pychangelog Documentation

Release 1.0 (v1.0.0.0-x-dev)

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pychangelog is a python package.

CHAPTER 1

Documentation Contents:

1.1 README

pychangelog is a python package which provides some simple utilities for parsing and testing change logs, based on a simple standard format which is not really documented anywhere. But you can look at the changelog for this project to get an idea (in CHANGES.txt in the root of the source distribution).

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1.1.1 tl;dr

What?

Parses changelogs.

Install?

```
$ pip install pychangelog
```

Or, from source:

```
$ python setup.py install
```

Examples?

Example changelog (in 'CHANGES.txt'):

```
Pre Rel 4
    [M] Remove the doo_little function.
    [n] Add optional argument to frobnicate.
    [p] More bug fixes.

Rel 3   - v1.1.0.0 - 2013-05-20
    [p] Bug fix in doo_little()
    [n] Added the frobnicate function in order to frob objects
        more easily.
    [s] Fixed up docs on doo_little.
    [p] Bug fix in some private functions

Rel 2   - v1.0.0.1 - 2013-05-18
    [s] Documentation improvements.

Rel 1   - v1.0.0.0 - 2013-05-15
    * Initial public release.
    * Provides the doo_little() function, and little else.

>>> import pychangelog
>>> with open('CHANGES.txt', 'r') as f:
...     changelog = pychangelog.parse_plain_text(f)
...
>>> changelog
<pychangelog.ChangeLog object at 0x01F71A30>
>>> len(changelog)
4
>>> for release in changelog:
...     print repr(release)
...
<ReleaseInfo r1-1.0.0.0 (05/15/13)>
<ReleaseInfo r2-1.0.0.1 (05/18/13)>
<ReleaseInfo r3-1.1.0.0 (05/20/13)>
<ReleaseInfo r4*>
>>> r3 = changelog[2]
>>> r3
<ReleaseInfo r3-1.1.0.0 (05/20/13)>
>>> r3.release_num
3
>>> r3.version
(1, 1, 0, 0)
>>> r3.year
2013
>>> r3.date
datetime.date(2013, 5, 20)
>>> len(r3)
4
>>> for change in r3:
...     print change
...
[p] Bug fix in doo_little()
[n] Added the frobnicate function in order to frob objectsmore easily.
[s] Fixed up docs on doo_little.
[p] Bug fix in some private functions
>>> p = r3.patch
>>> len(p)
2
>>> for patch_change in p:
```

```
...     print patch_change
...
[p] Bug fix in doo_little()
[p] Bug fix in some private functions
>>> r3.append('[p] Another change I forgot to mention.')
>>> len(p)
3
>>> len(r3)
5
>>> for patch_change in p:
...     print patch_change
...
[p] Bug fix in doo_little()
[p] Bug fix in some private functions
[p] Another change I forgot to mention.
>>>
```

Dependencies?

pychangelog is developed against python version 2.7.

pychangelog also requires the docit package for its internals. If you install with **pip**, this will be handled automatically.

Some of the utilities in `pychangelog.tests` are optionally enhanced by the nose python package, but this is not strictly required. You can install nose with:

```
$ pip install nose
```

To build the sphinx docs from source (as is), you'll need the sphinx_rtd_theme:

```
$ pip install sphinx_rtd_theme
```

Docs?

- Read The Docs (.org)
- Python Hosted (.org)

1.1.2 Misc.

Contact Information

This project is currently hosted on bitbucket, at https://bitbucket.org/bmearns/pychangelog. The primary author is Brian Mearns, whom you can contact through bitbucket at https://bitbucket.org/bmearns.

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1.2 pychangelog module

The toplevel module for the pychangelog package.

class pychangelog.**ChangeLog**(**releases*)
Bases: _abcoll.Sequence

A ChangeLog object is simply a sequence of ReleaseInfo objects, in order form oldest to newest. There are rules used to validate the change log, for instance that each release must be numerically next after the previous, version numbers must increase correctly, full-releases cannot follow pre-releases, and dates must increase correctly.

Pass in the ReleaseInfo objects from oldest to newest.

__init__(**releases*)
Pass in the ReleaseInfo objects from oldest to newest.

last_release()
Returns the **index** in the sequence of the last **full** release (i.e., not a pre_release).

Returns None if no full releases are mentioned in the change log.

See also:

get_last_release to get the actul corresponding ReleaseInfo object.

get_last_release()
Returns the ReleaseIngo object for the last **full** release in the log (i.e., not a pre_release).

Returns None if no full releases are mentioned in the change log.

See also:

last_release to get just the index of the last release.

__len__()
Returns the number of releases in the change log.

__getitem__(*idx*)
Get the ReleaseInfo object at the specified index, where 0 is the oldest.

append(*release*)
Add a new ReleaseInfo object to the end (top) of the change log. This should be a release after the most recent.

__abstractmethods__ = frozenset([])

__module__ = 'pychangelog'

class pychangelog.**ReleaseInfo**(*release_num*, *version_numbers*, *year*, *month*, *day*, *pre_release=False*, **change_lines*)
Bases: _abcoll.Sequence

Encapsulates information about a single release, usually a member of a ChangeLog.

A ReleaseInfo object acts as a Sequence over the change-lines it mentions in the change log (i.e., the entries that describe the changes in the release from the previous.

Each such line must have a type: usually one of TYPE_MAJOR, TYPE_MINOR, TYPE_PATCH, or TYPE_SEMANTIC, specfiying the scope of the impact on the public interface. However, for the first release

(release #1), each line should instead be simple a `TYPE_STAR` line, since there is no public interface prior to the first release.

In addition to iterating over all the lines in the release, you can get a `View` ojbect which acts as a Sequence over just a particular type of line. One such View is created during initialization for each of the five types of lines, and you can get a handle to these View objects using the `major`, `minor`, `patch`, `semantic`, and `starred` properties.

TYPE_STAR = 0

TYPE_MAJOR = 1

TYPE_MINOR = 2

TYPE_PATCH = 3

TYPE_SEMANTIC = 4

__init__(*release_num*, *version_numbers*, *year*, *month*, *day*, *pre_release=False*, **change_lines*)

__str__()

__repr__()

class View(*obj*, *length*, *getitem*)

Bases: `_abcoll.Sequence`

__init__(*obj*, *length*, *getitem*)

__len__()

__getitem__(*idx*)

__abstractmethods__ = frozenset([])

__module__ = 'pychangelog'

ReleaseInfo.**major**

ReleaseInfo.**minor**

ReleaseInfo.**patch**

ReleaseInfo.**semantic**

ReleaseInfo.**starred**

ReleaseInfo.**major_count**()

ReleaseInfo.**get_major**(*idx*)

ReleaseInfo.**minor_count**()

ReleaseInfo.**get_minor**(*idx*)

ReleaseInfo.**patch_count**()

ReleaseInfo.**get_patch**(*idx*)

ReleaseInfo.**semantic_count**()

ReleaseInfo.**get_semantic**(*idx*)

ReleaseInfo.**starred_count**()

ReleaseInfo.**get_starred**(*idx*)

ReleaseInfo.**pre_release**

ReleaseInfo.**version**

ReleaseInfo.**year**

ReleaseInfo.**month**

ReleaseInfo.**day**

ReleaseInfo.**date**

ReleaseInfo.**release_num**

ReleaseInfo.**__len__**()

ReleaseInfo.**__getitem__**(*idx*)

ReleaseInfo.**iter**()

ReleaseInfo.**append**(*line*)

ReleaseInfo.**__abstractmethods__ = frozenset([])**

ReleaseInfo.**__module__ = 'pychangelog'**

classmethod ReleaseInfo.**parse_line**(*line*)

pychangelog.**parse_plain_text**(*istream*)
Parses a change log in plain-text format, with newst release at the beginning, and returns a ChangeLog object.

1.3 tests module

The pychangelog.tests module provides some helper functions and classes for testing your changelog, as well as standard version modules.

A standard version module is simply a module which you distribute as part of your package (usually called package_name.version) which includes as public members a certain set of standard attributes providing information about the version number of the package. Specifically, it provides the following attributes, which you can read more about in *this* package's version module:

- RELEASE
- MAJOR
- MINOR
- PATCH
- SEMANTIC
- SUFFIX
- YEAR
- MONTH
- DAY

1.3.1 Nosetests

Some of the code in this module is intended to work with the nose test utility for python. While none of it strictly depends on nose to function, the node python package will be imported and used to provide some additional convenience if it is available.

pychangelog.tests.**verify_version_module**(*changelog*, *version*)
Generically tests the contents of a standard version module against the contents of the given ChangeLog object, without any pre-existing assumptions about whether or not this is for a release or a development version.

The latest full release (i.e., not a pre-release) in the changelog should correspond to the version and date information in the version module. If there is not full release in the change log, then the version module should list major version 0 and release 0.

Additionally, if the change-log has no pre-release, then we should not be in development mode, meaning version.SUFFIX should be None. Otherwise, it should *not* be None.

pychangelog.tests.**verify_for_release**(*changelog*, *version*)
Tests a version module and change log for a release version. This calls verify_version_module to do the generic tests validating the version module against the changelog, and also tests that the version module and changelog are both correct for a release version.

pychangelog.tests.**verify_for_development**(*changelog*, *version*)
Tests a version module and change log for a release version. This calls verify_version_module to do the generic tests validating the version module against the changelog, and also tests that the version module and changelog are both correct for a release version.

class pychangelog.tests.**StandardVersionTests**(*methodName='runTest'*)
Bases: unittest.case.TestCase

This is a simple TestCase class that can be easily extended for unittesting to validate your changelog and version module. All you need to do is subclass this class and set the version_mod attribute to the module which contains your project's standard version attributes.

Alternatively, you can use the create factory method to create automatically create a new subclass with the specified version module.

See also:

- **get_path_to_changelog can be overridden to change the path from which** the changelog will be read.
- **get_changelog can be overridden to change the way in which the changelog** is actually loaded and parsed.
- **get_version_module can be overridden to change the way the version module** is fetched, instead of just getting it form the version_mod attribute.

Create an instance of the class that will use the named test method when executed. Raises a ValueError if the instance does not have a method with the specified name.

classmethod create(*version_mod*)
Create and return a new subclass of cls which sets the version_mod attribute to the given version module. This is an alternative to statically subclassing if for some reason that's easier for you.

version_mod = None
The version_mod attribute should be set on a subclass of StandardVersionTests to the module which implememnts your package's standard version attributes.

See also:

get_version_module

get_path_to_changelog()
Returns the filesystem path from which the changelog will be read by get_changelog.

get_changelog()
Called from setUp to get a ChangeLog object to test with. The default implementation opens the path indicates by get_path_to_changelog and parses it using parse_plain_text.

get_version_module()
Should returns a module which implements your projects standard version attributes. The default implementation returns the value of the version_mod attribute, which subclasses can easily set statically in the class definition.

If this attribute value is None, will raise a NotImplementedError. This is what will happen if you actually try to run an instance of this class directly, instead of subclassing it to override the value of the version_mod attribute.

setUp()
Test setup sets a change_log attribute on the instance to the value returned by get_changelog.

test_changelog()
Just does the setUp to make sure that the changelog can be parsed and constructed.

test_version_module()
Invokes verify_version_module.

test_for_release()
Invokes verify_for_release.

If nose is installed, this is tagged with the attribute release using the attrib plugin. To omit this test, you can invoke **nosetests** using the *--attr* parameter, for instance in BASH as:

```
$ nosetest --attr '!release'
```

or in DOS as:

```
> nosetests --attr !release
```

test_for_dev()
Invokes verify_for_development.

If nose is installed, this is tagged with the attribute dev using the attrib plugin. To omit this test, you can invoke **nosetests** using the *--attr* parameter, for instance in BASH as:

```
$ nosetest --attr '!dev'
```

or in DOS as:

```
> nosetests --attr !dev
```

1.4 version module

The version module provides version numbering for the entire package.

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1.4.1 Versioning

This packages uses a five part version number, plus an incremental release number. Either the version number or the release number can be used to identify a released version of the code.

Version Number

The version number is a four part dotted number, with an optional suffix on the end. Formally, a version number looks like:

```
version number  ::=   <Major>.<minor>[.<patch>[.<semantic>]][-[x-]<suffix>]
```

With each new released version of the code, exactly one of the four numbers will increase, and any numbers to its right will reset to 0.

The easiest way to understand version numbers is from the perspective of someone who has written *client code*: i.e., code that makes use of a particular version of the library. From this perspective, the version number indicates whether or not your client code can be expected to work with different versions of this package.

Major Version

The `<Major>` component is the **major version number**, and it describes *backward compatibility*. Going to a *newer* version of the package, your code should continue to work as long as the major version doesn't change.

The major version is changed only when something is removed from the public interface. For instance, if a function is no longer supported, the major version number would have to increase, because client code which relied on that function would no longer work.

The major version number can be accessed through the `MAJOR` member of this module.

Minor Version

The `<minor>` component is the **minor version number**, and it describes *forward compatibility*: Going to an *older* version of the package, your code will continue to work as long as the minor version doesn't change. (As before, your code will also work for *newer* versions, as long as the major version number hasn't changed).

The minor version number is changed only when something is added to the public interface, for instance a new function is added. Such a change maintains *backward* compatibility (as described above), but *loses forward compatibility*, because any client code written again this new version may not work with an older version.

The minor version number can be accessed through the `MINOR` member of this module.

Patch Version

The `<patch>` component is the **patch number**, and it describes changes that *do not affect compatibility*, either forwards or backwards. Your client code will continue to work with an older or newer version of the package as long as the major and minor version numbers are the same, regardless of the patch number.

Patch changes are code changes that do not effect the interface, for instance bug-fixes or performance enhancements. (although some bugs effect the interface and may therefore cause a higher version number to change).

The patch number can be accessed through the `PATCH` member of this module.

Semantic Version

The `<semantic>` component is the **semantic version number**, and it describes changes that do not affect how the code runs at all. Ths generally means that documentation or other auxilliary files included in the package have changed.

The semantic version number can be accessed through the `SEMANTIC` member of this module.

Compatibility Summary

The following table summarizes compatibility for a hypothetical client application built against released version `M.n.p.s`:

Component	Compatibile (all)	Incompatible (any)
Major	M	!= M
minor	>= n	< n
patch	any	
semantic	any	

Version Suffix

The `<suffic>` component is the **version suffix**, which is used only for non-released code. The suffix has one of the following forms:

```
version suffix  ::=   << empty >>
                      dev[-<rev>]
                      blood-<branch>[-<rev>]
```

The first form is an empty suffix, and is reserved for released (tagged) code only.

The second form, `"dev"`, is for non-released code in the *trunk*. This is the main line of development. Dev code may not be completely functional, and may even break the existing interface.

The third form, `"blood-..."`, if for non-released code on a *branch*. The `<branch>` component of this form should be the name of the branch. This is considered *bleeding-edge* code and may be highly unstable.

The optional <rev> component on both the second and third forms can be used to specify a specific revision for comitted development code. This must be an globally unambiguous identifier for the revision, for instance the change set id.

Development code

A non-empty version suffix indicates a *development version* of the code. In this case, the four version numbers remain *unchanged* until the code is released (in which case it is no longer development code, and the suffix is changed to empty).

In other words, anytime you see a non-empty version suffix, the version numbers shown refer to version from which the development code is derived. This is done because it is not generally known until release what the next released version number will be, since it is not known what types of changes will be included in it.

Specifying a version number

When specifying a version number, the major and minor version numbers should always be included. Additionally, all non-zero version numbers should be included, and any version number to the left of a non-zero version number should be included.

The suffix should always be included in the version number, with the indicated hyphen separating the semantic version number and the suffix. The only exception is for released code, in which case the suffix is empty and should be omitted, along with the joining hyphen.

The optional "x-" shown preceding the suffix in the version number is for compatibility with setup-tools so that versions compare correctly.

The above rules will unambiguously describe any released version of the package.

Interface Version

Because any change to the public interface requires a change to either the major or minor version numbers, the interface can be specified by a shortened two part version:

```
interface version  ::=   <Major>.<minor>
```

Note that this only applies for released versions: development versions may modify the public interface prior to changing the version numbers.

Release Number

The release number is a simple integer which increments by one for every public release of the code. It does not convey any information about compatibility with other versions, but it does provide a simple alternative to identifying released versions.

The release number should be written with a leading "r" or "rel". For instance, the first release was "r1".

For release code, the release number may be used in place of the suffix in the version number. This is optional because the version number and the release number are synonymous. However, including them both in the version string is a useful way to provide both pieces of information.

This alternative form of the version number is:

```
alt.  version number  ::=  <Major>.<minor>[.<patch>[.<semantic>]]-r<release>
```

1.4.2 Module Contents

pychangelog.version.**RELEASE = 1**
The current Release Number.

pychangelog.version.**MAJOR = 1**
The current *major version number*.

pychangelog.version.**MINOR = 0**
The current *minor version number*.

pychangelog.version.**PATCH = 0**
The current *patch version number*.

pychangelog.version.**SEMANTIC = 0**
The current *semantic version number*.

pychangelog.version.**SUFFIX = 'dev'**
The current Version Suffix.

Suffix options are `None`, `"dev"`, and `"blood-"`

- `None` means this is a released/tagged version.
- `"dev"` means this is a development version from the trunk/mainline.
- `"blood-"` means it's on a branch. After the dash, fill in the name of the branch.

Dev and blood versions are still numbered for the *previous* version, because we may not know what the next version will be until we're finished.

pychangelog.version.**COPYRIGHT = 2014**
The copyright year for the code.

pychangelog.version.**YEAR = 2014**
The year in which the code was released.

See also:

- MONTH
- DAY
- datestr

pychangelog.version.**MONTH = 5**
The month in which the code was released. This is 1 indexed, in [1, 12].

See also:

- YEAR
- DAY
- datestr
- MONTH_NAMES

pychangelog.version.**DAY = 18**
The day of the month on which the code was released.

See also:

- YEAR
- MONTH
- datestr

pychangelog.version.**MONTH_NAMES = ['Jan', 'Feb', 'Mar', 'Apr', 'May', 'Jun', 'Jul', 'Aug', 'Sep', 'Oct', 'Nov', 'Dec']**
A sequence giving the names of months, for use by datestr. Standard values are three-letter English-language abbreviations for the months of the Gregorian calendar.

pychangelog.version.**setuptools_string**()
Returns the version string used by setuptools. This takes one of two forms:

```
setuptools_string  ::=   <Major>.<minor>.<patch>.<semantic>-x-<suffix>
                         <Major>.<minor>.<patch>.<semantic>-r<release>
```

The first form is used for development code (i.e., when SUFFIX is not None), and the second it used for released code.

This is similar to string, except for the additional x- for development versions, which is used to ensure that setuptools sorts versions correctly. (specifically, so that released versions are earler than development versions which are derived from them).

pychangelog.version.**tag_name**()
Returns the tag name for the most recent release.

pychangelog.version.**short_string**()
Returns a string describing the Interface Version (i.e., <Major>.<minor>).

pychangelog.version.**string**()
Like setuptools_string, except leaves out the x- for development versions.

pychangelog.version.**datestr**()
Returns a simple string giving the date of release. Format of this string is unspecified, it intended to be human readable, not machine parsed. For machine processing, use the individual variables, as listed below.

See also:

- YEAR
- MONTH
- DAY
- MONTH_NAMES

1.5 LICENSE (GPLv3)

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  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
can do so.  This is fundamentally incompatible with the aim of
protecting users' freedom to change the software.  The systematic
pattern of such abuse occurs in the area of products for individuals to
use, which is precisely where it is most unacceptable.  Therefore, we
have designed this version of the GPL to prohibit the practice for those
products.  If such problems arise substantially in other domains, we
stand ready to extend this provision to those domains in future versions
of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents.
States should not allow patents to restrict development and use of
software on general-purpose computers, but in those that do, we wish to
```

```
avoid the special danger that patents applied to a free program could
make it effectively proprietary.  To prevent this, the GPL assures that
patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and
modification follow.

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  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of
works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this
License.  Each licensee is addressed as "you".  "Licensees" and
"recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work
in a fashion requiring copyright permission, other than the making of an
exact copy.  The resulting work is called a "modified version" of the
earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based
on the Program.

  To "propagate" a work means to do anything with it that, without
permission, would make you directly or secondarily liable for
infringement under applicable copyright law, except executing it on a
computer or modifying a private copy.  Propagation includes copying,
distribution (with or without modification), making available to the
public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other
parties to make or receive copies.  Mere interaction with a user through
a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices"
to the extent that it includes a convenient and prominently visible
feature that (1) displays an appropriate copyright notice, and (2)
tells the user that there is no warranty for the work (except to the
extent that warranties are provided), that licensees may convey the
work under this License, and how to view a copy of this License.  If
the interface presents a list of user commands or options, such as a
menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it.  "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.
```

```
  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form.  A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities.  However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work.  For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

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    more than your reasonable cost of physically performing this
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    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
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  A separable portion of the object code, whose source code is excluded
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code is in no case prevented or interfered with solely because
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CHAPTER 2

Indices and tables

- *genindex*
- *modindex*
- *search*

CHAPTER 3

Version

This documentation is for pychangelog 1.0 (v1.0.0.0-x-dev).

CHAPTER 4

Project Resources

- pychangelog project homepage (bitbucket)
- pychangelog on pypi
- **Online documentation:**
  - Read The Docs (.org)
  - Python Hosted (.org)

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