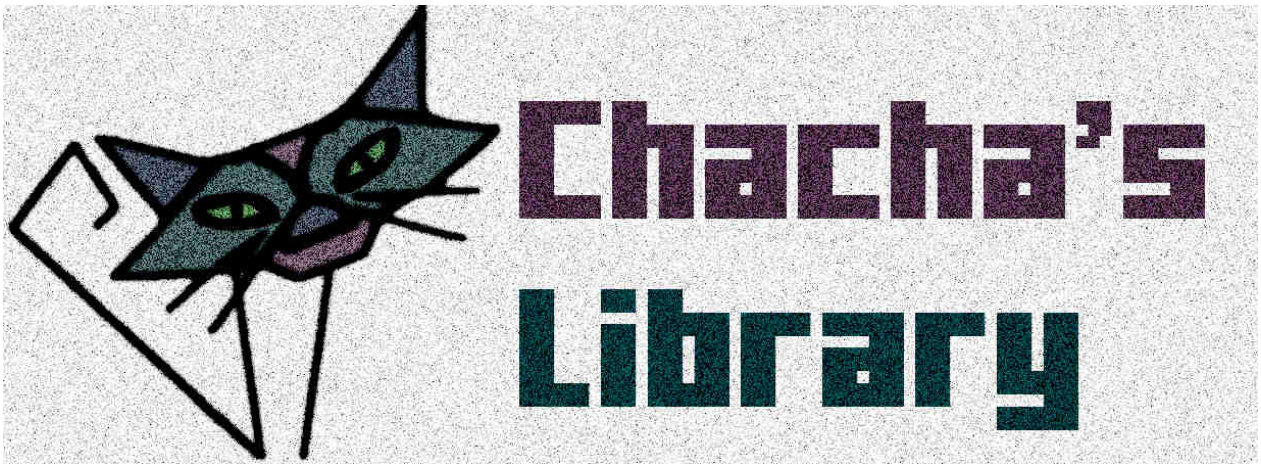


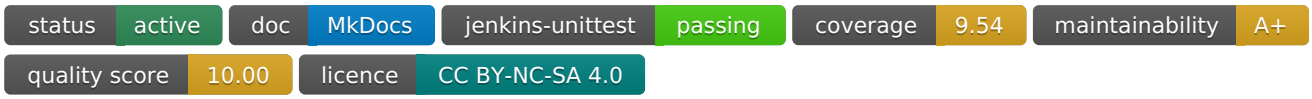
pygitversionhelper

User Manual

prune

Table of contents

1. pyGitVersionHelper 3
   1.1 Features 3
   1.2 Options 3
   1.3 Process 3
2. Usage 4
   2.1 Installation 4
   2.2 Import in your project 4
   2.3 Basic API 4
   2.4 Limitations 6
3. Reference 7
   3.1 Pygitversionhelper 7



1. pyGitVersionHelper

A tiny library to help versioning management of git python projects

Because a good developer is a lazy developer and version management in CI/CD can be very time consuming.

Checkout Latest Documentation.

1.1 Features

```
- list tags
- get last tag
- get last version
- get current version (bumped)
- convert / switch from SemVer to PEP440 (both ways)
- automatic version format detection (SemVer by default)
- get commit message history
```

1.2 Options

```
- restrict to same branch
- both SemVer and PEP440 support
- custom output format
- configurable default bump type: major, minor, patch or dev
- configurable default bump strategy: post, pre-patch, pre-minor, pre-major
- ignore non-version tag
- force version format
```

1.3 Process

```
- full CI/CD developpment: Gitea / Jenkins + few python libs (pytlint, coverage, unittest, mkdocs)
- documentation generated mkdocs and self-hosted
- CI/CD on Linux, manually tested in Windows environnement
```

2. Usage

2.1 Installation

From pypi repository (prefered):

```
/> python -m pip install pygitversionhelper
```

From downloaded .whl file:

```
/> python -m pip install pygitversionhelper-<VERSION>-py3-none-any.whl
```

From master git repository:

```
/> python -m pip install git+https://chacha.ddns.net/gitea/chacha/pygitversionhelper.git@master
```

2.2 Import in your project

Add this line on the top of your python script:

```
from pygitversionhelper import gitversionhelper
```

[optionnal] If you need to catch exception from this module:

```
from pygitversionhelper import gitversionhelperException
```

2.3 Basic API

All the API commands are static so it is not needed to create instantiate any object.

They are all executed in the current active directory.

One easy way to change directory:

```
import os
os.chdir("<YOUR DIRECTORY>")
```

2.3.1 sub-lib: repository

To check if a repository is dirty:

```
if gitversionhelper.repository.isDirty():
    print("repository is dirty")
```

2.3.2 sub-lib: tag

List all tags [default to taggerdate order]:

```
for tag in gitversionhelper.tag.getTags():
    print(f"found tag: {tag}")
```

List all tags [using git refname order]:

```
for tag in gitversionhelper.tag.getTags("v:refname"):
    print(f"found tag: {tag}")
```

Get the last tag:

```
print(f"most recent repository tag: {gitversionhelper.tag.getLastTag()}")
```

Get the last tag [only on same branch]:

```
print(f"most recent repository tag: {gitversionhelper.tag.getLastTag(same_branch=True)}")
```

Get the distance from HEAD to last tag:

```
print(f"number of commit since last tag: {gitversionhelper.tag.getDistanceFromTag()}")
```

Get the distance from HEAD to last tag [only on same branch]:

```
print(f"number of commit since last tag: {gitversionhelper.tag.getDistanceFromTag(same_branch=True)}")
```

2.3.3 sub-lib: version

Get the last found version in the repository [return MetaVersion object]:

```
print(f"most recent repository version: {gitversionhelper.version.getLastVersion()}")
```

Get the last found version in the repository [return formated string]:

```
print(f"most recent repository version: {gitversionhelper.version.getLastVersion(formated_output=True)}")
```

Others kwargs available to this function:

- version_std: string to force a version standard for rendering ["PEP440" or "SemVer"]
- same_branch: boolean to force searching on same branch
- ignore_unknown_tags: boolean to allow unknown tag to be ignored

Get the current version of the repository, automatically bump it if the last commit is not tagged [returns MetaVersion object]:

```
print(f"current repository version: {gitversionhelper.version.getCurrentVersion()}")
```

Or with formated output:

```
print(f"current repository version: {gitversionhelper.version.getCurrentVersion(formated_output=True)}")
```

Typical usage in CI/CD env:

```
bumped_version = gitversionhelper.version.getCurrentVersion(    formated_output=True,       \
                                                                version_std="PEP440",       \
                                                                bump_type="dev",            \
                                                                bump_dev_strategy="post")
print(f"current repository version: {bumped_version}")
```

kwargs available to this function:

- All same args as getLastVersion()
- bump_type: if version need to be pump, allow to configure next release update type: **major, minor, patch, dev**
- bump_dev_strategy: if bump_type is dev, allow to choose dev update strategy: **post, pre-patch, pre-minor, pre-major**

A version object can also be manually formated:

```
_version = gitversionhelper.tag.getCurrentVersion()
```

Then;

```
_version.doFormatVersion()
```

or;

```
gitversionhelper.version.doFormatVersion(_version)
```

kwargs available to this function:

- output_format: string to choose a rendering format ["Auto","PEP440" or "SemVer"]

2.4 Limitations

There is unfortunately some technical limitation :

- MultiThreading and async behavior is not tested / supported.
- Multiple tag on the same commit is not supported.
- Branch filter when searching for a version is only tested with -no-ff strategy

3. Reference

3.1 Pygitversionhelper

3.1.1 Gitversionhelper

This project try to help doing handy operations with git when dealing with project versioning and tags on python project - at leat for project using PEP440 or SemVer standards.

One requirement is to keep it compact and to not cover too much fancy features. This is the reason why it is one single file with nested classes.

This library is made for repository that uses tags as version. Support for non-version tags is optional and not well tested.

This module is the main project file, containing all the code.

Read the read me for more information. Check the unittest s for usage samples.

> **Note**
>
> Other Parameters are **kwargs

ATTRIBUTE	DESCRIPTION
`TKwargs`	Kwargs type definition for type hints

Attributes

TKwargs `module-attribute`

```
TKwargs = TypedDict('TKwargs', {'version_std': Optional[str], 'same_branch': Optional[bool], 'formated_output': Optional[bool], 'bump_type': Optional[str],
'bump_dev_strategy': Optional[str], 'merged_output': Optional[bool], 'ignore_unknown_tags': Optional[bool], 'output_format': Optional[str], 'ignore_merged':
Optional[bool]}, total=False)
```

Classes

gitversionhelper

main gitversionhelper class

Classes

commit

class containing methods focusing on commits

Classes
commitException

Bases: `gitversionhelperException`

generic commit exception

commitNotFound

Bases: `commitException`

tag not found exception

Functions

getFromTag `classmethod`

```
getFromTag(tag: str) -> str
```

retrieve a commit from repository associated to a tag

PARAMETER	DESCRIPTION
`tag`	tag of the commit **TYPE:** `str`

RETURNS	DESCRIPTION
`str`	the commit Id

getLast `classmethod`

```
getLast(**kwargs: Unpack[TKwargs]) -> str
```

retrieve last commit from repository

PARAMETER	DESCRIPTION
`kwargs/same_branch`	force searching only in the same branch **TYPE:** `bool`
`kwargs/ignore_merged`	ignore merged commits **TYPE:** `bool`

RETURNS	DESCRIPTION
`str`	the commit Id

getMessage `classmethod`

```
getMessage(commit_hash: str) -> str
```

retrieve a commit message from repository

PARAMETER	DESCRIPTION
`commit_hash`	id of the commit **TYPE:** `str`

RETURNS	DESCRIPTION
`str`	the commit message

getMessagesSinceTag `classmethod`

```
getMessagesSinceTag(tag: str, **kwargs: Unpack[TKwargs]) -> str | List[str]
```

Retrieve a commits message history from repository. Start from Latest found commit until the given tag.

PARAMETER	DESCRIPTION
`tag`	tag of the commit where search will stop **TYPE:** `str`

PARAMETER	DESCRIPTION
`kwargs/merged_output`	Output one single merged string **TYPE:** `bool`
`kwargs/same_branch`	Force searching only in the same branch **TYPE:** `bool`
`kwargs/ignore_merged`	ignore merged commits **TYPE:** `bool`

RETURNS	DESCRIPTION
`str | List[str]`	the commit message

repository

class containing methods focusing on repository

Classes
notAGitRepository

Bases: `repositoryException`

not-a-git-repository repository exception

repositoryDirty

Bases: `repositoryException`

dirty-repository repository exception

repositoryException

Bases: `gitversionhelperException`

generic repository exeption

Functions
isDirty `classmethod`

```
isDirty() -> bool
```

check if the repository is in dirty state

RETURNS	DESCRIPTION
`bool`	True if it is dirty

tag

class containing methods focusing on tags

Attributes
__validGitTagSort `class-attribute` `instance-attribute`

```
__validGitTagSort = ['', 'v:refname', '-v:refname', 'taggerdate', 'committerdate', '-taggerdate', '-committerdate']
```

Classes

moreThanOneTag

Bases: `tagException`

more-than-one-tag tag exception

tagException

Bases: `gitversionhelperException`

generic tag exception

tagNotFound

Bases: `tagException`

tag-not-found tag exception

Functions

getDistanceFromTag `classmethod`

```
getDistanceFromTag(tag: Optional[str] = None, **kwargs: Unpack[TKwargs]) -> int
```

retrieve the distance between Latest commit and tag in the repository

PARAMETER	DESCRIPTION
`tag`	reference tag, if None the most recent one will be used **TYPE:** `Optional[str]` **DEFAULT:** `None`

PARAMETER	DESCRIPTION
`kwargs/same_branch`	force searching only in the same branch **TYPE:** `bool`

RETURNS	DESCRIPTION
`int`	the tag

getLastTag `classmethod`

```
getLastTag(**kwargs: Unpack[TKwargs]) -> str
```

retrieve the Latest tag from a repository

PARAMETER	DESCRIPTION
`kwargs/same_branch`	force searching only in the same branch **TYPE:** `bool`

RETURNS	DESCRIPTION
`str`	the tag

getTags `classmethod`

```
getTags(Sort: str = 'taggerdate', **kwargs: Unpack[TKwargs]) -> List[str]
```

retrieve all tags from a repository

PARAMETER	DESCRIPTION
`Sort`	sorting constraints (git format) **TYPE:** `str` **DEFAULT:** `'taggerdate'`

PARAMETER	DESCRIPTION
`kwargs/same_branch`	force searching only in the same branch **TYPE:** `bool`

RETURNS	DESCRIPTION
`List[str]`	the tags list

unknownGITError

Bases: `gitversionhelperException`

unknown git error generic exception

unknownGITFatalError

Bases: `unknownGITError`

unknown fatal git error generic exception

version

class containing methods focusing on versions

Attributes

DefaultInputFormat `class-attribute` `instance-attribute`

```
DefaultInputFormat = 'Auto'
```

TVersionStds `class-attribute` `instance-attribute`

```
TVersionStds = TypedDict('TVersionStds', {'regex': str, 'regex_preversion_num': str, 'regex_build_num': str}, total=False)
```

VersionStds `class-attribute` `instance-attribute`

```
VersionStds: dict[str, TVersionStds] = {'SemVer': {'regex': '^(?P<major>0|[1-9]\\d*)\\.(?P<minor>0|[1-9]\\d*)\\.(?P<patch>0|[1-9]\\d*)(?:-(?P<prerelease>(?:0|[1-9]\\d*|\\d*[a-zA-Z-][0-9a-zA-Z-]*)(?:\\.(?:0|[1-9]\\d*|\\d*[a-zA-Z-][0-9a-zA-Z-]*))*))?(?:\\+(?P<buildmetadata>[0-9a-zA-Z-]+(?:\\.[0-9a-zA-Z-]+)*))?$', 'regex_preversion_num': '(?:\\.)(?P<num>(?:\\d+(?!\\w))+)', 'regex_build_num': '(?:\\.)(?P<num>(?:\\d+(?!\\w))+)'}, 'PEP440': {'regex': packaging_VERSION_PATTERN}}
```

__versionReseted `class-attribute` `instance-attribute`

```
__versionReseted = False
```

Classes

MetaVersion

```
MetaVersion(version_std: TVersionStd = 'Auto', major: int = 0, minor: int = 1, patch: int = 0, pre_count: int = 0, post_count: int = 0, raw: str = '0.1.0')
```

generic version object

Attributes

BumpDevStrategies `class-attribute` `instance-attribute`

```
BumpDevStrategies: set[TBumpDevStrategies] = {'post', 'pre-patch', 'pre-minor', 'pre-major'}
```

BumpTypes `class-attribute` `instance-attribute`

```
BumpTypes: set[TBumpTypes] = {'major', 'minor', 'patch', 'dev'}
```

DefaultBumpDevStrategy class-attribute instance-attribute

```
DefaultBumpDevStrategy: TBumpDevStrategies = 'post'
```

DefaultBumpType class-attribute instance-attribute

```
DefaultBumpType: TBumpTypes = 'patch'
```

TBumpDevStrategies class-attribute instance-attribute

```
TBumpDevStrategies = Literal['post', 'pre-patch', 'pre-minor', 'pre-major']
```

TBumpTypes class-attribute instance-attribute

```
TBumpTypes = Literal['major', 'minor', 'patch', 'dev']
```

TVersionStd class-attribute instance-attribute

```
TVersionStd = Literal['Auto', 'PEP440', 'SemVer']
```

major class-attribute instance-attribute

```
major: int = major
```

minor class-attribute instance-attribute

```
minor: int = minor
```

patch class-attribute instance-attribute

```
patch: int = patch
```

post_count class-attribute instance-attribute

```
post_count: int = post_count
```

pre_count class-attribute instance-attribute

```
pre_count: int = pre_count
```

raw class-attribute instance-attribute

```
raw: str = raw
```

version_std class-attribute instance-attribute

```
version_std: TVersionStd = version_std
```

Functions

bump

```
bump(amount: int = 1, **kwargs: Unpack[TKwargs]) -> gitversionhelper.version.MetaVersion | str
```

bump the version to the next one

PARAMETER	DESCRIPTION
`amount`	number of revision to bump **TYPE:** `int` **DEFAULT:** `1`

PARAMETER	DESCRIPTION
`kwargs/bump_type`	the given bump_type (can be None) **TYPE:** `str`
`kwargs/bump_dev_strategy`	the given bump_dev_strategy (can be None) **TYPE:** `str`

RETURNS	DESCRIPTION
`MetaVersion | str`	the bumped version

doFormatVersion

```
doFormatVersion(**kwargs: Unpack[TKwargs]) -> str
```

output a formated version string

PARAMETER	DESCRIPTION
`kwargs/output_format`	output format to render ("Auto" or "PEP440" or "SemVer")

RETURNS	DESCRIPTION
`str`	formated version string

PreAndPostVersionUnsupported

Bases: `versionException`

pre and post release can not be present at the same time

noValidVersion

Bases: `versionException`

no valid version found exception

versionException

Bases: `gitversionhelperException`

generic version exception

Functions

doFormatVersion `classmethod`

```
doFormatVersion(inputversion: MetaVersion, **kwargs: Unpack[TKwargs]) -> str
```

output a formated version string from a MetaVersion object

PARAMETER	DESCRIPTION
`kwargs/output_format`	output format to render ("Auto" or "PEP440" or "SemVer") **TYPE:** `str`

PARAMETER	DESCRIPTION
`inputversion`	version to be rendered **TYPE:** `MetaVersion`

RETURNS	DESCRIPTION
`str`	formated version string

getCurrentFormatedVersion `classmethod`

```
getCurrentFormatedVersion(**kwargs: Unpack[TKwargs]) -> str
```

same as getCurrentVersion() with formated_output kwarg forced activated.

PARAMETER	DESCRIPTION
`kwargs/version_std`	the given version_std (can be None) **TYPE:** `str`
`kwargs/same_branch`	force searching only in the same branch **TYPE:** `bool`
`kwargs/bump_type`	the given bump_type (can be None) **TYPE:** `str`
`kwargs/bump_dev_strategy`	the given bump_dev_strategy (can be None) **TYPE:** `str`
`kwargs/output_format`	output format to render ("Auto" or "PEP440" or "SemVer") **TYPE:** `str`

RETURNS	DESCRIPTION
`str`	the last version

getCurrentVersion `classmethod`

```
getCurrentVersion(**kwargs: Unpack[TKwargs]) -> gitversionhelper.version.MetaVersion | str
```

get the current version or bump depending of repository state.

PARAMETER	DESCRIPTION
`kwargs/version_std`	the given version_std (can be None) **TYPE:** `str`
`kwargs/same_branch`	force searching only in the same branch **TYPE:** `bool`
`kwargs/formated_output`	output a formated version string **TYPE:** `bool`
`kwargs/bump_type`	the given bump_type (can be None) **TYPE:** `str`
`kwargs/bump_dev_strategy`	the given bump_dev_strategy (can be None) **TYPE:** `str`
`kwargs/output_format`	output format to render ("Auto" or "PEP440" or "SemVer") **TYPE:** `str`

RETURNS	DESCRIPTION
`MetaVersion | str`	the last version

getLastVersion `classmethod`

```
getLastVersion(**kwargs: Unpack[TKwargs]) -> gitversionhelper.version.MetaVersion | str
```

get the last version from tags

PARAMETER	DESCRIPTION
`kwargs/version_std`	the given version_std (can be None) **TYPE:** `str`
`kwargs/same_branch`	force searching only in the same branch **TYPE:** `bool`
`kwargs/formated_output`	output a formated version string **TYPE:** `bool`
`kwargs/ignore_unknown_tags`	skip tags with not decoded versions (default to False) **TYPE:** `bool`

RETURNS	DESCRIPTION
`MetaVersion | str`	the last version in MetaVersion object or string

wrongArguments

Bases: `gitversionhelperException`

wrong argument generic exception

gitversionhelperException

Bases: `Exception`

general Module Exception