sphobjinv

Release 2.3

Brian Skinn

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CONTENTS

A toolkit for inspection/manipulation of Sphinx objects inventories

When documentation is built using, e.g., Sphinx's `StandaloneHTMLBuilder`, an inventory of the named objects in the documentation set is dumped to a file called objects.inv in the html build directory. (One common location is, doc/build/html, though the exact location will vary depending on the details of how Sphinx is configured.) This file is read by `intersphinx` when generating links in other documentation.

Since version 1.0 of Sphinx (~July 2010), the data in these objects.inv inventories is compressed by `zlib` (presumably to reduce storage requirements and improve download speeds; "version 2"), whereas prior to that date the data was left uncompressed ("version 1"). This compression renders the files non-human-readable. **It is the purpose of this package to enable quick and simple compression/decompression and inspection of these "version 2" inventory files.**

In particular, was developed to satisfy two primary use cases:

1. Searching and inspection of objects.inv contents in order to identify how to properly construct `intersphinx` references.
2. Assembly of new objects.inv files in order to allow `intersphinx` cross-referencing of other documentation sets that were not created by Sphinx.

For more background on the mechanics of the Sphinx data model and Sphinx cross-references generally, see this talk from PyOhio 2019.

Install via pip:

```
$ pip install sphobjinv
```

Or, if you only plan to use the CLI, another option is `pipx`:

```
$ pipx install sphobjinv
```

Alternatively, is packaged with multiple POSIX distributions and package managers, including:

- Alpine Linux: `py3-sphobjinv` (info)
- Arch Linux: `python-sphobjinv` (info)
- Fedora: `python-sphobjinv` (info)
- Gentoo: `dev-python/sphobjinv` (info)
- Guix: `python-sphobjinv` (info)
- Manjaro: `python-sphobjinv`
- OpenEuler: `python-sphobjinv`
- openSUSE: `python-sphobjinv` (info)
- Parabola: `python-sphobjinv` (info)
- pkgsrc: `textproc/py-sphobjinv` (info)
- spack: `py-sphobjinv` (info)

is configured for use both as a *command-line script* and as a *Python package*.

The optional dependency `python-Levenshtein` for accelerating the "suggest" functionality is no longer available due to a licensing conflict, and has been deprecated. See *here* for more information.

The project source repository is on GitHub: bskinn/sphobjinv.

CHAPTER

ONE

COMMAND-LINE USAGE

The CLI for is implemented using two subcommands:

- A *convert* subcommand, which handles conversion of inventories between supported formats (currently zlib-compressed, plaintext, and JSON).
- A *suggest* subcommand, which provides suggestions for objects in an inventory matching a desired search term.

More information about the underlying implementation of these subcommands can be found *here* and in the documentation for the *Inventory* object, in particular the *data_file()* and *suggest()* methods.

Some notes on these CLI docs:

- CLI docs examples are executed in a sandboxed directory pre-loaded with objects_attrs.inv (from, e.g., here).
- Path (from pathlib) is imported into the namespace before all tests.
- cli_run is a helper function that enables doctesting of CLI examples by mimicking execution of a shell command. It is described in more detail here.
- file_head is a helper function that retrieves the head of a specified file.

The options for the parent command are:

-h, --help

Show help message and exit

```
usage: sphobjinv [-h] [-v] {convert,suggest} ...

Format conversion for and introspection of intersphinx 'objects.inv' files.

options:
  -h, --help         show this help message and exit
  -v, --version      Print package version & other info

Subcommands:
  {convert,suggest}  Execution mode. Type 'sphobjinv [mode] -h' for more
                     information on available options. Mode names can be
                     abbreviated to their first two letters.
    convert (co)     Convert intersphinx inventory to zlib-compressed,
                     plaintext, or JSON formats.
    suggest (su)     Fuzzy-search intersphinx inventory for desired object(s).
```

-v, --version

Print package version & other info

```
sphobjinv v2.3

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Bug reports & feature requests: https://github.com/bskinn/sphobjinv
Documentation: https://sphobjinv.readthedocs.io
```

1.1 Command-Line Usage: "convert" Subcommand

The convert subcommand is used for all conversions of "version 2" Sphinx inventory files among plaintext, zlib-compressed, and (unique to) JSON formats. The CLI can read and write inventory data from local files in any of these three formats, as well as read the standard zlib-compressed format from files in remote locations (see *--url*).

As of v2.1, the CLI can also read/write inventories at `stdin`/`stdout` in the plaintext and JSON formats; see *below*.

Basic file conversion to the default output filename is straightforward:

```
>>> Path('objects_attrs.txt').is_file()
False
>>> cli_run('sphobjinv convert plain objects_attrs.inv')

Conversion completed.
'...objects_attrs.inv' converted to '...objects_attrs.txt' (plain).


>>> print(file_head('objects_attrs.txt', head=6))
# Sphinx inventory version 2
# Project: attrs
# Version: 22.1
# The remainder of this file is compressed using zlib.
attr py:module 0 index.html#module-$ -
attr.VersionInfo py:class 1 api.html#$ -
```

A different target filename can be specified, to avoid overwriting an existing file:

```
>>> cli_run('sphobjinv convert plain objects_attrs.inv', inp='n\n')
File exists. Overwrite (Y/N)? n


Exiting...

>>> cli_run('sphobjinv convert plain objects_attrs.inv objects_attrs_foo.txt')

Conversion completed.
'...objects_attrs.inv' converted to '...objects_attrs_foo.txt' (plain).
```

If you don't provide an output file extension, the defaults (*.inv*/*.txt*/*.json*) will be used.

If you want to pull an input file directly from the internet, use *--url* (note that the base filename is **not** inferred from the indicated URL):

```
>>> cli_run('sphobjinv convert plain -u https://github.com/bskinn/sphobjinv/raw/main/
↪tests/resource/objects_attrs.inv')

Attempting https://github.com/bskinn/sphobjinv/raw/main/tests/resource/objects_attrs.inv␣
↪...
  ... inventory found.

Conversion completed.
'https://github.com/b[...]ce/objects_attrs.inv' converted to '...objects.txt' (plain).


>>> print(file_head('objects.txt', head=6))
# Sphinx inventory version 2
# Project: attrs
# Version: 22.1
# The remainder of this file is compressed using zlib.
attr py:module 0 index.html#module-$ -
attr.VersionInfo py:class 1 api.html#$ -
```

The URL provided **MUST** have the leading protocol specified (here, https://).

It is not necessary to locate the objects.inv file before running ; for most Sphinx documentation sets, if you provide a URL to any page in the docs, it will automatically find and use the correct objects.inv:

```
>>> cli_run('sphobjinv convert plain -ou https://docs.python.org/3/library/urllib.error.
↪html#urllib.error.URLError')

Attempting https://docs.python.org/3/library/urllib.error.html#urllib.error.URLError ...
  ... no recognized inventory.
Attempting "https://docs.python.org/3/library/urllib.error.html/objects.inv" ...
  ... HTTP error: 404 Not Found.
Attempting "https://docs.python.org/3/library/objects.inv" ...
  ... HTTP error: 404 Not Found.
Attempting "https://docs.python.org/3/objects.inv" ...
  ... inventory found.

Conversion completed.
'...objects.inv' converted to '...objects.txt' (plain).
```

only supports download of zlib-compressed objects.inv files by URL. Plaintext download by URL is unreliable, presumably due to encoding problems. If processing of JSON files by API URL is desirable, please submit an issue.

New in version 2.1: The URL at which a remote inventory is found is now included in JSON output:

```
>>> cli_run('sphobjinv convert json -qu https://docs.python.org/3/ objects.json')

>>> data = json.loads(Path('objects.json').read_text())
>>> data["metadata"]["url"]
'https://docs.python.org/3/objects.inv'
```

New in version 2.1: JSON and plaintext inventories can now be read from `stdin` and written to `stdout`, by using the special value `-` in the invocation. E.g., to print to `stdout`:

```
>>> cli_run('sphobjinv co plain objects_attrs.inv -')
# Sphinx inventory version 2
# Project: attrs
# Version: 22.1
# The remainder of this file is compressed using zlib.
attr py:module 0 index.html#module-$ -
attr.VersionInfo py:class 1 api.html#$ -
attr._make.Attribute py:class -1 api.html#attrs.Attribute -
...
```

Usage

```
$ sphobjinv convert --help
usage: sphobjinv convert [-h] [-e | -c] [-o] [-q] [-u]
                         {zlib,plain,json} infile [outfile]

Convert intersphinx inventory to zlib-compressed, plaintext, or JSON formats.
...
```

Positional Arguments

mode

Conversion output format.

Must be one of *plain*, *zlib*, or *json*

infile

Path (or URL, if *--url* is specified) to file to be converted.

If passed as `-`, will attempt import of a plaintext or JSON inventory from `stdin` (incompatible with *--url*).

outfile

(Optional) Path to desired output file. Defaults to same directory and main file name as input file but with extension .inv/.txt/.json, as appropriate for the output format.

A bare path is accepted here, using the default output file name/extension.

If passed as `-`, or if omitted when *infile* is passed as `-`, will emit plaintext or JSON (but *not* zlib-compressed) inventory contents to `stdout`.

Flags

-h, --help

Display *convert* help message and exit.

-o, --overwrite

If the output file already exists, overwrite without prompting for confirmation.

-q, --quiet

Suppress all status message output, regardless of success or failure. Useful for scripting/automation. Implies *--overwrite*.

-u, --url

Treat *infile* as a URL for download. Cannot be used when *infile* is passed as `-`.

-e, --expand

Expand any abbreviations in *uri* or *dispname* fields before writing to output; see *here*. Cannot be specified with *--contract*.

-c, --contract

Contract *uri* and *dispname* fields, if possible, before writing to output; see *here*. Cannot be specified with *--expand*.

1.2 Command-Line Usage: "suggest" Subcommand

The suggest subcommand is used to query an inventory for objects fuzzy-matching a given search string. Fuzzy-matching is carried out via the fuzzywuzzy library, against the Restructured Text-like representation of each object exposed by *SuperDataObj.as_rst*:

```
$ sphobjinv suggest objects_attrs.inv instance

Project: attrs
Version: 22.1

129 objects in inventory.

3 results found at/above current threshold of 75.

Cannot infer intersphinx_mapping from a local objects.inv.


:py:exception:`attr.exceptions.FrozenInstanceError`
:py:exception:`attrs.exceptions.FrozenInstanceError`
:py:function:`attrs.validators.instance_of`
```

The fuzzywuzzy match score and the index of the object within the inventory can be printed by passing the *--score* and *--index* options, respectively:

```
$ sphobjinv suggest objects_attrs.inv instance -s -i

Project: attrs
Version: 22.1

129 objects in inventory.

3 results found at/above current threshold of 75.

Cannot infer intersphinx_mapping from a local objects.inv.


  Name                                                  Score    Index
------------------------------------------------------  -------  -------
:py:exception:`attr.exceptions.FrozenInstanceError`       90       26
:py:exception:`attrs.exceptions.FrozenInstanceError`      90       56
:py:function:`attrs.validators.instance_of`               90       82
```

If too few or too many matches are returned, the reporting threshold can be changed via *--thresh*:

```
$ sphobjinv suggest objects_attrs.inv instance -s -i -t 48

Project: attrs
```

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```
Version: 22.1

129 objects in inventory.

6 results found at/above current threshold of 48.

Cannot infer intersphinx_mapping from a local objects.inv.


  Name                                                    Score    Index
-------------------------------------------------------  -------  -------
:py:exception:`attr.exceptions.FrozenInstanceError`        90       26
:py:exception:`attrs.exceptions.FrozenInstanceError`       90       56
:py:function:`attrs.validators.instance_of`                90       82
:std:doc:`license`                                         51       115
:py:function:`attr.define`                                 48       21
:py:function:`attrs.define`                                48       50
```

Remote objects.inv files can be retrieved for inspection by passing the `--url` flag:

```
$ sphobjinv suggest https://github.com/bskinn/sphobjinv/raw/main/tests/resource/objects_
↪attrs.inv instance -u -t 48

Attempting https://github.com/bskinn/sphobjinv/raw/main/tests/resource/objects_attrs.inv␣
↪...
  ... inventory found.

Project: attrs
Version: 22.1

129 objects in inventory.

6 results found at/above current threshold of 48.

Cannot infer intersphinx_mapping for this docset using the provided input URL.


:py:exception:`attr.exceptions.FrozenInstanceError`
:py:exception:`attrs.exceptions.FrozenInstanceError`
:py:function:`attrs.validators.instance_of`
:std:doc:`license`
:py:function:`attr.define`
:py:function:`attrs.define`
```

The URL provided **MUST** have the leading protocol specified (here, https://).

It is usually not necessary to locate the objects.inv file before running ; for most Sphinx documentation sets, if you provide a URL to any page in the docs, it will automatically find and use the correct objects.inv:

```
$ sphobjinv suggest -u https://sphobjinv.readthedocs.io/en/stable/cli/convert.html␣
↪compress

Attempting https://sphobjinv.readthedocs.io/en/stable/cli/convert.html ...
```

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```
  ... no recognized inventory.
Attempting "https://sphobjinv.readthedocs.io/en/stable/cli/convert.html/objects.inv" ...
  ... HTTP error: 404 Not Found.
Attempting "https://sphobjinv.readthedocs.io/en/stable/cli/objects.inv" ...
  ... HTTP error: 404 Not Found.
Attempting "https://sphobjinv.readthedocs.io/en/stable/objects.inv" ...
  ... inventory found.

Project: sphobjinv
Version: 2.3

219 objects in inventory.

2 results found at/above current threshold of 75.

The intersphinx_mapping for this docset is LIKELY:

  (https://sphobjinv.readthedocs.io/en/stable/, None)


:py:function:`sphobjinv.zlib.compress`
:py:function:`sphobjinv.zlib.decompress`
```

only supports download of zlib-compressed objects.inv files by URL. Plaintext download by URL is unreliable, presumably due to encoding problems. If download of JSON files by URL is desirable, please submit an issue.

New in version 2.1: The CLI can now read JSON and plaintext inventories from `stdin` by passing the special `-` argument for *infile*:

```
$ sphobjinv suggest -s - valid < objects_attrs.txt

Project: attrs
Version: 22.1

129 objects in inventory.

14 results found at/above current threshold of 75.

Cannot infer intersphinx_mapping from a local objects.inv.


  Name                                    Score
----------------------------------------  -------
:py:function:`attr.attr.validate`           90
:py:function:`attr.get_run_validators`      90
:py:function:`attr.set_run_validators`      90
:py:function:`attrs.setters.validate`       90
:py:function:`attrs.validate`               90
:py:function:`attrs.validators.and_`        90
:py:function:`attrs.validators.ge`          90
:py:function:`attrs.validators.gt`          90
:py:function:`attrs.validators.in_`         90
:py:function:`attrs.validators.le`          90
```

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```
:py:function:`attrs.validators.lt`          90
:std:label:`api_validators`                 90
:std:label:`examples_validators`            90
:std:label:`validators`                     90
```

Usage

```
$ sphobjinv suggest --help
usage: sphobjinv suggest [-h] [-a] [-p] [-i] [-s] [-t {0-100}] [-u]
                         infile search

Fuzzy-search intersphinx inventory for desired object(s).
...
```

Positional Arguments

infile

Path (or URL, if *--url* is specified) to file to be searched.

If passed as `-`, will attempt import of a plaintext or JSON inventory from `stdin`. This is incompatible with *--url*, and automatically enables *--all*.

search

Search term for `fuzzywuzzy` matching.

Flags

-h, --help

Display *suggest* help message and exit.

-a, --all

Display all search results without prompting, regardless of the number of hits. Otherwise, prompt if number of results exceeds *SUGGEST_CONFIRM_LENGTH*.

-i, --index

Display the index position within the *Inventory.objects* list for each search result returned.

-s, --score

Display the `fuzzywuzzy` match score for each search result returned.

-t, --thresh <#>

Change the `fuzzywuzzy` match quality threshold (0-100; higher values yield fewer results). Default is specified in *DEF_THRESH*.

-u, --url

Treat *infile* as a URL for download. Cannot be used when *infile* is passed as `-`.

CHAPTER

TWO

API USAGE

In all of the below, the package has been imported as soi, and the working temp directory has been populated with the objects_attrs.inv inventory.

2.1 Inspecting an Inventory

Inspecting the contents of an existing inventory is handled entirely by the *Inventory* class:

```
>>> inv = soi.Inventory('objects_attrs.inv')
>>> print(inv)
<Inventory (fname_zlib): attrs v22.1, 129 objects>
>>> inv.version
'22.1'
>>> inv.count
129
```

The location of the inventory file to import can also be provided as a `pathlib.Path`, instead of as a string:

```
>>> soi.Inventory(Path('objects_attrs.inv')).project
'attrs'
```

The individual objects contained in the inventory are represented by instances of the *DataObjStr* class, which are stored in a `list` in the *objects* attribute:

```
>>> len(inv.objects)
129
>>> dobj = inv.objects[0]
>>> dobj
DataObjStr(name='attr', domain='py', role='module', priority='0', uri='index.html#module-
↪$', dispname='-')
>>> dobj.name
'attr'
>>> dobj.domain
'py'
>>> [d.name for d in inv.objects if 'validator' in d.uri]
['api_validators', 'examples_validators']
```

Inventory objects can also import from plaintext or zlib-compressed inventories, as `bytes`:

```
>>> inv2 = soi.Inventory(inv.data_file())
>>> print(inv2)
<Inventory (bytes_plain): attrs v22.1, 129 objects>
>>> inv3 = soi.Inventory(soi.compress(inv.data_file()))
>>> print(inv3)
<Inventory (bytes_zlib): attrs v22.1, 129 objects>
```

Remote objects.inv files can also be retrieved via URL, with the *url* keyword argument:

```
>>> inv4 = soi.Inventory(url='https://github.com/bskinn/sphobjinv/raw/main/tests/
↪resource/objects_attrs.inv')
>>> print(inv4)
<Inventory (url): attrs v22.1, 129 objects>
```

2.2 Comparing Inventories

Inventory instances compare equal when they have the same *project* and *version*, and when all the members of *objects* are identical between the two instances:

```
>>> inv = soi.Inventory("objects_attrs.inv")
>>> inv2 = soi.Inventory(inv.data_file())
>>> inv is inv2
False
>>> inv == inv2
True
>>> inv2.project = "foo"
>>> inv == inv2
False
```

Individual *DataObjStr* and (*DataObjBytes*) instances compare equal if all of *name*, *domain*, *role*, *priority*, *uri*, and *dispname* are equal:

```
>>> obj1 = inv.objects[0]
>>> obj2 = inv.objects[1]
>>> obj1 == obj1
True
>>> obj1 == obj2
False
>>> obj1 == obj1.evolve(name="foo")
False
```

Changed in version 2.1: Previously, *Inventory* instances would only compare equal to themselves, and comparison attempts on *SuperDataObj* subclass instances would raise RecursionError.

2.3 Modifying an Inventory

The *DataObjStr* instances can be edited in place:

```
>>> inv = soi.Inventory('objects_attrs.inv')
>>> inv.objects[0]
DataObjStr(name='attr', domain='py', role='module', priority='0', uri='index.html#module-
↪$', dispname='-')
>>> inv.objects[0].uri = 'attribute.html'
>>> inv.objects[0]
DataObjStr(name='attr', domain='py', role='module', priority='0', uri='attribute.html',␣
↪dispname='-')
```

New instances can be easily created either by direct instantiation, or by *evolve()*:

```
>>> inv.objects.append(inv.objects[0].evolve(name='attr.Generator', uri='generator.html
↪'))
>>> inv.count
130
>>> inv.objects[-1]
DataObjStr(name='attr.Generator', domain='py', role='module', priority='0', uri=
↪'generator.html', dispname='-')
```

The other attributes of the *Inventory* instance can also be freely modified:

```
>>> inv.project = 'not_attrs'
>>> inv.version = '0.1'
>>> print(inv)
<Inventory (fname_zlib): not_attrs v0.1, 130 objects>
```

2.4 Formatting Inventory Contents

The contents of the *Inventory* can be converted to the plaintext objects.inv format **as** `bytes` via *data_file()*:

```
>>> inv = soi.Inventory('objects_attrs.inv')
>>> print(*inv.data_file().splitlines()[:6], sep='\n')
b'# Sphinx inventory version 2'
b'# Project: attrs'
b'# Version: 22.1'
b'# The remainder of this file is compressed using zlib.'
b'attr py:module 0 index.html#module-$ -'
b'attr.VersionInfo py:class 1 api.html#$ -'
```

This method makes use of the *DataObjStr.data_line* method to format each of the object information lines.

If desired, the *shorthand* used for the *uri* and *dispname* fields can be expanded:

```
>>> print(*inv.data_file(expand=True).splitlines()[4:6], sep='\n')
b'attr py:module 0 index.html#module-attr attr'
b'attr.VersionInfo py:class 1 api.html#attr.VersionInfo attr.VersionInfo'
>>> do = inv.objects[0]
```

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```
>>> do.data_line(expand=True)
'attr py:module 0 index.html#module-attr attr'
```

2.5 Exporting an Inventory

Inventory instances can be written to disk in three formats: zlib-compressed objects.inv, plaintext objects.txt, and JSON. The API does not provide single-function means to do this, however.

To start, load the source objects.inv:

```
>>> from pathlib import Path
>>> inv = soi.Inventory('objects_attrs.inv')
```

To export plaintext:

```
>>> df = inv.data_file()
>>> soi.writebytes('objects_attrs.txt', df)
>>> print(*Path('objects_attrs.txt').read_text().splitlines()[:6], sep='\n')
# Sphinx inventory version 2
# Project: attrs
# Version: 22.1
# The remainder of this file is compressed using zlib.
attr py:module 0 index.html#module-$ -
attr.VersionInfo py:class 1 api.html#$ -
```

For zlib-compressed:

```
>>> dfc = soi.compress(df)
>>> soi.writebytes('objects_attrs_new.inv', dfc)
>>> print(*Path('objects_attrs_new.inv').read_bytes().splitlines()[:4], sep='\n')
b'# Sphinx inventory version 2'
b'# Project: attrs'
b'# Version: 22.1'
b'# The remainder of this file is compressed using zlib.'
>>> print(Path('objects_attrs_new.inv').read_bytes().splitlines()[6][:10])
b'\xbf\x86\x8fL49\xc4\x91\xb8\x8c'
```

For JSON:

```
>>> jd = inv.json_dict()
>>> soi.writejson('objects_attrs.json', jd)
>>> print(Path('objects_attrs.json').read_text()[:51])
{"project": "attrs", "version": "17.2", "count": 56
```

CHAPTER

THREE

CREATING AND USING A CUSTOM OBJECTS.INV

The workflow presented here is introduced in the context of manually assembling an objects inventory, but the functionality is mainly intended for use downstream of a web-scraping or other automated content-extraction tool.

A (possibly obsolete) representative example of such a custom objects.inv can be found at the GitHub repo here.

Note: These instructions are for v2.x; the prior instructions for v1.0 can be found here.

1. Identify the head of the URI to the documentation.
2. Construct an *Inventory* containing all of the objects of interest. The *uri* and *dispname* values can be entered with or without the *standard abbreviations*.
   - Create an empty *Inventory*:

```
>>> import sphobjinv as soi
>>> inv = soi.Inventory()
>>> print(inv)
<Inventory (manual): <no project> <no version>, 0 objects>
```

   - Define the *project* and *version* attributes:

```
>>> inv.project = 'foobar'
>>> inv.version = '1.5'
>>> print(inv)
<Inventory (manual): foobar v1.5, 0 objects>
```

   - Append new *DataObjStr* instances to *objects* as needed to populate the inventory:

```
>>> o = soi.DataObjStr(name='baz', domain='py', role='class',
... priority='1', uri='api.html#$', dispname='-')
>>> print(o)
<DataObjStr:: :py:class:`baz`>
>>> inv.objects.append(o)
>>> print(inv)
<Inventory (manual): foobar v1.5, 1 objects>
>>> inv.objects.append(soi.DataObjStr(name='baz.quux', domain='py',
... role='method', priority='1', uri='api.html#$', dispname='-'))
>>> inv.objects.append(soi.DataObjStr(name='quuux', domain='py',
... role='function', priority='1', uri='api.html#$', dispname='-'))
>>> print(inv)
<Inventory (manual): foobar v1.5, 3 objects>
```

> **Note:** The *role* values here must be the **full** role names ("*block directives*"), described as the "directives" in the Sphinx documentation for domains, and not the abbreviated forms ("*inline directives*") used when constructing cross-references.
>
> Thus, for example, a *DataObjStr* corresponding to a method on a class should be constructed with role='method', not role='meth'.

3. Export the *Inventory* in compressed form.
   - Generate the text of the inventory file with *data_file()*, optionally *contracting* the *uri* and *dispname* fields:

     ```
     >>> text = inv.data_file(contract=True)
     ```

   - Compress the file text:

     ```
     >>> ztext = soi.compress(text)
     ```

   - Save to disk:

     ```
     >>> soi.writebytes('objects_foobar.inv', ztext)
     ```

4. Transfer the compressed file to its distribution location.
   - If only local access is needed, it can be kept local.
   - If external access needed, upload to a suitable host.
5. Add an element to the intersphinx_mapping parameter in conf.py.
   - The key of the element is an arbitrary name, which can be used to specify the desired documentation set to be searched for the target object, in the event of a *name* collision between one or more documentation projects; e.g.:

     ```
     :meth:`python:str.join`
     ```

   - The value of the element is a tuple of length two:
     - The first element of the value tuple is the head URI for the documentation repository, identified in step (1), to which the *uri* of given object is appended when constructing an intersphinx cross-reference.
     - The second element of the value tuple can be None, in which case the objects.inv file is assumed to be at the repository head URI. Otherwise, this element is the complete address of the distribution location of the compressed inventory file, from step (4), whether a local path or a remote URL.

   Examples:

   ```
   intersphinx_mapping = {
       # Standard reference to web docs, with web objects.inv
       'python': ('https://docs.python.org/3.5', None),

       # Django puts its objects.inv file in a non-standard location
       'django': ('https://docs.djangoproject.com/en/dev/', 'https://
   ↪docs.djangoproject.com/en/dev/_objects/'),
   ```

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```
    # Drawing the Sphinx objects.inv from a local copy, but␣
↪referring to the current web docs
    'sphinx': ('https://www.sphinx-doc.org/en/master/', '/path/to/
↪local/objects.inv'),
}
```

CHAPTER

FOUR

SPEEDING UP "SUGGEST" WITH PYTHON-LEVENSHTEIN (DEPRECATED)

uses fuzzywuzzy for fuzzy-match searching of object names/domains/roles as part of the *Inventory.suggest()* functionality, also implemented as the CLI *suggest* subcommand.

fuzzywuzzy uses difflib.SequenceMatcher from the Python standard library for its fuzzy searching. While earlier versions of were able to make use of fuzzywuzzy's optional link to python-Levenshtein, a Python C extension providing similar functionality, due to a licensing conflict this is no longer possible. now uses a vendored copy of fuzzywuzzy from an era when it was released under the MIT License.

Formally:

Removed in version 2.2: Acceleration of the "suggest" mode via python-Levenshtein has been deprecated and is no longer available.

The discussion of performance benchmarks and variations in matching behavior is kept below for historical interest.

4.1 Performance Benchmark

The chart below presents one dataset illustrating the performance enhancement that can be obtained by installing python-Levenshtein. The timings plotted here are from execution of timeit.repeat() around a *suggest()* call, searching for the term "function", for a number of objects.inv files from different projects (see here).

The timings were collected using the following code:

```
import sphobjinv as soi

durations = {}
obj_counts = {}

for fn in os.listdir():
    if fn.endswith('.inv'):
        inv = soi.Inventory(fn)

        # Execute the 'suggest' operation 20 times for each file
        timings = timeit.repeat("inv.suggest('function')", repeat=20, number=1,␣
↪globals=globals())

        # Store the average timing for each file
        durations.update({fn: sum(timings) / len(timings)})
```

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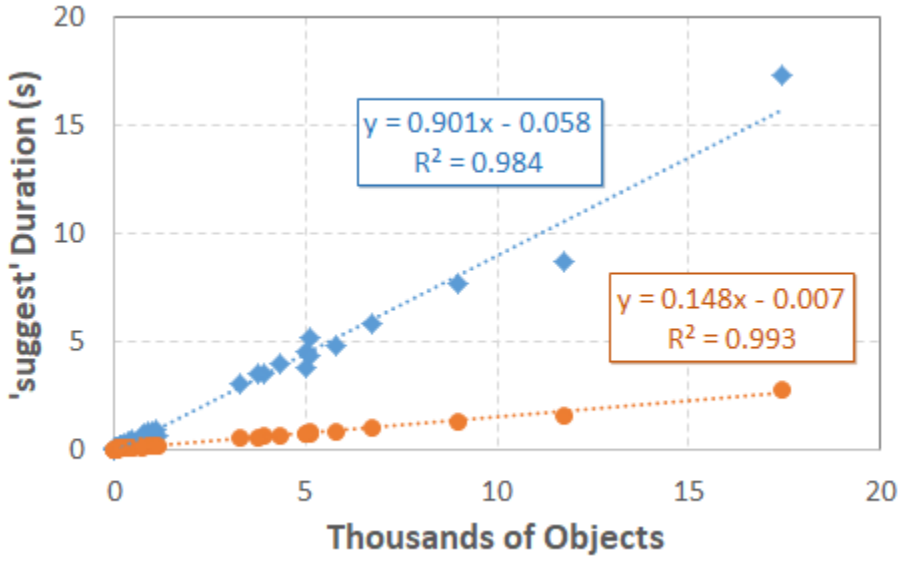
```
        # Store the number of objects
        obj_counts.update({fn: inv.count})
```

As can be seen, the fifty-two objects.inv files in this dataset contain widely varying numbers of objects n:



Unsurprisingly, larger inventories require more time to search. Also relatively unsurprisingly, the time required appears to be roughly $O(n)$, since the fuzzy search must be performed once on the `as_rst` representation of each object.

For this specific search, using `python-Levenshtein` instead of `difflib` decreases the time required from 0.90 seconds per thousand objects down to 0.15 seconds per thousand objects, representing a performance improvement of almost exactly six-fold. Other searches will likely exhibit somewhat better or worse improvement from the use of `python-Levenshtein`, depending on the average length of the reST-like representations of the objects in an objects.inv and the length of the search term.

4.2 Variations in Matching Behavior

Note that the matching scores calculated by `difflib` and `python-Levenshtein` can often differ appreciably. (This is illustrated in issue #128 of the `fuzzywuzzy` GitHub repo.) This difference in behavior doesn't have much practical significance, save for the potential of causing some confusion between users with/without `python-Levenshtein` installed.

As an example, the following shows an excerpt of the results of a representative CLI *suggest* call **without** `python-Levenshtein`:

```
$ sphobjinv suggest objects_scipy.inv surface -asit 40

  Name                                                  Score    Index
------------------------------------------------------  -------  -------
:py:function:`scipy.misc.face`                           64      1018
:py:function:`scipy.misc.source`                         64      1032
:std:doc:`generated/scipy.misc.face`                     64      4042
:std:doc:`generated/scipy.misc.source`                   64      4056
```

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```
:py:data:`scipy.stats.rice`                                  56      2688
:std:label:`continuous-rice`                                 56      2896
:py:method:`scipy.integrate.complex_ode.successful`          51       156
:py:method:`scipy.integrate.ode.successful`                  51       171
:py:function:`scipy.linalg.lu_factor`                        51       967

... more with score 51 ...

:py:attribute:`scipy.LowLevelCallable.signature`             50         5
:py:function:`scipy.constants.convert_temperature`           50        53
:py:function:`scipy.integrate.quadrature`                    50       176

... more with score 50 and below ...
```

This is a similar excerpt **with** `python-Levenshtein`:

```
  Name                                                      Score    Index
-------------------------------------------------------  -------  -------
:py:function:`scipy.misc.face`                               64      1018
:py:function:`scipy.misc.source`                             64      1032
:std:doc:`generated/scipy.misc.face`                         64      4042
:std:doc:`generated/scipy.misc.source`                       64      4056
:py:method:`scipy.integrate.ode.successful`                  51       171
:py:function:`scipy.linalg.lu_factor`                        51       967
:py:function:`scipy.linalg.subspace_angles`                  51      1003

... more with score 51 ...

:py:function:`scipy.cluster.hierarchy.fcluster`              49        23
:py:function:`scipy.cluster.hierarchy.fclusterdata`          49        24
:py:method:`scipy.integrate.complex_ode.successful`          49       156

... more with score 49 and below ...
```

CHAPTER

FIVE

SPHINX OBJECTS.INV V2 SYNTAX

After decompression, "version 2" Sphinx objects.inv files follow a syntax that, to the best of this author's ability to determine, is not included in the Sphinx documentation. The below syntax is believed to be accurate as of Nov 2022 (Sphinx v6.0.0b2). It is based on inspection of objects.inv files "in the wild" and of the Sphinx inventory object parsing regex.

Based upon a quick `git diff` of the Sphinx repository, it is thought to be valid for all Sphinx versions >=1.0b1 that make use of this "version 2" objects.inv format.

NOTE that previous versions of the syntax presented here have been shown to be inaccurate:

- It *is* permitted for the *{name}* field to contain whitespace (see #181).
- It *is* permitted for the *{role}* field to contain a colon (see #256).

The descriptions below have been updated to reflect this and to provide more detailed information on the constraints governing each field of an objects.inv data line.

The first line must be exactly:

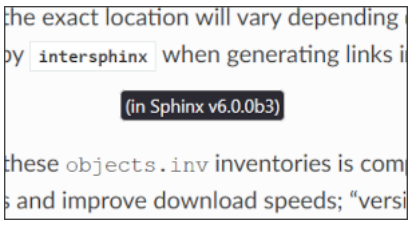
```
# Sphinx inventory version 2
```

The second and third lines must obey the template:

```
# Project: <project name>
# Version: <full version number>
```

The version number should *not* include a leading "v".

The above project name and version are used to populate mouseovers for the `intersphinx` cross-references:



The fourth line must contain the string `zlib` somewhere within it, but for consistency it should be exactly:

```
# The remainder of this file is compressed using zlib.
```

All remaining lines of the file are the objects data, each laid out in the following syntax:

```
{name} {domain}:{role} {priority} {uri} {dispname}
```

`{name}`

The object name used when cross-referencing the object (falls between the backticks).

Constraints

- **MUST** have nonzero length
- **MUST NOT** start with `#`
- **SHOULD** have no leading or trailing whitespace
- **MAY** contain internal whitespace

`{domain}`

The Sphinx domain used when cross-referencing the object (falls between the first and second colons; omitted if using the default domain).

Constraints

- **MUST** have nonzero length
- **MUST** match a built-in or installable Sphinx domain
- **MUST NOT** contain whitespace or a colon
  - **RECOMMENDED** to contain only ASCII word characters (`a-z`, `A-Z`, `0-9`, and `_`)

`{role}`

The Sphinx role used when cross-referencing the object (falls between the second and third/last colons; or, between the first and second/last colons if using the default domain).

Note that the role MAY contain a colon, as occurs with the `:rst:directive:option:` directive in the Sphinx docs.

Constraints

- **MUST** have nonzero length
- **MUST** match a role defined in the domain referenced by `{domain}`
- **MUST NOT** contain whitespace
  - **RECOMMENDED** to consist of only ASCII word characters (`a-z`, `A-Z`, `0-9`, and `_`)

`{priority}`

Flag for placement in search results. Most will be `1` (standard priority) or `-1` (omit from results) for documentation built by Sphinx.

To note, as of Jan 2022 this value is **not** used by `intersphinx`; it is only used internally within the search function of the static webpages built *by Sphinx* (here and here). Thus, custom inventories likely **MAY** use this field for arbitrary content, if desired, as long as the integer constraint is observed. Such use *would* run the risk of a future change to Sphinx/intersphinx breaking compatibility with objects.inv files having non-standard *{priority}* values.

Constraints

- **MUST** have nonzero length

- **MUST** be a positive or negative integer, or zero, *without* a decimal point
- **MUST NOT** contain whitespace (implicit in the integer constraint)

`{uri}`
: Relative URI for the location to which cross-references will point. The base URI is taken from the relevant element of the `intersphinx_mapping` configuration parameter in `conf.py`.

  Constraints

  - **MAY** have zero length, but typically has nonzero length
    - A zero-length *{uri}* can occur for the root/index documentation page in certain instances; see sphinx-doc/sphinx#7096
  - **MUST NOT** contain whitespace

`{dispname}`
: Default cross-reference text to be displayed in compiled documentation.

  Constraints

  - **MUST** have nonzero length
  - **MAY** contain internal whitespace (leading/trailing whitespace is ignored)

Unicode characters appear to be valid for all fields except *{uri}* (where they are specifically forbidden) and *{priority}*. However, it is **RECOMMENDED** that they *only* be used in *{dispname}*, as their use in *{name}*, *{domain}* and *{role}* would complicate construction of cross-references from other documentation source.

For illustration, the following is the entry for the `join()` method of the `str` class in the Python 3.9 objects.inv, broken out field-by-field:

```
str.join py:method 1 library/stdtypes.html#$ -

{name}      = str.join
{domain}    = py
{role}      = method
{priority}  = 1
{uri}       = library/stdtypes.html#$
{dispname}  = -
```

The above illustrates two shorthand notations that were introduced to shrink the size of the inventory file:

1. If *{uri}* has an anchor (technically a "fragment identifier," the portion following the # symbol) and the tail of the anchor is identical to *{name}*, that tail is replaced with `$`.
2. If *{dispname}* is identical to *{name}*, it is stored as `-`.

Thus, a standard `intersphinx` reference to this method would take the form:

```
:py:meth:`str.join`
```

The leading `:py` here could be omitted if `py` is the default domain.

The cross-reference would show as `str.join()` and link to the relative URI:

```
library/stdtypes.html#str.join
```

Other intersphinx Syntax Examples

To show as only `join()`:

```
:py:meth:`~str.join`
```

To suppress the hyperlink as in `str.join()`:

```
:py:meth:`!str.join`
```

To change the cross-reference text and omit the trailing parentheses as in `This is join!`:

```
:py:obj:`This is join! <str.join>`
```

CHAPTER

SIX

API

Most (all?) of the objects documented in the below submodules are also exposed at the package root. For example, both of the following will work to import the *Inventory* class:

```
>>> from sphobjinv import Inventory
>>> from sphobjinv.inventory import Inventory
```

6.1 sphobjinv.data

`sphobjinv` *data classes for individual objects*.

`sphobjinv` is a toolkit for manipulation and inspection of Sphinx objects.inv files.

Author
Brian Skinn (brian.skinn@gmail.com)

File Created
7 Nov 2017

Copyright
(c) Brian Skinn 2016-2022

Source Repository
https://github.com/bskinn/sphobjinv

Documentation
https://sphobjinv.readthedocs.io/en/stable

License
Code: MIT License

Docs & Docstrings: CC BY 4.0 International License

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Members

class DataFields(*value*)

Enum for the fields of objects.inv data objects.

DispName = 'dispname'

Default display name for the object in rendered documentation when referenced as :domain:role:`name`

Domain = 'domain'

Sphinx domain housing the object

Name = 'name'

Object name, as recognized internally by Sphinx

Priority = 'priority'

Object search priority

Role = 'role'

Full name of Sphinx role to be used when referencing the object

URI = 'uri'

URI to the location of the object's documentation, relative to the documentation root

class DataObjBytes(*name*, *domain*, *role*, *priority*, *uri*, *dispname*, *as_str=NOTHING*, *as_bytes=NOTHING*)

SuperDataObj subclass generating `bytes` object data.

Two *DataObjBytes* instances will test equal if all of *name*, *domain*, *role*, *priority*, *uri*, and *dispname* are equal between them.

```
>>> obj = soi.DataObjBytes(
...     name=b"foo",
...     domain=b"py",
...     role=b"method",
...     priority=b"1",
...     uri=b"$",
...     dispname=b"-",
... )
>>> obj == obj
True
>>> obj == obj.evolve(name=b"quux")
False
```

Changed in version 2.1: Previously, attempts to compare instances resulted in a `RecursionError`.

class DataObjStr(*name*, *domain*, *role*, *priority*, *uri*, *dispname*, *as_bytes=NOTHING*, *as_str=NOTHING*)

SuperDataObj subclass generating `str` object data.

Two *DataObjStr* instances will test equal if all of *name*, *domain*, *role*, *priority*, *uri*, and *dispname* are equal between them.

```
>>> obj = soi.DataObjStr(
...     name="foo",
...     domain="py",
...     role="method",
...     priority="1",
...     uri="$",
...     dispname="-",
... )
>>> obj == obj
True
>>> obj == obj.evolve(name="quux")
False
```

Changed in version 2.1: Previously, attempts to compare instances resulted in a `RecursionError`.

class SuperDataObj

Abstract base superclass defining common methods &c. for data objects.

Intended only to be subclassed by *DataObjBytes* and *DataObjStr*, to allow definition of common methods, properties, etc. all in one place.

Where marked with †, *DataObjBytes* instances will return bytes values, whereas *DataObjStr* instances will return str values.

abstract property as_bytes

DataObjBytes version of instance.

property as_rst

str reST reference-like object representation.

Typically will NOT function as a proper reST reference in Sphinx source (e.g., a *role* of function must be referenced using :func: for the py domain).

abstract property as_str

DataObjStr version of instance.

data_line(*, *expand=False*, *contract=False*)

Compose plaintext objects.inv data line from instance contents.

The format of the resulting data line is given by *data_line_fmt*. *DataObjBytes* and *DataObjStr* instances generate data lines as bytes and str, respectively.

Calling with both *expand* and *contract* as True is invalid.

Parameters

- **expand** – bool *(optional)* – Return data line with any *uri* or *dispname* abbreviations expanded
- **contract** – bool *(optional)* – Return data line with abbreviated *uri* and *dispname*

Returns

dl – bytes (for *DataObjBytes*) or str (for *DataObjStr*) – Object data line

Raises

ValueError – If both *expand* and *contract* are True

data_line_fmt = '{name} {domain}:{role} {priority} {uri} {dispname}'

Helper str for generating plaintext objects.inv data lines. The field names MUST match the str values of the *DataFields* members.

abstract property dispname

Object default name in rendered documentation†.

Possibly abbreviated; see *here*.

abstract property dispname_abbrev

Abbreviation character(s) for display name†.

'-' or b'-' for *version 2* objects.inv files.

property dispname_contracted

Object display name, contracted with *dispname_abbrev*.

property dispname_expanded

Object display name, with *dispname_abbrev* expanded.

abstract property domain

Sphinx domain containing the object†.

evolve(***kwargs*)

Create a new instance with changes applied.

This helper method provides a concise means for creating new instances with only a subset of changed data fields.

The names of any *kwargs* MUST be keys of the `dict`s generated by *`json_dict()`*.

Parameters

kwargs – `str` or `bytes` – Revised value(s) to use in the new instance for the passed keyword argument(s).

Returns

dobj – *`DataObjBytes`* or *`DataObjStr`* – New instance with updated data

json_dict(*, *expand=False*, *contract=False*)

Return the object data formatted as a flat `dict`.

The returned `dict` is constructed such that it matches the relevant subschema of *`sphobjinv.schema.json_schema`*, to facilitate implementation of *`Inventory.json_dict()`*.

The `dict`s returned by *`DataObjBytes`* and *`DataObjStr`* both have `str` keys, but they have `bytes` and `str` values, respectively. The `dict` keys are identical to the `str` values of the *`DataFields`* `Enum` members.

Calling with both *expand* and *contract* as `True` is invalid.

Parameters

- **expand** – `bool` *(optional)* – Return `dict` with any *`uri`* or *`dispname`* abbreviations expanded
- **contract** – `bool` *(optional)* – Return `dict` with abbreviated *`uri`* and *`dispname`*

Returns

d – `dict` – Object data

Raises

ValueError – If both *expand* and *contract* are `True`

abstract property name

Object name, as recognized internally by Sphinx†.

abstract property priority

Object search priority, as handled internally by Sphinx†.

abstract property role

Sphinx role to be used when referencing the object†.

rst_fmt = ':{domain}:{role}:`{name}`'

`str.format()` template for generating reST-like representations of object data for *`as_rst`* (used with *`Inventory.suggest()`*).

abstract property uri

Object URI relative to documentation root†.

Possibly abbreviated; see *here*.

abstract property uri_abbrev

Abbreviation character(s) for URI tail†.

`'$'` or `b'$'` for *version 2* objects.inv files.

property uri_contracted

Object-relative URI, contracted with *uri_abbrev*.

property uri_expanded

Object-relative URI, with *uri_abbrev* expanded.

6.2 sphobjinv.enum

Helper enums for `sphobjinv`.

`sphobjinv` is a toolkit for manipulation and inspection of Sphinx objects.inv files.

Author
Brian Skinn (brian.skinn@gmail.com)

File Created
4 May 2019

Copyright
(c) Brian Skinn 2016-2022

Source Repository
https://github.com/bskinn/sphobjinv

Documentation
https://sphobjinv.readthedocs.io/en/stable

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Code: MIT License

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See LICENSE.txt for full license terms.

Members

class HeaderFields(*value*)

`Enum` for various inventory-level data items.

A subset of these `Enum` values is used in various Regex, JSON, and string formatting contexts within class:~*sphobjinv.inventory.Inventory* and *schema.json_schema*.

Count = 'count'

Number of objects contained in the inventory

Metadata = 'metadata'

The `str` value of this `Enum` member is accepted as a root-level key in a `dict` to be imported into an *Inventory*. The corresponding value in the `dict` may contain any arbitrary data. Its possible presence is accounted for in *schema.json_schema*.

The data associated with this key are **ignored** during import into an *Inventory*.

Project = 'project'

Project name associated with an inventory

Version = 'version'

Project version associated with an inventory

class SourceTypes(*value*)

Enum for the import mode used in instantiating an *Inventory*.

Since Enum keys iterate in definition order, the definition order here defines the order in which *Inventory* objects attempt to parse a source object passed to *Inventory.__init__()* either as a positional argument or via the generic *source* keyword argument.

This order **DIFFERS** from the documentation order, which is alphabetical.

BytesPlaintext = 'bytes_plain'

Instantiation from a plaintext objects.inv bytes.

BytesZlib = 'bytes_zlib'

Instantiation from a zlib-compressed objects.inv bytes.

DictJSON = 'dict_json'

Instantiation from a dict validated against *schema.json_schema*.

FnamePlaintext = 'fname_plain'

Instantiation from a plaintext objects.inv file on disk.

FnameZlib = 'fname_zlib'

Instantiation from a zlib-compressed objects.inv file on disk.

Manual = 'manual'

No source; *Inventory* was instantiated with *project* and *version* as empty strings and *objects* as an empty list.

URL = 'url'

Instantiation from a zlib-compressed objects.inv file downloaded from a URL.

6.3 sphobjinv.error

Custom errors for sphobjinv.

sphobjinv is a toolkit for manipulation and inspection of Sphinx objects.inv files.

Author
Brian Skinn (brian.skinn@gmail.com)

File Created
5 Nov 2017

Copyright
(c) Brian Skinn 2016-2022

Source Repository
https://github.com/bskinn/sphobjinv

Documentation
https://sphobjinv.readthedocs.io/en/stable

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Code: MIT License

Docs & Docstrings: CC BY 4.0 International License

See LICENSE.txt for full license terms.

Members

exception SphobjinvError

Custom sphobjinv error superclass.

exception VersionError

Raised when attempting an operation on an unsupported version.

The current version of sphobjinv only supports 'version 2' objects.inv files (see *here*).

6.4 sphobjinv.fileops

File I/O helpers for sphobjinv.

sphobjinv is a toolkit for manipulation and inspection of Sphinx objects.inv files.

Author
Brian Skinn (brian.skinn@gmail.com)

File Created
5 Nov 2017

Copyright
(c) Brian Skinn 2016-2022

Source Repository
https://github.com/bskinn/sphobjinv

Documentation
https://sphobjinv.readthedocs.io/en/stable

License
Code: MIT License

Docs & Docstrings: CC BY 4.0 International License

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Members

readbytes(*path*)

Read file contents and return as bytes.

Changed in version 2.1: *path* can now be Path or str. Previously, it had to be str.

Parameters
path – str or Path – Path to file to be opened.

Returns
b – bytes – Contents of the indicated file.

readjson(*path*)

Create dict from JSON file.

No data or schema validation is performed.

Changed in version 2.1: *path* can now be Path or str. Previously, it had to be str.

Parameters
path – str or Path – Path to JSON file to be read.

Returns
d – dict – Deserialized JSON.

urlwalk(*url*)

Generate a series of candidate objects.inv URLs.

URLs are based on the seed *url* passed in. Ensure that the path separator in *url* is the standard **forward** slash ('/').

Parameters
url – str – Seed URL defining directory structure to walk through.

Yields
inv_url – str – Candidate URL for objects.inv location.

writebytes(*path*, *contents*)

Write indicated file contents.

Any existing file at *path* will be overwritten.

Changed in version 2.1: *path* can now be Path or str. Previously, it had to be str.

Parameters

- **path** – str or Path – Path to file to be written.
- **contents** – bytes – Content to be written to file.

writejson(*path*, *d*)

Create JSON file from dict.

No data or schema validation is performed. Any existing file at *path* will be overwritten.

Changed in version 2.1: *path* can now be Path or str. Previously, it had to be str.

Parameters

- **path** – str or Path – Path to output JSON file.
- **d** – dict – Data structure to serialize.

6.5 sphobjinv.inventory

sphobjinv *data class for full inventories*.

sphobjinv is a toolkit for manipulation and inspection of Sphinx objects.inv files.

Author
Brian Skinn (brian.skinn@gmail.com)

File Created
7 Dec 2017

Copyright
(c) Brian Skinn 2016-2022

Source Repository
https://github.com/bskinn/sphobjinv

Documentation
https://sphobjinv.readthedocs.io/en/stable

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Code: MIT License

Docs & Docstrings: CC BY 4.0 International License

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Members

class Inventory(*source=None*, *plaintext=None*, *zlib=None*, *fname_plain=None*, *fname_zlib=None*, *dict_json=None*, *url=None*, *count_error=True*)

Entire contents of an objects.inv inventory.

All information is stored internally as `str`, even if imported from a `bytes` source.

All arguments except *count_error* are used to specify the source from which the *Inventory* contents are to be populated. **At most ONE** of these source arguments may be other than `None`.

The *count_error* argument is only relevant to the *dict_json* source type.

Equality comparisons between *Inventory* instances will return `True` if *project*, *version*, and **all** contents of *objects* are identical, even if the instances were created from different sources:

```
>>> inv1 = soi.Inventory(
...     url="https://sphobjinv.readthedocs.io/en/latest/objects.inv"
... )
>>> inv2 = soi.Inventory(inv1.data_file())
>>> inv1 is inv2
False
>>> inv1 == inv2
True
```

Changed in version 2.1: Previously, an *Inventory* instance would compare equal only to itself.

source

The *Inventory* will attempt to parse the indicated source object as each of the below types in sequence, **except** for *url*.

This argument is included mainly as a convenience feature for use in interactive sessions, as invocations of the following form implicitly populate *source*, as the first positional argument:

```
>>> inv = Inventory(src_obj)
```

In most cases, for clarity it is recommended that programmatic instantiation of *Inventory* objects utilize the below format-specific arguments.

plaintext

Object is to be parsed as the UTF-8 `bytes` plaintext contents of an objects.inv inventory.

zlib

Object is to be parsed as the UTF-8 `bytes` zlib-compressed contents of an objects.inv inventory.

fname_plain

Object is the `str` or `Path` path to a file containing the plaintext contents of an objects.inv inventory.

Changed in version 2.1: Previously, this argument could only be a `str`.

fname_zlib

Object is the `str` or `Path` path to a file containing the zlib-compressed contents of an objects.inv inventory.

Changed in version 2.1: Previously, this argument could only be a `str`.

dict_json

Object is a `dict` containing the contents of an objects.inv inventory, conforming to the JSON schema of *`schema.json_schema`*.

If *count_error* is passed as `True`, then a `ValueError` is raised if the number of objects found in the `dict` does not match the value associated with its *count* key. If *count_error* is passed as `False`, an object count mismatch is ignored.

url

Object is a `str` URL to a zlib-compressed objects.inv file. Any URL type supported by `urllib.request` SHOULD work; only http: and file: have been directly tested, however.

No authentication is supported at this time.

Members

property count

Count of objects currently in inventory.

data_file(*, *expand=False*, *contract=False*)

Generate a plaintext objects.inv as UTF-8 `bytes`.

`bytes` is used here as the output type since the most common use cases are anticipated to be either (1) dumping to file via *`sphobjinv.fileops.writebytes()`* or (2) compressing via *`sphobjinv.zlib.compress()`*, both of which take `bytes` input.

Calling with both *expand* and *contract* as `True` is invalid.

Parameters

- **expand** – `bool` *(optional)* – Generate `bytes` with any *`uri`* or *`dispname`* abbreviations expanded
- **contract** – `bool` *(optional)* – Generate `bytes` with abbreviated *`uri`* and *`dispname`* values

Returns

b – `bytes` – Inventory in plaintext objects.inv format

Raises

ValueError – If both *expand* and *contract* are `True`

header_preamble = '# Sphinx inventory version 2'

Preamble line for v2 objects.inv header

header_project = '# Project: {project}'

Project line `str.format()` template for objects.inv header

header_version = '# Version: {version}'

Version line `str.format()` template for objects.inv header

header_zlib = '# The remainder of this file is compressed using zlib.'

zlib compression line for v2 objects.inv header

json_dict(*expand=False*, *contract=False*)

Generate a flat `dict` representation of the inventory.

The returned `dict` matches the schema of *`sphobjinv.schema.json_schema`*.

Calling with both *expand* and *contract* as `True` is invalid.

Parameters

- **expand** – `bool` *(optional)* – Return `dict` with any *`uri`* or *`dispname`* abbreviations expanded

- **contract** – bool *(optional)* – Return dict with abbreviated *uri* and *dispname* values

Returns

d – dict – Inventory data; keys and values are all str

Raises

ValueError – If both *expand* and *contract* are True

objects

list of *DataObjStr* representing the data objects of the inventory. Can be edited directly to change the inventory contents. Undefined/random behavior/errors will result if the type of the elements is anything other than *DataObjStr*.

property objects_rst

list of objects formatted in a str reST-like representation.

The format of each str in the list is given by *data.SuperDataObj.rst_fmt*.

Returns

obj_l – list of str – Inventory object data in reST-like format

project

str project display name for the inventory (see *here*).

source_type

SourceTypes Enum value indicating the type of source from which the instance was generated.

suggest(*name*, *, *thresh=50*, *with_index=False*, *with_score=False*)

Suggest objects in the inventory to match a name.

suggest() makes use of the edit-distance scoring library fuzzywuzzy to identify potential matches to the given *name* within the inventory. The search is performed over the list of str generated by *objects_rst()*.

thresh defines the minimum fuzzywuzzy match quality (an integer ranging from 0 to 100) required for a given object to be included in the results list. Can be any float value, but best results are generally obtained with values between 50 and 80, depending on the number of objects in the inventory, the confidence of the user in the match between *name* and the object(s) of interest, and the desired fidelity of the search results to *name*.

This functionality is provided by the *'suggest' subparser* of the command-line interface.

Parameters

- **name** – str – Object name for fuzzywuzzy pattern matching
- **thresh** – float – fuzzywuzzy match quality threshold
- **with_index** – bool – Include with each matched name its index within *Inventory.objects*
- **with_score** – bool – Include with each matched name its fuzzywuzzy match quality score

Returns

res_l – list

If both *with_index* and *with_score* are False, members are the str *SuperDataObj.as_rst()* representations of matching objects.

If either is True, members are tuples of the indicated match results:

with_index == *True*: (as_rst, index)

with_score == *True*: (as_rst, score)

with_index == *with_score* == *True*: (as_rst, score, index)

version

`str` project display version for the inventory (see *here*).

6.6 sphobjinv.re

Helper regexes for `sphobjinv`.

`sphobjinv` is a toolkit for manipulation and inspection of Sphinx objects.inv files.

Author
Brian Skinn (brian.skinn@gmail.com)

File Created
5 Nov 2017

Copyright
(c) Brian Skinn 2016-2022

Source Repository
https://github.com/bskinn/sphobjinv

Documentation
https://sphobjinv.readthedocs.io/en/stable

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Code: MIT License

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Members

p_data = re.compile('\n ^ # Start of line\n (?P<name>.+?) # --> Name\n \\s+ # Dividing space\n (?P<domain>[^\\s:]+) # --> Domain\n : , re.MULTILINE|re.VERBOSE)

Compiled re `str` regex pattern for data lines in `str` decompressed inventory files

pb_comments = re.compile(b'^#.*$', re.MULTILINE)

Compiled re `bytes` pattern for comment lines in decompressed inventory files

pb_data = re.compile(b'\n ^ # Start of line\n (?P<name>.+?) # --> Name\n \\s+ # Dividing space\n (?P<domain>[^\\s:]+) # --> Domain\n : , re.MULTILINE|re.VERBOSE)

Compiled re `bytes` regex pattern for data lines in `bytes` decompressed inventory files

pb_project = re.compile(b'\n ^ # Start of line\n [#][ ]Project:[ ] # Preamble\n (?P<project>.*?) # Lazy rest of line is project name\n \\r?$ # Ignore, re.MULTILINE|re.VERBOSE)

Compiled re `bytes` pattern for project line

pb_version = re.compile(b'\n ^ # Start of line\n [#][ ]Version:[ ] # Preamble\n (?P<version>.*?) # Lazy rest of line is version\n \\r?$ # Ignore poss, re.MULTILINE|re.VERBOSE)

Compiled re `bytes` pattern for version line

```
ptn_data = '\n ^ # Start of line\n (?P<name>.+?) # --> Name\n \\s+ # Dividing space\n
(?P<domain>[^\\s:]+) # --> Domain\n :  # Dividing colon\n (?P<role>[^\\s]+) # --> Role\n
\\s+ # Dividing space\n (?P<priority>-?\\d+) # --> Priority\n \\s+? # Dividing space\n
(?P<uri>\\S*) # --> URI\n \\s+ # Dividing space\n (?P<dispname>.+?) # --> Display name,
lazy b/c possible CR\n \\r?$ # Ignore possible CR at EOL\n '
```

Regex pattern string used to compile *p_data* and *pb_data*

6.7 sphobjinv.schema

JSON schema to validate inventory dictionaries.

This module is part of sphobjinv, a toolkit for manipulation and inspection of Sphinx objects.inv files.

Author
Brian Skinn (brian.skinn@gmail.com)

File Created
7 Dec 2017

Copyright
(c) Brian Skinn 2016-2022

Source Repository
https://github.com/bskinn/sphobjinv

Documentation
https://sphobjinv.readthedocs.io/en/stable

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Members

```
json_schema = {'$schema': 'https://json-schema.org/draft-04/schema#',
'additionalProperties': False, 'patternProperties': {'^\\d+': {'additionalProperties':
False, 'properties': {'dispname': {'type': 'string'}, 'domain': {'type': 'string'},
'name': {'type': 'string'}, 'priority': {'type': 'string'}, 'role': {'type':
'string'}, 'uri': {'type': 'string'}}, 'required': ['name', 'domain', 'role',
'priority', 'uri', 'dispname'], 'type': 'object'}}, 'properties': {'count': {'type':
'integer'}, 'metadata': {}, 'project': {'type': 'string'}, 'version': {'type':
'string'}}, 'required': ['project', 'version', 'count'], 'type': 'object'}
```

JSON schema for validating the dict forms of Sphinx objects.inv inventories as generated from or expected by *Inventory* classes.

6.8 sphobjinv.zlib

zlib (de)compression helpers for `sphobjinv`.

`sphobjinv` is a toolkit for manipulation and inspection of Sphinx objects.inv files.

Author
Brian Skinn (brian.skinn@gmail.com)

File Created
5 Nov 2017

Copyright
(c) Brian Skinn 2016-2022

Source Repository
https://github.com/bskinn/sphobjinv

Documentation
https://sphobjinv.readthedocs.io/en/stable

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Members

`compress`(*bstr*)

Compress a version 2 `intersphinx` objects.inv bytestring.

The #-prefixed comment lines are left unchanged, whereas the plaintext data lines are compressed with `zlib`.

Parameters
`bstr` – `bytes` – Binary string containing the decompressed contents of an objects.inv file.

Returns
out_b – `bytes` – Binary string containing the compressed objects.inv content.

`decompress`(*bstr*)

Decompress a version 2 `intersphinx` objects.inv bytestring.

The #-prefixed comment lines are left unchanged, whereas the `zlib`-compressed data lines are decompressed to plaintext.

Parameters
`bstr` – `bytes` – Binary string containing a compressed objects.inv file.

Returns
out_b – `bytes` – Decompressed binary string containing the plaintext objects.inv content.

CHAPTER

SEVEN

SPHOBJINV.CLI (NON-API)

7.1 sphobjinv.cli.convert

`sphobjinv` *module for CLI convert functionality*.

`sphobjinv` is a toolkit for manipulation and inspection of Sphinx objects.inv files.

Author
Brian Skinn (brian.skinn@gmail.com)

File Created
20 Oct 2022

Copyright
(c) Brian Skinn 2016-2022

Source Repository
https://github.com/bskinn/sphobjinv

Documentation
https://sphobjinv.readthedocs.io/en/stable

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Members

do_convert(*inv*, *in_path*, *params*)

Carry out the conversion operation, including writing output.

If *OVERWRITE* is passed and the output file (the default location, or as passed to *OUTFILE*) exists, it will be overwritten without a prompt. Otherwise, the user will be queried if it is desired to overwrite the existing file.

If *QUIET* is passed, nothing will be printed to stdout (potentially useful for scripting), and any existing output file will be overwritten without prompting.

Parameters

- **inv** – *Inventory* – Inventory object to be output in the format indicated by *MODE*.
- **in_path** – str – For a local input file, its absolute path. For a URL, the (possibly truncated) URL text.
- **params** – dict – Parameters/values mapping from the active subparser

7.2 sphobjinv.cli.core

`sphobjinv` *CLI core execution module*.

`sphobjinv` is a toolkit for manipulation and inspection of Sphinx objects.inv files.

Author
Brian Skinn (brian.skinn@gmail.com)

File Created
15 Nov 2020

Copyright
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Source Repository
https://github.com/bskinn/sphobjinv

Documentation
https://sphobjinv.readthedocs.io/en/stable

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Members

`main()`

Handle command line invocation.

Parses command line arguments, handling the no-arguments and *VERSION* cases.

Creates the *Inventory* from the indicated source and method.

Invokes *do_convert()* or *do_suggest()* per the subparser name stored in *SUBPARSER_NAME*.

7.3 sphobjinv.cli.load

Module for `sphobjinv` *CLI* *Inventory* *loading*.

`sphobjinv` is a toolkit for manipulation and inspection of Sphinx objects.inv files.

Author
Brian Skinn (brian.skinn@gmail.com)

File Created
17 Nov 2020

Copyright
(c) Brian Skinn 2016-2022

Source Repository
https://github.com/bskinn/sphobjinv

Documentation
https://sphobjinv.readthedocs.io/en/stable

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Members

import_infile(*in_path*)

Attempt import of indicated file.

Convenience function wrapping attempts to load an *Inventory* from a local path.

Parameters
in_path – str – Path to input file

Returns
inv – *Inventory* or None – If instantiation with the file at *in_path* succeeds, the resulting *Inventory* instance; otherwise, None

inv_local(*params*)

Create *Inventory* from local source.

Uses *resolve_inpath()* to sanity-check and/or convert *INFILE*.

Calls sys.exit() internally in error-exit situations.

Parameters
params – dict – Parameters/values mapping from the active subparser

Returns

- *inv* – *Inventory* – Object representation of the inventory at *INFILE*
- *in_path* – str – Input file path as resolved/checked by *resolve_inpath()*

inv_stdin(*params*)

Create *Inventory* from contents of stdin.

Due to stdin's encoding and formatting assumptions, only text-based inventory formats can be sanely parsed.

Thus, only plaintext and JSON inventory formats can be used as inputs here.

Parameters
params – dict – Parameters/values mapping from the active subparser

Returns
inv – *Inventory* – Object representation of the inventory provided at stdin

inv_url(*params*)

Create *Inventory* from file downloaded from URL.

Initially, treats *INFILE* as a download URL to be passed to the *url* initialization argument of *Inventory*.

If an inventory is not found at that exact URL, progressively searches the directory tree of the URL for objects.inv.

Injects the URL at which an inventory was found into *params* under the *FOUND_URL* key.

Calls sys.exit() internally in error-exit situations.

Parameters
params – dict – Parameters/values mapping from the active subparser

Returns

- *inv* – *Inventory* – Object representation of the inventory at *INFILE*
- *ret_path* – str – URL from *INFILE* used to construct *inv*. If URL is longer than 45 characters, the central portion is elided.

7.4 sphobjinv.cli.parser

sphobjinv *CLI parser definition module*.

sphobjinv is a toolkit for manipulation and inspection of Sphinx objects.inv files.

Author
Brian Skinn (brian.skinn@gmail.com)

File Created
15 Nov 2020

Copyright

Source Repository
https://github.com/bskinn/sphobjinv

Documentation
https://sphobjinv.readthedocs.io/en/stable

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Members

class PrsConst

Container for CLI parser constants.

ALL = 'all'

Optional argument name for use with the *SUGGEST* subparser, indicating to print all returned objects, regardless of the number returned, without asking for confirmation

CONTRACT = 'contract'

Optional argument name for use with the *CONVERT* subparser, indicating to contract URIs and display names to abbreviated forms in the generated output file

CONVERT = 'convert'

Subparser name for inventory file conversions; stored in *SUBPARSER_NAME* when selected

DEF_BASENAME = 'objects'

Default base name for an unspecified *OUTFILE*

DEF_OUT_EXT = {'json': '.json', 'plain': '.txt', 'zlib': '.inv'}

Default extensions for an unspecified *OUTFILE*

DEF_THRESH = 75

Default match threshold for *sphobjinv suggest --thresh*

EXPAND = 'expand'

Optional argument name for use with the *CONVERT* subparser, indicating to expand URI and display name abbreviations in the generated output file

FOUND_URL = 'found_url'

Dict key for URL at which an inventory was actually found

HELP_CONV_EXTS = "'.inv/.txt/.json'"

Help text for default extensions for the various conversion types

HELP_CO_PARSER = 'Convert intersphinx inventory to zlib-compressed, plaintext, or JSON formats.'

Help text for the *CONVERT* subparser

HELP_SU_PARSER = 'Fuzzy-search intersphinx inventory for desired object(s).'

Help text for the *SUGGEST* subparser

INDEX = 'index'

Optional argument name for use with the *SUGGEST* subparser, indicating to print the location index of each returned object within *INFILE* along with the object domain/role/name (may be specified with *SCORE*)

INFILE = 'infile'

Required positional argument name for use with both *CONVERT* and *SUGGEST* subparsers, holding the path (or URL, if *URL* is specified) to the input file

JSON = 'json'

Argument value for *CONVERT MODE*, to output an inventory as JSON

MODE = 'mode'

Positional argument name for use with *CONVERT* subparser, indicating output file format (*ZLIB*, *PLAIN* or *JSON*)

OUTFILE = 'outfile'

Optional positional argument name for use with the *CONVERT* subparser, holding the path to the output file (*DEF_BASENAME* and the appropriate item from *DEF_OUT_EXT* are used if this argument is not provided)

OVERWRITE = 'overwrite'

Optional argument name for use with the *CONVERT* subparser, indicating to overwrite any existing output file without prompting

PAGINATE = 'paginate'

Optional argument name for use with the *SUGGEST* subparser, indicating to paginate the suggest subcommand results

PLAIN = 'plain'

Argument value for *CONVERT MODE*, to output a plaintext inventory

QUIET = 'quiet'

Optional argument name for use with the *CONVERT* subparser, indicating to suppress console output

SCORE = 'score'

Optional argument name for use with the *SUGGEST* subparser, indicating to print the `fuzzywuzzy` score of each returned object within *INFILE* along with the object domain/role/name (may be specified with *INDEX*)

SEARCH = 'search'

Positional argument name for use with the *SUGGEST* subparser, holding the search term for `fuzzywuzzy` text matching

SUBPARSER_NAME = 'sprs_name'

Param for storing subparser name (*CONVERT* or *SUGGEST*)

SUGGEST = 'suggest'

Subparser name for inventory object suggestions; stored in *SUBPARSER_NAME* when selected

SUGGEST_CONFIRM_LENGTH = 30

Number of returned objects from a *SUGGEST* subparser invocation above which user will be prompted for confirmation to print the results (unless *ALL* is specified)

THRESH = 'thresh'

Optional argument name for use with the *SUGGEST* subparser, taking the minimum desired `fuzzywuzzy` match quality as one required argument

URL = 'url'

Optional argument name for use with both *CONVERT* and *SUGGEST* subparsers, indicating that *INFILE* is to be treated as a URL rather than a local file path

VERSION = 'version'

Optional argument name for use with the base argument parser, to show version &c. info, and exit

VER_TXT = '\nsphobjinv v2.3\n\nCopyright (c) Brian Skinn 2016-2022\nLicense: The MIT License\n\nBug reports & feature requests: https://github.com/bskinn/sphobjinv\nDocumentation: https://sphobjinv.readthedocs.io\n'

Version &c. output blurb

ZLIB = 'zlib'

Argument value for *CONVERT MODE*, to output a `zlib`-compressed inventory

getparser()

Generate argument parser.

Returns

prs – `ArgumentParser` – Parser for commandline usage of

7.5 sphobjinv.cli.paths

`sphobjinv` *CLI path resolution module*.

`sphobjinv` is a toolkit for manipulation and inspection of Sphinx objects.inv files.

Author

Brian Skinn (brian.skinn@gmail.com)

File Created

19 Nov 2020

Copyright

(c) Brian Skinn 2016-2022

Source Repository

https://github.com/bskinn/sphobjinv

Documentation

https://sphobjinv.readthedocs.io/en/stable

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Members

resolve_inpath(*in_path*)

Resolve the input file, handling invalid values.

Currently, only checks for existence and not-directory.

Parameters
in_path – str – Path to desired input file

Returns
abs_path – str – Absolute path to indicated file

Raises
FileNotFoundError – If a file is not found at the given path

resolve_outpath(*out_path*, *in_path*, *params*)

Resolve the output location, handling mode-specific defaults.

If the output path or basename are not specified, they are taken as the same as the input file. If the extension is unspecified, it is taken as the appropriate mode-specific value from *DEF_OUT_EXT*.

If *URL* is passed, the input directory is taken to be os.getcwd() and the input basename is taken as *DEF_BASENAME*.

Parameters

- **out_path** – str or None – Output location provided by the user, or None if omitted
- **in_path** – str – For a local input file, its absolute path. For a URL, the (possibly truncated) URL text.
- **params** – dict – Parameters/values mapping from the active subparser

Returns
out_path – str – Absolute path to the target output file

7.6 sphobjinv.cli.suggest

sphobjinv *module for CLI suggest functionality*.

sphobjinv is a toolkit for manipulation and inspection of Sphinx objects.inv files.

Author
Brian Skinn (brian.skinn@gmail.com)

File Created
20 Oct 2022

Copyright
(c) Brian Skinn 2016-2022

Source Repository
https://github.com/bskinn/sphobjinv

Documentation
https://sphobjinv.readthedocs.io/en/stable

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Members

`confirm_print_if_long_list`(*params*, *results*)

Check if the results list is too long and query user if to proceed.

Skip the check if `--all` has been passed.

Also skip the check if receiving data from `stdin`, as a stream interaction here fouls the data flow…I forget exactly how.

`do_suggest`(*inv*, *params*)

Perform the suggest call and output the results.

Results are printed one per line.

If neither *INDEX* nor *SCORE* is specified, the results are output without a header. If either or both are specified, the results are output in a lightweight tabular format.

If the number of results exceeds *SUGGEST_CONFIRM_LENGTH*, the user will be queried whether to display all of the returned results unless *ALL* is specified.

No *QUIET* option is available here, since a silent mode for suggestion output is nonsensical.

Parameters

- **inv** – *Inventory* – Inventory object to be output in the format indicated by *MODE*.
- **params** – `dict` – Parameters/values mapping from the active subparser

`extract_objectsinv_url_base`(*objectsinv_url*)

Infer a base URL for the provided `objects.inv` inventory URL.

If this function is a no-op, then the resulting base is NOT RELIABLE, because the URL did not end with `/objects.inv`.

If this function *does* make a change, then the resulting base is RELATIVELY RELIABLE, since the only change that should occur is stripping of a `/objects.inv` suffix, which strongly implies but does not guarantee that the URL came from a Sphinx docset in the standard multi-page HTML layout.

Parameters
objectsinv_url – `str` – URL from which to attempt docset base inference

Returns
trimmed – `str` – URL after attempt to trim a trailing `/objects.inv`

`generate_index_lines`(*results*, *index_width*, *rst_width*)

Yield lines to print the table with indices.

`generate_names_only_lines`(*results*)

Yield lines to print containing just the object search results.

`generate_score_index_lines`(*results*, *score_width*, *index_width*, *rst_width*)

Yield lines to print the table with scores & indices.

generate_score_lines(*results*, *score_width*, *rst_width*)

Yield lines to print the table with scores.

print_results_table(*with_index*, *with_score*, *results*, *params*)

Prepare and print the table of suggest search results.

print_stderr_inferred_mapping(*params*)

Print as good of an *intersphinx_mapping* entry as can be determined.

print_stderr_result_count(*params*, *results*)

Report the count of found objects from the suggest search.

7.7 sphobjinv.cli.ui

`sphobjinv` *CLI UI functions*.

`sphobjinv` is a toolkit for manipulation and inspection of Sphinx objects.inv files.

Author
Brian Skinn (brian.skinn@gmail.com)

File Created
19 Nov 2020

Copyright
(c) Brian Skinn 2016-2022

Source Repository
https://github.com/bskinn/sphobjinv

Documentation
https://sphobjinv.readthedocs.io/en/stable

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Code: MIT License

Docs & Docstrings: CC BY 4.0 International License

See LICENSE.txt for full license terms.

Members

err_format(*exc*)

Pretty-format an exception.

Parameters
exc – `Exception` – Exception instance to pretty-format

Returns
pretty_exc – `str` – Exception type and message formatted as '{type}: {message}'

print_stderr(*thing*, *params*, *, *end='\n'*)

Print *thing* to stderr if not in quiet mode.

Quiet mode is indicated by the value at the *QUIET* key within *params*.

Quiet mode is not implemented for the "*suggest*" CLI mode.

Parameters

- **thing** – *any* – Object to be printed

- **params** – dict – Parameters/values mapping from the active subparser
- **end** – str – String to append to printed content (default: \n)

yesno_prompt(*prompt*)

Query user at *stdin* for yes/no confirmation.

Uses input(), so will hang if used programmatically unless *stdin* is suitably mocked.

The value returned from input() must satisfy either resp.lower() == 'n' or resp.lower() == 'y', or else the query will be repeated *ad infinitum*. This function does **NOT** augment *prompt* to indicate the constraints on the accepted values.

Parameters
prompt – str – Prompt to display to user that requests a 'Y' or 'N' response

Returns
resp – str – User response

7.8 sphobjinv.cli.write

Module for sphobjinv *CLI* *Inventory* *writing*.

sphobjinv is a toolkit for manipulation and inspection of Sphinx objects.inv files.

Author
Brian Skinn (brian.skinn@gmail.com)

File Created
19 Nov 2020

Copyright
(c) Brian Skinn 2016-2022

Source Repository
https://github.com/bskinn/sphobjinv

Documentation
https://sphobjinv.readthedocs.io/en/stable

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Code: MIT License

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See LICENSE.txt for full license terms.

Members

write_file(*inv*, *in_path*, *params*)

Write the inventory contents to a file on disk.

Parameters

- **inv** – *Inventory* – Objects inventory to be written to stdout
- **in_path** – str – For a local input file, its absolute path. For a URL, the (possibly truncated) URL text.
- **params** – dict – *argparse* parameters

Raises
ValueError – If both *params["expand"]* and *params["contract"]* are True

write_json(*inv*, *path*, *params*)

Write an *Inventory* to JSON.

Writes output via *fileops.writejson()*.

Calling with both *expand* and *contract* as `True` is invalid.

Parameters

- **inv** – *Inventory* – Objects inventory to be written zlib-compressed
- **path** – `str` – Path to output file
- **params** – dict – *argparse* parameters

Raises

ValueError – If both *params["expand"]* and *params["contract"]* are `True`

write_plaintext(*inv*, *path*, *, *expand=False*, *contract=False*)

Write an *Inventory* to plaintext.

Newlines are inserted in an OS-aware manner, based on the value of `os.linesep`.

Calling with both *expand* and *contract* as `True` is invalid.

Parameters

- **inv** – *Inventory* – Objects inventory to be written as plaintext
- **path** – `str` – Path to output file
- **expand** – `bool` *(optional)* – Generate output with any *uri* or *dispname* abbreviations expanded
- **contract** – `bool` *(optional)* – Generate output with abbreviated *uri* and *dispname* values

Raises

ValueError – If both *expand* and *contract* are `True`

write_stdout(*inv*, *params*)

Write the inventory contents to stdout.

Parameters

- **inv** – *Inventory* – Objects inventory to be written to stdout
- **params** – dict – *argparse* parameters

Raises

ValueError – If both *params["expand"]* and *params["contract"]* are `True`

write_zlib(*inv*, *path*, *, *expand=False*, *contract=False*)

Write an *Inventory* to zlib-compressed format.

Calling with both *expand* and *contract* as `True` is invalid.

Parameters

- **inv** – *Inventory* – Objects inventory to be written zlib-compressed
- **path** – `str` – Path to output file
- **expand** – `bool` *(optional)* – Generate output with any *uri* or *dispname* abbreviations expanded
- **contract** – `bool` *(optional)* – Generate output with abbreviated *uri* and *dispname* values

Raises

`ValueError` – If both *expand* and *contract* are `True`

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