Epydoc 3.0.1

API Documentation

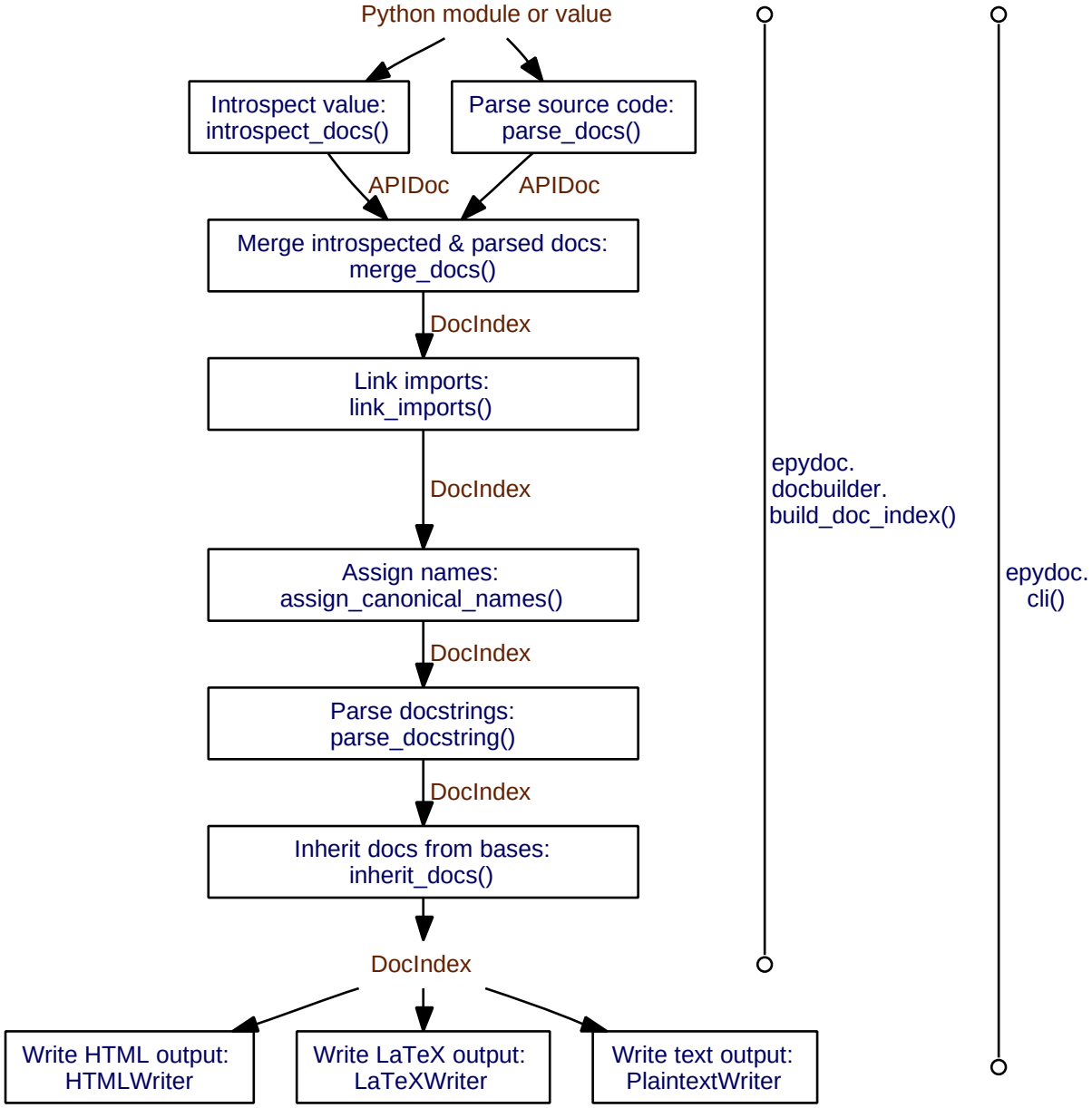
June 13, 2008

Contents

1 Package epydoc

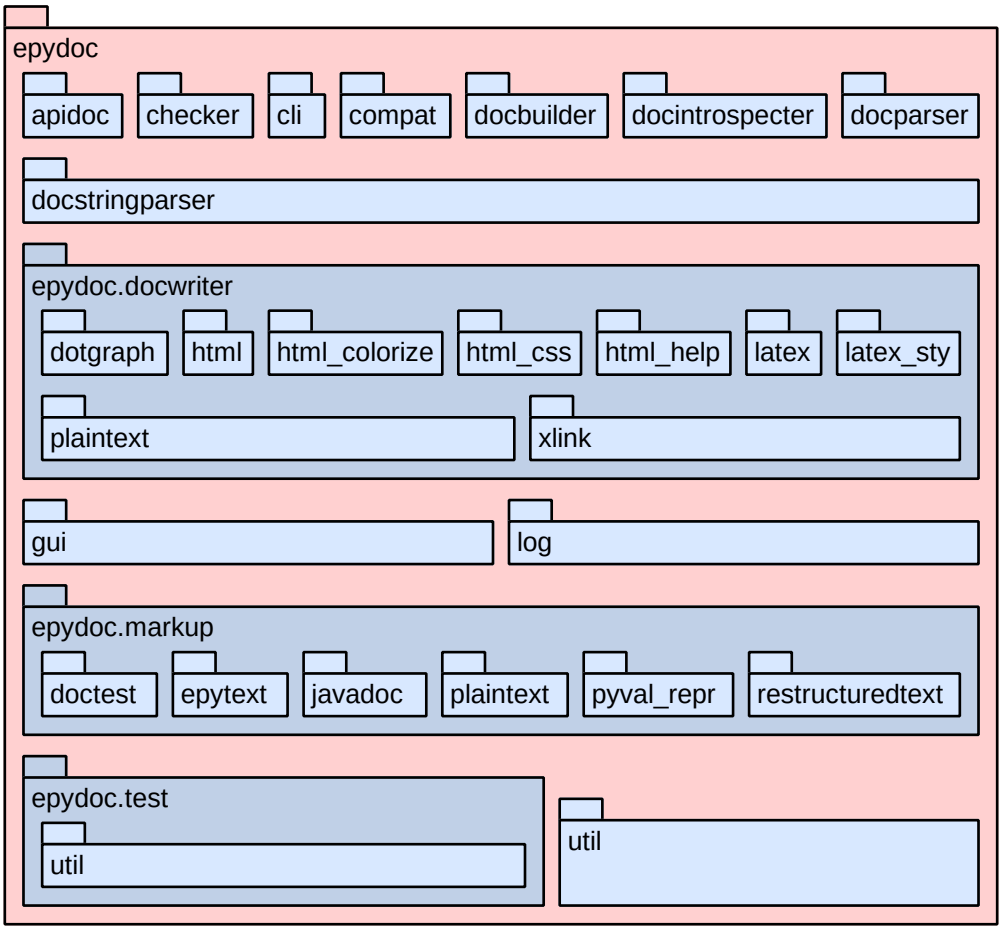
Automatic Python reference documentation generator. Epydoc processes Python modules and docstrings to generate formatted API documentation, in the form of HTML pages. Epydoc can be used via a command-line interface (`epydoc.cli`) and a graphical interface (`epydoc.gui`). Both interfaces let the user specify a set of modules or other objects to document, and produce API documentation using the following steps:

1. Extract basic information about the specified objects, and objects that are related to them (such as the values defined by a module). This can be done via introspection, parsing, or both:
   - *Introspection* imports the objects, and examines them directly using Python's introspection mechanisms.
   - *Parsing* reads the Python source files that define the objects, and extracts information from those files.
2. Combine and process that information.
   - **Merging**: Merge the information obtained from introspection & parsing each object into a single structure.
   - **Linking**: Replace any "pointers" that were created for imported variables with the documentation that they point to.
   - **Naming**: Assign unique *canonical names* to each of the specified objects, and any related objects.
   - **Docstrings**: Parse the docstrings of each of the specified objects.
   - **Inheritance**: Add variables to classes for any values that they inherit from their base classes.
3. Generate output. Output can be generated in a variety of formats:
   - An HTML webpage.
   - A LaTeX document (which can be rendered as a PDF file)
   - A plaintext description.



Package Organization

The epydoc package contains the following subpackages and modules:



The user interfaces are provided by the `gui` and `cli` modules. The `apidoc` module defines the basic data types used to record information about Python objects. The programmatic interface to epydoc is provided by `docbuilder`. Docstring markup parsing is handled by the `markup` package, and output generation is handled by the `docwriter` package. See the submodule list for more information about the submodules and subpackages.

Author: Edward Loper

Requires: Python 2.3+

Version: 3.0.1

See Also: The epydoc webpage, The epytext markup language manual

To Do:

- Create a better default top_page than trees.html.
- Fix trees.html to work when documenting non-top-level modules/packages
- Implement @include
- Optimize epytext
- More doctests

- When introspecting, limit how much introspection you do (eg, don't construct docs for imported modules' vars if it's not necessary)

Bug: UserDict.* is interpreted as imported .. why??

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- Edward Loper
- Bruce Mitchener
- Jeff O'Halloran
- Simon Pamies
- Christian Reis
- Daniele Varrazzo
- Jonathan Guyer

1.1 Variables

DEBUG

True if debugging is turned on.

Value: `True`

__author__

The primary author of eypdoc

Value: `'Edward Loper <edloper@gradient.cis.upenn.edu>'`

__license__

The license governing the use and distribution of epydoc

Value: `'IBM Open Source License'`

__url__

The URL for epydoc's homepage

Value: `'http://epydoc.sourceforge.net'`

__version__

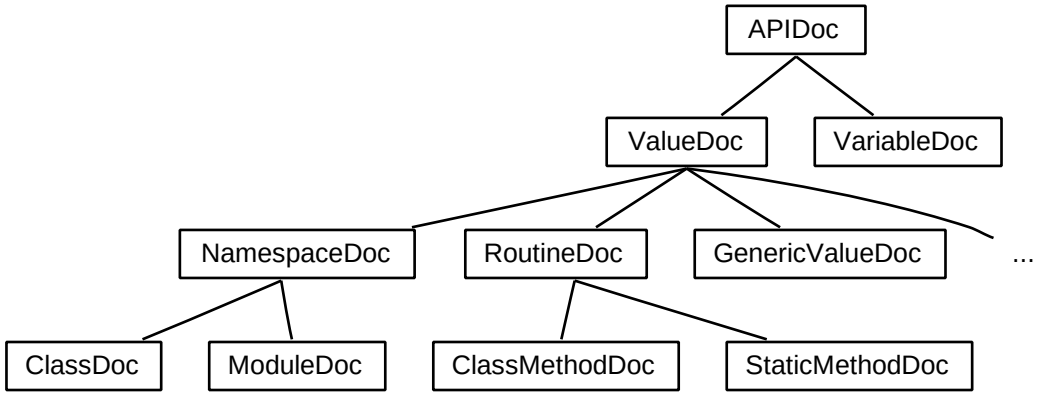
The version of epydoc

Value: `'3.0.1'`

2 Module epydoc.apidoc

Classes for encoding API documentation about Python programs. These classes are used as a common representation for combining information derived from introspection and from parsing.

The API documentation for a Python program is encoded using a graph of `APIDoc` objects, each of which encodes information about a single Python variable or value. `APIDoc` has two direct subclasses: `VariableDoc`, for documenting variables; and `ValueDoc`, for documenting values. The `ValueDoc` class is subclassed further, to define the different pieces of information that should be recorded about each value type:



The distinction between variables and values is intentionally made explicit. This allows us to distinguish information about a variable itself (such as whether it should be considered 'public' in its containing namespace) from information about the value it contains (such as what type the value has). This distinction is also important because several variables can contain the same value: each variable should be described by a separate `VariableDoc`; but we only need one `ValueDoc`, since they share a single value.

To Do: Add a cache to canonical name lookup?

2.1 Functions

reachable_valdocs(*root*, ***filters*)

Return a list of all `ValueDocs` that can be reached, directly or indirectly from the given root list of `ValueDocs`.

Parameters

`filters`: A set of filters that can be used to prevent `reachable_valdocs` from following specific link types when looking for `ValueDocs` that can be reached from the root set. See `APIDoc.apidoc_links` for a more complete description.

_flatten(*lst*, *out*=`None`)

Return a flattened version of `lst`.

pp_apidoc(*api_doc*, *doublespace*=0, *depth*=5, *exclude*=(), *include*=(), *backpointers*=None)

Parameters

`doublespace`: If true, then extra lines will be inserted to make the output more readable.

`depth`: The maximum depth that pp_apidoc will descend into descendent VarDocs. To put no limit on depth, use `depth=-1`.

`exclude`: A list of names of attributes whose values should not be shown.

`backpointers`: For internal use.

Return Value

A multiline pretty-printed string representation for the given `APIDoc`.

_pp_list(*api_doc*, *items*, *doublespace*, *depth*, *exclude*, *include*, *backpointers*, *is_last*)

_pp_dict(*api_doc*, *dict*, *doublespace*, *depth*, *exclude*, *include*, *backpointers*, *is_last*)

_pp_apidoc(*api_doc*, *val*, *doublespace*, *depth*, *exclude*, *include*, *backpointers*, *is_last*)

_pp_val(*api_doc*, *val*, *doublespace*, *depth*, *exclude*, *include*, *backpointers*)

2.2 Variables

UNKNOWN

A special value used to indicate that a given piece of information about an object is unknown. This is used as the default value for all instance variables.

Value: `_Sentinel('UNKNOWN')`

2.3 Class DottedName

A sequence of identifiers, separated by periods, used to name a Python variable, value, or argument. The identifiers that make up a dotted name can be accessed using the indexing operator:

```
>>> name = DottedName('epydoc', 'api_doc', 'DottedName')
>>> print name
epydoc.apidoc.DottedName
>>> name[1]
```

```
'api_doc'
```

2.3.1 Methods

__init__(*self*, **pieces*, ***options*)

Construct a new dotted name from the given sequence of pieces, each of which can be either a `string` or a `DottedName`. Each piece is divided into a sequence of identifiers, and these sequences are combined together (in order) to form the identifier sequence for the new `DottedName`. If a piece contains a string, then it is divided into substrings by splitting on periods, and each substring is checked to see if it is a valid identifier.

As an optimization, `pieces` may also contain a single tuple of values. In that case, that tuple will be used as the `DottedName`'s identifiers; it will *not* be checked to see if it's valid.

Parameters

`strict`: if true, then raise an `InvalidDottedName` if the given name is invalid.

__repr__(*self*)

__str__(*self*)

Return the dotted name as a string formed by joining its identifiers with periods:

```
>>> print DottedName('epydoc', 'api_doc', DottedName')
epydoc.apidoc.DottedName
```

__add__(*self*, *other*)

Return a new `DottedName` whose identifier sequence is formed by adding `other`'s identifier sequence to `self`'s.

__radd__(*self*, *other*)

Return a new `DottedName` whose identifier sequence is formed by adding `self`'s identifier sequence to `other`'s.

__getitem__(*self*, *i*)

Return the `i`th identifier in this `DottedName`. If `i` is a non-empty slice, then return a `DottedName` built from the identifiers selected by the slice. If `i` is an empty slice, return an empty list (since empty `DottedName`s are not valid).

__hash__(*self*)

__cmp__(*self*, *other*)

Compare this dotted name to `other`. Two dotted names are considered equal if their identifier subsequences are equal. Ordering between dotted names is lexicographic, in order of identifier from left to right.

__len__(*self*)

Return the number of identifiers in this dotted name.

container(*self*)

Return the DottedName formed by removing the last identifier from this dotted name's identifier sequence. If this dotted name only has one name in its identifier sequence, return `None` instead.

dominates(*self*, *name*, *strict*=`False`)

Return true if this dotted name is equal to a prefix of `name`. If `strict` is true, then also require that `self!=name`.

```
>>> DottedName('a.b').dominates(DottedName('a.b.c.d'))
True
```

contextualize(*self*, *context*)

If `self` and `context` share a common ancestor, then return a name for `self`, relative to that ancestor. If they do not share a common ancestor (or if `context` is `UNKNOWN`), then simply return `self`.

This is used to generate shorter versions of dotted names in cases where users can infer the intended target from the context.

Parameters

`context`: *(type=DottedName)*

Return Value

DottedName

2.3.2 Class Variables

UNREACHABLE

Value: `'??'`

_IDENTIFIER_RE

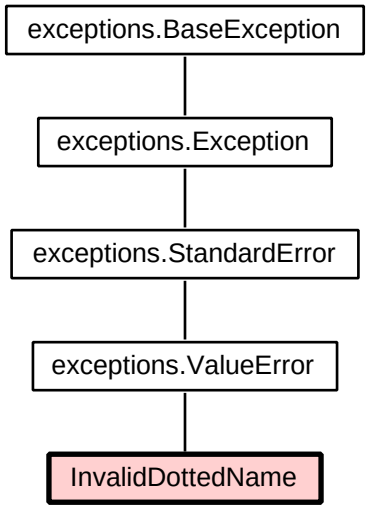
Value: `re.compile(r'(?x)(\?\?|(script-)?\w+\'?)(-\d+)?$')`

_ok_identifiers

A cache of identifier strings that have been checked against _IDENTIFIER_RE and found to be acceptable.

Value: `set(['??', '??-1', '??-10', '??-11', '??-12', '??-13', '?...`

2.4 Class DottedName.InvalidDottedName



An exception raised by the DottedName constructor when one of its arguments is not a valid dotted name.

2.4.1 Methods

Inherited from exceptions.ValueError: __init__(), __new__()

Inherited from exceptions.BaseException: __delattr__(), __getattribute__(), __getitem__(), __getslice__(), __reduce__(), __repr__(), __setattr__(), __setstate__(), __str__()

2.4.2 Properties

Inherited from exceptions.BaseException: args, message

2.5 Class _Sentinel

A unique value that won't compare equal to any other value. This class is used to create `UNKNOWN`.

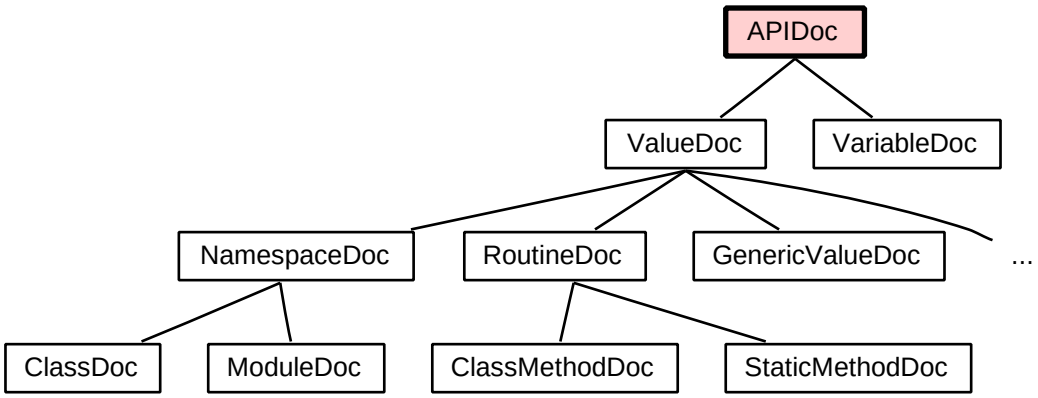
2.5.1 Methods

__init__(*self*, *name*)

__repr__(*self*)

__nonzero__(*self*)

2.6 Class APIDoc



Known Subclasses: epydoc.apidoc.ValueDoc, epydoc.apidoc.VariableDoc

API documentation information for a single element of a Python program. `APIDoc` itself is an abstract base class; subclasses are used to specify what information should be recorded about each type of program element. In particular, `APIDoc` has two direct subclasses, `VariableDoc` for documenting variables and `ValueDoc` for documenting values; and the `ValueDoc` class is subclassed further for different value types.

Each `APIDoc` subclass specifies the set of attributes that should be used to record information about the corresponding program element type. The default value for each attribute is stored in the class; these default values can then be overridden with instance variables. Most attributes use the special value `UNKNOWN` as their default value, to indicate that the correct value for that attribute has not yet been determined. This makes it easier to merge two `APIDoc` objects that are documenting the same element (in particular, to merge information about an element that was derived from parsing with information that was derived from introspection).

For all attributes with boolean values, use only the constants `True` and `False` to designate true and false. In particular, do *not* use other values that evaluate as true or false, such as `2` or `()`. This restriction makes it easier to handle `UNKNOWN` values. For example, to test if a boolean attribute is `True` or `UNKNOWN`, use '`attrib in (True, UNKNOWN)`' or '`attrib is not False`'.

Two `APIDoc` objects describing the same object can be *merged*, using the method `merge_and_overwrite(other)`. After two `APIDoc`s are merged, any changes to one will be reflected in the other. This is accomplished by setting the two `APIDoc` objects to use a shared instance dictionary. See the documentation for `merge_and_overwrite` for more information, and some important caveats about hashing.

2.6.1 Methods

__init__(*self*, ***kwargs*)

Construct a new `APIDoc` object. Keyword arguments may be used to initialize the new `APIDoc`'s attributes.

Raises

TypeError If a keyword argument is specified that does not correspond to a valid attribute for this (sub)class of `APIDoc`.

Overrides: object.__init__

_debug_setattr(*self*, *attr*, *val*)

Modify an `APIDoc`'s attribute. This is used when `epydoc.DEBUG` is true, to make sure we don't accidentally set any inappropriate attributes on `APIDoc` objects.

Raises

AttributeError If `attr` is not a valid attribute for this (sub)class of `APIDoc`. (`attr` is considered a valid attribute iff `self.__class__` defines an attribute with that name.)

__setattr__(*self*, *attr*, *val*)

Modify an `APIDoc`'s attribute. This is used when `epydoc.DEBUG` is true, to make sure we don't accidentally set any inappropriate attributes on `APIDoc` objects.

Raises

AttributeError If `attr` is not a valid attribute for this (sub)class of `APIDoc`. (`attr` is considered a valid attribute iff `self.__class__` defines an attribute with that name.)

Overrides: object.__setattr__

__repr__(*self*)

Overrides: object.__repr__ *(inherited documentation)*

pp(*self*, *doublespace*=0, *depth*=5, *exclude*=(), *include*=())

Return a pretty-printed string representation for the information contained in this `APIDoc`.

__str__(*self*, *doublespace*=0, *depth*=5, *exclude*=(), *include*=())

Return a pretty-printed string representation for the information contained in this `APIDoc`.

Overrides: object.__str__

specialize_to(*self*, *cls*)

Change `self`'s class to `cls`. `cls` must be a subclass of `self`'s current class. For example, if a generic `ValueDoc` was created for a value, and it is determined that the value is a routine, you can update its class with:

```
>>> valdoc.specialize_to(RoutineDoc)
```

__hash__(*self*)

Overrides: object.__hash__ *(inherited documentation)*

__cmp__(*self*, *other*)

is_detailed(*self*)

Does this object deserve a box with extra details?

Return Value
True if the object needs extra details, else False.*(type=bool)*

merge_and_overwrite(*self*, *other*, *ignore_hash_conflict*=False)

Combine `self` and `other` into a *merged object*, such that any changes made to one will affect the other. Any attributes that `other` had before merging will be discarded. This is accomplished by copying `self.__dict__` over `other.__dict__` and `self.__class__` over `other.__class__`.

Care must be taken with this method, since it modifies the hash value of `other`. To help avoid the problems that this can cause, `merge_and_overwrite` will raise an exception if `other` has ever been hashed, unless `ignore_hash_conflict` is True. Note that adding `other` to a dictionary, set, or similar data structure will implicitly cause it to be hashed. If you do set `ignore_hash_conflict` to True, then any existing data structures that rely on `other`'s hash staying constant may become corrupted.

Return Value
`self`

Raises
ValueError If `other` has ever been hashed.

apidoc_links(*self*, ***filters*)

Return a list of all `APIDoc`s that are directly linked from this `APIDoc` (i.e., are contained or pointed to by one or more of this `APIDoc`'s attributes.)

Keyword argument `filters` can be used to selectively exclude certain categories of attribute value. For example, using `includes=False` will exclude variables that were imported from other modules; and `subclasses=False` will exclude subclasses. The filter categories currently supported by epydoc are:

- `imports`: Imported variables.
- `packages`: Containing packages for modules.
- `submodules`: Contained submodules for packages.
- `bases`: Bases for classes.
- `subclasses`: Subclasses for classes.
- `variables`: All variables.
- `private`: Private variables.
- `overrides`: Points from class variables to the variables they override. This filter is False by default.

2.6.2 Class Variables

__has_been_hashed

True iff `self.__hash__()` has ever been called.

Value: `False`

__mergeset

The set of all `APIDoc` objects that have been merged with this `APIDoc` (using `merge_and_overwrite()`). Each `APIDoc` in this set shares a common instance dictionary (`__dict__`).

Value: `None`

2.6.3 Instance Variables

Docstrings

docstring

The documented item's docstring.

Type: `string or None`

Value: `_Sentinel('UNKNOWN')`

docstring_lineno

The line number on which the documented item's docstring begins.

Type: `int`

Value: `_Sentinel('UNKNOWN')`

Information Extracted from Docstrings

descr

A description of the documented item, extracted from its docstring.

Type: `ParsedDocstring`

Value: `_Sentinel('UNKNOWN')`

summary

A summary description of the documented item, extracted from its docstring.

Type: `ParsedDocstring`

Value: `_Sentinel('UNKNOWN')`

other_docs

A flag indicating if the entire `docstring` body (except tags if any) is entirely included in the `summary`.

Type: `bool`

Value: `_Sentinel('UNKNOWN')`

metadata

Metadata about the documented item, extracted from fields in its docstring. *Currently* this is encoded as a list of tuples `(field, arg, descr)`. But that may change.

Type: `(str, str, ParsedDocstring)`

Value: `_Sentinel('UNKNOWN')`

extra_docstring_fields

A list of new docstring fields tags that are defined by the documented item's docstring. These new field tags can be used by this item or by any item it contains.

Type: `DocstringField`

Value: `_Sentinel('UNKNOWN')`

Source Information

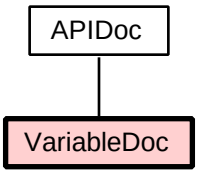
docs_extracted_by

Information about where the information contained by this `APIDoc` came from. Can be one of `'parser'`, `'introspector'`, or `'both'`.

Type: `str`

Value: `_Sentinel('UNKNOWN')`

2.7 Class VariableDoc



API documentation information about a single Python variable.

Note: The only time a `VariableDoc` will have its own docstring is if that variable was created using an assignment statement, and that assignment statement had a docstring-comment or was followed by a pseudo-docstring.

2.7.1 Methods

__init__(*self*, ***kwargs*)

Construct a new `APIDoc` object. Keyword arguments may be used to initialize the new `APIDoc`'s attributes.

Raises

TypeError If a keyword argument is specified that does not correspond to a valid attribute for this (sub)class of `APIDoc`.

Overrides: epydoc.apidoc.APIDoc.__init__ *(inherited documentation)*

__repr__(*self*)

Overrides: epydoc.apidoc.APIDoc.__repr__

_get_defining_module(*self*)

apidoc_links(*self*, ***filters*)

Return a list of all `APIDoc`s that are directly linked from this `APIDoc` (i.e., are contained or pointed to by one or more of this `APIDoc`'s attributes.)

Keyword argument `filters` can be used to selectively exclude certain categories of attribute value. For example, using `includes=False` will exclude variables that were imported from other modules; and `subclasses=False` will exclude subclasses. The filter categories currently supported by epydoc are:

- `imports`: Imported variables.
- `packages`: Containing packages for modules.
- `submodules`: Contained submodules for packages.
- `bases`: Bases for classes.
- `subclasses`: Subclasses for classes.
- `variables`: All variables.
- `private`: Private variables.
- `overrides`: Points from class variables to the variables they override. This filter is False by default.

Overrides: epydoc.apidoc.APIDoc.apidoc_links *(inherited documentation)*

is_detailed(*self*)

Does this object deserve a box with extra details?

Return Value

True if the object needs extra details, else False.*(type=`bool`)*

Overrides: epydoc.apidoc.APIDoc.is_detailed *(inherited documentation)*

Inherited from epydoc.apidoc.APIDoc*(Section 2.6, p. 19)*: __cmp__(), __hash__(), __setattr__(), __str__(), _debug_setattr(), merge_and_overwrite(), pp(), specialize_to()

2.7.2 Properties

defining_module

A read-only property that can be used to get the variable's defining module. This is defined as the defining module of the variable's container.

Get: epydoc.apidoc.VariableDoc._get_defining_module()

2.7.3 Instance Variables

Basic Variable Information

name

The name of this variable in its containing namespace.

Type: `str`

Value: `_Sentinel('UNKNOWN')`

container

API documentation for the namespace that contains this variable.

Type: `ValueDoc`

Value: `_Sentinel('UNKNOWN')`

canonical_name

A dotted name that serves as a unique identifier for this `VariableDoc`. It should be formed by concatenating the `VariableDoc`'s `container` with its `name`.

Type: `DottedName`

Value: `_Sentinel('UNKNOWN')`

value

The API documentation for this variable's value.

Type: `ValueDoc`

Value: `_Sentinel('UNKNOWN')`

Information Extracted from Docstrings

type_descr

A description of the variable's expected type, extracted from its docstring.

Type: `ParsedDocstring`

Value: `_Sentinel('UNKNOWN')`

Inherited from epydoc.apidoc.APIDoc*(Section 2.6, p. 19)*: descr, extra_docstring_fields, metadata, other_docs, summary

Information about Imported Variables

imported_from

The fully qualified dotted name of the variable that this variable's value was imported from. This attribute should only be defined if `is_instvar` is true.

Type: `DottedName`

Value: `_Sentinel('UNKNOWN')`

is_imported

Was this variable's value imported from another module? (Exception: variables that are explicitly included in __all__ have `is_imported` set to `False`, even if they are in fact imported.)

Type: `bool`

Value: `_Sentinel('UNKNOWN')`

Information about Variables in Classes

is_instvar

If true, then this variable is an instance variable; if false, then this variable is a class variable. This attribute should only be defined if the containing namespace is a class

Type: `bool`

Value: `_Sentinel('UNKNOWN')`

overrides

The API documentation for the variable that is overridden by this variable. This attribute should only be defined if the containing namespace is a class.

Type: `VariableDoc`

Value: `_Sentinel('UNKNOWN')`

Flags

is_alias

Is this variable an alias for another variable with the same value? If so, then this variable will be dispreferred when assigning canonical names.

Type: `bool`

Value: `_Sentinel('UNKNOWN')`

is_public

Is this variable part of its container's public API?

Type: `bool`

Value: `_Sentinel('UNKNOWN')`

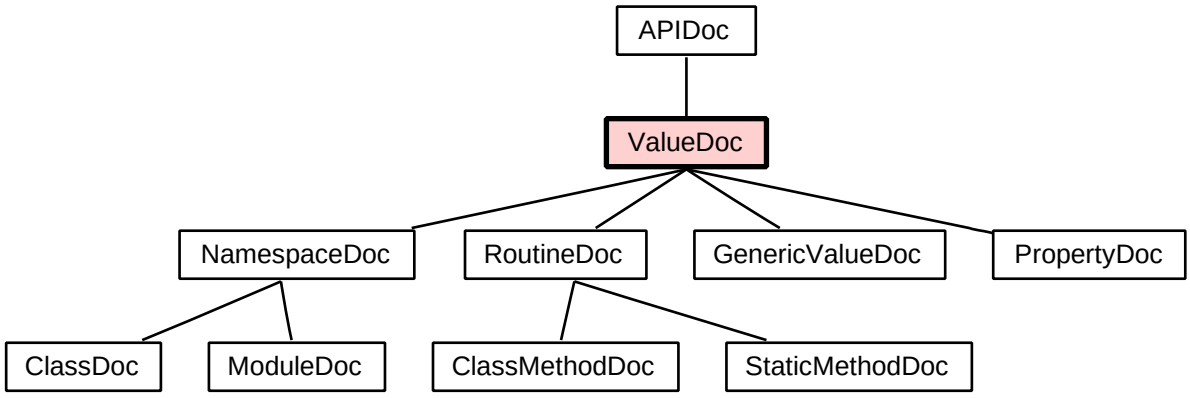
Docstrings

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: docstring, docstring_lineno

Source Information

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: docs_extracted_by

2.8 Class ValueDoc



Known Subclasses: epydoc.apidoc.NamespaceDoc, epydoc.apidoc.RoutineDoc, epydoc.apidoc.GenericValueDoc, epydoc.apidoc.PropertyDoc

API documentation information about a single Python value.

2.8.1 Methods

__repr__(*self*)

Overrides: epydoc.apidoc.APIDoc.__repr__

__setstate__(*self*, *state*)

__getstate__(*self*)

State serializer for the pickle module. This is necessary because sometimes the `pyval` attribute contains an un-pickleable value.

apidoc_links(*self*, ***filters*)

Return a list of all `APIDoc`s that are directly linked from this `APIDoc` (i.e., are contained or pointed to by one or more of this `APIDoc`'s attributes.)

Keyword argument `filters` can be used to selectively exclude certain categories of attribute value. For example, using `includes=False` will exclude variables that were imported from other modules; and `subclasses=False` will exclude subclasses. The filter categories currently supported by epydoc are:

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- `variables`: All variables.
- `private`: Private variables.
- `overrides`: Points from class variables to the variables they override. This filter is False by default.

Overrides: epydoc.apidoc.APIDoc.apidoc_links *(inherited documentation)*

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: __cmp__(), __hash__(), __init__(), __setattr__(), __str__(), _debug_setattr(), is_detailed(), merge_and_overwrite(), pp(), specialize_to()

Value Representation

pyval_repr(*self*)

Return a formatted representation of the Python object described by this `ValueDoc`. This representation may include data from introspection or parsing, and is authorative as 'the best way to represent a Python value.' Any lines that go beyond `REPR_LINELEN` characters will be wrapped; and if the representation as a whole takes more than `REPR_MAXLINES` lines, then it will be truncated (with an ellipsis marker). This function will never return `UNKNOWN` or `None`.

Return Value

ColorizedPyvalRepr

summary_pyval_repr(*self*, *max_len*=None)

Return a single-line formatted representation of the Python object described by this `ValueDoc`. This representation may include data from introspection or parsing, and is authorative as 'the best way to summarize a Python value.' If the representation takes more then `SUMMARY_REPR_LINELEN` characters, then it will be truncated (with an ellipsis marker). This function will never return `UNKNOWN` or `None`.

Return Value

ColorizedPyvalRepr

2.8.2 Class Variables

Value Representation

REPR_MAXLINES

The maximum number of lines of text that should be generated by `pyval_repr()`. If the string representation does not fit in this number of lines, an ellpsis marker (...) will be placed at the end of the formatted representation.

Value: `5`

REPR_LINELEN

The maximum number of characters for lines of text that should be generated by `pyval_repr()`. Any lines that exceed this number of characters will be line-wrappped; The ↩ symbol will be used to indicate that the line was wrapped.

Value: `75`

SUMMARY_REPR_LINELEN

The maximum number of characters for the single-line text representation generated by `summary_pyval_repr()`. If the value's representation does not fit in this number of characters, an ellipsis marker (...) will be placed at the end of the formatted representation.

Value: `75`

REPR_MIN_SCORE

The minimum score that a value representation based on `pyval` should have in order to be used instead of `parse_repr` as the canonical representation for this `ValueDoc`'s value.

Value: `0`

2.8.3 Instance Variables

canonical_name

A dotted name that serves as a unique identifier for this `ValueDoc`'s value. If the value can be reached using a single sequence of identifiers (given the appropriate imports), then that sequence of identifiers is used as its canonical name. If the value can be reached by multiple sequences of identifiers (i.e., if it has multiple aliases), then one of those sequences of identifiers is used. If the value cannot be reached by any sequence of identifiers (e.g., if it was used as a base class but then its variable was deleted), then its canonical name will start with `'??'`. If necessary, a dash followed by a number will be appended to the end of a non-reachable identifier to make its canonical name unique.

When possible, canonical names are chosen when new `ValueDoc`s are created. However, this is sometimes not possible. If a canonical name can not be chosen when the `ValueDoc` is created, then one will be assigned by `assign_canonical_names()`.

Type: `DottedName`

Value: `_Sentinel('UNKNOWN')`

toktree

This is currently used to extract values from __all__, etc, in the docparser module; maybe I should specialize process_assignment and extract it there? Although, for __all__, it's not clear where I'd put the value, since I just use it to set private/public/imported attribs on other vars (that might not exist yet at the time.)

Value: `_Sentinel('UNKNOWN')`

Value Representation

pyval

A pointer to the actual Python object described by this `ValueDoc`. This is used to display the value (e.g., when describing a variable.) Use `pyval_repr()` to generate a plaintext string representation of this value.

Type: `Python object`

Value: `_Sentinel('UNKNOWN')`

parse_repr

A text representation of this value, extracted from parsing its source code. This representation may not accurately reflect the actual value (e.g., if the value was modified after the initial assignment).

Type: `unicode`

Value: `_Sentinel('UNKNOWN')`

Context

defining_module

The documentation for the module that defines this value. This is used, e.g., to lookup the appropriate markup language for docstrings. For a `ModuleDoc`, `defining_module` should be `self`.

Type: `ModuleDoc`

Value: `_Sentinel('UNKNOWN')`

Information about Imported Variables

proxy_for

If `proxy_for` is not None, then this value was imported from another file. `proxy_for` is the dotted name of the variable that this value was imported from. If that variable is documented, then its `value` may contain more complete API documentation about this value. The `proxy_for` attribute is used by the source code parser to link imported values to their source values (in particular, for base classes). When possible, these proxy `ValueDoc`s are replaced by the imported value's `ValueDoc` by `link_imports()`.

Type: `DottedName`

Value: `None`

Docstrings

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: docstring, docstring_lineno

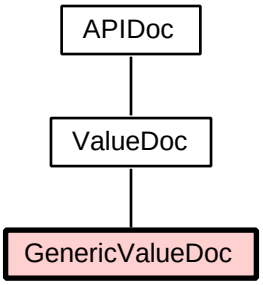
Information Extracted from Docstrings

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: descr, extra_docstring_fields, metadata, other_docs, summary

Source Information

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: docs_extracted_by

2.9 Class GenericValueDoc



API documentation about a 'generic' value, i.e., one that does not have its own docstring or any information other than its value and parse representation. `GenericValueDoc`s do not get assigned cannonical names.

2.9.1 Methods

is_detailed(*self*)

Does this object deserve a box with extra details?

Return Value
True if the object needs extra details, else False.*(type=`bool`)*

Overrides: epydoc.apidoc.APIDoc.is_detailed *(inherited documentation)*

Inherited from epydoc.apidoc.ValueDoc*(Section 2.8, p. 27)*: __getstate__(), __repr__(), __setstate__(), apidoc_links()

Inherited from epydoc.apidoc.APIDoc*(Section 2.6, p. 19)*: __cmp__(), __hash__(), __init__(), __setattr__(), __str__(), _debug_setattr(), merge_and_overwrite(), pp(), specialize_to()

Value Representation

Inherited from epydoc.apidoc.ValueDoc*(Section 2.8, p. 27)*: pyval_repr(), summary_pyval_repr()

2.9.2 Class Variables

canonical_name

A dotted name that serves as a unique identifier for this `ValueDoc`'s value. If the value can be reached using a single sequence of identifiers (given the appropriate imports), then that sequence of identifiers is used as its canonical name. If the value can be reached by multiple sequences of identifiers (i.e., if it has multiple aliases), then one of those sequences of identifiers is used. If the value cannot be reached by any sequence of identifiers (e.g., if it was used as a base class but then its variable was deleted), then its canonical name will start with `'??'`. If necessary, a dash followed by a number will be appended to the end of a non-reachable identifier to make its canonical name unique.

When possible, canonical names are chosen when new `ValueDoc`s are created. However, this is sometimes not possible. If a canonical name can not be chosen when the `ValueDoc` is created, then one will be assigned by `assign_canonical_names()`.

Type: `DottedName`

Value: `None`

Value Representation

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: REPR_LINELEN, REPR_MAXLINES, REPR_MIN_SCORE, SUMMARY_REPR_LINELEN

2.9.3 Instance Variables

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: toktree

Value Representation

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: parse_repr, pyval

Context

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: defining_module

Information about Imported Variables

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: proxy_for

Docstrings

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: docstring, docstring_lineno

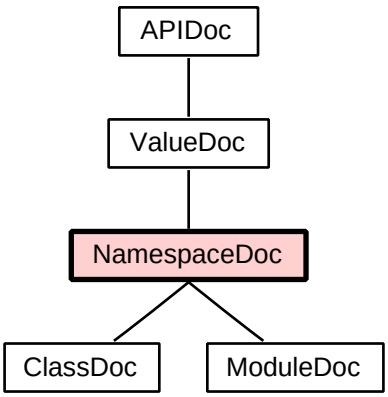
Information Extracted from Docstrings

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: descr, extra_docstring_fields, metadata, other_docs, summary

Source Information

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: docs_extracted_by

2.10 Class NamespaceDoc



Known Subclasses: epydoc.apidoc.ClassDoc, epydoc.apidoc.ModuleDoc

API documentation information about a singe Python namespace value. (I.e., a module or a class).

2.10.1 Methods

__init__(*self*, ***kwargs*)

Construct a new `APIDoc` object. Keyword arguments may be used to initialize the new `APIDoc`'s attributes.

Raises

TypeError If a keyword argument is specified that does not correspond to a valid attribute for this (sub)class of `APIDoc`.

Overrides: epydoc.apidoc.APIDoc.__init__ *(inherited documentation)*

is_detailed(*self*)

Does this object deserve a box with extra details?

Return Value

True if the object needs extra details, else False. *(type=`bool`)*

Overrides: epydoc.apidoc.APIDoc.is_detailed *(inherited documentation)*

apidoc_links(*self*, ***filters*)

Return a list of all `APIDocs` that are directly linked from this `APIDoc` (i.e., are contained or pointed to by one or more of this `APIDoc`'s attributes.)

Keyword argument `filters` can be used to selectively exclude certain categories of attribute value. For example, using `includes=False` will exclude variables that were imported from other modules; and `subclasses=False` will exclude subclasses. The filter categories currently supported by epydoc are:

- `imports`: Imported variables.
- `packages`: Containing packages for modules.
- `submodules`: Contained submodules for packages.
- `bases`: Bases for classes.
- `subclasses`: Subclasses for classes.
- `variables`: All variables.
- `private`: Private variables.
- `overrides`: Points from class variables to the variables they override. This filter is False by default.

Overrides: epydoc.apidoc.APIDoc.apidoc_links *(inherited documentation)*

init_sorted_variables(*self*)

Initialize the `sorted_variables` attribute, based on the `variables` and `sort_spec` attributes. This should usually be called after all variables have been added to `variables` (including any inherited variables for classes).

init_variable_groups(*self*)

Initialize the `variable_groups` attribute, based on the `sorted_variables` and `group_specs` attributes.

group_names(*self*)

Return a list of the group names defined by this namespace, in the order in which they should be listed, with no duplicates.

_init_grouping(*self*, *elts*)

Divide a given a list of APIDoc objects into groups, as specified by `self.group_specs`.

Parameters

`elts`: A list of tuples `(name, apidoc)`.

Return Value

A list of tuples `(groupname, elts)`, where `groupname` is the name of a group and `elts` is a list of `APIDocs` in that group. The first tuple has name ■, and is used for ungrouped elements. The remaining tuples are listed in the order that they appear in `self.group_specs`. Within each tuple, the elements are listed in the order that they appear in `api_docs`.

report_unused_groups(*self*)

Issue a warning for any @group items that were not used by `_init_grouping()`.

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: __getstate__(), __repr__(), __setstate__()

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: __cmp__(), __hash__(), __setattr__(), __str__(), _debug_setattr(), merge_and_overwrite(), pp(), specialize_to()

Value Representation

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: pyval_repr(), summary_pyval_repr()

2.10.2 Class Variables

Value Representation

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: REPR_LINELEN, REPR_MAXLINES, REPR_MIN_SCORE, SUMMARY_REPR_LINELEN

2.10.3 Instance Variables

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: canonical_name, toktree

Information about Variables

variables

The contents of the namespace, encoded as a dictionary mapping from identifiers to `VariableDocs`. This dictionary contains all names defined by the namespace, including imported variables, aliased variables, and variables inherited from base classes (once `inherit_docs()` has added them).

Type: `dict from string to VariableDoc`

Value: `_Sentinel('UNKNOWN')`

sorted_variables

A list of all variables defined by this namespace, in sorted order. The elements of this list should exactly match the values of `variables`. The sort order for this list is defined as follows:

- Any variables listed in a `@sort` docstring field are listed in the order given by that field.
- These are followed by any variables that were found while parsing the source code, in the order in which they were defined in the source file.
- Finally, any remaining variables are listed in alphabetical order.

Type: `list of VariableDoc`

Value: `_Sentinel('UNKNOWN')`

sort_spec

The order in which variables should be listed, encoded as a list of names. Any variables whose names are not included in this list should be listed alphabetically, following the variables that are included.

Type: `list of str`

Value: `_Sentinel('UNKNOWN')`

group_specs

The groups that are defined by this namespace's docstrings. `group_specs` is encoded as an ordered list of tuples `(group_name, elt_names)`, where `group_name` is the

name of a group and `elt_names` is a list of element names in that group. (An element can be a variable or a submodule.) A '*' in an element name will match any string of characters.

Type: `list of (str,list)`

Value: `_Sentinel('UNKNOWN')`

variable_groups

A dictionary specifying what group each variable belongs to. The keys of the dictionary are group names, and the values are lists of `VariableDocs`. The order that groups should be listed in should be taken from `group_specs`.

Type: `dict from str to list of VariableDoc`

Value: `_Sentinel('UNKNOWN')`

Value Representation

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: parse_repr, pyval

Context

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: defining_module

Information about Imported Variables

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: proxy_for

Docstrings

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: docstring, docstring_lineno

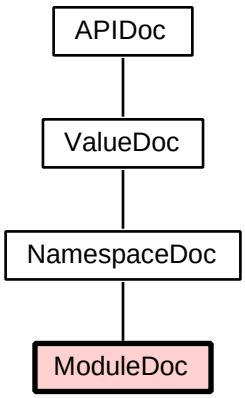
Information Extracted from Docstrings

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: descr, extra_docstring_fields, metadata, other_docs, summary

Source Information

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: docs_extracted_by

2.11 Class ModuleDoc



API documentation information about a single module.

2.11.1 Methods

apidoc_links(*self*, ***filters*)

Return a list of all `APIDoc`s that are directly linked from this `APIDoc` (i.e., are contained or pointed to by one or more of this `APIDoc`'s attributes.)

Keyword argument `filters` can be used to selectively exclude certain categories of attribute value. For example, using `includes=False` will exclude variables that were imported from other modules; and `subclasses=False` will exclude subclasses. The filter categories currently supported by epydoc are:

- `imports`: Imported variables.
- `packages`: Containing packages for modules.
- `submodules`: Contained submodules for packages.
- `bases`: Bases for classes.
- `subclasses`: Subclasses for classes.
- `variables`: All variables.
- `private`: Private variables.
- `overrides`: Points from class variables to the variables they override. This filter is False by default.

Overrides: epydoc.apidoc.APIDoc.apidoc_links *(inherited documentation)*

init_submodule_groups(*self*)

Initialize the `submodule_groups` attribute, based on the `submodules` and `group_specs` attributes.

select_variables(*self*, *group*=None, *value_type*=None, *public*=None, *imported*=None, *detailed*=None)

Return a specified subset of this module's `sorted_variables` list. If `value_type` is given, then only return variables whose values have the specified type. If `group` is given, then only return variables that belong to the specified group.

Parameters

`value_type`: A string specifying the value type for which variables should be returned. Valid values are:

- 'class' - variables whose values are classes or types.
- 'function' - variables whose values are functions.
- 'other' - variables whose values are not classes, exceptions, types, or functions.

(type=`string`)

`group`: The name of the group for which variables should be returned. A complete list of the groups defined by this `ModuleDoc` is available in the `group_names` instance variable. The first element of this list is always the special group name ■, which is used for variables that do not belong to any group. *(type=`string`)*

`detailed`: If True (False), return only the variables deserving (not deserving) a detailed informative box. If `None`, don't care. *(type=`bool`)*

Requires: The `sorted_variables`, `variable_groups`, and `submodule_groups` attributes must be initialized before this method can be used. See `init_sorted_variables()`, `init_variable_groups()`, and `init_submodule_groups()`.

Inherited from epydoc.apidoc.NamespaceDoc *(Section 2.10, p. 34)*: __init__(), _init_grouping(), group_names(), init_sorted_variables(), init_variable_groups(), is_detailed(), report_unused_groups()

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: __getstate__(), __repr__(), __setstate__()

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: __cmp__(), __hash__(), __setattr__(), __str__(), _debug_setattr(), merge_and_overwrite(), pp(), specialize_to()

Value Representation

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: pyval_repr(), summary_pyval_repr()

2.11.2 Class Variables

Value Representation

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: REPR_LINELEN, REPR_MAXLINES, REPR_MIN_SCORE, SUMMARY_REPR_LINELEN

2.11.3 Instance Variables

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: canonical_name, toktree

Information about the Module

filename

The name of the file that defines the module.

Type: `string`

Value: `_Sentinel('UNKNOWN')`

docformat

The markup language used by docstrings in this module.

Type: `string`

Value: `_Sentinel('UNKNOWN')`

Information about Submodules

submodules

Modules contained by this module (if this module is a package). (Note: on rare occasions, a module may have a submodule that is shadowed by a variable with the same name.)

Type: `list of ModuleDoc`

Value: `_Sentinel('UNKNOWN')`

submodule_groups

A dictionary specifying what group each submodule belongs to. The keys of the dictionary are group names, and the values are lists of `ModuleDoc`s. The order that groups should be listed in should be taken from `group_specs`.

Type: `dict from str to list of ModuleDoc`

Value: `_Sentinel('UNKNOWN')`

Information about Packages

package

API documentation for the module's containing package.

Type: `ModuleDoc`

Value: `_Sentinel('UNKNOWN')`

is_package

True if this `ModuleDoc` describes a package.

Type: `bool`

Value: `_Sentinel('UNKNOWN')`

path

If this `ModuleDoc` describes a package, then `path` contains a list of directories that constitute its path (i.e., the value of its `__path__` variable).

Type: `list of str`

Value: `_Sentinel('UNKNOWN')`

Information about Imported Variables

imports

A list of the source names of variables imported into this module. This is used to construct import graphs.

Type: `list of DottedName`

Value: `_Sentinel('UNKNOWN')`

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: proxy_for

Information about Variables

Inherited from epydoc.apidoc.NamespaceDoc *(Section 2.10, p. 34)*: group_specs, sort_spec, sorted_variables, variable_groups, variables

Value Representation

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: parse_repr, pyval

Context

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: defining_module

Docstrings

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: docstring, docstring_lineno

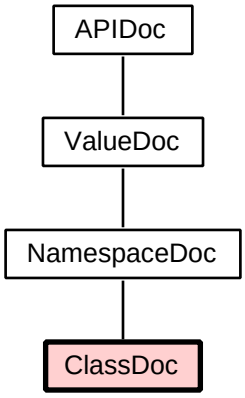
Information Extracted from Docstrings

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: descr, extra_docstring_fields, metadata, other_docs, summary

Source Information

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: docs_extracted_by

2.12 Class ClassDoc



API documentation information about a single class.

2.12.1 Methods

apidoc_links(*self*, ***filters*)

Return a list of all `APIDocs` that are directly linked from this `APIDoc` (i.e., are contained or pointed to by one or more of this `APIDoc`'s attributes.)

Keyword argument `filters` can be used to selectively exclude certain categories of attribute value. For example, using `includes=False` will exclude variables that were imported from other modules; and `subclasses=False` will exclude subclasses. The filter categories currently supported by epydoc are:

- `imports`: Imported variables.
- `packages`: Containing packages for modules.
- `submodules`: Contained submodules for packages.
- `bases`: Bases for classes.
- `subclasses`: Subclasses for classes.
- `variables`: All variables.
- `private`: Private variables.
- `overrides`: Points from class variables to the variables they override. This filter is False by default.

Overrides: epydoc.apidoc.APIDoc.apidoc_links *(inherited documentation)*

is_type(*self*)

is_exception(*self*)

is_newstyle_class(*self*)

mro(*self*, *warn_about_bad_bases*=`False`)

_dfs_bases(*self*, *mro*, *seen*, *warn_about_bad_bases*)

_c3_mro(*self*, *warn_about_bad_bases*)

Compute the class precedence list (mro) according to C3.

See Also: *http://www.python.org/2.3/mro.html*

_report_bad_base(*self*, *base*)

_c3_merge(*self*, *seqs*)

Helper function for `_c3_mro`.

select_variables(*self*, *group*=None, *value_type*=None, *inherited*=None, *public*=None, *imported*=None, *detailed*=None)

Return a specified subset of this class's `sorted_variables` list. If `value_type` is given, then only return variables whose values have the specified type. If `group` is given, then only return variables that belong to the specified group. If `inherited` is True, then only return inherited variables; if `inherited` is False, then only return local variables.

Parameters

`value_type`: A string specifying the value type for which variables should be returned. Valid values are:

- 'instancemethod' - variables whose values are instance methods.
- 'classmethod' - variables whose values are class methods.
- 'staticmethod' - variables whose values are static methods.
- 'properties' - variables whose values are properties.
- 'class' - variables whose values are nested classes (including exceptions and types).
- 'instancevariable' - instance variables. This includes any variables that are explicitly marked as instance variables with docstring fields; and variables with docstrings that are initialized in the constructor.
- 'classvariable' - class variables. This includes any variables that are not included in any of the above categories.

*(type=**string**)*

`group`: The name of the group for which variables should be returned. A complete list of the groups defined by this `ClassDoc` is available in the `group_names` instance variable. The first element of this list is always the special group name ■, which is used for variables that do not belong to any group. *(type=**string**)*

`inherited`: If `None`, then return both inherited and local variables; if `True`, then return only inherited variables; if `False`, then return only local variables.

`detailed`: If True (False), return only the variables deserving (not deserving) a detailed informative box. If `None`, don't care. *(type=**bool**)*

Requires: The `sorted_variables` and `variable_groups` attributes must be initialized before this method can be used. See `init_sorted_variables()` and `init_variable_groups()`.

Inherited from epydoc.apidoc.NamespaceDoc *(Section 2.10, p. 34)*: __init__(), _init_grouping(), group_names(), init_sorted_variables(), init_variable_groups(), is_detailed(), report_unused_groups()

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: __getstate__(), __repr__(), __setstate__()

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: __cmp__(), __hash__(), __setattr__(), __str__(), _debug_setattr(), merge_and_overwrite(), pp(), specialize_to()

Value Representation

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: pyval_repr(), summary_pyval_repr()

2.12.2 Class Variables

Information about Metaclasses

metaclass

Value: `_Sentinel('UNKNOWN')`

Value Representation

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: REPR_LINELEN, REPR_MAXLINES, REPR_MIN_SCORE, SUMMARY_REPR_LINELEN

2.12.3 Instance Variables

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: canonical_name, toktree

Information about Base Classes

bases

API documentation for the class's base classes.

Type: `list of ClassDoc`

Value: `_Sentinel('UNKNOWN')`

Information about Subclasses

subclasses

API documentation for the class's known subclasses.

Type: `list of ClassDoc`

Value: `_Sentinel('UNKNOWN')`

Information about Variables

Inherited from epydoc.apidoc.NamespaceDoc *(Section 2.10, p. 34)*: group_specs, sort_spec, sorted_variables, variable_groups, variables

Value Representation

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: parse_repr, pyval

Context

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: defining_module

Information about Imported Variables

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: proxy_for

Docstrings

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: docstring, docstring_lineno

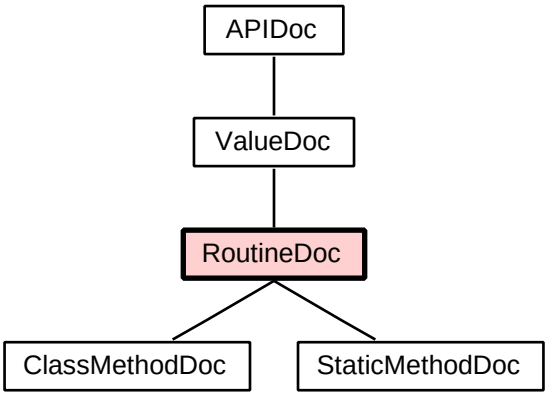
Information Extracted from Docstrings

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: descr, extra_docstring_fields, metadata, other_docs, summary

Source Information

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: docs_extracted_by

2.13 Class RoutineDoc



Known Subclasses: epydoc.apidoc.ClassMethodDoc, epydoc.apidoc.StaticMethodDoc

API documentation information about a single routine.

2.13.1 Methods

is_detailed(*self*)

Does this object deserve a box with extra details?

Return Value

True if the object needs extra details, else False.*(type=`bool`)*

Overrides: epydoc.apidoc.APIDoc.is_detailed *(inherited documentation)*

all_args(*self*)

Return Value

A list of the names of all arguments (positional, vararg, and keyword), in order. If a positional argument consists of a tuple of names, then that tuple will be flattened.

Inherited from epydoc.apidoc.ValueDoc*(Section 2.8, p. 27)*: __getstate__(), __repr__(), __setstate__(), apidoc_links()

Inherited from epydoc.apidoc.APIDoc*(Section 2.6, p. 19)*: __cmp__(), __hash__(), __init__(), __setattr__(), __str__(), _debug_setattr(), merge_and_overwrite(), pp(), specialize_to()

Value Representation

Inherited from epydoc.apidoc.ValueDoc*(Section 2.8, p. 27)*: pyval_repr(), summary_pyval_repr()

2.13.2 Class Variables

Value Representation

Inherited from epydoc.apidoc.ValueDoc*(Section 2.8, p. 27)*: REPR_LINELEN, REPR_MAXLINES, REPR_MIN_SCORE, SUMMARY_REPR_LINELEN

2.13.3 Instance Variables

callgraph_uid

`DotGraph`.uid of the call graph for the function.

Type: `str`

Value: `None`

Inherited from epydoc.apidoc.ValueDoc*(Section 2.8, p. 27)*: canonical_name, toktree

Signature

posargs

The names of the routine's positional arguments. If an argument list contains "unpacking" arguments, then their names will be specified using nested lists. E.g., if a function's argument list is `((x1,y1), (x2,y2))`, then posargs will be `[['x1','y1'], ['x2','y2']]`.

Type: `list`

Value: `_Sentinel('UNKNOWN')`

posarg_defaults

API documentation for the positional arguments' default values. This list has the same length as `posargs`, and each element of `posarg_defaults` describes the corresponding argument in `posargs`. For positional arguments with no default, `posargs_defaults` will contain None.

Type: `list of ValueDoc or None`

Value: `_Sentinel('UNKNOWN')`

vararg

The name of the routine's vararg argument, or `None` if it has no vararg argument.

Type: `string or None`

Value: `_Sentinel('UNKNOWN')`

kwarg

The name of the routine's keyword argument, or `None` if it has no keyword argument.

Type: `string or None`

Value: `_Sentinel('UNKNOWN')`

lineno

The line number of the first line of the function's signature. For Python functions, this is equal to `func.func_code.co_firstlineno`. The first line of a file is considered line 1.

Type: `int`

Value: `_Sentinel('UNKNOWN')`

Decorators

decorators

A list of names of decorators that were applied to this routine, in the order that they are listed in the source code. (I.e., in the reverse of the order that they were applied in.)

Type: `list of string`

Value: `_Sentinel('UNKNOWN')`

Information Extracted from Docstrings

arg_descrs

A list of descriptions of the routine's arguments. Each element of this list is a tuple `(args, descr)`, where `args` is a list of argument names; and `descr` is a `ParsedDocstring` describing the argument(s) specified by `arg`.

Type: `list`

Value: `_Sentinel('UNKNOWN')`

arg_types

Descriptions of the expected types for the routine's arguments, encoded as a dictionary mapping from argument names to type descriptions.

Type: `dict from string to ParsedDocstring`

Value: `_Sentinel('UNKNOWN')`

return_descr

A description of the value returned by this routine.

Type: `ParsedDocstring`

Value: `_Sentinel('UNKNOWN')`

return_type

A description of expected type for the value returned by this routine.

Type: `ParsedDocstring`

Value: `_Sentinel('UNKNOWN')`

exception_descrs

A list of descriptions of exceptions that the routine might raise. Each element of this list is a tuple `(exc, descr)`, where `exc` is a string contianing the exception name; and `descr` is a `ParsedDocstring` describing the circumstances under which the exception specified by `exc` is raised.

Type: `list`

Value: `_Sentinel('UNKNOWN')`

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: descr, extra_docstring_fields, metadata, other_docs, summary

Value Representation

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: parse_repr, pyval

Context

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: defining_module

Information about Imported Variables

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: proxy_for

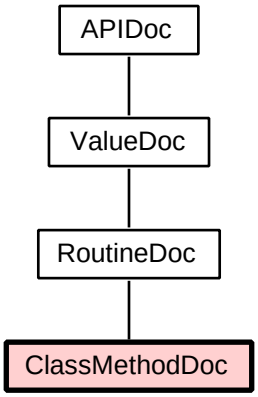
Docstrings

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: docstring, docstring_lineno

Source Information

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: docs_extracted_by

2.14 Class ClassMethodDoc



2.14.1 Methods

Inherited from epydoc.apidoc.RoutineDoc *(Section 2.13, p. 47)*: all_args(), is_detailed()

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: __getstate__(), __repr__(), __setstate__(), apidoc_links()

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: __cmp__(), __hash__(), __init__(), __setattr__(), __str__(), _debug_setattr(), merge_and_overwrite(), pp(), specialize_to()

Value Representation

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: pyval_repr(), summary_pyval_repr()

2.14.2 Class Variables

Value Representation

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: REPR_LINELEN, REPR_MAXLINES, REPR_MIN_SCORE, SUMMARY_REPR_LINELEN

2.14.3 Instance Variables

Inherited from epydoc.apidoc.RoutineDoc *(Section 2.13, p. 47)*: callgraph_uid

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: canonical_name, toktree

Signature

Inherited from epydoc.apidoc.RoutineDoc *(Section 2.13, p. 47)*: kwarg, lineno, posarg_defaults, posargs, vararg

Decorators

Inherited from epydoc.apidoc.RoutineDoc *(Section 2.13, p. 47)*: decorators

Information Extracted from Docstrings

Inherited from epydoc.apidoc.RoutineDoc *(Section 2.13, p. 47)*: arg_descrs, arg_types, exception_descrs, return_descr, return_type

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: descr, extra_docstring_fields, metadata, other_docs, summary

Value Representation

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: parse_repr, pyval

Context

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: defining_module

Information about Imported Variables

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: proxy_for

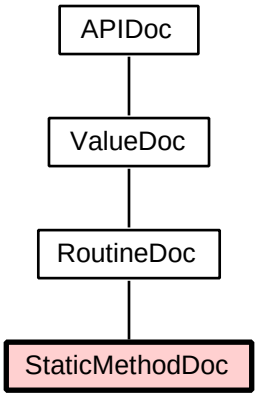
Docstrings

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: docstring, docstring_lineno

Source Information

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: docs_extracted_by

2.15 Class StaticMethodDoc



2.15.1 Methods

Inherited from epydoc.apidoc.RoutineDoc *(Section 2.13, p. 47)*: all_args(), is_detailed()

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: __getstate__(), __repr__(), __setstate__(), apidoc_links()

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: __cmp__(), __hash__(), __init__(), __setattr__(), __str__(), _debug_setattr(), merge_and_overwrite(), pp(), specialize_to()

Value Representation

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: pyval_repr(), summary_pyval_repr()

2.15.2 Class Variables

Value Representation

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: REPR_LINELEN, REPR_MAXLINES, REPR_MIN_SCORE, SUMMARY_REPR_LINELEN

2.15.3 Instance Variables

Inherited from epydoc.apidoc.RoutineDoc *(Section 2.13, p. 47)*: callgraph_uid

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: canonical_name, toktree

Signature

Inherited from epydoc.apidoc.RoutineDoc *(Section 2.13, p. 47)*: kwarg, lineno, posarg_defaults, posargs, vararg

Decorators

Inherited from epydoc.apidoc.RoutineDoc *(Section 2.13, p. 47)*: decorators

Information Extracted from Docstrings

Inherited from epydoc.apidoc.RoutineDoc *(Section 2.13, p. 47)*: arg_descrs, arg_types, exception_descrs, return_descr, return_type

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: descr, extra_docstring_fields, metadata, other_docs, summary

Value Representation

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: parse_repr, pyval

Context

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: defining_module

Information about Imported Variables

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: proxy_for

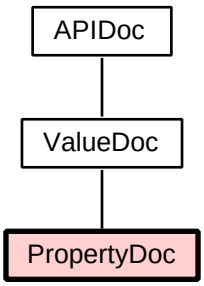
Docstrings

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: docstring, docstring_lineno

Source Information

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: docs_extracted_by

2.16 Class PropertyDoc



API documentation information about a single property.

2.16.1 Methods

apidoc_links(*self*, ***filters*)

Return a list of all `APIDoc`s that are directly linked from this `APIDoc` (i.e., are contained or pointed to by one or more of this `APIDoc`'s attributes.)

Keyword argument `filters` can be used to selectively exclude certain categories of attribute value. For example, using `includes=False` will exclude variables that were imported from other modules; and `subclasses=False` will exclude subclasses. The filter categories currently supported by epydoc are:

- `imports`: Imported variables.
- `packages`: Containing packages for modules.
- `submodules`: Contained submodules for packages.
- `bases`: Bases for classes.
- `subclasses`: Subclasses for classes.
- `variables`: All variables.
- `private`: Private variables.
- `overrides`: Points from class variables to the variables they override. This filter is False by default.

Overrides: epydoc.apidoc.APIDoc.apidoc_links *(inherited documentation)*

is_detailed(*self*)

Does this object deserve a box with extra details?

Return Value

True if the object needs extra details, else False.*(type=`bool`)*

Overrides: epydoc.apidoc.APIDoc.is_detailed *(inherited documentation)*

Inherited from epydoc.apidoc.ValueDoc*(Section 2.8, p. 27)*: __getstate__(), __repr__(), __setstate__()

Inherited from epydoc.apidoc.APIDoc*(Section 2.6, p. 19)*: __cmp__(), __hash__(), __init__(), __setattr__(), __str__(), _debug_setattr(), merge_and_overwrite(), pp(), specialize_to()

Value Representation

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: pyval_repr(), summary_pyval_repr()

2.16.2 Class Variables

Value Representation

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: REPR_LINELEN, REPR_MAXLINES, REPR_MIN_SCORE, SUMMARY_REPR_LINELEN

2.16.3 Instance Variables

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: canonical_name, toktree

Property Access Functions

fget

API documentation for the property's get function.

Type: `RoutineDoc`

Value: `_Sentinel('UNKNOWN')`

fset

API documentation for the property's set function.

Type: `RoutineDoc`

Value: `_Sentinel('UNKNOWN')`

fdel

API documentation for the property's delete function.

Type: `RoutineDoc`

Value: `_Sentinel('UNKNOWN')`

Information Extracted from Docstrings

type_descr

A description of the property's expected type, extracted from its docstring.

Type: `ParsedDocstring`

Value: `_Sentinel('UNKNOWN')`

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: descr, extra_docstring_fields, metadata, other_docs, summary

Value Representation

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: parse_repr, pyval

Context

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: defining_module

Information about Imported Variables

Inherited from epydoc.apidoc.ValueDoc *(Section 2.8, p. 27)*: proxy_for

Docstrings

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: docstring, docstring_lineno

Source Information

Inherited from epydoc.apidoc.APIDoc *(Section 2.6, p. 19)*: docs_extracted_by

2.17 Class DocIndex

[xx] out of date.

An index that .. hmm... it *can't* be used to access some things, cuz they're not at the root level. Do I want to add them or what? And if so, then I have a sort of a new top level. hmm.. so basically the question is what to do with a name that's not in the root var's name space. 2 types:

- entirely outside (eg os.path)
- inside but not known (eg a submodule that we didn't look at?)
- container of current thing not examined?

An index of all the `APIDoc` objects that can be reached from a root set of `ValueDoc`s.

The members of this index can be accessed by dotted name. In particular, `DocIndex` defines two mappings, accessed via the `get_vardoc()` and `get_valdoc()` methods, which can be used to access `VariableDoc`s or `ValueDoc`s respectively by name. (Two separate mappings are necessary because a

single name can be used to refer to both a variable and to the value contained by that variable.)

Additionally, the index defines two sets of `ValueDoc`s: "reachable `ValueDoc`s" and "contained `ValueDoc`s". The *reachable `ValueDoc`s* are defined as the set of all `ValueDoc`s that can be reached from the root set by following *any* sequence of pointers to `ValueDoc`s or `VariableDoc`s. The *contained `ValueDoc`s* are defined as the set of all `ValueDoc`s that can be reached from the root set by following only the `ValueDoc` pointers defined by non-imported `VariableDoc`s. For example, if the root set contains a module `m`, then the contained `ValueDoc`s includes the `ValueDoc`s for any functions, variables, or classes defined in that module, as well as methods and variables defined in classes defined in the module. The reachable `ValueDoc`s includes all of those `ValueDoc`s, as well as `ValueDoc`s for any values imported into the module, and base classes for classes defined in the module.

2.17.1 Methods

__init__(*self*, *root*)

Create a new documentation index, based on the given root set of `ValueDoc`s. If any `APIDoc`s reachable from the root set does not have a canonical name, then it will be assigned one. etc.

Parameters

`root`: A list of `ValueDoc`s.

get_vardoc(*self*, *name*)

Return the `VariableDoc` with the given name, or `None` if this index does not contain a `VariableDoc` with the given name.

get_valdoc(*self*, *name*)

Return the `ValueDoc` with the given name, or `None` if this index does not contain a `ValueDoc` with the given name.

_get(*self*, *name*)

A helper function that's used to implement `get_vardoc()` and `get_valdoc()`.

_get_from(*self*, *val_doc*, *identifier*)

find(*self*, *name*, *context*)

Look for an `APIDoc` named `name`, relative to `context`. Return the `APIDoc` if one is found; otherwise, return `None`. `find` looks in the following places, in order:

- Function parameters (if one matches, return `None`)
- All enclosing namespaces, from closest to furthest.
- If `name` starts with `'self'`, then strip it off and look for the remaining part of the name using `find`
- Builtins
- Parameter attributes
- Classes at module level (if the name is not ambiguous)

Parameters

`name`: *(type=`str` or `DottedName`)*

`context`: *(type=`APIDoc`)*

_get_module_classes(*self*, *docs*)

Gather all the classes defined in a list of modules.

Very often people refers to classes only by class name, even if they are not imported in the namespace. Linking to such classes will fail if we look for them only in nested namespaces. Allow them to retrieve only by name.

Parameters

`docs`: containers of the objects to collect *(type=`list` of `APIDoc`)*

Return Value

mapping from objects name to the object(s) with that name*(type=`dict` from `str` to `ClassDoc` or `list`)*

reachable_valdocs(*self*, ***filters*)

Return a list of all `ValueDoc`s that can be reached, directly or indirectly from this `DocIndex`'s root set.

Parameters

`filters`: A set of filters that can be used to prevent `reachable_valdocs` from following specific link types when looking for `ValueDoc`s that can be reached from the root set. See `APIDoc.apidoc_links` for a more complete description.

container(*self*, *api_doc*)

Return the `ValueDoc` that contains the given `APIDoc`, or `None` if its container is not in the index.

read_profiling_info(*self*, *profile_stats*)

Initialize the `callers` and `callees` variables, given a `Stat` object from the `pstats` module.

Warning: This method uses undocumented data structures inside of `profile_stats`.

_update_funcid_to_doc(*self*, *profile_stats*)

Update the dictionary mapping from `pstat.Stat` funciton ids to `RoutineDocs`. `pstat.Stat` function ids are tuples of `(filename, lineno, funcname)`.

2.17.2 Instance Variables

root

The list of `ValueDocs` to document.

Type: `list`

mlclasses

A mapping from class names to `ClassDoc`. Contains classes defined at module level for modules in `root` and which can be used as fallback by `find()` if looking in containing namespaces fails.

Type: `dict from str to ClassDoc or list`

callers

A dictionary mapping from `RoutineDocs` in this index to lists of `RoutineDocs` for the routine's callers. This dictionary is initialized by calling `read_profiling_info()`.

Type: `list of RoutineDoc`

callees

A dictionary mapping from `RoutineDocs` in this index to lists of `RoutineDocs` for the routine's callees. This dictionary is initialized by calling `read_profiling_info()`.

Type: `list of RoutineDoc`

_funcid_to_doc

A mapping from `profile` function ids to corresponding `APIDoc` objects. A function id is a tuple of the form `(filename, lineno, funcname)`. This is used to update the `callers` and `callees` variables.

_container_cache

A cache for the `container()` method, to increase speed.

_get_cache

A cache for the `get_vardoc()` and `get_valdoc()` methods, to increase speed.

3 Module epydoc.checker

Documentation completeness checker. This module defines a single class, `DocChecker`, which can be used to check the that specified classes of objects are documented.

3.1 Variables

_NO_DOCS

Value: `['__hash__', '__repr__', '__str__', '__cmp__']`

_NO_BASIC

Value: `['__hash__', '__repr__', '__str__', '__cmp__']`

_NO_RETURN

Value: `['__init__', '__hash__', '__repr__', '__str__', '__cmp__']`

_NO_PARAM

Value: `['__cmp__']`

3.2 Class DocChecker

Documentation completeness checker. `DocChecker` can be used to check that specified classes of objects are documented. To check the documentation for a group of objects, you should create a `DocChecker` from a `DocIndex` that documents those objects; and then use the `check` method to run specified checks on the objects' documentation.

What checks are run, and what objects they are run on, are specified by the constants defined by `DocChecker`. These constants are divided into three groups.

- Type specifiers indicate what type of objects should be checked: `MODULE`; `CLASS`; `FUNC`; `VAR`; `IVAR`; `CVAR`; `PARAM`; and `RETURN`.
- Public/private specifiers indicate whether public or private objects should be checked: `PRIVATE`.
- Check specifiers indicate what checks should be run on the objects: `TYPE`; `DESCR`; `AUTHOR`; and `VERSION`.

The `check` method is used to perform a check on the documentation. Its parameter is formed by or-ing together at least one value from each specifier group:

```
>>> checker.check(DocChecker.MODULE | DocChecker.DESCR)
```

To specify multiple values from a single group, simply or their values together:

```
>>> checker.check(DocChecker.MODULE | DocChecker.CLASS |
...               DocChecker.FUNC )
```

3.2.1 Methods

__init__(*self*, *docindex*)

Create a new `DocChecker` that can be used to run checks on the documentation of the objects documented by `docindex`

Parameters

`docindex`: A documentation map containing the documentation for the objects to be checked. *(type=`Docindex`)*

check(*self*, **check_sets*)

Run the specified checks on the documentation of the objects contained by this `DocChecker`'s `DocIndex`. Any errors found are printed to standard out.

Parameters

`check_sets`: The checks that should be run on the documentation. This value is constructed by or-ing together the specifiers that indicate which objects should be checked, and which checks should be run. See the `module description` for more information. If no checks are specified, then a default set of checks will be run. *(type=`int`)*

Return Value

True if no problems were found.*(type=`boolean`)*

_check(*self*, *checks*)

_name(*self*, *doc*)

_check_basic(*self*, *doc*)

Check the description, author, version, and see-also fields of `doc`. This is used as a helper function by `_check_module`, `_check_class`, and `_check_func`.

Parameters

`doc`: The documentation that should be checked. *(type=`APIDoc`)*

Return Value

None

_check_module(*self*, *doc*)

Run checks on the module whose APIDoc is `doc`.

Parameters

`doc`: The APIDoc of the module to check. *(type=`APIDoc`)*

Return Value

None

_check_class(*self*, *doc*)

Run checks on the class whose APIDoc is `doc`.

Parameters

`doc`: The APIDoc of the class to check. *(type=APIDoc)*

Return Value

None

_check_property(*self*, *doc*)

_check_var(*self*, *doc*)

Run checks on the variable whose documentation is `var` and whose name is `name`.

Parameters

`doc`: The documentation for the variable to check. *(type=APIDoc)*

Return Value

None

_check_func(*self*, *doc*)

Run checks on the function whose APIDoc is `doc`.

Parameters

`doc`: The APIDoc of the function to check. *(type=APIDoc)*

Return Value

None

warning(*self*, *msg*, *doc*)

3.2.2 Class Variables

PROPERTY

Value: `256`

ALL

Value: `24831`

Types

MODULE

Type specifier that indicates that the documentation of modules should be checked.

Type: `int`

Value: `1`

CLASS

Type specifier that indicates that the documentation of classes should be checked.

Type: `int`

Value: `2`

FUNC

Type specifier that indicates that the documentation of functions should be checked.

Type: `int`

Value: `4`

VAR

Type specifier that indicates that the documentation of module variables should be checked.

Type: `int`

Value: `8`

PARAM

Type specifier that indicates that the documentation of function and method parameters should be checked.

Type: `int`

Value: `64`

RETURN

Type specifier that indicates that the documentation of return values should be checked.

Type: `int`

Value: `128`

ALL_T

Type specifier that indicates that the documentation of all objects should be checked.

Type: `int`

Value: `511`

CVAR

Type specifier that indicates that the documentation of class variables should be checked.

Type: `int`

IVAR

Type specifier that indicates that the documentation of instance variables should be checked.

Type: `int`

Checks

TYPE

Check specifier that indicates that every variable and parameter should have a `@type` field.

Type: `int`

Value: `256`

AUTHOR

Check specifier that indicates that every object should have an `author` field.

Type: `int`

Value: `1024`

VERSION

Check specifier that indicates that every object should have a `version` field.

Type: `int`

Value: `2048`

DESCR

Check specifier that indicates that every object should have a description.

Type: `int`

Value: `4096`

ALL_C

Check specifier that indicates that all checks should be run.

Type: `int`

Value: `7936`

Publicity

PRIVATE

Specifier that indicates that private objects should be checked.

Type: `int`

Value: `16384`

4 Module epydoc.cli

Command-line interface for epydoc. Abbreviated Usage:

```
epydoc [options] NAMES...

    NAMES...                  The Python modules to document.
    --html                    Generate HTML output (default).
    --latex                   Generate LaTeX output.
    --pdf                     Generate pdf output, via LaTeX.
    -o DIR, --output DIR      The output directory.
    --inheritance STYLE       The format for showing inherited objects.
    -V, --version             Print the version of epydoc.
    -h, --help                Display a usage message.
```

Run "epydoc –help" for a complete option list. See the epydoc(1) man page for more information.

Config Files

Configuration files can be specified with the `-config` option. These files are read using ConfigParser[1]. Configuration files may set options or add names of modules to document. Option names are (usually) identical to the long names of command line options. To specify names to document, use any of the following option names:

```
module modules value values object objects
```

A simple example of a config file is:

```
[epydoc]
modules: sys, os, os.path, re, %(MYSANDBOXPATH)/utilities.py
name: Example
graph: classtree
introspect: no
```

All ConfigParser interpolations are done using local values and the environment variables.

Verbosity Levels

The `-v` and `-q` options increase and decrease verbosity, respectively. The default verbosity level is zero. The verbosity levels are currently defined as follows:

	Progress	Markup warnings	Warnings	Errors
-3	none	no	no	no
-2	none	no	no	yes
-1	none	no	yes	yes
0 (default)	bar	no	yes	yes
1	bar	yes	yes	yes
2	list	yes	yes	yes

[1] http://docs.python.org/lib/module-ConfigParser.html

4.1 Functions

Argument & Config File Parsing

option_defaults()

add_action(*option*, *opt*, *value*, *optparser*)

add_target(*option*, *opt*, *value*, *optparser*)

parse_arguments()

parse_configfiles(*configfiles*, *options*, *names*)

_str_to_bool(*val*, *optname*)

_str_to_int(*val*, *optname*)

_str_to_list(*val*)

Interface

main(*options*)

Perform all actions indicated by the given set of options.

Return Value

the `epydoc.apidoc.DocIndex` object created while running epydoc (or None).

write_html(*docindex*, *options*)

write_pickle(*docindex*, *options*)

Helper for writing output to a pickle file, which can then be read in at a later time. But loading the pickle is only marginally faster than building the docs from scratch, so this has pretty limited application.

pickle_persistent_id(*obj*)

Helper for pickling, which allows us to save and restore UNKNOWN, which is required to be identical to apidoc.UNKNOWN.

pickle_persistent_load(*identifier*)

Helper for pickling, which allows us to save and restore UNKNOWN, which is required to be identical to apidoc.UNKNOWN.

write_latex(*docindex*, *options*)

write_text(*docindex*, *options*)

check_docs(*docindex*, *options*)

cli()

Perform all actions indicated by the options in sys.argv.

Return Value

the `epydoc.apidoc.DocIndex` object created while running epydoc (or None).

_profile()

4.2 Variables

INHERITANCE_STYLES

Value: `('grouped', 'listed', 'included', 'hidden')`

GRAPH_TYPES

Value: `('classtree', 'callgraph', 'umlclasstree')`

ACTIONS

Value: `('html', 'text', 'latex', 'dvi', 'ps', 'pdf', 'check')`

DEFAULT_DOCFORMAT

Value: `'epytext'`

PROFILER

Which profiler to use: 'hotshot' or 'profile'

Value: `'profile'`

TARGET_ACTIONS

Value: `('html', 'latex', 'dvi', 'ps', 'pdf')`

DEFAULT_ACTIONS

Value: `('html')`

PDFDRIVERS

Value: `('pdflatex', 'latex', 'auto')`

descr

Value: `'Black on white, with blue highlights'`

key

Value: `'white'`

sheet

Value: `'\n\n/* Epydoc CSS Stylesheet\n *\n * This stylesheet can...`

topic

Value: `'inheritance'`

Help Topics

DOCFORMATS

Value: `('epytext', 'plaintext', 'restructuredtext', 'javadoc')`

HELP_TOPICS

Value: `{'css': 'The following built-in CSS stylesheets are avail...`

Argument & Config File Parsing

DEFAULT_TARGET

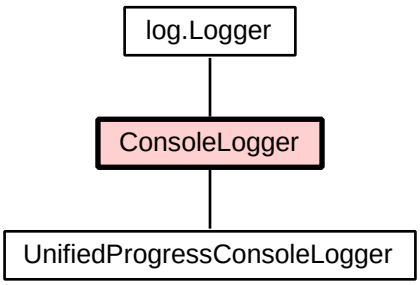
Value: `{'dvi': 'api.dvi', 'html': 'html', 'latex': 'latex', 'pdf...`

Interface

_RERUN_LATEX_RE

Value: `re.compile(r'(?im)^LaTeX\s+Warning:\s+Label\(s\)\s+may\s+...`

4.3 Class ConsoleLogger



Known Subclasses: epydoc.cli.UnifiedProgressConsoleLogger

4.3.1 Methods

__init__(*self*, *verbosity*, *progress_mode*=`None`)

start_block(*self*, *header*)

Start a new message block. Any calls to `info()`, `warning()`, or `error()` that occur between a call to `start_block` and a corresponding call to `end_block` will be grouped together, and displayed with a common header. `start_block` can be called multiple times (to form nested blocks), but every call to `start_block` *must* be balanced by a call to `end_block`.

Overrides: epydoc.log.Logger.start_block *(inherited documentation)*

end_block(*self*)

End a warning block. See `start_block` for details.

Overrides: epydoc.log.Logger.end_block *(inherited documentation)*

_format(*self*, *prefix*, *message*, *color*)

Rewrap the message; but preserve newlines, and don't touch any lines that begin with spaces.

log(*self*, *level*, *message*)

Display a message.

Parameters

`message`: The message string to display. `message` may contain newlines, but does not need to end in a newline.

`level`: An integer value indicating the severity of the message.

Overrides: epydoc.log.Logger.log *(inherited documentation)*

_report(*self*, *message*)

progress(*self*, *percent*, *message*='')

Update the progress display.

Parameters

`percent`: A float from 0.0 to 1.0, indicating how much progress has been made.

`message`: A message indicating the most recent action that contributed towards that progress.

Overrides: epydoc.log.Logger.progress *(inherited documentation)*

_timestr(*self*, *dt*)

start_progress(*self*, *header*=None)

Begin displaying progress for a new task. `header` is a description of the task for which progress is being reported. Each call to `start_progress` must be followed by a call to `end_progress` (with no intervening calls to `start_progress`).

Overrides: epydoc.log.Logger.start_progress *(inherited documentation)*

end_progress(*self*)

Finish off the display of progress for the current task. See `start_progress` for more information.

Overrides: epydoc.log.Logger.end_progress *(inherited documentation)*

print_times(*self*)

Inherited from epydoc.log.Logger*(Section 21.3, p. 194)*: close()

4.3.2 Instance Variables

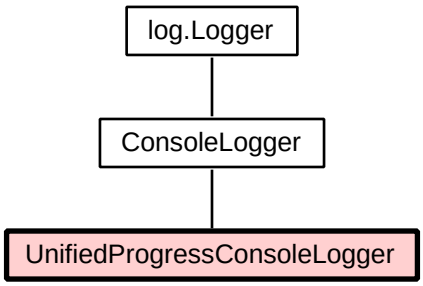
reported_message_levels

This set contains all the message levels (WARNING, ERROR, etc) that have been reported. It is used by the options –fail-on-warning etc to determine the return value.

suppressed_docstring_warning

This variable will be incremented once every time a docstring warning is reported tothe logger, but the verbosity level is too low for it to be displayed.

4.4 Class UnifiedProgressConsoleLogger



4.4.1 Methods

__init__(*self*, *verbosity*, *stages*, *progress_mode*=`None`)

Overrides: epydoc.cli.ConsoleLogger.__init__

progress(*self*, *percent*, *message*=`''`)

Update the progress display.

Parameters

`percent`: A float from 0.0 to 1.0, indicating how much progress has been made.

`message`: A message indicating the most recent action that contributed towards that progress.

Overrides: epydoc.log.Logger.progress *(inherited documentation)*

start_progress(*self*, *header*=`None`)

Begin displaying progress for a new task. `header` is a description of the task for which progress is being reported. Each call to `start_progress` must be followed by a call to `end_progress` (with no intervening calls to `start_progress`).

Overrides: epydoc.log.Logger.start_progress *(inherited documentation)*

end_progress(*self*)

Finish off the display of progress for the current task. See `start_progress` for more information.

Overrides: epydoc.log.Logger.end_progress *(inherited documentation)*

print_times(*self*)

Overrides: epydoc.cli.ConsoleLogger.print_times

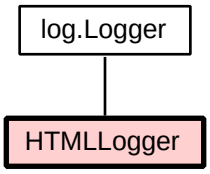
Inherited from epydoc.cli.ConsoleLogger *(Section 4.3, p. 72)*: _format(), _report(), _timestr(), end_block(), log(), start_block()

Inherited from epydoc.log.Logger *(Section 21.3, p. 194)*: close()

4.4.2 Instance Variables

Inherited from epydoc.cli.ConsoleLogger *(Section 4.3, p. 72)*: reported_message_levels, suppressed_docstring_warning

4.5 Class HTMLLogger



A logger used to generate a log of all warnings and messages to an HTML file.

4.5.1 Methods

__init__(*self*, *directory*, *options*)

write_options(*self*, *options*)

start_block(*self*, *header*)

Start a new message block. Any calls to `info()`, `warning()`, or `error()` that occur between a call to `start_block` and a corresponding call to `end_block` will be grouped together, and displayed with a common header. `start_block` can be called multiple times (to form nested blocks), but every call to `start_block` *must* be balanced by a call to `end_block`.

Overrides: epydoc.log.Logger.start_block *(inherited documentation)*

end_block(*self*)

End a warning block. See `start_block` for details.

Overrides: epydoc.log.Logger.end_block *(inherited documentation)*

log(*self*, *level*, *message*)

Display a message.

Parameters

`message`: The message string to display. `message` may contain newlines, but does not need to end in a newline.

`level`: An integer value indicating the severity of the message.

Overrides: epydoc.log.Logger.log *(inherited documentation)*

_message(*self*, *level*, *message*)

close(*self*)

Perform any tasks needed to close this logger. This should be safe to call multiple times.

Overrides: epydoc.log.Logger.close *(inherited documentation)*

_elapsed_time(*self*)

Inherited from epydoc.log.Logger*(Section 21.3, p. 194)*: end_progress(), progress(), start_progress()

4.5.2 Class Variables

FILENAME

Value: `'epydoc-log.html'`

HEADER

Value: `'<?xml version="1.0" encoding="ascii"?>\n<!DOCTYPE html P...`

START_BLOCK

Value: `'<div class="log-block"><h2 class="log-hdr">%s</h2>'`

MESSAGE

Value: `'<div class="log-%s"><b>%s</b>:  \n%s</div>\n'`

END_BLOCK

Value: `'</div>'`

FOOTER

Value: `'</body>\n</html>\n'`

5 Module epydoc.compat

Backwards compatibility with previous versions of Python.

This module provides backwards compatibility by defining several functions and classes that were not available in earlier versions of Python. Intented usage:

```
>>> from epydoc.compat import *
```

Currently, epydoc requires Python 2.3+.

5.1 Functions

sorted(*iterable*, *cmp*=`None`, *key*=`None`, *reverse*=`False`)

reversed(*iterable*)

6 Module epydoc.docbuilder

Construct data structures that encode the API documentation for Python objects. These data structures are created using a series of steps:

1. **Building docs**: Extract basic information about the objects, and objects that are related to them. This can be done by introspecting the objects' values (with `epydoc.docintrospecter`; or by parsing their source code (with `epydoc.docparser`.
2. **Merging**: Combine the information obtained from introspection & parsing each object into a single structure.
3. **Linking**: Replace any 'pointers' that were created for imported variables by their target (if it's available).
4. **Naming**: Chose a unique 'canonical name' for each object.
5. **Docstring Parsing**: Parse the docstring of each object, and extract any pertinant information.
6. **Inheritance**: Add information about variables that classes inherit from their base classes.

The documentation information for each individual object is represented using an `APIDoc`; and the documentation for a collection of objects is represented using a `DocIndex`.

The main interface to `epydoc.docbuilder` consists of two functions:

- `build_doc()` – Builds documentation for a single item, and returns it as an `APIDoc` object.
- `build_doc_index()` – Builds documentation for a collection of items, and returns it as a `DocIndex` object.

The remaining functions are used by these two main functions to perform individual steps in the creation of the documentation.

6.1 Functions

_import_docs_from_items(*items*, *options*)

_import_docs_from_package(*pkg*, *options*)

_do_import(*filename*, *options*, *parent*=`None`)

_report_errors(*name*, *introspect_doc*, *parse_doc*, *introspect_error*, *parse_error*)

find_overrides(*class_doc*)

Set the `overrides` attribute for all variables in `class_doc`. This needs to be done early (before docstring parsing), so we can know which docstrings to suppress warnings for.

Documentation Construction

build_doc(*item*, *introspect*=`True`, *parse*=`True`, *add_submodules*=`True`, *exclude_introspect*=`None`, *exclude_parse*=`None`, *inherit_from_object*=`False`)

Build API documentation for a given item, and return it as an `APIDoc` object.

Parameters

`item`: The item to document, specified using any of the following:

- A string, naming a python package directory (e.g., `'epydoc/markup'`)
- A string, naming a python file (e.g., `'epydoc/docparser.py'`)
- A string, naming a python object (e.g., `'epydoc.docparser.DocParser'`)
- Any (non-string) python object (e.g., `list.append`)

`introspect`: If true, then use introspection to examine the specified items. Otherwise, just use parsing.

`parse`: If true, then use parsing to examine the specified items. Otherwise, just use introspection.

Return Value

APIDoc

build_doc_index(*items*, *introspect*=`True`, *parse*=`True`, *add_submodules*=`True`, *exclude_introspect*=`None`, *exclude_parse*=`None`, *inherit_from_object*=`False`)

Build API documentation for the given list of items, and return it in the form of a `DocIndex`.

Parameters

`items`: The items to document, specified using any of the following:

- A string, naming a python package directory (e.g., `'epydoc/markup'`)
- A string, naming a python file (e.g., `'epydoc/docparser.py'`)
- A string, naming a python object (e.g., `'epydoc.docparser.DocParser'`)
- Any (non-string) python object (e.g., `list.append`)

`introspect`: If true, then use introspection to examine the specified items. Otherwise, just use parsing.

`parse`: If true, then use parsing to examine the specified items. Otherwise, just use introspection.

Return Value

DocIndex

_report_valdoc_progress(*i*, *val_doc*, *val_docs*)

_get_docs_from_items(*items*, *options*)

_get_docs_from_pyobject(*obj*, *options*, *progress_estimator*)

_get_docs_from_pyname(*name*, *options*, *progress_estimator*, *suppress_warnings*=`False`)

_get_docs_from_pyscript(*filename*, *options*, *progress_estimator*)

_get_docs_from_module_file(*filename*, *options*, *progress_estimator*, *parent_docs*=`(None, None)`)

Construct and return the API documentation for the python module with the given filename.

Parameters

`parent_docs`: The `ModuleDoc` of the containing package. If `parent_docs` is not provided, then this method will check if the given filename is contained in a package; and if so, it will construct a stub `ModuleDoc` for the containing package(s). `parent_docs` is a tuple, where the first element is the parent from introspection, and the second element is the parent from parsing.

_get_docs_from_submodules(*item*, *pkg_docs*, *options*, *progress_estimator*)

Merging

register_attribute_mergefunc(*attrib*, *mergefunc*)

Register an attribute merge function. This function will be called by `merge_docs()` when it needs to merge the attribute values of two `APIDocs`.

Parameters

`attrib`: The name of the attribute whose values are merged by `mergefunc`.

`mergefunc`: The merge function, whose sinature is:

```
>>> def mergefunc(introspect_val, parse_val, precedence, cy-
clecheck, path):
...   return calculate_merged_value(introspect_val, parse_val)
```

Where `introspect_val` and `parse_val` are the two values to combine; `precedence` is a string indicating which value takes precedence for this attribute (`'introspect'` or `'parse'`); `cyclecheck` is a value used by `merge_docs()` to make sure that it only visits each pair of docs once; and `path` is a string describing the path that was taken from the root to this attribute (used to generate log messages).

If the merge function needs to call `merge_docs`, then it should pass `cyclecheck` and `path` back in. (When appropriate, a suffix should be added to `path` to describe the path taken to the merged values.)

merge_docs(*introspect_doc*, *parse_doc*, *cyclecheck*=None, *path*=None)

Merge the API documentation information that was obtained from introspection with information that was obtained from parsing. `introspect_doc` and `parse_doc` should be two `APIDoc` instances that describe the same object. `merge_docs` combines the information from these two instances, and returns the merged `APIDoc`.

If `introspect_doc` and `parse_doc` are compatible, then they will be *merged* – i.e., they will be coerced to a common class, and their state will be stored in a shared dictionary. Once they have been merged, any change made to the attributes of one will affect the other. The value for the each of the merged `APIDoc`'s attributes is formed by combining the values of the source `APIDocs`' attributes, as follows:

- If either of the source attributes' value is `UNKNOWN`, then use the other source attribute's value.
- Otherwise, if an attribute merge function has been registered for the attribute, then use that function to calculate the merged value from the two source attribute values.
- Otherwise, if `MERGE_PRECEDENCE` is defined for the attribute, then use the attribute value from the source that it indicates.
- Otherwise, use the attribute value from the source indicated by `DEFAULT_MERGE_PRECEDENCE`.

If `introspect_doc` and `parse_doc` are *not* compatible (e.g., if their values have incompatible types), then `merge_docs()` will simply return either `introspect_doc` or `parse_doc`, depending on the value of `DEFAULT_MERGE_PRECEDENCE`. The two input `APIDocs` will not be merged or modified in any way.

Parameters

`cyclecheck, path`: These arguments should only be provided when `merge_docs()` is called by an attribute merge function. See `register_attribute_mergefunc()` for more details.

_merge_posargs_and_defaults(*introspect_doc*, *parse_doc*, *path*)

merge_attribute(*attrib*, *introspect_doc*, *parse_doc*, *cyclecheck*, *path*)

merge_variables(*varlist1*, *varlist2*, *precedence*, *cyclecheck*, *path*)

merge_value(*value1*, *value2*, *precedence*, *cyclecheck*, *path*)

merge_overrides(*v1*, *v2*, *precedence*, *cyclecheck*, *path*)

merge_fget(*v1*, *v2*, *precedence*, *cyclecheck*, *path*)

merge_fset(*v1*, *v2*, *precedence*, *cyclecheck*, *path*)

merge_fdel(*v1*, *v2*, *precedence*, *cyclecheck*, *path*)

merge_proxy_for(*v1*, *v2*, *precedence*, *cyclecheck*, *path*)

merge_bases(*baselist1*, *baselist2*, *precedence*, *cyclecheck*, *path*)

merge_posarg_defaults(*defaults1*, *defaults2*, *precedence*, *cyclecheck*, *path*)

merge_docstring(*docstring1*, *docstring2*, *precedence*, *cyclecheck*, *path*)

merge_docs_extracted_by(*v1*, *v2*, *precedence*, *cyclecheck*, *path*)

merge_submodules(*v1*, *v2*, *precedence*, *cyclecheck*, *path*)

Linking

link_imports(*val_doc*, *docindex*)

Naming

assign_canonical_names(*val_doc*, *name*, *docindex*, *score*=0)

Assign a canonical name to `val_doc` (if it doesn't have one already), and (recursively) to each variable in `val_doc`. In particular, `val_doc` will be assigned the canonical name `name` iff either:

- `val_doc`'s canonical name is `UNKNOWN`; or
- `val_doc`'s current canonical name was assigned by this method; but the score of the new name (`score`) is higher than the score of the current name (`score_dict[val_doc]`).

Note that canonical names will even be assigned to values like integers and `None`; but these should be harmless.

_var_shadows_self(*var_doc*, *varname*)

_fix_self_shadowing_var(*var_doc*, *varname*, *docindex*)

_unreachable_name_for(*val_doc*, *docindex*)

Inheritance

inherit_docs(*class_doc*, *inherit_from_object*)

_inherit_info(*var_doc*)

Copy any relevant documentation information from the variable that `var_doc` overrides into `var_doc` itself.

6.2 Variables

_INHERITED_ATTRIBS

Value: `['descr', 'summary', 'metadata', 'extra_docstring_fields'...`

Merging

MERGE_PRECEDENCE

Indicates whether information from introspection or parsing should be given precedence, for specific attributes. This dictionary maps from attribute names to either `'introspect'` or `'parse'`.

Value: `{'canonical_name': 'introspect', 'docformat': 'parse', 'd...`

DEFAULT_MERGE_PRECEDENCE

Indicates whether information from introspection or parsing should be given precedence. Should be either `'introspect'` or `'parse'`

Value: `'introspect'`

_attribute_mergefunc_registry

Value: `{}`

Naming

_name_scores

A dictionary mapping from each `ValueDoc` to the score that has been assigned to its current cannonical name. If `assign_canonical_names()` finds a canonical name with a better score, then it will replace the old name.

Value: `{<GenericValueDoc ??-3>: -10000, <ModuleDoc ConfigParser>...`

_unreachable_names

The set of names that have been used for unreachable objects. This is used to ensure there are no duplicate cannonical names assigned. `_unreachable_names` is a dictionary mapping from dotted names to integer ids, where the next unused unreachable name derived from dotted name `n` is `DottedName('%s-%s' % (n, str(_unreachable_names[n]+1))`

Value: `{DottedName('??'): 74, DottedName('??', 'APIDoc'): 4, Dot...`

6.3 Class BuildOptions

Holds the parameters for a documentation building process.

6.3.1 Methods

__init__(*self*, *introspect*=`True`, *parse*=`True`, *exclude_introspect*=`None`, *exclude_parse*=`None`, *add_submodules*=`True`)

must_introspect(*self*, *name*)

Return `True` if a module is to be introsepcted with the current settings.

Parameters

`name`: The name of the module to test *(type=`DottedName` or `str`)*

must_parse(*self*, *name*)

Return `True` if a module is to be parsed with the current settings.

Parameters

`name`: The name of the module to test *(type=`DottedName` or `str`)*

_matches_filter(*self*, *name*, *regexp*)

Test if a module name matches a pattern.

Parameters

`name`: The name of the module to test *(type=`DottedName` or `str`)*

`regexp`: The pattern object to match `name` against. If `None`, return `False` *(type=`pattern`)*

Return Value

`True` if `name` in dotted format matches `regexp`, else `False` *(type=`bool`)*

6.4 Class _ProgressEstimator

Used to keep track of progress when generating the initial docs for the given items. (It is not known in advance how many items a package directory will contain, since it might depend on those packages' __path__ values.)

6.4.1 Methods

__init__(*self*, *items*)

progress(*self*)

revise_estimate(*self*, *pkg_item*, *modules*, *subpackages*)

_est_pkg_modules(*self*, *package_dir*)

7 Module epydoc.docintrospecter

Extract API documentation about python objects by directly introspecting their values.

The function `introspect_docs()`, which provides the main interface of this module, examines a Python objects via introspection, and uses the information it finds to create an `APIDoc` objects containing the API documentation for that objects.

The `register_introspecter()` method can be used to extend the functionality of `docintrospector`, by providing methods that handle special value types.

7.1 Functions

clear_cache()

Discard any cached `APIDoc` values that have been computed for introspected values.

introspect_docs(*value*=None, *name*=None, *filename*=None, *context*=None, *is_script*=False, *module_name*=None)

Generate the API documentation for a specified object by introspecting Python values, and return it as a `ValueDoc`. The object to generate documentation for may be specified using the `value` parameter, the `filename` parameter, *or* the `name` parameter. (It is an error to specify more than one of these three parameters, or to not specify any of them.)

Parameters

`value:` The python object that should be documented.

`filename:` The name of the file that contains the python source code for a package, module, or script. If `filename` is specified, then `introspect` will return a `ModuleDoc` describing its contents.

`name:` The fully-qualified python dotted name of any value (including packages, modules, classes, and functions). `DocParser` will automatically figure out which module(s) it needs to import in order to find the documentation for the specified object.

`context:` The API documentation for the class of module that contains `value` (if available).

`module_name:` The name of the module where the value is defined. Useful to retrieve the docstring encoding if there is no way to detect the module by introspection (such as in properties)

_get_valuedoc(*value*)

If a `ValueDoc` for the given value exists in the valuedoc cache, then return it; otherwise, create a new `ValueDoc`, add it to the cache, and return it. When possible, the new `ValueDoc`'s `pyval`, `repr`, and `canonical_name` attributes will be set appropriately.

introspect_module(*module*, *module_doc*, *module_name*=`None`, *preliminary*=`False`)

Add API documentation information about the module `module` to `module_doc`.

introspect_class(*cls*, *class_doc*, *module_name*=`None`)

Add API documentation information about the class `cls` to `class_doc`.

introspect_routine(*routine*, *routine_doc*, *module_name*=`None`)

Add API documentation information about the function `routine` to `routine_doc` (specializing it to `Routine_doc`).

introspect_property(*prop*, *prop_doc*, *module_name*=`None`)

Add API documentation information about the property `prop` to `prop_doc` (specializing it to `PropertyDoc`).

introspect_other(*val*, *val_doc*, *module_name*=`None`)

Specialize val_doc to a `GenericValueDoc` and return it.

isclass(*object*)

Return true if the given object is a class. In particular, return true if object is an instance of `types.TypeType` or of `types.ClassType`. This is used instead of `inspect.isclass()`, because the latter returns true for objects that are not classes (in particular, it returns true for any object that has a `__bases__` attribute, including objects that define `__getattr__` to always return a value).

register_class_type(*typ*)

Add a type to the lists of types that should be treated as classes. By default, this list contains `TypeType` and `ClassType`.

is_future_feature(*object*)

Return True if `object` results from a `from __future__ import feature` statement.

get_docstring(*value*, *module_name*=`None`)

Return the docstring for the given value; or `None` if it does not have a docstring.

Return Value

unicode

get_canonical_name(*value*, *strict*=False)

Return Value

the canonical name for `value`, or `UNKNOWN` if no canonical name can be found. Currently, `get_canonical_name` can find canonical names for: modules; functions; non-nested classes; methods of non-nested classes; and some class methods of non-nested classes.*(type=DottedName or UNKNOWN)*

verify_name(*value*, *dotted_name*)

Verify the name. E.g., if it's a nested class, then we won't be able to find it with the name we constructed.

value_repr(*value*)

get_containing_module(*value*)

Return the name of the module containing the given value, or `None` if the module name can't be determined.

Return Value

DottedName

_find_function_module(*func*)

Parameters

`func`: The function whose module should be found. *(type=function)*

Return Value

The module that defines the given function.*(type=module)*

register_introspecter(*applicability_test*, *introspecter*, *priority*=10)

Register an introspecter function. Introspecter functions take two arguments, a python value and a `ValueDoc` object, and should add information about the given value to the the `ValueDoc`. Usually, the first line of an inspecter function will specialize it to a sublass of `ValueDoc`, using `ValueDoc.specialize_to()`:

```
>>> def typical_introspecter(value, value_doc):
...   value_doc.specialize_to(SomeSubclassOfValueDoc)
...   <add info to value_doc>
```

Parameters

`priority`: The priority of this introspecter, which determines the order in which introspecters are tried – introspecters with lower numbers are tried first. The standard introspecters have priorities ranging from 20 to 30. The default priority (10) will place new introspecters before standard introspecters.

_get_introspecter(*value*)

is_classmethod(*v*)

is_staticmethod(*v*)

is_property(*v*)

is_getset(*v*)

is_member(*v*)

get_value_from_filename(*filename*, *context*=`None`)

get_value_from_scriptname(*filename*)

get_value_from_name(*name*, *globs*=`None`)

Given a name, return the corresponding value.

Parameters

`globs`: A namespace to check for the value, if there is no module containing the named value. Defaults to __builtin__.

_lookup(*module*, *name*)

_import(*name*, *filename*=`None`)

Run the given callable in a 'sandboxed' environment. Currently, this includes saving and restoring the contents of sys and __builtins__; and suppressing stdin, stdout, and stderr.

introspect_docstring_lineno(*api_doc*)

Try to determine the line number on which the given item's docstring begins. Return the line number, or `None` if the line number can't be determined. The line number of the first line in the file is 1.

_is_zope_type(*val*)

_is_zope_method(*val*)

7.2 Variables

_valuedoc_cache

A cache containing the API documentation for values that we've already seen. This cache is implemented as a dictionary that maps a value's pyid to its `ValueDoc`.

Note that if we encounter a value but decide not to introspect it (because it's imported from another module), then `_valuedoc_cache` will contain an entry for the value, but the value will not be listed in `_introspected_values`.

Value: `{135509120: <ClassDoc bool>, 135509312: <GenericValueDoc ...`

_introspected_values

A record which values we've introspected, encoded as a dictionary from pyid to `bool`.

Value: `{135509120: True, 135509312: True, 135509324: True, 13550...`

UNDOCUMENTED_MODULE_VARS

A list of module variables that should not be included in a module's API documentation.

Value: `('__builtins__', '__doc__', '__all__', '__file__', '__pat...`

UNDOCUMENTED_CLASS_VARS

A list of class variables that should not be included in a class's API documentation.

Value: `('__doc__', '__module__', '__dict__', '__weakref__', '__s...`

_CLASS_TYPES

A list of types that should be treated as classes.

Value: `set([<type 'classobj'>, <type 'type'>])`

__future_check_works

Value: `True`

_introspecter_registry

Value: `[]`

_dev_null

Value: `_DevNull()`

_ZopeType

Value: `type(_ExtensionClass)`

7.3 Class _DevNull

A "file-like" object that discards anything that is written and always reports end-of-file when read. `_DevNull` is used by `_import()` to discard output when importing modules; and to ensure that stdin appears closed.

7.3.1 Methods

__init__(*self*)

close(*self*)

flush(*self*)

read(*self*, *size*=0)

readline(*self*, *size*=0)

readlines(*self*, *sizehint*=0)

seek(*self*, *offset*, *whence*=0)

tell(*self*)

truncate(*self*, *size*=0)

write(*self*, *str*)

writelines(*self*, *sequence*)

xreadlines(*self*, *sizehint*=0)

8 Module epydoc.docparser

Extract API documentation about python objects by parsing their source code.

The function `parse_docs()`, which provides the main interface of this module, reads and parses the Python source code for a module, and uses it to create an `APIDoc` object containing the API documentation for the variables and values defined in that modules.

Currently, `parse_docs()` extracts documentation from the following source code constructions:

- module docstring
- import statements
- class definition blocks
- function definition blocks
- assignment statements
  - simple assignment statements
  - assignment statements with multiple `'='`s
  - assignment statements with unpacked left-hand sides
  - assignment statements that wrap a function in classmethod or staticmethod.
  - assignment to special variables __path__, __all__, and __docformat__.
- delete statements

`parse_docs()` does not yet support the following source code constructions:

- assignment statements that create properties

By default, `parse_docs()` will expore the contents of top-level `try` and `if` blocks. If desired, `parse_docs()` can also be configured to explore the contents of `while` and `for` blocks. (See the configuration constants, below.)

To Do: Make it possible to extend the functionality of `parse_docs()`, by replacing process_line with a dispatch table that can be customized (similarly to `docintrospector.register_introspector()`).

8.1 Functions

Module parser

parse_docs(*filename*=`None`, *name*=`None`, *context*=`None`, *is_script*=`False`)

Generate the API documentation for a specified object by parsing Python source files, and return it as a `ValueDoc`. The object to generate documentation for may be specified using the `filename` parameter *or* the `name` parameter. (It is an error to specify both a filename and a name; or to specify neither a filename nor a name).

Parameters

`filename`: The name of the file that contains the python source code for a package, module, or script. If `filename` is specified, then `parse` will return a `ModuleDoc` describing its contents.

`name`: The fully-qualified python dotted name of any value (including packages, modules, classes, and functions). `parse_docs()` will automatically figure out which module(s) it needs to parse in order to find the documentation for the specified object.

`context`: The API documentation for the package that contains `filename`. If no context is given, then `filename` is assumed to contain a top-level module or package. It is an error to specify a `context` if the `name` argument is used.

Return Value

ValueDoc

_parse_package(*package_dir*)

If the given directory is a package directory, then parse its __init__.py file (and the __init__.py files of all ancestor packages); and return its `ModuleDoc`.

handle_special_module_vars(*module_doc*)

_module_var_toktree(*module_doc*, *name*)

Module Lookup

_find(*name*, *package_doc*=`None`)

Return the API documentaiton for the object whose name is `name`. `package_doc`, if specified, is the API documentation for the package containing the named object.

_is_submodule_import_var(*module_doc*, *var_name*)

Return true if `var_name` is the name of a variable in `module_doc` that just contains an `imported_from` link to a submodule of the same name. (I.e., is a variable created when a package imports one of its own submodules.)

_find_in_namespace(*name*, *namespace_doc*)

_get_filename(*identifier*, *path*=`None`)

File tokenization loop

process_file(*module_doc*)

Read the given `ModuleDoc`'s file, and add variables corresponding to any objects defined in that file. In particular, read and tokenize `module_doc.filename`, and process each logical line using `process_line()`.

add_to_group(*container*, *api_doc*, *group_name*)

script_guard(*line*)

Detect the idiomatic trick `if __name__ == "__main__":`

Shallow parser

shallow_parse(*line_toks*)

Given a flat list of tokens, return a nested tree structure (called a *token tree*), whose leaves are identical to the original list, but whose structure reflects the structure implied by the grouping tokens (i.e., parenthases, braces, and brackets). If the parenthases, braces, and brackets do not match, or are not balanced, then raise a ParseError.

Assign some structure to a sequence of structure (group parens).

Line processing

process_line(*line*, *parent_docs*, *prev_line_doc*, *lineno*, *comments*, *decorators*, *encoding*)

Return Value

`new-doc`, `decorator`..?

process_control_flow_line(*line*, *parent_docs*, *prev_line_doc*, *lineno*, *comments*, *decorators*, *encoding*)

process_import(*line*, *parent_docs*, *prev_line_doc*, *lineno*, *comments*, *decorators*, *encoding*)

process_from_import(*line*, *parent_docs*, *prev_line_doc*, *lineno*, *comments*, *decorators*, *encoding*)

_process_fromstar_import(*src*, *parent_docs*)

Handle a statement of the form:

```
>>> from <src> import *
```

If `IMPORT_HANDLING` is `'parse'`, then first try to parse the module *<src>*, and copy all of its exported variables to `parent_docs[-1]`.

Otherwise, try to determine the names of the variables exported by *<src>*, and create a new variable for each export. If `IMPORT_STAR_HANDLING` is `'parse'`, then the list of exports if found by parsing *<src>*; if it is `'introspect'`, then the list of exports is found by importing and introspecting *<src>*.

_import_var(*name*, *parent_docs*)

Handle a statement of the form:

```
>>> import <name>
```

If `IMPORT_HANDLING` is `'parse'`, then first try to find the value by parsing; and create an appropriate variable in parentdoc.

Otherwise, add a variable for the imported variable. (More than one variable may be created for cases like `'import a.b'`, where we need to create a variable `'a'` in parentdoc containing a proxy module; and a variable `'b'` in the proxy module.

_import_var_as(*src*, *name*, *parent_docs*)

Handle a statement of the form:

```
>>> import src as name
```

If `IMPORT_HANDLING` is `'parse'`, then first try to find the value by parsing; and create an appropriate variable in parentdoc.

Otherwise, create a variables with its `imported_from` attribute pointing to the imported object.

_add_import_var(*src*, *name*, *container*)

Add a new imported variable named `name` to `container`, with `imported_from=src`.

_global_name(*name*, *parent_docs*)

If the given name is package-local (relative to the current context, as determined by `parent_docs`), then convert it to a global name.

process_assignment(*line*, *parent_docs*, *prev_line_doc*, *lineno*, *comments*, *decorators*, *encoding*)

lhs_is_instvar(*lhs_pieces*, *parent_docs*)

rhs_to_valuedoc(*rhs*, *parent_docs*, *lineno*)

get_lhs_parent(*lhs_name*, *parent_docs*)

process_one_line_block(*line*, *parent_docs*, *prev_line_doc*, *lineno*, *comments*, *decorators*, *encoding*)

The line handler for single-line blocks, such as:

```
>>> def f(x): return x*2
```

This handler calls `process_line` twice: once for the tokens up to and including the colon, and once for the remaining tokens. The comment docstring is applied to the first line only.

Return Value

`None`

process_multi_stmt(*line*, *parent_docs*, *prev_line_doc*, *lineno*, *comments*, *decorators*, *encoding*)

The line handler for semicolon-separated statements, such as:

```
>>> x=1; y=2; z=3
```

This handler calls `process_line` once for each statement. The comment docstring is not passed on to any of the sub-statements.

Return Value

`None`

process_del(*line*, *parent_docs*, *prev_line_doc*, *lineno*, *comments*, *decorators*, *encoding*)

The line handler for delete statements, such as:

```
>>> del x, y.z
```

This handler calls `del_variable` for each dotted variable in the variable list. The variable list may be nested. Complex expressions in the variable list (such as `x[3]`) are ignored.

Return Value

`None`

process_docstring(*line*, *parent_docs*, *prev_line_doc*, *lineno*, *comments*, *decorators*, *encoding*)

The line handler for bare string literals. If `prev_line_doc` is not `None`, then the string literal is added to that `APIDoc` as a docstring. If it already has a docstring (from comment docstrings), then the new docstring will be appended to the old one.

process_funcdef(*line*, *parent_docs*, *prev_line_doc*, *lineno*, *comments*, *decorators*, *encoding*)

The line handler for function declaration lines, such as:

```
>>> def f(a, b=22, (c,d)):
```

This handler creates and initializes a new `VariableDoc` containing a `RoutineDoc`, adds the `VariableDoc` to the containing namespace, and returns the `RoutineDoc`.

apply_decorator(*decorator_name*, *func_doc*, *parent_docs*, *lineno*)

init_arglist(*func_doc*, *arglist*)

process_classdef(*line*, *parent_docs*, *prev_line_doc*, *lineno*, *comments*, *decorators*, *encoding*)

The line handler for class declaration lines, such as:

```
>>> class Foo(Bar, Baz):
```

This handler creates and initializes a new `VariableDoc` containing a `ClassDoc`, adds the `VariableDoc` to the containing namespace, and returns the `ClassDoc`.

_proxy_base(***attribs*)

find_base(*name*, *parent_docs*)

process_append_to_all(*line*, *parent_docs*, *prev_line_doc*, *lineno*, *comments*, *decorators*, *encoding*)

The line handler for __all__.append() lines; either of:

```
>>> __all__.append('name')
>>> __all__ += ['name']
```

This handler looks up the value of the variable `__all__` in parent_docs; and if it is found, and has a list-of-strings value, the handler appends the new name.

append_to_all(*name*, *parent_docs*, *lineno*)

is_append_to_all(*line*)

Check if a line is an __all__.append line()

See Also: `process_append_to_all`

Parsing

dotted_names_in(*elt_list*)

Return a list of all simple dotted names in the given expression.

parse_name(*elt*, *strip_parens*=`False`)

If the given token tree element is a name token, then return that name as a string. Otherwise, raise ParseError.

Parameters

`strip_parens`: If true, then if elt is a single name enclosed in parenthases, then return that name.

parse_dotted_name(*elt_list*, *strip_parens*=`True`, *parent_name*=`None`)

Parameters

`parent_name`: canonical name of referring module, to resolve relative imports. *(type=`DottedName`)*

Bug: does not handle 'x.(y).z'

split_on(*elt_list*, *split_tok*)

parse_funcdef_arg(*elt*)

If the given tree token element contains a valid function definition argument (i.e., an identifier token or nested list of identifiers), then return a corresponding string identifier or nested list of string identifiers. Otherwise, raise a ParseError.

parse_classdef_bases(*elt*)

If the given tree token element contains a valid base list (that contains only dotted names), then return a corresponding list of `DottedName`s. Otherwise, raise a ParseError.

Bug: Does not handle either of:

```
- class A( (base.in.parens) ): pass - class B( (lambda:calculated.base)()
): pass
```

parse_dotted_name_list(*elt_list*)

If the given list of tree token elements contains a comma-separated list of dotted names, then return a corresponding list of `DottedName` objects. Otherwise, raise ParseError.

parse_string(*elt_list*)

parse_string_list(*elt_list*, *require_sequence*=`False`)

Variable Manipulation

set_variable(*namespace*, *var_doc*, *preserve_docstring*=`False`)

Add var_doc to namespace. If namespace already contains a variable with the same name, then discard the old variable. If `preserve_docstring` is true, then keep the old variable's docstring when overwriting a variable.

del_variable(*namespace*, *name*)

Name Lookup

lookup_name(*identifier*, *parent_docs*)

Find and return the documentation for the variable named by the given identifier.

Return Value

VariableDoc or *None*

lookup_variable(*dotted_name*, *parent_docs*)

lookup_value(*dotted_name*, *parent_docs*)

Find and return the documentation for the value contained in the variable with the given name in the current namespace.

Docstring Comments

add_docstring_from_comments(*api_doc*, *comments*)

Tree tokens

_join_toktree(*s1*, *s2*)

_pp_toktree_add_piece(*spacing*, *pieces*, *piece*)

pp_toktree(*elts*, *spacing*=`'normal'`, *indent*=`0`)

_pp_toktree(*elts*, *spacing*, *indent*, *pieces*)

Helper Functions

get_module_encoding(*filename*)

See Also: PEP 263[a]

[a] http://www.python.org/peps/pep-0263.html

_get_module_name(*filename*, *package_doc*)

Return (dotted_name, is_package)

flatten(*lst*, *out*=None)

Parameters

`lst:` The nested list that should be flattened.

Return Value

a flat list containing the leaves of the given nested list.

8.2 Variables

_moduledoc_cache

A cache of `ModuleDoc`s that we've already created. `_moduledoc_cache` is a dictionary mapping from filenames to `ValueDoc` objects.

Type: `dict`

Value: `{'/home/edloper/newdata/projects/docutils/docutils/__init...`

Configuration Constants: Control Flow

PARSE_TRY_BLOCKS

Should the contents of `try` blocks be examined?

Value: `True`

PARSE_EXCEPT_BLOCKS

Should the contents of `except` blocks be examined?

Value: `True`

PARSE_FINALLY_BLOCKS

Should the contents of `finally` blocks be examined?

Value: `True`

PARSE_IF_BLOCKS

Should the contents of `if` blocks be examined?

Value: `True`

PARSE_ELSE_BLOCKS

Should the contents of `else` and `elif` blocks be examined?

Value: `True`

PARSE_WHILE_BLOCKS

Should the contents of `while` blocks be examined?

Value: `False`

PARSE_FOR_BLOCKS

Should the contents of `for` blocks be examined?

Value: `False`

Configuration Constants: Imports

IMPORT_HANDLING

What should `docparser` do when it encounters an import statement?

- `'link'`: Create variabledoc objects with imported_from pointers to the source object.
- `'parse'`: Parse the imported file, to find the actual documentation for the imported object. (This will fall back to the 'link' behavior if the imported file can't be parsed, e.g., if it's a builtin.)

Value: `'link'`

IMPORT_STAR_HANDLING

When `docparser` encounters a `'from` *m* `import *'` statement, and is unable to parse *m* (either because `IMPORT_HANDLING='link'`, or because parsing failed), how should it determine the list of identifiers expored by *m*?

- `'ignore'`: ignore the import statement, and don't create any new variables.
- `'parse'`: parse it to find a list of the identifiers that it exports. (This will fall back to the 'ignore' behavior if the imported file can't be parsed, e.g., if it's a builtin.)
- `'introspect'`: import the module and introspect it (using `dir`) to find a list of the identifiers that it exports. (This will fall back to the 'ignore' behavior if the imported file can't be parsed, e.g., if it's a builtin.)

Value: `'parse'`

DEFAULT_DECORATOR_BEHAVIOR

When `DocParse` encounters an unknown decorator, what should it do to the documentation of the decorated function?

- `'transparent'`: leave the function's documentation as-is.
- `'opaque'`: replace the function's documentation with an empty `ValueDoc` object, reflecting the fact that we have no knowledge about what value the decorator returns.

Value: `'transparent'`

PUBLIC_DECORATOR_APPENDS_TO_ALL

If true, then the @public decorator will append the function's name to the module's __all__ variable.

Value: `True`

BASE_HANDLING

What should `docparser` do when it encounters a base class that was imported from another module?

- `'link'`: Create a valuedoc with a `proxy_for` pointer to the base class.
- `'parse'`: Parse the file containing the base class, to find the actual documentation for it. (This will fall back to the 'link' behavior if the imported file can't be parsed, e.g., if it's a builtin.)

Value: `'parse'`

Configuration Constants: Comment docstrings

COMMENT_DOCSTRING_MARKER

The prefix used to mark comments that contain attribute docstrings for variables.

Value: `'#:'`

Configuration Constants: Grouping

START_GROUP_MARKER

The prefix used to mark a comment that starts a group. This marker should be followed (on the same line) by the name of the group. Following a start-group comment, all variables defined at the same indentation level will be assigned to this group name, until the parser reaches the end of the file, a matching end-group comment, or another start-group comment at the same indentation level.

Value: `'#{'`

END_GROUP_MARKER

The prefix used to mark a comment that ends a group. See `START_GROUP_MARKER`.

Value: `'#}'`

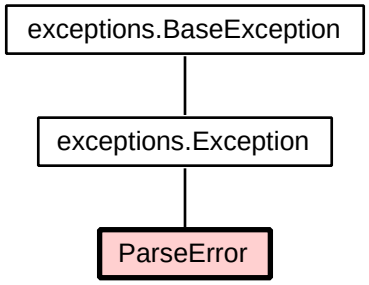
Line processing

CONTROL_FLOW_KEYWORDS

A list of the control flow keywords. If a line begins with one of these keywords, then it should be handled by `process_control_flow_line`.

Value: `['if', 'elif', 'else', 'while', 'for', 'try', 'except', '...`

8.3 Class ParseError



An exception that is used to signify that `docparser` encountered syntactically invalid Python code while processing a Python source file.

8.3.1 Methods

Inherited from exceptions.Exception: __init__(), __new__()

Inherited from exceptions.BaseException: __delattr__(), __getattribute__(), __getitem__(), __getslice__(), __reduce__(), __repr__(), __setattr__(), __setstate__(), __str__()

8.3.2 Properties

Inherited from exceptions.BaseException: args, message

9 Module epydoc.docstringparser

Parse docstrings and handle any fields it defines, such as `@type` and `@author`. Fields are used to describe specific information about an object. There are two classes of fields: *simple fields* and *special fields*.

Simple fields are fields that get stored directly in an `APIDoc`'s metadata dictionary, without any special processing. The set of simple fields is defined by the list `STANDARD_FIELDS`, whose elements are `DocstringField`s.

Special fields are fields that perform some sort of processing on the `APIDoc`, or add information to attributes other than the metadata dictionary. Special fields are are handled by field handler functions, which are registered using `register_field_handler`.

9.1 Functions

Docstring Parsing

parse_docstring(*api_doc*, *docindex*, *suppress_warnings*=[])

Process the given `APIDoc`'s docstring. In particular, populate the `APIDoc`'s `descr` and `summary` attributes, and add any information provided by fields in the docstring.

Parameters

`docindex`: A DocIndex, used to find the containing module (to look up the docformat); and to find any user docfields defined by containing objects.

`suppress_warnings`: A set of objects for which docstring warnings should be suppressed.

add_metadata_from_var(*api_doc*, *field*)

initialize_api_doc(*api_doc*)

A helper function for `parse_docstring()` that initializes the attributes that `parse_docstring()` will write to.

split_init_fields(*fields*, *warnings*)

Remove the fields related to the constructor from a class docstring fields list.

Parameters

`fields`: The fields to process. The list will be modified in place *(type=`list` of `markup.Field`)*

`warnings`: A list to emit processing warnings *(type=`list`)*

Return Value

The `fields` items to be applied to the `__init__` method*(type=`list` of `markup.Field`)*

report_errors(*api_doc*, *docindex*, *parse_errors*, *field_warnings*)

A helper function for `parse_docstring()` that reports any markup warnings and field warnings that we encountered while processing `api_doc`'s docstring.

Field Processing

process_field(*api_doc*, *docindex*, *tag*, *arg*, *descr*)

Process a single field, and use it to update `api_doc`. If `tag` is the name of a special field, then call its handler function. If `tag` is the name of a simple field, then use `process_simple_field` to process it. Otherwise, check if it's a user-defined field, defined in this docstring or the docstring of a containing object; and if so, process it with `process_simple_field`.

Parameters

`tag`: The field's tag, such as `'author'`

`arg`: The field's optional argument

`descr`: The description following the field tag and argument.

Raises

ValueError If a problem was encountered while processing the field. The `ValueError`'s string argument is an explanation of the problem, which should be displayed as a warning message.

user_docfields(*api_doc*, *docindex*)

Return a list of user defined fields that can be used for the given object. This list is taken from the given `api_doc`, and any of its containing `NamepaceDocs`.

Note: We assume here that a parent's docstring will always be parsed before its childrens'. This is indeed the case when we are called via `docbuilder.build_doc_index()`. If a child's docstring is parsed before its parents, then its parent won't yet have had its `extra_docstring_fields` attribute initialized.

register_field_handler(*handler*, **field_tags*)

Register the given field handler function for processing any of the given field tags. Field handler functions should have the following signature:

```
>>> def field_handler(api_doc, docindex, tag, arg, descr):
...     '''update api_doc in response to the field.'''
```

Where `api_doc` is the documentation object to update; `docindex` is a `DocIndex` that can be used to look up the documentation for related objects; `tag` is the field tag that was used; `arg` is the optional argument; and `descr` is the description following the field tag and argument.

Field Handler Functions

process_summary_field(*api_doc*, *docindex*, *tag*, *arg*, *descr*)

Store `descr` in `api_doc.summary`

process_include_field(*api_doc*, *docindex*, *tag*, *arg*, *descr*)

Copy the docstring contents from the object named in `descr`

process_undocumented_field(*api_doc*, *docindex*, *tag*, *arg*, *descr*)

Remove any documentation for the variables named in `descr`

process_group_field(*api_doc*, *docindex*, *tag*, *arg*, *descr*)

Define a group named `arg` containing the variables whose names are listed in `descr`.

process_deffield_field(*api_doc*, *docindex*, *tag*, *arg*, *descr*)

Define a new custom field.

process_raise_field(*api_doc*, *docindex*, *tag*, *arg*, *descr*)

Record the fact that `api_doc` can raise the exception named `tag` in `api_doc.exception_descrs`.

process_sort_field(*api_doc*, *docindex*, *tag*, *arg*, *descr*)

process_type_field(*api_doc*, *docindex*, *tag*, *arg*, *descr*)

process_var_field(*api_doc*, *docindex*, *tag*, *arg*, *descr*)

process_cvar_field(*api_doc*, *docindex*, *tag*, *arg*, *descr*)

process_ivar_field(*api_doc*, *docindex*, *tag*, *arg*, *descr*)

process_return_field(*api_doc*, *docindex*, *tag*, *arg*, *descr*)

process_rtype_field(*api_doc*, *docindex*, *tag*, *arg*, *descr*)

process_arg_field(*api_doc*, *docindex*, *tag*, *arg*, *descr*)

process_kwarg_field(*api_doc*, *docindex*, *tag*, *arg*, *descr*)

Helper Functions

check_type_fields(*api_doc*, *field_warnings*)

Check to make sure that all type fields correspond to some documented parameter; if not, append a warning to field_warnings.

set_var_descr(*api_doc*, *ident*, *descr*)

set_var_type(*api_doc*, *ident*, *descr*)

_check(*api_doc*, *tag*, *arg*, *context*=`None`, *expect_arg*=`None`)

get_docformat(*api_doc*, *docindex*)

Return the name of the markup language that should be used to parse the API documentation for the given object.

unindent_docstring(*docstring*)

_descr_to_identifiers(*descr*)

Given a `ParsedDocstring` that contains a list of identifiers, return a list of those identifiers. This is used by fields such as `@group` and `@sort`, which expect lists of identifiers as their values. To extract the identifiers, the docstring is first converted to plaintext, and then split. The plaintext content of the docstring must be a a list of identifiers, separated by spaces, commas, colons, or semicolons.

Parameters

`descr`: A `ParsedDocstring` containing a list of identifiers. *(type=`markup.ParsedDocstring`)*

Return Value

A list of the identifier names contained in `descr`.*(type=`list of string`)*

Raises

ValueError If `descr` does not contain a valid list of identifiers.

_descr_to_docstring_field(*arg*, *descr*)

Function Signature Extraction

parse_function_signature(*func_doc*, *doc_source*, *docformat*, *parse_errors*)

Construct the signature for a builtin function or method from its docstring. If the docstring uses the standard convention of including a signature in the first line of the docstring (and formats that signature according to standard conventions), then it will be used to extract a signature. Otherwise, the signature will be set to a single varargs variable named `"..."`.

Parameters

`func_doc`: The target object where to store parsed signature. Also container of the docstring to parse if doc_source is `None` *(type=`RoutineDoc`)*

`doc_source`: Contains the docstring to parse. If `None`, parse `func_doc` docstring instead *(type=`APIDoc`)*

Return Value

None

9.2 Variables

STANDARD_FIELDS

A list of the standard simple fields accepted by epydoc. This list can be augmented at run-time by a docstring with the special `@deffield` field. The order in which fields are listed here determines the order in which they will be displayed in the output.

Value: `[<Field: deprecated>, <Field: version>, <Field: date>, <F...`

Docstring Parsing

DEFAULT_DOCFORMAT

The name of the default markup languge used to process docstrings.

Value: `'plaintext'`

RETURN_PDS

A ParsedDocstring containing the text 'Returns'. This is used to construct summary descriptions for routines that have empty `descr`, but non-empty `return_descr`.

Value: `markup.parse('Returns:', markup= 'epytext')`

Field Processing Error Messages

UNEXPECTED_ARG

Value: `'%r did not expect an argument'`

EXPECTED_ARG

Value: `'%r expected an argument'`

EXPECTED_SINGLE_ARG

Value: `'%r expected a single argument'`

BAD_CONTEXT

Value: `'Invalid context for %r'`

REDEFINED

Value: `'Redefinition of %s'`

UNKNOWN_TAG

Value: `'Unknown field tag %r'`

BAD_PARAM

Value: `'@%s for unknown parameter %s'`

Field Processing

_field_dispatch_table

Value: `{}`

Field Handler Functions

PARAMETER_TAGS

Value: `('arg', 'argument', 'parameter', 'param', 'kwarg', 'keywo...`

VARIABLE_TAGS

Value: `('cvar', 'cvariable', 'ivar', 'ivariable')`

EXCEPTION_TAGS

Value: `('raise', 'raises', 'except', 'exception')`

Helper Functions

_IDENTIFIER_LIST_REGEXP

Value: `re.compile(r'^[\w\.\*]+([\s,:;]\s*[\w\.\*]+)*$')`

Function Signature Extraction

_SIGNATURE_RE

A regular expression that is used to extract signatures from docstrings.

Value: `re.compile(r'^\s*((?P<self>\w+)\.)?(?P<func>\w+)\((?P<par...`

9.3 Class DocstringField

A simple docstring field, which can be used to describe specific information about an object, such as its author or its version. Simple docstring fields are fields that take no arguments, and are displayed as simple sections.

9.3.1 Methods

__init__(*self*, *tags*, *label*, *plural*=`None`, *short*=`0`, *multivalue*=`1`, *takes_arg*=`0`, *varnames*=`None`)

__cmp__(*self*, *other*)

__hash__(*self*)

__repr__(*self*)

9.3.2 Instance Variables

multivalue

If true, then multiple values may be given for this field; if false, then this field can only take a single value, and a warning should be issued if it is redefined.

plural

The label that should be used to identify this field in the output, if the field contains multiple values.

short

If true, then multiple values should be combined into a single comma-delimited list. If false, then multiple values should be listed separately in a bulleted list.

singular

The label that should be used to identify this field in the output, if the field contains one value.

tags

The set of tags that can be used to identify this field.

takes_arg

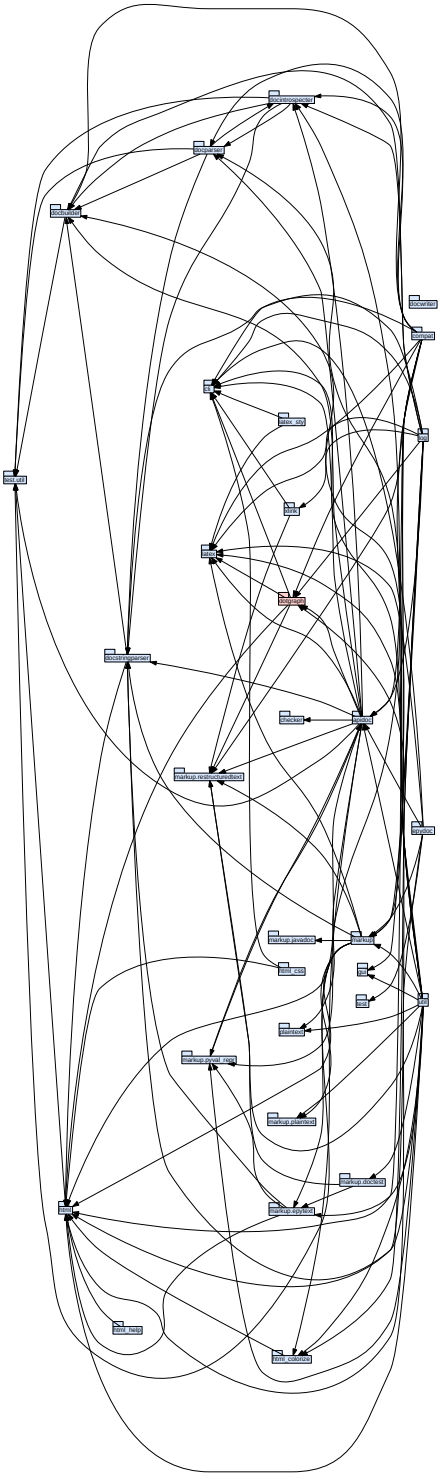
If true, then this field expects an argument; and a separate field section will be constructed for each argument value. The label (and plural label) should include a '%s' to mark where the argument's string rep should be added.

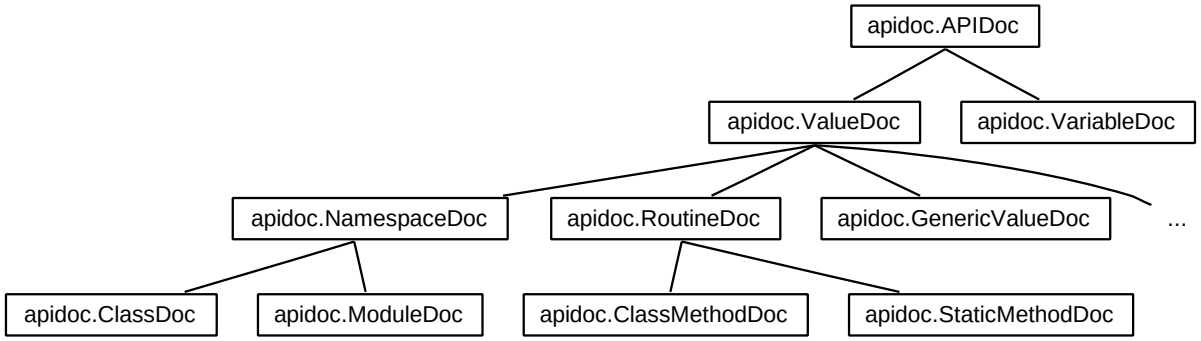
10 Package epydoc.docwriter

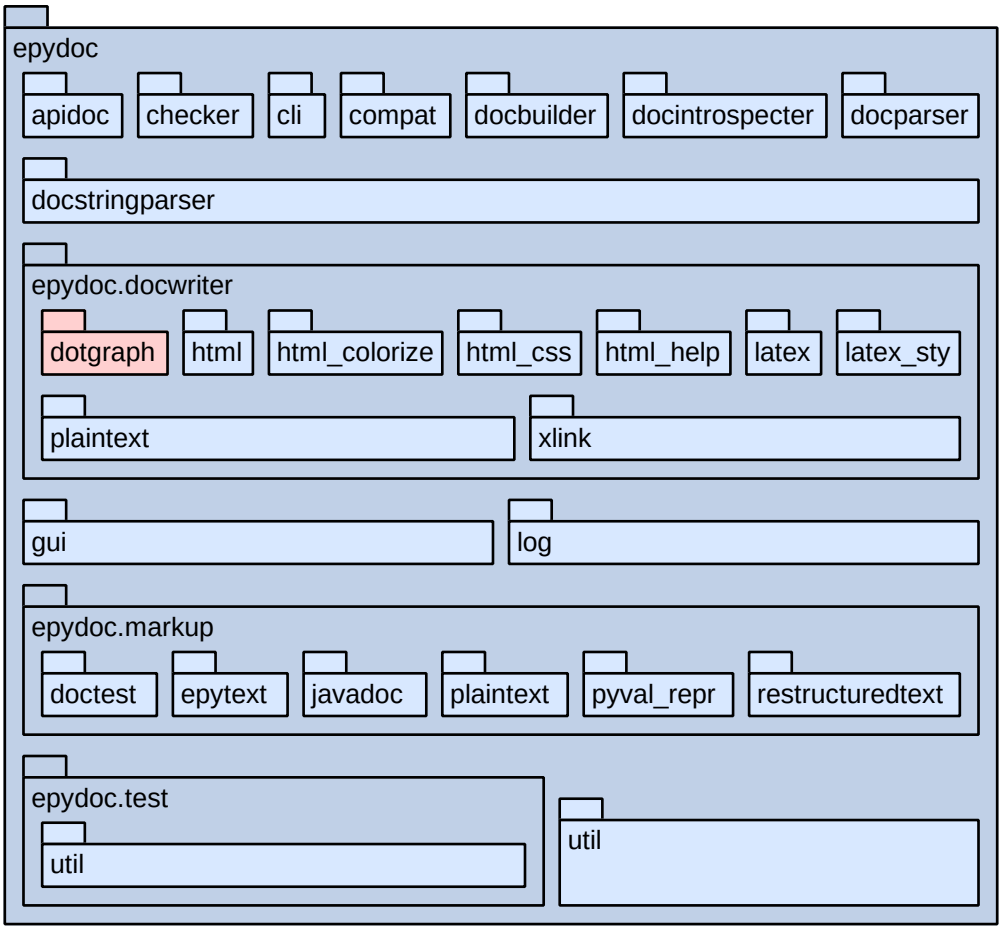
Output generation.

11 Module epydoc.docwriter.dotgraph

Render Graphviz directed graphs as images. Below are some examples.


epydoc.apidoc
epydoc.docbuilder
epydoc.docwriter
epydoc.html
epydoc.markup
epydoc.markup.epytext
epydoc.markup.plaintext
epydoc.markup.restructuredtext
epydoc.markup.javadoc
epydoc.markup.doctest
epydoc.markup.latex
epydoc.markup.docstring
epydoc.util
epydoc.cli
epydoc.compat
epydoc.docstringparser
epydoc.docwriter.dotgraph
epydoc.docwriter.latex
epydoc.docwriter.xlink
epydoc.test.util
epydoc.test.apidoc
epydoc.test.docbuilder
epydoc.test.docstringparser
epydoc.test.epytext
epydoc.test.html
epydoc.test.latex
epydoc.test.markup
epydoc.test.restructuredtext
epydoc.test.xlink
epydoc.test
epydoc.util
epydoc.cli.cli_help
epydoc.cli.cli_value_ops





See Also: The Graphviz Homepage

11.1 Functions

Graph Generation Functions

package_tree_graph(*packages*, *linker*, *context*=`None`, ***options*)

Return a `DotGraph` that graphically displays the package hierarchies for the given packages.

uml_package_tree_graph(*packages*, *linker*, *context*=`None`, ***options*)

Return a `DotGraph` that graphically displays the package hierarchies for the given packages as a nested set of UML symbols.

class_tree_graph(*classes*, *linker*, *context*=`None`, ***options*)

Return a `DotGraph` that graphically displays the class hierarchy for the given classes. Options:

- exclude: A list of classes that should be excluded
- dir: LR|RL|BT requests a left-to-right, right-to-left, or bottom-to- top, drawing. (corresponds to the dot option 'rankdir'
- max_subclass_depth: The maximum depth to which subclasses will be drawn.
- max_subclasses: A list of ints, specifying how many subclasses should be drawn per class at each level of the graph. E.g., [5,3,1] means draw up to 5 subclasses for the specified classes; up to 3 subsubclasses for each of those (up to) 5 subclasses; and up to 1 subclass for each of those.

_class_tree_graph(*graph*, *classes*, *mknode*, *mkedge*, *linker*, *context*, *options*, *cls2node*)

A helper function that is used by both `class_tree_graph()` and `uml_class_tree_graph()` to draw class trees. To abstract over the differences between the two, this function takes two callback functions that create graph nodes and edges:

- `mknode(base, nodetype, linker, context, options)`: Returns a `DotGraphNode`. `nodetype` is one of: subclass, superclass, selected, undocumented.
- `mkedge(begin, end, edgetype, options)`: Returns a `DotGraphEdge`. `edgetype` is one of: subclass, truncate-subclass.

_add_class_tree_superclasses(*graph*, *classes*, *mknode*, *mkedge*, *linker*, *context*, *options*, *cls2node*)

_add_class_tree_subclasses(*graph*, *classes*, *mknode*, *mkedge*, *linker*, *context*, *options*, *cls2node*, *truncated*)

_add_class_tree_inheritance(*graph*, *classes*, *mknode*, *mkedge*, *linker*, *context*, *options*, *cls2node*, *truncated*)

_get_subclass_depth_map(*classes*)

uml_class_tree_graph(*classes*, *linker*, *context*=`None`, ***options*)

Return a `DotGraph` that graphically displays the class hierarchy for the given class, using UML notation. Options:

- exclude: A list of classes that should be excluded
- dir: LR|RL|BT requests a left-to-right, right-to-left, or bottom-to- top, drawing. (corresponds to the dot option 'rankdir'
- max_subclass_depth: The maximum depth to which subclasses will be drawn.
- max_subclasses: A list of ints, specifying how many subclasses should be drawn per class at each level of the graph. E.g., [5,3,1] means draw up to 5 subclasses for the specified classes; up to 3 subsubclasses for each of those (up to) 5 subclasses; and up to 1 subclass for each of those.
- max_attributes
- max_operations
- show_private_vars
- show_magic_vars
- link_attributes
- show_signature_defaults
- max_signature_width

_uml_mknode(*cls*, *nodetype*, *linker*, *context*, *options*)

_uml_mkedge(*start*, *end*, *edgetype*, *options*)

import_graph(*modules*, *docindex*, *linker*, *context*=`None`, ***options*)

call_graph(*api_docs*, *docindex*, *linker*, *context*=`None`, ***options*)

Parameters

`options`:
- `dir`: rankdir for the graph. (default=LR)
- `add_callers`: also include callers for any of the routines in `api_docs`. (default=False)
- `add_callees`: also include callees for any of the routines in `api_docs`. (default=False)

To Do: Add an `exclude` option?

Dot Version

get_dot_version()

Helper Functions

add_valdoc_nodes(*graph*, *val_docs*, *linker*, *context*)

To Do: Use different node styles for different subclasses of APIDoc

mk_valdoc_node(*val_doc*, *linker*, *context*)

specialize_valdoc_node(*node*, *val_doc*, *context*, *linker*)

Update the style attributes of `node` to reflext its type and context.

name_list(*api_docs*, *context*=`None`)

11.2 Variables

USE_DOT2TEX

Should the dot2tex module be used to render dot graphs to latex (if it's available)? This is experimental, and not yet working, so it should be left False for now.

Value: `False`

COLOR

colors for graphs of APIDocs

Value: `{'BASECLASS_BG': '#e0b0a0', 'CLASS_BG': '#d8ffe8', 'INH_L...`

Dot Graphs

DOT_COMMAND

The command that should be used to spawn dot

Value: `'dot'`

Dot Version

_dot_version

Value: `None`

_DOT_VERSION_RE

Value: `re.compile(r'dot version ([\d\.]+)')`

Helper Functions

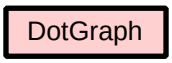
NOOP_URL

Value: `'javascript:void(0);'`

MODULE_NODE_HTML

Value: `'<TABLE BORDER="0" CELLBORDER="0" CELLSPACING="0"\n ...`

11.3 Class DotGraph



A `dot` directed graph. The contents of the graph are constructed from the following instance variables:

- `nodes`: A list of `DotGraphNode`s, encoding the nodes that are present in the graph. Each node is characterized a set of attributes, including an optional label.
- `edges`: A list of `DotGraphEdge`s, encoding the edges that are present in the graph. Each edge is characterized by a set of attributes, including an optional label.
- `node_defaults`: Default attributes for nodes.
- `edge_defaults`: Default attributes for edges.
- `body`: A string that is appended as-is in the body of the graph. This can be used to build more complex dot graphs.

The `link()` method can be used to resolve crossreference links within the graph. In particular, if the 'href' attribute of any node or edge is assigned a value of the form `<name>`, then it will be replaced by the URL of the object with that name. This applies to the `body` as well as the `nodes` and `edges`.

To render the graph, use the methods `write()` and `render()`. Usually, you should call `link()` before you render the graph.

11.3.1 Methods

__init__(*self*, *title*, *body*=`''`, *node_defaults*=`None`, *edge_defaults*=`None`, *caption*=`None`)

Create a new `DotGraph`.

Overrides: object.__init__

to_latex(*self*, *directory*, *center*=`True`, *size*=`None`)

Return the LaTeX code that should be used to display this graph. Two image files will be written: image_file+'.eps' and image_file+'.pdf'.

Parameters

`size`: The maximum size for the generated image, in inches. In particular, if `size` is `"w,h"`, then this will add a line `size="w,h"` to the dot graph. Defaults to `DEFAULT_LATEX_SIZE`. *(type=`str`)*

_to_dot2tex(*self*, *center*=`True`, *size*=`None`)

to_html(*self*, *directory*, *center*=`True`, *size*=`None`)

Return the HTML code that should be uesd to display this graph (including a client-side image map).

Parameters

`image_url`: The URL of the image file for this graph; this should be generated separately with the `write()` method.

`size`: The maximum size for the generated image, in inches. In particular, if `size` is `"w,h"`, then this will add a line `size="w,h"` to the dot graph. Defaults to `DEFAULT_HTML_SIZE`. *(type=`str`)*

link(*self*, *docstring_linker*)

Replace any href attributes whose value is `<name>` with the url of the object whose name is `<name>`.

_link_href(*self*, *attribs*, *docstring_linker*)

Helper for `link()`

write(*self*, *filename*, *language*=`None`, *size*=`None`)

Render the graph using the output format `language`, and write the result to `filename`.

Parameters

`size`: The maximum size for the generated image, in inches. In particular, if `size` is `"w,h"`, then this will add a line `size="w,h"` to the dot graph. If not specified, no size line will be added. *(type=`str`)*

Return Value

True if rendering was successful.

_pick_language(*self*, *filename*)

render(*self*, *language*=None, *size*=None)

Use the `dot` command to render this graph, using the output format `language`. Return the result as a string, or `None` if the rendering failed.

Parameters

`size`: The maximum size for the generated image, in inches. In particular, if `size` is `"w,h"`, then this will add a line `size="w,h"` to the dot graph. If not specified, no size line will be added. *(type=`str`)*

_run_dot(*self*, **options*, ***kwparam*)

to_dotfile(*self*, *size*=None)

Return the string contents of the dot file that should be used to render this graph.

Parameters

`size`: The maximum size for the generated image, in inches. In particular, if `size` is `"w,h"`, then this will add a line `size="w,h"` to the dot graph. If not specified, no size line will be added. *(type=`str`)*

11.3.2 Class Variables

_uids

A set of all uids that that have been generated, used to ensure that each new graph has a unique uid.

Value: `set(['class_hierarchy_for_apidoc', 'class_hierarchy_for_a...`

DEFAULT_NODE_DEFAULTS

Value: `{'fontname': 'Helvetica', 'fontsize': 10}`

DEFAULT_EDGE_DEFAULTS

Value: `{'fontname': 'Helvetica', 'fontsize': 10}`

DEFAULT_LATEX_SIZE

The default minimum size in inches (width,height) for graphs when rendering with `to_latex()`

Value: `'6.25,8'`

DEFAULT_HTML_SIZE

The default minimum size in inches (width,height) for graphs when rendering with `to_html()`

Value: `'10,20'`

DEFAULT_HTML_IMAGE_FORMAT

The default format used to generate images by `to_html()`

Value: `'gif'`

11.3.3 Instance Variables

title

The title of the graph.

caption

A caption for the graph.

nodes

A list of the nodes that are present in the graph.

Type: `list of DotGraphNode`

edges

A list of the edges that are present in the graph.

Type: `list of DotGraphEdge`

body

A string that should be included as-is in the body of the graph.

Type: `str`

node_defaults

Default attribute values for nodes.

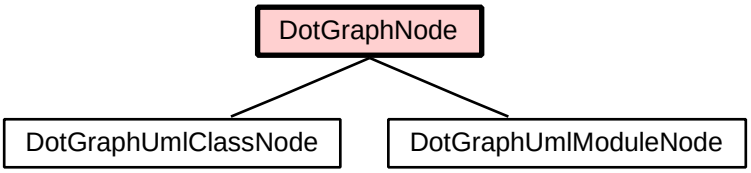
edge_defaults

Default attribute values for edges.

uid

A unique identifier for this graph. This can be used as a filename when rendering the graph. No two `DotGraph`s will have the same uid.

11.4 Class DotGraphNode



Known Subclasses: epydoc.docwriter.dotgraph.DotGraphUmlClassNode, epydoc.docwriter.dotgraph.DotGraphUmlModuleNode

11.4.1 Methods

__init__(*self*, *label*=None, *html_label*=None, ***attribs*)

Overrides: object.__init__ *(inherited documentation)*

__getitem__(*self*, *attr*)

__setitem__(*self*, *attr*, *val*)

to_dotfile(*self*)

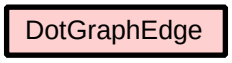
Return the dot commands that should be used to render this node.

11.4.2 Class Variables

_next_id

Value: `0`

11.5 Class DotGraphEdge



11.5.1 Methods

__init__(*self*, *start*, *end*, *label*=None, ***attribs*)

Parameters

`start`: *(type=DotGraphNode)*

`end`: *(type=DotGraphNode)*

Overrides: object.__init__

__getitem__(*self*, *attr*)

__setitem__(*self*, *attr*, *val*)

to_dotfile(*self*)

Return the dot commands that should be used to render this edge.

11.5.2 Instance Variables

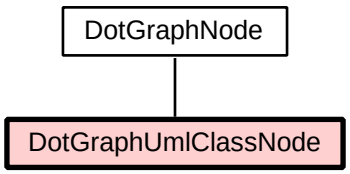
start

Type: `DotGraphNode`

end

Type: `DotGraphNode`

11.6 Class DotGraphUmlClassNode



A specialized dot graph node used to display `ClassDoc`s using UML notation. The node is rendered as a table with three cells: the top cell contains the class name; the middle cell contains a list of attributes; and the bottom cell contains a list of operations:

```
+--------------+
|  ClassName   |
+--------------+
| x: int       |
|     ...      |
+--------------+
| f(self, x)   |
|     ...      |
+--------------+
```

`DotGraphUmlClassNode`s may be *collapsed*, in which case they are drawn as a simple box containing the class name:

```
+--------------+
|  ClassName   |
+--------------+
```

Attributes with types corresponding to documented classes can optionally be converted into edges, using `link_attributes()`.

To Do: Add more options? - show/hide operation signature - show/hide operation signature types - show/hide operation signature return type - show/hide attribute types - use qualifiers

11.6.1 Methods

__init__(*self*, *class_doc*, *linker*, *context*, *collapsed*=`False`, *bgcolor*=`'#d8ffe8'`, ***options*)

Create a new `DotGraphUmlClassNode` based on the class `class_doc`.

Parameters

`linker:`	Used to look up URLs for classes. *(type=`markup.DocstringLinker`)*
`context:`	The context in which this node will be drawn; dotted names will be contextualized to this context. *(type=`APIDoc`)*
`collapsed:`	If true, then display this node as a simple box. *(type=`bool`)*
`bgcolor:`	The background color for this node. *(type=`'str'`)*
`options:`	A set of options used to control how the node should be displayed. *(type=`dict`)*
`show_private_vars:`	If false, then private variables are filtered out of the attributes & operations lists. (Default: *False*)
`show_magic_vars:`	If false, then magic variables (such as `__init__` and `__add__`) are filtered out of the attributes & operations lists. (Default: *True*)
`show_inherited_vars:`	If false, then inherited variables are filtered out of the attributes & operations lists. (Default: *False*)
`max_attributes:`	The maximum number of attributes that should be listed in the attribute box. If the class has more than this number of attributes, some will be ellided. Ellipsis is marked with `'...'`. (Default: 10)
`max_operations:`	The maximum number of operations that should be listed in the operation box. (Default: 5)
`add_nodes_for_linked_attributes:`	If true, then `link_attributes()` will create new a collapsed node for the types of a linked attributes if no node yet exists for that type.
`show_signature_defaults:`	If true, then show default parameter values in method signatures; if false, then hide them. (Default: *False*)
`max_signature_width:`	The maximum width (in chars) for method signatures. If the signature is longer than this, then it will be trunctated (with `'...'`). (Default: *60*)

Overrides: epydoc.docwriter.dotgraph.DotGraphNode.__init__

Inherited from epydoc.docwriter.dotgraph.DotGraphNode*(Section 11.4, p. 124)*: __getitem__(), __setitem__()

Attribute Linking

link_attributes(*self*, *graph*, *nodes*)

Convert any attributes with type descriptions corresponding to documented classes to edges. The following type descriptions are currently handled:

- Dotted names: Create an attribute edge to the named type, labelled with the variable name.
- Collections: Create an attribute edge to the named type, labelled with the variable name, and marked with '*' at the type end of the edge.
- Mappings: Create an attribute edge to the named type, labelled with the variable name, connected to the class by a qualifier box that contains the key type description.
- Optional: Create an attribute edge to the named type, labelled with the variable name, and marked with '0..1' at the type end of the edge.

The edges created by `link_attributes()` are handled internally by `DotGraphUmlClassNode`; they should *not* be added directly to the `DotGraph`.

Parameters

`nodes`: A dictionary mapping from `ClassDoc`s to `DotGraphUmlClassNode`s, used to look up the nodes for attribute types. If the `add_nodes_for_linked_attributes` option is used, then new nodes will be added to this dictionary for any types that are not already listed. These added nodes must be added to the `DotGraph`.

_link_attribute(*self*, *var*, *graph*, *nodes*)

Helper for `link_attributes()`: try to convert the attribute variable `var` into an edge, and add that edge to `self.edges`. Return `True` iff the variable was successfully converted to an edge (in which case, it should be removed from the attributes list).

_add_attribute_edge(*self*, *var*, *graph*, *nodes*, *type_str*, ***attribs*)

Helper for `link_attributes()`: try to add an edge for the given attribute variable `var`. Return `True` if successful.

Helper Methods

_summary(*self*, *api_doc*)

Return a plaintext summary for `api_doc`

_type_descr(*self*, *api_doc*)

Return a plaintext type description for `api_doc`

_tooltip(*self*, *var_doc*)

Return a tooltip for `var_doc`.

Rendering

_attribute_cell(*self*, *var_doc*)

_operation_cell(*self*, *var_doc*)

To Do:

- do 'word wrapping' on the signature, by starting a new row in the table, if necessary. How to indent the new line? Maybe use align=right? I don't think dot has a .
- Optionally add return type info?

_operation_arg(*self*, *name*, *default*, *func_doc*)

To Do:

- Handle tuple args better
- Optionally add type info?

_qualifier_cell(*self*, *key_label*, *port*)

_get_html_label(*self*)

to_dotfile(*self*)

Return the dot commands that should be used to render this node.

Overrides: epydoc.docwriter.dotgraph.DotGraphNode.to_dotfile *(inherited documentation)*

11.6.2 Class Variables

Inherited from epydoc.docwriter.dotgraph.DotGraphNode*(Section 11.4, p. 124)*: _next_id

Attribute Linking

SIMPLE_TYPE_RE

A regular expression that matches descriptions of simple types.

Value: `re.compile(r'^([\w\.]+)$')`

COLLECTION_TYPE_RE

A regular expression that matches descriptions of collection types.

Value: `re.compile(r'^(list|set|sequence|tuple|collection) of ([\...`

MAPPING_TYPE_RE

A regular expression that matches descriptions of mapping types.

Value: `re.compile(r'^(dict|dictionary|map|mapping) from ([\w\.]+...`

MAPPING_TO_COLLECTION_TYPE_RE

A regular expression that matches descriptions of mapping types whose value type is a collection.

Value: `re.compile(r'^(dict|dictionary|map|mapping) from ([\w\.]+...`

OPTIONAL_TYPE_RE

A regular expression that matches descriptions of optional types.

Value: `re.compile(r'^(None or|optional) ([\w\.]+)$|([\w\.]+) or ...`

Rendering

_ATTRIBUTE_CELL

args: (url, tooltip, label)

Value: `'\n <TR><TD ALIGN="LEFT" HREF="%s" TOOLTIP="%s">%s</TD...`

_OPERATION_CELL

args: (url, tooltip, label)

Value: `'\n <TR><TD ALIGN="LEFT" HREF="%s" TOOLTIP="%s">%s</TD...`

_QUALIFIER_CELL

args: (port, bgcolor, label)

Value: `'\n <TR><TD VALIGN="BOTTOM" PORT="%s" BGCOLOR="%s" BOR...`

_QUALIFIER_DIV

Value: `'\n <TR><TD VALIGN="BOTTOM" HEIGHT="10" WIDTH="10" FIX...`

_LABEL

Args: (rowspan, bgcolor, classname, attributes, operations, qualifiers)

Value: `'\n <TABLE BORDER="0" CELLBORDER="0" CELLSPACING="0" C...`

_COLLAPSED_LABEL

Value: `'\n <TABLE CELLBORDER="0" BGCOLOR="%s" PORT="body">\n ...`

11.6.3 Instance Variables

class_doc

The class represented by this node.

linker

Used to look up URLs for classes.

context

The context in which the node will be drawn.

bgcolor

The background color of the node.

options

Options used to control how the node is displayed.

collapsed

If true, then draw this node as a simple box.

attributes

The list of VariableDocs for attributes

operations

The list of VariableDocs for operations

qualifiers

List of (key_label, port) tuples.

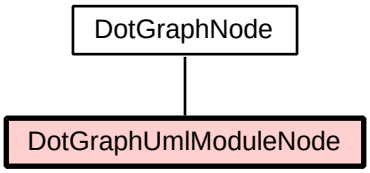
edges

List of edges used to represent this node's attributes. These should not be added to the `DotGraph`; this node will generate their dotfile code directly.

same_rank

List of nodes that should have the same rank as this one. (Used for nodes that are created by _link_attributes).

11.7 Class DotGraphUmlModuleNode



A specialized dot grah node used to display `ModuleDoc`s using UML notation. Simple module nodes look like:

```
.----.
+------------+
| modulename |
+------------+
```

Packages nodes are drawn with their modules & subpackages nested inside:

```
.----.
+----------------------------------------+
| packagename                            |
|                                        |
|  .----.       .----.       .----.      |
|  +---------+  +---------+  +---------+ |
|  | module1 |  | module2 |  | module3 | |
|  +---------+  +---------+  +---------+ |
|                                        |
+----------------------------------------+
```

11.7.1 Methods

__init__(*self*, *module_doc*, *linker*, *context*, *collapsed*=`False`, *excluded_submodules*=`()`, ***options*)

Overrides: epydoc.docwriter.dotgraph.DotGraphNode.__init__

_get_html_label(*self*, *package*)

Return Value

(label, depth, width) where:

- `label` is the HTML label
- `depth` is the depth of the package tree (for coloring)
- `width` is the max width of the HTML label, roughly in units of characters.

_color(*self*, *package*, *depth*)

to_dotfile(*self*)

Return the dot commands that should be used to render this node.

Overrides: epydoc.docwriter.dotgraph.DotGraphNode.to_dotfile *(inherited documentation)*

Inherited from epydoc.docwriter.dotgraph.DotGraphNode*(Section 11.4, p. 124)*: __getitem__(), __setitem__()

11.7.2 Class Variables

_MODULE_LABEL

Expects: (color, color, url, tooltip, body)

Value: `' \n <TABLE BORDER="0" CELLBORDER="0" CELLSPACING="0" ...`

_NESTED_BODY

Expects: (name, body_rows)

Value: `'\n <TABLE BORDER="0" CELLBORDER="0" CELLPADDING="0" C...`

_NESTED_BODY_ROW

Expects: (cells,)

Value: `'\n <TR><TD>\n <TABLE BORDER="0" CELLBORDER="0"><...`

_COLOR_DIFF

Value: `24`

Inherited from epydoc.docwriter.dotgraph.DotGraphNode*(Section 11.4, p. 124)*: _next_id

12 Module epydoc.docwriter.html

The HTML output generator for epydoc. The main interface provided by this module is the `HTMLWriter` class.

To Do: Add a cache to `HTMLWriter.url()`?

12.1 Functions

compile_template(*docstring*, *template_string*, *output_function*='out', *debug*=True)

Given a template string containing inline python source code, return a python function that will fill in the template, and output the result. The signature for this function is taken from the first line of `docstring`. Output is generated by making repeated calls to the output function with the given name (which is typically one of the function's parameters).

The templating language used by this function passes through all text as-is, with three exceptions:

- If every line in the template string is indented by at least x spaces, then the first x spaces are stripped from each line.
- Any line that begins with '>>>' (with no indentation) should contain python code, and will be inserted as-is into the template-filling function. If the line begins a control block (such as 'if' or 'for'), then the control block will be closed by the first '>>>'-marked line whose indentation is less than or equal to the line's own indentation (including lines that only contain comments.)
- In any other line, any expression between two '$' signs will be evaluated and inserted into the line (using `str()` to convert the result to a string).

Here is a simple example:

```
>>> TEMPLATE = ■'
... <book>
...  <title>$book.title$</title>
...  <pages>$book.count_pages()$</pages>
... >>> for chapter in book.chapters:
...  <chaptername>$chapter.name$</chaptername>
... >>> #endfor
... </book>
>>> write_book = compile_template('write_book(out, book)', TEMPLATE)
```

Acknowledgements: The syntax used by `compile_template` is loosely based on Cheetah.

strip_indent(*s*)

Given a multiline string `s`, find the minimum indentation for all non-blank lines, and return a new string formed by stripping that amount of indentation from all lines in `s`.

12.2 Class HTMLWriter

12.2.1 Methods

__init__(*self*, *docindex*, ***kwargs*)

Construct a new HTML writer, using the given documentation index.

Parameters

`docindex:` The documentation index.

`prj_name:` The name of the project. Defaults to none. *(type=`string`)*

`prj_url:` The target for the project hopeage link on the navigation bar. If `prj_url` is not specified, then no hyperlink is created. *(type=`string`)*

`prj_link:` The label for the project link on the navigation bar. This link can contain arbitrary HTML code (e.g. images). By default, a label is constructed from `prj_name`. *(type=`string`)*

`top_page:` The top page for the documentation. This is the default page shown main frame, when frames are enabled. `top` can be a URL, the name of a module, the name of a class, or one of the special strings `"trees.html"`, `"indices.html"`, or `"help.html"`. By default, the top-level package or module is used, if there is one; otherwise, `"trees"` is used. *(type=`string`)*

`css:` The CSS stylesheet file. If `css` is a file name, then the specified file's conents will be used. Otherwise, if `css` is the name of a CSS stylesheet in `epydoc.docwriter.html_css`, then that stylesheet will be used. Otherwise, an error is reported. If no stylesheet is specified, then the default stylesheet is used. *(type=`string`)*

`help_file:` The name of the help file. If no help file is specified, then the default help file will be used. *(type=`string`)*

`show_private:` Whether to create documentation for private objects. By default, private objects are documented. *(type=`boolean`)*

`show_frames:` Whether to create a frames-based table of contents. By default, it is produced. *(type=`boolean`))*

`show_imports:` Whether or not to display lists of imported functions and classes. By default, they are not shown. *(type=`boolean`)*

`variable_maxlines:` The maximum number of lines that should be displayed for the value of a variable in the variable details section. By default, 8 lines are displayed. *(type=`int`)*

`variable_linelength:` The maximum line length used for displaying the values of variables in the variable details sections. If a line is longer than this length, then it will be wrapped to the next line. The default line length is 70 characters. *(type=`int`)*

`variable_summary_linelength:` The maximum line length used for displaying the values of variables in the summary section. If a

_find_top_page(*self*, *pagename*)

Find the top page for the API documentation. This page is used as the default page shown in the main frame, when frames are used. When frames are not used, this page is copied to `index.html`.

Parameters

`pagename`: The name of the page, as specified by the keyword argument `top` to the constructor. *(type=`string`)*

Return Value

The URL of the top page.*(type=`string`)*

1. Interface Methods

write(*self*, *directory*=`None`)

Write the documentation to the given directory.

Parameters

`directory`: The directory to which output should be written. If no directory is specified, output will be written to the current directory. If the directory does not exist, it will be created. *(type=`string`)*

Return Value

None

Raises

OSError If `directory` cannot be created.

OSError If any file cannot be created or written to.

_write(*self*, *write_func*, *directory*, *filename*, **args*)

_mkdir(*self*, *directory*)

If the given directory does not exist, then attempt to create it.

Return Value

None

2.1. Module Pages

write_module(*self*, *out*, *doc*)

Write an HTML page containing the API documentation for the given module to `out`.

Parameters

`doc`: A `ModuleDoc` containing the API documentation for the module that should be described.

2.??. Source Code Pages

write_sourcecode(*self*, *out*, *doc*, *name_to_docs*)

2.2. Class Pages

write_class(*self*, *out*, *doc*)

Write an HTML page containing the API documentation for the given class to `out`.

Parameters

`doc`: A `ClassDoc` containing the API documentation for the class that should be described.

write_class_tree_graph(*self*, *out*, *doc*, *graphmaker*)

Write HTML code for a class tree graph of `doc` (a classdoc), using `graphmaker` to draw the actual graph. `graphmaker` should be `class_tree_graph()`, or `uml_class_tree_graph()`, or any other function with a compatible signature.

If the given class has any private sublcasses (including recursive subclasses), then two graph images will be generated – one to display when private values are shown, and the other to display when private values are hidden.

2.3. Trees pages

write_module_tree(*self*, *out*)

write_class_tree(*self*, *out*)

Write HTML code for a nested list showing the base/subclass relationships between all documented classes. Each element of the top-level list is a class with no (documented) bases; and under each class is listed all of its subclasses. Note that in the case of multiple inheritance, a class may appear multiple times.

To Do: For multiple inheritance, don't repeat subclasses the second time a class is mentioned; instead, link to the first mention.

write_treepage_header(*self*, *out*, *title*, *url*)

2.4. Index pages

write_link_index(*self*, *out*, *indices*, *title*, *url*, *index_by_section*, *sections*=`'ABCDEFGHIJKLMNOPQRSTUVWXYZ_'`, *section_url*=`'#%s'`)

write_metadata_index(*self*, *out*, *indices*, *field*, *title*, *typ*)

Write an HTML page containing a metadata index.

write_indexpage_header(*self*, *out*, *indices*, *title*, *url*)

A helper for the index page generation functions, which generates a header that can be used to navigate between the different indices.

write_index_section(*self*, *out*, *items*, *add_blankline*=`False`)

2.5. Help Page

write_help(*self*, *out*)

Write an HTML help file to the given stream. If `self._helpfile` contains a help file, then use it; otherwise, use the default helpfile from `epydoc.docwriter.html_help`.

2.6. Frames-based Table of Contents

write_frames_index(*self*, *out*)

Write the frames index file for the frames-based table of contents to the given streams.

write_toc(*self*, *out*)

write_toc_section(*self*, *out*, *name*, *docs*, *fullname*=`True`)

write_project_toc(*self*, *out*)

write_module_toc(*self*, *out*, *doc*)

Write an HTML page containing the table of contents page for the given module to the given streams. This page lists the modules, classes, exceptions, functions, and variables defined by the module.

2.7. Project homepage (index.html)

write_homepage(*self*, *directory*)

Write an `index.html` file in the given directory. The contents of this file are copied or linked from an existing page, so this method must be called after all pages have been written. The page used is determined by `_frames_index` and `_top_page`:

- If `_frames_index` is true, then `frames.html` is copied.
- Otherwise, the page specified by `_top_page` is copied.

write_redirect_index(*self*, *out*, *top*, *name*)

2.8. Stylesheet (epydoc.css)

write_css(*self*, *directory*, *cssname*)

Write the CSS stylesheet in the given directory. If `cssname` contains a stylesheet file or name (from `epydoc.docwriter.html_css`), then use that stylesheet; otherwise, use the default stylesheet.

Return Value
None

2.9. Javascript (epydoc.js)

write_javascript(*self*, *directory*)

2.10. Graphs

render_graph(*self*, *graph*)

render_callgraph(*self*, *callgraph*, *token=''*)

Render the HTML chunk of a callgraph.

If `callgraph` is a string, use the `_callgraph_cache` to return a pre-rendered HTML chunk. This mostly avoids to run `dot` twice for the same callgraph. Else, run the graph and store its HTML output in the cache.

Parameters

`callgraph`: The graph to render or its `uid`. *(type=DotGraph or str)*

`token`: A string that can be used to make the `<div>` id unambiguous, if the callgraph is used more than once in a page. *(type=str)*

Return Value
The HTML representation of the graph.*(type=str)*

callgraph_link(*self*, *callgraph*, *token=''*)

Render the HTML chunk of a callgraph link.

The link can toggles the visibility of the callgraph rendered using `render_callgraph` with matching parameters.

Parameters

`callgraph`: The graph to render or its `uid`. *(type=DotGraph or str)*

`token`: A string that can be used to make the `<div>` id unambiguous, if the callgraph is used more than once in a page. *(type=str)*

Return Value
The HTML representation of the graph link.*(type=str)*

2.11. Images

write_images(*self*, *directory*)

3.1. Page Header

write_header(*self*, *out*, *title*)

Generate HTML code for the standard page header, and write it to `out`. `title` is a string containing the page title. It should be appropriately escaped/encoded.

3.2. Page Footer

write_footer(*self*, *out*, *short*=`False`)

Generate HTML code for the standard page footer, and write it to `out`.

3.3. Navigation Bar

write_navbar(*self*, *out*, *context*)

Generate HTML code for the navigation bar, and write it to `out`. The navigation bar typically looks like:

```
[ Home Trees Index Help Project ]
```

Parameters

`context`: A value indicating what page we're generating a navigation bar for. If we're generating an API documentation page for an object, then `context` is a `ValueDoc` containing the documentation for that object; otherwise, `context` is a string name for the page. The following string names are recognized: `'tree'`, `'index'`, and `'help'`.

3.4. Breadcrumbs

write_breadcrumbs(*self*, *out*, *context*, *context_url*)

Generate HTML for the breadcrumbs line, and write it to `out`. The breadcrumbs line is an invisible table with a list of pointers to the current object's ancestors on the left; and the show/hide private selector and the frames/noframes selector on the right.

Parameters

`context`: The API documentation for the object whose breadcrumbs we should generate. *(type=`ValueDoc`)*

breadcrumbs(*self*, *doc*)

_crumb(*self*, *doc*)

3.5. Summary Tables

write_summary_table(*self*, *out*, *heading*, *doc*, *value_type*)

Generate HTML code for a summary table, and write it to `out`. A summary table is a table that includes a one-row description for each variable (of a given type) in a module or class.

Parameters

`heading`: The heading for the summary table; typically, this indicates what kind of value the table describes (e.g., functions or classes).

`doc`: A `ValueDoc` object containing the API documentation for the module or class whose variables we should summarize.

`value_type`: A string indicating what type of value should be listed in this summary table. This value is passed on to `doc`'s `select_variables()` method.

write_summary_group(*self*, *out*, *doc*, *name*, *var_docs*, *grouped_inh_vars*)

write_inheritance_list(*self*, *out*, *doc*, *listed_inh_vars*)

write_var_list(*self*, *out*, *vardocs*)

write_summary_line(*self*, *out*, *var_doc*, *container*)

Generate HTML code for a single line of a summary table, and write it to `out`. See `write_summary_table` for more information.

Parameters

`var_doc`: The API documentation for the variable that should be described by this line of the summary table.

`container`: The API documentation for the class or module whose summary table we're writing.

_write_summary_line(*self*, *out*, *typ*, *description*, *tr_class*, *pysrc_link*, *callgraph*)

3.6. Details Lists

write_details_list(*self*, *out*, *heading*, *doc*, *value_type*)

write_details_entry(*self*, *out*, *var_doc*)

labelled_list_item(*self*, *lhs*, *rhs*)

property_accessor_to_html(*self*, *val_doc*, *context*=`None`)

arg_name_to_html(*self*, *func_doc*, *arg_name*)

A helper function used to format an argument name, for use in the argument description list under a routine's details entry. This just wraps strong & code tags around the arg name; and if the arg name is associated with a type, then adds it parenthetically after the name.

write_function_details_entry(*self*, *out*, *var_doc*, *descr*, *callgraph*, *rtype*, *rdescr*, *arg_descrs*, *div_class*)

write_property_details_entry(*self*, *out*, *var_doc*, *descr*, *accessors*, *div_class*)

write_variable_details_entry(*self*, *out*, *var_doc*, *descr*, *div_class*)

variable_tooltip(*self*, *var_doc*)

pprint_value(*self*, *val_doc*)

Base Tree

base_tree(*self*, *doc*, *width*=`None`, *postfix*=`''`, *context*=`None`)

Return Value

The HTML code for a class's base tree. The tree is drawn 'upside-down' and right justified, to allow for multiple inheritance. *(type=`string`)*

find_tree_width(*self*, *doc*, *context*)

Helper function for `base_tree`.

Return Value

The width of a base tree, when drawn right-justified. This is used by `base_tree` to determine how far to indent lines of the base tree. *(type=`int`)*

contextual_label(*self*, *doc*, *context*)

Return the label for `doc` to be shown in `context`.

Function Signatures

function_signature(*self*, *api_doc*, *is_summary*=False, *link_name*=False, *anchor*=False, *context*=None)

Render a function signature in HTML.

Parameters

`api_doc`: The object whose name is to be rendered. If a `VariableDoc`, its `value` should be a `RoutineDoc` *(type=`VariableDoc` or `RoutineDoc`)*

`is_summary`: True if the fuction is to be rendered in the summary. type css_class: `bool`

`link_name`: If True, the name is a link to the object anchor. *(type=`bool`)*

`anchor`: If True, the name is the object anchor. *(type=`bool`)*

`context`: If set, represent the function name from this context. Only useful when `api_doc` is a `RoutineDoc`. *(type=`DottedName`)*

Return Value

The HTML code for the object.*(type=`str`)*

summary_name(*self*, *api_doc*, *css_class*='summary-name', *link_name*=False, *anchor*=False)

Render an object name in HTML.

Parameters

`api_doc`: The object whose name is to be rendered *(type=`APIDoc`)*

`css_class`: The CSS class to assign to the rendered name type css_class: `str`

`link_name`: If True, the name is a link to the object anchor. *(type=`bool`)*

`anchor`: If True, the name is the object anchor. *(type=`bool`)*

Return Value

The HTML code for the object.*(type=`str`)*

func_arg(*self*, *name*, *default*, *css_class*)

_arg_name(*self*, *arg*)

Import Lists

write_imports(*self*, *out*, *doc*)

_import(*self*, *var_doc*, *context*)

Module Trees

write_module_list(*self*, *out*, *doc*)

write_module_tree_item(*self*, *out*, *doc*, *package*=`None`)

Class trees

write_class_tree_item(*self*, *out*, *doc*, *class_set*)

Standard Fields

write_standard_fields(*self*, *out*, *doc*)

Write HTML code containing descriptions of any standard markup fields that are defined by the given `APIDoc` object (such as `@author` and `@todo` fields).

Parameters

`doc`: The `APIDoc` object containing the API documentation for the object whose standard markup fields should be described.

write_standard_field(*self*, *out*, *doc*, *field*, *descrs*, *arg*=■)

Index generation

build_identifier_index(*self*)

_group_by_letter(*self*, *items*)

Preserves sort order of the input.

build_term_index(*self*)

_terms_from_docstring(*self*, *base_url*, *container*, *parsed_docstring*)

build_metadata_index(*self*, *field_name*)

_term_index_to_anchor(*self*, *term*)

Given the name of an inline index item, construct a URI anchor. These anchors are used to create links from the index page to each index item.

Redirect page

write_redirect_page(*self*, *out*)

Build the auto-redirect page, which translates dotted names to URLs using javascript. When the user visits <redirect.html#dotted.name>, they will automatically get redirected to the page for the object with the given fully-qualified dotted name. E.g., for epydoc, <redirect.html#epydoc.apidoc.UNKNOWN> redirects the user to <epydoc.apidoc-module.html#UNKNOWN>.

_write_redirect_page(*self*, *out*, *pages*)

URLs list

write_api_list(*self*, *out*)

Write a list of mapping name->url for all the documented objects.

write_url_record(*self*, *out*, *obj*)

Helper functions

_val_is_public(*self*, *valdoc*)

Make a best-guess as to whether the given class is public.

write_table_header(*self*, *out*, *css_class*, *heading*=`None`, *private_link*=`True`, *colspan*=`2`)

write_group_header(*self*, *out*, *group*, *tr_class*=■)

url(*self*, *obj*)

Return the URL for the given object, which can be a `VariableDoc`, a `ValueDoc`, or a `DottedName`.

_url(*self*, *obj*)

Internal helper for `url`.

pysrc_link(*self*, *api_doc*)

pysrc_url(*self*, *api_doc*)

href(*self*, *target*, *label*=`None`, *css_class*=`None`, *context*=`None`, *tooltip*=`None`)

Return the HTML code for an HREF link to the given target (which can be a `VariableDoc`, a `ValueDoc`, or a `DottedName`. If a `NamespaceDoc` `context` is specified, the target label is contextualized to it.

_attr_to_html(*self*, *attr*, *api_doc*, *indent*)

summary(*self*, *api_doc*, *indent*=`0`)

descr(*self*, *api_doc*, *indent*=`0`)

type_descr(*self*, *api_doc*, *indent*=`0`)

return_type(*self*, *api_doc*, *indent*=`0`)

return_descr(*self*, *api_doc*, *indent*=`0`)

docstring_to_html(*self*, *parsed_docstring*, *where*=`None`, *indent*=`0`)

description(*self*, *parsed_docstring*, *where*=`None`, *indent*=`0`)

doc_kind(*self*, *doc*)

_doc_or_ancestor_is_private(*self*, *api_doc*)

_private_subclasses(*self*, *class_doc*)

Return a list of all subclasses of the given class that are private, as determined by `_val_is_public`. Recursive subclasses are included in this list.

12.2.2 Class Variables

2.4. Index pages

SPLIT_IDENT_INDEX_SIZE

If the identifier index has more than this number of entries, then it will be split into separate pages, one for each alphabetical section.

Value: `3000`

LETTERS

The alphabetical sections that are used for link index pages.

Value: `'ABCDEFGHIJKLMNOPQRSTUVWXYZ_'`

2.9. Javascript (epydoc.js)

TOGGLE_PRIVATE_JS

A javascript that is used to show or hide the API documentation for private objects. In order for this to work correctly, all documentation for private objects should be enclosed in `<div class="private">...</div>` elements.

Value: `'function toggle_private() {\n // Search for any p...`

GET_COOKIE_JS

A javascript that is used to read the value of a cookie. This is used to remember whether private variables should be shown or hidden.

Value: `'function getCookie(name) {\n var dc = document.co...`

SET_FRAME_JS

A javascript that is used to set the contents of two frames at once. This is used by the project table-of-contents frame to set both the module table-of-contents frame and the main frame when the user clicks on a module.

Value: `'function setFrame(url1, url2) {\n parent.frames...`

HIDE_PRIVATE_JS

A javascript that is used to hide private variables, unless either: (a) the cookie says not to; or (b) we appear to be linking to a private variable.

Value: `'function checkCookie() {\n var cmd=getCookie("Epy...`

TOGGLE_CALLGRAPH_JS

Value: `'function toggleCallGraph(id) {\n var elt = docume...`

SHOW_PRIVATE_JS

Value: `'function show_private() {\n var elts = document.g...`

GET_ANCHOR_JS

Value: `'function get_anchor() {\n var href = location.h...`

REDIRECT_URL_JS

A javascript that is used to implement the auto-redirect page. When the user visits <redirect.html#dotted.name>, they will automatically get redirected to the page for the object with the given fully-qualified dotted name. E.g., for epydoc, <redirect.html#epydoc.apidoc.UNKNOWN> redirects the user to <epydoc.apidoc-module.html#UNKNOWN>.

Value: `'function redirect_url(dottedName) {\n // Scan t...`

2.10. Graphs

RE_CALLGRAPH_ID

Value: `re.compile(r'["\'](.+-div)[\'"]')`

2.11. Images

IMAGES

Value: `{'crarr.png': 'iVBORw0KGgoAAAANSUhEUgAAABEAAAAKCAMAAABlok...`

3.6. Details Lists

SPECIAL_METHODS

Value: `{'__add__': 'Addition operator', '__and__': 'And operator...`

Index generation

METADATA_INDICES

A list of metadata indices that should be generated. Each entry in this list is a tuple `(tag, label, short_label)`, where `tag` is the cannonical tag of a metadata field; `label` is a label for the index page; and `short_label` is a shorter label, used in the index selector.

Value: `[('bug', 'Bug List', 'Bugs'), ('todo', 'To Do List', 'To ...`

Helper functions

TABLE_FOOTER

Value: `'</table>\n'`

PRIVATE_LINK

Value: `'<span class="options">[<a href="javascript:void(0);" cla...`

_url_cache

Value: `{}`

12.2.3 Instance Variables

_show_private

Should private docs be included?

_prj_name

The project's name (for the project link in the navbar)

_prj_url

URL for the project link in the navbar

_prj_link

HTML code for the project link in the navbar

_top_page

The 'main' page

_css

CSS stylesheet to use

_helpfile

Filename of file to extract help contents from

_frames_index

Should a frames index be created?

_show_imports

Should imports be listed?

_propfunc_linelen

[XXX] Not used!

_variable_maxlines

Max lines for variable values

_variable_linelen

Max line length for variable values

_variable_summary_linelen

Max length for variable value summaries

_variable_tooltip_linelen

Max length for variable tooltips

_inheritance

How should inheritance be displayed? 'listed', 'included', or 'grouped'

_incl_sourcecode

Should pages be generated for source code of modules?

_mark_docstrings

Wrap ... around docstrings?

_graph_types

Graphs that we should include in our output.

_include_log

Are we generating an HTML log page?

_include_timestamp

Include a timestamp on the generated docs?

_src_code_tab_width

Number of spaces to replace each tab with in source code listings.

_callgraph_cache
Map the callgraph `uid` to their HTML representation.

_redundant_details
If true, then include objects in the details list even if all info about them is already provided by the summary table.

_show_submodule_list
If true, the include a list of submodules on the package documentation page.

_google_analytics
A tracker code for google analytics; or None

module_list
The list of `ModuleDoc`s for the documented modules.

module_set
The set of `ModuleDoc`s for the documented modules.

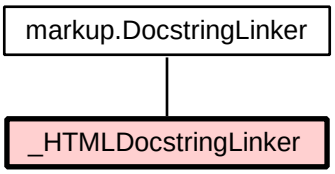
class_list
The list of `ClassDoc`s for the documented classes.

class_set
The set of `ClassDoc`s for the documented classes.

routine_list
The list of `RoutineDoc`s for the documented routines.

indexed_docs
The list of `APIDoc`s for variables and values that should be included in the index.

12.3 Class _HTMLDocstringLinker



12.3.1 Methods

__init__(*self*, *htmlwriter*, *container*)

translate_indexterm(*self*, *indexterm*)

Translate an index term to the appropriate output format. The output will typically include a crossreference anchor.

Parameters

`indexterm`: The index term to translate.

Return Value

The translated index term.*(type=`string`)*

Overrides: epydoc.markup.DocstringLinker.translate_indexterm *(inherited documentation)*

translate_identifier_xref(*self*, *identifier*, *label*=`None`)

Translate a crossreference link to a Python identifier to the appropriate output format. The output will typically include a reference or pointer to the crossreference target.

Parameters

`identifier`: The name of the Python identifier that should be linked to.

`label`: The label that should be used for the identifier, if it's different from the name of the identifier. This should be expressed in the target markup language – e.g. for latex, "_"s should be escaped.

Return Value

The translated crossreference link.*(type=`string`)*

Overrides: epydoc.markup.DocstringLinker.translate_identifier_xref *(inherited documentation)*

url_for(*self*, *identifier*)

Given an identifier, return a URL pointing at that identifier. This is used to create hyperlinks in dotgraphs. This method is *optional* – i.e., it may raise NotImplementedError

Overrides: epydoc.markup.DocstringLinker.url_for *(inherited documentation)*

_failed_xref(*self*, *identifier*)

Add an identifier to the htmlwriter's failed crossreference list.

13 Module epydoc.docwriter.html_colorize

Functions to produce colorized HTML code for various objects. Currently, `html_colorize` defines functions to colorize Python source code.

13.1 Variables

PYSRC_JAVASCRIPTS

Javascript code for the PythonSourceColorizer

Value: `'function expand(id) {\n var elt = document.getElementBy...`

PYSRC_EXPANDTO_JAVASCRIPT

Value: `'<script type="text/javascript">\n<!-\nexpandto(location...`

_HDR

Value: `'<?xml version="1.0" encoding="ascii"?>\n <!DOCTYP...`

_FOOT

Value: `'</body></html>'`

13.2 Class PythonSourceColorizer

A class that renders a python module's source code into HTML pages. These HTML pages are intended to be provided along with the API documentation for a module, in case a user wants to learn more about a particular object by examining its source code. Links are therefore generated from the API documentation to the source code pages, and from the source code pages back into the API documentation.

The HTML generated by `PythonSourceColorizer` has several notable features:

- CSS styles are used to color tokens according to their type. (See `CSS_CLASSES` for a list of the different token types that are identified).
- Line numbers are included to the left of each line.
- The first line of each class and function definition includes a link to the API source documentation for that object.
- The first line of each class and function definition includes an anchor that can be used to link directly to that class or function.
- If javascript is enabled, and the page is loaded using the anchor for a class or function (i.e., if the url ends in `'#<name>'`), then that class or function will automatically be highlighted; and all other classes and function definition blocks will be 'collapsed'. These collapsed blocks can be expanded by clicking on them.
- Unicode input is supported (including automatic detection of `'coding:'` declarations).

13.2.1 Methods

__init__(*self*, *module_filename*, *module_name*, *docindex*=`None`, *url_func*=`None`, *name_to_docs*=`None`, *tab_width*=`8`)

Create a new HTML colorizer for the specified module.

Parameters

`module_filename`: The name of the file containing the module; its text will be loaded from this file.

`module_name`: The dotted name of the module; this will be used to create links back into the API source documentation.

find_line_offsets(*self*)

Construct the `line_offsets` table from `self.text`.

lineno_to_html(*self*)

colorize(*self*)

Return an HTML string that renders the source code for the module that was specified in the constructor.

tokeneater(*self*, *toktype*, *toktext*, *(srow, scol)*, *(erow, ecol)*, *line*)

A callback function used by `tokenize.tokenize` to handle each token in the module. `tokeneater` collects tokens into the `self.cur_line` list until a complete logical line has been formed; and then calls `handle_line` to process that line.

handle_line(*self*, *line*)

Render a single logical line from the module, and write the generated HTML to `self.out`.

Parameters

`line`: A single logical line, encoded as a list of `(toktype,tokttext)` pairs corresponding to the tokens in the line.

context_name(*self*, *extra*=`None`)

doclink(*self*, *name*, *docs*)

doc_descr(*self*, *doc*, *context*)

doc_kind(*self*, *doc*)

mark_def(*self*, *s*, *name*)

is_docstring(*self*, *line*, *i*)

add_line_numbers(*self*, *s*, *css_class*)

name2url(*self*, *class_name*, *func_name*=None)

13.2.2 Class Variables

CSS_CLASSES

A look-up table that is used to determine which CSS class should be used to colorize a given token. The following keys may be used:

- Any token name (e.g., `'STRING'`)
- Any operator token (e.g., `'='` or `'@'`).
- `'KEYWORD'` – Python keywords such as `'for'` and `'if'`
- `'DEFNAME'` – the name of a class or function at the top of its definition statement.
- `'BASECLASS'` – names of base classes at the top of a class definition statement.
- `'PARAM'` – function parameters
- `'DOCSTRING'` – docstrings
- `'DECORATOR'` – decorator names

If no CSS class can be found for a given token, then it won't be marked with any CSS class.

Value: `{'@': 'py-decorator', 'BASECLASS': 'py-base-class', 'COMM...`

START_DEF_BLOCK

HTML code for the beginning of a collapsable function or class definition block. The block contains two ... elements – a collapsed version and an expanded version – and only one of these elements is visible at any given time. By default, all definition blocks are expanded.

This string should be interpolated with the following values:

`(name, indentation, name)`

Where `name` is the anchor name for the function or class; and indentation is a string of whitespace used to indent the ellipsis marker in the collapsed version.

Value: `'<div id="%s-collapsed" style="display:none;" pad="%s" in...`

END_DEF_BLOCK

HTML code for the end of a collapsable function or class definition block.

Value: `'</div>'`

UNICODE_CODING_RE

A regular expression used to pick out the unicode encoding for the source file.

Value: `re.compile(r'.*?\n?.*?coding[:=]\s*([-\w\.]+)')`

ADD_DEF_BLOCKS

A configuration constant, used to determine whether or not to add collapsable elements for definition blocks.

Value: `True`

ADD_LINE_NUMBERS

A configuration constant, used to determine whether or not to add line numbers.

Value: `True`

ADD_TOOLTIPS

A configuration constant, used to determine whether or not to add tooltips for linked names.

Value: `True`

GUESS_LINK_TARGETS

If true, then try to guess which target is appropriate for linked names; if false, then always open a div asking the user which one they want.

Value: `False`

_next_uid

Value: `0`

_FIX_DECORATOR_RE

A regexp used to move the that marks the beginning of a function or method to just before the decorators.

Value: `re.compile(r'(?m)((?:^<a name="L\d+"></a><tt class="py-li...`

13.2.3 Instance Variables

module_filename

The filename of the module we're colorizing.

module_name

The dotted name of the module we're colorizing.

docindex

A docindex, used to create href links from identifiers to the API documentation for their values.

name_to_docs

A mapping from short names to lists of ValueDoc, used to decide which values an identifier might map to when creating href links from identifiers to the API docs for their values.

url_func

A function that maps APIDoc -> URL, used to create href links from identifiers to the API documentation for their values.

pos

The index in `text` of the last character of the last token we've processed.

line_offsets

A list that maps line numbers to character offsets in `text`. In particular, line *i* begins at character `line_offset[i]` in `text`. Since line numbers begin at 1, the first element of `line_offsets` is `None`.

cur_line

A list of `(toktype, toktext)` for all tokens on the logical line that we are currently processing. Once a complete line of tokens has been collected in `cur_line`, it is sent to `handle_line` for processing.

context

A list of the names of the class or functions that include the current block. `context` has one element for each level of indentation; `context[i]` is the name of the class or function defined by the `i`th level of indentation, or `None` if that level of indentation doesn't correspond to a class or function definition.

context_types

A list, corresponding one-to-one with `self.context`, indicating the type of each entry. Each element of `context_types` is one of: `'func'`, `'class'`, `None`.

indents

A list of indentation strings for each of the current block's indents. I.e., the current total indentation can be found by taking `■.join(self.indents)`.

lineno

The line number of the line we're currently processing.

def_name

The name of the class or function whose definition started on the previous logical line, or `None` if the previous logical line was not a class or function definition.

def_type

The type of the class or function whose definition started on the previous logical line, or `None` if the previous logical line was not a class or function definition. Can be `'func'`, `'class'`, `None`.

tab_width

The number of spaces to replace each tab in source code with

14 Module epydoc.docwriter.html_css

Predefined CSS stylesheets for the HTML outputter (`epydoc.docwriter.html`).

14.1 Functions

_set_colors(*template*, **dicts*)

_rv(*match*)

Given a regexp match for a color, return the reverse-video version of that color.

Parameters

`match`: A regular expression match. *(type=`Match`)*

Return Value

The reverse-video color.*(type=`string`)*

_darken_darks(*match*)

14.2 Variables

TEMPLATE

Value: `'\n\n/* Epydoc CSS Stylesheet\n *\n * This stylesheet can...`

_COLOR_RE

Value: `re.compile(r'#(..)(..)(..)')`

_WHITE_COLORS

Value: `{'body_bg': '#ffffff', 'body_fg': '#000000', 'body_link':...`

_BLUE_COLORS

Value: `{'body_bg': '#000070', 'body_fg': '#ffffff', 'body_link':...`

_WHITE

Value: `'\n\n/* Epydoc CSS Stylesheet\n *\n * This stylesheet can...`

_BLUE

Value: `'\n\n/* Epydoc CSS Stylesheet\n *\n * This stylesheet can...`

_GREEN

Value: `'\n\n/* Epydoc CSS Stylesheet\n *\n * This stylesheet can...`

_BLACK

Value: `'\n\n/* Epydoc CSS Stylesheet\n *\n * This stylesheet can...`

_GRAYSCALE

Value: `'\n\n/* Epydoc CSS Stylesheet\n *\n * This stylesheet can...`

STYLESHEETS

A dictionary mapping from stylesheet names to CSS stylesheets and descriptions. A single stylesheet may have multiple names. Currently, the following stylesheets are defined:

- `default`: The default stylesheet (synonym for `white`).
- `white`: Black on white, with blue highlights (similar to javadoc).
- `blue`: Black on steel blue.
- `green`: Black on green.
- `black`: White on black, with blue highlights
- `grayscale`: Grayscale black on white.
- `none`: An empty stylesheet.

Type: `dictionary from string to (string, string)`

Value: `{'black': ('\n\n/* Epydoc CSS Stylesheet\n *\n * This sty...`

15 Module epydoc.docwriter.html_help

Default help file for the HTML outputter (`epydoc.docwriter.html`).

15.1 Variables

HTML_HELP

The contents of the HTML body for the default help page.

Type: `string`

Value: `'\n<h1 class="epydoc"> API Documentation </h1>\n\n<p> Thi...`

16 Module epydoc.docwriter.latex

The LaTeX output generator for epydoc. The main interface provided by this module is the `LatexWriter` class.

To Do: Inheritance=listed

16.1 Functions

_label(*doc*)

_hyperlink(*target*, *name*)

_hypertarget(*uid*, *sig*)

_dotted(*name*)

find_latex_error(*s*)

show_latex_warnings(*s*)

16.2 Variables

LATEX_WARNING_RE

Value: `re.compile(r'(?im)(?P<file>\([\.a-zA-Z_-/\\0-9]+[\.\n][a-...`

OVERFULL_RE

Value: `re.compile(r'(?P<typ>Underfull|Overfull)\s+\\(?P<boxtype>...`

IGNORE_WARNING_REGEXPS

Value: `[re.compile(r'LaTeX\s+Font\s+Warning:\s+.*\n\(Font\)\s*us...`

16.3 Class LatexWriter

16.3.1 Methods

__init__(*self*, *docindex*, ***kwargs*)

write(*self*, *directory*=`None`)

Write the API documentation for the entire project to the given directory.

Parameters

`directory`: The directory to which output should be written. If no directory is specified, output will be written to the current directory. If the directory does not exist, it will be created. *(type=`string`)*

Return Value

None

Raises

OSError If `directory` cannot be created,

OSError If any file cannot be created or written to.

_write_sty(*self*, *directory*, *stylesheet*)

Copy the requested LaTeX stylesheet to the target directory. The stylesheet can be specified as a name (i.e., a key from the STYLESHEETS directory); a filename; or None for the default stylesheet. If any stylesheet *other* than the default stylesheet is selected, then the default stylesheet will be copied to 'epydoc-default.sty', which makes it possible to reference it via \RequirePackage.

_write(*self*, *write_func*, *directory*, *filename*, **args*)

num_files(*self*)

Return Value

The number of files that this `LatexFormatter` will generate.*(type=`int`)*

_mkdir(*self*, *directory*)

If the given directory does not exist, then attempt to create it.

Return Value

None

Main Doc File

write_topfile(*self*, *out*)

write_preamble(*self*, *out*)

Chapters

write_module(*self*, *out*, *doc*)

render_graph(*self*, *graph*)

write_class(*self*, *out*, *doc*)

Module hierarchy trees

write_module_tree(*self*, *out*)

write_module_list(*self*, *out*, *doc*)

write_module_tree_item(*self*, *out*, *doc*, *depth*=0)

Helper function for `write_module_tree` and `write_module_list`.

Return Value

string

Base class trees

base_tree(*self*, *doc*, *width*=None, *linespec*=None)

_base_name(*self*, *doc*)

_find_tree_width(*self*, *doc*)

_base_tree_line(*self*, *doc*, *width*, *linespec*)

Class List

write_class_list(*self*, *out*, *doc*)

write_class_list_line(*self*, *out*, *var_doc*)

Details Lists

write_list(*self*, *out*, *heading*, *doc*, *list_type*, *value_type*, *seclevel*=1)

write_list_group(*self*, *out*, *doc*, *name*, *var_docs*, *grouped_inh_vars*)

write_inheritance_list(*self*, *out*, *doc*, *listed_inh_vars*)

_parens_if_func(*self*, *var_doc*)

Function Details

replace_par(*self*, *out*)

write_function(*self*, *out*, *var_doc*)

write_function_parameters(*self*, *out*, *var_doc*)

function_signature(*self*, *var_doc*, *indent*=6)

func_arg(*self*, *name*, *default*)

_arg_name(*self*, *arg*)

Variable Details

write_var(*self*, *out*, *var_doc*)

Property Details

write_property(*self*, *out*, *var_doc*)

Standard Fields

metadata(*self*, *doc*, *indent*=0)

meatadata_field(*self*, *doc*, *field*, *descrs*, *indent*, *arg*='')

_descrlist(*self*, *items*, *singular*, *plural*=None, *short*=0, *indent*=0)

Docstring -> LaTeX Conversion

docstring_to_latex(*self*, *docstring*, *where*, *indent*=0, *breakany*=0)

Return a latex string that renders the given docstring. This string expects to start at the beginning of a line; and ends with a newline.

Helpers

write_header(*self*, *out*, *where*)

start_of(*self*, *section_name*, *doc*=`None`)

section(*self*, *title*, *depth*=`0`, *ref*=`None`)

sectionstar(*self*, *title*, *depth*, *ref*=`None`)

doc_kind(*self*, *doc*)

indexterm(*self*, *doc*, *pos*=`'only'`, *indent*=`0`)

Return a latex string that marks the given term or section for inclusion in the index. This string ends with a newline.

get_latex_encoding(*self*)

Return Value

The LaTeX representation of the selected encoding.*(type=`str`)*

crossref(*self*, *doc*, *indent*=`0`)

_filter_deprecated(*self*, *docs*)

_is_deprecated(*self*, *doc*)

16.3.2 Class Variables

PREAMBLE

Expects (options, epydoc_sty_package)

Value: `['\\documentclass{article}', '\\usepackage[%s]{%s}']`

SECTIONS

Value: `['\\part{%s}', '\\chapter{%s}', '\\section{%s}', '\\subse...`

STAR_SECTIONS

Value: `['\\part*{%s}', '\\chapter*{%s}', '\\section*{%s}', '\\su...`

Docstring -> LaTeX Conversion

_docstring_linker

Value: `_LatexDocstringLinker()`

Helpers

latex_encodings

Map the Python encoding representation into mismatching LaTeX ones.

Value: `{'utf-8': 'utf8x'}`

16.3.3 Instance Variables

_graph_types

Graphs that we should include in our output.

_encoding

The Python representation of the encoding. Update `latex_encodings` in case of mismatch between it and the `inputenc` LaTeX package.

class_list

The list of `ClassDoc`s for the documented classes.

class_set

The set of `ClassDoc`s for the documented classes.

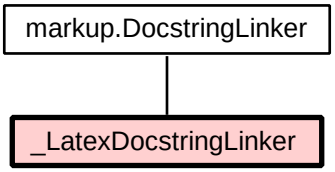
module_list

The list of `ModuleDoc`s for the documented modules.

module_set

The set of `ModuleDoc`s for the documented modules.

16.4 Class LatexWriter._LatexDocstringLinker



16.4.1 Methods

translate_indexterm(*self*, *indexterm*)

Translate an index term to the appropriate output format. The output will typically include a crossreference anchor.

Parameters

`indexterm`: The index term to translate.

Return Value

The translated index term.*(type=`string`)*

Overrides: epydoc.markup.DocstringLinker.translate_indexterm *(inherited documentation)*

translate_identifier_xref(*self*, *identifier*, *label*=`None`)

Translate a crossreference link to a Python identifier to the appropriate output format. The output will typically include a reference or pointer to the crossreference target.

Parameters

`identifier`: The name of the Python identifier that should be linked to.

`label`: The label that should be used for the identifier, if it's different from the name of the identifier. This should be expressed in the target markup language – e.g. for latex, "_"s should be escaped.

Return Value

The translated crossreference link.*(type=`string`)*

Overrides: epydoc.markup.DocstringLinker.translate_identifier_xref *(inherited documentation)*

Inherited from epydoc.markup.DocstringLinker*(Section 22.5, p. 202)*: url_for()

17 Module epydoc.docwriter.latex_sty

LaTeX stylesheets (*.sty) for epydoc's LaTeX writer.

17.1 Variables

NIST_DISCLAIMER

A disclaimer that is appended to the bottom of the BASE and BOXES stylesheets.

Value: `'\n% This style file is a derivative work, based on a pub...`

BASE

Value: `'\n% epydoc-base.sty\n%\n% Authors: Jonathan Guyer <guyer...`

BOXES

Value: `'\n% epydoc-boxes.sty\n%\n% Authors: Jonathan Guyer <guye...`

SHADED

Value: `'\n% epydoc-shaded.sty\n%\n% Author: Edward Loper <edlope...`

BLUE

Value: `'\n% epydoc-blue.sty\n%\n% A relatively minimal customiza...`

TEMPLATE

Value: `'\n% epydoc-template.sty\n%\n% This is a starting point f...`

STYLESHEETS

Value: `{'base': '\n% epydoc-base.sty\n%\n% Authors: Jonathan Guy...`

18 Module epydoc.docwriter.plaintext

Plaintext output generation.

18.1 Class PlaintextWriter

18.1.1 Methods

__init__(*self*, *term*)

write(*self*, *api_doc*, ***options*)

write_module(*self*, *out*, *mod_doc*)

baselist(*self*, *class_doc*)

write_class(*self*, *out*, *class_doc*, *name*=`None`, *prefix*=`''`, *verbose*=`True`)

write_variable(*self*, *out*, *var_doc*, *name*=`None`, *prefix*=`''`, *verbose*=`True`)

write_property(*self*, *out*, *prop_doc*, *name*=`None`, *prefix*=`''`, *verbose*=`True`)

write_function(*self*, *out*, *func_doc*, *name*=`None`, *prefix*=`''`, *verbose*=`True`)

write_signature(*self*, *out*, *func_doc*, *name*, *prefix*, *verbose*)

write_list(*self*, *out*, *heading*, *doc*, *value_type*=`None`, *imported*=`False`, *inherited*=`False`, *prefix*=`''`, *noindent*=`False`, *verbose*=`True`)

_descr(*self*, *descr*, *prefix*)

bold(*self*, *text*)

Write a string in bold by overstriking.

title(*self*, *text*, *indent*)

section(*self*, *text*, *indent*='')

color(*self*, *text*, *style*)

18.1.2 Class Variables

STYLE

Value: `{'class_name': 'bold cyan', 'h1': 'bold', 'h2': 'bold', '...`

19 Module epydoc.docwriter.xlink

A Docutils interpreted text role for cross-API reference support.

This module allows a Docutils document to refer to elements defined in external API documentation. It is possible to refer to many external API from the same document.

Each API documentation is assigned a new interpreted text role: using such interpreted text, an user can specify an object name inside an API documentation. The system will convert such text into an url and generate a reference to it. For example, if the API `db` is defined, being a database package, then a certain method may be referred as:

```
:db:‘Connection.cursor()‘
```

To define a new API, an *index file* must be provided. This file contains a mapping from the object name to the URL part required to resolve such object.

Index file

Each line in the the index file describes an object.

Each line contains the fully qualified name of the object and the URL at which the documentation is located. The fields are separated by a `<tab>` character.

The URL's in the file are relative from the documentation root: the system can be configured to add a prefix in front of each returned URL.

Allowed names

When a name is used in an API text role, it is split over any *separator*. The separators defined are '`.`', '`::`', '`->`'. All the text from the first noise char (neither a separator nor alphanumeric or '`_`') is discarded. The same algorithm is applied when the index file is read.

First the sequence of name parts is looked for in the provided index file. If no matching name is found, a partial match against the trailing part of the names in the index is performed. If no object is found, or if the trailing part of the name may refer to many objects, a warning is issued and no reference is created.

Configuration

This module provides the class `ApiLinkReader` a replacement for the Docutils standalone reader. Such reader specifies the settings required for the API canonical roles configuration. The same command line options are exposed by Epydoc.

The script `apirst2html.py` is a frontend for the `ApiLinkReader` reader.

API Linking Options:

```
--external-api=NAME
                    Define a new API document.  A new interpreted text
                    role NAME will be added.
--external-api-file=NAME:FILENAME
                    Use records in FILENAME to resolve objects in the API
                    named NAME.
```

```
--external-api-root=NAME:STRING
                    Use STRING as prefix for the URL generated from the
                    API NAME.
```

Version: 1719

Author: Daniele Varrazzo

19.1 Functions

API register

register_api(*name*, *generator*=None)

Register the API `name` into the `api_register`.

A registered API will be available to the markup as the interpreted text role `name`.

If a `generator` is not provided, register a `VoidUrlGenerator` instance: in this case no warning will be issued for missing names, but no URL will be generated and all the dotted names will simply be rendered as literals.

Parameters

`name`: the name of the generator to be registered *(type=`str`)*

`generator`: the object to register to translate names into URLs. *(type=`UrlGenerator`)*

set_api_file(*name*, *file*)

Set an URL generator populated with data from `file`.

Use `file` to populate a new `DocUrlGenerator` instance and register it as `name`.

Parameters

`name`: the name of the generator to be registered *(type=`str`)*

`file`: the file to parse populate the URL generator *(type=`str` or file)*

set_api_root(*name*, *prefix*)

Set the root for the URLs returned by a registered URL generator.

Parameters

`name`: the name of the generator to be updated *(type=`str`)*

`prefix`: the prefix for the generated URL's *(type=`str`)*

Raises

IndexError `name` is not a registered generator

create_api_role(*name*, *problematic*)

Create and register a new role to create links for an API documentation.

Create a role called `name`, which will use the URL resolver registered as `name` in `api_register` to create a link for an object.

Parameters

`name:` name of the role to create. *(type=`str`)*

`problematic:` if True, the registered role will create problematic nodes in case of failed references. If False, a warning will be raised anyway, but the output will appear as an ordinary literal. *(type=`bool`)*

Command line parsing

split_name(*value*)

Split an option in form `NAME:VALUE` and check if `NAME` exists.

19.2 Variables

API register

api_register

Mapping from the API name to the `UrlGenerator` to be used.

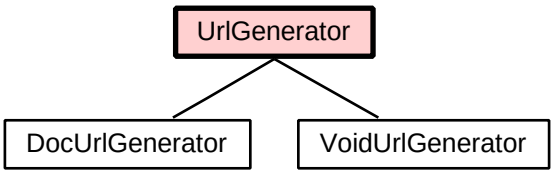
Use `register_api()` to add new generators to the register.

Value: `{}`

_TARGET_RE

Value: `re.compile(r'^(.*?)\s*<(?:URI:|L:)?([^<>]+)>$')`

19.3 Class UrlGenerator



Known Subclasses: epydoc.docwriter.xlink.DocUrlGenerator, epydoc.docwriter.xlink.VoidUrlGenerator

Generate URL from an object name.

19.3.1 Methods

get_url(*self*, *name*)

Look for a name and return the matching URL documentation.

First look for a fully qualified name. If not found, try with partial name.

If no url exists for the given object, return `None`.

Parameters

`name:` the name to look for *(type=`str`)*

Return Value

the URL that can be used to reach the `name` documentation. `None` if no such URL exists.*(type=`str`)*

Raises

IndexError no object found with `name`

DocUrlGenerator.IndexAmbiguous more than one object found with a non-fully qualified name; notice that this is an `IndexError` subclass

get_canonical_name(*self*, *name*)

Convert an object name into a canonical name.

the canonical name of an object is a tuple of strings containing its name fragments, splitted on any allowed separator ('.', '::', '->').

Noise such parenthesis to indicate a function is discarded.

Parameters

`name:` an object name, such as `os.path.prefix()` or `lib::foo::bar` *(type=`str`)*

Return Value

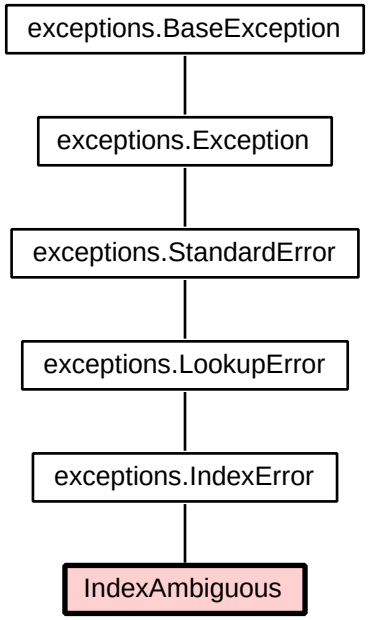
the fully qualified name such `('os', 'path', 'prefix')` and `('lib', 'foo', 'bar')` *(type=`tuple` of `str`)*

19.3.2 Class Variables

_SEP_RE

Value: `re.compile(r'(?x)([a-zA-Z0-9_]+)|(\.|::|->)|(.)')`

19.4 Class UrlGenerator.IndexAmbiguous



The name looked for is ambiguous

19.4.1 Methods

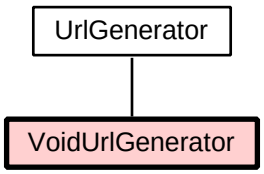
Inherited from exceptions.IndexError: __init__(), __new__()

Inherited from exceptions.BaseException: __delattr__(), __getattribute__(), __getitem__(), __getslice__(), __reduce__(), __repr__(), __setattr__(), __setstate__(), __str__()

19.4.2 Properties

Inherited from exceptions.BaseException: args, message

19.5 Class VoidUrlGenerator



Don't actually know any url, but don't report any error.

Useful if an index file is not available, but a document linking to it is to be generated, and warnings are to be avoided.

Don't report any object as missing, Don't return any url anyway.

19.5.1 Methods

get_url(*self*, *name*)

Look for a name and return the matching URL documentation.

First look for a fully qualified name. If not found, try with partial name.

If no url exists for the given object, return `None`.

Parameters

`name`: the name to look for

Return Value

the URL that can be used to reach the `name` documentation. `None` if no such URL exists.*(type=`str`)*

Raises

IndexError no object found with `name`

DocUrlGenerator.IndexAmbiguous more than one object found with a non-fully qualified name; notice that this is an `IndexError` subclass

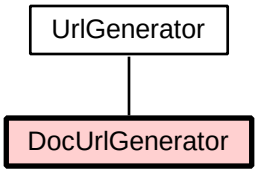
Overrides: epydoc.docwriter.xlink.UrlGenerator.get_url *(inherited documentation)*

Inherited from epydoc.docwriter.xlink.UrlGenerator *(Section 19.3, p. 176)*: get_canonical_name()

19.5.2 Class Variables

Inherited from epydoc.docwriter.xlink.UrlGenerator *(Section 19.3, p. 176)*: _SEP_RE

19.6 Class DocUrlGenerator



Read a *documentation index* and generate URL's for it.

19.6.1 Methods

__init__(*self*)

get_url(*self*, *name*)

Look for a name and return the matching URL documentation.

First look for a fully qualified name. If not found, try with partial name.

If no url exists for the given object, return `None`.

Parameters
`name:` the name to look for

Return Value
the URL that can be used to reach the `name` documentation. `None` if no such URL exists.*(type=`str`)*

Raises
IndexError no object found with `name`

DocUrlGenerator.IndexAmbiguous more than one object found with a non-fully qualified name; notice that this is an `IndexError` subclass

Overrides: epydoc.docwriter.xlink.UrlGenerator.get_url *(inherited documentation)*

Inherited from epydoc.docwriter.xlink.UrlGenerator*(Section 19.3, p. 176)*: get_canonical_name()

Content loading

clear(*self*)

Clear the current class content.

load_index(*self*, *f*)

Read the content of an index file.

Populate the internal maps with the file content using `load_records()`.

Parameters
`f:` a file name or file-like object fron which read the index. *(type=`str` or file)*

_iter_tuples(*self*, *f*)

Iterate on a file returning 2-tuples.

load_records(*self*, *records*)

Read a sequence of pairs name -> url and populate the internal maps.

Parameters
`records:` the sequence of pairs (*name*, *url*) to add to the maps. *(type=iterable)*

19.6.2 Class Variables

Inherited from epydoc.docwriter.xlink.UrlGenerator*(Section 19.3, p. 176)*: _SEP_RE

19.6.3 Instance Variables

_exact_matches

A map from an object fully qualified name to its URL.

Values are both the name as tuple of fragments and as read from the records (see `load_records()`), mostly to help `_partial_names` to perform lookup for unambiguous names.

_partial_names

A map from partial names to the fully qualified names they may refer.

The keys are the possible left sub-tuples of fully qualified names, the values are list of strings as provided by the index.

If the list for a given tuple contains a single item, the partial match is not ambuguous. In this case the string can be looked up in `_exact_matches`.

If the name fragment is ambiguous, a warning may be issued to the user. The items can be used to provide an informative message to the user, to help him qualifying the name in a unambiguous manner.

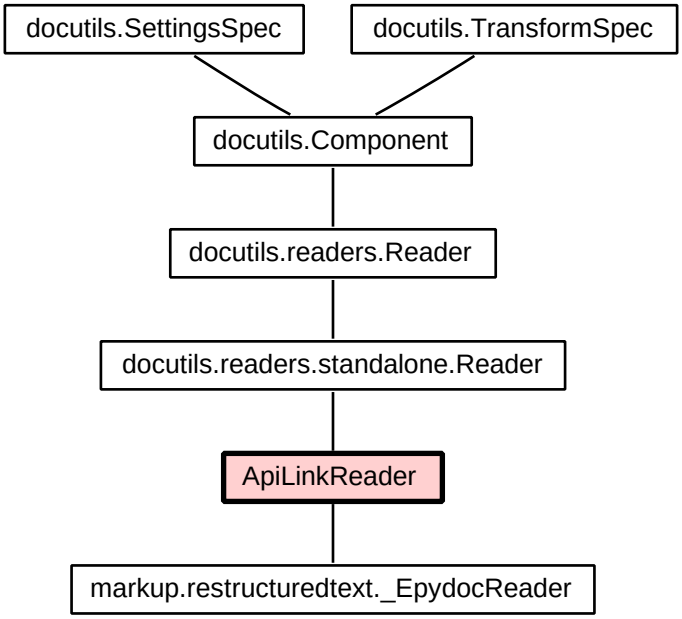
prefix

Prefix portion for the URL's returned by `get_url()`.

_filename

Not very important: only for logging.

19.7 Class ApiLinkReader



Known Subclasses: epydoc.markup.restructuredtext._EpydocReader

A Docutils standalone reader allowing external documentation links.

The reader configure the url resolvers at the time `read()` is invoked the first time.

19.7.1 Methods

__init__(*self*, **args*, ***kwargs*)

Initialize the Reader instance.

Several instance attributes are defined with dummy initial values. Subclasses may use these attributes as they wish.

Overrides: docutils.readers.Reader.__init__ *(inherited documentation)*

read(*self*, *source*, *parser*, *settings*)

Overrides: docutils.readers.Reader.read

read_configuration(*self*, *settings*, *problematic*=`True`)

Read the configuration for the configured URL resolver.

Register a new role for each configured API.

Parameters

`settings:` the settings structure containing the options to read.

`problematic:` if True, the registered role will create problematic nodes in case of failed references. If False, a warning will be raised anyway, but the output will appear as an ordinary literal. *(type=`bool`)*

Inherited from docutils.readers.standalone.Reader: get_transforms()

Inherited from docutils.readers.Reader: new_document(), parse(), set_parser()

Inherited from docutils.Component: supports()

19.7.2 Class Variables

settings_spec

The option parser configuration.

Value: `('API Linking Options', None, (('Define a new API documen...`

_conf

Value: `True`

Inherited from docutils.readers.standalone.Reader: config_section, config_section_dependencies, document, supported

Inherited from docutils.readers.Reader: component_type

Inherited from docutils.SettingsSpec: relative_path_settings, settings_default_overrides, settings_defaults

Inherited from docutils.TransformSpec: default_transforms, unknown_reference_resolvers

20 Module epydoc.gui

Graphical interface to epydoc. This interface might be useful for systems where it's inconvenient to use the command-line interface (such as Windows). It supports many (but not all) of the features that are supported by the command-line interface. It also supports loading and saving of *project files*, which store a set of related modules, and the options that should be used to generate the documentation for those modules.

Usage:

```
epydocgui [OPTIONS] [FILE.prj | MODULES...]

FILE.prj                  An epydoc GUI project file.
MODULES...                A list of Python modules to document.
-V, --version             Print the version of epydoc.
-h, -?, --help, --usage   Display this usage message
--debug                   Do not suppress error messages
```

To Do: Use ini-style project files, rather than pickles (using the same format as the CLI).

20.1 Functions

document(*options*, *cancel*, *done*)

Create the documentation for `modules`, using the options specified by `options`. `document` is designed to be started in its own thread by `EpydocGUI._go`.

Parameters

`options`: The options to use for generating documentation. This includes keyword options that can be given to `docwriter.html.HTMLWriter`, as well as the option `target`, which controls where the output is written to. *(type=`dictionary`)*

_version()

Display the version information, and exit.

Return Value

None

_usage()

_error(*s*)

gui()

20.2 Variables

DEBUG

Value: `0`

BG_COLOR

Value: `'#e0e0e0'`

ACTIVEBG_COLOR

Value: `'#e0e0e0'`

TEXT_COLOR

Value: `'black'`

ENTRYSELECT_COLOR

Value: `'#e0e0e0'`

SELECT_COLOR

Value: `'#208070'`

MESSAGE_COLOR

Value: `'#000060'`

ERROR_COLOR

Value: `'#600000'`

GUIERROR_COLOR

Value: `'#600000'`

WARNING_COLOR

Value: `'#604000'`

HEADER_COLOR

Value: `'#000000'`

COLOR_CONFIG

Value: `{'background': '#e0e0e0', 'foreground': 'black', 'highlig...`

ENTRY_CONFIG

Value: `{'background': '#e0e0e0', 'foreground': 'black', 'highlig...`

SB_CONFIG

Value: `{'activebackground': '#e0e0e0', 'background': '#e0e0e0', ...`

LISTBOX_CONFIG

Value: `{'background': '#e0e0e0', 'foreground': 'black', 'highlig...`

BUTTON_CONFIG

Value: `{'activebackground': '#e0e0e0', 'activeforeground': 'blac...`

CBUTTON_CONFIG

Value: `{'activebackground': '#e0e0e0', 'activeforeground': 'blac...`

SHOWMSG_CONFIG

Value: `{'activebackground': '#e0e0e0', 'activeforeground': 'blac...`

SHOWWRN_CONFIG

Value: `{'activebackground': '#e0e0e0', 'activeforeground': 'blac...`

SHOWERR_CONFIG

Value: `{'activebackground': '#e0e0e0', 'activeforeground': 'blac...`

PROGRESS_HEIGHT

Value: `16`

PROGRESS_WIDTH

Value: `200`

PROGRESS_BG

Value: `'#305060'`

PROGRESS_COLOR1

Value: `'#30c070'`

PROGRESS_COLOR2

Value: `'#60ffa0'`

PROGRESS_COLOR3

Value: `'#106030'`

DX

Value: `1`

DY

Value: `1`

DH

Value: `1`

DW

Value: `3`

IMPORT_PROGRESS

Value: `0.1`

BUILD_PROGRESS

Value: `0.2`

WRITE_PROGRESS

Value: `0.7`

UP_GIF

Value: `'R0lGODlhCwAMALMAANnZ2QDMmQCZZgBmZgAAAAAzM///////wAAAAAA...`

DOWN_GIF

Value: `'R0lGODlhCwAMALMAANnZ2QDMmQCZZgBmZgAAAAAzM///////wAAAAAA...`

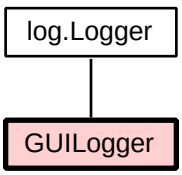
LEFT_GIF

Value: `'R0lGODlhDAALAKIAANnZ2QDMmQCZZgBmZgAAAAAzM///////yH5BAEA...`

RIGHT_GIF

Value: `'R0lGODlhDAALAKIAANnZ2QDMmQBmZgCZZgAzMwAAAP//////yH5BAEA...`

20.3 Class GUILogger



20.3.1 Methods

__init__(*self*, *progress*, *cancel*)

clear(*self*)

log(*self*, *level*, *message*)

Display a message.

Parameters

`message`: The message string to display. `message` may contain newlines, but does not need to end in a newline.

`level`: An integer value indicating the severity of the message.

Overrides: epydoc.log.Logger.log *(inherited documentation)*

start_block(*self*, *header*)

Start a new message block. Any calls to `info()`, `warning()`, or `error()` that occur between a call to `start_block` and a corresponding call to `end_block` will be grouped together, and displayed with a common header. `start_block` can be called multiple times (to form nested blocks), but every call to `start_block` *must* be balanced by a call to `end_block`.

Overrides: epydoc.log.Logger.start_block *(inherited documentation)*

end_block(*self*)

End a warning block. See `start_block` for details.

Overrides: epydoc.log.Logger.end_block *(inherited documentation)*

start_progress(*self*, *header*=`None`)

Begin displaying progress for a new task. `header` is a description of the task for which progress is being reported. Each call to `start_progress` must be followed by a call to `end_progress` (with no intervening calls to `start_progress`).

Overrides: epydoc.log.Logger.start_progress *(inherited documentation)*

end_progress(*self*)

Finish off the display of progress for the current task. See `start_progress` for more information.

Overrides: epydoc.log.Logger.end_progress *(inherited documentation)*

progress(*self*, *percent*, *message*='')

Update the progress display.

Parameters

`percent`: A float from 0.0 to 1.0, indicating how much progress has been made.

`message`: A message indicating the most recent action that contributed towards that progress.

Overrides: epydoc.log.Logger.progress *(inherited documentation)*

read(*self*)

Inherited from epydoc.log.Logger*(Section 21.3, p. 194)*: close()

20.3.2 Class Variables

_STAGES

Value: `[40, 7, 1, 3, 1, 30, 1, 2, 100]`

20.4 Class EpydocGUI

A graphical user interace to epydoc.

20.4.1 Methods

__init__(*self*)

_init_menubar(*self*)

_init_module_list(*self*, *mainframe*)

_init_progress_bar(*self*, *mainframe*)

_init_messages(*self*, *msgsframe*, *ctrlframe*)

_update_msg_tags(*self*, **e*)

_init_options(*self*, *optsframe*, *ctrlframe*)

_init_bindings(*self*)

_options_toggle(*self*, **e*)

_messages_toggle(*self*, **e*)

_configure(*self*, *event*)

_delete_module(*self*, **e*)

_entry_module(*self*, **e*)

_browse_module(*self*, **e*)

_browse_css(*self*, **e*)

_browse_help(*self*, **e*)

_browse_out(*self*, **e*)

destroy(*self*, **e*)

add_module(*self*, *name*, *check*=0)

mainloop(*self*, **args*, ***kwargs*)

_getopts(*self*)

_go(*self*, **e*)

_update_messages(*self*)

_update(*self*, *dt*, *id*)

_new(*self*, **e*)

_open(*self*, **e*)

open(*self*, *prjfile*)

_save(*self*, **e*)

_saveas(*self*, **e*)

21 Module epydoc.log

Functions used to report messages and progress updates to the user. These functions are delegated to zero or more registered `Logger` objects, which are responsible for actually presenting the information to the user. Different interfaces are free to create and register their own `Logger`s, allowing them to present this information in the manner that is best suited to each interface.

Note: I considered using the standard `logging` package to provide this functionality. However, I found that it would be too difficult to get that package to provide the behavior I want (esp. with respect to progress displays; but also with respect to message blocks).

21.1 Functions

register_logger(*logger*)

Register a logger. Each call to one of the logging functions defined by this module will be delegated to each registered logger.

remove_logger(*logger*, *close_logger*=`True`)

fatal(**messages*)

Display the given fatal message.

error(**messages*)

Display the given error message.

warning(**messages*)

Display the given warning message.

docstring_warning(**messages*)

Display the given docstring warning message.

info(**messages*)

Display the given informational message.

debug(**messages*)

Display the given debugging message.

start_block(*header*)

Start a new message block. Any calls to `info()`, `warning()`, or `error()` that occur between a call to `start_block` and a corresponding call to `end_block` will be grouped together, and displayed with a common header. `start_block` can be called multiple times (to form nested blocks), but every call to `start_block` *must* be balanced by a call to `end_block`.

end_block()

End a warning block. See `start_block` for details.

start_progress(*header*=`None`)

Begin displaying progress for a new task. `header` is a description of the task for which progress is being reported. Each call to `start_progress` must be followed by a call to `end_progress` (with no intervening calls to `start_progress`).

end_progress()

Finish off the display of progress for the current task. See `start_progress` for more information.

progress(*percent*, *message*='')

Update the progress display.

Parameters

`percent`: A float from 0.0 to 1.0, indicating how much progress has been made.

`message`: A message indicating the most recent action that contributed towards that progress.

close()

21.2 Variables

DOCSTRING_WARNING

Value: `25`

_loggers

The list of registered logging functions.

Value: `[]`

Message Severity Levels

DEBUG

Value: `10`

INFO

Value: `20`

WARNING

Value: `30`

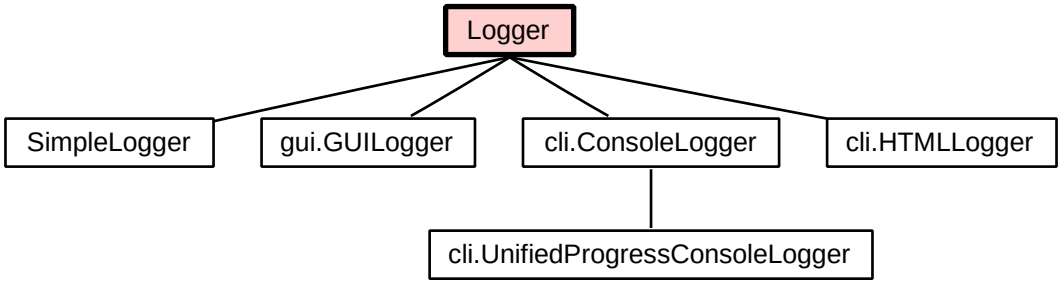
ERROR

Value: `40`

FATAL

Value: `40`

21.3 Class Logger



Known Subclasses: epydoc.log.SimpleLogger, epydoc.gui.GUILogger, epydoc.cli.ConsoleLogger, epydoc.cli.HTMLLogger

An abstract base class that defines the interface for *loggers*, which are used by epydoc to report information back to the user. Loggers are responsible for tracking two types of information:

- Messages, such as warnings and errors.
- Progress on the current task.

This abstract class allows the command-line interface and the graphical interface to each present this information to the user in the way that's most natural for each interface. To set up a logger, create a subclass of `Logger` that overrides all methods, and register it using `register_logger`.

21.3.1 Methods

log(*self*, *level*, *message*)

Display a message.

Parameters

`message`: The message string to display. `message` may contain newlines, but does not need to end in a newline.

`level`: An integer value indicating the severity of the message.

close(*self*)

Perform any tasks needed to close this logger. This should be safe to call multiple times.

start_block(*self*, *header*)

Start a new message block. Any calls to `info()`, `warning()`, or `error()` that occur between a call to `start_block` and a corresponding call to `end_block` will be grouped together, and displayed with a common header. `start_block` can be called multiple times (to form nested blocks), but every call to `start_block` *must* be balanced by a call to `end_block`.

end_block(*self*)

End a warning block. See `start_block` for details.

start_progress(*self*, *header*=`None`)

Begin displaying progress for a new task. `header` is a description of the task for which progress is being reported. Each call to `start_progress` must be followed by a call to `end_progress` (with no intervening calls to `start_progress`).

end_progress(*self*)

Finish off the display of progress for the current task. See `start_progress` for more information.

progress(*self*, *percent*, *message*=`''`)

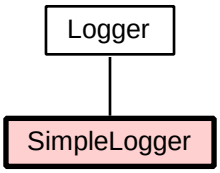
Update the progress display.

Parameters

`percent`: A float from 0.0 to 1.0, indicating how much progress has been made.

`message`: A message indicating the most recent action that contributed towards that progress.

21.4 Class SimpleLogger



21.4.1 Methods

__init__(*self*, *threshold*=30)

log(*self*, *level*, *message*)

Display a message.

Parameters

`message`: The message string to display. `message` may contain newlines, but does not need to end in a newline.

`level`: An integer value indicating the severity of the message.

Overrides: epydoc.log.Logger.log *(inherited documentation)*

Inherited from epydoc.log.Logger*(Section 21.3, p. 194)*: close(), end_block(), end_progress(), progress(), start_block(), start_progress()

22 Package epydoc.markup

Markup language support for docstrings. Each submodule defines a parser for a single markup language. These parsers convert an object's docstring to a `ParsedDocstring`, a standard intermediate representation that can be used to generate output. `ParsedDocstring`s support the following operations:

- output generation (`to_plaintext()`, `to_html()`, and `to_latex()`).
- Summarization (`summary()`).
- Field extraction (`split_fields()`).
- Index term extraction (`index_terms()`.

The `parse()` function provides a single interface to the `epydoc.markup` package: it takes a docstring and the name of a markup language; delegates to the appropriate parser; and returns the parsed docstring (along with any errors or warnings that were generated).

The `ParsedDocstring` output generation methods (`to_`*`format`*`()`) use a `DocstringLinker` to link the docstring output with the rest of the documentation that epydoc generates. `DocstringLinker`s are currently responsible for translating two kinds of crossreference:

- index terms (`translate_indexterm()`).
- identifier crossreferences (`translate_identifier_xref()`).

A parsed docstring's fields can be extracted using the `ParsedDocstring.split_fields()` method. This method divides a docstring into its main body and a list of `Field`s, each of which encodes a single field. The field's bodies are encoded as `ParsedDocstring`s.

Markup errors are represented using `ParseError`s. These exception classes record information about the cause, location, and severity of each error.

22.1 Functions

parse(*docstring*, *markup*=`'plaintext'`, *errors*=`None`, ***options*)

Parse the given docstring, and use it to construct a `ParsedDocstring`. If any fatal `ParseError`s are encountered while parsing the docstring, then the docstring will be rendered as plaintext, instead.

Parameters

`docstring`: The docstring to encode. *(type=`string`)*

`markup`: The name of the markup language that is used by the docstring. If the markup language is not supported, then the docstring will be treated as plaintext. The markup name is case-insensitive. *(type=`string`)*

`errors`: A list where any errors generated during parsing will be stored. If no list is specified, then fatal errors will generate exceptions, and non-fatal errors will be ignored. *(type=`list of ParseError`)*

Return Value

A `ParsedDocstring` that encodes the contents of `docstring`.*(type=`ParsedDocstring`)*

Raises

ParseError If `errors` is `None` and an error is encountered while parsing.

register_markup_language(*name*, *parse_function*)

Register a new markup language named `name`, which can be parsed by the function `parse_function`.

Parameters

`name`: The name of the markup language. `name` should be a simple identifier, such as `'epytext'` or `'restructuredtext'`. Markup language names are case insensitive.

`parse_function`: A function which can be used to parse the markup language, and returns a `ParsedDocstring`. It should have the following signature:

```
>>> def parse(s, errors):
...   'returns a ParsedDocstring'
```

Where:

- `s` is the string to parse. (`s` will be a unicode string.)
- `errors` is a list; any errors that are generated during docstring parsing should be appended to this list (as `ParseError` objects).

_parse_warn(*estr*)

Print a warning message. If the given error has already been printed, then do nothing.

Utility Functions

parse_type_of(*obj*)

Parameters

`obj`: The object whose type should be returned as DOM document. *(type=any)*

Return Value

A `ParsedDocstring` that encodes the type of the given object.*(type=ParsedDocstring)*

22.2 Variables

_markup_language_registry

Value: `{'restructuredtext': 'epydoc.markup.restructuredtext', 'e...`

MARKUP_LANGUAGES_USED

Value: `set(['epytext', 'plaintext', u'restructuredtext'])`

_parse_warnings

Used by `_parse_warn`.

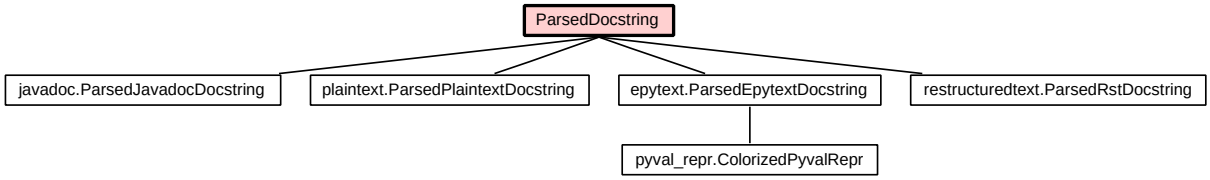
Value: `{}`

SCRWIDTH

The default width with which text will be wrapped when formatting the output of the parser.

Type: `int`

22.3 Class ParsedDocstring



Known Subclasses: epydoc.markup.javadoc.ParsedJavadocDocstring,
epydoc.markup.plaintext.ParsedPlaintextDocstring,
epydoc.markup.epytext.ParsedEpytextDocstring,
epydoc.markup.restructuredtext.ParsedRstDocstring

A standard intermediate representation for parsed docstrings that can be used to generate output. Parsed docstrings are produced by markup parsers (such as `epytext.parse` or `javadoc.parse`). `ParsedDocstring`s support several kinds of operation:

- output generation (`to_plaintext()`, `to_html()`, and `to_latex()`).
- Summarization (`summary()`).
- Field extraction (`split_fields()`).
- Index term extraction (`index_terms()`.

The output generation methods (`to_`*`format`*`()`) use a `DocstringLinker` to link the docstring output with the rest of the documentation that epydoc generates.

Subclassing

The only method that a subclass is *required* to implement is `to_plaintext()`; but it is often useful to override the other methods. The default behavior of each method is described below:

- `to_`*`format`*: Calls `to_plaintext`, and uses the string it returns to generate verbatim output.
- `summary`: Returns `self` (i.e., the entire docstring).
- `split_fields`: Returns `(self, [])` (i.e., extracts no fields).
- `index_terms`: Returns `[]` (i.e., extracts no index terms).

If and when epydoc adds more output formats, new `to_`*`format`* methods will be added to this base class; but they will always be given a default implementation.

22.3.1 Methods

split_fields(*self*, *errors*=None)

Split this docstring into its body and its fields.

Parameters

`errors`: A list where any errors generated during splitting will be stored. If no list is specified, then errors will be ignored. *(type=`list of ParseError`)*

Return Value

A tuple `(body, fields)`, where `body` is the main body of this docstring, and `fields` is a list of its fields. If the resulting body is empty, return `None` for the body.*(type=`(ParsedDocstring, list of Field)`)*

summary(*self*)

Return Value

A pair consisting of a short summary of this docstring and a boolean value indicating whether there is further documentation in addition to the summary. Typically, the summary consists of the first sentence of the docstring.*(type=`(ParsedDocstring, bool)`)*

concatenate(*self*, *other*)

Return Value

A new parsed docstring containing the concatination of this docstring and `other`.

Raises

ValueError If the two parsed docstrings are incompatible.

__add__(*self*, *other*)

to_html(*self*, *docstring_linker*, ***options*)

Translate this docstring to HTML.

Parameters

`docstring_linker`: An HTML translator for crossreference links into and out of the docstring. *(type=`DocstringLinker`)*

`options`: Any extra options for the output. Unknown options are ignored.

Return Value

An HTML fragment that encodes this docstring.*(type=`string`)*

to_latex(*self*, *docstring_linker*, ***options*)

Translate this docstring to LaTeX.

Parameters

`docstring_linker`: A LaTeX translator for crossreference links into and out of the docstring. *(type=`DocstringLinker`)*

`options`: Any extra options for the output. Unknown options are ignored.

Return Value

A LaTeX fragment that encodes this docstring.*(type=`string`)*

to_plaintext(*self*, *docstring_linker*, ***options*)

Translate this docstring to plaintext.

Parameters

`docstring_linker`: A plaintext translator for crossreference links into and out of the docstring. *(type=`DocstringLinker`)*

`options`: Any extra options for the output. Unknown options are ignored.

Return Value

A plaintext fragment that encodes this docstring.*(type=`string`)*

index_terms(*self*)

Return Value

The list of index terms that are defined in this docstring. Each of these items will be added to the index page of the documentation.*(type=`list of ParsedDocstring`)*

22.4 Class Field

The contents of a docstring's field. Docstring fields are used to describe specific aspects of an object, such as a parameter of a function or the author of a module. Each field consists of a tag, an optional argument, and a body:

- The tag specifies the type of information that the field encodes.
- The argument specifies the object that the field describes. The argument may be `None` or a `string`.
- The body contains the field's information.

Tags are automatically downcased and stripped; and arguments are automatically stripped.

22.4.1 Methods

__init__(*self*, *tag*, *arg*, *body*)

tag(*self*)

Return Value

This field's tag.*(type=`string`)*

arg(*self*)

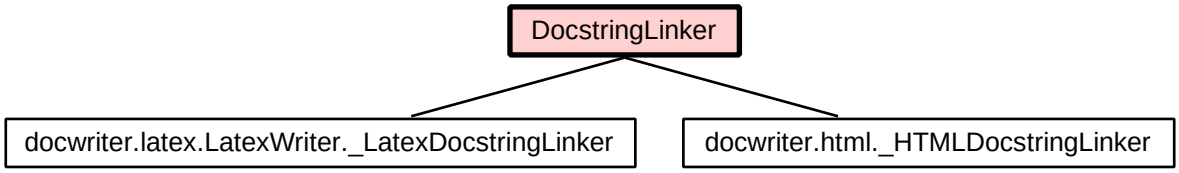
Return Value
This field's argument, or `None` if this field has no argument. *(type=`string` or `None`)*

body(*self*)

Return Value
This field's body. *(type=`ParsedDocstring`)*

__repr__(*self*)

22.5 Class DocstringLinker



Known Subclasses: epydoc.docwriter.latex.LatexWriter._LatexDocstringLinker, epydoc.docwriter.html._HTMLDocstringLinker

A translator for crossreference links into and out of a `ParsedDocstring`. `DocstringLinker` is used by `ParsedDocstring` to convert these crossreference links into appropriate output formats. For example, `DocstringLinker.to_html` expects a `DocstringLinker` that converts crossreference links to HTML.

22.5.1 Methods

translate_identifier_xref(*self*, *identifier*, *label*=`None`)

Translate a crossreference link to a Python identifier to the appropriate output format. The output will typically include a reference or pointer to the crossreference target.

Parameters

`identifier`: The name of the Python identifier that should be linked to. *(type=`string`)*

`label`: The label that should be used for the identifier, if it's different from the name of the identifier. This should be expressed in the target markup language – e.g. for latex, "_"s should be escaped. *(type=`string` or `None`)*

Return Value
The translated crossreference link. *(type=`string`)*

translate_indexterm(*self*, *indexterm*)

Translate an index term to the appropriate output format. The output will typically include a crossreference anchor.

Parameters

`indexterm`: The index term to translate. *(type=`ParsedDocstring`)*

Return Value

The translated index term.*(type=`string`)*

url_for(*self*, *identifier*)

Given an identifier, return a URL pointing at that identifier. This is used to create hyperlinks in dotgraphs. This method is *optional* – i.e., it may raise NotImplementedError

22.6 Class ConcatenatedDocstring

22.6.1 Methods

__init__(*self*, **parsed_docstrings*)

split_fields(*self*, *errors*=`None`)

summary(*self*)

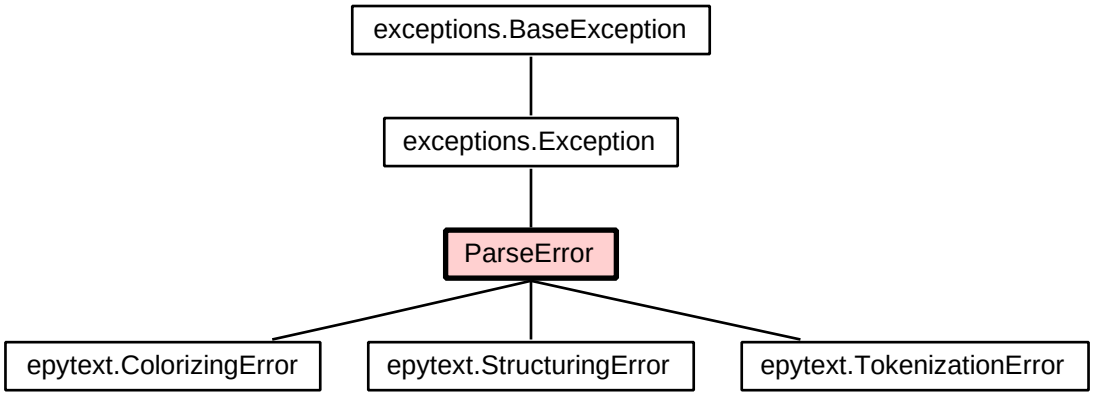
to_html(*self*, *docstring_linker*, ***options*)

to_latex(*self*, *docstring_linker*, ***options*)

to_plaintext(*self*, *docstring_linker*, ***options*)

index_terms(*self*)

22.7 Class ParseError



Known Subclasses: epydoc.markup.epytext.ColorizingError, epydoc.markup.epytext.StructuringError, epydoc.markup.epytext.TokenizationError

The base class for errors generated while parsing docstrings.

22.7.1 Methods

__init__(*self*, *descr*, *linenum*=None, *is_fatal*=1)

`x.__init__(...) initializes x; see x.__class__.__doc__ for signature`

Parameters

`descr:` A description of the error. *(type=**string**)*

`linenum:` The line on which the error occured within the docstring. The linenum of the first line is 0. *(type=**int**)*

`is_fatal:` True if this is a fatal error. *(type=**boolean**)*

Overrides: exceptions.BaseException.__init__

is_fatal(*self*)

Return Value

true if this is a fatal error. If an error is fatal, then epydoc should ignore the output of the parser, and parse the docstring as plaintext.*(type=**boolean**)*

linenum(*self*)

Return Value

The line number on which the error occured (including any offset). If the line number is unknown, then return `None`.*(type=**int** or **None**)*

set_linenum_offset(*self*, *offset*)

Set the line number offset for this error. This offset is the line number where the docstring begins. This offset is added to `_linenum` when displaying the line number of the error.

Parameters

`offset`: The new line number offset. *(type=int)*

Return Value

None

descr(*self*)

__str__(*self*)

Return a string representation of this `ParseError`. This multi-line string contains a description of the error, and specifies where it occured.

Return Value

the informal representation of this `ParseError`.*(type=string)*

Overrides: exceptions.BaseException.__str__

__repr__(*self*)

Return the formal representation of this `ParseError`. `ParseError`s have formal representations of the form:

```
<ParseError on line 12>
```

Return Value

the formal representation of this `ParseError`.*(type=string)*

Overrides: exceptions.BaseException.__repr__

__cmp__(*self*, *other*)

Compare two `ParseError`s, based on their line number.

- Return -1 if `self.linenum<other.linenum`
- Return +1 if `self.linenum>other.linenum`
- Return 0 if `self.linenum==other.linenum`.

The return value is undefined if `other` is not a ParseError.

Return Value

int

Inherited from exceptions.Exception: __new__()

Inherited from exceptions.BaseException: __delattr__(), __getattribute__(), __getitem__(), __getslice__(), __reduce__(), __setattr__(), __setstate__()

22.7.2 Properties

Inherited from exceptions.BaseException: args, message

22.7.3 Instance Variables

_descr

A description of the error.

Type: `string`

_fatal

True if this is a fatal error.

Type: `boolean`

_linenum

The line on which the error occured within the docstring. The linenum of the first line is 0.

Type: `int`

_offset

The line number where the docstring begins. This offset is added to `_linenum` when displaying the line number of the error. Default value: 1.

Type: `int`

23 Module epydoc.markup.doctest

Syntax highlighting for doctest blocks. This module defines two functions, `doctest_to_html()` and `doctest_to_latex()`, which can be used to perform syntax highlighting on doctest blocks. It also defines the more general `colorize_doctest()`, which could be used to do syntac highlighting on doctest blocks with other output formats. (Both `doctest_to_html()` and `doctest_to_latex()` are defined using `colorize_doctest()`.)

23.1 Functions

doctest_to_html(*s*)

Perform syntax highlighting on the given doctest string, and return the resulting HTML code. This code consists of a `<pre>` block with class=py-doctest. Syntax highlighting is performed using the following css classes:

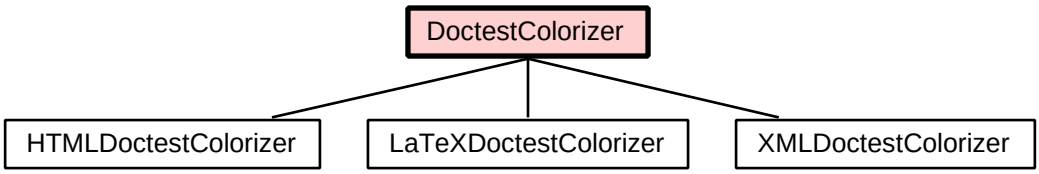
- `py-prompt` – the Python PS1 prompt (>>>)
- `py-more` – the Python PS2 prompt (...)
- `py-keyword` – a Python keyword (for, if, etc.)
- `py-builtin` – a Python builtin name (abs, dir, etc.)
- `py-string` – a string literal
- `py-comment` – a comment
- `py-except` – an exception traceback (up to the next >>>)
- `py-output` – the output from a doctest block.
- `py-defname` – the name of a function or class defined by a `def` or `class` statement.

doctest_to_latex(*s*)

Perform syntax highlighting on the given doctest string, and return the resulting LaTeX code. This code consists of an `alltt` environment. Syntax highlighting is performed using the following new latex commands, which must be defined externally:

- `\pysrcprompt` – the Python PS1 prompt (>>>)
- `\pysrcmore` – the Python PS2 prompt (...)
- `\pysrckeyword` – a Python keyword (for, if, etc.)
- `\pysrcbuiltin` – a Python builtin name (abs, dir, etc.)
- `\pysrcstring` – a string literal
- `\pysrccomment` – a comment
- `\pysrcexcept` – an exception traceback (up to the next >>>)
- `\pysrcoutput` – the output from a doctest block.
- `\pysrcdefname` – the name of a function or class defined by a `def` or `class` statement.

23.2 Class DoctestColorizer



Known Subclasses: epydoc.markup.doctest.HTMLDoctestColorizer, epydoc.markup.doctest.LaTeXDoctestColorizer, epydoc.markup.doctest.XMLDoctestColorizer

An abstract base class for performing syntax highlighting on doctest blocks and other bits of Python code. Subclasses should provide definitions for:

- The `markup()` method, which takes a substring and a tag, and returns a colorized version of the substring.
- The `PREFIX` and `SUFFIX` variables, which will be added to the beginning and end of the strings returned by `colorize_codeblock` and `colorize_doctest`.

23.2.1 Methods

colorize_inline(*self*, *s*)

Colorize a string containing Python code. Do not add the `PREFIX` and `SUFFIX` strings to the returned value. This method is intended for generating syntax-highlighted strings that are appropriate for inclusion as inline expressions.

colorize_codeblock(*self*, *s*)

Colorize a string containing only Python code. This method differs from `colorize_doctest` in that it will not search for doctest prompts when deciding how to colorize the string.

colorize_doctest(*self*, *s*, *strip_directives*=`False`)

Colorize a string containing one or more doctest examples.

subfunc(*self*, *match*)

markup(*self*, *s*, *tag*)

Apply syntax highlighting to a single substring from a doctest block. `s` is the substring, and `tag` is the tag that should be applied to the substring. `tag` will be one of the following strings:

- `prompt` – the Python PS1 prompt (>>>)
- `more` – the Python PS2 prompt (...)
- `keyword` – a Python keyword (for, if, etc.)
- `builtin` – a Python builtin name (abs, dir, etc.)
- `string` – a string literal
- `comment` – a comment
- `except` – an exception traceback (up to the next >>>)
- `output` – the output from a doctest block.
- `defname` – the name of a function or class defined by a `def` or `class` statement.
- `other` – anything else (does *not* include output.)

23.2.2 Class Variables

PREFIX

A string that is added to the beginning of the strings returned by `colorize_codeblock` and `colorize_doctest`. Typically, this string begins a preformatted area.

Value: `None`

SUFFIX

A string that is added to the end of the strings returned by `colorize_codeblock` and `colorize_doctest`. Typically, this string ends a preformatted area.

Value: `None`

NEWLINE

The string used to divide lines

Value: `'\n'`

_KEYWORDS

A list of the names of all Python keywords. ('as' is included even though it is technically not a keyword.)

Value: `['and', 'del', 'for', 'is', 'raiseassert', 'elif', 'from'...`

_BUILTINS

A list of all Python builtins.

Value: `['clear', 'copy', 'fromkeys', 'get', 'has_key', 'items', ...`

_KEYWORD_GRP

A regexp group that matches keywords.

Value: `'\\band\\b|\\bdel\\b|\\bfor\\b|\\bis\\b|\\braiseassert\\b...`

_BUILTIN_GRP

A regexp group that matches Python builtins.

Value: `'(?<!\\.)(?:\\bclear\\b|\\bcopy\\b|\\bfromkeys\\b|\\bget\...`

_STRING_GRP

A regexp group that matches Python strings.

Value: `'("""("""|.*?((?!").)"""))|("("|.*?((?!").)"))|(\'\'\'(\'...`

_COMMENT_GRP

A regexp group that matches Python comments.

Value: `'(#.*?$)'`

_PROMPT1_GRP

A regexp group that matches Python ">>>" prompts.

Value: `'^[ \\t]*>>>(?:[ \\t]|$)'`

_PROMPT2_GRP

A regexp group that matches Python "..." prompts.

Value: `'^[ \\t]*\\.\\.\\.(?:[ \\t]|$)'`

_DEFINE_GRP

A regexp group that matches function and class definitions.

Value: `'\\b(?:def|class)[ \\t]+\\w+'`

PROMPT_RE

A regexp that matches Python prompts

Value: `re.compile(r'(?ms)(^[ \t]*>>>(?:[ \t]|$)|[ \t]*\.\.\.(?:[...`

PROMPT2_RE

A regexp that matches Python "..." prompts.

Value: `re.compile(r'(?ms)(^[ \t]*\.\.\.(?:[ \t]|$))')`

EXCEPT_RE

A regexp that matches doctest exception blocks.

Value: `re.compile(r'(?ms)^[ \t]*Traceback \(most recent call las...`

DOCTEST_DIRECTIVE_RE

A regexp that matches doctest directives.

Value: `re.compile(r'#[ \t]*doctest:.*')`

DOCTEST_RE

A regexp that matches all of the regions of a doctest block that should be colored.

Value: `re.compile(r'(?ms)(.*?)((?P<STRING>("""("""|.*?((?!").)""...`

DOCTEST_EXAMPLE_RE

This regular expression is used to find doctest examples in a string. This is copied from the standard Python doctest.py module (after the refactoring in Python 2.4+).

Value: `re.compile(r'(?mx)(?P<source>(?:^(?P<indent> *)>>>.*)(?:\...`

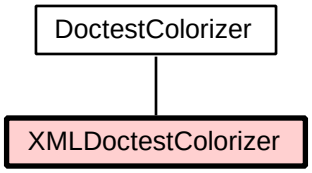
_BI

Value: `'values'`

_KW

Value: `'as'`

23.3 Class XMLDoctestColorizer



A subclass of DoctestColorizer that generates XML-like output. This class is mainly intended to be used for testing purposes.

23.3.1 Methods

markup(*self*, *s*, *tag*)

Apply syntax highlighting to a single substring from a doctest block. `s` is the substring, and `tag` is the tag that should be applied to the substring. `tag` will be one of the following strings:

- `prompt` – the Python PS1 prompt (>>>)
- `more` – the Python PS2 prompt (...)
- `keyword` – a Python keyword (for, if, etc.)
- `builtin` – a Python builtin name (abs, dir, etc.)
- `string` – a string literal
- `comment` – a comment
- `except` – an exception traceback (up to the next >>>)
- `output` – the output from a doctest block.
- `defname` – the name of a function or class defined by a `def` or `class` statement.
- `other` – anything else (does *not* include output.)

Overrides: epydoc.markup.doctest.DoctestColorizer.markup *(inherited documentation)*

Inherited from epydoc.markup.doctest.DoctestColorizer *(Section 23.2, p. 208)*: colorize_codeblock(), colorize_doctest(), colorize_inline(), subfunc()

23.3.2 Class Variables

PREFIX

A string that is added to the beginning of the strings returned by `colorize_codeblock` and `colorize_doctest`. Typically, this string begins a preformatted area.

Value: `'<colorized>\n'`

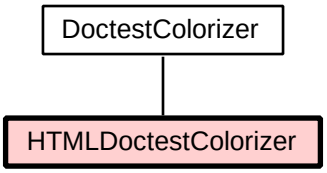
SUFFIX

A string that is added to the end of the strings returned by `colorize_codeblock` and `colorize_doctest`. Typically, this string ends a preformatted area.

Value: `'</colorized>\n'`

Inherited from epydoc.markup.doctest.DoctestColorizer *(Section 23.2, p. 208)*: DOCTEST_DIRECTIVE_RE, DOCTEST_EXAMPLE_RE, DOCTEST_RE, EXCEPT_RE, NEWLINE, PROMPT2_RE, PROMPT_RE, _BI, _BUILTINS, _BUILTIN_GRP, _COMMENT_GRP, _DEFINE_GRP, _KEYWORDS, _KEYWORD_GRP, _KW, _PROMPT1_GRP, _PROMPT2_GRP, _STRING_GRP

23.4 Class HTMLDoctestColorizer



A subclass of DoctestColorizer that generates HTML output.

23.4.1 Methods

markup(*self*, *s*, *tag*)

Apply syntax highlighting to a single substring from a doctest block. `s` is the substring, and `tag` is the tag that should be applied to the substring. `tag` will be one of the following strings:

- `prompt` – the Python PS1 prompt (>>>)
- `more` – the Python PS2 prompt (...)
- `keyword` – a Python keyword (for, if, etc.)
- `builtin` – a Python builtin name (abs, dir, etc.)
- `string` – a string literal
- `comment` – a comment
- `except` – an exception traceback (up to the next >>>)
- `output` – the output from a doctest block.
- `defname` – the name of a function or class defined by a `def` or `class` statement.
- `other` – anything else (does *not* include output.)

Overrides: epydoc.markup.doctest.DoctestColorizer.markup *(inherited documentation)*

Inherited from epydoc.markup.doctest.DoctestColorizer *(Section 23.2, p. 208)*: colorize_codeblock(), colorize_doctest(), colorize_inline(), subfunc()

23.4.2 Class Variables

PREFIX

A string that is added to the beginning of the strings returned by `colorize_codeblock` and `colorize_doctest`. Typically, this string begins a preformatted area.

Value: `'<pre class="py-doctest">\n'`

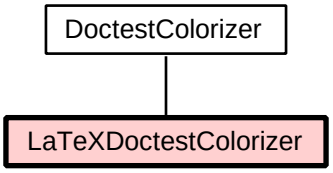
SUFFIX

A string that is added to the end of the strings returned by `colorize_codeblock` and `colorize_doctest`. Typically, this string ends a preformatted area.

Value: `'</pre>\n'`

Inherited from epydoc.markup.doctest.DoctestColorizer *(Section 23.2, p. 208)*: DOCTEST_DIRECTIVE_RE, DOCTEST_EXAMPLE_RE, DOCTEST_RE, EXCEPT_RE, NEWLINE, PROMPT2_RE, PROMPT_RE, _BI, _BUILTINS, _BUILTIN_GRP, _COMMENT_GRP, _DEFINE_GRP, _KEYWORDS, _KEYWORD_GRP, _KW, _PROMPT1_GRP, _PROMPT2_GRP, _STRING_GRP

23.5 Class LaTeXDoctestColorizer



A subclass of DoctestColorizer that generates LaTeX output.

23.5.1 Methods

markup(*self*, *s*, *tag*)

Apply syntax highlighting to a single substring from a doctest block. `s` is the substring, and `tag` is the tag that should be applied to the substring. `tag` will be one of the following strings:

- `prompt` – the Python PS1 prompt (>>>)
- `more` – the Python PS2 prompt (...)
- `keyword` – a Python keyword (for, if, etc.)
- `builtin` – a Python builtin name (abs, dir, etc.)
- `string` – a string literal
- `comment` – a comment
- `except` – an exception traceback (up to the next >>>)
- `output` – the output from a doctest block.
- `defname` – the name of a function or class defined by a `def` or `class` statement.
- `other` – anything else (does *not* include output.)

Overrides: epydoc.markup.doctest.DoctestColorizer.markup *(inherited documentation)*

Inherited from epydoc.markup.doctest.DoctestColorizer *(Section 23.2, p. 208)*: colorize_codeblock(), colorize_doctest(), colorize_inline(), subfunc()

23.5.2 Class Variables

PREFIX

A string that is added to the beginning of the strings returned by `colorize_codeblock` and `colorize_doctest`. Typically, this string begins a preformatted area.

Value: `'\\begin{alltt}'`

SUFFIX

A string that is added to the end of the strings returned by `colorize_codeblock` and `colorize_doctest`. Typically, this string ends a preformatted area.

Value: `'\\end{alltt}\n'`

NEWLINE

The string used to divide lines

Value: `'\\\\'`

Inherited from epydoc.markup.doctest.DoctestColorizer *(Section 23.2, p. 208)*: DOCTEST_DIRECTIVE_RE, DOCTEST_EXAMPLE_RE, DOCTEST_RE, EXCEPT_RE, PROMPT2_RE, PROMPT_RE, _BI, _BUILTINS, _BUILTIN_GRP, _COMMENT_GRP, _DEFINE_GRP, _KEYWORDS, _KEYWORD_GRP, _KW, _PROMPT1_GRP, _PROMPT2_GRP, _STRING_GRP

24 Module epydoc.markup.epytext

Parser for epytext strings. Epytext is a lightweight markup whose primary intended application is Python documentation strings. This parser converts Epytext strings to a simple DOM-like representation (encoded as a tree of `Element` objects and strings). Epytext strings can contain the following *structural blocks*:

- *epytext*: The top-level element of the DOM tree.
- *para*: A paragraph of text. Paragraphs contain no newlines, and all spaces are soft.
- *section*: A section or subsection.
- *field*: A tagged field. These fields provide information about specific aspects of a Python object, such as the description of a function's parameter, or the author of a module.
- *literalblock*: A block of literal text. This text should be displayed as it would be displayed in plaintext. The parser removes the appropriate amount of leading whitespace from each line in the literal block.
- *doctestblock*: A block containing sample python code, formatted according to the specifications of the `doctest` module.
- *ulist*: An unordered list.
- *olist*: An ordered list.
- *li*: A list item. This tag is used both for unordered list items and for ordered list items.

Additionally, the following *inline regions* may be used within `para` blocks:

- *code*: Source code and identifiers.
- *math*: Mathematical expressions.
- *index*: A term which should be included in an index, if one is generated.
- *italic*: Italicized text.
- *bold*: Bold-faced text.
- *uri*: A Universal Resource Indicator (URI) or Universal Resource Locator (URL)
- *link*: A Python identifier which should be hyperlinked to the named object's documentation, when possible.

The returned DOM tree will conform to the the following Document Type Description:

```
<!ENTITY % colorized '(code | math | index | italic |
                       bold | uri | link | symbol)*'>

<!ELEMENT epytext ((para | literalblock | doctestblock |
                   section | ulist | olist)*, fieldlist?)>

<!ELEMENT para (#PCDATA | %colorized;)*>

<!ELEMENT section (para | listblock | doctestblock |
                   section | ulist | olist)+>

<!ELEMENT fieldlist (field+)>
<!ELEMENT field (tag, arg?, (para | listblock | doctestblock)
                            ulist | olist)+)>
<!ELEMENT tag (#PCDATA)>
<!ELEMENT arg (#PCDATA)>
```

```
<!ELEMENT literalblock (#PCDATA | %colorized;)*>
<!ELEMENT doctestblock (#PCDATA)>

<!ELEMENT ulist (li+)>
<!ELEMENT olist (li+)>
<!ELEMENT li (para | literalblock | doctestblock | ulist | olist)+>
<!ATTLIST li bullet NMTOKEN #IMPLIED>
<!ATTLIST olist start NMTOKEN #IMPLIED>

<!ELEMENT uri     (name, target)>
<!ELEMENT link    (name, target)>
<!ELEMENT name    (#PCDATA | %colorized;)*>
<!ELEMENT target  (#PCDATA)>

<!ELEMENT code    (#PCDATA | %colorized;)*>
<!ELEMENT math    (#PCDATA | %colorized;)*>
<!ELEMENT italic  (#PCDATA | %colorized;)*>
<!ELEMENT bold    (#PCDATA | %colorized;)*>
<!ELEMENT indexed (#PCDATA | %colorized;)>
<!ATTLIST code style CDATA #IMPLIED>

<!ELEMENT symbol (#PCDATA)>
```

24.1 Functions

parse(*str*, *errors*=None)

Return a DOM tree encoding the contents of an epytext string. Any errors generated during parsing will be stored in `errors`.

Parameters

`str:` The epytext string to parse. *(type=`string`)*

`errors:` A list where any errors generated during parsing will be stored. If no list is specified, then fatal errors will generate exceptions, and non-fatal errors will be ignored. *(type=`list` of `ParseError`)*

Return Value

a DOM tree encoding the contents of an epytext string.*(type=`Element`)*

Raises

ParseError If `errors` is `None` and an error is encountered while parsing.

_raise_graphs(*tree*, *parent*)

_pop_completed_blocks(*token*, *stack*, *indent_stack*)

Pop any completed blocks off the stack. This includes any blocks that we have dedented past, as well as any list item blocks that we've dedented to. The top element on the stack should only be a list if we're about to start a new list item (i.e., if the next token is a bullet).

_add_para(*doc*, *para_token*, *stack*, *indent_stack*, *errors*)

Colorize the given paragraph, and add it to the DOM tree.

_add_section(*doc*, *heading_token*, *stack*, *indent_stack*, *errors*)

Add a new section to the DOM tree, with the given heading.

_add_list(*doc*, *bullet_token*, *stack*, *indent_stack*, *errors*)

Add a new list item or field to the DOM tree, with the given bullet or field tag. When necessary, create the associated list.

_tokenize_doctest(*lines*, *start*, *block_indent*, *tokens*, *errors*)

Construct a `Token` containing the doctest block starting at `lines[start]`, and append it to `tokens`. `block_indent` should be the indentation of the doctest block. Any errors generated while tokenizing the doctest block will be appended to `errors`.

Parameters

`lines`: The list of lines to be tokenized *(type=`list` of `string`)*

`start`: The index into `lines` of the first line of the doctest block to be tokenized. *(type=`int`)*

`block_indent`: The indentation of `lines[start]`. This is the indentation of the doctest block. *(type=`int`)*

`errors`: A list where any errors generated during parsing will be stored. If no list is specified, then errors will generate exceptions. *(type=`list` of `ParseError`)*

`tokens`: *(type=`list` of `Token`)*

Return Value

The line number of the first line following the doctest block.*(type=`int`)*

_tokenize_literal(*lines*, *start*, *block_indent*, *tokens*, *errors*)

Construct a `Token` containing the literal block starting at `lines[start]`, and append it to `tokens`. `block_indent` should be the indentation of the literal block. Any errors generated while tokenizing the literal block will be appended to `errors`.

Parameters

`lines`: The list of lines to be tokenized *(type=list of string)*

`start`: The index into `lines` of the first line of the literal block to be tokenized. *(type=int)*

`block_indent`: The indentation of `lines[start]`. This is the indentation of the literal block. *(type=int)*

`errors`: A list of the errors generated by parsing. Any new errors generated while will tokenizing this paragraph will be appended to this list. *(type=list of ParseError)*

`tokens`: *(type=list of Token)*

Return Value

The line number of the first line following the literal block.*(type=int)*

_tokenize_listart(*lines*, *start*, *bullet_indent*, *tokens*, *errors*)

Construct `Token`s for the bullet and the first paragraph of the list item (or field) starting at `lines[start]`, and append them to `tokens`. `bullet_indent` should be the indentation of the list item. Any errors generated while tokenizing will be appended to `errors`.

Parameters

`lines`: The list of lines to be tokenized *(type=list of string)*

`start`: The index into `lines` of the first line of the list item to be tokenized. *(type=int)*

`bullet_indent`: The indentation of `lines[start]`. This is the indentation of the list item. *(type=int)*

`errors`: A list of the errors generated by parsing. Any new errors generated while will tokenizing this paragraph will be appended to this list. *(type=list of ParseError)*

`tokens`: *(type=list of Token)*

Return Value

The line number of the first line following the list item's first paragraph.*(type=int)*

_tokenize_para(*lines*, *start*, *para_indent*, *tokens*, *errors*)

Construct a `Token` containing the paragraph starting at `lines[start]`, and append it to `tokens`. `para_indent` should be the indentation of the paragraph . Any errors generated while tokenizing the paragraph will be appended to `errors`.

Parameters

`lines`: The list of lines to be tokenized *(type=list of string)*

`start`: The index into `lines` of the first line of the paragraph to be tokenized. *(type=int)*

`para_indent`: The indentation of `lines[start]`. This is the indentation of the paragraph. *(type=int)*

`errors`: A list of the errors generated by parsing. Any new errors generated while will tokenizing this paragraph will be appended to this list. *(type=list of ParseError)*

`tokens`: *(type=list of Token)*

Return Value

The line number of the first line following the paragraph.*(type=int)*

_tokenize(*str*, *errors*)

Split a given formatted docstring into an ordered list of `Token`s, according to the epytext markup rules.

Parameters

`str`: The epytext string *(type=string)*

`errors`: A list where any errors generated during parsing will be stored. If no list is specified, then errors will generate exceptions. *(type=list of ParseError)*

Return Value

a list of the `Token`s that make up the given string.*(type=list of Token)*

_colorize(*doc*, *token*, *errors*, *tagName*='para')

Given a string containing the contents of a paragraph, produce a DOM `Element` encoding that paragraph. Colorized regions are represented using DOM `Element`s, and text is represented using DOM `Text`s.

Parameters

`errors`: A list of errors. Any newly generated errors will be appended to this list. *(type=list of string)*

`tagName`: The element tag for the DOM `Element` that should be generated. *(type=string)*

Return Value

a DOM `Element` encoding the given paragraph.*(type=Element)*

_colorize_graph(*doc*, *graph*, *token*, *end*, *errors*)

Eg:

```
G{classtree} G{classtree x, y, z} G{importgraph}
```

_colorize_link(*doc*, *link*, *token*, *end*, *errors*)

to_epytext(*tree*, *indent*=0, *seclevel*=0)

Convert a DOM document encoding epytext back to an epytext string. This is the inverse operation from `parse`. I.e., assuming there are no errors, the following is true:

- `parse(to_epytext(tree)) == tree`

The inverse is true, except that whitespace, line wrapping, and character escaping may be done differently.

- `to_epytext(parse(str)) == str` (approximately)

Parameters

`tree`: A DOM document encoding of an epytext string. *(type=`Element`)*

`indent`: The indentation for the string representation of `tree`. Each line of the returned string will begin with `indent` space characters. *(type=`int`)*

`seclevel`: The section level that `tree` appears at. This is used to generate section headings. *(type=`int`)*

Return Value

The epytext string corresponding to `tree`.*(type=`string`)*

to_plaintext(*tree*, *indent*=0, *seclevel*=0)

Convert a DOM document encoding epytext to a string representation. This representation is similar to the string generated by `to_epytext`, but `to_plaintext` removes inline markup, prints escaped characters in unescaped form, etc.

Parameters

`tree`: A DOM document encoding of an epytext string. *(type=`Element`)*

`indent`: The indentation for the string representation of `tree`. Each line of the returned string will begin with `indent` space characters. *(type=`int`)*

`seclevel`: The section level that `tree` appears at. This is used to generate section headings. *(type=`int`)*

Return Value

The epytext string corresponding to `tree`.*(type=`string`)*

to_debug(*tree*, *indent*=4, *seclevel*=0)

Convert a DOM document encoding epytext back to an epytext string, annotated with extra debugging information. This function is similar to `to_epytext`, but it adds explicit information about where different blocks begin, along the left margin.

Parameters

`tree`: A DOM document encoding of an epytext string. *(type=`Element`)*

`indent`: The indentation for the string representation of `tree`. Each line of the returned string will begin with `indent` space characters. *(type=`int`)*

`seclevel`: The section level that `tree` appears at. This is used to generate section headings. *(type=`int`)*

Return Value

The epytext string corresponding to `tree`.*(type=`string`)*

to_rst(*tree*, *indent*=0, *seclevel*=0, *wrap_startindex*=0)

Convert a DOM document encoding epytext into a reStructuredText markup string. (Because rst is fairly loosely defined, it is possible that this function will produce incorrect output in some cases.)

Parameters

`tree`: A DOM document encoding of an epytext string. *(type=`Element`)*

`indent`: The indentation for the string representation of `tree`. Each line of the returned string will begin with `indent` space characters. *(type=`int`)*

`seclevel`: The section level that `tree` appears at. This is used to generate section headings. *(type=`int`)*

Return Value

The reStructuredText string corresponding to `tree`.*(type=`string`)*

pparse(*str*, *show_warnings*=1, *show_errors*=1, *stream*=`sys.stderr`)

Pretty-parse the string. This parses the string, and catches any warnings or errors produced. Any warnings and errors are displayed, and the resulting DOM parse structure is returned.

Parameters

`str`: The string to parse. *(type=`string`)*

`show_warnings`: Whether or not to display non-fatal errors generated by parsing `str`. *(type=`boolean`)*

`show_errors`: Whether or not to display fatal errors generated by parsing `str`. *(type=`boolean`)*

`stream`: The stream that warnings and errors should be written to. *(type=`stream`)*

Return Value

a DOM document encoding the contents of `str`.*(type=`Element`)*

Raises

SyntaxError If any fatal errors were encountered.

parse_as_literal(*str*)

Return a DOM document matching the epytext DTD, containing a single literal block. That literal block will include the contents of the given string. This method is typically used as a fall-back when the parser fails.

Parameters

`str`: The string which should be enclosed in a literal block. *(type=`string`)*

Return Value

A DOM document containing `str` in a single literal block.*(type=`Element`)*

parse_as_para(*str*)

Return a DOM document matching the epytext DTD, containing a single paragraph. That paragraph will include the contents of the given string. This can be used to wrap some forms of automatically generated information (such as type names) in paragraphs.

Parameters

`str`: The string which should be enclosed in a paragraph. *(type=`string`)*

Return Value

A DOM document containing `str` in a single paragraph.*(type=`Element`)*

parse_docstring(*docstring*, *errors*, ***options*)

Parse the given docstring, which is formatted using epytext; and return a `ParsedDocstring` representation of its contents.

Parameters

`docstring`: The docstring to parse *(type=`string`)*

`errors`: A list where any errors generated during parsing will be stored. *(type=`list` of `ParseError`)*

`options`: Extra options. Unknown options are ignored. Currently, no extra options are defined.

Return Value

ParsedDocstring

24.2 Variables

_HEADING_CHARS

Value: `'=-~'`

_ESCAPES

Value: `{'lb': '{', 'rb': '}'}`

SYMBOLS

A list of the of escape symbols that are supported by epydoc. Currently the following symbols are supported:

- `S{<-}`=$\leftarrow$;
- `S{->}`=$\rightarrow$;
- `S{^}`=$\uparrow$;
- `S{v}`=$\downarrow$;
- `S{alpha}`=α;
- `S{beta}`=β;
- `S{gamma}`=γ;
- `S{delta}`=δ;
- `S{epsilon}`=ϵ;
- `S{zeta}`=ζ;
- `S{eta}`=η;
- `S{theta}`=θ;
- `S{iota}`=ι;
- `S{kappa}`=κ;
- `S{lambda}`=λ;
- `S{mu}`=μ;
- `S{nu}`=ν;
- `S{xi}`=ξ;
- `S{omicron}`=o;
- `S{pi}`=π;
- `S{rho}`=ρ;
- `S{sigma}`=σ;
- `S{tau}`=τ;
- `S{upsilon}`=υ;
- `S{phi}`=ϕ;
- `S{chi}`=χ;
- `S{psi}`=ψ;
- `S{omega}`=ω;
- `S{Alpha}`=α;
- `S{Beta}`=β;
- `S{Gamma}`=Γ;
- `S{Delta}`=Δ;
- `S{Epsilon}`=ϵ;
- `S{Zeta}`=ζ;
- `S{Eta}`=η;
- `S{Theta}`=Θ;
- `S{Iota}`=ι;
- `S{Kappa}`=κ;
- `S{Lambda}`=Λ;
- `S{Mu}`=μ;
- `S{Nu}`=ν;
- `S{Xi}`=Ξ;
- `S{Omicron}`=o;
- `S{Pi}`=Π;
- `S{Rho}`=[Rho];
- `S{Sigma}`=Σ;
- `S{Tau}`=τ;
- `S{Upsilon}`=Υ;
- `S{Phi}`=Φ;

_SYMBOLS

Value: `{'->': 1, '<-': 1, '<=': 1, '>=': 1, 'Alpha': 1, 'Beta': ...`

__doc__

Value: `__doc__.replace('<<<SYMBOLS>>>', symblist)`

_COLORIZING_TAGS

Value: `{'B': 'bold', 'C': 'code', 'E': 'escape', 'G': 'graph', '...`

_LINK_COLORIZING_TAGS

Value: `['link', 'uri']`

_BULLET_RE

Value: `re.compile(r'-( +|$)|(\d+\.)+( +|$)|@\w+( [^\{\}:\n]+)?:')`

_LIST_BULLET_RE

Value: `re.compile(r'-( +|$)|(\d+\.)+( +|$)')`

_FIELD_BULLET_RE

Value: `re.compile(r'@\w+( [^\{\}:\n]+)?:')`

_BRACE_RE

Value: `re.compile(r'[\{\}]')`

_TARGET_RE

Value: `re.compile(r'^(.*?)\s*<(?:URI:|L:)?([^<>]+)>$')`

GRAPH_TYPES

Value: `['classtree', 'packagetree', 'importgraph', 'callgraph']`

SYMBOL_TO_PLAINTEXT

Value: `{'crarr': '\\'}`

SCRWIDTH

Value: `75`

24.3 Class Element

A very simple DOM-like representation for parsed epytext documents. Each epytext document is encoded as a tree whose nodes are `Element` objects, and whose leaves are `string`s. Each node is marked by a *tag* and zero or more *attributes*. Each attribute is a mapping from a string key to a string value.

24.3.1 Methods

__init__(*self*, *tag*, **children*, ***attribs*)

__str__(*self*)

Return a string representation of this element, using XML notation.

Bug: Doesn't escape '<' or '&' or '>'.

__repr__(*self*)

24.3.2 Instance Variables

tag

A string tag indicating the type of this element.

Type: `string`

children

A list of the children of this element.

Type: `list of (string or Element)`

attribs

A dictionary mapping attribute names to attribute values for this element.

Type: `dict from string to string`

24.4 Class Token

`Token`s are an intermediate data structure used while constructing the structuring DOM tree for a formatted docstring. There are five types of `Token`:

- Paragraphs
- Literal blocks
- Doctest blocks
- Headings
- Bullets

The text contained in each `Token` is stored in the `contents` variable. The string in this variable has been normalized. For paragraphs, this means that it has been converted into a single line of text, with newline/indentation replaced by single spaces. For literal blocks and doctest blocks, this means that the appropriate amount of leading whitespace has been removed from each line.

Each `Token` has an indentation level associated with it, stored in the `indent` variable. This indentation level is used by the structuring procedure to assemble hierarchical blocks.

24.4.1 Methods

__init__(*self*, *tag*, *startline*, *contents*, *indent*, *level*=`None`, *inline*=`False`)

Create a new `Token`.

Parameters

`tag:` The type of the new `Token`. *(type=`string`)*

`startline:` The line on which the new `Token` begins. *(type=`int`)*

`contents:` The normalized contents of the new `Token`. *(type=`string`)*

`indent:` The indentation of the new `Token` (in number of leading spaces). A value of `None` indicates an unknown indentation. *(type=`int` or `None`)*

`level:` The heading-level of this `Token` if it is a heading; `None`, otherwise. *(type=`int` or `None`)*

`inline:` Is this `Token` inline as a `<span>`?. *(type=`bool`)*

__repr__(*self*)

Return Value

the formal representation of this `Token`. `Token`s have formal representaitons of the form:

```
<Token: para at line 12>
```

(type=`string`)

to_dom(*self*, *doc*)

Return Value

a DOM representation of this `Token`.*(type=`Element`)*

24.4.2 Class Variables

PARA

The `tag` value for paragraph `Token`s.

Type: `string`

Value: `'para'`

LBLOCK

The `tag` value for literal `Token`s.

Type: `string`

Value: `'literalblock'`

DTBLOCK

The `tag` value for doctest `Token`s.

Type: `string`

Value: `'doctestblock'`

HEADING

The `tag` value for heading `Token`s.

Type: `string`

Value: `'heading'`

BULLET

The `tag` value for bullet `Token`s. This `tag` value is also used for field tag `Token`s, since fields function syntactically the same as list items.

Type: `string`

Value: `'bullet'`

24.4.3 Instance Variables

contents

The normalized text contained in this `Token`.

Type: `string`

indent

The indentation level of this `Token` (in number of leading spaces). A value of `None` indicates an unknown indentation; this is used for list items and fields that begin with one-line paragraphs.

Type: `int or None`

inline

If True, the element is an inline level element, comparable to an HTML `<span>` tag. Else, it is a block level element, comparable to an HTML `<div>`.

Type: `bool`

level

The heading-level of this `Token` if it is a heading; `None`, otherwise. Valid heading levels are 0, 1, and 2.

Type: `int or None`

startline

The line on which this `Token` begins. This line number is only used for issuing errors.

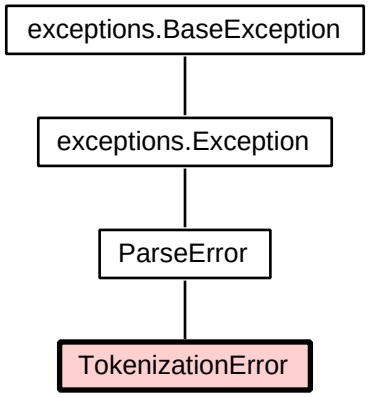
Type: `int`

tag

This `Token`'s type. Possible values are `Token.PARA` (paragraph), `Token.LBLOCK` (literal block), `Token.DTBLOCK` (doctest block), `Token.HEADINGC`, and `Token.BULLETC`.

Type: `string`

24.5 Class TokenizationError



An error generated while tokenizing a formatted documentation string.

24.5.1 Methods

Inherited from epydoc.markup.ParseError *(Section 22.7, p. 204)*: __cmp__(), __init__(), __repr__(), __str__(), descr(), is_fatal(), linenum(), set_linenum_offset()

Inherited from exceptions.Exception: __new__()

Inherited from exceptions.BaseException: __delattr__(), __getattribute__(), __getitem__(), __getslice__(), __reduce__(), __setattr__(), __setstate__()

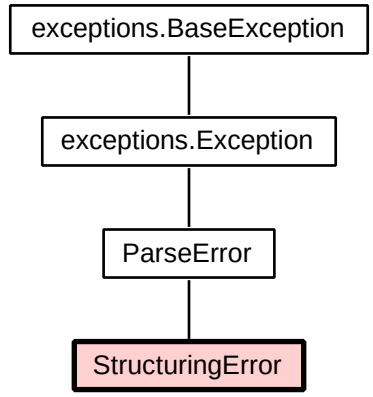
24.5.2 Properties

Inherited from exceptions.BaseException: args, message

24.5.3 Instance Variables

Inherited from epydoc.markup.ParseError *(Section 22.7, p. 204)*: _descr, _fatal, _linenum, _offset

24.6 Class StructuringError



An error generated while structuring a formatted documentation string.

24.6.1 Methods

Inherited from epydoc.markup.ParseError *(Section 22.7, p. 204)*: __cmp__(), __init__(), __repr__(), __str__(), descr(), is_fatal(), linenum(), set_linenum_offset()

Inherited from exceptions.Exception: __new__()

Inherited from exceptions.BaseException: __delattr__(), __getattribute__(), __getitem__(), __getslice__(), __reduce__(), __setattr__(), __setstate__()

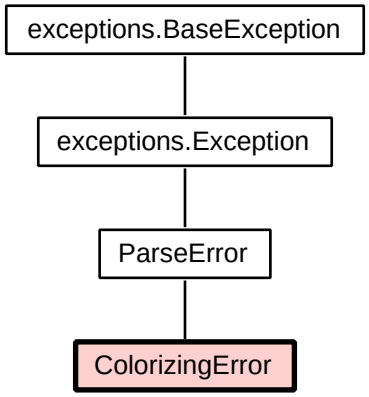
24.6.2 Properties

Inherited from exceptions.BaseException: args, message

24.6.3 Instance Variables

Inherited from epydoc.markup.ParseError *(Section 22.7, p. 204)*: _descr, _fatal, _linenum, _offset

24.7 Class ColorizingError



An error generated while colorizing a paragraph.

24.7.1 Methods

__init__(*self*, *descr*, *token*, *charnum*, *is_fatal*=1)

Construct a new colorizing exception.

Parameters

`descr`: A short description of the error. *(type=`string`)*

`token`: The token where the error occured *(type=`Token`)*

`charnum`: The character index of the position in `token` where the error occured. *(type=`int`)*

Overrides: exceptions.BaseException.__init__

descr(*self*)

Overrides: epydoc.markup.ParseError.descr

Inherited from epydoc.markup.ParseError *(Section 22.7, p. 204)*: __cmp__(), __repr__(), __str__(), is_fatal(), linenum(), set_linenum_offset()

Inherited from exceptions.Exception: __new__()

Inherited from exceptions.BaseException: __delattr__(), __getattribute__(), __getitem__(), __getslice__(), __reduce__(), __setattr__(), __setstate__()

24.7.2 Properties

Inherited from exceptions.BaseException: args, message

24.7.3 Class Variables

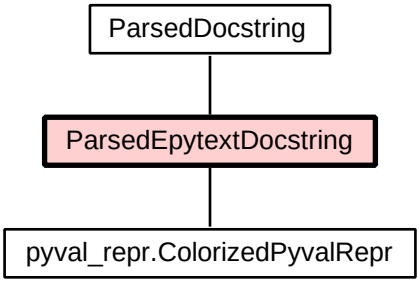
CONTEXT_RANGE

Value: `20`

24.7.4 Instance Variables

Inherited from epydoc.markup.ParseError *(Section 22.7, p. 204)*: _descr, _fatal, _linenum, _offset

24.8 Class ParsedEpytextDocstring



Known Subclasses: epydoc.markup.pyval_repr.ColorizedPyvalRepr

24.8.1 Methods

__init__(*self*, *dom_tree*, ***options*)

__str__(*self*)

to_html(*self*, *docstring_linker*, *directory*=`None`, *docindex*=`None`, *context*=`None`, ***options*)

Translate this docstring to HTML.

Parameters

`docstring_linker`: An HTML translator for crossreference links into and out of the docstring.

`options`: Any extra options for the output. Unknown options are ignored.

Return Value

An HTML fragment that encodes this docstring.*(type=**string**)*

Overrides: epydoc.markup.ParsedDocstring.to_html *(inherited documentation)*

to_latex(*self*, *docstring_linker*, *directory*=`None`, *docindex*=`None`, *context*=`None`, ***options*)

Translate this docstring to LaTeX.

Parameters

`docstring_linker`: A LaTeX translator for crossreference links into and out of the docstring.

`options`: Any extra options for the output. Unknown options are ignored.

Return Value

A LaTeX fragment that encodes this docstring.*(type=**string**)*

Overrides: epydoc.markup.ParsedDocstring.to_latex *(inherited documentation)*

to_plaintext(*self*, *docstring_linker*, ***options*)

Translate this docstring to plaintext.

Parameters

`docstring_linker`: A plaintext translator for crossreference links into and out of the docstring.

`options`: Any extra options for the output. Unknown options are ignored.

Return Value

A plaintext fragment that encodes this docstring.*(type=**string**)*

Overrides: epydoc.markup.ParsedDocstring.to_plaintext *(inherited documentation)*

_index_term_key(*self*, *tree*)

_to_html(*self*, *tree*, *linker*, *directory*, *docindex*, *context*, *indent*=`0`, *seclevel*=`0`)

_build_graph(*self*, *graph_type*, *graph_args*, *linker*, *docindex*, *context*)

_to_latex(*self*, *tree*, *linker*, *directory*, *docindex*, *context*, *indent*=0, *seclevel*=0, *breakany*=0)

summary(*self*)

Return Value

A pair consisting of a short summary of this docstring and a boolean value indicating whether there is further documentation in addition to the summary. Typically, the summary consists of the first sentence of the docstring.*(type=(`ParsedDocstring`, `bool`))*

Overrides: epydoc.markup.ParsedDocstring.summary *(inherited documentation)*

split_fields(*self*, *errors*=None)

Split this docstring into its body and its fields.

Parameters

`errors`: A list where any errors generated during splitting will be stored. If no list is specified, then errors will be ignored.

Return Value

A tuple `(body, fields)`, where `body` is the main body of this docstring, and `fields` is a list of its fields. If the resulting body is empty, return `None` for the body.*(type=`(ParsedDocstring, list of Field)`)*

Overrides: epydoc.markup.ParsedDocstring.split_fields *(inherited documentation)*

index_terms(*self*)

Return Value

The list of index terms that are defined in this docstring. Each of these items will be added to the index page of the documentation.*(type=`list of ParsedDocstring`)*

Overrides: epydoc.markup.ParsedDocstring.index_terms *(inherited documentation)*

_index_terms(*self*, *tree*, *terms*)

Inherited from epydoc.markup.ParsedDocstring*(Section 22.3, p. 199)*: __add__(), concatenate()

24.8.2 Class Variables

SYMBOL_TO_HTML

Value: `{'->': '&rarr;', '<-': '&larr;', '<=': '&le;', '>=': '&ge...`

SYMBOL_TO_LATEX

Value: `{'->': '\\(\\rightarrow\\)', '<-': '\\(\\leftarrow\\)', '...`

_SUMMARY_RE

Value: `re.compile(r'(\s*[\w\W]*?\.)(\s|$)')`

25 Module epydoc.markup.javadoc

Epydoc parser for Javadoc[2] docstrings. Javadoc is an HTML-based markup language that was developed for documenting Java APIs with inline comments. It consists of raw HTML, augmented by Javadoc tags. There are two types of Javadoc tag:

- *Javadoc block tags* correspond to Epydoc fields. They are marked by starting a line with a string of the form "`@tag [arg]`", where *`tag`* indicates the type of block, and *`arg`* is an optional argument. (For fields that take arguments, Javadoc assumes that the single word immediately following the tag is an argument; multi-word arguments cannot be used with javadoc.)
- *inline Javadoc tags* are used for inline markup. In particular, epydoc uses them for crossreference links between documentation. Inline tags may appear anywhere in the text, and have the form "`{@tag [args...]}`", where *`tag`* indicates the type of inline markup, and *`args`* are optional arguments.

Epydoc supports all Javadoc tags, *except*:

- `{@docRoot}`, which gives the (relative) URL of the generated documentation's root.
- `{@inheritDoc}`, which copies the documentation of the nearest overridden object. This can be used to combine the documentation of the overridden object with the documentation of the overridding object.
- `@serial`, `@serialField`, and `@serialData` which describe the serialization (pickling) of an object.
- `{@value}`, which copies the value of a constant.

Warning: Epydoc only supports HTML output for Javadoc docstrings.

25.1 Functions

parse_docstring(*docstring*, *errors*, ***options*)

Parse the given docstring, which is formatted using Javadoc; and return a `ParsedDocstring` representation of its contents.

Parameters

`docstring`: The docstring to parse *(type=`string`)*

`errors`: A list where any errors generated during parsing will be stored. *(type=`list` of `ParseError`)*

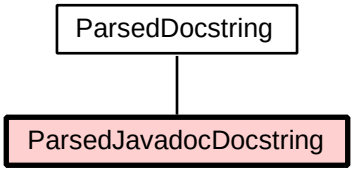
`options`: Extra options. Unknown options are ignored. Currently, no extra options are defined.

Return Value

`ParsedDocstring`

[2] http://java.sun.com/j2se/javadoc/

25.2 Class ParsedJavadocDocstring



An encoded version of a Javadoc docstring. Since Javadoc is a fairly simple markup language, we don't do any processing in advance; instead, we wait to split fields or resolve crossreference links until we need to.

25.2.1 Methods

__init__(*self*, *docstring*, *errors*=None)

Create a new `ParsedJavadocDocstring`.

Parameters

`docstring`: The docstring that should be used to construct this `ParsedJavadocDocstring`. *(type=`string`)*

`errors`: A list where any errors generated during parsing will be stored. If no list is given, then all errors are ignored. *(type=`list` of `ParseError`)*

_check_links(*self*, *errors*)

Make sure that all @{link}s are valid. We need a separate method for ths because we want to do this at parse time, not html output time. Any errors found are appended to `errors`.

to_plaintext(*self*, *docstring_linker*, ***options*)

Translate this docstring to plaintext.

Parameters

`docstring_linker`: A plaintext translator for crossreference links into and out of the docstring.

`options`: Any extra options for the output. Unknown options are ignored.

Return Value

A plaintext fragment that encodes this docstring.*(type=`string`)*

Overrides: epydoc.markup.ParsedDocstring.to_plaintext *(inherited documentation)*

summary(*self*)

Return Value

A pair consisting of a short summary of this docstring and a boolean value indicating whether there is further documentation in addition to the summary. Typically, the summary consists of the first sentence of the docstring.*(type=(`ParsedDocstring`, `bool`))*

Overrides: epydoc.markup.ParsedDocstring.summary *(inherited documentation)*

Inherited from epydoc.markup.ParsedDocstring*(Section 22.3, p. 199)*: __add__(), concatenate(), index_terms(), to_latex()

Field Splitting

split_fields(*self*, *errors*=`None`)

Split this docstring into its body and its fields.

Parameters

`errors`: A list where any errors generated during splitting will be stored. If no list is specified, then errors will be ignored.

Return Value

A tuple `(body, fields)`, where `body` is the main body of this docstring, and `fields` is a list of its fields. If the resulting body is empty, return `None` for the body.*(type=(`ParsedDocstring, list of Field`))*

Overrides: epydoc.markup.ParsedDocstring.split_fields *(inherited documentation)*

HTML Output

to_html(*self*, *docstring_linker*, ***options*)

Translate this docstring to HTML.

Parameters

`docstring_linker`: An HTML translator for crossreference links into and out of the docstring.

`options`: Any extra options for the output. Unknown options are ignored.

Return Value

An HTML fragment that encodes this docstring.*(type=`string`)*

Overrides: epydoc.markup.ParsedDocstring.to_html *(inherited documentation)*

25.2.2 Class Variables

_SUMMARY_RE

Value: `re.compile(r'(\s*[\w\W]*?\.)(\s|$)')`

Field Splitting

_ARG_FIELDS

A list of the fields that take arguments. Since Javadoc doesn't mark arguments in any special way, we must consult this list to decide whether the first word of a field is an argument or not.

Value: `['group', 'variable', 'var', 'type', 'cvariable', 'cvar',...`

_FIELD_RE

A regular expression used to search for Javadoc block tags.

Value: `re.compile(r'(?m)(^\s*@\w+[\s\$])')`

HTML Output

_LINK_SPLIT_RE

A regular expression used to search for Javadoc inline tags.

Value: `re.compile(r'(\{@link(?:plain)?\s[^\}]+\})')`

_LINK_RE

A regular expression used to process Javadoc inline tags.

Value: `re.compile(r'\{@link(?:plain)?\s+([\w#\.]+)(?:\([^\)]*\))...`

26 Module epydoc.markup.plaintext

Parser for plaintext docstrings. Plaintext docstrings are rendered as verbatim output, preserving all whitespace.

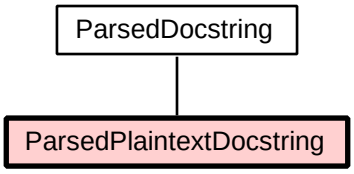
26.1 Functions

parse_docstring(*docstring*, *errors*, ***options*)

Return Value

A pair `(d, e)`, where `d` is a `ParsedDocstring` that encodes the contents of the given plaintext docstring; and `e` is a list of errors that were generated while parsing the docstring.*(type=ParsedPlaintextDocstring, list of ParseError)*

26.2 Class ParsedPlaintextDocstring



26.2.1 Methods

__init__(*self*, *text*, ***options*)

to_html(*self*, *docstring_linker*, ***options*)

Translate this docstring to HTML.

Parameters

`docstring_linker`: An HTML translator for crossreference links into and out of the docstring.

`options`: Any extra options for the output. Unknown options are ignored.

Return Value

An HTML fragment that encodes this docstring.*(type=string)*

Overrides: epydoc.markup.ParsedDocstring.to_html *(inherited documentation)*

to_latex(*self*, *docstring_linker*, ***options*)

Translate this docstring to LaTeX.

Parameters

`docstring_linker`: A LaTeX translator for crossreference links into and out of the docstring.

`options`: Any extra options for the output. Unknown options are ignored.

Return Value

A LaTeX fragment that encodes this docstring.*(type=`string`)*

Overrides: epydoc.markup.ParsedDocstring.to_latex *(inherited documentation)*

to_plaintext(*self*, *docstring_linker*, ***options*)

Translate this docstring to plaintext.

Parameters

`docstring_linker`: A plaintext translator for crossreference links into and out of the docstring.

`options`: Any extra options for the output. Unknown options are ignored.

Return Value

A plaintext fragment that encodes this docstring.*(type=`string`)*

Overrides: epydoc.markup.ParsedDocstring.to_plaintext *(inherited documentation)*

summary(*self*)

Return Value

A pair consisting of a short summary of this docstring and a boolean value indicating whether there is further documentation in addition to the summary. Typically, the summary consists of the first sentence of the docstring.*(type=(`ParsedDocstring`, `bool`))*

Overrides: epydoc.markup.ParsedDocstring.summary *(inherited documentation)*

Inherited from epydoc.markup.ParsedDocstring*(Section 22.3, p. 199)*: __add__(), concatenate(), index_terms(), split_fields()

26.2.2 Class Variables

_SUMMARY_RE

Value: `re.compile(r'(\s*[\w\W]*?(?:\.(\s|$)|\n[\t ]*\n))')`

27 Module epydoc.markup.pyval_repr

Syntax highlighter for Python values. Currently provides special colorization support for:

- lists, tuples, sets, frozensets, dicts
- numbers
- strings
- compiled regexps

The highlighter also takes care of line-wrapping, and automatically stops generating repr output as soon as it has exceeded the specified number of lines (which should make it faster than pprint for large values). It does *not* bother to do automatic cycle detection, because maxlines is typically around 5, so it's really not worth it.

The syntax-highlighted output is encoded using a `ParsedEpytextDocstring`, which can then be used to generate output in a variety of formats.

27.1 Functions

is_re_pattern(*pyval*)

colorize_pyval(*pyval*, *parse_repr*=`None`, *min_score*=`None`, *linelen*=`75`, *maxlines*=`5`, *linebreakok*=`True`, *sort*=`True`)

27.2 Class _ColorizerState

An object uesd to keep track of the current state of the pyval colorizer. The `mark()`/`restore()` methods can be used to set a backup point, and restore back to that backup point. This is used by several colorization methods that first try colorizing their object on a single line (setting linebreakok=False); and then fall back on a multi-line output if that fails. The `score` variable is used to keep track of a 'score', reflecting how good we think this repr is. E.g., unhelpful values like '<Foo instance at 0x12345>' get low scores. If the score is too low, we'll use the parse-derived repr instead.

27.2.1 Methods

__init__(*self*)

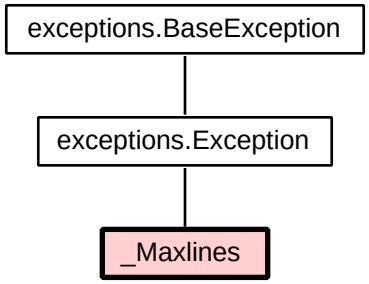
mark(*self*)

restore(*self*, *mark*)

27.2.2 Instance Variables

score
How good this represention is?

27.3 Class _Maxlines



A control-flow exception that is raised when PyvalColorizer exeeds the maximum number of allowed lines.

27.3.1 Methods

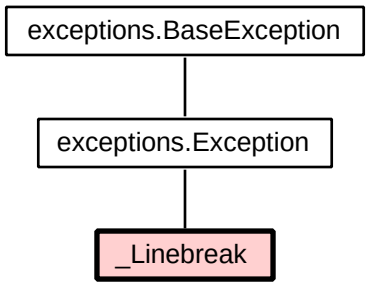
Inherited from exceptions.Exception: __init__(), __new__()

Inherited from exceptions.BaseException: __delattr__(), __getattribute__(), __getitem__(), __getslice__(), __reduce__(), __repr__(), __setattr__(), __setstate__(), __str__()

27.3.2 Properties

Inherited from exceptions.BaseException: args, message

27.4 Class _Linebreak



A control-flow exception that is raised when PyvalColorizer generates a string containing a newline, but the state object's linebreakok variable is False.

27.4.1 Methods

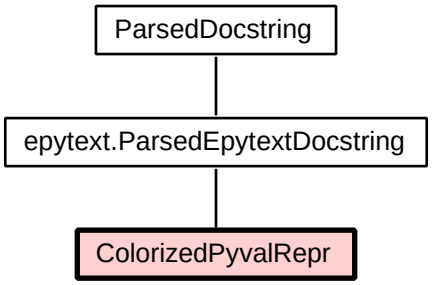
Inherited from exceptions.Exception: __init__(), __new__()

Inherited from exceptions.BaseException: __delattr__(), __getattribute__(), __getitem__(), __getslice__(), __reduce__(), __repr__(), __setattr__(), __setstate__(), __str__()

27.4.2 Properties

Inherited from exceptions.BaseException: args, message

27.5 Class ColorizedPyvalRepr



27.5.1 Methods

__init__(*self*, *tree*, *score*, *is_complete*)

Overrides: epydoc.markup.epytext.ParsedEpytextDocstring.__init__

Inherited from epydoc.markup.epytext.ParsedEpytextDocstring*(Section 24.8, p. 232)*: __str__(), _build_graph(), _index_term_key(), _index_terms(), _to_html(), _to_latex(), index_terms(), split_fields(), summary(), to_html(), to_latex(), to_plaintext()

Inherited from epydoc.markup.ParsedDocstring*(Section 22.3, p. 199)*: __add__(), concatenate()

27.5.2 Class Variables

Inherited from epydoc.markup.epytext.ParsedEpytextDocstring*(Section 24.8, p. 232)*: SYMBOL_TO_HTML, SYMBOL_TO_LATEX, _SUMMARY_RE

27.5.3 Instance Variables

is_complete

True if this colorized repr completely describes the object.

score

A score, evaluating how good this repr is.

27.6 Class PyvalColorizer

Syntax highlighter for Python values.

27.6.1 Methods

__init__(*self*, *linelen*=`75`, *maxlines*=`5`, *linebreakok*=`True`, *sort*=`True`)

colorize(*self*, *pyval*, *parse_repr*=`None`, *min_score*=`None`)

Return Value

A `ColorizedPyvalRepr` describing the given pyval.

_colorize(*self*, *pyval*, *state*)

_sort(*self*, *items*)

_trim_result(*self*, *result*, *num_chars*)

_multiline(*self*, *func*, *pyval*, *state*, **args*)

Helper for container-type colorizers. First, try calling `func(pyval, state, *args)` with linebreakok set to false; and if that fails, then try again with it set to true.

_colorize_iter(*self*, *pyval*, *state*, *prefix*, *suffix*)

_colorize_dict(*self*, *items*, *state*, *prefix*, *suffix*)

_colorize_str(*self*, *pyval*, *state*, *prefix*, *encoding*)

_colorize_re(*self*, *pyval*, *state*)

_colorize_re_flags(*self*, *flags*, *state*)

_colorize_re_tree(*self*, *tree*, *state*, *noparen*, *groups*)

_output(*self*, *s*, *tag*, *state*)

Add the string 's' to the result list, tagging its contents with tag 'tag'. Any lines that go beyond 'self.linelen' will be line-wrapped. If the total number of lines exceeds 'self.maxlines', then raise a '_Maxlines' exception.

27.6.2 Class Variables

GROUP_TAG

Value: `'variable-group'`

COMMA_TAG

Value: `'variable-op'`

COLON_TAG

Value: `'variable-op'`

CONST_TAG

Value: `None`

NUMBER_TAG

Value: `None`

QUOTE_TAG

Value: `'variable-quote'`

STRING_TAG

Value: `'variable-string'`

RE_CHAR_TAG

Value: `None`

RE_GROUP_TAG

Value: `'re-group'`

RE_REF_TAG

Value: `'re-ref'`

RE_OP_TAG

Value: `'re-op'`

RE_FLAGS_TAG

Value: `'re-flags'`

ELLIPSIS

Value: `Element(code, u'...', style='variable-ellipsis')`

LINEWRAP

Value: `Element(symbol, u'crarr')`

UNKNOWN_REPR

Value: `Element(code, u'??', style='variable-unknown')`

GENERIC_OBJECT_RE

Value: `re.compile(r'(?i)^<.* at 0x[0-9a-f]+>$')`

ESCAPE_UNICODE

Value: `False`

28 Module epydoc.markup.restructuredtext

Epydoc parser for ReStructuredText strings. ReStructuredText is the standard markup language used by the Docutils project. `parse_docstring()` provides the primary interface to this module; it returns a `ParsedRstDocstring`, which supports all of the methods defined by `ParsedDocstring`.

`ParsedRstDocstring` is basically just a `ParsedDocstring` wrapper for the `docutils.nodes.document` class.

Creating `ParsedRstDocstrings`

`ParsedRstDocstring`s are created by the `parse_document` function, using the `docutils.core.publish_string()` method, with the following helpers:

- An `_EpydocReader` is used to capture all error messages as it parses the docstring.
- A `_DocumentPseudoWriter` is used to extract the document itself, without actually writing any output. The document is saved for further processing. The settings for the writer are copied from `docutils.writers.html4css1.Writer`, since those settings will be used when we actually write the docstring to html.

Using `ParsedRstDocstrings`

`ParsedRstDocstring`s support all of the methods defined by `ParsedDocstring`; but only the following four methods have non-default behavior:

- `to_html()` uses an `_EpydocHTMLTranslator` to translate the `ParsedRstDocstring`'s document into an HTML segment.
- `split_fields()` uses a `_SplitFieldsTranslator` to divide the `ParsedRstDocstring`'s document into its main body and its fields. Special handling is done to account for consolidated fields.
- `summary()` uses a `_SummaryExtractor` to extract the first sentence from the `ParsedRstDocstring`'s document.
- `to_plaintext()` uses `document.astext()` to convert the `ParsedRstDocstring`'s document to plaintext.

To Do: Add ParsedRstDocstring.to_latex()

28.1 Functions

parse_docstring(*docstring*, *errors*, ***options*)

Parse the given docstring, which is formatted using ReStructuredText; and return a `ParsedDocstring` representation of its contents.

Parameters

`docstring`: The docstring to parse *(type=`string`)*

`errors`: A list where any errors generated during parsing will be stored. *(type=`list` of `ParseError`)*

`options`: Extra options. Unknown options are ignored. Currently, no extra options are defined.

Return Value

`ParsedDocstring`

latex_head_prefix()

python_code_directive(*name*, *arguments*, *options*, *content*, *lineno*, *content_offset*, *block_text*, *state*, *state_machine*)

A custom restructuredtext directive which can be used to display syntax-highlighted Python code blocks. This directive takes no arguments, and the body should contain only Python code. This directive can be used instead of doctest blocks when it is inconvenient to list prompts on each line, or when you would prefer that the output not contain prompts (e.g., to make copy/paste easier).

term_role(*name*, *rawtext*, *text*, *lineno*, *inliner*, *options*=`{}`, *content*=`[]`)

Graph Generation Directives

_dir_option(*argument*)

A directive option spec for the orientation of a graph.

digraph_directive(*name*, *arguments*, *options*, *content*, *lineno*, *content_offset*, *block_text*, *state*, *state_machine*)

A custom restructuredtext directive which can be used to display Graphviz dot graphs. This directive takes a single argument, which is used as the graph's name. The contents of the directive are used as the body of the graph. Any href attributes whose value has the form <name> will be replaced by the URL of the object with that name. Here's a simple example:

```
.. digraph:: example_digraph a -> b -> c c -> a [dir="none"]
```

_construct_digraph(*docindex*, *context*, *linker*, *title*, *caption*, *body*)

Graph generator for `digraph_directive`

classtree_directive(*name*, *arguments*, *options*, *content*, *lineno*, *content_offset*, *block_text*, *state*, *state_machine*)

A custom restructuredtext directive which can be used to graphically display a class hierarchy. If one or more arguments are given, then those classes and all their descendants will be displayed. If no arguments are given, and the directive is in a class's docstring, then that class and all its descendants will be displayed. It is an error to use this directive with no arguments in a non-class docstring.

Options:

- `:dir:` – Specifies the orientation of the graph. One of `down`, `right` (default), `left`, `up`.

_construct_classtree(*docindex*, *context*, *linker*, *arguments*, *options*)

Graph generator for `classtree_directive`

packagetree_directive(*name*, *arguments*, *options*, *content*, *lineno*, *content_offset*, *block_text*, *state*, *state_machine*)

A custom restructuredtext directive which can be used to graphically display a package hierarchy. If one or more arguments are given, then those packages and all their submodules will be displayed. If no arguments are given, and the directive is in a package's docstring, then that package and all its submodules will be displayed. It is an error to use this directive with no arguments in a non-package docstring.

Options:

- `:dir:` – Specifies the orientation of the graph. One of `down`, `right` (default), `left`, `up`.

_construct_packagetree(*docindex*, *context*, *linker*, *arguments*, *options*)

Graph generator for `packagetree_directive`

importgraph_directive(*name*, *arguments*, *options*, *content*, *lineno*, *content_offset*, *block_text*, *state*, *state_machine*)

_construct_importgraph(*docindex*, *context*, *linker*, *arguments*, *options*)

Graph generator for `importgraph_directive`

callgraph_directive(*name*, *arguments*, *options*, *content*, *lineno*, *content_offset*, *block_text*, *state*, *state_machine*)

_construct_callgraph(*docindex*, *context*, *linker*, *arguments*, *options*)

Graph generator for `callgraph_directive`

28.2 Variables

CONSOLIDATED_FIELDS

A dictionary whose keys are the "consolidated fields" that are recognized by epydoc; and whose values are the corresponding epydoc field names that should be used for the individual fields.

Value: `{'arguments': 'arg', 'cvariables': 'cvar', 'exceptions': ...`

CONSOLIDATED_DEFLIST_FIELDS

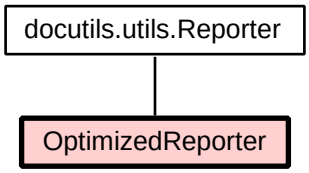
A list of consolidated fields whose bodies may be specified using a definition list, rather than a bulleted list. For these fields, the 'classifier' for each term in the definition list is translated into a @type field.

Value: `['param', 'arg', 'var', 'ivar', 'cvar', 'keyword']`

_TARGET_RE

Value: `re.compile(r'^(.*?)\s*<(?:URI:|L:)?([^<>]+)>$')`

28.3 Class OptimizedReporter



A reporter that ignores all debug messages. This is used to shave a couple seconds off of epydoc's run time, since docutils isn't very fast about processing its own debug messages.

28.3.1 Methods

debug(*self*, **args*, ***kwargs*)

Level-0, "DEBUG": an internal reporting issue. Typically, there is no effect on the processing. Level-0 system messages are handled separately from the others.

Overrides: docutils.utils.Reporter.debug *(inherited documentation)*

Inherited from docutils.utils.Reporter: __init__(), attach_observer(), detach_observer(), error(), info(), notify_observers(), set_conditions(), severe(), system_message(), warning()

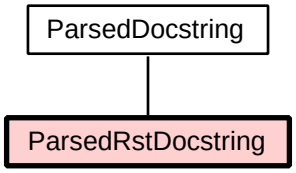
28.3.2 Class Variables

Inherited from docutils.utils.Reporter: DEBUG_LEVEL, ERROR_LEVEL, INFO_LEVEL, SEVERE_LEVEL, WARNING_LEVEL, levels

28.3.3 Instance Variables

Inherited from docutils.utils.Reporter: debug_flag, encoding, error_handler, halt_level, max_level, observers, report_level, source, stream

28.4 Class ParsedRstDocstring



An encoded version of a ReStructuredText docstring. The contents of the docstring are encoded in the `_document` instance variable.

28.4.1 Methods

__init__(*self*, *document*)

Parameters

`document`: *(type=`docutils.nodes.document`)*

split_fields(*self*, *errors*=`None`)

Split this docstring into its body and its fields.

Parameters

`errors`: A list where any errors generated during splitting will be stored. If no list is specified, then errors will be ignored.

Return Value

A tuple `(body, fields)`, where `body` is the main body of this docstring, and `fields` is a list of its fields. If the resulting body is empty, return `None` for the body.*(type=`(ParsedDocstring, list of Field)`)*

Overrides: epydoc.markup.ParsedDocstring.split_fields *(inherited documentation)*

summary(*self*)

Return Value

A pair consisting of a short summary of this docstring and a boolean value indicating whether there is further documentation in addition to the summary. Typically, the summary consists of the first sentence of the docstring.*(type=(`ParsedDocstring`, `bool`))*

Overrides: epydoc.markup.ParsedDocstring.summary *(inherited documentation)*

to_html(*self*, *docstring_linker*, *directory*=`None`, *docindex*=`None`, *context*=`None`, ***options*)

Translate this docstring to HTML.

Parameters

`docstring_linker`: An HTML translator for crossreference links into and out of the docstring.

`options`: Any extra options for the output. Unknown options are ignored.

Return Value

An HTML fragment that encodes this docstring.*(type=`string`)*

Overrides: epydoc.markup.ParsedDocstring.to_html *(inherited documentation)*

to_latex(*self*, *docstring_linker*, *directory*=`None`, *docindex*=`None`, *context*=`None`, ***options*)

Translate this docstring to LaTeX.

Parameters

`docstring_linker`: A LaTeX translator for crossreference links into and out of the docstring.

`options`: Any extra options for the output. Unknown options are ignored.

Return Value

A LaTeX fragment that encodes this docstring.*(type=`string`)*

Overrides: epydoc.markup.ParsedDocstring.to_latex *(inherited documentation)*

to_plaintext(*self*, *docstring_linker*, ***options*)

Translate this docstring to plaintext.

Parameters

`docstring_linker`: A plaintext translator for crossreference links into and out of the docstring.

`options`: Any extra options for the output. Unknown options are ignored.

Return Value

A plaintext fragment that encodes this docstring.*(type=`string`)*

Overrides: epydoc.markup.ParsedDocstring.to_plaintext *(inherited documentation)*

__repr__(*self*)

index_terms(*self*)

Return Value

The list of index terms that are defined in this docstring. Each of these items will be added to the index page of the documentation. *(type=`list` of `ParsedDocstring`)*

Overrides: epydoc.markup.ParsedDocstring.index_terms *(inherited documentation)*

Inherited from epydoc.markup.ParsedDocstring *(Section 22.3, p. 199)*: __add__(), concatenate()

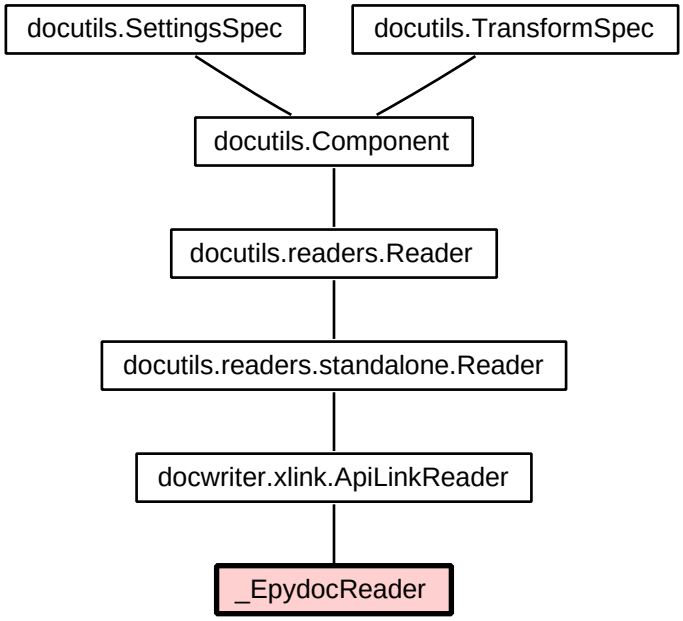
28.4.2 Instance Variables

_document

A ReStructuredText document, encoding the docstring.

Type: `docutils.nodes.document`

28.5 Class _EpydocReader



A reader that captures all errors that are generated by parsing, and appends them to a list.

28.5.1 Methods

get_transforms(*self*)

Transforms required by this class. Override in subclasses.

Overrides: docutils.TransformSpec.get_transforms *(inherited documentation)*

__init__(*self*, *errors*)

Initialize the Reader instance.

Several instance attributes are defined with dummy initial values. Subclasses may use these attributes as they wish.

Overrides: docutils.readers.Reader.__init__ *(inherited documentation)*

new_document(*self*)

Create and return a new empty document tree (root node).

Overrides: docutils.readers.Reader.new_document *(inherited documentation)*

report(*self*, *error*)

Inherited from epydoc.docwriter.xlink.ApiLinkReader *(Section 19.7, p. 182)*: read(), read_configuration()

Inherited from docutils.readers.Reader: parse(), set_parser()

Inherited from docutils.Component: supports()

28.5.2 Class Variables

default_transforms

Value: `list(ApiLinkReader.default_transforms)`

v

Value: `'5'`

Inherited from epydoc.docwriter.xlink.ApiLinkReader *(Section 19.7, p. 182)*: _conf, settings_spec

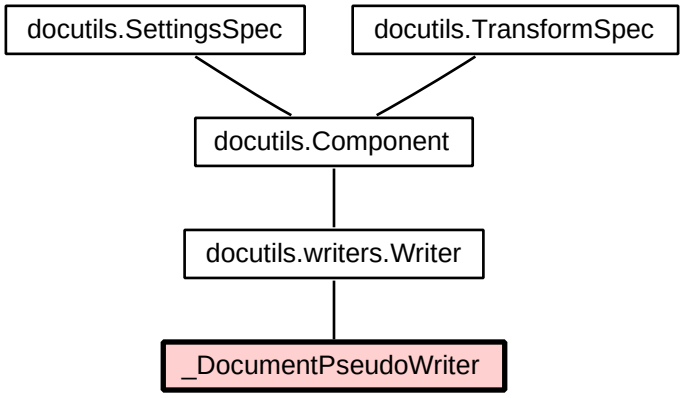
Inherited from docutils.readers.standalone.Reader: config_section, config_section_dependencies, document, supported

Inherited from docutils.readers.Reader: component_type

Inherited from docutils.SettingsSpec: relative_path_settings, settings_default_overrides, settings_defaults

Inherited from docutils.TransformSpec: unknown_reference_resolvers

28.6 Class _DocumentPseudoWriter



A pseudo-writer for the docutils framework, that can be used to access the document itself. The output of `_DocumentPseudoWriter` is just an empty string; but after it has been used, the most recently processed document is available as the instance variable `document`

28.6.1 Methods

__init__(*self*)

Overrides: docutils.writers.Writer.__init__

translate(*self*)

Do final translation of `self.document` into `self.output`. Called from `write`. Override in subclasses.

Usually done with a `docutils.nodes.NodeVisitor` subclass, in combination with a call to `docutils.nodes.Node.walk()` or `docutils.nodes.Node.walkabout()`. The `NodeVisitor` subclass must support all standard elements (listed in `docutils.nodes.node_class_names`) and possibly non-standard elements used by the current Reader as well.

Overrides: docutils.writers.Writer.translate *(inherited documentation)*

Inherited from docutils.writers.Writer: assemble_parts(), get_transforms(), write()

Inherited from docutils.Component: supports()

28.6.2 Class Variables

Inherited from docutils.writers.Writer: component_type, config_section, destination, language, output

Inherited from docutils.Component: supported

Inherited from docutils.SettingsSpec: config_section_dependencies, relative_path_settings, settings_default_overrides, settings_defaults, settings_spec

Inherited from docutils.TransformSpec: default_transforms, unknown_reference_resolvers

28.6.3 Instance Variables

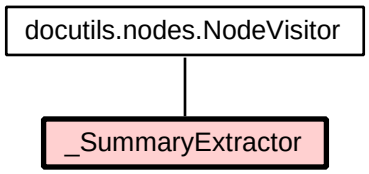
document

The document to write (Docutils doctree); set by `write`.

Type: `docutils.nodes.document`

Inherited from docutils.writers.Writer: parts

28.7 Class _SummaryExtractor



A docutils node visitor that extracts the first sentence from the first paragraph in a document.

28.7.1 Methods

__init__(*self*, *document*)

Overrides: docutils.nodes.NodeVisitor.__init__

visit_document(*self*, *node*)

visit_paragraph(*self*, *node*)

visit_field(*self*, *node*)

unknown_visit(*self*, *node*)

Ignore all unknown nodes

Overrides: docutils.nodes.NodeVisitor.unknown_visit

Inherited from docutils.nodes.NodeVisitor: dispatch_departure(), dispatch_visit(), unknown_departure()

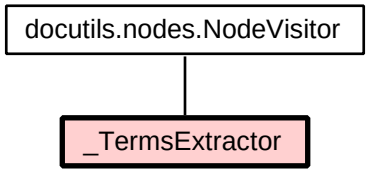
28.7.2 Class Variables

_SUMMARY_RE

Value: `re.compile(r'(\s*[\w\W]*?\.)(\s|$)')`

Inherited from docutils.nodes.NodeVisitor: optional

28.8 Class _TermsExtractor



A docutils node visitor that extracts the terms from documentation.

Terms are created using the `:term:` interpreted text role.

28.8.1 Methods

__init__(*self*, *document*)

Overrides: docutils.nodes.NodeVisitor.__init__

visit_document(*self*, *node*)

visit_emphasis(*self*, *node*)

depart_emphasis(*self*, *node*)

visit_Text(*self*, *node*)

unknown_visit(*self*, *node*)

Ignore all unknown nodes

Overrides: docutils.nodes.NodeVisitor.unknown_visit

unknown_departure(*self*, *node*)

Ignore all unknown nodes

Overrides: docutils.nodes.NodeVisitor.unknown_departure

Inherited from docutils.nodes.NodeVisitor: dispatch_departure(), dispatch_visit()

28.8.2 Class Variables

Inherited from docutils.nodes.NodeVisitor: optional

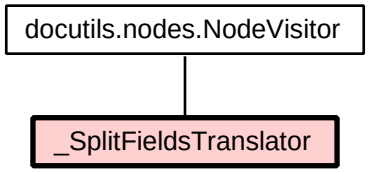
28.8.3 Instance Variables

terms

The terms currently found.

Type: `list`

28.9 Class _SplitFieldsTranslator



A docutils translator that removes all fields from a document, and collects them into the instance variable `fields`

28.9.1 Methods

__init__(*self*, *document*, *errors*)

Overrides: docutils.nodes.NodeVisitor.__init__

visit_document(*self*, *node*)

visit_field(*self*, *node*)

_add_field(*self*, *tagname*, *arg*, *fbody*)

visit_field_list(*self*, *node*)

handle_consolidated_field(*self*, *body*, *tagname*)

Attempt to handle a consolidated section.

handle_consolidated_bullet_list(*self*, *items*, *tagname*)

handle_consolidated_definition_list(*self*, *items*, *tagname*)

unknown_visit(*self*, *node*)

Ignore all unknown nodes

Overrides: docutils.nodes.NodeVisitor.unknown_visit

Inherited from docutils.nodes.NodeVisitor: dispatch_departure(), dispatch_visit(), unknown_departure()

28.9.2 Class Variables

ALLOW_UNMARKED_ARG_IN_CONSOLIDATED_FIELD

If true, then consolidated fields are not required to mark arguments with `backticks`. (This is currently only implemented for consolidated fields expressed as definition lists; consolidated fields expressed as unordered lists still require backticks for now.

Value: `True`

Inherited from docutils.nodes.NodeVisitor: optional

28.9.3 Instance Variables

fields

The fields of the most recently walked document.

Type: `list of Field`

28.10 Class _EpydocDocumentClass

28.10.1 Methods

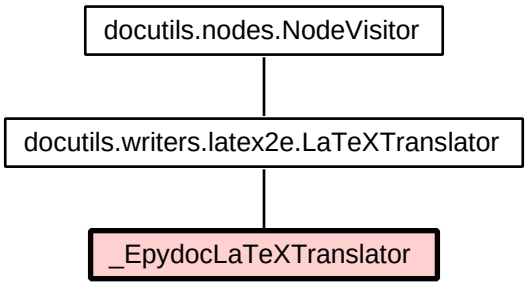
section(*self*, *level*)

28.10.2 Class Variables

SECTIONS

Value: `['EpydocUserSection', 'EpydocUserSubsection', 'EpydocUser...`

28.11 Class _EpydocLaTeXTranslator



28.11.1 Methods

__init__(*self*, *document*, *docstring_linker*=`None`, *directory*=`None`, *docindex*=`None`, *context*=`None`)

Overrides: docutils.nodes.NodeVisitor.__init__

visit_title_reference(*self*, *node*)

Overrides: docutils.writers.latex2e.LaTeXTranslator.visit_title_reference

visit_document(*self*, *node*)

Overrides: docutils.writers.latex2e.LaTeXTranslator.visit_document

depart_document(*self*, *node*)

Overrides: docutils.writers.latex2e.LaTeXTranslator.depart_document

visit_dotgraph(*self*, *node*)

visit_doctest_block(*self*, *node*)

Overrides: docutils.writers.latex2e.LaTeXTranslator.visit_doctest_block

visit_admonition(*self*, *node*, *name*=`''`)

Overrides: docutils.writers.latex2e.LaTeXTranslator.visit_admonition

depart_admonition(*self*, *node*=None)

Overrides: docutils.writers.latex2e.LaTeXTranslator.depart_admonition

Inherited from docutils.writers.latex2e.LaTeXTranslator: astext(), attval(), bookmark(), depart_Text(), depart_address(), depart_attention(), depart_attribution(), depart_author(), depart_authors(), depart_block_quote(), depart_bullet_list(), depart_caption(), depart_caution(), depart_citation(), depart_citation_reference(), depart_classifier(), depart_colspec(), depart_compound(), depart_contact(), depart_container(), depart_copyright(), depart_danger(), depart_date(), depart_decoration(), depart_definition(), depart_definition_list(), depart_definition_list_item(), depart_description(), depart_docinfo(), depart_docinfo_item(), depart_doctest_block(), depart_emphasis(), depart_entry(), depart_enumerated_list(), depart_error(), depart_field(), depart_field_argument(), depart_field_body(), depart_field_list(), depart_field_name(), depart_figure(), depart_footer(), depart_footnote(), depart_footnote_reference(), depart_generated(), depart_header(), depart_hint(), depart_image(), depart_important(), depart_inline(), depart_interpreted(), depart_label(), depart_legend(), depart_line(), depart_line_block(), depart_list_item(), depart_literal(), depart_literal_block(), depart_meta(), depart_note(), depart_option(), depart_option_argument(), depart_option_group(), depart_option_list(), depart_option_list_item(), depart_option_string(), depart_organization(), depart_paragraph(), depart_problematic(), depart_reference(), depart_revision(), depart_row(), depart_rubric(), depart_section(), depart_sidebar(), depart_status(), depart_strong(), depart_subscript(), depart_subtitle(), depart_superscript(), depart_system_message(), depart_table(), depart_target(), depart_tbody(), depart_term(), depart_tgroup(), depart_thead(), depart_tip(), depart_title(), depart_title_reference(), depart_topic(), depart_transition(), depart_version(), depart_warning(), encode(), ensure_math(), label_delim(), language_label(), latex_image_length(), literal_block_env(), to_latex_encoding(), unicode_to_latex(), unimplemented_visit(), visit_Text(), visit_address(), visit_attention(), visit_attribution(), visit_author(), visit_authors(), visit_block_quote(), visit_bullet_list(), visit_caption(), visit_caution(), visit_citation(), visit_citation_reference(), visit_classifier(), visit_colspec(), visit_comment(), visit_compound(), visit_contact(), visit_container(), visit_copyright(), visit_danger(), visit_date(), visit_decoration(), visit_definition(), visit_definition_list(), visit_definition_list_item(), visit_description(), visit_docinfo(), visit_docinfo_item(), visit_emphasis(), visit_entry(), visit_enumerated_list(), visit_error(), visit_field(), visit_field_argument(), visit_field_body(), visit_field_list(), visit_field_name(), visit_figure(), visit_footer(), visit_footnote(), visit_footnote_reference(), visit_generated(), visit_header(), visit_hint(), visit_image(), visit_important(), visit_inline(), visit_interpreted(), visit_label(), visit_legend(), visit_line(), visit_line_block(), visit_list_item(), visit_literal(), visit_literal_block(), visit_meta(), visit_note(), visit_option(), visit_option_argument(), visit_option_group(), visit_option_list(), visit_option_list_item(), visit_option_string(), visit_organization(), visit_paragraph(), visit_problematic(), visit_raw(), visit_reference(), visit_revision(), visit_row(), visit_rubric(), visit_section(), visit_sidebar(), visit_status(), visit_strong(), visit_subscript(), visit_substitution_definition(), visit_substitution_reference(), visit_subtitle(), visit_superscript(), visit_system_message(), visit_table(), visit_target(), visit_tbody(), visit_term(), visit_tgroup(), visit_thead(), visit_tip(), visit_title(), visit_topic(), visit_transition(), visit_version(), visit_warning()

Inherited from docutils.nodes.NodeVisitor: dispatch_departure(), dispatch_visit(), unknown_departure(), unknown_visit()

28.11.2 Class Variables

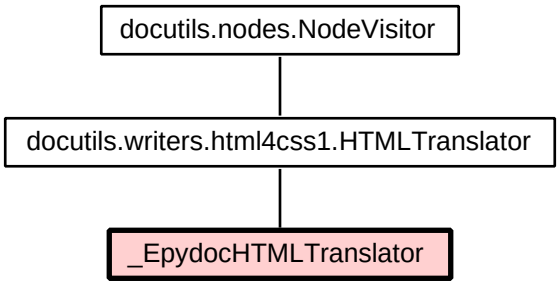
settings

Value: `None`

Inherited from docutils.writers.latex2e.LaTeXTranslator: attribution_formats, compound_enumerators, generator, hyperlink_color, latex_equivalents, latex_head, linking, section_enumerator_separator, section_prefix_for_enumerators, stylesheet, use_latex_toc, use_optionlist_for_docinfo

Inherited from docutils.nodes.NodeVisitor: optional

28.12 Class _EpydocHTMLTranslator



28.12.1 Methods

__init__(*self*, *document*, *docstring_linker*, *directory*, *docindex*, *context*)

Overrides: docutils.nodes.NodeVisitor.__init__

visit_title_reference(*self*, *node*)

Overrides: docutils.writers.html4css1.HTMLTranslator.visit_title_reference

should_be_compact_paragraph(*self*, *node*)

Determine if the <p> tags around paragraph `node` can be omitted.

Overrides: docutils.writers.html4css1.HTMLTranslator.should_be_compact_paragraph *(inherited documentation)*

visit_document(*self*, *node*)

Overrides: docutils.writers.html4css1.HTMLTranslator.visit_document

depart_document(*self*, *node*)

Overrides: docutils.writers.html4css1.HTMLTranslator.depart_document

starttag(*self*, *node*, *tagname*, *suffix*='\n', ***attributes*)

This modified version of starttag makes a few changes to HTML tags, to prevent them from conflicting with epydoc. In particular:

- existing class attributes are prefixed with `'rst-'`
- existing names are prefixed with `'rst-'`
- hrefs starting with `'#'` are prefixed with `'rst-'`
- hrefs not starting with `'#'` are given target='_top'
- all headings (`<hn>`) are given the css class `'heading'`

Overrides: docutils.writers.html4css1.HTMLTranslator.starttag

visit_dotgraph(*self*, *node*)

visit_doctest_block(*self*, *node*)

Overrides: docutils.writers.html4css1.HTMLTranslator.visit_doctest_block

visit_emphasis(*self*, *node*)

Overrides: docutils.writers.html4css1.HTMLTranslator.visit_emphasis

Inherited from docutils.writers.html4css1.HTMLTranslator: add_meta(), astext(), attval(), check_simple_list(), cloak_email(), cloak_mailto(), depart_Text(), depart_abbreviation(), depart_acronym(), depart_address(), depart_admonition(), depart_attribution(), depart_author(), depart_authors(), depart_block_quote(), depart_bullet_list(), depart_caption(), depart_citation(), depart_citation_reference(), depart_classifier(), depart_colspec(), depart_compound(), depart_contact(), depart_container(), depart_copyright(), depart_date(), depart_decoration(), depart_definition(), depart_definition_list(), depart_definition_list_item(), depart_description(), depart_docinfo(), depart_docinfo_item(), depart_doctest_block(), depart_emphasis(), depart_entry(), depart_enumerated_list(), depart_field(), depart_field_body(), depart_field_list(), depart_field_name(), depart_figure(), depart_footer(), depart_footnote(), depart_footnote_reference(), depart_generated(), depart_header(), depart_image(), depart_inline(), depart_label(), depart_legend(), depart_line(), depart_line_block(), depart_list_item(), depart_literal_block(), depart_meta(), depart_option(), depart_option_argument(), depart_option_group(), depart_option_list(), depart_option_list_item(), depart_option_string(), depart_organization(), depart_paragraph(), depart_problematic(), depart_reference(), depart_revision(), depart_row(), depart_rubric(), depart_section(), depart_sidebar(), depart_status(), depart_strong(), depart_subscript(), depart_subtitle(), depart_superscript(), depart_system_message(), depart_table(), depart_target(), depart_tbody(), depart_term(), depart_tgroup(), depart_thead(), depart_title(), depart_title_reference(), depart_topic(), depart_transition(), depart_version(), emptytag(), encode(), footnote_backrefs(), is_compactable(), set_class_on_child(), set_first_last(), unimplemented_visit(), visit_Text(), visit_abbreviation(), visit_acronym(), visit_address(), visit_admonition(), visit_attribution(), visit_author(), visit_authors(), visit_block_quote(), visit_bullet_list(), visit_caption(), visit_citation(), visit_citation_reference(), visit_classifier(), visit_colspec(), visit_comment(), visit_compound(), visit_contact(), visit_container(), visit_copyright(), visit_date(), visit_decoration(), visit_definition(), visit_definition_list(), visit_definition_list_item(), visit_description(), visit_docinfo(), visit_docinfo_item(), visit_entry(), visit_enumerated_list(), visit_field(), visit_field_body(), visit_field_list(), visit_field_name(), visit_figure(), visit_footer(), visit_footnote(), visit_footnote_reference(), visit_generated(), visit_header(), visit_image(), visit_inline(), visit_label(), visit_legend(), visit_line(), visit_line_block(), visit_list_item(), visit_literal(), visit_literal_block(), visit_meta(), visit_option(), visit_option_argument(), visit_option_group(), visit_option_list(), visit_option_list_item(), visit_option_string(), visit_organization(), visit_paragraph(), visit_problematic(), visit_raw(), visit_reference(), visit_revision(), visit_row(), visit_rubric(), visit_section(), visit_sidebar(), visit_status(), visit_strong(), visit_subscript(), visit_substitution_definition(), visit_substitution_reference(), visit_subtitle(), visit_superscript(), visit_system_message(), visit_table(), visit_target(), visit_tbody(), visit_term(), visit_tgroup(), visit_thead(), visit_title(), visit_topic(), visit_transition(), visit_version(), write_colspecs()

Inherited from docutils.nodes.NodeVisitor: dispatch_departure(), dispatch_visit(), unknown_departure(), unknown_visit()

28.12.2 Class Variables

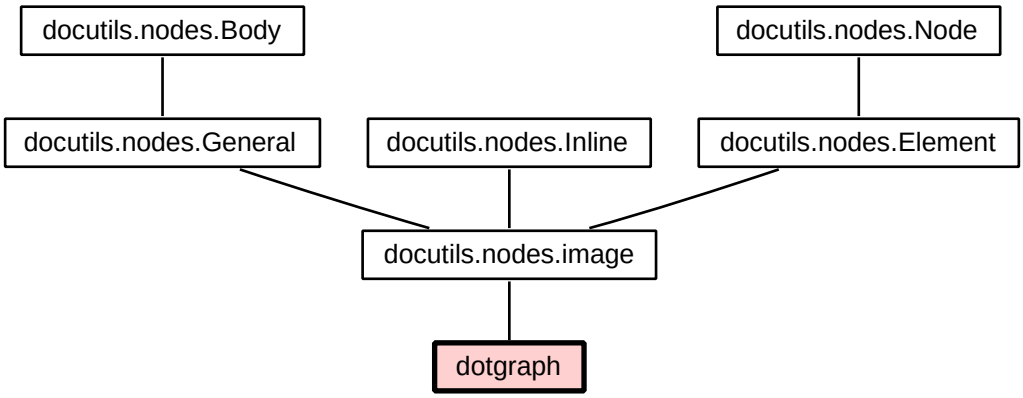
settings

Value: `None`

Inherited from docutils.writers.html4css1.HTMLTranslator: attribution_formats, content_type, doctype, embedded_stylesheet, generator, head_prefix_template, stylesheet_link, words_and_spaces, xml_declaration

Inherited from docutils.nodes.NodeVisitor: optional

28.13 Class dotgraph



A custom docutils node that should be rendered using Graphviz dot. This node does not directly store the graph; instead, it stores a pointer to a function that can be used to generate the graph. This allows the graph to be built based on information that might not be available yet at parse time. This graph generation function has the following signature:

```
>>> def generate_graph(docindex, context, linker, *args):
...     'generates and returns a new DotGraph'
```

Where `docindex` is a docindex containing the documentation that epydoc has built; `context` is the `APIDoc` whose docstring contains this dotgraph node; `linker` is a `DocstringLinker` that can be used to resolve crossreferences; and `args` is any extra arguments that are passed to the `dotgraph` constructor.

28.13.1 Methods

__init__(*self*, *generate_graph_func*, **generate_graph_args*)

Overrides: docutils.nodes.Element.__init__

graph(*self*, *docindex*, *context*, *linker*)

Inherited from docutils.nodes.image: astext()

Inherited from docutils.nodes.Element: __add__(), __delitem__(), __getitem__(), __iadd__(), __len__(), __radd__(), __repr__(), __setitem__(), __unicode__(), _dom_node(), append(), attlist(), clear(), copy(), deepcopy(), delattr(), emptytag(), endtag(), extend(), first_child_matching_class(), first_child_not_matching_class(), get(), has_key(), hasattr(), index(), insert(), is_not_default(), non_default_attributes(), note_referenced_by(), pformat(), pop(), remove(), replace(), replace_self(), set_class(), setdefault(), shortrepr(), starttag(), update_basic_atts()

Inherited from docutils.nodes.Node: __nonzero__(), __str__(), asdom(), next_node(), setup_child(), traverse(), walk(), walkabout()

28.13.2 Class Variables

Inherited from docutils.nodes.Element: child_text_separator, list_attributes, tagname

Inherited from docutils.nodes.Node: document, line, parent, source

28.13.3 Instance Variables

Inherited from docutils.nodes.Element: attributes, children, rawsource

29 Package epydoc.test

Regression testing.

29.1 Functions

main()

check_requirements(*filename*)

Search for strings of the form:

```
[Require: <module>]
```

If any are found, then try importing the module named <module>. If the import fails, then return False. If all required modules are found, return True. (This includes the case where no requirements are listed.)

30 Module epydoc.test.util

Utility functions used by the regression tests (`*.doctest`).

30.1 Functions

Test Functions

buildvaluedoc(*s*)

This test function takes a string containing the contents of a module. It writes the string contents to a file, imports the file as a module, and uses build_doc to build documentation, and returns it as a `ValueDoc` object.

runbuilder(*s*, *attribs*=`''`, *build*=`None`, *exclude*=`''`)

This test function takes a string containing the contents of a module. It writes the string contents to a file, imports the file as a module, and uses build_doc to build documentation, and pretty prints the resulting ModuleDoc object. The `attribs` argument specifies which attributes of the `APIDocs` should be displayed. The `build` argument gives the name of a variable in the module whose documentation should be built, instead of bilding docs for the whole module.

runparser(*s*, *attribs*=`''`, *show*=`None`, *exclude*=`''`)

This test function takes a string containing the contents of a module, and writes it to a file, uses 'parse_docs' to parse it, and pretty prints the resulting ModuleDoc object. The 'attribs' argument specifies which attributes of the 'APIDoc's should be displayed. The 'show' argument, if specifies, gives the name of the object in the module that should be displayed (but the whole module will always be inspected; this just selects what to display).

runintrospecter(*s*, *attribs*=`''`, *introspect*=`None`, *exclude*=`''`)

This test function takes a string containing the contents of a module. It writes the string contents to a file, imports the file as a module, and uses `introspect_docs` to introspect it, and pretty prints the resulting ModuleDoc object. The `attribs` argument specifies which attributes of the `APIDocs` should be displayed. The `introspect` argument gives the name of a variable in the module whose value should be introspected, instead of introspecting the whole module.

print_warnings()

Register a logger that will print warnings & errors.

testencoding(*s*, *introspect*=`True`, *parse*=`True`, *debug*=`False`)

An end-to-end test for unicode encodings. This function takes a given string, writes it to a python file, and processes that file's documentation. It then generates HTML output from the documentation, extracts all docstrings from the generated HTML output, and displays them. (In order to extract & display all docstrings, it monkey-patches the HMTLwriter.docstring_to_html() method.)

Helper Functions

write_pystring_to_tmp_dir(*s*)

cleanup_tmp_dir(*tmp_dir*)

to_plain(*docstring*)

Conver a parsed docstring into plain text

fun_to_plain(*val_doc*)

Convert parsed docstrings in text from a RoutineDoc

print_docstring_as_html(*self*, *parsed_docstring*, **varargs*, ***kwargs*)

Convert the given parsed_docstring to HTML and print it. Ignore any other arguments. This function is used by `testencoding` to monkey-patch the HTMLWriter class's docstring_to_html() method.

remove_surrogates(*s*)

The following is a helper function, used to convert two-character surrogate sequences into single characters. This is needed because some systems create surrogates but others don't.

31 Module epydoc.util

Miscellaneous utility functions that are used by multiple modules.

31.1 Functions

is_src_filename(*filename*)

munge_script_name(*filename*)

plaintext_to_latex(*str*, *nbsp*=0, *breakany*=0)

Parameters

`breakany`: Insert hyphenation marks, so that LaTeX can break the resulting string at any point. This is useful for small boxes (e.g., the type box in the variable list table).

`nbsp`: Replace every space with a non-breaking space (`'~'`).

Return Value

A LaTeX string that encodes the given plaintext string. In particular, special characters (such as `'$'` and `'_'`) are escaped, and tabs are expanded.*(type=`string`)*

run_subprocess(*cmd*, *data*=None)

Execute the command `cmd` in a subprocess.

Parameters

`cmd`: The command to execute, specified as a list of string.

`data`: A string containing data to send to the subprocess.

Return Value

A tuple `(out, err)`.

Raises

OSError If there is any problem executing the command, or if its exitval is not 0.

Python source types

is_module_file(*path*)

is_package_dir(*dirname*)

Return true if the given directory is a valid package directory (i.e., it names a directory that contains a valid __init__ file, and its name is a valid identifier).

is_pyname(*name*)

py_src_filename(*filename*)

Text processing

decode_with_backslashreplace(*s*)

Convert the given 8-bit string into unicode, treating any character c such that ord(c)<128 as an ascii character, and converting any c such that ord(c)>128 into a backslashed escape sequence.

```
>>> decode_with_backslashreplace('abc\xff\xe8')
u'abc\\xff\\xe8'
```

wordwrap(*str*, *indent*=0, *right*=75, *startindex*=0, *splitchars*='')

Word-wrap the given string. I.e., add newlines to the string such that any lines that are longer than `right` are broken into shorter lines (at the first whitespace sequence that occurs before index `right`). If the given string contains newlines, they will *not* be removed. Any lines that begin with whitespace will not be wordwrapped.

Parameters

`indent`: If specified, then indent each line by this number of spaces. *(type=**int**)*

`right`: The right margin for word wrapping. Lines that are longer than `right` will be broken at the first whitespace sequence before the right margin. *(type=**int**)*

`startindex`: If specified, then assume that the first line is already preceeded by `startindex` characters. *(type=**int**)*

`splitchars`: A list of non-whitespace characters which can be used to split a line. (E.g., use '/\' to allow path names to be split over multiple lines.)

Return Value

str

plaintext_to_html(*s*)

Return Value

An HTML string that encodes the given plaintext string. In particular, special characters (such as `'<'` and `'&'`) are escaped.*(type=**string**)*

31.2 Variables

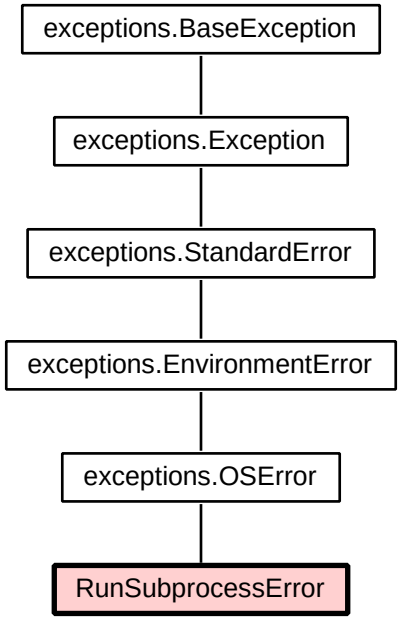
PY_SRC_EXTENSIONS

Value: `['.py', '.pyw']`

PY_BIN_EXTENSIONS

Value: `['.pyc', '.so', '.pyd']`

31.3 Class RunSubprocessError



31.3.1 Methods

__init__(*self*, *cmd*, *out*, *err*)

`x.__init__(...) initializes x; see x.__class__.__doc__ for signature`

Overrides: exceptions.BaseException.__init__ *(inherited documentation)*

Inherited from exceptions.OSError: __new__()

Inherited from exceptions.EnvironmentError: __reduce__(), __str__()

Inherited from exceptions.BaseException: __delattr__(), __getattribute__(), __getitem__(), __getslice__(), __repr__(), __setattr__(), __setstate__()

31.3.2 Properties

Inherited from exceptions.EnvironmentError: errno, filename, message, strerror

Inherited from exceptions.BaseException: args

31.4 Class TerminalController

A class that can be used to portably generate formatted output to a terminal. See *http://aspn.activestate.com/ASPN/Coo* for documentation. (This is a somewhat stripped-down version.)

31.4.1 Methods

__init__(*self*, *term_stream*=`sys.stdout`)

_tigetstr(*self*, *cap_name*)

render(*self*, *template*)

Replace each $-substitutions in the given template string with the corresponding terminal control string (if it's defined) or '' (if it's not).

_render_sub(*self*, *match*)

31.4.2 Class Variables

BOL

Move the cursor to the beginning of the line

Value: `''`

UP

Move the cursor up one line

Value: `''`

DOWN

Move the cursor down one line

Value: `''`

LEFT

Move the cursor left one char

Value: `''`

RIGHT

Move the cursor right one char

Value: `''`

CLEAR_EOL

Clear to the end of the line.

Value: `''`

CLEAR_LINE

Clear the current line; cursor to BOL.

Value: `''`

BOLD

Turn on bold mode

Value: `''`

NORMAL

Turn off all modes

Value: `''`

COLS

Width of the terminal (default to 75)

Value: `75`

UNDERLINE

Underline the text

Value: `''`

REVERSE

Reverse the foreground & background

Value: `''`

WHITE

Value: `''`

YELLOW

Value: `''`

MAGENTA
Value: `''`

RED
Value: `''`

CYAN
Value: `''`

GREEN
Value: `''`

BLUE
Value: `''`

BLACK
Value: `''`

_STRING_CAPABILITIES
Value: `['BOL=cr', 'UP=cuu1', 'DOWN=cud1', 'LEFT=cub1', 'RIGHT=cu...`

_COLORS
Value: `['BLACK', 'BLUE', 'GREEN', 'CYAN', 'RED', 'MAGENTA', 'YEL...`

_ANSICOLORS
Value: `['BLACK', 'RED', 'GREEN', 'YELLOW', 'BLUE', 'MAGENTA', 'C...`

FORCE_SIMPLE_TERM
If this is set to true, then new TerminalControllers will assume that the terminal is not capable of doing manipulation of any kind.

Value: `False`

Index