `default_values` by adding the following to the `extensions` variable in your `conf.py`:

```
extensions = [
    ...
    'sphinxcontrib.default_values',
    ]
```

For more information see https://www.sphinx-doc.org/en/master/usage/extensions/index.html#third-party-extensions .

CHAPTER

TWO

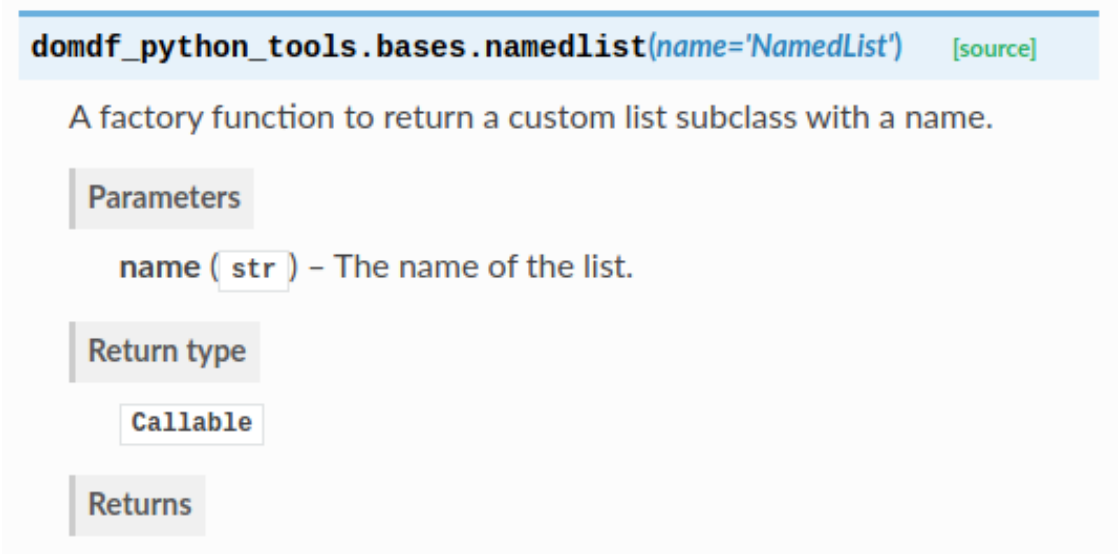
USAGE

This extension shows the default values in autodoc-formatted docstrings.

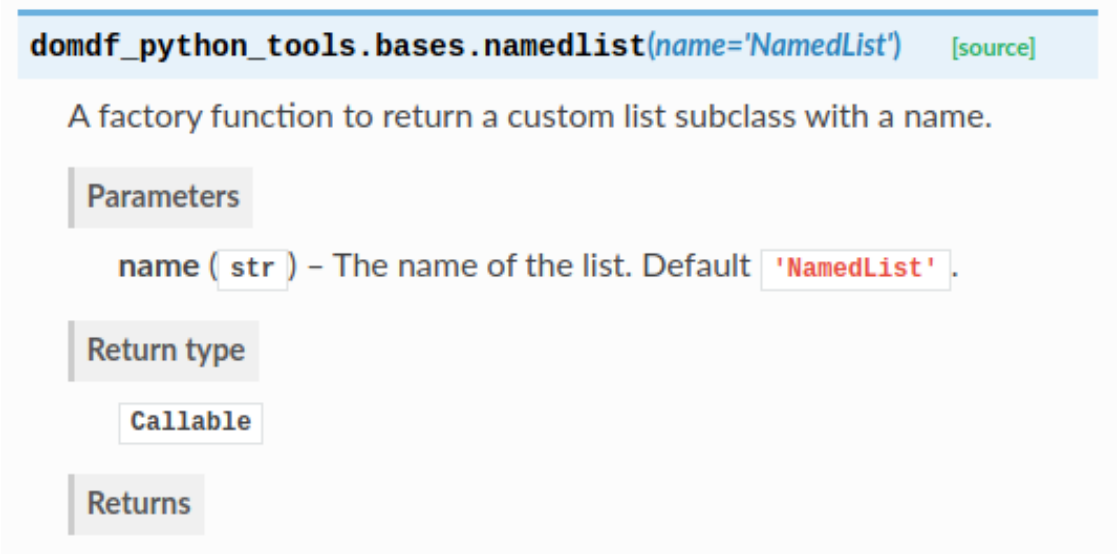
The default behaviour of autodoc is to turn this:

```
def namedlist(name: str = "NamedList") -> Callable:
    """
    A factory function to return a custom list subclass with a name.

    :param name: The name of the list.
    :default name: :py:obj:`True`

    :return:
    """
```

into this:



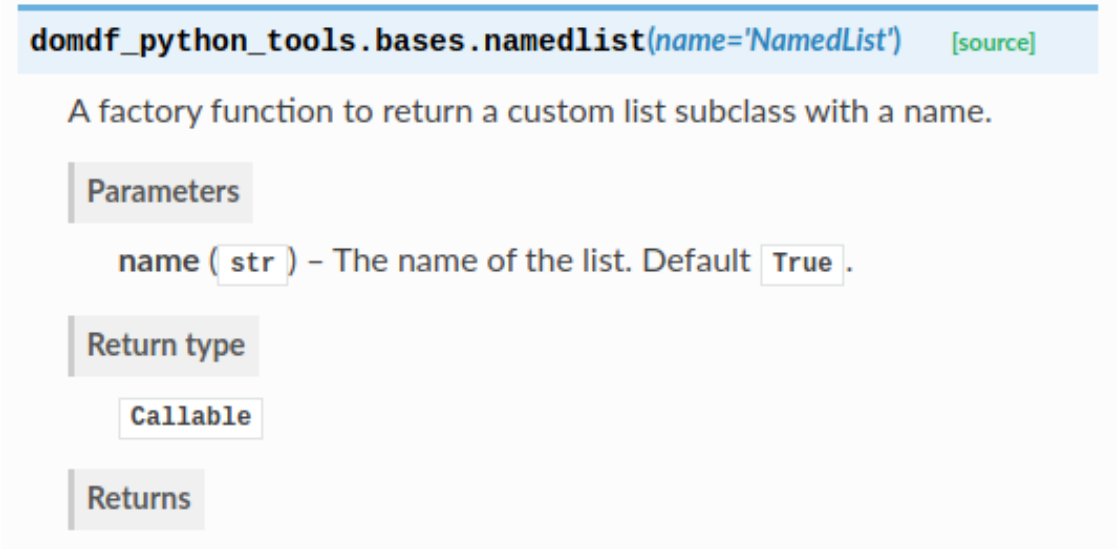
With `default_values` enabled, the documentation will now look like this:



Default values are taken from the function/class signature. They can be overridden using the `:default <argname>: <default value>` option in the docstring:

```
:param name: The name of the list.
:default name: :py:obj:`True`
```

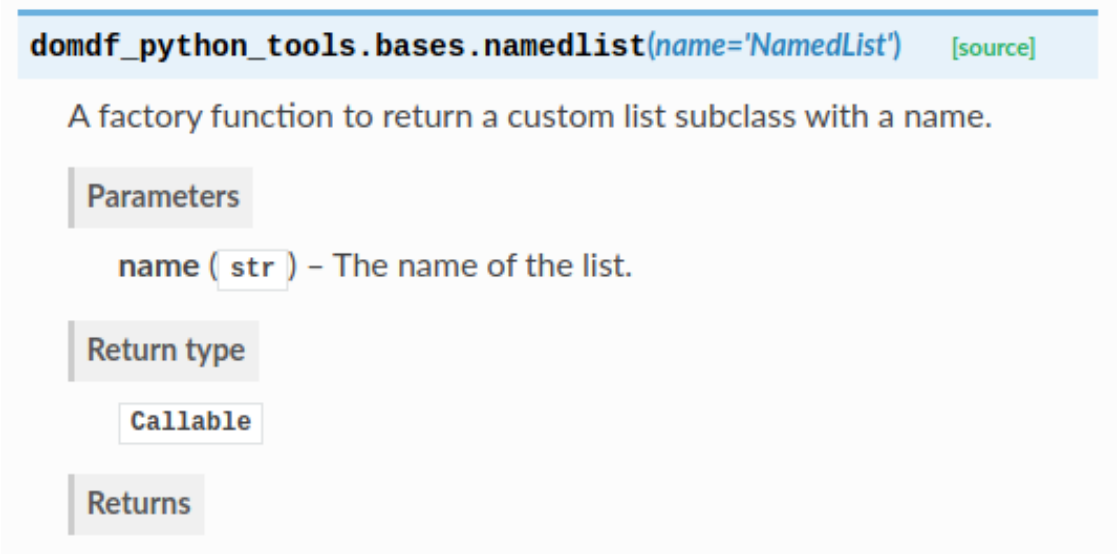
which will produce:



The value must be formatted how you would like it to be displayed in Sphinx. This can be useful when the default value in the signature is `None` and the true default value is assigned in the function body, such as for a mutable default argument.

The default value can be suppressed using the `:no-default <argname>` option:

```
:param name: The name of the list.
:no-default name:
```



domdf_python_tools.bases.namedlist(*name='NamedList'*) [source]

A factory function to return a custom list subclass with a name.

Parameters

name (`str`) – The name of the list.

Return type

`Callable`

Returns

This allows for default values to be suppressed on a per-argument basis.

No default value is shown if the argument does not have a default value.

The formatting of the default value can be customised using the `default_description_format` option in `setup.py`. By default this is `'Default %s'`.

CHAPTER

THREE

API REFERENCE

A Sphinx directive to specify that a module has extra requirements, and show how to install them.

Functions:

get_arguments(obj)	Returns a dictionary mapping argument names to parameters/arguments for a function.
get_class_defaults(obj)	Obtains the default values for the arguments of a class.
get_function_defaults(obj)	Obtains the default values for the arguments of a function.
process_default_format(app)	Prepare the formatting of the default value.
process_docstring(app, what, name, obj, ...)	Add default values to the docstring.
setup(app)	Setup Sphinx Extension.

Data:

default_regex	Regular expression to match default values declared in docstrings.
no_default_regex	Regular expression to match flags in docstrings to suppress default values.

default_regex = re.compile('^:(default|Default) ')

Type: Pattern

Regular expression to match default values declared in docstrings.

get_arguments(*obj*)

Returns a dictionary mapping argument names to parameters/arguments for a function.

Parameters **obj** (Callable) – A function (can be the __init__ method of a class).

Return type Mapping[str, Parameter]

get_class_defaults(*obj*)

Obtains the default values for the arguments of a class.

Parameters **obj** (Type) – The class.

Return type Iterator[Tuple[str, Any]]

Returns An iterator of 2-element tuples comprising the argument name and its default value.

get_function_defaults(*obj*)

Obtains the default values for the arguments of a function.

Parameters **obj** (Callable) – The function.

Return type Iterator[Tuple[str, Any]]

Returns An iterator of 2-element tuples comprising the argument name and its default value.

no_default_regex = re.compile('^:(No|no)[-_](default|Default) ')
Type: Pattern

Regular expression to match flags in docstrings to suppress default values.

process_default_format(*app*)
Prepare the formatting of the default value.

Parameters **app** (Sphinx) –

Return type None

process_docstring(*app*, *what*, *name*, *obj*, *options*, *lines*)
Add default values to the docstring.

Parameters

- **app** (Sphinx) – The Sphinx app.
- **what** (str) –
- **name** (str) – The name of the object being documented.
- **obj** (Any) – The object being documented.
- **options** (Dict[str, Any]) – Mapping of autodoc options to values.
- **lines** (List[str]) – List of strings representing the current contents of the docstring.

Return type None

setup(*app*)
Setup Sphinx Extension.

Parameters **app** (Sphinx) –

Return type Dict[str, Any]

Returns

CHAPTER

FOUR

DEMO

demo (*a*, *b=0.0*, *c=''*, *d=' '*, *e='hello world'*, *f=()*, *g=Decimal('12.34')*, *h=1234*, *i=None*, *j=None*, *k=None*, *l=''*, *m='\t'*, *n=...*)

Parameters

- **a** (`Any`) – No default.
- **b** (`float`) – A float. Default `0.0`.
- **c** (`str`) – An empty string. Default `''`.
- **d** (`str`) – A space (or a smiley face?). Default `'␣'`.
- **e** (`str`) – A string. Default `'hello␣world'`.
- **f** (`Tuple`) – A Tuple. Default `()`.
- **g** (`Decimal`) – A Decimal. Default `Decimal('12.34')`.
- **h** (`int`) – An int. Default `1234`.
- **i** (`Optional[List[str]]`) – Default None. Default `None`.
- **j** (`Optional[List[str]]`) – Overridden default. Default `[]`.
- **k** (`Optional[List[str]]`) – Suppressed default.
- **l** (`str`) – This is a really long description. It spans multiple lines. The quick brown fox jumps over the lazy dog. The default value should be added at the end regardless. Default `''`.
- **m** (`str`) – Tab. Default `'\t'`.
- **n** (`Any`) – This argument's default value is undefined.

The description for `d` lacked a fullstop at the end, but one was added automatically.

The default value of `n` was `Ellipsis`, but it wasn't shown.

The above example was created from the following Python code:

```
# stdlib
from decimal import Decimal  # pragma: no cover
from typing import Any, List, Optional, Tuple  # pragma: no cover

__all__ = ["demo"]  # pragma: no cover


def demo(
        a: Any,
```

(continues on next page)

(continued from previous page)

```
        b: float = 0.0,
        c: str = '',
        d: str = ' ',
        e: str = "hello world",
        f: Tuple = (),
        g: Decimal = Decimal("12.34"),
        h: int = 1234,
        i: Optional[List[str]] = None,
        j: Optional[List[str]] = None,
        k: Optional[List[str]] = None,
        l: str = '',
        m: str = "\t",
        n: Any = ...,
        ):  # pragma: no cover
    """

    :param a: No default.
    :param b: A float.
    :param c: An empty string.
    :param d: A space (or a smiley face?)
    :param e: A string.
    :param f: A Tuple.
    :param g: A Decimal.
    :param h: An int.
    :param i: Default None.
    :param j: Overridden default.
    :default j: ``[]``
    :param k: Suppressed default.
    :no-default k:
    :param l: This is a really long description.
        It spans multiple lines.
        The quick brown fox jumps over the lazy dog.
        The default value should be added at the end regardless.
    :param m: Tab.
    :param n: This argument's default value is undefined.

    The description for ``d`` lacked a fullstop at the end, but one was added␣
↪automatically.

    The default value of ``n`` was ``Ellipsis``, but it wasn't shown.
    """
```

The **PEP 484** type hints were added by sphinx-autodoc-typehints.

CHAPTER

FIVE

OVERVIEW

`default_values` uses tox to automate testing and packaging, and pre-commit to maintain code quality.

Install `pre-commit` with `pip` and install the git hook:

```
$ python -m pip install pre-commit
$ pre-commit install
```

CHAPTER

SIX

CODING STYLE

Yapf is used for code formatting, and isort is used to sort imports.

`yapf` and `isort` can be run manually via `pre-commit`:

```
$ pre-commit run yapf -a
$ pre-commit run isort -a
```

The complete autoformatting suite can be run with `pre-commit`:

```
$ pre-commit run -a
```

CHAPTER

SEVEN

AUTOMATED TESTS

Tests are run with `tox` and `pytest`. To run tests for a specific Python version, such as Python 3.6, run:

```
$ tox -e py36
```

To run tests for all Python versions, simply run:

```
$ tox
```

CHAPTER

EIGHT

TYPE ANNOTATIONS

Type annotations are checked using `mypy`. Run `mypy` using `tox`:

```
$ tox -e mypy
```

CHAPTER

NINE

BUILD DOCUMENTATION LOCALLY

The documentation is powered by Sphinx. A local copy of the documentation can be built with `tox`:

```
$ tox -e docs
```

CHAPTER

TEN

DOWNLOADING SOURCE CODE

The `default_values` source code is available on GitHub, and can be accessed from the following URL: https://github.com/domdfcoding/default_values"

If you have `git` installed, you can clone the repository with the following command:

```
$ git clone https://github.com/domdfcoding/default_values"
> Cloning into 'default_values'...
> remote: Enumerating objects: 47, done.
> remote: Counting objects: 100% (47/47), done.
> remote: Compressing objects: 100% (41/41), done.
> remote: Total 173 (delta 16), reused 17 (delta 6), pack-reused 126
> Receiving objects: 100% (173/173), 126.56 KiB | 678.00 KiB/s, done.
> Resolving deltas: 100% (66/66), done.
```

Alternatively, the code can be downloaded in a 'zip' file by clicking:
Clone or download –> Download Zip

10.1 Building from source

The recommended way to build `default_values` is to use tox:

```
$ tox -e build
```

The source and wheel distributions will be in the directory `dist`.

If you wish, you may also use pep517.build or another **PEP 517**-compatible build tool.

View the Function Index or browse the Source Code.

Browse the GitHub Repository

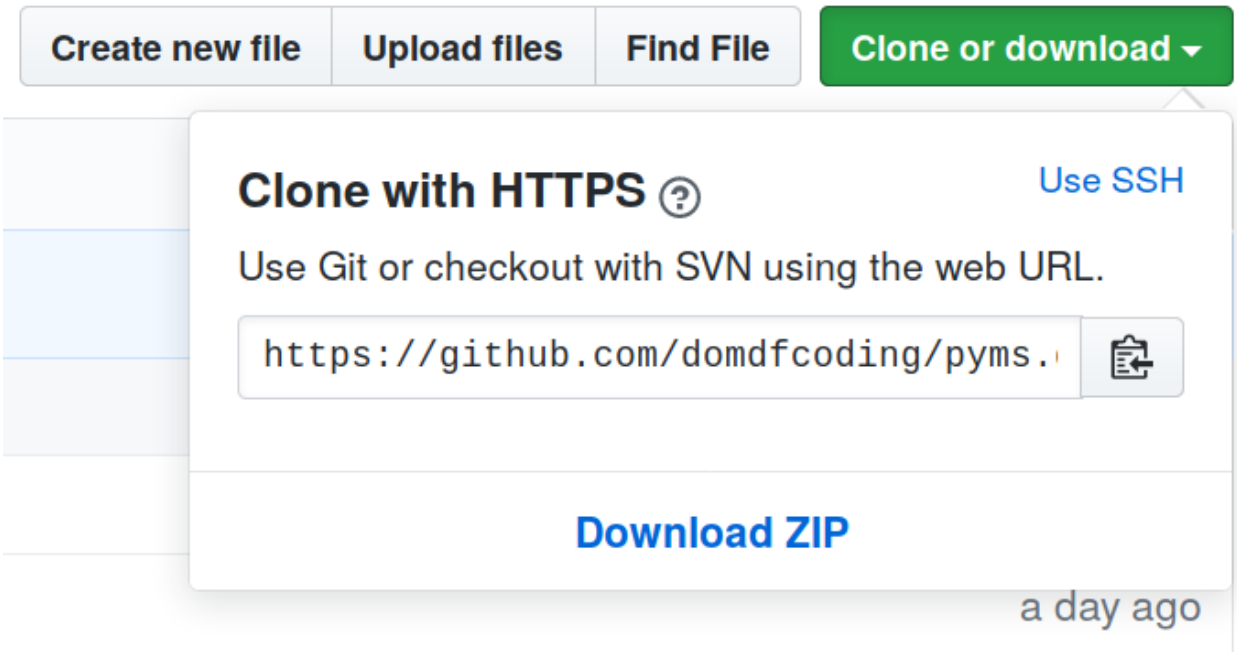


Fig. 1: Downloading a 'zip' file of the source code

PYTHON MODULE INDEX

S

INDEX