Documentation System

Release 10.1

The Sage Development Team

CONTENTS

1	Sage Doc Builders	1
2	Sphinx Extensions	13
Pyt	thon Module Index	29
Ind	lex	31

CHAPTER

ONE

SAGE DOC BUILDERS

1.1 Sage docbuild main

This module defines the Sage documentation build command:

```
sage --docbuild [OPTIONS] DOCUMENT (FORMAT | COMMAND)
```

If FORMAT is given, it builds DOCUMENT in FORMAT. If COMMAND is given, it returns information about DOCUMENT.

Run sage --docbuild to get detailed explanations about arguments and options.

Positional arguments:

DOCUMENT	name of the document to build. It can be either one
	of the documents listed by -D or 'file=/path/to/FILE' to build_
→documentation	
	for this specific file.
FORMAT or COMMAND	document output format (or command)

Standard options:

-h,help	show a help message and exit
-H,help-all	show an extended help message and exit
-D,documents	list all available DOCUMENTs
-F,formats	list all output FORMATs
-C DOC,commands DOC	list all COMMANDs for DOCUMENT DOC; use 'all' to list all
-i,inherited	include inherited members in reference manual; may be slow,
→may fail for PDF output	
-u,underscore	<pre>include variables prefixed with '_' in reference</pre>
	manual; may be slow, may fail for PDF output
-j,mathjax,jsmath	ignored for backwards compatibility
no-plot	do not include graphics auto-generated using the ' plot'
-markup	
include-tests-blocks	include TESTS blocks in the reference manual
no-pdf-links	do not include PDF links in DOCUMENT 'website';
	FORMATs: html, json, pickle, web
warn-links	issue a warning whenever a link is not properly
	resolved; equivalent to 'sphinx-opts -n' (sphinx option:
⊶nitpicky)	
check-nested	check picklability of nested classes in DOCUMENT 'reference'
no-prune-empty-dirs	do not prune empty directories in the documentation sources
-N,no-colors	do not color output; does not affect children
	(continues on next moss)

(continues on next page)

(continued from previous page)

Advanced options:

```
-S OPTS, --sphinx-opts OPTS pass comma-separated OPTS to sphinx-build; must precede OPTS with '=', as in '-S=-q,-aE' or '-S="-q,-aE"'

-U, --update-mtimes before building reference manual, update modification times for auto-generated reST files

-k, --keep-going do not abort on errors but continue as much as possible after an error

--all-documents ARG if ARG is 'reference', list all subdocuments of en/reference. If ARG is 'all', list all main documents
```

class sage_docbuild.__main__.IntersphinxCache

Bases: object

Replace sphinx.ext.intersphinx.fetch_inventory by an in-memory cached version.

fetch_inventory(app, uri, inv)

Return the result of sphinx.ext.intersphinx.fetch_inventory() from a cache if possible. Otherwise, call sphinx.ext.intersphinx.fetch_inventory() and cache the result.

```
sage_docbuild.__main__.format_columns(lst, align='<', cols=None, indent=4, pad=3, width=80)</pre>
```

Utility function that formats a list as a simple table and returns a Unicode string representation.

The number of columns is computed from the other options, unless it's passed as a keyword argument. For help on Python's string formatter, see

https://docs.python.org/library/string.html#format-string-syntax

```
sage_docbuild.__main__.get_formats()
```

Return a list of output formats the Sage documentation builder will accept on the command-line.

```
sage_docbuild.__main__.help_commands(name='all')
```

Append and return a tabular list of commands, if any, the Sage documentation builder can run on the indicated document. The default is to list all commands for all documents.

```
sage_docbuild.__main__.help_description(s=", compact=False)
```

Append and return a brief description of the Sage documentation builder.

If 'compact' is False, the function adds a final newline character.

```
sage_docbuild.__main__.help_documents()
```

Append and return a tabular list of documents, including a shortcut 'all' for all documents, available to the Sage documentation builder.

```
sage_docbuild.__main__.help_examples(s=")
```

Append and return some usage examples for the Sage documentation builder.

```
sage_docbuild.__main__.help_formats()
```

Append and return a tabular list of output formats available to the Sage documentation builder.

Bases: Action

Print an extended help message for the Sage documentation builder and exits.

Bases: Action

Print a help message for the Sage documentation builder.

The message includes command-line usage and a list of options. The message is printed only on the first call. If error is True during this call, the message is printed only if the user hasn't requested a list (e.g., documents, formats, commands).

```
sage_docbuild.__main__.help_usage(s=", compact=False)
```

Append and return a brief usage message for the Sage documentation builder.

If 'compact' is False, the function adds a final newline character.

Bases: Action

A helper wrapper for command-line options to the Sage documentation builder that print lists, such as document names, formats, and document-specific commands.

```
sage_docbuild.__main__.main()
sage_docbuild.__main__.setup_logger(verbose=1, color=True)
```

Set up a Python Logger instance for the Sage documentation builder.

The optional argument sets logger's level and message format.

EXAMPLES:

```
sage: from sage_docbuild.__main__ import setup_logger, logger
sage: setup_logger()
sage: type(logger)
<class 'logging.Logger'>
```

```
sage_docbuild.__main__.setup_parser()
```

Set up and return a command-line ArgumentParser instance for the Sage documentation builder.

1.2 Documentation builders

This module is the starting point for building documentation, and is responsible to figure out what to build and with which options. The actual documentation build for each individual document is then done in a subprocess call to Sphinx, see builder_helper(). Note that

- The builders are configured with build_options.py;
- The Sphinx subprocesses are configured in conf.py.

DocBuilder is the base class of all Builders. It has builder helpers html(), latex(), pdf(), inventory(), etc, which are invoked depending on the output type. Each type corresponds with the Sphinx builder format, except that pdf is Sphinx latex builder plus compiling latex to pdf. Note that Sphinx inventory builder is not native to Sphinx but provided by Sage. See sage_docbuild/ext/inventory_builder.py. The Sphinx inventory builder is a dummy builder with no actual output but produces doctree files in local/share/doctree and inventory.inv inventory files in local/share/inventory.

The reference manual is built in two passes, first by <code>ReferenceBuilder</code> with inventory output type and secondly with 'html' output type. The <code>ReferenceBuilder</code> itself uses <code>ReferenceTopBuilder</code> and <code>ReferenceSubBuilder</code> to build subcomponents of the reference manual. The <code>ReferenceSubBuilder</code> examines the modules included in the subcomponent by comparing the modification times of the module files with the times saved in <code>local/share/doctree/reference.pickle</code> from the previous build. Then new rst files are generated for new and updated modules. See <code>get_new_and_updated_modules()</code>.

After github issue #31948, when Sage is built, *ReferenceBuilder* is not used and its responsibility is now taken by the Makefile in \$SAGE_ROOT/src/doc.

class sage_docbuild.builders.AllBuilder

Bases: object

A class used to build all of the documentation.

get_all_documents()

Return a list of all of the documents.

A document is a directory within one of the language subdirectories of SAGE_DOC_SRC specified by the global LANGUAGES variable.

EXAMPLES:

```
sage: from sage_docbuild.builders import AllBuilder
sage: documents = AllBuilder().get_all_documents()
sage: 'en/tutorial' in documents # optional - sage_spkg
True
sage: documents[0] == 'en/reference'
True
```

class sage_docbuild.builders.DocBuilder(name, lang='en')

Bases: object

INPUT:

- name the name of a subdirectory in SAGE_DOC_SRC, such as 'tutorial' or 'bordeaux_2008'
- lang (default "en") the language of the document.

```
changes(*args, **kwds)
clean(*args)
html(*args, **kwds)
htmlhelp(*args, **kwds)
inventory(*args, **kwds)
json(*args, **kwds)
latex(*args, **kwds)
```

```
linkcheck(*args, **kwds)
```

pdf()

Build the PDF files for this document.

This is done by first (re)-building the LaTeX output, going into that LaTeX directory, and running 'make all-pdf' there.

EXAMPLES:

```
sage: from sage_docbuild.builders import DocBuilder
sage: b = DocBuilder('tutorial')
sage: b.pdf() #not tested
```

```
pickle(*args, **kwds)
web(*args, **kwds)
```

class sage_docbuild.builders.ReferenceBuilder(name, lang='en')

```
Bases: AllBuilder
```

This class builds the reference manual. It uses DocBuilder to build the top-level page and ReferenceSubBuilder for each sub-component.

get_all_documents(refdir)

Return a list of all reference manual components to build.

We add a component name if it's a subdirectory of the manual's directory and contains a file named 'in-dex.rst'.

We return the largest component (most subdirectory entries) first since they will take the longest to build.

EXAMPLES:

class sage_docbuild.builders.ReferenceSubBuilder(*args, **kwds)

Bases: DocBuilder

This class builds sub-components of the reference manual. It is responsible for making sure that the auto generated reST files for the Sage library are up to date.

When building any output, we must first go through and check to see if we need to update any of the autogenerated reST files. There are two cases where this would happen:

- 1. A new module gets added to one of the toctrees.
- 2. The actual module gets updated and possibly contains a new title.

auto_rest_filename(module_name)

Return the name of the file associated to a given module

EXAMPLES:

cache_filename()

Return the filename where the pickle of the reference cache is stored.

clean_auto()

Remove all autogenerated reST files.

get_all_included_modules()

Return an iterator for all modules which are included in the reference manual.

get_all_rst_files(exclude_sage=True)

Return an iterator for all rst files which are not autogenerated.

get_cache()

Retrieve the reference cache which contains the options previously used by the reference builder.

If it doesn't exist, then we just return an empty dictionary. If it is corrupted, return an empty dictionary.

get_modified_modules()

Return an iterator for all the modules that have been modified since the documentation was last built.

get_module_docstring_title(module_name)

Return the title of the module from its docstring.

get_modules(filename)

Given a filename for a reST file, return an iterator for all of the autogenerated reST files that it includes.

get_new_and_updated_modules()

Return an iterator for all new and updated modules that appear in the toctrees, and remove obsolete old modules.

get_sphinx_environment()

Return the Sphinx environment for this project.

get_unincluded_modules()

Return an iterator for all the modules in the Sage library which are not included in the reference manual.

print_included_modules()

Print all of the modules that are included in the Sage reference manual.

print modified modules()

Print a list of all the modules that have been modified since the documentation was last built.

print_new_and_updated_modules()

Print all the modules that appear in the toctrees that are newly included or updated.

print_unincluded_modules()

Print all of the modules which are not included in the Sage reference manual.

save_cache()

Pickle the current reference cache for later retrieval.

update_mtimes()

Update the modification times for reST files in the Sphinx environment for this project.

write_auto_rest_file(module_name)

Write the autogenerated reST file for module_name.

class sage_docbuild.builders.ReferenceTopBuilder(*args, **kwds)

Bases: DocBuilder

This class builds the top-level page of the reference manual.

pdf()

Build top-level document.

class sage_docbuild.builders.SingleFileBuilder(path)

Bases: DocBuilder

This is the class used to build the documentation for a single user-specified file. If the file is called 'foo.py', then the documentation is built in DIR/foo/ if the user passes the command line option "-o DIR", or in DOT_SAGE/docbuild/foo/ otherwise.

class sage_docbuild.builders.WebsiteBuilder(name, lang='en')

Bases: DocBuilder

clean()

When we clean the output for the website index, we need to remove all of the HTML that were placed in the parent directory.

In addition, remove the index file installed into the root doc directory.

html()

After we have finished building the website index page, we copy everything one directory up.

In addition, an index file is installed into the root doc directory.

sage_docbuild.builders.build_many(target, args, processes=None)

Thin wrapper around $sage_docbuild.utils.build_many$ which uses the docbuild settings NUM_THREADS and ABORT_ON_ERROR.

```
sage_docbuild.builders.build_other_doc(args)
```

sage_docbuild.builders.build_ref_doc(args)

sage_docbuild.builders.builder_helper(type)

Return a function which builds the documentation for output type type.

sage_docbuild.builders.get_builder(name)

Return an appropriate *Builder* object for the document name.

DocBuilder and its subclasses do all the real work in building the documentation.

sage_docbuild.builders.get_documents()

Return a list of document names the Sage documentation builder will accept as command-line arguments.

1.3 Build options

This module defines options for building Sage documentation.

class sage_docbuild.sphinxbuild.SageSphinxLogger(stream, prefix)

1.4 Sphinx build script

This is Sage's version of the sphinx-build script. We redirect stdout and stderr to our own logger, and remove some unwanted chatter.

```
Bases: object
This implements the file object interface to serve as sys.stdout/sys.stderr replacement.
ansi_color = re.compile('\\x1b\\[[0-9;]*m')
ansi_reset = re.compile('\\x1b\\[39;49;00m')
close()
closed = False
encoding = None
flush()
isatty()
mode = 'w'
name = '<log>'
newlines = None
prefix_len = 9
raise_errors()
    Raise an exceptions if any errors have been found while parsing the Sphinx output.
    EXAMPLES:
    sage: from sys import stdout
    sage: from sage_docbuild.sphinxbuild import SageSphinxLogger
    sage: logger = SageSphinxLogger(stdout, "doctesting")
    sage: logger._log_line("This is a SEVERE error\n")
    [doctestin] This is a SEVERE error
    sage: logger.raise_errors()
    Traceback (most recent call last):
    OSError: This is a SEVERE error
softspace = 0
write(str)
writelines(sequence)
```

```
sage_docbuild.sphinxbuild.runsphinx()
sage_docbuild.sphinxbuild.term_width_line(text)
```

1.5 Sphinx build configuration

This file contains configuration needed to customize Sphinx input and output behavior.

sage_docbuild.conf.add_page_context(app, pagename, templatename, context, doctree)

sage_docbuild.conf.call_intersphinx(app, env, node, contnode)

Call intersphinx and make links between Sage manuals relative.

sage_docbuild.conf.check_nested_class_picklability(app, what, name, obj, skip, options)

Print a warning if pickling is broken for nested classes.

sage_docbuild.conf.debug_inf(app, message)

sage_docbuild.conf.find_sage_dangling_links(app, env, node, contnode)

Try to find dangling link in local module imports or all.py.

sage_docbuild.conf.nitpick_patch_config(app)

Patch the default config for nitpicky

Calling path_config ensure that nitpicky is not considered as a Sphinx environment variable but rather as a Sage environment variable. As a consequence, changing it doesn't force the recompilation of the entire documentation.

sage_docbuild.conf.set_intersphinx_mappings(app, config)

Add precompiled inventory (the objects.inv)

sage_docbuild.conf.setup(app)

sage_docbuild.conf.skip_member(app, what, name, obj, skip, options)

To suppress Sphinx warnings / errors, we

- Don't include [aliases of] builtins.
- Don't include the docstring for any nested class which has been inserted into its module by sage.misc.
 NestedClassMetaclass only for pickling. The class will be properly documented inside its surrounding class.
- Optionally, check whether pickling is broken for nested classes.
- Optionally, include objects whose name begins with an underscore ('_'), i.e., "private" or "hidden" attributes, methods, etc.

Otherwise, we abide by Sphinx's decision. Note: The object obj is excluded (included) if this handler returns True (False).

1.6 Utilities

Map a list of arguments in args to a single-argument target function target in parallel using multiprocessing.cpu_count() (or processes if given) simultaneous processes.

This is a simplified version of multiprocessing.Pool.map from the Python standard library which avoids a couple of its pitfalls. In particular, it can abort (with a RuntimeError) without hanging if one of the worker processes unexpectedly dies. It also has semantics equivalent to maxtasksperchild=1; that is, one process is started per argument. As such, this is inefficient for processing large numbers of fast tasks, but appropriate for running longer tasks (such as doc builds) which may also require significant cleanup.

It also avoids starting new processes from a pthread, which results in at least two known issues:

- On versions of Cygwin prior to 3.0.0 there were bugs in mmap handling on threads (see github issue #27214#comment:25).
- When PARI is built with multi-threading support, forking a Sage process from a thread leaves the main Pari interface instance broken (see github issue #26608#comment:38).

In the future this may be replaced by a generalized version of the more robust parallel processing implementation from sage.doctest.forker.

EXAMPLES:

```
sage: from sage_docbuild.utils import build_many
sage: def target(N):
....:    import time
....:    time.sleep(float(0.1))
....:    print('Processed task %s' % N)
sage: _ = build_many(target, range(8), processes=8)
Processed task ...
Processed task ...
Processed task ...
```

(continues on next page)

(continued from previous page)

```
Processed task ...
```

Unlike the first version of build_many which was only intended to get around the Cygwin bug, this version can also return a result, and thus can be used as a replacement for multiprocessing.Pool.map (i.e. it still blocks until the result is ready):

```
sage: def square(N):
    return N * N
sage: build_many(square, range(100))
[0, 1, 4, 9, ..., 9604, 9801]
```

If the target function raises an exception in any of the workers, build_many raises that exception and all other results are discarded. Any in-progress tasks may still be allowed to complete gracefully before the exception is raised:

Note: In practice this test might still show output from the other worker processes before the poison-pill is executed. It may also display the traceback from the failing process on stderr. However, due to how the doctest runner works, the doctest will only expect the final exception:

```
sage: build_many(target, range(8), processes=8)
Traceback (most recent call last):
...
    raise ZeroDivisionError("rational division by zero")
ZeroDivisionError: rational division by zero
...
    raise worker_exc.original_exception
ZeroDivisionError: rational division by zero
```

Similarly, if one of the worker processes dies unexpectedly otherwise exits non-zero (e.g. killed by a signal) any in-progress tasks will be completed gracefully, but then a RuntimeError is raised and pending tasks are not started:

```
sage: def target(N):
....:    import time, os, signal
....:    if N == 4:
....:    # Task 4 is a poison pill
....:    os.kill(os.getpid(), signal.SIGKILL)
....:    else:
....:        time.sleep(float(0.5))
....:        print('Processed task %s' % N)
```

(continues on next page)

1.6. Utilities 11

(continued from previous page)

```
sage: build_many(target, range(8), processes=8)
Traceback (most recent call last):
...
WorkerDiedException: worker for 4 died with non-zero exit code -9
```

CHAPTER

TWO

SPHINX EXTENSIONS

2.1 Inventory builder

A customized builder which only generates intersphinx "object.inv" inventory files. The documentation files are not written.

Bases: DummyBuilder

A customized builder which only generates intersphinx "object.inv" inventory files. The documentation files are not written.

```
epilog = 'The inventory files are in %(outdir)s.'
```

The message emitted upon successful build completion. This can be a printf-style template string with the following keys: outdir, project

finish()

Only write the inventory files.

format = 'inventory'

The builder's output format, or "if no document output is produced.

get_outdated_docs()

Return an iterable of output files that are outdated.

get_target_uri(docname, typ=None)

Return the target URI for a document name.

name = 'inventory'

The builder's name, for the -b command line option.

sage_docbuild.ext.inventory_builder.setup(app)

2.2 Sage autodoc extension

This is sphinx.ext.autodoc extension modified for Sage objects.

The original header of sphinx.ext.autodoc:

Extension to create automatic documentation from code docstrings.

Automatically insert docstrings for functions, classes or whole modules into the doctree, thus avoiding duplication between docstrings and documentation for those who like elaborate docstrings.

This module is currently based on sphinx.ext.autodoc from Sphinx version 5.3.0. Compare against the upstream original source file sphinx/ext/autodoc/__init__.py.

In the source file of this module, major modifications are delimited by a pair of comment dividers. To lessen maintenance burden, we aim at reducing the modifications.

AUTHORS:

- ? (before 2011): initial version derived from sphinx.ext.autodoc
- Johan S. R. Nielsen: support for _sage_argspec_
- Simon King (2011-04): use sageinspect; include public cython attributes only in the documentation if they have a docstring
- Kwankyu Lee (2018-12-26, 2022-11-08): rebased on the latest sphinx.ext.autodoc

```
Bases: GenericAliasMixin, NewTypeMixin, SlotsMixin, TypeVarMixin, RuntimeInstanceAttributeMixin, UninitializedInstanceAttributeMixin, NonDataDescriptorMixin, DocstringStripSignatureMixin, ClassLevelDocumenter
```

Specialized Documenter subclass for attributes.

```
add_content(more_content)
add_directive_header(sig)
classmethod can_document_member(member, membername, isattr, parent)
document_members(all_members=False)
get_attribute_comment(parent, attrname)
get_doc()
get_real_modname()
import_object(raiseerror=False)
static is_function_or_method(obj)
member_order = 60
    order if autodoc_member_order is set to 'groupwise'
objtype = 'attribute'
```

name by which the directive is called (auto...) and the default generated directive name

```
option_spec: Dict[str, Callable[[str], Any]] = {'annotation': <function</pre>
     annotation_option>, 'no-value': <function bool_option>, 'noindex': <function
     bool_option>}
     priority = 10
         priority if multiple documenters return True from can_document_member
     should_suppress_value_header()
     update_annotations(parent)
         Update __annotations__ to support type_comment and so on.
class sage_docbuild.ext.sage_autodoc.ClassDocumenter(*args: Any)
     Bases: DocstringSignatureMixin, ModuleLevelDocumenter
     Specialized Documenter subclass for classes.
     add_content(more_content)
     add_directive_header(sig)
     classmethod can_document_member(member, membername, isattr, parent)
     document_members(all_members=False)
     format_args(**kwargs)
     format_signature(**kwargs)
     generate(more content=None, real modname=None, check module=False, all members=False)
     get_canonical_fullname()
     get_doc()
     get_object_members(want_all)
     get_overloaded_signatures()
     get_variable_comment()
     import_object(raiseerror=False)
     member_order = 20
         order if autodoc_member_order is set to 'groupwise'
     objtype = 'class'
         name by which the directive is called (auto...) and the default generated directive name
     option_spec: Dict[str, Callable[[str], Any]] = {'class-doc-from': <function
     class_doc_from_option>, 'exclude-members': <function exclude_members_option>,
     'inherited-members': <function inherited_members_option>, 'member-order':
     <function member_order_option>, 'members': <function members_option>, 'noindex':
     <function bool_option>, 'private-members': <function members_option>,
     'show-inheritance': <function bool_option>, 'special-members': <function
     members_option>, 'undoc-members': <function bool_option>}
```

```
class sage_docbuild.ext.sage_autodoc.ClassLevelDocumenter(directive: DocumenterBridge, name: str,
                                                                indent: str = "
     Bases: Documenter
     Specialized Documenter subclass for objects on class level (methods, attributes).
     resolve_name(modname, parents, path, base)
class sage_docbuild.ext.sage_autodoc.DataDocumenter(directive: DocumenterBridge, name: str, indent:
     Bases: GenericAliasMixin, NewTypeMixin, TypeVarMixin, UninitializedGlobalVariableMixin,
     ModuleLevelDocumenter
     Specialized Documenter subclass for data items.
     add_content(more_content)
     add_directive_header(sig)
     classmethod can_document_member(member, membername, isattr, parent)
     document_members(all_members=False)
     get_doc()
     get_module_comment(attrname)
     get_real_modname()
     import_object(raiseerror=False)
     member_order = 40
          order if autodoc_member_order is set to 'groupwise'
     objtype = 'data'
          name by which the directive is called (auto...) and the default generated directive name
     option_spec: Dict[str, Callable[[str], Any]] = {'annotation': <function</pre>
     annotation_option>, 'no-value': <function bool_option>, 'noindex': <function
     bool_option>}
     priority = -10
          priority if multiple documenters return True from can_document_member
     should_suppress_value_header()
     update_annotations(parent)
          Update __annotations__ to support type_comment and so on.
class sage_docbuild.ext.sage_autodoc.DataDocumenterMixinBase
     Bases: object
     config: Config = None
     env: BuildEnvironment = None
     modname: str = None
     object: Any = None
```

```
objpath: List[str] = None
     parent: Any = None
     should_suppress_directive_header()
          Check directive header should be suppressed.
     should_suppress_value_header()
          Check :value: header should be suppressed.
     update_content(more_content)
          Update docstring for the NewType object.
class sage_docbuild.ext.sage_autodoc.DecoratorDocumenter(directive: DocumenterBridge, name: str,
                                                                 indent: str = ")
     Bases: FunctionDocumenter
     Specialized Documenter subclass for decorator functions.
     format_args(**kwargs)
     objtype = 'decorator'
          name by which the directive is called (auto...) and the default generated directive name
     priority = -1
          priority if multiple documenters return True from can_document_member
class sage_docbuild.ext.sage_autodoc.DocstringSignatureMixin
     Bases: object
     Mixin for FunctionDocumenter and MethodDocumenter to provide the feature of reading the signature from the
     docstring.
     format_signature(**kwargs)
     get_doc()
class sage_docbuild.ext.sage_autodoc.DocstringStripSignatureMixin
     Bases: DocstringSignatureMixin
     Mixin for AttributeDocumenter to provide the feature of stripping any function signature from the docstring.
     format_signature(**kwargs)
class sage_docbuild.ext.sage_autodoc.Documenter(directive: DocumenterBridge, name: str, indent: str =
     Bases: object
```

A Documenter knows how to autodocument a single object type. When registered with the AutoDirective, it will be used to document objects of that type when needed by autodoc.

Its objtype attribute selects what auto directive it is assigned to (the directive name is 'auto' + objtype), and what directive it generates by default, though that can be overridden by an attribute called *directivetype*.

A Documenter has an option spec that works like a docutils directive's; in fact, it will be used to parse an auto directive's options that matches the Documenter.

```
add_content(more_content)
```

Add content from docstrings, attribute documentation and user.

add_directive_header(sig)

Add the directive header and options to the generated content.

add_line(line, source, *lineno)

Append one line of generated reST to the output.

classmethod can_document_member(member, membername, isattr, parent)

Called to see if a member can be documented by this Documenter.

check_module()

Check if *self.object* is really defined in the module given by *self.modname*.

content_indent = ' '

indentation by which to indent the directive content

document_members(all_members=False)

Generate reST for member documentation.

If all_members is True, document all members, else those given by self.options.members.

property documenters: Dict[str, Type[Documenter]]

Returns registered Documenter classes

filter_members(members, want all)

Filter the given member list.

Members are skipped if

- they are private (except if given explicitly or the private-members option is set)
- they are special methods (except if given explicitly or the special-members option is set)
- they are undocumented (except if the undoc-members option is set)

The user can override the skipping decision by connecting to the autodoc-skip-member event.

format_args(**kwargs)

Format the argument signature of *self.object*.

Should return None if the object does not have a signature.

format_name()

Format the name of *self.object*.

This normally should be something that can be parsed by the generated directive, but doesn't need to be (Sphinx will display it unparsed then).

format_signature(**kwargs)

Format the signature (arguments and return annotation) of the object.

Let the user process it via the autodoc-process-signature event.

generate(more_content=None, real_modname=None, check_module=False, all_members=False)

Generate reST for the object given by self.name, and possibly for its members.

If *more_content* is given, include that content. If *real_modname* is given, use that module name to find attribute docs. If *check_module* is True, only generate if the object is defined in the module name it is imported from. If *all_members* is True, document all members.

```
get_attr(obj, name, *defargs)
```

getattr() override for types such as Zope interfaces.

get_doc()

Decode and return lines of the docstring(s) for the object.

When it returns None, autodoc-process-docstring will not be called for this object.

get_object_members(want_all)

Return $(members_c heck_module, members)$ where members is a list of (membername, member) pairs of the members of self.object.

If want_all is True, return all members. Else, only return those members given by self.options.members (which may also be None).

get_real_modname()

Get the real module name of an object to document.

It can differ from the name of the module through which the object was imported.

get_sourcename()

import_object(raiseerror=False)

Import the object given by self.modname and self.objpath and set it as self.object.

Returns True if successful, False if an error occurred.

member_order = 0

order if autodoc_member_order is set to 'groupwise'

objtype = 'object'

name by which the directive is called (auto...) and the default generated directive name

```
option_spec: Dict[str, Callable[[str], Any]] = {'noindex': <function bool_option>}
```

parse_name()

Determine what module to import and what attribute to document.

Returns True and sets self.modname, self.objpath, self.fullname, self.args and self.retann if parsing and resolving was successful.

priority = 0

priority if multiple documenters return True from can_document_member

process_doc(docstrings)

Let the user process the docstrings before adding them.

resolve_name(modname, parents, path, base)

Resolve the module and name of the object to document given by the arguments and the current module/class.

Must return a pair of the module name and a chain of attributes; for example, it would return ('zipfile', ['ZipFile', 'open']) for the zipfile.ZipFile.open method.

sort_members(documenters, order)

Sort the given member list.

titles_allowed = False

true if the generated content may contain titles

class sage_docbuild.ext.sage_autodoc.ExceptionDocumenter(*args: Any)

Bases: ClassDocumenter

Specialized ClassDocumenter subclass for exceptions.

```
classmethod can_document_member(member, membername, isattr, parent)
     member_order = 10
          order if autodoc_member_order is set to 'groupwise'
     objtype = 'exception'
          name by which the directive is called (auto...) and the default generated directive name
     priority = 10
          priority if multiple documenters return True from can_document_member
class sage_docbuild.ext.sage_autodoc.FunctionDocumenter(directive: DocumenterBridge, name: str,
                                                                 indent: str = ")
     Bases: DocstringSignatureMixin, ModuleLevelDocumenter
     Specialized Documenter subclass for functions.
     add_directive_header(sig)
     annotate_to_first_argument(func, typ)
          Annotate type hint to the first argument of function if needed.
     classmethod can_document_member(member, membername, isattr, parent)
     document_members(all_members=False)
     format_args(**kwargs)
     format_signature(**kwargs)
     member order = 30
          order if autodoc member order is set to 'groupwise'
     merge_default_value(actual, overload)
          Merge default values of actual implementation to the overload variants.
     objtype = 'function'
          name by which the directive is called (auto...) and the default generated directive name
class sage_docbuild.ext.sage_autodoc.GenericAliasMixin
     Bases: DataDocumenterMixinBase
     Mixin for DataDocumenter and AttributeDocumenter to provide the feature for supporting GenericAliases.
     should_suppress_directive_header()
     update_content(more content)
sage_docbuild.ext.sage_autodoc.INSTANCEATTR = <object object>
     The base class of the class hierarchy.
     When called, it accepts no arguments and returns a new featureless instance that has no instance attributes and
     cannot be given any.
class sage_docbuild.ext.sage_autodoc.MethodDocumenter(directive: DocumenterBridge, name: str,
                                                               indent: str = ")
     Bases: {\it DocstringSignatureMixin, ClassLevelDocumenter}
     Specialized Documenter subclass for methods (normal, static and class).
```

```
add_directive_header(sig)
     annotate_to_first_argument(func, typ)
          Annotate type hint to the first argument of function if needed.
     classmethod can_document_member(member, membername, isattr, parent)
     directivetype = 'method'
     document_members(all_members=False)
     format_args(**kwargs)
     get_doc()
     import_object(raiseerror=False)
     member_order = 50
          order if autodoc_member_order is set to 'groupwise'
     merge_default_value(actual, overload)
          Merge default values of actual implementation to the overload variants.
     objtype = 'method'
          name by which the directive is called (auto...) and the default generated directive name
     priority = 1
          priority if multiple documenters return True from can_document_member
class sage_docbuild.ext.sage_autodoc.ModuleDocumenter(*args: Any)
     Bases: Documenter
     Specialized Documenter subclass for modules.
     add_content(more_content)
     add_directive_header(sig)
     classmethod can_document_member(member, membername, isattr, parent)
     content_indent = ''
          indentation by which to indent the directive content
     get_module_members()
          Get members of target module.
     get_object_members(want_all)
     import_object(raiseerror=False)
     objtype = 'module'
          name by which the directive is called (auto...) and the default generated directive name
```

```
option_spec: Dict[str, Callable[[str], Any]] = {'deprecated': <function</pre>
     bool_option>, 'exclude-members': <function exclude_members_option>,
     'ignore-module-all': <function bool_option>, 'imported-members': <function
     bool_option>, 'inherited_members': <function inherited_members_option>,
     'member-order': <function member_order_option>, 'members': <function</pre>
     members_option>, 'no-value': <function bool_option>, 'noindex': <function
     bool_option>, 'platform': <function identity>, 'private-members': <function
     members_option>, 'show-inheritance': <function bool_option>, 'special-members':
     <function members_option>, 'synopsis': <function identity>, 'undoc-members':
     <function bool_option>}
     parse_name()
     resolve_name(modname, parents, path, base)
     sort_members(documenters, order)
     titles_allowed = True
          true if the generated content may contain titles
class sage_docbuild.ext.sage_autodoc.ModuleLevelDocumenter(directive: DocumenterBridge, name:
                                                                 str, indent: str = "
     Bases: Documenter
     Specialized Documenter subclass for objects on module level (functions, classes, data/constants).
     resolve_name(modname, parents, path, base)
class sage_docbuild.ext.sage_autodoc.NewTypeAttributeDocumenter(directive: DocumenterBridge,
                                                                      name: str, indent: str = ")
     Bases: AttributeDocumenter
     Specialized Documenter subclass for NewTypes.
     Note: This must be invoked before MethodDocumenter because NewType is a kind of function object.
     classmethod can_document_member(member, membername, isattr, parent)
     directivetype = 'attribute'
     objtype = 'newvarattribute'
          name by which the directive is called (auto...) and the default generated directive name
     priority = 2
          priority if multiple documenters return True from can document member
class sage_docbuild.ext.sage_autodoc.NewTypeDataDocumenter(directive: DocumenterBridge, name:
                                                                 str, indent: str = ")
     Bases: DataDocumenter
     Specialized Documenter subclass for NewTypes.
     Note: This must be invoked before FunctionDocumenter because NewType is a kind of function object.
     classmethod can_document_member(member, membername, isattr, parent)
     directivetype = 'data'
```

```
objtype = 'newtypedata'
          name by which the directive is called (auto...) and the default generated directive name
     priority = 1
          priority if multiple documenters return True from can_document_member
class sage_docbuild.ext.sage_autodoc.NewTypeMixin
     Bases: DataDocumenterMixinBase
     Mixin for DataDocumenter and AttributeDocumenter to provide the feature for supporting NewTypes.
     should_suppress_directive_header()
     update_content(more content)
class sage_docbuild.ext.sage_autodoc.NonDataDescriptorMixin
     Bases: DataDocumenterMixinBase
     Mixin for AttributeDocumenter to provide the feature for supporting non data-descriptors.
     Note: This mix-in must be inherited after other mix-ins. Otherwise, docstring and :value: header will be
     suppressed unexpectedly.
     get_doc()
     import_object(raiseerror=False)
     should_suppress_value_header()
class sage_docbuild.ext.sage_autodoc.ObjectMember(name: str, obj: Any, **kwargs: Any)
     Bases: tuple
     A member of object.
     This is used for the result of Documenter.get_object_members() to represent each member of the object.
     Note: An instance of this class behaves as a tuple of (name, object) for compatibility to old Sphinx. The behavior
     will be dropped in the future. Therefore extensions should not use the tuple interface.
class sage_docbuild.ext.sage_autodoc.Options
     Bases: dict
     A dict/attribute hybrid that returns None on nonexisting keys.
     copy()
class sage_docbuild.ext.sage_autodoc.PropertyDocumenter(directive: DocumenterBridge, name: str,
                                                                 indent: str = "
     Bases: DocstringStripSignatureMixin, ClassLevelDocumenter
     Specialized Documenter subclass for properties.
     add_directive_header(sig)
     classmethod can_document_member(member, membername, isattr, parent)
     document_members(all_members=False)
```

```
get_real_modname()
     import_object(raiseerror=False)
          Check the exisitence of uninitialized instance attribute when failed to import the attribute.
     member order = 60
          order if autodoc_member_order is set to 'groupwise'
     objtype = 'property'
          name by which the directive is called (auto...) and the default generated directive name
     priority = 11
          priority if multiple documenters return True from can_document_member
class sage_docbuild.ext.sage_autodoc.RuntimeInstanceAttributeMixin
     Bases: DataDocumenterMixinBase
     Mixin for AttributeDocumenter to provide the feature for supporting runtime instance attributes (that are defined
     in __init__() methods with doc-comments).
     Example:
          class Foo:
              def init (self):
                  self.attr = None #: This is a target of this mix-in.
     RUNTIME_INSTANCE_ATTRIBUTE
     get_doc()
     import_object(raiseerror=False)
          Check the existence of runtime instance attribute after failing to import the attribute.
     is_runtime_instance_attribute(parent)
          Check the subject is an attribute defined in __init__().
     is_runtime_instance_attribute_not_commented(parent)
          Check the subject is an attribute defined in __init__() without comment.
     should_suppress_value_header()
class sage_docbuild.ext.sage_autodoc.SlotsMixin
     Bases: DataDocumenterMixinBase
     Mixin for AttributeDocumenter to provide the feature for supporting slots .
     get_doc()
     import_object(raiseerror=False)
     isslotsattribute()
          Check the subject is an attribute in __slots__.
     should_suppress_value_header()
class sage_docbuild.ext.sage_autodoc.TypeVarMixin
     Bases: DataDocumenterMixinBase
     Mixin for DataDocumenter and AttributeDocumenter to provide the feature for supporting TypeVars.
```

```
get_doc()
     should_suppress_directive_header()
     update_content(more_content)
class sage_docbuild.ext.sage_autodoc.UninitializedGlobalVariableMixin
     Bases: DataDocumenterMixinBase
     Mixin for DataDocumenter to provide the feature for supporting uninitialized (type annotation only) global vari-
     ables.
     get_doc()
     import_object(raiseerror=False)
     should_suppress_value_header()
class sage_docbuild.ext.sage_autodoc.UninitializedInstanceAttributeMixin
     Bases: DataDocumenterMixinBase
     Mixin for AttributeDocumenter to provide the feature for supporting uninitialized instance attributes (PEP-526
     styled, annotation only attributes).
     Example:
          class Foo:
              attr: int #: This is a target of this mix-in.
     get_doc()
     import_object(raiseerror=False)
          Check the exisitence of uninitialized instance attribute when failed to import the attribute.
     is_uninitialized_instance_attribute(parent)
          Check the subject is an annotation only attribute.
     should_suppress_value_header()
sage_docbuild.ext.sage_autodoc.annotation_option(arg)
sage_docbuild.ext.sage_autodoc.autodoc_attrgetter(app, obj, name, *defargs)
     Alternative getattr() for types
sage_docbuild.ext.sage_autodoc.between(marker, what=None, keepempty=False, exclude=False)
     Return a listener that either keeps, or if exclude is True excludes, lines between lines that match the marker
     regular expression. If no line matches, the resulting docstring would be empty, so no change will be made unless
     keepempty is true.
     If what is a sequence of strings, only docstrings of a type in what will be processed.
sage_docbuild.ext.sage_autodoc.bool_option(arg)
     Used to convert flag options to auto directives. (Instead of directives.flag(), which returns None).
sage_docbuild.ext.sage_autodoc.class_doc_from_option(arg)
     Used to convert the :class-doc-from: option to autoclass directives.
```

```
sage_docbuild.ext.sage_autodoc.cut_lines(pre, post=0, what=None)
     Return a listener that removes the first pre and last post lines of every docstring. If what is a sequence of strings,
     only docstrings of a type in what will be processed.
     Use like this (e.g. in the setup() function of conf.py):
     from sphinx.ext.autodoc import cut_lines
     app.connect('autodoc-process-docstring', cut_lines(4, what=['module']))
     This can (and should) be used in place of automodule_skip_lines.
sage_docbuild.ext.sage_autodoc.exclude_members_option(arg)
     Used to convert the :exclude-members: option.
sage_docbuild.ext.sage_autodoc.getdoc(obj, *args, **kwargs)
sage_docbuild.ext.sage_autodoc.identity(x)
sage_docbuild.ext.sage_autodoc.inherited_members_option(arg)
     Used to convert the :inherited-members: option to auto directives.
sage_docbuild.ext.sage_autodoc.member_order_option(arg)
     Used to convert the :member-order: option to auto directives.
sage_docbuild.ext.sage_autodoc.members_option(arg)
     Used to convert the :members: option to auto directives.
sage_docbuild.ext.sage_autodoc.merge_members_option(options)
     Merge :private-members: and :special-members: options to the :members: option.
sage_docbuild.ext.sage_autodoc.py_ext_sig_re = re.compile('^ ([\\w.]+::)? # explicit
module name\n ([\\w.]+\\.)? # module and/or class name(s)\n (\\w+) \\s* # thing name\n
(?: \\((.*)\\) , re.VERBOSE)
     extended signature RE: with explicit module name separated by ::.
```

2.3 Sage multidocs extension

sage_docbuild.ext.sage_autodoc.setup(app)

The goal of this extension is to manage a multi-documentation in Sphinx. To be able to compile Sage's huge documentation in parallel, the documentation is cut into a bunch of independent documentations called "sub-docs", which are compiled separately. There is a master document which points to all the sub-docs. The intersphinx extension ensures that the cross-link between the sub-docs are correctly resolved. However some work is needed to build a global index. This is the goal of the multidocs extension.

More precisely this extension ensures the correct merging of

- the todo list if this extension is activated
- · the python indexes
- the list of python modules
- the javascript index
- · the citations

sage_docbuild.ext.multidocs.citation_dir(app)

```
sage_docbuild.ext.multidocs.fetch_citation(app, env)
```

Fetch the global citation index from the refman to allow for cross references.

sage_docbuild.ext.multidocs.fix_path_html(app, pagename, templatename, ctx, event_arg)

Fix the context so that the files

- search.html
- genindex.html
- py-modindex.html

point to the right place, that is in reference/instead of reference/subdocument.

```
sage_docbuild.ext.multidocs.get_env(app, curdoc)
```

Get the environment of a sub-doc from the pickle

```
sage_docbuild.ext.multidocs.get_js_index(app, curdoc)
```

Get the JS index of a sub-doc from the file

```
sage_docbuild.ext.multidocs.init_subdoc(app)
```

Init the merger depending on if we are compiling a sub-doc or the master doc itself.

```
sage_docbuild.ext.multidocs.merge_environment(app, env)
```

Merge the following attributes of the sub-docs environment into the main environment:

- titles Titles
- todo_all_todos todo's
- indexentries global python index
- all_docs needed by the js index
- citations citations
- domaindata['py']['modules'] list of python modules

```
sage_docbuild.ext.multidocs.merge_js_index(app)
```

Merge the JS indexes of the sub-docs into the main JS index

sage_docbuild.ext.multidocs.setup(app)

sage_docbuild.ext.multidocs.write_citations(app, citations)

Pickle the citation in a file.

PYTHON MODULE INDEX

S

```
sage_docbuild.__main__, 1
sage_docbuild.build_options, 8
sage_docbuild.builders, 3
sage_docbuild.conf, 9
sage_docbuild.ext.inventory_builder, 13
sage_docbuild.ext.multidocs, 26
sage_docbuild.ext.sage_autodoc, 14
sage_docbuild.sphinxbuild, 8
sage_docbuild.utils, 10
```

30 Python Module Index

INDEX

A		method), 20		
add_content() (sage_docbuild.ext.sage_autodoc.Attribut	eBBUUnter	e _e to_first_arg	ument()	
method). 14		(sage_aocouna.ex	t.sage_autodoc.Me	ethodDocumenter
add_content() (sage_docbuild.ext.sage_autodoc.ClassDemethod), 15	ocumenter annotat	.method),21 ion_option()	(in	module
add_content() (sage_docbuild.ext.sage_autodoc.DataDo	cumenter	sage_docbuild.ext	.sage_autodoc), 25	5
method), 16	ansi_co	lor (sage_docbuild attribute), 8	d.sphinxbuild.Sage	SphinxLogger
<pre>add_content() (sage_docbuild.ext.sage_autodoc.Docume</pre>	ansi_re	set (sage_docbuil	d.sphinxbuild.Sage	SphinxLogger
$\verb add_content() (sage_docbuild.ext.sage_autodoc.Module.ext.sage_autodoc.Mod$	Document	_e qttribute), 8		
method), 21	Attribu	tebocumenter	(class	in
<pre>add_directive_header()</pre>			.sage_autodoc), 14	1
(sage_docbuild.ext.sage_autodoc.AttributeDocun	<i>₁enter</i> _re	st_filename()		
method), 14		(sage_aocouna.or	ıilders.ReferenceSı	ıbBuilder
<pre>add_directive_header()</pre>	_	method), 5		
(sage_docbuild.ext.sage_autodoc.ClassDocument	_{ter} utodoc	_attrgetter()	(in	module
method), 15		sage_docbuild.ext	.sage_autodoc), 25	5
add_directive_header()	D			
(sage_docbuild.ext.sage_autodoc.DataDocument	eP			
method), 16	between	() (in module sage	_docbuild.ext.sage	_autodoc),
add_directive_header()		25		
(sage_docbuild.ext.sage_autodoc.Documenter	bool_op		(in	module
method), 17		sage_docbuild.ext	.sage_autodoc), 25	5
add_directive_header()		any() (in module		
(sage_docbuild.ext.sage_autodoc.FunctionDocun			sage_docbuild.util.	s), 10
method), 20	build_o	ther_doc()	(in	module
add_directive_header()		sage_docbuild.bu		
(sage_docbuild.ext.sage_autodoc.MethodDocume method), 20	<i>h</i> wild_r	ef_doc() (in mod 7	dule sage_docbuile	d.builders),
add_directive_header()	builder	_helper() (in mo	dule sage_docbuild	d.builders),
(sage_docbuild.ext.sage_autodoc.ModuleDocume	enter	7		
method), 21	\circ			
add_directive_header()	C			
(sage_docbuild.ext.sage_autodoc.PropertyDocun	ı <i>en</i> wehe_f	ilename()(sage_	docbuild.builders	ReferenceSubBuilde
method), 23		method), 6		
add_line() (sage_docbuild.ext.sage_autodoc.Documenter method), 18	call_in	tersphinx() (in	module sage_doch	puild.conf),
<pre>add_page_context() (in module sage_docbuild.conf),</pre>	can_doc	ument_member()		
9			t.sage_autodoc.At	tributeDocumenter
AllBuilder (class in sage_docbuild.builders), 4		class method), 14	U –	
annotate_to_first_argument()	can_doc	ument_member()		
(sage_docbuild.ext.sage_autodoc.FunctionDocun			t.sage_autodoc.Cl	assDocumenter

	class method), 15		attribute), 18
	ument_member()	content	_indent(sage_docbuild.ext.sage_autodoc.ModuleDocumenter
	(sage_docbuild.ext.sage_autodoc.DataDocum		attribute), 21
	class method), 16	copy()	(sage_docbuild.ext.sage_autodoc.Options
	ument_member()	copy	method), 23
	(sage_docbuild.ext.sage_autodoc.Documenter	cut_lin	
	class method), 18	cuc_IIII	sage_docbuild.ext.sage_autodoc), 25
	ument_member()		suse_uocomu.c.n.suse_umouoc), 25
	(sage_docbuild.ext.sage_autodoc.ExceptionDo	ocumanter	
	class method), 19		
	ument_member()	DataDoc	`
	(sage_docbuild.ext.sage_autodoc.FunctionDoc	cumantara	sage_docbuild.ext.sage_autodoc), 16
	class method), 20	итыа тарос	
	ument_member()		sage_docbuild.ext.sage_autodoc), 16
		debug_1	nf() (in module sage_docbuild.conf), 9
	(sage_docbuild.ext.sage_autodoc.MethodDoct class method), 21	^{™e} B€corat	· ·
	ument_member()		sage_docbuild.ext.sage_autodoc), 17
		directi	vetype(sage_docbuild.ext.sage_autodoc.MethodDocumenter
	(sage_docbuild.ext.sage_autodoc.ModuleDoct		attribute), 21
	class method), 21	directi	vetype(sage_docbuild.ext.sage_autodoc.NewTypeAttributeDocur
can_doci	ument_member()	" D	attribute), 22
	(sage_aocbuila.ext.sage_autoaoc.NewTypeAtt	rıbu ણ મહત્યા મ	&₩€\$pe (sage_docbuild.ext.sage_autodoc.NewTypeDataDocument
	class method), 22		attribute), 22
can_doci	ument_member()	DocBuil	der (class in sage_docbuild.builders), 4
	(sage_docbuild.ext.sage_autodoc.NewTypeDa	taD ₽∂⊎₽€ ₽₽₽	
	class method), 22		sage_docbuild.ext.sage_autodoc), 17
	ument_member()	Docstri	ngStripSignatureMixin (class in
	(sage_docbuild.ext.sage_autodoc.PropertyDoc	cumenter	sage_docbuild.ext.sage_autodoc), 17
	class method), 23	documen	$\verb t_members() (sage_docbuild.ext.sage_autodoc.AttributeDocument) \\$
changes	. •	er .	method), 14
	method), 4	documen	$\verb t_members() (sage_docbuild.ext.sage_autodoc.ClassDocumenter) \\$
	odule() (sage_docbuild.ext.sage_autodoc.Doc	cumenter	method), 15
	method), 18	documen	$\verb t_members() (sage_docbuild.ext.sage_autodoc.DataDocumenter) $
	ested_class_picklability() (in modul	le	method), 16
	sage_docbuild.conf), 9		t_members()(sage_docbuild.ext.sage_autodoc.Documenter
citation	•	le	method), 18
	sage_docbuild.ext.multidocs), 26		t_members()(sage_docbuild.ext.sage_autodoc.FunctionDocume.
	oc_from_option() (in modul	le	method), 20
	sage_docbuild.ext.sage_autodoc), 25	documen	t_members()(sage_docbuild.ext.sage_autodoc.MethodDocument
ClassDo	`	'n	method), 21
	sage_docbuild.ext.sage_autodoc), 15	documen	t_members()(sage_docbuild.ext.sage_autodoc.PropertyDocument
	`	'n	method), 23
	sage_docbuild.ext.sage_autodoc), 15	Documen	ter (class in sage_docbuild.ext.sage_autodoc),
	$(sage_docbuild.builders.DocBuilder\ method),$		17
clean()	(sage_docbuild.builders.WebsiteBuilde	cr documen	ters(sage_docbuild.ext.sage_autodoc.Documenter
	method), 7		property), 18
	uto() (sage_docbuild.builders.ReferenceSubB		
	method), 6	E	
close()	$(sage_docbuild.sphinxbuild.SageSphinxLogge$	r encodin	g (sage_docbuild.sphinxbuild.SageSphinxLogger
	method), 8	chedum	attribute), 8
closed	$(sage_docbuild.sphinxbuild.SageSphinxLogge$	env (saa	e_docbuild.ext.sage_autodoc.DataDocumenterMixinBase
	attribute), 8		17
config(s	sage_docbuild.ext.sage_autodoc.DataDocumer	ıterMixinBaş	attribute), 16 gage_docbuild.ext.inventory_builder.InventoryBuilder
	attribute), 16	chiio (attribute), 13
content	indent (sage dochuild ext sage autodoc Doc	rumenter	ши тоте), 13

```
exc (sage docbuild.utils.RemoteExceptionWrapper at-
                                                                                                                                                                                                                                                                                                                             generate() (sage_docbuild.ext.sage_autodoc.Documenter
                                                     tribute), 10
                                                                                                                                                                                                                                                                                                                                                                                   method), 18
ExceptionDocumenter
                                                                                                                                                                                                                                                                                                                             GenericAliasMixin
                                                                                                                                                                                                      (class
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (class
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   in
                                                     sage_docbuild.ext.sage_autodoc), 19
                                                                                                                                                                                                                                                                                                                                                                                   sage_docbuild.ext.sage_autodoc), 20
exclude_members_option()
                                                                                                                                                                                                                (in
                                                                                                                                                                                                                                                                          module
                                                                                                                                                                                                                                                                                                                             get_all_documents()
                                                    sage docbuild.ext.sage autodoc), 26
                                                                                                                                                                                                                                                                                                                                                                                   (sage docbuild.builders.AllBuilder method), 4
                                                                                                                                                                                                                                                                                                                              get_all_documents()
F
                                                                                                                                                                                                                                                                                                                                                                                    (sage_docbuild.builders.ReferenceBuilder
                                                                                                                                                                                                                                                                                                                                                                                   method), 5
 fetch_citation()
                                                                                                                                                                                                                                                                          module
                                                                                                                                                                                                                                                                                                                              get_all_included_modules()
                                                      sage_docbuild.ext.multidocs), 26
                                                                                                                                                                                                                                                                                                                                                                                  (sage\_docbuild.builders.ReferenceSubBuilder
fetch_inventory() (sage_docbuild.__main__.IntersphinxCache
                                                                                                                                                                                                                                                                                                                                                                                   method), 6
                                                    method), 2
filter\_members() \ (sage\_docbuild.ext.sage\_autodoc.DocuMetriell\_rst\_files()
                                                                                                                                                                                                                                                                                                                                                                                    (sage_docbuild.builders.ReferenceSubBuilder
                                                     method), 18
                                                                                                                                                                                                                                                                                                                                                                                    method), 6
find_sage_dangling_links()
                                                                                                                                                                                                                        (in
                                                                                                                                                                                                                                                                          module
                                                                                                                                                                                                                                                                                                                              get_attr() (sage_docbuild.ext.sage_autodoc.Documenter
                                                     sage_docbuild.conf), 9
                                                                                                                                                                                                                                                                                                                                                                                   method), 18
finish() (sage_docbuild.ext.inventory_builder.InventoryBuilder
                                                                                                                                                                                                                                                                                                                              get_attribute_comment()
                                                     method), 13
                                                                                                                                                                                                                                                                                                                                                                                    (sage_docbuild.ext.sage_autodoc.AttributeDocumenter
fix_path_html()
                                                                                                                                                                                  (in
                                                                                                                                                                                                                                                                          module
                                                                                                                                                                                                                                                                                                                                                                                   method), 14
                                                    sage_docbuild.ext.multidocs), 27
                                                                                                                                                                                                                                                                                                                             get_builder() (in module sage_docbuild.builders), 7
flush() (sage docbuild.sphinxbuild.SageSphinxLogger
                                                                                                                                                                                                                                                                                                                              get_cache() (sage_docbuild.builders.ReferenceSubBuilder
                                                     method), 8
                                                                                                                                                                                                                                                                                                                                                                                   method), 6
format (sage_docbuild.ext.inventory_builder.InventoryBuilder
                                                                                                                                                                                                                                                                                                                             get_canonical_fullname()
                                                     attribute), 13
{\tt format\_args()} \ (sage\_docbuild.ext.sage\_autodoc.ClassDocumenter\ (sage\_autodocbuild.ext.sage\_autodoc.ClassDocumenter\ (sage\_autodocbuild.ext.sage\_autodoc.ClassDocumenter\ (sage\_a
                                                                                                                                                                                                                                                                                                                                                                                   method), 15
                                                      method), 15
\textbf{format\_args()} \ (\textit{sage\_docbuild.ext.sage\_autodoc.Decorate} \ \textbf{Poddffemerage\_docbuild.ext.sage\_autodoc.AttributeDocumenter} \ \textbf{format\_args()} \ (\textit{sage\_docbuild.ext.sage\_autodoc.Decorate} \ \textbf{Poddffemerage\_docbuild.ext.sage\_autodoc.AttributeDocumenter} \ \textbf{format\_args()} \ (\textit{sage\_docbuild.ext.sage\_autodoc.Decorate} \ \textbf{format\_args()} \ (\textit{sage\_do
                                                                                                                                                                                                                                                                                                                                                                                   method), 14
                                                    method), 17
\verb|format_args()| (sage\_docbuild.ext.sage\_autodoc.Docume \textit{Me} \ddagger\_\texttt{doc()}) (sage\_docbuild.ext.sage\_autodoc.ClassDocumenter) \\
                                                                                                                                                                                                                                                                                                                                                                                    method), 15
                                                     method), 18
\textbf{format\_args()} \ (sage\_docbuild.ext.sage\_autodoc.Function \textbf{D} \\ \textbf{format\_args()} \ (sage\_docbuild.ext.sage\_autodoc.DataDocumenter) \\ \textbf{format\_args()} \ (sage\_docbuild.ext.sage\_au
                                                                                                                                                                                                                                                                                                                                                                                    method), 16
                                                    method), 20
format\_args() \ (sage\_docbuild.ext.sage\_autodoc.MethodDBeturberGe) \ (sage\_docbuild.ext.sage\_autodoc.DocstringSignatureMixinDBeturberGe) \ (sage\_autodoc.DocstringSignatureMixinDBeturberGe) \ (sage\_autodoc.DocstringSignatureMixinDBeturberGe) \ (sage\_autodoc.DocstringSignatureMixinDBeturberGe) \
                                                                                                                                                                                                                                                                                                                                                                                    method), 17
                                                    method), 21
                                                                                                                                                                                                                                                                         module get_doc() (sage_docbuild.ext.sage_autodoc.Documenter
format_columns()
                                                                                                                                                                                      (in
                                                                                                                                                                                                                                                                                                                                                                                   method), 18
                                                     sage_docbuild.__main__), 2
\verb|format_name()| (sage\_docbuild.ext.sage\_autodoc.Docume \textit{Me}!\_\texttt{doc()}) (sage\_docbuild.ext.sage\_autodoc.MethodDocumenter) (sage\_docbuild.ext.sage\_autodoc.MethodDocumenter) (sage\_docbuild.ext.sage\_autodoc.Documenter) (sage\_docbuild.ext.sage\_autodoc.MethodDocumenter) (sage\_autodoc.MethodDocumenter) (sage\_autodoc.Method.Method.MethodDocumenter) (sage\_autodoc.Method.Method.Method.Method.Method.Meth
                                                                                                                                                                                                                                                                                                                                                                                    method), 21
                                                    method), 18
{\tt format\_signature()} \ (sage\_docbuild.ext.sage\_autodoc.CDstDdefine hierse\_docbuild.ext.sage\_autodoc.NonDataDescriptorMixinal properties of the control o
                                                                                                                                                                                                                                                                                                                                                                                   method), 23
                                                     method), 15
 format_signature() (sage_docbuild.ext.sage_autodoc.Dsestriflessign (sage_docbuild.ext.sage_autodoc.RuntimeInstanceAttributeMix
                                                                                                                                                                                                                                                                                                                                                                                    method), 24
                                                    method), 17
format_signature() (sage_docbuild.ext.sage_autodoc.D&estringshipsignature() (sage_docbuild.ext.sage_autodoc.SlotsMixin
                                                                                                                                                                                                                                                                                                                                                                                    method), 24
                                                     method), 17
\verb|format_signature()| (sage\_docbuild.ext.sage\_autodoc.D&\texttt{etm} \texttt{eqc}()) (sage\_docbuild.ext.sage\_autodoc.TypeVarMixin) (sage\_autodoc.TypeVarMixin) (sage\_autodoc.Typ
                                                                                                                                                                                                                                                                                                                                                                                   method), 24
                                                    method), 18
{\tt format\_signature()} \ (sage\_docbuild.ext.sage\_autodoc.Fightick Procurse regular docbuild.ext.sage\_autodoc.Uninitialized Global Variable No. 1995. A signature () (sage\_docbuild.ext.sage\_autodoc.Fightick Procurse regular docbuild.ext.sage\_autodoc.Uninitialized Global Variable No. 1995. A signature () (sage\_docbuild.ext.sage\_autodoc.Fightick Procurse regular docbuild.ext.sage\_autodoc.Uninitialized Global Variable No. 1995. A signature () (sage\_docbuild.ext.sage\_autodoc.Fightick Procurse regular docbuild.ext.sage\_autodoc.Uninitialized Global Variable No. 1995. A signature () (sage\_docbuild.ext.sage\_autodoc.Fightick Procurse regular docbuild.ext.sage\_autodoc.Uninitialized Global Variable No. 1995. A signature () (sage\_docbuild.ext.sage\_autodoc.Uninitialized Global Variable No. 1995. A signature () (sage\_docbuild.ext.sage\_autodoc.Fightick Procurse regular docbuild.ext.sage\_autodoc.Uninitialized Global Variable No. 1995. A signature () (sage\_docbuild.ext.sage\_autodoc.Uninitialized Global Variable No. 1995. A signature () (sage\_autodoc.Uninitialized Global Variable () (sage\_autodoc.Uninitialized Global Variable () (sage\_autodoc.Uninitialized Global Variable () (sage\_autodoc.Uninitialized Global Variable () (sage\_autodoc.Uninitialized Global Variable
                                                                                                                                                                                                                                                                                                                                                                                   method), 25
                                                     method), 20
                                                                                                                                                                                                                                                                                                                        get_doc() (sage_docbuild.ext.sage_autodoc.UninitializedInstanceAttribut
FunctionDocumenter
                                                                                                                                                                                                  (class
                                                                                                                                                                                                                                                                                                                                                                                   method), 25
                                                    sage_docbuild.ext.sage_autodoc), 20
                                                                                                                                                                                                                                                                                                                              get_documents() (in module sage_docbuild.builders),
G
\texttt{generate()} \ (\textit{sage\_docbuild.ext.sage\_autodoc.ClassDocumenter\_env()} \ (\textit{in module sage\_docbuild.ext.multidocs}), 27 \\
                                                                                                                                                                                                                                                                                                                              get_formats() (in module sage docbuild. main ), 2
                                                     method), 15
```

<pre>get_js_index()</pre>	(in	module		method), 15			
sage_docbuild.	ext.multidocs), 27		getdoc() (in module sage	_docbuild.ext.sag	e_autodoc),	
<pre>get_modified_module</pre>	s()			26			
(sage_docbuild	l.builders.ReferenceSu	bBuilder					
method), 6			Н				
<pre>get_module_comment(</pre>)		help co	mmands()	(in	module	
_	l.ext.sage_autodoc.Da	taDocument		sage_docbuildn	,		
method), 16	0 =			scription()	(in	module	
<pre>get_module_docstrin</pre>	a title()			sage_docbuildn	`	mounte	
=	l.builders.ReferenceSu	bBuilder	helm do	cuments()	(in	module	
method), 6			ncip_ao	sage_docbuildn	`	mounte	
<pre>get_module_members(</pre>)		haln av	amples()	(in	module	
_	l.ext.sage_autodoc.Mo	duleDocum		sage_docbuildn	`	тошие	
method), 21	.exi.suge_uiiouoe.mo	ашевосит		rmats() (in modu		main)	
get_modules() (sage_d	lochuild huilders Refer	renceSuhRui		imats() (in moan 2	ie sage_aocouita.	main),	
method), 6	ocouna.ounaers.Rejer	енсевиови		_	(alass	in.	
	modulos()		петр_ше	ssage_long	(class	in	
get_new_and_updated		la Davil d'an	1 1	sage_docbuildn			
	l.builders.ReferenceSu	рвинаеr	neip_me	ssage_short	(class	in	
method), 6				sage_docbuildn			
<pre>get_object_members(</pre>		ъ		age() (in module s			
	l.ext.sage_autodoc.Cla	issDocumen					
method), 15	_			sage_docbuild.buil			
<pre>get_object_members(</pre>			html()		build.builders.Wel	bsiteBuilder	
	l.ext.sage_autodoc.Do	cumenter		method), 7			
method), 19			htmlhel	p() (sage_a	docbuild.builders.	DocBuilder	
<pre>get_object_members(</pre>)			method), 4			
(sage_docbuild	l.ext.sage_autodoc.Mo	duleDocume	enter				
method), 21							
<pre>get_outdated_docs()</pre>			identit	v()	(in	module	
(sage_docbuild	l.ext.inventory_builder	:.InventoryBi	uilder	sage_docbuild.ext.	*		
method), 13			import	object()(<i>sage_da</i>			Documenter
<pre>get_overloaded_sign</pre>	atures()		p o _ c_	method), 14			
(sage_docbuild	l.ext.sage_autodoc.Cla	assDocumen	ter _{mnort}	ohiect()(sage da	ochuild ext sage a	autodoc ClassDoc	umenter
method), 15	•		Impor c_	method), 15	ocouna.cm.susc_c	iniodoc.CidssBoc	untertier
<pre>get_real_modname() (</pre>	sage docbuild.ext.sag	e autodoc.A	ttributeDo	Municuter (sage d	ochuild art saga	autodoc DataDoc	umantar
method), 14			Timpor t_	method), 16	ocouna.exi.sage_c	иноиос.ДиниДост	ımeniei
<pre>get_real_modname()(</pre>	sage dochuild.ext.sag	e autodoc.L)ataDocun	memen, 10 Manter+ () (agas 1.	a abuild out agas	autodo o Doouwow	4.04
method), 16			Tillpot c_	mathod) 10	ocouna.exi.sage_t	ишоаос.Доситен	iei
get_real_modname()(sage dochuild ext sag	e autodoc E	ocumente)	method), 19	1:1.14		
<i>method</i>), 19	suse_uocomua.cm.sus	c_amouoe.b	1mport	object()(sage_ac	ocouiia.ext.sage_c	аитоаос.метоаД	ocumenter
<pre>get_real_modname()(</pre>	sage dochuild ext sag	e autodoc P	ropertyDa	method), 21	1 11 .		
method), 23	suge_uoconna.cxi.sug	c_amoaoc.1	'import_	object() (sage_do	ocbuild.ext.sage_c	autodoc.ModuleD	ocumenter
	a dochuild art saga	autodos Dos	umantar	method), 21			
<pre>get_sourcename() (sage mathod) 10</pre>	ge_aocouna.exi.sage_c	ишошос.Дос	"Import_	object()(<i>sage_do</i>	ocbuild.ext.sage_c	autodoc.NonDatai	DescriptorN
method), 19	om+ ()			method), 23			
<pre>get_sphinx_environm</pre>		l. D:1 J	import_	object()(<i>sage_de</i>	ocbuild.ext.sage_c	autodoc.Propertyl	<i>Documenter</i>
_	l.builders.ReferenceSu	рвинаеr		method), 24			
method), 6	1 1 11	1 .11	<pre>import_</pre>	object()(<i>sage_de</i>	ocbuild.ext.sage_a	autodoc.RuntimeIi	ıstanceAttr
<pre>get_target_uri()(sag</pre>	ge_docbuild.ext.invent	ory_builder.	Inventory	BH16168d), 24			
method), 13			<pre>import_</pre>	object()(<i>sage_de</i>	ocbuild.ext.sage_c	autodoc.SlotsMixi	n
<pre>get_unincluded_modu</pre>				method), 24			
. •	l.builders.ReferenceSu	bBuilder	import_	object()(sage_de	ocbuild.ext.sage_a	autodoc.Uninitiali	zedGlobalV
method), 6			•	method), 25	~ ~		
<pre>get_variable_commen</pre>			import_	object()(<i>sage_do</i>	ocbuild.ext.sage	autodoc.Uninitiali	zedInstance
(sage_docbuila	l.ext.sage_autodoc.Cla	issDocumen	ter	method), 25	~ ~		

```
inherited_members_option()
                                            module
                                                     member_order(sage docbuild.ext.sage autodoc.PropertyDocumenter
         sage_docbuild.ext.sage_autodoc), 26
                                                              attribute), 24
init_subdoc()
                                                                                                  module
                            (in
                                            module
                                                     member_order_option()
                                                                                      (in
         sage_docbuild.ext.multidocs), 27
                                                              sage_docbuild.ext.sage_autodoc), 26
INSTANCEATTR
                            (in
                                            module
                                                     members_option()
                                                                                                  module
        sage docbuild.ext.sage autodoc), 20
                                                              sage docbuild.ext.sage autodoc), 26
IntersphinxCache (class in sage docbuild. main ),
                                                     merge_default_value()
                                                              (sage docbuild.ext.sage autodoc.FunctionDocumenter
inventory()
                  (sage docbuild.builders.DocBuilder
                                                              method), 20
        method), 4
                                                     merge_default_value()
InventoryBuilder
                               (class
                                                 in
                                                              (sage_docbuild.ext.sage_autodoc.MethodDocumenter
         sage_docbuild.ext.inventory_builder), 13
                                                              method), 21
is_function_or_method()
                                                                                                  module
                                                     merge_environment()
                                                                                     (in
         (sage_docbuild.ext.sage_autodoc.AttributeDocumenter
                                                              sage_docbuild.ext.multidocs), 27
         static method), 14
                                                     merge_js_index()
                                                                                                  module
                                                                                    (in
is_runtime_instance_attribute()
                                                              sage_docbuild.ext.multidocs), 27
         (sage_docbuild.ext.sage_autodoc.RuntimeInstancenterrigbunedthbers_option()
                                                                                                  module
                                                                                       (in
         method), 24
                                                              sage docbuild.ext.sage autodoc), 26
is_runtime_instance_attribute_not_commented() MethodDocumenter
                                                                                                      in
                                                                                    (class
         (sage docbuild.ext.sage autodoc.RuntimeInstanceAttributeMixin docbuild.ext.sage autodoc), 20
        method), 24
                                                     mode (sage docbuild.sphinxbuild.SageSphinxLogger at-
is_uninitialized_instance_attribute()
                                                              tribute), 8
         (sage_docbuild.ext.sage_autodoc.UninitializedInstwordteAute:ilsweteMibiabuild.ext.sage_autodoc.DataDocumenterMixinBase
                                                              attribute), 16
        method), 25
isatty()(sage docbuild.sphinxbuild.SageSphinxLogger module
         method), 8
                                                         sage_docbuild.__main__, 1
isslotsattribute()(sage_docbuild.ext.sage_autodoc.SlotsMissinge_docbuild.build_options, 8
                                                         sage_docbuild.builders, 3
         method), 24
                                                         sage_docbuild.conf, 9
J
                                                         sage_docbuild.ext.inventory_builder, 13
                                                         sage_docbuild.ext.multidocs, 26
json() (sage_docbuild.builders.DocBuilder method), 4
                                                         sage_docbuild.ext.sage_autodoc, 14
                                                         sage_docbuild.sphinxbuild, 8
                                                         sage_docbuild.utils, 10
latex() (sage_docbuild.builders.DocBuilder method), 4
                                                     ModuleDocumenter
                                                                                     (class
                                                                                                       in
linkcheck()
                  (sage_docbuild.builders.DocBuilder
                                                              sage docbuild.ext.sage autodoc), 21
         method), 4
                                                     ModuleLevelDocumenter
                                                                                       (class
                                                                                                       in
                                                              sage_docbuild.ext.sage_autodoc), 22
M
main() (in module sage_docbuild.__main__), 3
                                                     Ν
member_order(sage_docbuild.ext.sage_autodoc.AttributeDocumenter
                                                     name (sage_docbuild.ext.inventory_builder.InventoryBuilder
         attribute), 14
                                                              attribute), 13
member_order(sage_docbuild.ext.sage_autodoc.ClassDocumenter
                                                     name (sage_docbuild.sphinxbuild.SageSphinxLogger at-
         attribute), 15
attribute), 16
(class
                                                                                                      in
        attribute), 19
{\tt member\_order} (sage\_docbuild.ext.sage\_autodoc.Exception\underline{D}oc\underline{u}menter] sage\_docbuild.ext.sage\_autodoc), 22
                                                     NewTypeDataDocumenter
                                                                                       (class
                                                                                                      in
         attribute), 20
\begin{tabular}{ll} member\_order (sage\_docbuild.ext.sage\_autodoc.FunctionDocumenter gage\_docbuild.ext.sage\_autodoc), 22 \\ attribute), 20 \\ \begin{tabular}{ll} NewTypeMixin & (class) \\ \end{tabular}
                                                                                                      in
member_order(sage_docbuild.ext.sage_autodoc.MethodDocumentersage_docbuild.ext.sage_autodoc), 23
                                                     nitpick_patch_config()
                                                                                                  module
                                                                                       (in
         attribute), 21
                                                              sage_docbuild.conf), 9
```

```
NonDataDescriptorMixin
                                      (class
                                                         parse_name() (sage docbuild.ext.sage autodoc.ModuleDocumenter
         sage docbuild.ext.sage autodoc), 23
                                                                   method), 22
                                                          pdf() (sage docbuild.builders.DocBuilder method), 5
\mathbf{O}
                                                                     (sage_docbuild.builders.ReferenceTopBuilder
                                                          pdf()
\verb"object" (sage\_docbuild.ext.sage\_autodoc.DataDocumenterMixinBase^{method}), 7 \\
                                                          pickle() (sage docbuild.builders.DocBuilder method),
          attribute), 16
ObjectMember
                               (class
                                                     in
                                                          prefix_len(sage docbuild.sphinxbuild.SageSphinxLogger
         sage_docbuild.ext.sage_autodoc), 23
{\tt objpath} (sage\_docbuild.ext.sage\_autodoc.DataDocumenter MixinBas {\it \it attribute}), 8
                                                          print_included_modules()
         attribute), 16
                                                                   (sage_docbuild.builders.ReferenceSubBuilder
objtype(sage docbuild.ext.sage autodoc.AttributeDocumenter
                                                                   method), 6
         attribute), 14
objtype (\textit{sage\_docbuild.ext.sage\_autodoc.ClassDocumenter} \texttt{print\_modified\_modules()}) \\
                                                                    (sage_docbuild.builders.ReferenceSubBuilder
         attribute), 15
                                                                   method), 6
objtype(sage docbuild.ext.sage autodoc.DataDocumenter
                                                          print_new_and_updated_modules()
         attribute), 16
                                                                   (sage_docbuild.builders.ReferenceSubBuilder
objtype(sage_docbuild.ext.sage_autodoc.DecoratorDocumenter
                                                                   method), 6
         attribute), 17
objtype \quad (\textit{sage\_docbuild.ext.sage\_autodoc.Documenter} \quad \texttt{print\_unincluded\_modules()}
                                                                    (sage docbuild.builders.ReferenceSubBuilder
         attribute), 19
                                                                   method), 6
\verb"objtype" (sage\_docbuild.ext.sage\_autodoc. Exception Documenter
                                                          priority(sage_docbuild.ext.sage_autodoc.AttributeDocumenter
          attribute), 20
                                                                    attribute), 15
objtype(sage_docbuild.ext.sage_autodoc.FunctionDocumenter
                                                          priority(sage docbuild.ext.sage autodoc.DataDocumenter
         attribute), 20
                                                                   attribute), 16
objtype(sage_docbuild.ext.sage_autodoc.MethodDocumenter
                                                          priority(sage_docbuild.ext.sage_autodoc.DecoratorDocumenter
          attribute), 21
                                                                    attribute), 17
objtype(sage docbuild.ext.sage autodoc.ModuleDocumenter
                                                          priority (sage_docbuild.ext.sage_autodoc.Documenter
         attribute), 21
objtype (sage_docbuild.ext.sage_autodoc.NewTypeAttributeDocumefteribute), 19
                                                          priority(sage_docbuild.ext.sage_autodoc.ExceptionDocumenter
          attribute), 22
\verb"objtype" (sage\_docbuild.ext.sage\_autodoc.NewTypeDataDocumenter {}^{attribute}), 20
                                                          \verb"priority" (sage\_docbuild.ext.sage\_autodoc.MethodDocumenter")
         attribute), 22
                                                                    attribute), 21
objtype(sage_docbuild.ext.sage_autodoc.PropertyDocumenter
                                                          \verb"priority" (sage\_docbuild.ext.sage\_autodoc.NewTypeAttributeDocumenter
         attribute), 24
\verb"option_spec" (sage\_docbuild.ext.sage\_autodoc. Attribute Documenter {\it attribute}), 22 \\
                                                          priority(sage_docbuild.ext.sage_autodoc.NewTypeDataDocumenter
         attribute), 14
                                                                   attribute), 23
\verb"option_spec" (sage\_docbuild.ext.sage\_autodoc.ClassDocumenter") \\
                                                          priority(sage_docbuild.ext.sage_autodoc.PropertyDocumenter
         attribute), 15
                                                                    attribute), 24
option_spec(sage_docbuild.ext.sage_autodoc.DataDocumenter
                                                          process_doc() (sage_docbuild.ext.sage_autodoc.Documenter
         attribute), 16
                                                                   method), 19
option_spec(sage_docbuild.ext.sage_autodoc.Documenter
                                                          PropertyDocumenter
                                                                                             (class
                                                                                                               in
         attribute), 19
\verb"option_spec" (sage\_docbuild.ext.sage\_autodoc.ModuleDocumenter "sage\_docbuild.ext.sage\_autodoc), 23 \\
                                                                                                          module
                                                          py_ext_sig_re
                                                                                         (in
         attribute), 21
                                                                   sage_docbuild.ext.sage_autodoc), 26
Options (class in sage docbuild.ext.sage autodoc), 23
original_exception(sage_docbuild.utils.WorkerDiedException
         attribute), 10
                                                          raise_errors() (sage_docbuild.sphinxbuild.SageSphinxLogger
Р
                                                                   method), 8
parent (sage_docbuild.ext.sage_autodoc.DataDocumenter Pressage Builder (class in sage_docbuild.builders), 5
                                                          ReferenceSubBuilder
                                                                                              (class
                                                                                                               in
          attribute), 17
                                                                    sage_docbuild.builders), 5
parse_name() (sage_docbuild.ext.sage_autodoc.Documenter
                                                                                              (class
                                                          ReferenceTopBuilder
                                                                                                               in
         method), 19
                                                                    sage_docbuild.builders), 7
```

RemoteException, 10	method), 17
RemoteExceptionWrapper (class in	<pre>should_suppress_directive_header()</pre>
sage_docbuild.utils), 10	(sage_docbuild.ext.sage_autodoc.GenericAliasMixin
${\tt resolve_name()} \ (sage_docbuild.ext.sage_autodoc.ClassLassLassLassLassLassLassLassLassLass$	LevelDocum neatko d), 20
method), 16	<pre>should_suppress_directive_header()</pre>
resolve_name() (sage_docbuild.ext.sage_autodoc.Documethod), 19	nenter (sage_docbuild.ext.sage_autodoc.NewTypeMixin method), 23
resolve_name() (sage_docbuild.ext.sage_autodoc.Modul	ethoundersuppress_directive_header()
method), 22	(sage_docbuild.ext.sage_autodoc.TypeVarMixin
${\tt resolve_name()} \ (sage_docbuild.ext.sage_autodoc.Moduli$	eLevelDoc unathwe t), 25
method), 22	<pre>should_suppress_value_header()</pre>
<pre>runsphinx() (in module sage_docbuild.sphinxbuild), 8</pre>	$(sage_docbuild.ext.sage_autodoc.AttributeDocumenter$
RUNTIME_INSTANCE_ATTRIBUTE	method), 15
(sage_docbuild.ext.sage_autodoc.RuntimeInstance	
attribute), 24	(sage_docbuild.ext.sage_autodoc.DataDocumenter
RuntimeInstanceAttributeMixin (class in	method), 16
sage_docbuild.ext.sage_autodoc), 24	<pre>should_suppress_value_header()</pre>
S	(sage_docbuild.ext.sage_autodoc.DataDocumenterMixinBase method), 17
sage_docbuildmain	<pre>should_suppress_value_header()</pre>
module, 1	$(sage_docbuild.ext.sage_autodoc.NonDataDescriptor Mixin$
<pre>sage_docbuild.build_options</pre>	method), 23
module, 8	<pre>should_suppress_value_header()</pre>
<pre>sage_docbuild.builders</pre>	(sage_docbuild.ext.sage_autodoc.RuntimeInstanceAttributeMixin
module, 3	method), 24
<pre>sage_docbuild.conf</pre>	should_suppress_value_header()
module, 9	(sage_docbuild.ext.sage_autodoc.SlotsMixin
<pre>sage_docbuild.ext.inventory_builder</pre>	method), 24
module, 13	should_suppress_value_header()
<pre>sage_docbuild.ext.multidocs</pre>	(sage_docbuild.ext.sage_autodoc.UninitializedGlobalVariableMi
module, 26	method), 25
<pre>sage_docbuild.ext.sage_autodoc</pre>	should_suppress_value_header()
module, 14	(sage_docbuild.ext.sage_autodoc.UninitializedInstanceAttributeN
<pre>sage_docbuild.sphinxbuild</pre>	method), 25
module, 8	SingleFileBuilder (class in sage_docbuild.builders),
<pre>sage_docbuild.utils</pre>	
module, 10	skip_member() (in module sage_docbuild.conf), 9
SageSphinxLogger (class in	SlotsMixin (class in sage_docbuild.ext.sage_autodoc),
$sage_docbuild.sphinxbuild), 8$	24
<pre>save_cache() (sage_docbuild.builders.ReferenceSubBuild</pre>	Aspftspace(sage_docbuild.sphinxbuild.SageSphinxLogger
method), 6	attribute), 8
<pre>set_intersphinx_mappings() (in module sage_docbuild.conf), 9</pre>	<pre>sort_members() (sage_docbuild.ext.sage_autodoc.Documenter method), 19</pre>
<pre>setup() (in module sage_docbuild.conf), 9</pre>	sort_members() (sage_docbuild.ext.sage_autodoc.ModuleDocumenter
<pre>setup() (in module sage_docbuild.ext.inventory_builder),</pre>	method), 22
<pre>setup() (in module sage_docbuild.ext.multidocs), 27</pre>	T
setup() (in module sage_docbuild.ext.sage_autodoc), 26	tb (sage_docbuild.utils.RemoteException attribute), 10
<pre>setup_logger() (in module sage_docbuildmain),</pre>	tb (sage_docbuild.utils.RemoteExceptionWrapper at-
3	tribute), 10
<pre>setup_parser() (in module sage_docbuildmain),</pre>	term_width_line() (in module
3	sage_docbuild.sphinxbuild), 9
<pre>should_suppress_directive_header()</pre>	titles_allowed(sage_docbuild.ext.sage_autodoc.Documenter
(sage dochuild.ext.sage autodoc.DataDocument	erMixinRasattribute). 19

```
titles_allowed(sage_docbuild.ext.sage_autodoc.ModuleDocumenter
         attribute), 22
TypeVarMixin
                             (class
                                                  in
        sage_docbuild.ext.sage_autodoc), 24
U
UninitializedGlobalVariableMixin
                                         (class
                                                  in
         sage_docbuild.ext.sage_autodoc), 25
UninitializedInstanceAttributeMixin (class in
         sage_docbuild.ext.sage_autodoc), 25
update_annotations()
        (sage_docbuild.ext.sage_autodoc.AttributeDocumenter
        method), 15
update_annotations()
         (sage_docbuild.ext.sage_autodoc.DataDocumenter
update_content() (sage_docbuild.ext.sage_autodoc.DataDocumenterMixinBase
         method), 17
update_content() (sage_docbuild.ext.sage_autodoc.GenericAliasMixin
        method), 20
update_content() (sage_docbuild.ext.sage_autodoc.NewTypeMixin
         method), 23
update_content() (sage_docbuild.ext.sage_autodoc.TypeVarMixin
         method), 25
\verb"update_mtimes"() (sage\_docbuild.builders. Reference SubBuilder") \\
        method), 6
W
web() (sage_docbuild.builders.DocBuilder method), 5
WebsiteBuilder (class in sage docbuild.builders), 7
WorkerDiedException, 10
write() (sage_docbuild.sphinxbuild.SageSphinxLogger
        method), 8
write_auto_rest_file()
         (sage_docbuild.builders.ReferenceSubBuilder
        method), 6
write_citations()
                                             module
                               (in
         sage_docbuild.ext.multidocs), 27
writelines() (sage_docbuild.sphinxbuild.SageSphinxLogger
        method), 8
```