



Li-Pro.Net Sphinx Primer

Version 0.0.4+RTDEXT

The LP/N Documentation Team

Sep 14, 2020

**Li-Pro.Net
Jena, Germany
Email: info@li-pro.net**

Table of Contents

1	Concepts	9
1.1	Use of whitespace	11
1.1.1	Indentation	11
1.2	Sphinx naming	13
1.2.1	Roles	13
1.2.2	Directives	15
1.2.3	Domains	18
1.3	Parts, Chapters, Titles, Sections	20
1.4	Table of Contents Tree	22
1.4.1	Sidebar navigation menu	23
1.4.2	Secondary sub-TOC trees	23
1.4.3	How this document uses main and secondary TOC	23
1.5	Paragraphs	25
1.5.1	Quotes (block quotation) Element	25
1.5.2	Line Blocks	26
1.5.3	Doctest Blocks	27
1.6	Inline Markup	28
1.7	File, Directory, Path	30
1.8	Lists, Definition Lists	31
1.8.1	Unordered (bullet) Lists	31
1.8.2	Ordered (numbered) Lists	32
1.8.3	Definition (description) Lists	33
1.9	Explicit Markup	35
1.9.1	Comments	35
1.9.2	Directives	35
1.9.3	Footnotes	36
1.9.4	Citations	37
1.10	Reuse Content	38
1.10.1	Include a Shared File	38

1.10.2	Substitutions	39
1.11	Images and Figures	41
1.11.1	SVG Graphics only	41
1.11.2	PNG Images only	43
1.11.3	Inserting	45
1.11.4	Inserting with Captions	46
1.11.5	Inserting Inline	47
1.12	Tables	48
1.12.1	Grid Style	49
1.12.2	Simple Style	50
1.12.3	List Table	51
1.12.4	CSV Table	53
1.13	Code Example	57
1.13.1	Explicit Code Blocks	59
1.13.2	Explicit Code Includes	61
1.14	Mathematics	62
1.15	Admonitions	64
1.15.1	Generic Admonition	64
1.15.2	Specific Admonitions	64
1.15.3	Sphinx Additional Admonitions	69
1.16	Hyperlink	70
1.17	Referencing	70
1.17.1	A cool section	71
1.18	External References	71
1.19	Downloadable Files	72
1.20	Semantic Descriptions and References	73
1.21	Writing about User Interface	75
1.21.1	Other Semantic Markup	76
1.22	Glossary	77
1.22.1	Create a Glossary	77
1.22.2	Link a Term to its Glossary Entry	78
1.23	Index	79
2	Extensions	81
2.1	Spelling Checker	83
2.1.1	Private Dictionaries	83
2.2	BibTeX Citations	84
2.3	LinuxDoc	86
2.3.1	Flat list table	86
2.4	Program Output	89
2.4.1	Complete output	89
2.4.2	Shortening the output	90
2.4.3	Mimicking shell input	90
2.4.4	Command execution and shell expansion	91

2.4.5	Error handling	92
2.5	Mathematical Plots	94
2.5.1	Expressions	94
2.5.2	Plots	95
2.6	PGF/TikZ LaTeX Pictures	100
2.7	Block Diagram Family	103
2.7.1	Block Diagram	104
2.7.2	Sequence Diagram	107
2.7.3	Activity Diagram	110
2.7.4	Network Diagram	113
2.8	Tabbed Content	119
2.9	Paneled Content	123
2.10	Email Obfuscate	125
3	Themes	127
3.1	Read the Docs Sphinx Theme	129
4	Cheat Sheet	131
	Appendices	135
A	Appendix	135
A.1	License	135
A.2	Credits	144
B	Glossary	145
B.1	Terms	145
B.1.1	Commons	145
B.1.2	Programming Languages	146
B.1.3	Technologies	148
	Listings	153
	List of Tables	155
	List of Figures	157
	List of Equations	159
	List of Downloads	161
	List of Issues (To-Do)	163
	Bibliography	166
	Index	167

Summary of Li-Pro.Net Sphinx Primer

Abstract This document has documentation of the Li-Pro.Net community which is a effort to improve the technical writing of any kind of documents and publishings. In short words: How to write Li-Pro.Net documentation with Sphinx.

Involved Components

- *Sphinx*
- *Docutils*
- *reStructuredText*

Audience

- Project members / maintainer
- Hard- and software developer
- Integrators and testers
- Technical writer / editor

Status preliminary (*some mature, much in progress*)

Version 0.0.4

Release 0.0.4+RTDEXT

Date Sep 14, 2020

Authors The LP/N Documentation Team

- Stephan Linz <linz@li-pro.net>

Copyright Copyright © 2020, Li-Pro.Net, The LP/N Documentation Team and individual contributors.—all rights reserved.

License This work is licensed under the Creative Commons Attribution-ShareAlike 3.0 Unported License. For details of the terms and definitions, representations, warranties and disclaimer see the file LICENSE that comes with the documentation and/or read the online version ([CC-BY-SA-3.0](#)).

Credits See the file CREDITS that comes with the documentation for a list of all well known contributors.

Organization Li-Pro.Net

Contact Stephan Linz <linz@li-pro.net>

Address Jena, Germany

Legal Notice of Li-Pro.Net Sphinx Primer



This work is licensed under the Creative Commons Attribution-ShareAlike 3.0 Unported License. For details of the terms and definitions, representations, warranties and disclaimer see the file LICENSE that comes with the documentation and/or read the online version ([CC-BY-SA-3.0](https://creativecommons.org/licenses/by-sa/3.0/)).

Creative Commons Legal Code

Attribution-ShareAlike 3.0 Unported

See [Listing 1.1, License text of the Li-Pro.Net Sphinx Primer](#) (page 135), for the complete text that comes within this document.

You are free:

- to Share** —to copy, distribute and transmit the work
- to Remix** —to adapt the work to make commercial use of the work

Under the following conditions:

- Attribution** —You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work).
- Share Alike** —If you alter, transform, or build upon this work, you may distribute the resulting work only under the same or similar license to this one.

With the understanding that:

- Waiver** —Any of the above conditions can be waived if you get permission from the copyright holder.
- Public Domain** —Where the work or any of its elements is in the public domain under applicable law, that status is in no way affected by the license.
- Other Rights** —In no way are any of the following rights affected by the license:
 - Your fair dealing or fair use rights, or other applicable copyright exceptions and limitations;
 - The author’s moral rights;
 - Rights other persons may have either in the work itself or in how the work is used, such as publicity or privacy rights.

Version history of Li-Pro.Net Sphinx Primer

Table 1: Li-Pro.Net Sphinx Primer Document Revisions

Version	Change	Passed	Date
0.0.4	initial content in chapters “Concepts”	Stephan Linz	2020-09-14
0.0.3	initial content in chapters “Extensions”	Stephan Linz	2020-09-11
0.0.2	initial content in chapters “Cheat Sheet” and “Themes”	Stephan Linz	2020-09-08
0.0.1	base document skeleton	Stephan Linz	2020-09-08
0.0	preliminary, project created	Stephan Linz	2020-09-05

PREAMBLE

How to write Li-Pro.Net documentation with Sphinx.

Excerpts from the [Sphinx Tutorial](#) by Eric Holscher and [Documentation Style Guide](#) by Bareos GmbH & Co. KG and others. See [\[juh2019swdocwsp\]](#) for an introduction to *Sphinx*.

This documentation is built using *Sphinx*, a static-site generator designed to create structured, semantic, and internally consistent documentation. Source documents are written in *reStructuredText*, a semantic, extensible markup syntax similar to Markdown. *reStructuredText* is a [better tool than Markdown for documentation](#).

- [reStructuredText Primer](#) - introduction to reStructuredText
 - [reStructuredText Quick Reference](#)
 - [reStructuredText 1-page cheat sheet](#)
- [Sphinx Markup](#) - detailed guide to Sphinx's markup concepts and reStructuredText extensions
- [Sphinx/Rest Memo](#) - serve as quick reference for reStructuredText and Sphinx syntax

Note: *Sphinx* and *reStructuredText* can be very flexible. For the sake of consistency and maintainability, this how to guide is *highly opinionated* about how documentation source files are organized and marked up.

Section author: Stephan Linz <linz@li-pro.net>

Let's document the project. A lot of these *reStructuredText* syntax examples are covered in the *Sphinx reStructuredText Primer*. The outline for this chapter has been taken from *Documenting Python* and adapted and extended for our needs.

1.1 Use of whitespace

All *reStructuredText* files **use an indentation of three (3) spaces**; no tabs are allowed. The maximum **line length is 80 characters** for normal text, but tables, deeply indented code samples and long links may extend beyond that. *Code example* bodies should use *normal four-(4)-space* indentation.

Make generous use of blank lines where applicable; they help group things together.

1.1.1 Indentation

Indentation is meaningful in *Sphinx* and *reStructuredText* text. Usually, indenting a section means that is “belongs to” the line it is indented under.

for example

```
1 .. figure:: path-to-image.*
2
3     This is the caption of the figure. Notice that it is indented under
4     the line defining the figure.
```

The rules for indentation are:

- Use **spaces, not tabs**.
- Generally, indent **three (3) spaces**.
- Code example, indent **four (4) spaces**, except *reStructuredText* examples.

The exception to the three (3) spaces rule is *Unordered (bullet) Lists* (page 31) and *Ordered (numbered) Lists* (page 32), where indentation follows the content of the list item.

unordered (bulleted) list

(2) spaces

```
1 * This is a list item.
2
3     This is some additional content related to first item. Notice that
4     it is indented to the same column as the first line of content.
5     In this case, that's three (2) spaces.
6
7     .
8     .
9     .
10
11 * The N-th item in a list.
```

ordered (numbered) list

(4) spaces

```
1  1. This is a list item.  
2  
3      This is some additional content related to Item 1. Notice that  
4      it is indented to the same column as the first line of content.  
5      In this case, that's three (3) spaces.  
6  
7      .  
8      .  
9      .  
10  
11 10. The tenth item in a list.  
12  
13      This related content will be indented four (4) spaces.
```


1.2 Sphinx naming

1.2.1 Roles

A [role](#) or “custom interpreted text role” is an inline piece of explicit markup, see [Inline Markup](#) (page 28) and [Explicit Markup](#) (page 35). It signifies that the enclosed text should be interpreted in a specific way. *Sphinx* uses this to provide semantic markup and cross-referencing of identifiers, as described in the appropriate section.

The general syntax is `:rolename:`content``. Like [Directives](#) (page 15), roles are extensible. Own roles can be created. They are used inside other text structures.

Docutils supports the following roles (incomplete list):

:emphasis:

[emphasis](#) - `:emphasis:`emphasis`` - equivalent of `*emphasis*`

:strong:

[strong](#) - `:strong:`strong`` - equivalent of `**strong**`

:literal:

[literal](#) - `:literal:`literal`` - equivalent of ``literal``

:code:

[code](#) - `:code:`code`` - equivalent of ``code``

:subscript:

[subscript](#) - `:subscript:`subscript`` - subscript text

The example The Fibonacci numbers (without inline role for [Mathematics](#) (page 62)).

```
1 .. |gE| unicode:: U+02267 .. GREATER-THAN OVER EQUAL TO
2
3 *f*\ :subscript:`n` = *f*\ :subscript:`n-1` + *f*\ :subscript:`n-2`
4 for *n* |gE| 3 with *f*\ :subscript:`1` = *f*\ :subscript:`2` = 1
```

Which gives $f_n = f_{n-1} + f_{n-2}$ for $n \geq 3$ with $f_1 = f_2 = 1$

:superscript:

[superscript](#) - `:superscript:`superscript`` - superscript text

The example The elementary charge (without inline role for [Mathematics](#) (page 62)).

```
1 .. |sdot| unicode:: U+022C5 .. DOT OPERATOR
2
3 *e* = 1.602176634 |sdot| 10\ :superscript:`-19` C
```

Which gives $e = 1.602176634 \cdot 10^{-19} \text{ C}$

:math:

[math](#) - `:math:`mathematic equations`` - for [Mathematics](#) (page 62) equations

:pep-reference:

[pep-reference](#) - `:pep-reference: `pep-reference`` - equivalent to `:pep: `pep reference number`` - for [External References](#) (page 71) into the PEP (Python Enhancement Proposal) index

:rfc-reference:

[rfc-reference](#) - `:rfc-reference: `rfc-reference`` - equivalent to `:rfc: `rfc reference number`` - for [External References](#) (page 71) into the RFC (Request for Comments) index

:title-reference:

[title-reference](#) - `:title-reference: `title-reference`` - for titles of books, periodicals, and other materials

See also:

- Refer to [Roles](#) for roles provided by *Docutils*.
- Refer to [Roles](#) for roles added by *Sphinx*.

1.2.2 Directives

A [directive](#) is a generic block of *Explicit Markup* (page 35). Besides roles, it is one of the extension mechanisms of *reStructuredText*, and *Sphinx* makes heavy use of it.

Basically, a directive consists of a **name**, **arguments**, **options** and **content**. Keep this terminology in mind, it is used in section *Explicit Markup* (page 35) describing custom directives. Looking at this example, that allows marking a block of content with special meaning.

basic directive syntax looks like this

the example

```

1 .. directive:: arg1 arg2 ...
2   :option1: value
3   :option2: value
4   :option5: value
5   ...
6
7   Multiline content of the directive,
8   ...

```

This line is no longer part of the block controlled by the directive.

directive That is the *directive name*. It is given two arguments here.

arg1, arg2, ... *Arguments*. The last argument can contain spaces (depending on the directive implementation).

:option0:, :option1:, ... :option9: *Options* are optional. As you can see, options are given in the lines immediately following the arguments and indicated by the colons.

Multiline content of the directive, The *directive content* follows after a blank line and is indented relative to the directive start.

Directives are supplied not only by *Docutils*, but *Sphinx* and custom extensions can add their own. Directives are written as a block.

Docutils supports the following directives (incomplete list):

- *Admonitions* (page 64): [attention](#), [caution](#), [danger](#), [error](#), [hint](#), [important](#), [note](#), [tip](#), [warning](#) and the generic [admonition](#). (Most themes style only “note” and “warning” specially.)
- *Images and Figures* (page 41):
 - [image](#)
 - [figure](#) (an image with caption and optional legend)

- Additional body elements:
 - [contents](#) (a local, i.e. for the current file only, table of contents)
 - [section numbering](#) (automatically)
 - [container](#) (a container with a custom class, useful to generate an outer `<div>` in *HTML*)
 - [rubric](#) (a heading without relation to the document sectioning)
 - [topic](#), [sidebar](#) (special highlighted body elements)
 - [parsed-literal](#) (literal block that supports inline markup)
 - [epigraph](#) (a block quote with optional attribution line)
 - [highlights](#), [pull-quote](#) (block quotes with their own class attribute)
 - [compound](#) (a compound paragraph)
 - Special *Tables* (page 48):
 - [table](#) (a table with title)
 - [csv-table](#) (a table generated from comma-separated values)
 - [list-table](#) (a table generated from a list of lists)
 - Special directives and *Include a Shared File* (page 38):
 - [raw](#) (include raw target-format markup)
 - [include](#) (include *reStructuredText* from another file) – in *Sphinx*, when given an absolute include file path, this directive takes it as relative to the source directory
 - [class](#) (assign a class attribute to the next element)¹
 - *HTML* specifics:
 - [meta](#) (generation of *HTML* `<meta>` tags, see also [HTML Metadata](#) below)
 - [title](#) (override document title)
 - Influencing markup:
 - [default-role](#) (set a new default role)
 - [role](#) (create a new role)
- Since these are only per-file, better use *Sphinx*'s facilities for setting the [default_role](#).
- References and *Substitutions* (page 39):
 - [target footnotes](#) (for each external URL target)
 - [replacement text](#) (for a substitution)
 - [unicode characters](#) (used in substitution)

When the default domain contains a **class** directive, this directive will be shadowed. Therefore, *Sphinx* re-exports it as **rst-class**.

Warning: Do *not* use the directives [sectnum](#), [header](#) and [footer](#).

See also:

- Refer to [Directives](#) for directives provided by *Docutils*.
- Refer to [Directives](#) for directives added by *Sphinx*.

1.2.3 Domains

A [domain](#) is a collection of [explicit](#) (page 35) and [inline](#) (page 28) markup ([reStructuredText Directives](#) (page 15) and [Roles](#) (page 13)) to describe and link to objects belonging together, e.g. elements of a programming language. Directive and role names in a domain have names like `domain:name`, e.g. `.. c:function:: int main(int argc, char **argv, char **env)` or `:c:func:`main``.

An [object](#) is the basic building block of [Sphinx](#) documentation. Every “object directive” (e.g. `function` or `object`) creates such a block; and most objects can be cross-referenced to.

The [Standard Domain](#) collects all markup that does not warrant a domain of its own. Its directives and roles are not prefixed with a domain name.

There is a set of directives allowing documenting command-line programs:

Table 1.1: Sphinx directives for command-line programs

short description	directive (target)	role (reference)
Following document options for the program. ↗	<code>.. program:: name</code>	
Describes a command line argument or switch. ↗	<code>.. option:: name args, ...</code>	<code>:option:`name arg`</code>
Describes an environment variable. ↗	<code>.. envvar:: name</code>	<code>:envvar:`name`</code>

There is also a very generic object description directive, which is not tied to any domain. This directive produces the same formatting as the specific ones provided by domains, but does not create index entries or cross-referencing targets:

Table 1.2: Sphinx directives for unspecific objects without referencing

short description	directive (target)	role (reference)
Describes an unspecific element. ↗	<code>.. describe:: text</code>	
Describes an unspecific object. ↗	<code>.. object:: text</code>	

Originally, [Sphinx](#) was conceived for a single project, the documentation of the [Python](#) language. Shortly afterwards, it was made available for everyone as a documentation tool, but the documentation of [Python](#) modules remained deeply built in – the most fundamental directives, like `function`,

were designed for *Python* objects.

Since *Sphinx* has become somewhat popular, interest developed in using it for many different purposes: *C/C++* projects, *JavaScript*, or even *reStructuredText* markup (like in this documentation). The following specific domains are provided by *Sphinx* (without additional extensions):

- The C Domain [↗](#) (name **c**)
- The C++ Domain [↗](#) (name **cpp**)
- The *JavaScript* Domain (name **js**)
- The Math Domain [↗](#) (name **math**)
- The *Python* Domain (name **py**)
- The *reStructuredText* Domain (name **rst**)

See also:

- Refer to [Domains](#) [↗](#) for domains provided by *Sphinx*.

1.3 Parts, Chapters, Titles, Sections

Every *Sphinx* document has multiple level of headings. [Section headers](#) are created by underlining (and optionally overlining) the section title with a punctuation character, at least as long as the text.

Normally, there are no heading levels assigned to certain characters as the structure is determined from the succession of headings. However, for this documentation, here is a suggested convention as covered in the [Sphinx reStructuredText Primer](#) to use them in this order:

- # for title – with overline, for parts
- * for subtitle – with overline, for chapters
- =, for sections
- -, for subsections
- ^, for subsubsections
- =, for paragraphs

They give structure to the document, which is used in navigation and in the display in all output formats. The part section header is not used at all. All regular documents starts with a title heading underlined by #. Therefore the specific names part, chapter, section,... might not match the actual context. Generally we speak about “sections” (or “section headings” or “section markers”).

Note: With *reStructuredText*, there is no leaving out a section level. If you write a chapter it is not possible to continue with a paragraph. Instead the next section must be of the type title.

If you try to do it overwise (chapter 1 * with overline → paragraph ”), the “paragraph” is treated as a “title”. And if you continue by another chapter in the same file (chapter 2 * with overline → title #), **sphinx-build** got confused and at least produces a warning (*Title level inconsistent*) and possibly renders the result incorrectly.

1.4 Table of Contents Tree

Now would be a good time to introduce the `.. toctree::`. One of the main concepts in *Sphinx* is that it allows multiple pages to be combined into a cohesive hierarchy. Since *reStructuredText* does not have facilities to interconnect several documents, or split documents into multiple output files, *Sphinx* uses a custom directive to add relations between the single files the documentation is made of, as well as tables of contents.

The `.. toctree::` directive is the central element and a fundamental part of this structure. Consider this example:

`.. toctree::`

For more details, see [toctree](#)  directive.

The example

```
1 .. toctree::
2     :maxdepth: 2
3
4     install
5     support
6     (many more files listed here)
```

Which gives

```
index
├─ install
├─ support
├─ (many more files here)
│   └─ (many more sub-files here)
```

The above directive example will output a TOC (Table of Contents) in the page where it occurs, using the individual TOCs (including “sub-TOC trees”) of the files given in the directive body. The `:maxdepth: 2` argument tells *Sphinx* to include 2 levels of headers in it’s output. It will output the 2 top-level headers of the pages listed; by default, all levels are included. This also tells *Sphinx* that the other pages are sub-pages of the current page, creating a “tree” structure of the pages.

This accomplishes two things:

- Tables of contents from all those files are inserted, with a maximum depth of argument `:maxdepth:`, that means one nested heading. `.. toctree::` directives in those files are also taken into account.
- *Sphinx* knows that the relative order of the files `install`, `support` and so forth, and it knows that they are children of the shown file, the library index. From this information it generates “next chapter”, “previous chapter” and “parent chapter” links.

In the end, all files included in the build process must occur in (only) one `.. toctree::` directive; *Sphinx* will emit a warning if it finds a file that is not included, because that means that this file will not

be reachable through standard navigation.

The special file `index.rst` at the root of the source directory is the “root” of the TOC tree hierarchy; from it the “Contents” page is generated.

Note: The TOC Tree is also used for generating the navigation elements inside *Sphinx*. It is quite important, and one of the most powerful concepts in *Sphinx*.

1.4.1 Sidebar navigation menu

The `index.rst` file serves as a front-page to the documentation and contains the main tables of content, defined using `.. toctree::` directives. These `.. toctree::` directives control the sidebar navigation menu. To add a new document to a table of content, add the file name (without the `.rst` extension) to the relevant list of file names in `index.rst` or any other (but only one) “sub-TOC trees”.

1.4.2 Secondary sub-TOC trees

Collections of documents are mostly given their own table of content on an individual page (see, for example: [Appendix](#) (page 135) and [Glossary](#) (page 145)). In these cases, the page containing the `.. toctree::` serves as a sort of intro page for the collection. That intro must, itself, be included in the [Sidebar navigation menu](#) (page 23). The contents of a `.. toctree::` appear as section links in another `.. toctree::` it is included in. That is, if a `.. toctree::` in `index.rst` lists `.. glossary::`, and `glossary.rst` has a `.. toctree::`, then the contents of that second `.. toctree::` will appear in the [Sidebar navigation menu](#) (page 23), as sub-items to [Glossary](#) (page 145).

Indeed, this is precisely the case in this Li-Pro.Net Sphinx Primer document currently.

1.4.3 How this document uses main and secondary TOC

- Major topics get a `.. toctree::` in `index.rst`

Major topics include things like:

- Each major parts ([Extensions](#) (page 81), [Themes](#) (page 127),...)
- Large, general categories like Releases, Contributing, or Building

Major topic tables of content include both sub-collection intro pages and also individual pages that don’t fit into a sub-collection.

The `:caption:` attribute of the `.. toctree::` directive may but not must defines the section label in the [Sidebar navigation menu](#) (page 23).

- Within a large topic, documents are grouped into collections of related pages, defined by a `.. toctree::` on a topic intro page.

Intro pages (pages that contain secondary `.. toctree::` directives) may include additional content, introducing the collection or providing contextual way-finding. However, this is not always necessary or desirable. Use your judgment, and avoid stating things just for the sake of having some text. (“Here are the pages in this collection.”)

We also (very occasionally) include `.. toctree::` directives in sub-collection pages, such as:

- [BibTeX Citations](#) (page 84),
- [Spelling Checker](#) (page 83),
- ...
- [Read the Docs Sphinx Theme](#) (page 129),
- ...

Tip: If it not obvious where a new document should appear in the navigation, the best practice is to simply ask about it in the GitHub issue driving the new page.

Note: For way-finding purposes, we sometimes create an [Unordered \(bullet\) Lists](#) (page 31) of page links rather than a `.. toctree::` directive (for example, see `index.rst`). We do this when using a `.. toctree::` would create redundant links in the [Sidebar navigation menu](#) (page 23).

1.5 Paragraphs

The [paragraph](#) is the most basic block in a *reStructuredText* document. Paragraphs are simply chunks of text separated by one or more blank lines. As in *Python*, indentation is significant in *reStructuredText*, so all lines of the same paragraph must be left-aligned to the same level of indentation. General rules can be looked up under *Use of whitespace* (page 11).

the example

```

1 Paragraphs are separated by blank lines. Line breaks in the source
  ↳ code do not create line breaks in the output.
2
3 This means that you *could*, in theory,
4 include a lot of arbitrary line breaks
5 in your source document files.
6 These line breaks would not appear in the output.
7 Some people like to do this because they have been trained
8 to not exceed 80 column lines, and they like
9 to write :file:'.txt' files this way.
10 Please do not do this.
11
12 There is **no reason** to put a limit on line length in source files
  ↳ for documentation, since this is prose and not code.
13 Therefore, please do not put arbitrary line breaks in your files.
```

which gives Paragraphs are separated by blank lines. Line breaks in the source code do not create line breaks in the output.

This means that you *could*, in theory, include a lot of arbitrary line breaks in your source document files. These line breaks would not appear in the output. Some people like to do this because they have been trained to not exceed 80 column lines, and they like to write `.txt` files this way. Please do not do this.

There is **no reason** to put a limit on line length in source files for documentation, since this is prose and not code. Therefore, please do not put arbitrary line breaks in your files.

1.5.1 Quotes (block quotation) Element

[Block quoted](#) paragraphs are quoted by just indenting them more than the surrounding paragraphs.

the example

```

1 This line is not a block quote. Block quotes are indented,
2 and otherwise unadorned.
3
```

(continues on next page)

(continued from previous page)

```
4   This is a block quote.
5
6   --Adam Michael Wood - `Technical Content Writer`_
7
8   .. _`Technical Content Writer`:
9      http://adammichaelwood.com/portfolio/
```

which gives This line is not a block quote. Block quotes are indented, and otherwise unadorned.

This is a block quote.

—Adam Michael Wood - [Technical Content Writer](#)

.. pull-quote::

[Pull-quoted](#) paragraphs are similar to blockquotes but are directives for small selection of text to “pull out and quote”, typically in a larger typeface.

The example

```
1   This line is not a pull quote.
2   Pull quotes are directive content.
3
4   .. pull-quote::
5
6       This is a pull quote.
7
8       --Adam Michael Wood - `Technical Content Writer`_
9
10  .. _`Technical Content Writer`:
11     http://adammichaelwood.com/portfolio/
```

Which gives This line is not a pull quote. Pull quotes are directive content.

This is a pull quote.

—Adam Michael Wood - [Technical Content Writer](#)

1.5.2 Line Blocks

[Line blocks](#) are useful for addresses, verse, and adornment-free lists. They are quoted by just a | pipe sign in front of each single line.

the example

```
1   | Each new line begins with a
2   | vertical bar ("`|`").
```

(continues on next page)

(continued from previous page)

```

3 |   Line breaks and initial indents
4 |   are preserved.

```

which gives

Each new line begins with a
vertical bar ("|").

Line breaks and initial indents
are preserved.

1.5.3 Doctest Blocks

Doctest blocks [↗](#) are interactive *Python* sessions cut-and-pasted into docstrings. They do not require the *literal blocks* (page 57) syntax. The doctest block must end with a blank line and should not end with an unused prompt, see **Doctest blocks** [↗](#) in *Sphinx* for more informations.

the example

```

1 >>> print('this is a Doctest block')
2 this is a Doctest block
3
4 >>> print('Python-specific usage examples; begun with ">>>"')
5 Python-specific usage examples; begun with ">>>"
6 >>> print('(cut and pasted from interactive Python sessions)')
7 (cut and pasted from interactive Python sessions)
8
9 >>> a = [51,27,13,56]
10 >>> b = dict(enumerate(a))
11 >>> print(b)
12 {0: 51, 1: 27, 2: 13, 3: 56}

```

which gives

```
>>> print('this is a Doctest block')
this is a Doctest block
```

```
>>> print('Python-specific usage examples; begun with ">>>"')
Python-specific usage examples; begun with ">>>"
>>> print('(cut and pasted from interactive Python sessions)')
(cut and pasted from interactive Python sessions)
```

```
>>> a = [51,27,13,56]
>>> b = dict(enumerate(a))
>>> print(b)
{0: 51, 1: 27, 2: 13, 3: 56}
```

1.6 Inline Markup

If you want to make sure that text is shown in monospaced fonts for code examples or concepts, use double backticks around it. It looks like `this` on output.

the example

```
1 You can use backticks for showing highlighted code.
```

which gives You can use **backticks** for showing highlighted code.

Refer to [Inline markup](#) added by *Sphinx*.

All the standard *reStructuredText* inline markups are quite simple, use:

- one asterisk: `*text*` for emphasis (*italics*),
- two asterisks: `**text**` for strong emphasis (**boldface**), and
- backquotes: ``text`` for code samples as shown above (literal).

If asterisks or backquotes appear in running text and could be confused with inline markup delimiters, they have to be escaped with a backslash or encapsulated by *Roles* (page 13):

one escaped asterisk

the example

```
1 italics \*with\* asterisk*,
2 boldface \*with\* asterisk**
```

which gives *italics* **with** asterisk, **boldface** **with** asterisk

two escaped asterisks

the example

```
1 italics \*\*with\*\* asterisks*,
2 boldface \*\*with\*\* asterisks**
```

which gives *italics* ****with**** asterisks, **boldface** ****with**** asterisks,

two escaped backquotes

the example

```
1 *italics \\\`with\\\` backquotes*,  
2 **boldface \\\`with\\\` backquotes**
```

which gives *italics “with” backquotes*, **boldface “with” backquotes**


escaped backquote and asterisks

the example

```
1 :literal: `literal \\\`with\\\` backquotes **and** asterisks`
```

which gives `literal \\\`with\\\` backquotes **and** asterisks`

Be aware of some restrictions of this markup:

- it may not be nested (see [nested inline markup](#)  in *Docutils* To Do List),
- content may not start or end with whitespace: `* text*` is wrong,
- it must be separated from surrounding text by non-word characters. Use a backslash escaped space to work around that: `thisis\ **one**\ word` (thisis**oneword**).

1.7 File, Directory, Path

File and directories (or generally paths) are formatted by `:file:` inline markup. Backslashes (Windows paths) `\` have to be written as `\\`. The name of an executable program should be documented by `:program:` inline markup. This may differ from the file name for the executable for some platforms. In particular, the `.exe` (or other) extension should be omitted for Windows programs. For OS-level command use `:command:` inline markup.

:file:

For more details, see [file](#) role; about the [program](#) role in *Semantic Descriptions and References* (page 73), and about the [command](#) role in *Writing about User Interface* (page 75).

The example

```
1 | :file:`/bin/bash` or :file:`bash` -- but better is :command:`bash`
2 | :file:`/usr/local/bin/myapp` -- but better is :program:`myapp`
3
4 | :file:`filename.txt`
5 | :file:`/path/filename.txt`
6 | :file:`/path/subdir/` (ends with a ``/``)
7
8 | :file:`..\MyApp\core.conf`
9 | :file:`C:\ProgramData\MyApp\core.conf`
10 | :file:`C:\ProgramData\MyApp\` (ends with a ``\``)
11
12 | :file:`/usr/share/man/man{N}` (ends with a variable mark, *N* = 1.
    ↳.9)
```

Which gives

`/bin/bash` or `bash` – but better is **bash**

`/usr/local/bin/myapp` – but better is **myapp**

`filename.txt`

`/path/filename.txt`

`/path/subdir/` (ends with a `/`)

`..\MyApp\core.conf`

`C:\ProgramData\MyApp\core.conf`

`C:\ProgramData\MyApp\` (ends with a `\`)


`/usr/share/man/manN` (ends with a variable mark, $N = 1..9$)

1.8 Lists, Definition Lists

List markup is natural: just place an asterisk or hyphen at the start of a paragraph and indent properly. The same goes for numbered list (number or letter with tailed dot); they can also be automatically numbered using a # sign.

Nested lists are possible, but be aware that they must be separated from the parent list items by blank lines.

1.8.1 Unordered (bullet) Lists

Bullet lists  contains list item elements which are uniformly marked with bullets. Bullets are typically simple dingbats (symbols) such as circles and squares.

bulleted lists (``)

the example

```

1  * This is a bulleted list ...
2  * ... use asterisks.
3  * It has fife items, the third
4    item uses two lines.
5  * Are unindented at the first level.
6  * Must have a blank line before and after.
7
8  - This is a bulleted list ...
9  - ... use hyphens.
10 - Are indented at the first level to stand out from the
11   previous paragraph.
12
13   - the blank line requirement means that nested list items
14     will have a blank line before and after as well
15
16   - you may *optionally* put a blank line *between* list items

```

which gives

- This is a bulleted list ...
- ... use asterisks.
- It has fife items, the third item uses two lines.
- Are unindented at the first level.
- Must have a blank line before and after.
 - This is a bulleted list ...

- ... use hyphens.
- Are indented at the first level to stand out from the previous paragraph.
 - * the blank line requirement means that nested list items will have a blank line before and after as well
 - * you may *optionally* put a blank line *between* list items

1.8.2 Ordered (numbered) Lists

Enumerated lists [↗](#) (a.k.a. “ordered” lists) are similar to bullet lists, but use enumerators instead of bullets. An enumerator consists of an enumeration sequence member and formatting, followed by whitespace. Different enumeration sequences are possible, e.g. Arabic or Roman numerals or alphabet characters.

numbered lists (``)

the example

```
1  1. This is a numbered list.
2  2. Start each line with a number and period.
3  3. Can begin on any number.
4
5  8. Must have a blank line before and after.
6  9. Can have nested sub-lists.
7
8      a. nested lists are numbered separately
9      #. nested lists need a blank line before and after
10
11 #. Can have automatic number with the ``#`` character.
```

which gives

1. This is a numbered list.
2. Start each line with a number and period.
3. Can begin on any number.
8. Must have a blank line before and after.
9. Can have nested sub-lists.
 - a. nested lists are numbered separately
 - b. nested lists need a blank line before and after
10. Can have automatic number with the # character.

1.8.3 Definition (description) Lists

[Definition Lists](#) contains a list of terms and their definitions. Each list item element contains a term, optional classifiers, and a definition.

definition list (`<dl>`)

the example

```

1 Definition list
2   a list with several term-definition pairs in the form
3
4   .. parsed-literal::
5
6       **TERM**
7           DEFINITION (*description of term*)
8
9   Terms
10      should not be indented
11
12   Definitions
13      should be indented under the term
14
15   Line spacing
16      there should be a blank line between term-definition pairs

```

which gives

Definition list a list with several term-definition pairs in the form

```

TERM
    DEFINITION (description of term)

```

Terms should not be indented

Definitions should be indented under the term

Line spacing there should be a blank line between term-definition pairs

Field (description) Lists

[Field lists](#) are special definition lists. They may also be used for two-column table-like structures resembling database records (label & data pairs). *Sphinx* extends standard docutils behavior for [Field Lists](#) and intercepts field lists specified at the beginning of documents and adds some extra (optional) functionality.

field list

the example

```
1 :Date: 2001-08-16
2 :Version: 1
3 :Authors: - Me
4           - Myself
5           - I
6 :Indentation: Since the field marker may be quite long, the second
7               and subsequent lines of the field body do not have to line up
8               with the first line, but they must be indented relative to the
9               field name marker, and they must line up with each other.
10 :Parameter i: integer
```

which gives

Date 2001-08-16

Version 1


Authors

- Me
- Myself
- I

Indentation Since the field marker may be quite long, the second and subsequent lines of the field body do not have to line up with the first line, but they must be indented relative to the field name marker, and they must line up with each other.


Parameter i integer

1.9 Explicit Markup

“Explicit markup”  is used in *reStructuredText* for most constructs that need special handling, such as footnotes, specially-highlighted paragraphs, comments, and generic directives.

An explicit markup block begins with a line starting with two dots followed by whitespace (“ . . ”) and is terminated by the next paragraph at the same level of indentation. There needs to be a blank line between explicit markup and normal paragraphs. This may all sound a bit complicated, but it is intuitive enough when you write it.

1.9.1 Comments

Every explicit markup block which is not a valid markup construct (like the footnotes above) is regarded as a *comment* .

However, it must have some text in the “ . . ” line, otherwise it is ignored, and content will be displayed (indented).

the example

```

1  .. This is a comment
2  ..
3  _so: is this!
4  ..
5  [and] this!
6  ..
7  this:: too!
8  ..
9  |even| this:: !

```

1.9.2 Directives

Directives (page 15) are generic blocks of explicit markup. Besides *Roles* (page 13), it is one of the extension mechanisms of *reStructuredText*, and *Sphinx* makes heavy use of it. Basically, a directive consists of a name, arguments, options and content. Keep this terminology in mind, it is used in one of the next chapter describing custom directives.

the example

```

1  .. cpp:function:: char* foo(x)
2  char* foo(y, z)
3  :noindexentry:
4
5  Return a line of text input from the user.

```

which gives

```
char *foo(x)
char *foo(y, z)
    Return a line of text input from the user.
```

`.. cpp:function::` is the directive name. It is given two arguments here, the remainder of the first line and the second line, as well as one option `:noindexentry:`. As you can see, options are given in the lines immediately following the arguments and indicated by the colons.

The directive content follows after a blank line and is indented relative to the directive start.

If you want to suppress the addition of an entry in the shown index, you can give the directive option flag `:noindexentry:`. If you want to typeset an object description, without even making it available for cross-referencing, you can give the directive option flag `:noindex:` (which implies `:noindexentry:`).

Hint: As far as possible, all examples in this document use the `:noindexentry:` option to keep the automatically created index as clean as possible but still be able to reference it.

1.9.3 Footnotes

For [footnotes](#), use `[#]_` to mark the footnote location, and add the footnote body at the bottom of the document after a “Footnotes” rubric heading.

the example

```
1 Lorem ipsum [#]_ dolor sit amet ... [#]_
2
3 .. rubric:: Footnotes
4
5 .. [#] Text of the first footnote.
6 .. [#] Text of the second footnote.
```

which gives Lorem ipsum¹ dolor sit amet ...²

You can also explicitly number the footnotes for better context.

Text of the first footnote.

Text of the second footnote.

1.9.4 Citations

Citations [↗](#) are identical to footnotes except that they use only non-numeric labels such as [note]_ or [GVR2001]_. Citation labels are simple [reference names](#) [↗](#) (case-insensitive single words consisting of alphanumerics plus internal hyphens, underscores, and periods; no whitespace). Citations may be rendered separately and differently from footnotes.

the example

```
1 Here is a citation reference: [CIT2002]_.
2
3 .. [CIT2002] This is the citation. It's just like a footnote,
4    except the label is textual.
```

which gives Here is a citation reference: [CIT2002].

To use a professional bibliography, you should use the *Sphinx* extension *BibTeX Citations* (page 84).

1.10 Reuse Content

Sphinx supports several ways to reuse content within and across projects.

1.10.1 Include a Shared File

`.. include::`

For more details, see [Including an External Document Fragment](#) in *Docutils*.

You can store complex content, such as tasks, or code samples, in a file that is then included in multiple *reStructuredText* document files.

If you are working on multiple documents, you can save entire topics in shared files, and include those files in multiple documents.

You add a shared file to content in your project with the `.. include::` directive. For example:

```
.. include:: /{absolut-document-subdirectory}/{file}.rsti
.. include:: {relative-document-subdirectory}/{file}.rsti
```

The contents of the shared file will then be built in the document.

Caution: Include paths are relative to the file in the document project, not the file in shared content.

Standard data files intended for inclusion in *reStructuredText* documents are distributed with the *Docutils* source code, located in the *docutils* package in the *docutils/parsers/rst/include* directory. To access these files, use the special syntax for standard include data files, angle brackets around the file name:

```
.. include:: <isonum.txt>
```

Note: You must reference the shared file from a file within the document. You cannot use a direct TOC reference to files outside of the document directory.

1.10.2 Substitutions

Substitutions are a useful way to define a value which is needed in many places. Substitution definitions are indicated by an explicit markup start (`".. "`) followed by a vertical bar, the substitution text (which gets substituted), another vertical bar, whitespace, and the definition block.

A substitution definition block may contain inline-compatible directives such as *Images and Figures* (page 41), *Downloadable Files* (page 72), or other [Substitution Directives](#):

- [Replacement Text](#)
- [Unicode Character Codes](#)
- [Date](#)

For more information, see [reStructuredText Primer](#), section *Substitutions*, or refer the [Substitution References](#). *Sphinx* provides additional predefined [Substitutions](#).

.. replace::

The example

```
1 .. |RST| replace:: reStructuredText
2
3 Here, :rst:`|RST|` will be replaced by |RST|.
```

Which gives Here, |RST| will be replaced by reStructuredText.

Styled Reference

You can also create a reference with styled text, [nested inline markup](#).

the example

```
1 .. |gh| replace:: :strong:`GitHub`
2 .. _`gh`: https://github.com/
3
4 Here, :rst:`|gh|` will be replaced by |gh|.
5
6 You can use the hyperlink reference by appending a :rst:`"_ "` at the
7 ↪end
of the vertical bars and :rst:`|gh|_` will be replaced by |gh|_.
```

which gives Here, |gh| will be replaced by **GitHub**.

You can use the hyperlink reference by appending a `"_"` at the end of the vertical bars and `|gh|_` will be replaced by [GitHub](#).

Use Prolog and Epilog

The *Sphinx* configuration values `rst_prolog` and `rst_epilog` in `conf.py` contains a list of global substitutions that can be used from any file. The (incomplete) list for this document is given below:

"|project|" → leads to: "Li-Pro.Net Sphinx Primer"

"|author|" → leads to: "The LP/N Documentation Team"

"|publisher|" → leads to: "Li-Pro.Net"

"|copyright|" → leads to: "2020, Li-Pro.Net, The LP/N Documentation Team and individual contributors."

"|LICENSE|" → leads to: "LICENSE"

"|CREDITS|" → leads to: "CREDITS"


Inline Image

You can add inline images in the document using substitutions. The following block of code substitutes arrow in the text with the image specified.

the example

```
1 :|lpn_16x16|: The logo as in front of this documentation.
2
3 .. |lpn_16x16| image:: /_images/lpn.*
4     :alt: Li-Pro.Net.
5     :height: 16px
6     :width: 16px
```

which gives

 The logo as in front of this documentation.

1.11 Images and Figures

1.11.1 SVG Graphics only

All vector graphics or diagrams should be [SVG](#) files. This helps us keep our graphic conversion tooling simple, and generally results in higher-quality representation. [SVG](#) graphics with an parameterized opacity (transparency) should be possible as well as an animated [SVG](#), see [Figure 1.1](#) and [Figure 1.2](#).

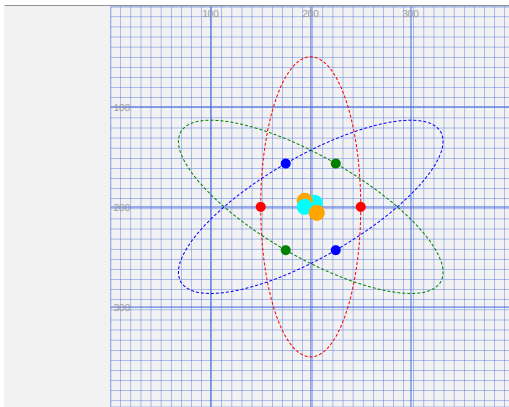


Figure 1.1: Example of transparent SVG¹

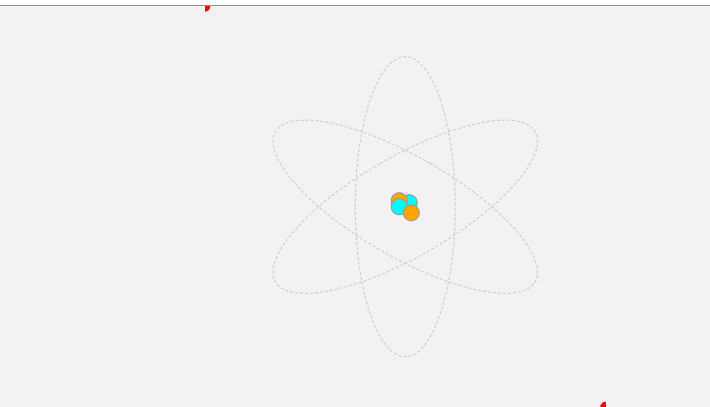


Figure 1.2: Example of animated SVG²

Whenever possible, you should generate your graphics as [SVG](#) rather than converting to [SVG](#) from another format. That avoids bitmap raster images embedded in a [SVG](#) container. The goal of [SVG](#) usage is to hold vector graphic as long as possible, from the editor up to the presentation. If you have to start in another vector graphic format **use lossless vector formats** whenever possible. These include EPS (Encapsulated PostScript)/PS (PostScript), AI (Adobe Illustrator Artwork), DXF (AutoCAD Drawing Exchange Format), EMF (Enhanced Metafile Format)/EMZ (Compressed Enhanced Metafile Format), WMF (Windows Metafile Format)/WMZ (Compressed Windows Metafile Format) or some special [XML](#) vector graphics schemes. In any case avoid embedded bitmaps, as this is a lossy format for vector informations that does not replicate scaling very well. [Figure 1.3](#) demonstrates differences between bitmapped raster and vector graphics. The bitmap raster is composed of a fixed set of pixels, while the vector is composed of a fixed set of shapes. In the picture, scaling the bitmap reveals the pixels while scaling the vector image preserves the shapes.

Indication of provenance: [STEAMcoded.org: atom1.svg](https://steamcoded.org/atom1.svg)  (public domain for teachers and students learning to code)

Indication of provenance: [STEAMcoded.org: atom.svg](https://steamcoded.org/atom.svg)  (public domain for teachers and students learning to code)

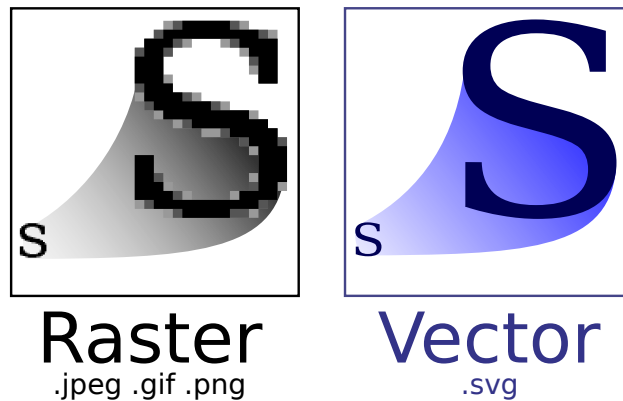


Figure 1.3: Demonstration of differences between bitmapped raster and vector images.³

Bitmap raster images are good for photographic images or screenshots but not for stencils, sketches, diagrams or graphs and often they do not support transparency.

—Superuser - [JPEG vs. PNG vs. BMP vs. GIF vs. SVG](#)↗

Raster graphics are resolution dependent, meaning they cannot scale up to an arbitrary resolution without loss of apparent quality. This property contrasts with the capabilities of vector graphics, which easily scale up to the quality of the device rendering them. Raster graphics deal more practically than vector graphics with photographs and photo-realistic images, while vector graphics often serve better for typesetting or for graphic design.

—Wikipedia - [Raster graphics](#)↗

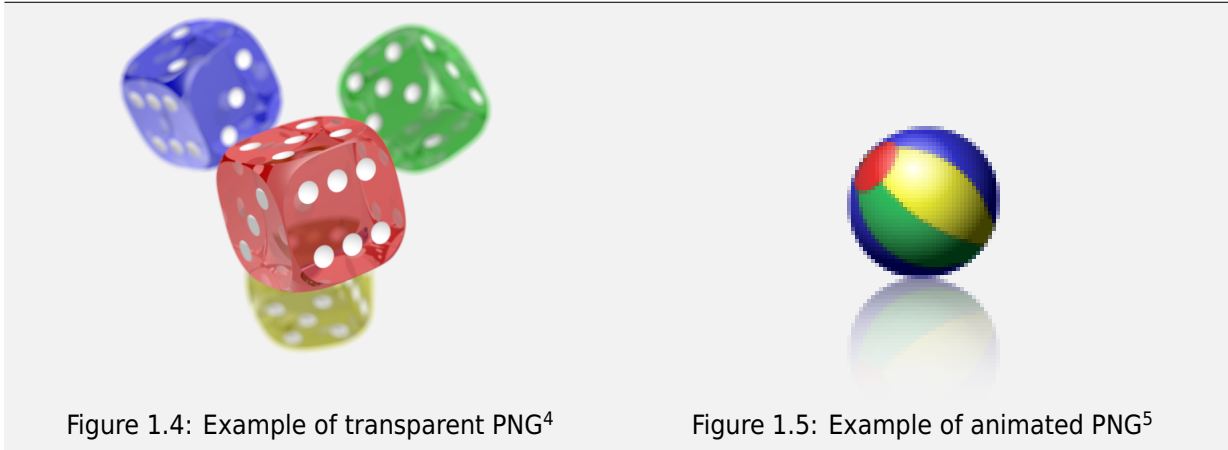
Vector graphics have the unique advantage over raster graphics in that the points, lines, and curves may be scaled up or down to any resolution with no aliasing.

—Wikipedia - [Vector graphics](#)↗

Indication of provenance: [Wikimedia: 6/6b/Bitmap_VS_SVG.svg](#)↗ (licensed under [CC-BY-SA-2.5](#)↗)

1.11.2 PNG Images only

All still bitmap raster images or photos should be [PNG](#) files. This helps us keep our image compression tooling simple, and generally results in higher-quality screenshots. [PNG](#) images with an 8-bit transparency channel should be possible as well as an animated [PNG](#), see [Figure 1.4](#) and [Figure 1.5](#).



Whenever possible, you should generate your images as [PNG](#) rather than converting to [PNG](#) from another format. If you have to start in another format, **use lossless formats** whenever possible. These include BMP (Bitmap Format)/DIB (Device Independent Bitmap Format), GIF (Graphics Interchange Format), and TIFF (Tagged Image File Format). Avoid JPEG (Joint Photographic Experts Group)/JFIF (JPEG File Interchange Format) if possible, as this is a lossy format that does not replicate screenshots very well. [Figure 1.6](#) comparing lossy compression in JPEG with lossless compression in [PNG](#): the JPEG artifacts can be easily visible in the background of this kind of image data, where the [PNG](#) image has solid color.

Indication of provenance: [Wikimedia: 4/47/PNG_transparency_demonstration_1.png](#) (licensed under [CC-BY-SA-3.0](#))

Indication of provenance: [Wikimedia: 1/14/Animated_PNG_example_bouncing_beach_ball.png](#) (released into the public domain by its author, Holger Will)

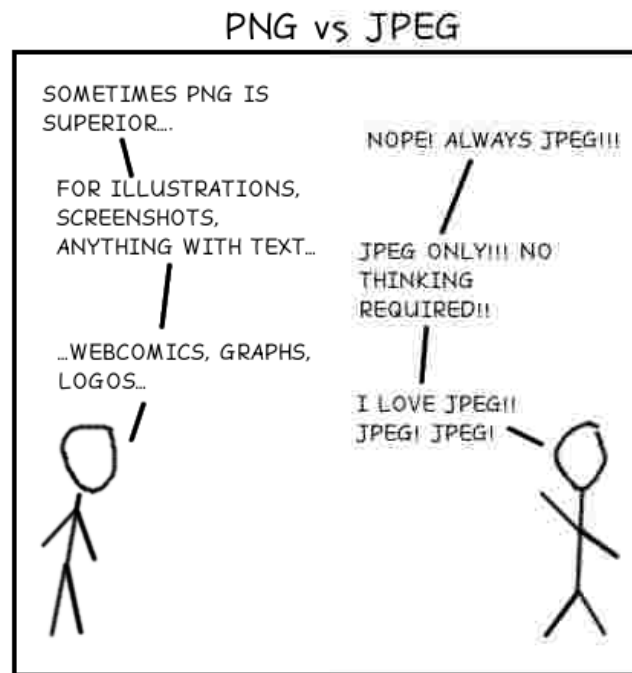


Figure 1.6: Demonstration of differences between lossy encoding and lossless method.⁶

JPEG is good for photographic images but not for sharp transitions and does not support transparency.

—Wikipedia - [PNG comparison with JPEG](#)


The JPEG format can produce a smaller file than [PNG](#) for photographic (and photo-like) images, since JPEG uses a lossy encoding method specifically *designed for photographic image data*. Using [PNG](#) instead of a high-quality JPEG for such images would result in a large increase in filesize with negligible gain in quality. In comparison, when storing images that contain text, line art, or graphics – images with sharp transitions and large areas of solid color – the [PNG](#) format can compress image data more than JPEG can. Additionally, [PNG](#) is lossless, while JPEG produces visual artifacts around high-contrast areas.

JPEG's lossy compression also suffers from generation loss, where repeatedly decoding and re-encoding an image to save it again causes a loss of information each time, degrading the image. This does not happen with repeated viewing or copying, but only if the file is edited and saved over again. Because [PNG](#) is lossless, it is suitable for storing images to be edited.

Where an image contains both *sharp transitions* and *photographic parts*, a choice must be made between the two effects:


Indication of provenance: Superuser: [a/55706](#), http://lbrandy.com/assets/jpg_vs_png2.png (licensed under [CC-BY-SA-3.0](#))

1.11.3 Inserting

To place an graphic or image in a document, use the `.. image::` directive (see [Image](#) .

```
.. image:: /img/{absolut-document-subdirectory}/{file}.svg
   :alt: Alt text. Every image should have descriptive alt text.

.. image:: {relative-document-subdirectory}/{file}.*
   :alt: Alt text. Every image should have descriptive alt text.
```

Note the literal asterisk (*) at the end, in place of a file extension. Use the asterisk, and omit the file extension (see [reStructuredText Primer](#) , section *Images*).

`.. image::`

The example

```
1 .. image:: /_images/lpn.svg
2    :alt: The Li-Pro.Net logo. (explicitely as SVG)
3    :height: 32px
4    :width: 32px
5
6 .. image:: /_images/lpn.*
7    :alt: The Li-Pro.Net logo. (scaled to the half)
8    :scale: 50 %
9    :align: right
```

Which gives 



1.11.4 Inserting with Captions

Use `.. figure::` directive to markup a graphic or image with a caption (see [Figure](#) .

```
.. figure:: {file-with-directory-same-as-for image}.*
   :alt: Alt text. Every image should have descriptive alt text.
```

The rest of the indented content will be the (optional) caption.
This can be a short sentence or multiline paragraph.

Captions can contain any other complex *reStructuredText* markup. Further paragraphs after the caption will be the (optional) legend which are also arbitrary body elements.

.. figure::

The example

```
1  .. figure:: /_images/lpn.*
2     :name: the-lpn-logo
3     :alt: The Li-Pro.Net logo.
4     :figclass: align-center
5     :align: center
6     :scale: 75 %
7
8     The |ghlpn|_ logo.
9
10    Legend of all elements you can see in the graphic:
11
12    .. list-table:: The legend for the |ghlpn|_ logo.
13       :widths: 10 40
14       :width: 50 %
15       :align: center
16       :header-rows: 1
17       :stub-columns: 1
18
19       * - Letter
20         - Meaning
21       * - L (in blue)
22         - Li
23       * - P (in blue)
24         - Pro
25       * - N (in red)
26         - Net
27
28    .. |ghlpn| unicode:: Li U+02013 Pro.Net U+0040 GitHub
29    .. _`ghlpn`: https://github.com/lipro
```

Which gives




Figure 1.7: The [Li-Pro.Net@GitHub](#)  logo.
Legend of all elements you can see in the graphic:

Table 1.3: The legend for the Li-Pro.Net@GitHub logo.

Letter	Meaning
L (in blue)	Li
P (in blue)	Pro
N (in red)	Net

1.11.5 Inserting Inline

To information on creating inline images, see [Inline Image](#) (page 40).

1.12 Tables

For more details, see [Table](#) in *Docutils* or [Tables Basics](#) and [Tables Directives](#).

.. table::

The `.. table::` directive serves as optional wrapper of the *Grid Style* (page 49) and *Simple Style* (page 50).

.. tabularcolumns::

The `.. tabularcolumns::` directive gives a `column spec` for the next table occurring in the source file. The spec is the second argument to the *LaTeX* `tabulary` package's environment (which *Sphinx* uses to translate tables). For more details, see [tabularcolumns](#).

1.12.1 Grid Style

For more details, see [Grid Tables](#) in *Docutils*.

the example

```

1 .. tabularcolumns:: p{0.132\linewidth}p{0.198\linewidth}p{0.330\
  ↳linewidth}
2 .. table:: Example table in grid style
3    :name: tables-grid-example
4    :widths: 20, 30, 50
5    :class: longtable
6    :align: center
7    :width: 66%
8
9    +-----+-----+-----+
10   | Header 1 | Header 2 | Header 3 |
11   +=====+=====+=====+
12   | body row 1 | column 2 | column 3 |
13   +-----+-----+-----+
14   | body row 2 | Cells may span columns. |
15   +-----+-----+-----+
16   | body row 3 | Cells may | - Cells |
17   +-----+ span rows. | - contain |
18   | body row 4 |           | - blocks. |
19   +-----+-----+-----+

```

which gives

Table 1.4: Example table in grid style		
Header 1	Header 2	Header 3
body row 1	column 2	column 3
body row 2	Cells may span columns.	
body row 3	Cells may span rows.	<ul style="list-style-type: none"> • Cells • contain
body row 4		<ul style="list-style-type: none"> • blocks.

1.12.2 Simple Style

For more details, see [Simple Tables](#) in *Docutils*.

the example

```
1 .. tabularcolumns:: p{0.132\linewidth}p{0.198\linewidth}p{0.330\
  ↳linewidth}
2 .. table:: Example table in simple style
3    :name: tables-simple-example
4    :widths: 20, 30, 50
5    :align: center
6    :width: 66%
7
8    =====
9           Inputs      Output
10    -----
11    A          B      A or B
12    =====
13    False
14    -----
15    True
16    -----
17    True   False   True
18    -----
19    False  True
20    =====
```

which gives

Table 1.5: Example table in simple style		
Inputs		Output
A	B	A or B
False		
True		
True	False	True
False	True	

1.12.3 List Table

.. list-table::

For more details, see [List Tables](#) in *Docutils*.

Hint: For table content that needs a higher complexity than the list table is able to support use the *flat-table* (page 86).

The example

```

1 .. tabularcolumns:: p{0.132\linewidth}p{0.198\linewidth}p{0.330\
   ↳linewidth}
2 .. list-table:: Example list table
3    :name: tables-list-example
4    :widths: 20, 30, 50
5    :class: longtable
6    :header-rows: 1
7    :align: center
8    :width: 66%
9
10   * - Treat
11     - Quantity
12     - Description
13   * - Albatross
14     - 2.99
15     - On a stick!
16   * - Crunchy Frog
17     - 1.49
18     - If we took the bones out, it would not be
19       crunchy, now would it?
20   * - Gannet Ripple
21     - 1.99
22     - On a stick!

```

Which gives

Table 1.6: Example list table		
Treat	Quantity	Description
Albatross	2.99	On a stick!
continues on next page		

Table 1.6 – continued from previous page

Treat	Quantity	Description
Crunchy Frog	1.49	If we took the bones out, it would not be crunchy, now would it?
Gannet Ripple	1.99	On a stick!

1.12.4 CSV Table

.. csv-table::

For more details, see [CSV Tables](#) in *Docutils*.

Hint: In almost all cases, *csv-table* (page 53) is the easiest and most maintainable way to insert a table into a document. It should be preferred unless there is a compelling reason to use one of the other styles.

The example

```

1 .. tabularcolumns:: p{0.132\linewidth}p{0.198\linewidth}p{0.330\
   ↳linewidth}
2 .. csv-table:: Example CSV table
3    :name: tables-csv-example
4    :header: "Treat", "Quantity", "Description"
5    :widths: 20, 30, 50
6    :class: longtable
7    :align: center
8    :width: 66%
9
10   "Albatross", 2.99, "On a stick!"
11   "Crunchy Frog", 1.49, "If we took the bones out, it would not be
12   crunchy, now would it?"
13   "Gannet Ripple", 1.99, "On a stick!"

```

Which gives

Treat	Quantity	Description
Albatross	2.99	On a stick!
Crunchy Frog	1.49	If we took the bones out, it would not be crunchy, now would it?
Gannet Ripple	1.99	On a stick!

Some of the options recognized are:

:widths:

Contains a comma or space-separated list of relative column widths. The default is equal-width columns.

The special value `auto` may be used by writers to decide whether to delegate the determination of column widths to the backend.

In most cases, the best result is either the default or `auto`. If you're unsure, try it both ways and see which looks better to you.

:header:

Contains column titles. It must use the same CSV format as the main CSV data.

:delim:

Contains a one character string used to separate fields. Default value is comma. It must be a single character or Unicode code.

The only reason to use something other than a comma is when copying large blocks of content from another source that uses a different style. If you are creating new table content yourself, use the comma.

The example

```
1 .. csv-table:: Example CSV table with customized delimiter
2   :name: tables-csv-delim-example
3   :header: "Name", "Password"
4   :widths: auto
5   :delim: :
6   :align: center
7   :width: 66%
8
9   "Peter":":literal:`QW8rTn@*emk;=J3f`"
10  "Paul":":literal:`b3%C/-9`][cnG,;{"`"
```

Which gives

Table 1.8: Example CSV table with customized delimiter

Name	Password
Peter	QW8rTn@*emk;=J3f
Paul	b3%C/-9`][cnG,;{`

:align:

It specifies the horizontal alignment of the table. It can be left, right or center.

The example

```
1 .. csv-table:: Example CSV table with right alignment
2   :name: tables-csv-align-example
3   :header: "Name", "Password"
4   :delim: #
5   :align: right
```

(continues on next page)

(continued from previous page)

```

6
7 "Peter"#"":literal:`QW8rTn@*emk;=J3f`"
8 "Paul"#" ":literal:`b3%C/-9` ][cnG,;{"

```

Which gives

Table 1.9: Example CSV table with right alignment

Name	Password
Peter	QW8rTn@*emk;=J3f`
Paul	b3%C/-9`][cnG,;{`

:url:

Contains an Internet URL reference to a CSV data file.

:file:

Contains the local file system path to a CSV data file.

The example

```

1 .. csv-table:: Example CSV table from source file
2   :name: tables-csv-srcfile-example
3   :file: example.csv
4   :delim: |
5   :encoding: utf-8-sig
6   :header-rows: 1
7   :stub-columns: 1
8   :width: 66%

```

Which gives

Table 1.10: Example CSV table from source file

Name	Password
Peter	QW8rTn@*emk;=J3f`
Paul	b3%C/-9`][cnG,;{`

Which needs The example above processed the following CSV file content:

Listing 1.1: CSV example file (tables/csv/srcfile/example.csv)

1	Name Password
2	Peter :literal:`QW8rTn@*emk;=J3f`
3	Paul :literal:`b3%C/-9\`][cnG,;{`

Note: There is no support for checking that the number of columns in each row is the same. However, this directive supports CSV generators that do not insert “empty” entries at the end of short rows, by automatically adding empty entries.

1.13 Code Example

The syntax for displaying code is the `::` mark, see [Literal blocks](#). When it is used at the end of a sentence, *Sphinx* is smart and displays one `:` sign in the output, and knows there is a code example in the following indented block, the [Indented literal \(code\) block](#). [Quoted literal \(code\) block](#) are unindented contiguous blocks of text where each line begins with the same non-alphanumeric printable 7-bit ASCII character.

`.. highlight::`

For more details, see [highlight](#) directive.

The example

```

1  .. highlight:: none
2
3  This is a normal text paragraph. The next paragraph
4  is a code sample::
5
6      It is not processed in any way, except
7      that the indentation is removed.
8
9      It can span multiple lines.
10
11 This is a normal text paragraph again.
12
13 The next paragraph is a quoted sample -- John Doe wrote::
14
15 >> Great idea!
16 >
17 > Why didn't I think of that?
18
19 You just did!  ;-)
```

Which gives This is a normal text paragraph. The next paragraph is a code sample:

```

It is not processed in any way, except
that the indentation is removed.

It can span multiple lines.
```

This is a normal text paragraph again.

The next paragraph is a quoted sample – John Doe wrote:

```

>> Great idea!
>
> Why didn't I think of that?
```

You just did! ;-)

The handling of the `::` marker is smart:

- If it occurs as a paragraph of its own, that paragraph is completely left out of the document.
- If it is preceded by whitespace, the marker is removed.
- If it is preceded by non-whitespace, the marker is replaced by a single colon.

That way, the first sentence in the above example's first paragraph would be rendered as "... The next paragraph is a code sample:".

Sphinx extends the default language setup for each literal (code) block with the `.. highlight::` directive. That is very useful if a specific directive is not able to set the language by argument or option, even in this case here.

1.13.1 Explicit Code Blocks

Source code will be formatted by the directive `.. code-block::`. *Sphinx*, like *Python*, uses meaningful whitespace. Blocks of content are structured based on the indentation level they are on.

`.. code-block::`

For more details, see [code-block](#) directive.

The example

```

1  .. highlight:: bash
2     :linenothreshold: 1
3
4  A cool bit of code::
5
6     #!/bin/bash
7     # Some cool Bash code
8     echo ${BASH_VERSION[*]}
9
10 .. highlight:: none
11
12 .. code-block:: rst
13     :caption: Documentation
14
15     A bit of **rst** which should be *highlighted* properly.
16
17 .. code-block:: python
18     :caption: Script
19     :linenos:
20
21     import sys
22     sys.exit(1)

```

Which gives A cool bit of code:

```

1  #!/bin/bash
2  # Some cool Bash code
3  echo ${BASH_VERSION[*]}

```

Listing 1.2: Documentation

```
A bit of **rst** which should be *highlighted* properly.
```

Listing 1.3: Script

```

1  import sys
2  sys.exit(1)

```

Valid values for the highlighting `: language:` (first argument) are:

- none (no highlighting)
- python (the default)
- c and cpp (*C/C++*)
- rst or rest (*reStructuredText*)
- bash or ksh or sh (Unix Shell scripts)
- shell-session (Unix Shell sessions)
- ps1 or posh or powershell (Windows PowerShell code)
- ps1con (Windows PowerShell sessions)
- dosbatch or winbatch (MS-DOS (Microsoft Disk Operating System)/Windows Batch file)
- doscon (MS-DOS sessions)
- cfg or ini (Generic configuration file, mostly INI files)
- sql (Generic SQL (Structured Query Language) commands)
- registry (Windows Registry files produced by **regedit**)
- guess (let *Pygments* guess the lexer based on contents, only works with certain well-recognizable languages)
- ... and any other *lexer alias that Pygments supports* [↗](#).

1.13.2 Explicit Code Includes

If the text resides in a separate file, use the `.. literalinclude::` directive:

`.. literalinclude::`

For more details, see [literalinclude](#) directive.

The example

```
1 .. literalinclude:: /docutils.conf
2    :language: cfg
```

Which gives

```
;
; Docutils Configuration
;
; The configuration file consists of sections, lead by a "[section]"
; header and followed by "name: value" entries, with continuations
; in the style of RFC 822; "name=value" is also accepted. Note that
; leading whitespace is removed from values. ... Lines beginning
; with "#" or ";" are ignored and may be used to provide comments.
;
; see: https://docutils.sourceforge.io/docs/user/config.html
;

; https://docutils.sourceforge.io/docs/user/config.html#parsers
; https://docutils.sourceforge.io/docs/user/config.html
→#restructuredtext-parser

[restructuredtext parser]
syntax_highlight = short
```

All included files could be located under `/include`. The beginning `/` means, root directory of the documentation source directory. Without it, the path is relative to the directory of the including file.

1.14 Mathematics

In *Sphinx* you can include inline math $x \leftarrow y \forall y \ x - y$ (as role `:math:\`x\leftarrow y\` x\forall y\` x-y\``) or display math as directive block which is able to cross-referencing equations:

$$W_{\delta_1 \rho_1 \sigma_2}^{3\beta} = U_{\delta_1 \rho_1}^{3\beta} + \frac{1}{8\pi^2} \int_{\alpha_2}^{\alpha_2} d\alpha'_2 \left[\frac{U_{\delta_1 \rho_1}^{2\beta} - \alpha'_2 U_{\rho_1 \sigma_2}^{1\beta}}{U_{\rho_1 \sigma_2}^{0\beta}} \right] \quad (1.1)$$

.. math::

To include math in your document, just use the `.. math::` directive. For more details, see [math](#) directive.

The example

```
1 .. math::
2
3     W^{3\beta}_{\delta_1 \rho_1 \sigma_2}
4     \approx U^{3\beta}_{\delta_1 \rho_1}
```

Which gives

$$W_{\delta_1 \rho_1 \sigma_2}^{3\beta} \approx U_{\delta_1 \rho_1}^{3\beta} \quad (1.2)$$

:math:numref:

The math domain (name **math**) provides the role `:math:numref:\`label\`` which is for cross-referencing equations defined by `.. math::` directive via their label. For more details, see [math:numref](#) role.

The example

```
1 .. math:: e^{i\pi} + 1 = 0
2     :label: euler
3
4 Euler's identity, :math:numref:\`euler\`, was elected one
5 of the most beautiful mathematical formulas.
```

Which gives

$$e^{i\pi} + 1 = 0 \quad (1.3)$$

Euler's identity, Equation 1.3, was elected one of the most beautiful mathematical formulas.

When the equation is only one line of text, it can also be given as a directive argument (as used in Euler's identity above).

:eq:

The role `:eq: `euler`` is the same as `:math:numref: `euler``. For more details, see [eq](#) role.

Recent versions of *Sphinx* include built-in support for math. There are three flavors:

- [sphinx.ext.imgmath](#): uses dvipng to render the equation
- [sphinx.ext.mathjax](#): renders the math in the browser using Javascript
- [sphinx.ext.jsmath](#): it's an older code, but it checks out

Additionally, there are special *Sphinx* extensions provided by [matplotlib](#) that has its own math support for writing mathematical expressions and inserting automatically-generated plots:

- `matplotlib.sphinxext.mathmpl`
- [matplotlib.sphinxext.plot_directive](#)

See also:

See [Mathematical Plots](#) (page 94) for more details about the *Sphinx* matplotlib extensions with examples.

1.15 Admonitions

1.15.1 Generic Admonition

The [Generic admonition](#) is a simple titled admonition. The title may be anything the author desires. The author-supplied title is also used as a “classes” attribute value after being converted into a valid identifier form. As well as this implicitly behavior the `:class:` option value can set to any implemented specific type and overrides the computed “classes” attribute value.

`.. admonition::`

The example

```
1 .. admonition:: Neque porro quisquam
2   :class: error
3
4   Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus
5   mattis commodo eros, quis posuere enim lobortis quis. Nullam ut
6   tempus nibh.
```

Which gives

Neque porro quisquam

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus mattis commodo eros, quis posuere enim lobortis quis. Nullam ut tempus nibh.

1.15.2 Specific Admonitions

[Specific Admonitions](#) are specially marked “topics” that can appear anywhere an ordinary body element can. Typically, an admonition is rendered as an offset block in a document, sometimes outlined or shaded, with a title matching the admonition type. The following admonition directives have been implemented.

Attention Admonition

`.. attention::`

The example

```
1 .. attention:: Neque porro quisquam
2
3   Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus
```

(continues on next page)

(continued from previous page)

```
4 mattis commodo eros, quis posuere enim lobortis quis. Nullam ut
5 tempus nibh.
```

Which gives

Attention: Neque porro quisquam

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus mattis commodo eros, quis posuere enim lobortis quis. Nullam ut tempus nibh.

Caution Admonition

`.. caution::`

The example

```
1 .. caution:: Neque porro quisquam
2
3 Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus
4 mattis commodo eros, quis posuere enim lobortis quis. Nullam ut
5 tempus nibh.
```

Which gives

Caution: Neque porro quisquam

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus mattis commodo eros, quis posuere enim lobortis quis. Nullam ut tempus nibh.

Danger Admonition

`.. danger::`

The example

```
1 .. danger:: Neque porro quisquam
2
3 Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus
4 mattis commodo eros, quis posuere enim lobortis quis. Nullam ut
5 tempus nibh.
```

Which gives

Danger: Neque porro quisquam

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus mattis commodo eros, quis posuere enim lobortis quis. Nullam ut tempus nibh.

Error Admonition

`.. error::`

The example

```
1 .. error:: Neque porro quisquam
2
3     Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus
4     mattis commodo eros, quis posuere enim lobortis quis. Nullam ut
5     tempus nibh.
```

Which gives

Error: Neque porro quisquam

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus mattis commodo eros, quis posuere enim lobortis quis. Nullam ut tempus nibh.

Hint Admonition

`.. hint::`

The example

```
1 .. hint:: Neque porro quisquam
2
3     Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus
4     mattis commodo eros, quis posuere enim lobortis quis. Nullam ut
5     tempus nibh.
```

Which gives

Hint: Neque porro quisquam

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus mattis commodo eros, quis posuere enim lobortis quis. Nullam ut tempus nibh.

Important Admonition

`.. important::`

The example

```
1 .. important:: Neque porro quisquam
2
3     Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus
4     mattis commodo eros, quis posuere enim lobortis quis. Nullam ut
5     tempus nibh.
```


Which gives

Important: Neque porro quisquam

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus mattis commodo eros, quis posuere enim lobortis quis. Nullam ut tempus nibh.

Note Admonition

`.. note::`

For more details, see [note](#)  directive.

The example

```
1 .. note:: Neque porro quisquam
2
3     Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus
4     mattis commodo eros, quis posuere enim lobortis quis. Nullam ut
5     tempus nibh.
```

Which gives

Note: Neque porro quisquam

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus mattis commodo eros, quis posuere enim lobortis quis. Nullam ut tempus nibh.

Tip Admonition

`.. tip::`

The example

```
1 .. tip:: Neque porro quisquam
2
3     Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus
4     mattis commodo eros, quis posuere enim lobortis quis. Nullam ut
5     tempus nibh.
```

Which gives

Tip: Neque porro quisquam

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus mattis commodo eros, quis posuere enim lobortis quis. Nullam ut tempus nibh.

Warning Admonition

`.. warning::`

For more details, see [warning](#)  directive.

The example

```
1 .. warning:: Neque porro quisquam
2
3     Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus
4     mattis commodo eros, quis posuere enim lobortis quis. Nullam ut
5     tempus nibh.
```

Which gives


Warning: Neque porro quisquam

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus mattis commodo eros, quis posuere enim lobortis quis. Nullam ut tempus nibh.

1.15.3 Sphinx Additional Admonitions

Seealso Admonition

.. seealso::

Many sections include a list of references to module documentation or external documents. These lists are created using the `seealso`  directive.

The example

```
1 .. seealso:: Neque porro quisquam
2
3     Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus
4     mattis commodo eros, quis posuere enim lobortis quis. Nullam ut
5     tempus nibh.
```

Which gives

See also:

Neque porro quisquam

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus mattis commodo eros, quis posuere enim lobortis quis. Nullam ut tempus nibh.

1.16 Hyperlink

The link text is set by putting a `_` after some text. The ``` is used to group text, allowing you to include multiple words in your link text. You should use the ```, even when the link text is only one word. This keeps the syntax consistent.

The link target is defined inline or at the bottom of the section with `.. _<link text>: <target>` (*reference style*).

The [Hyperlink Targets](#) in *Docutils* provides the basic specification for [external](#) and [anonymous](#) hyperlink targets. These are also called [explicit hyperlink targets](#).

the example

```
1 `A cool website`_ and `The Dino <https://docutils.sourceforge.io/>`_.
2
3 .. _A cool website: https://www.sphinx-doc.org/
```

which gives [A cool website](#) and [The Dino](#).

1.17 Referencing

Another important *Sphinx* feature is that it allows referencing across documents. This is another powerful way to tie documents together.

The simplest way to do this is to define an explicit reference object which can then be referenced directly as internal hyperlink target or with `:ref:`refname`` or in rare cases with `:numref:`refname`` depending on the [toctree](#) section numbering setup. *Sphinx* also supports `:doc:`docname`` for linking to a document via built-in extension [sphinx.ext.intersphinx](#) and also supports auto-generated labels for each section via built-in extension [sphinx.ext.autosectionlabel](#).

The [Hyperlink Targets](#) in *Docutils* provides the basic specification for [internal](#) and [external](#) hyperlink targets. These are also called [explicit](#) and also available as [implicit](#) hyperlink targets.

:doc:

:ref:

:numref:

For more details, see [doc](#), [ref](#) and [numref](#) role.

The example

```
1 Clicking on this internal hyperlink will take us to the target_
  ↳ below.
2
3 :ref:`reference-name`, this is
4 :ref:`the same (cool) section <reference-name>`, and again the_
  ↳ reference (continues on next page)
```

(continued from previous page)

```

5 with support of the extension **autosectionlabel** --
6 :ref:`concepts/referencing:A cool section` or :doc:`./referencing`.

```

```

1 .. _reference-name:
2
3 A cool section
4 ~~~~~
5
6 .. _target:
7
8 The hyperlink target above points to this paragraph.

```

Which gives Clicking on this internal hyperlink will take us to the [target](#) (page 71) below.

[A cool section](#) (page 71), this is [the same \(cool\) section](#) (page 71), and again the reference with support of the extension **autosectionlabel** – [A cool section](#) (page 71) or [Referencing](#) (page 70).

1.17.1 A cool section

The hyperlink target above points to this paragraph.

1.18 External References

Sphinx also includes a number of predefined references for external concepts. Things like PEP's and RFC's. You can read more about this in the [Sphinx Roles](#) (page 13) section.

:pep:

:rfc:

For more details, see [pep](#) and [rfc](#) role.

The example

```

1 You can learn more about this at :pep:`8` or :rfc:`1984`.

```

Which gives You can learn more about this at [PEP 8](#) or [RFC 1984](#).

1.19 Downloadable Files

To place a downloadable file in a document, use the `download` (page 72) role.

To understand the procedure better, see this
`:download:`example script </_downloads/contributing/example_script.py>`.`

Downloadable files with a dedicated context to a specific part of the documentation should also be placed exactly at this point in the source tree of the documentation. Other common artefacts should be put in the documentation root or the `/_downloads/` subdirectory, and they should be in a subdirectory with the same name as the document in which they appear (that is, the filename without the `.rst` extension).

Attention: Downloads are not fully supported by all *Sphinx* builders. Especially of-line documents like *LaTeX*/*PDF* will be created correctly, but will not provide additional artifacts.


:download:

For more details, see `download`  role.

The example

```
1 All artifacts were selected and download by using this references:
2
3 * matplotlib example: |ellipses.py| (published as `ellipses.py`_)
4
5 .. |ellipses.py| replace::
6     :download:`ellipses.py </_images/mplplots/ellipses.py>`
7 .. _`ellipses.py`:
8     https://matplotlib.org/gallery/shapes_and_collections/ellipse_
    ↪ demo.html#ellipse-rotated
```

Which gives All artifacts were selected and download by using this references:

- matplotlib example: `ellipses.py` (published as `ellipses.py` )

1.20 Semantic Descriptions and References

Sphinx also has much more powerful semantic referencing capabilities, which knows all about software development concepts.

Say you're creating a CLI (Command Line Interface) application. You can define the name of the executable application `program` and its `option` and `envvar` quite easily.

.. program::

.. option::

.. envvar::

For more details, see `program`, `option` and `envvar` directive.

The example

```

1  .. _dlapp:
2
3  .. rubric:: Dreamland
4
5  A fantasy command-line interface application.
6
7  .. program:: dlapp
8
9  .. option:: -f, --force
10
11     Force the operation.
12
13  .. option:: -i <regex>, --ignore <regex>
14
15     Ignore things that match a specific pattern.
16
17  .. envvar:: DLAPPRC
18
19     Set location of resources.
```

Which gives

Dreamland

A fantasy command-line interface application.

-f, --force

Force the operation.

-i <regex>, --ignore <regex>

Ignore things that match a specific pattern.

DLAPPRC

Set location of resources.

That can now also be referenced quite simply.

:program:

:option:

:envvar:

For more details, see [program](#), [option](#) and [envvar](#) role.

The example

```
1 .. seealso:: Working with :ref:`dlapp` (:program:`dlapp`):  
2  
3 * forcing with :option:`dlapp --force`  
4 * ignoring with :option:`dlapp -i`  
5 * defaults with :envvar:`DLAPPRC`
```

Which gives**See also:**

Working with *Dreamland* (page 73) (**dlapp**):

- forcing with *dlapp --force* (page 73)
- ignoring with *dlapp -i* (page 73)
- defaults with *DLAPPRC* (page 73)

Sphinx includes a large number of these semantic types, including:

- The C Domain (name **c**): [c:namespace](#), [c:struct](#), [c:var](#), [c:function](#),...
- The C++ Domain (name **cpp**): [cpp:namespace](#), [cpp:class](#),...
- The *JavaScript* Domain (name **js**): [js:module](#), [js:class](#),...
- The *Python* Domain (name **py**): [py:module](#), [py:class](#),...
- The *reStructuredText* Domain (name **rst**): [rst:directive](#), [rst:role](#),...

1.21 Writing about User Interface

Several roles are used when describing user interactions.

:guilabel:

Marks up *actual UI text* of form labels or buttons. For more details, see [guilabel](#) role.

The example

```
1 Press the :guilabel:`Submit` button.
```

Which gives Press the *Submit* button.

:menuselection:

Marks up the *actual UI text* of a navigation menu or form select element. For more details, see [menuselection](#) role.

The example

```
1 Select :menuselection:`Help` from menu.
2
3 To save your file, go to :menuselection:`File --> Save` in the Main_
  ↳ Menu.
```

Which gives Select *Help* from menu.

To save your file, go to *File* ▶ *Save* in the Main Menu.

When writing about multi-level menus, use a single `:menuselection:` role, and separate menu choices with `-->`.

Note: In some situations you might not be clear about which option, [menuselection](#) or [guilabel](#), to use. GUI (Graphics User Interface)s in real life can sometimes be ambiguous. The general rule is:

- Actual UI (User Interface) text will always receive [guilabel](#) role unless the text could reasonably be understood to be part of a menu.
- If the actual UI text could be understood as a menu, [menuselection](#) should be used.

These both render the same on output, so don't worry too much if you get it wrong. Just use your judgment and take your best guess.

:kbd:

Marks up a sequence of literal keyboard strokes. For more details, see [kbd](#) role.

The example

```
1 To stop the local server, type :kbd:`CTRL+C`.
```

Which gives To stop the local server, type CTRL+C.

:command:

Marks up a terminal command. For more details, see [command](#) role.

The example

```
1 To build the documentation, use :command:`sphinx-build`.
```

Which gives To build the documentation, use **sphinx-build**.

To document a CLI application, you will find more information in *Semantic Descriptions and References* (page 73).

1.21.1 Other Semantic Markup

:abbr:

Marks up an abbreviation. If the role content contains a parenthesized explanation, it will be treated specially: it will be shown in a tool-tip in *HTML*. For more details, see [abbr](#) role.

The example

```
1 This is the :abbr:`ISDN (Integrated Services Digital Network)`  
2 device.
```

Which gives This is the ISDN (Integrated Services Digital Network) device.

:dfn:

Marks the defining instance of a term outside the index or glossary. For more details, see [dfn](#) role.

The example

```
1 This library has a :dfn:`CAPI`, a Common ISDN Application  
2 Programming Interface.
```

Which gives This library has a *CAPI*, a Common ISDN Application Programming Interface.

1.22 Glossary

Sphinx has a built-in Glossary structure that you can use to:

- Produce a consolidated glossary of terms.
- Link terms in other content to their glossary definitions.

1.22.1 Create a Glossary

`.. glossary::`

For more details, see [glossary](#)  directive.

To add glossary terms, you use the directive `.. glossary::`. Write each glossary entry as a definition list, with a term, followed by a single-line indented definition.

Each glossary entry is nested below the `.. glossary::` directive. For example:

```
.. glossary::


    Sphinx
        Sphinx is a tool that makes it easy to create intelligent and
        beautiful documentation. It was originally created for the
        Python documentation, and it has excellent facilities for the
        documentation of software projects in a range of languages.

    RST
        reStructuredText is an easy-to-read, what-you-see-is-what-you-get
        plain text markup syntax and parser system. It is useful for
        in-line program documentation (such as Python docstrings), for
        quickly creating simple web pages, and for standalone documents.
        reStructuredText is designed for extensibility for specific
        application domains. The reStructuredText parser is a component
        of Docutils.

    Sublime Text
        Sublime Text is a sophisticated text editor for code, markup
        and prose. You'll love the slick user interface, extraordinary
        features and amazing performance.
```

1.22.2 Link a Term to its Glossary Entry

:term:

For more details, see [index](#)  role.

When a glossary term is used in text, you can link it to its definition with the `:term:` role. For example, to link the term *Sphinx* to its definition, use the following syntax:

```
:term:`Sphinx`
```

The term specified must exactly match a term in Glossary directive.


You can link to a term in the glossary while showing different text in the topic by including the term in angle brackets. For example:

```
:term:`reStructuredText<RST>`
```

The term in angle brackets must exactly match a term in the glossary. The text before the angle brackets is what users see on the page.

1.23 Index

.. index::

For more details, see [index](#)  directive.


Some roles and directives do already create indices automatically.

However, there is also an explicit directive available, to make the index more comprehensive and enable index entries in documents where information is not mainly contained in information units.

The directive is `.. index::` and contains one or more index entries. Each entry consists of a type and a value, separated by a colon. For example:

```
.. index::  
    single: execution; context  
    triple: module; search; path
```

:index:

For more details, see [index](#)  role.

While the [index](#) (page 79) directive is a block-level markup and links to the beginning of the next paragraph, there is also a corresponding role that sets the link target directly where it is used.

The content of the role can be a simple phrase, which is then kept in the text and used as an index entry. It can also be a combination of text and index entry, styled like with explicit targets of cross-references. In that case, the “target” part can be a full entry as described for the directive above. For example:

```
This is a normal reST :index:`paragraph` that contains several  
:index:`index entries <pair: index; entry>`.
```

Note: The `:index:` role must contain text. This text will be printed and referenced by the index.

Section author: Stephan Linz <linz@li-pro.net>

2.1 Spelling Checker

PyPI Package <https://pypi.org/project/sphinxcontrib-spelling/>

Documentation <https://sphinxcontrib-spelling.readthedocs.io/>

Git Repository <https://github.com/sphinx-contrib/spelling>

Spelling checker for *Sphinx*. It uses *PyEnchant* to produce a report showing misspelled words.

Features

1. Supports multiple source languages using the standard enchant dictionaries.
2. Supports project-specific dictionaries for localized jargon and other terminology that may not appear in the global dictionaries.
3. Suggests alternatives to words not found in the dictionary, when possible.

It consists:

- `sphinxcontrib.spelling`: spelling checker for *Sphinx*

2.1.1 Private Dictionaries

For more details, see [Configuration Options](#) section *Private Dictionaries*.

`.. spelling::`

The `.. spelling::` directive can be used to create a list of words known to be spelled correctly within a single file. For example, if a document refers to a person or project by name, the name can be added to the list of known words for just that single document.

When a more common list of words is needed, related to check multiple document at once, the `spelling_word_list_filename` (page 83) variable should be set properly.

`spelling_word_list_filename`

That is a list specifying files containing a list of words known to be spelled correctly but that do not appear in the referred language dictionary. The files should contain one word per line. Refer to the *PyEnchant* tutorial for details.

2.2 BibTeX Citations

PyPI Package <https://pypi.org/project/sphinxcontrib-bibtex/>

Documentation <https://sphinxcontrib-bibtex.readthedocs.org/>

Git Repository <https://github.com/mcmtrroffaes/sphinxcontrib-bibtex>

Allowing *BibTeX* citations to be inserted into documentation via a `.. bibliography::` directive, and a `:cite:` role, which work similarly to *LaTeX*'s `\begin{thebibliography} ... \end{thebibliography}` environment and `\cite{cite_key}` command. It consists:

- `sphinxcontrib.bibtex`: *Sphinx* interface
- `sphinxcontrib.bibtex.roles`: Doctree roles
- `sphinxcontrib.bibtex.nodes`: Doctree nodes
- `sphinxcontrib.bibtex.directives`: Doctree directives
- `sphinxcontrib.bibtex.transforms`: Doctree transforms
- `sphinxcontrib.bibtex.cache`: Cached information

Create a citation to a bibliographic entry.

Todo: activate “BibTeX Citations” extension.

```
.. rst:role:: cite
```

For more details, see `:rst:role:`scbibtex:cite`` role.

:the example:

```
.. code-block:: rst
:linenos:
```

See `:cite:`juh2014swdocwsp`` for an introduction to Sphinx.

:which gives:

See `:cite:`juh2014swdocwsp`` for an introduction to Sphinx.

For this sample you will need a corresponding bibliography for all cited references.

```
.. rst:directive:: bibliography
```

For more details, see `:rst:dir:`scbibtex:bibliography`` directive.

(continues on next page)

(continued from previous page)

:the example:

```
.. code-block:: rst
   :linenos:

.. bibliography:: bibliography.bibtex
   :style: kcsalpha
   :encoding: utf
   :all:
```

:which gives:

```
.. only:: html or man or texinfo or text

.. rubric:: Documentation with Sphinx

.. only:: latex
```

All entries in the central document bibliography list, mostly on the end of the document.

```
.. bibliography:: bibliography.bibtex
   :style: kcsalpha
   :encoding: utf
   :all:
```

:which needs:

The example above processed the following |BibTeX| file content:

```
.. literalinclude:: bibliography.bibtex
   :caption: BibTeX example file (bibliography.bibtex)
   :language: bibtex
   :emphasize-lines: 1
   :start-at: @book
   :linenos:

.. spelling::
```

Hasecke

2.3 LinuxDoc

Documentation <https://return42.github.io/linuxdoc/>

Git Repository <https://github.com/return42/linuxdoc>

The LinuxDoc library with extensions of the Linux-Kernel documentation, you can use these extensions in common *Sphinx* projects. It consists:

- `linuxdoc.rstFlatTable`: the `.. flat-table::` reST-directive
- `linuxdoc.rstKernelDoc`: the `.. kernel-doc::` reST-directive
- `linuxdoc.kernel_include`: the `.. kernel-include::` reST-directive
- `linuxdoc.manKernelDoc`: the **kernel-doc-man** builder
- `linuxdoc.cdomain`: replacement for the sphinx C-domain
- `linuxdoc.kfigure`: implements scalable image handling

Todo: activate “LinuxDoc” extension.

2.3.1 Flat list table

`.. flat-table::`

See also:

[About tables](#): [flat-table](#)

The `.. flat-table::`` (FlatTable) is a double-stage list similar to the `.. list-table::`` with some additional features:

- *column-span*: with the role `:cspan: `num`` a cell can be extended through additional columns
- *row-span*: with the role `:rspan: `num`` a cell can be extended through additional rows
- *auto-span*: rightmost cell of a table row over the missing cells on the right side of that table-row. With Option `:fill-cells:` this behavior can be changed from auto span to auto fill, which automatically inserts (empty) cells instead of spanning the last cell.

Options

- **:header-rows: (integer)**
count of header rows
- **:stub-columns: (integer)**
count of stub columns

:widths: (list of integer)

widths of columns

:fill-cells:

instead of auto-span missing cells, insert missing cells

Roles

:cspan:

(integer): additional columns (*morecols*)

:rspan:

(integer): additional rows (*morerows*)

The example below shows how to use this markup. The first level of the staged list is the *table-row*. In the *table-row* there is only one markup allowed, the list of the cells in this *table-row*. Exception are *comments* (`..`) and *targets* (e.g. a ref to [row 2 of table's body](#)).

the example

Attention: line 2: The option `:class: longtable` will not interpreted from directive `.. flat-table::` and has no effects.

```

1  .. flat-table:: LinuxDoc :rst:`.. flat-table::` example (table title)
2  :class: longtable
3  :widths: 15 15 15 15 40
4  :header-rows: 2
5  :stub-columns: 1
6
7  * - :rspan:`1` head / stub
8    - :cspan:`3` head 1.1-4
9
10 * - head 2.1
11   - head 2.2
12   - head 2.3
13   - head 2.4
14
15 * .. row body 1 / this is a comment
16
17   - row 1
18   - :rspan:`2` cell 1-3.1
19   - cell 1.2
20   - cell 1.3
21   - cell 1.4
22
23 * .. Comments and targets are allowed on *table-row* stage.
24 .. _`row body 2`:

```

(continues on next page)

(continued from previous page)

```
25
26     - row 2
27     - cell 2.2
28     - :rspan:`1` :cspan:`1`
29       cell 2.3 with a span over
30
31     * col 3-4 &
32     * row 2-3
33
34 * - row 3
35   - cell 3.2
36
37 * - row 4
38   - cell 4.1
39   - cell 4.2
40   - cell 4.3
41   - cell 4.4
42
43 * - row 5
44   - cell 5.1 with automatic span to right end
45
46 * - row 6
47   - cell 6.1
48   - .. empty cell 6.2 with automatic span to right end
```

:which gives:

```
.. include:: linuxdoc/flat-table/example.rsti
```

2.4 Program Output

PyPI Package <https://pypi.org/project/sphinxcontrib-programoutput/>

Documentation <https://sphinxcontrib-programoutput.readthedocs.org/>

Git Repository <https://github.com/NextThought/sphinxcontrib-programoutput>

Literally insert the output of arbitrary commands into documents, helping you to keep your command examples up to date. It consists:

- `sphinxcontrib.programoutput`: insert command output

Todo: activate “Program Output” extension.

2.4.1 Complete output

To include the output of a command into your document, use the `.. program-output::` directive provided by this extension.

`.. program-output::`

For more details, see `program-output` directive.

The example

```
1 .. program-output:: python --version
```

:which gives:

```
.. program-output:: python --version
```

The whole output of `python --version`, including any messages on standard error, is inserted into the current document, formatted as literal text without any syntax highlighting. You can omit the content of the standard error stream with the `:nstderr:` option.

By default, commands are executed in the top-level source directory. You can choose an alternate working directory with the `:cwd:` option. The argument of this option is either a path relative to the current source file, or a absolute path which means that it is relative to the top level source directory.

2.4.2 Shortening the output

Lengthy output can be shortened with the `:ellipsis:` option. Its value denotes lines to omit when inserting the output of the command. Instead, a single ellipsis `...` is inserted.

the example If used with a single number, all lines after the specified line are omitted:

```
1 .. program-output:: python --help
2   :ellipsis: 2
```

:which gives:

The above omits all lines after the second one:

```
.. program-output:: python --help
:ellipsis: 2
```

Negative numbers count from the last line backwards, thus replacing 2 with -2 in the above example would only omit the last two lines.

the example If used with two comma-separated line numbers, all lines in between the specified lines are omitted. Again, a negative number counts from the last line backwards:

```
1 .. program-output:: python --help
2   :ellipsis: 2,-2
```

:which gives:

The above omits all lines except the first two and the last two lines:

```
.. program-output:: python --help
:ellipsis: 2,-2
```

2.4.3 Mimicking shell input

You can mimic shell input with the `.. command-output:: directive`¹. This directive inserts the command along with its output into the document.

.. command-output::

For more details, see [command-output](#)  directive.

The example

¹This directive is just an alias for the `.. program-output:: directive` with the `:prompt:` option set.

```
1 .. command-output:: python --version
```

:which gives:

```
.. command-output:: python --version
```

The appearance of this output can be configured with `programoutput_prompt_template`. When used in conjunction with `:ellipsis:`, the command itself and any additional text is *never* omitted. `:ellipsis:` always refers to the *immediate output* of the command.

the example

```
1 .. command-output:: python --help
2 :ellipsis: 2
```

:which gives:

```
.. command-output:: python --help
:ellipsis: 2
```

2.4.4 Command execution and shell expansion

Normally the command is splittet according to the POSIX shell syntax (see [shlex](#)), and executed directly. Thus special shell features like expansion of environment variables will not work.

the example

```
1 .. command-output:: echo "$USER"
```

:which gives:

```
.. command-output:: echo "$USER"
```

To enable these features, enable the `:shell:` option. With this option, the command is literally passed to the system shell.

the example

```
1 .. command-output:: echo "$USER"
2 :shell:
```

:which gives:

```
.. command-output:: echo "$USER"
:shell:
```

Other shell features like process expansion consequently work, too.

the example

```
1 .. command-output:: ls -l $(which grep)
2   :shell:
```

:which gives:

```
.. command-output:: ls -l $(which grep)
   :shell:
```

Warning: Remember to use `:shell:` carefully to avoid unintended interpretation of shell syntax and swallowing of fatal errors!

2.4.5 Error handling

If an unexpected exit code (also known as *return code*) is returned by a command, it is considered to have failed. In this case, a build warning is emitted to help you to detect misspelled commands or similar errors. By default, a command is expected to exit with an exit code of 0, all other codes indicate an error. In some cases however, it may be reasonable to demonstrate failed programs. To avoid a (superfluous) warning in such a case, you can specify the expected return code of a command with the `:returncode:` option.

the example

```
1 .. command-output:: python -c 'import sys, platform; print(sys.
   ↪version); sys.exit(1)'
2   :returncode: 1
```

:which gives:

```
.. command-output:: python -c 'import sys, platform; print(sys.version); sys.
   ↪exit(1)'
   :returncode: 1
```

The above command returns the exit code 1 (as given to `sys.exit()` [↗](#)), but no warning will be emitted. On the contrary, a warning will be emitted, should the command return 0!

Note: Upon fatal errors which even prevent the execution of the command neither return code nor command output are available. In this case an error message is inserted into the document instead.

If `:shell:` is set however, most of these fatal errors are handled by the system shell and turned into return codes instead. In this case the error message will only appear in the output of the shell. If you're using `:shell:`, double-check the output for errors. Best avoid `:shell:`, if possible.

2.5 Mathematical Plots

Attention: Matplotlib does not support labels and auto-references. You can not refer to a equation and you will never see an entry to `.. mathmpl::` expressions in the list of equations.

PyPI Package <https://pypi.org/project/matplotlib/>

Project Home <https://matplotlib.org/>

Documentation <https://matplotlib.org/contents.html>

Git Repository <https://github.com/matplotlib/matplotlib>

Documentation <https://matplotlib.org/sampled/doc/index.html>

Git Repository <https://github.com/matplotlib/sampled>

Matplotlib is a comprehensive library for creating static, animated, and interactive visualizations in *Python*. It consists:

- `matplotlib.sphinxext.mathmpl`: Matplotlib math-text in a *Sphinx* document
- `matplotlib.sphinxext.plot_directive`: Matplotlib plot in a *Sphinx* document

Todo: activate “Mathematical Plots” extension.

2.5.1 Expressions

See the [Writing mathematical expressions](#) for lots more information how to writing mathematical expressions in matplotlib.

With matplotlib in |Sphinx| you can include inline math

```
:mathmpl: `(\alpha^{ic} > \beta_{ic})` (as role
:rst: `:mathmpl: `(\alpha^{ic} > \beta_{ic})`` or display math:

.. mathmpl::

    \sum_{i=0}^{\infty} x_i
```

.. mathmpl::

The example

```
1 .. mathmpl::  
2  
3 \left(\frac{5 - \frac{1}{x}}{4}\right)
```

:which gives:

```
.. include:: matplotlib/mathmpl/example.rsti
```

2.5.2 Plots

.. **plot**::

See the matplotlib [Pyplot tutorial](#) and the [Gallery](#) for lots of examples of matplotlib plots.

The source code for the plot may be included in one of three ways:

inline content

the example

```
1  .. plot::
2     :align: center
3     :scale: 75
4
5     import matplotlib.pyplot as plt
6     import matplotlib.image as mpimg
7     import numpy as np
8     img = mpimg.imread('https://github.com/matplotlib/matplotlib/raw/
→master/doc/_static/stinkbug.png')
9     imgplot = plt.imshow(img)
```

:which gives:

```
.. include:: matplotlib/inline/example.rsti
```

doctest content

the example

```
1 .. plot::
2   :format: doctest
3   :align: center
4   :scale: 75
5
6   >>> import matplotlib.pyplot as plt
7   >>> plt.plot([1, 2, 3], [4, 5, 6]) # doctest: +ELLIPSIS
8   [<matplotlib.lines.Line2D object at 0x...>]
```

:which gives:

```
.. include:: matplotlib/doctest/example.rsti
```

source file content

When a path to a source file is given, the *Sphinx* configuration option `plot_basedir` will respect. It is the base directory, to which `.. plot::` file names are relative to. If **None or empty**, file names are **relative** to the directory where the file containing the directive is.

```
.. ifconfig:: not plot_basedir

:plot_basedir: **None or empty**, file names are **relative**

.. ifconfig:: plot_basedir

:plot_basedir: currently set to :file:`{plot_basedir}`.
```

the example

```
1 .. plot:: ellipses.py
2   :include-source:
3   :encoding: utf
4   :format: python
5   :align: center
6   :scale: 75
```

:which gives:

```
.. include:: matplotlib/srcfile/example.rsti
```

3D-Plots

See [mplot3d](#), [mplot3d FAQ](#), and [mplot3d API](#).

the example

```
1  .. plot::
2     :format: python
3     :align: center
4     :scale: 75
5
6     import matplotlib.pyplot as plt
7     from matplotlib import cm
8     from mpl_toolkits.mplot3d import axes3d
9
10    fig = plt.figure()
11    ax = fig.gca(projection='3d')
12    X, Y, Z = axes3d.get_test_data(0.005)
13    ax.plot_surface(X, Y, Z, rstride=8, cstride=8, alpha=0.3)
14    cset = ax.contourf(X, Y, Z, zdir='z', offset=-100, cmap=cm.coolwarm)
15    cset = ax.contourf(X, Y, Z, zdir='x', offset=-40, cmap=cm.coolwarm)
16    cset = ax.contourf(X, Y, Z, zdir='y', offset=40, cmap=cm.coolwarm)
17
18    ax.set_xlabel('X'); ax.set_xlim(-40, 40)
19    ax.set_ylabel('Y'); ax.set_ylim(-40, 40)
20    ax.set_zlabel('Z'); ax.set_zlim(-100, 100)
21
22    plt.show()
```

:which gives:

```
.. include:: matplotlib/mplot3d/example.rsti
```

2.6 PGF/TikZ LaTeX Pictures

Attention: Only practicable and usable for *HTML* and *LaTeX* builder.

PyPI Package <https://pypi.org/project/sphinxcontrib-tikz/> 

Documentation <http://sphinxcontrib-tikz.readthedocs.io/> 

Git Repository <https://bitbucket.org/philexander/tikz> 

Sphinx extension, which enables the use of the *PGF/TikZ LaTeX* package to draw nice pictures.

This extension relies on two software packages being installed on your computer:

1. latex with the tikz and the amsmath packages
2. A software package that is able to convert a *PDF* to an image. Currently, four different ways of doing this conversion are supported, called conversion “suites”. Below is a list for each suite what must be installed on your computer. Only one such suite need to be installed:
 - *pdf2svg* suite: pdf2svg (preferred, default)
 - *Netpbm* suite: pdftoppm (part of the *Poppler PDF* library) and pnmtopng (part of the *Netpbm* package)
 - *ImageMagick* suite: pdftoppm (part of the *Poppler PDF* library) and convert (part of the *ImageMagick* package)
 - *GhostScript* suite: ghostscript

See [Configuration](#)  in the extension documentation for more details.

Todo: activate “PGF/TikZ LaTeX Pictures” extension.

:tikz:

For more details, see [Usage](#)  in the extension documentation.

inline content

The example

```
1 An example role :tikz:`[thick] \node[blue,draw] (a) {A};
2 \node[draw,dotted,right of=a] {B} edge[<-] (a);`
```

:which gives:

```
.. include:: tikz/inline/example.rsti
```


.. tikz::

For more details, see [Usage](#) in the extension documentation.

explicit markup

The example

```

1 .. rst-class:: centered
2 .. tikz:: [>=latex',dotted,thick] \draw[->] (0,0) -- (1,1) -- (1,0)
3    -- (2,0);
4    :libs: arrows

```

:which gives:

```
.. include:: tikz/explicit/example.rsti
```

from source file

The example

```

1 .. rst-class:: centered
2 .. tikz:: Control system principles (PGF/TikZ example)
3    :include: ctrloop.tikz
4    :libs: arrows,shapes

```

:which gives:

```
.. include:: tikz/srcfile/example.rsti
```

Which needs The example above comes from the [Control system principles](#) web page and processed the following TikZ file content:

Listing 2.1: TikZ example file (ctrloop.tikz)

```

1 [auto, node distance=2cm,>=latex']
2 \tikzstyle{block} = [draw, fill=blue!20, rectangle,
3                     minimum height=3em, minimum width=6em]
4 \tikzstyle{sum} = [draw, fill=blue!20, circle, node distance=1cm]
5 \tikzstyle{input} = [coordinate]
6 \tikzstyle{output} = [coordinate]
7 \tikzstyle{pinstyle} = [pin edge={to-,thin,black}]
8 % placing the blocks
9 \node [input, name=input] {};

```

(continues on next page)

(continued from previous page)

```
10 \node [sum, right of=input] (sum) {};
11 \node [block, right of=sum] (controller) {Controller};
12 \node [block, right of=controller, pin=
   ↳{[pinstyle]above:Disturbances},
13       node distance=3cm] (system) {System};
14 % draw an edge between the controller and system block to calculate
15 % the coordinate -- need it to place the measurement block
16 \draw [->] (controller) -- node[name=u] {$u$} (system);
17 \node [output, right of=system] (output) {};
18 \node [block, below of=u] (measurements) {Measurements};
19 % once the nodes are placed, connecting them is easy
20 \draw [draw,->] (input) -- node {$r$} (sum);
21 \draw [->] (sum) -- node {$e$} (controller);
22 \draw [->] (system) -- node [name=y] {$y$}(output);
23 \draw [->] (y) |- (measurements);
24 \draw [->] (measurements) -| node[pos=0.99] {$-$}
25                      node [near end] {$y_m$} (sum);
```

2.7 Block Diagram Family

Todo: activate “Block Diagram Family” extensions.

[blockdiag](#) and its family generate diagram images from simple text files:

```
.. blockdiag::

blockdiag {
    blockdiag -> generates -> "block-diagrams";
    blockdiag -> is -> "very easy!";

    blockdiag [color = "greenyellow"];
    "block-diagrams" [color = "pink"];
    "very easy!" [color = "orange"];
}
```

Features

1. Supports many types of diagrams
 - block diagram (w/ [blockdiag](#))
 - sequence diagram (w/ [seqdiag](#))
 - activity diagram (w/ [actdiag](#))
 - logical network diagram (w/ [nwdiag](#))
 - rack-structure diagram (w/ [rackdiag](#))
 - packet header diagram (w/ [packetdiag](#))
2. Generates beautiful diagram images from simple text format (similar to Graphviz's dot format)
3. Layouts diagram elements automatically
4. Embeds to many documentations; [Sphinx](#), Trac, Redmine, and some Wikis

2.7.1 Block Diagram

`sphinxcontrib-blockdiag` [↗](https://pypi.org/project/sphinxcontrib-blockdiag/) is a *Sphinx* extension for embedding block diagrams. You can embed block diagrams with the `.. blockdiag::` directive.

PyPI Package <https://pypi.org/project/sphinxcontrib-blockdiag/> [↗](#)

Documentation <http://blockdiag.com/en/blockdiag/sphinxcontrib.html> [↗](#)

Git Repository <https://github.com/blockdiag/sphinxcontrib-blockdiag> [↗](#)

Sphinx extension for embedding block diagrams using `blockdiag` [↗](#).

Features

1. Generate block-diagram from dot like text (basic feature).
2. Multilingualism for node-label (utf-8 only).

Todo: activate “Block Diagram” extension.

Directive Body Diagram

`.. blockdiag::`

For more details, see `sphinxcontrib-blockdiag` [↗](#) in the extension demonstration and the README .rst in the extension Git repository.

The example

```
1 .. blockdiag::
2   :align: center
3
4   blockdiag {
5       A -> B -> C;
6       B -> D;
7   }
```

:which gives:

```
.. include:: blockdiag/directive-body/example.rst
```

Description Table

the example

```

1  .. blockdiag::
2     :align: center
3     :desctable:
4
5     blockdiag {
6         A -> B -> C;
7         A [description = "browsers in each client"];
8         B [description = "web server"];
9         C [description = "database server"];
10    }
```

:which gives:

```
.. include:: blockdiag/description-table/example.rsti
```

Include Diagram

the example

```

1  .. blockdiag:: blockdiag/example.diag
2     :caption: Style attributes to nodes and edges (Block Diagram
3     ↪example)
4     :align: center
5     :width: 640
```

:which gives:

```

.. blockdiag:: blockdiag/example.diag
:caption: Style attributes to nodes and edges (Block Diagram example)
:align: center
:width: 640
```

which needs The example above comes from the original [Sample diagrams](#) web page and processed the following file content:

Listing 2.2: Block Diagram example file (blockdiag/example.diag)

```

1  blockdiag {
2     // Set border-style, background-color and text-color to nodes.
3     A [style = dotted];
4     B [style = dashed];
```

(continues on next page)

(continued from previous page)

```

5      C [color = pink, style = "3,3,3,3,15,3"]; //dashed_array format
↪style
6      D [shape = circle, color = "#888888", textcolor="#FFFFFF"];
7
8      // Set border-style and color to edges.
9      A -> B [style = dotted];
10     B -> C [style = dashed];
11     C -> D [color = "red", style = "3,3,3,3,15,3"]; //dashed_array
↪format style
12
13     // Set numbered-badge to nodes.
14     E [numbered = 99];
15
16     // Set background image to nodes (and erase label).
17     F [label = "", background = "https://github.com/sphinx-doc/sphinx/
↪raw/master/doc/_static/sphinx.png"];
18     G [label = "", background = "https://www.python.org/static/
↪community_logos/python-logo-master-v3-TM.png"];
19     H [icon = "https://github.com/blockdiag/blockdiag.com/raw/master/
↪sources/en/_static/help-browser.png"];
20     I [icon = "https://github.com/blockdiag/blockdiag.com/raw/master/
↪sources/en/_static/internet-mail.png"];
21     J [shape = actor]
22
23     // Set arrow direction to edges.
24     E -> F [dir = none, label = edge];
25     F -> G [dir = forward];
26     G -> H [dir = back];
27
28     group {
29         orientation = portrait;
30         color = lightgray;
31         H -> I [dir = both];
32     }
33
34     // Set width and height to nodes.
35     K [width = 192]; // default value is 128
36     L [shape = square, height = 64]; // default value is 40
37
38     // Use thick line
39     J -> K [thick]
40     K -> L;
41 }

```

2.7.2 Sequence Diagram

`sphinxcontrib-seqdiag` [↗](#) is a *Sphinx* extension for embedding sequence diagrams. You can embed sequence diagrams with the `.. seqdiag::` directive.

PyPI Package <https://pypi.org/project/sphinxcontrib-seqdiag/> [↗](#)

Documentation <http://blockdiag.com/en/seqdiag/sphinxcontrib.html> [↗](#)

Git Repository <https://github.com/blockdiag/sphinxcontrib-seqdiag> [↗](#)

Sphinx extension for embedding sequence diagrams using `seqdiag` [↗](#).

Features

1. Generate sequence-diagram from dot like text (basic feature).
2. Multilingualism for node-label (utf-8 only).

Todo: activate “Sequence Diagram” extension.

Directive Body Diagram

`.. seqdiag::`

For more details, see `sphinxcontrib-seqdiag` [↗](#) in the extension demonstration and the README .rst in the extension Git repository.

The example

```

1  .. seqdiag::
2     :align: center
3
4     seqdiag {
5         # define order of elements
6         # seqdiag sorts elements by order they appear
7         browser; database; webserver;
8
9         browser -> webserver [label = "GET /index.html"];
10        browser <-- webserver;
11        browser -> webserver [label = "POST /blog/comment"];
12        webserver -> database [label = "INSERT comment
13        ↪"];
14        webserver <-- database;
15        browser <-- webserver;
16    }
```

:which gives:

```
.. include:: seqdiag/directive-body/example.rsti
```

Description Table

the example

```
1  .. seqdiag::  
2     :align: center  
3     :desctable:  
4  
5     seqdiag {  
6         A -> B -> C;  
7         A [description = "browsers in each client"];  
8         B [description = "web server"];  
9         C [description = "database server"];  
10    }
```

:which gives:

```
.. include:: seqdiag/description-table/example.rsti
```

Include Diagram

the example

```
1  .. seqdiag:: seqdiag/example.diag  
2     :caption: Style attributes to diagram and edges (Sequence Diagram  
3     ↪example)  
4     :align: center  
5     :height: 640
```

:which gives:

```
.. seqdiag:: seqdiag/example.diag  
   :caption: Style attributes to diagram and edges (Sequence Diagram example)  
   :align: center  
   :height: 640
```

which needs The example above comes from the original [Sample diagrams](#) web page and processed the following file content:

Listing 2.3: Sequence Diagram example file (seqdiag/example.diag)

```
1 seqdiag {
2   // Set edge metrix.
3   edge_length = 300; // default value is 192
4   span_height = 80; // default value is 40
5
6   // Set fontsize.
7   default_fontsize = 16; // default value is 11
8
9   // Do not show activity line
10  activation = none;
11
12  // Numbering edges automatically
13  autonumber = True;
14
15  // Change note color
16  default_note_color = lightgreen;
17
18  browser -> webserver [label = "GET \n/index.html"];
19  browser <-- webserver [note = "Apache works!"];
20
21  // Separator
22  === Separator line ===
23
24  // color of edge
25  browser -> webserver [label = "misformatted", color = red];
26
27  // failed edge
28  browser -> webserver [label = "failed browser", failed];
29 }
```

2.7.3 Activity Diagram

`sphinxcontrib-actdiag` [↗](https://pypi.org/project/sphinxcontrib-actdiag/) is a *Sphinx* extension for embedding activity diagrams. You can embed activity diagrams with the `.. actdiag::`` directive.

PyPI Package <https://pypi.org/project/sphinxcontrib-actdiag/> [↗](#)

Documentation <http://blockdiag.com/en/actdiag/sphinxcontrib.html> [↗](#)

Git Repository <https://github.com/blockdiag/sphinxcontrib-actdiag> [↗](#)

Sphinx extension for embedding activity diagrams using `actdiag` [↗](#).

Features

1. Generate activity-diagram from dot like text (basic feature).
2. Multilingualism for node-label (utf-8 only).

Todo: activate “Activity Diagram” extension.

Directive Body Diagram

`.. actdiag::`

For more details, see `sphinxcontrib-actdiag` [↗](#) in the extension demonstration and the README .rst in the extension Git repository.

The example

```
1  .. actdiag::
2     :align: center
3     :scale: 75
4
5     actdiag {
6         A -> B -> C -> D;
7
8         lane foo {
9             A; B;
10        }
11        lane bar {
12            C; D;
13        }
14    }
```

:which gives:

```
.. include:: actdiag/directive-body/example.rsti
```

Description Table

the example

```

1  .. actdiag::
2     :align: center
3     :scale: 75
4     :desctable:
5
6     actdiag {
7         A -> B -> C;
8         A [description = "browsers in each client"];
9         B [description = "web server"];
10        C [description = "database server"];
11    }
```

:which gives:

```
.. include:: actdiag/description-table/example.rsti
```

Include Diagram

the example

```

1  .. blockdiag:: actdiag/example.diag
2     :caption: Style attributes to frames and nodes (Activity Diagram
3     ↪example)
4     :align: center
5     :scale: 75
6     :width: 640
```

:which gives:

```

.. actdiag:: actdiag/example.diag
:caption: Style attributes to frames and nodes (Activity Diagram example)
:align: center
:scale: 75
:width: 640
```

which needs The example above comes from the original [Sample diagrams](#) web page and processed the following file content:

Listing 2.4: Activity Diagram example file (actdiag/example.diag)

```
1  actdiag {
2      write -> convert -> image;
3
4      lane user {
5          label = "User";
6          write [label = "Writing reST"];
7          image [label = "Get diagram IMAGE"];
8      }
9      lane actdiag {
10         convert [label = "Convert reST to Image"];
11     }
12 }
```

2.7.4 Network Diagram

`sphinxcontrib-nwdiag` [↗](#) is a *Sphinx* extension for embedding network diagrams. You can embed network diagrams with the `.. nwdiag::`, `.. rackdiag::` and `.. packetdiag::` directives.

PyPI Package <https://pypi.org/project/sphinxcontrib-nwdiag/> [↗](#)

Documentation <http://blockdiag.com/en/nwdiag/sphinxcontrib.html> [↗](#)

Git Repository <https://github.com/blockdiag/sphinxcontrib-nwdiag> [↗](#)

Sphinx extension for embedding network diagrams using `nwdiag` [↗](#).

Features

1. Generate network-diagram from dot like text (basic feature).
2. Multilingualism for node-label (utf-8 only).

Todo: activate “Network Diagram” extension.

Directive Body Diagram

`.. nwdiag::`

For more details, see `sphinxcontrib-nwdiag` [↗](#) in the extension demonstration and the README .rst in the extension Git repository.

The example

```
1  .. nwdiag::
2      :align: center
3      :scale: 75
4
5      nwdiag {
6          network dmz {
7              web01;
8              web02;
9          }
10     }
```

:which gives:

```
.. include:: nwdiag/directive-body/example.rsti
```

Description Table

the example

```
1  .. nwdiag::
2     :align: center
3     :scale: 75
4     :desctable:
5
6     nwdiag {
7         network dmz {
8             web01 [address = "192.168.0.1", description = "web server01
9             ↪"];
10            web02 [address = "192.168.0.2", description = "web server02
11            ↪"];
12        }
13        network internal {
14            web01 [address = "172.0.0.1"];
15            db01 [address = "172.0.0.2,172.0.0.20", description =
16            ↪"database server"];
```

:which gives:

```
.. include:: nwdiag/description-table/example.rsti
```

Include Diagram

Network

the example

```
1  .. nwdiag:: nwdiag/example.diag
2     :caption: Peer networks and grouping nodes (Network Diagram example)
3     :align: center
4     :scale: 75
5     :width: 640
```

:which gives:

```
.. nwdiag:: nwdiag/example.diag
:caption: Peer networks and grouping nodes (Network Diagram example)
:align: center
```

(continues on next page)

(continued from previous page)

```
:scale: 75
:width: 640
```

which needs The example above comes from the original [Sample diagrams: nwdiag](#) web page and processed the following file content:

Listing 2.5: Network Diagram example file (nwdiag/example.diag)

```

1  nwdiag {
2      inet [shape = cloud];
3      inet -- router;
4
5      network front {
6          address = "192.168.0.0/24";
7          router;
8          web01;
9          web02;
10
11         // define network using defined nodes
12         group db {
13             web01;
14             web02;
15         }
16     }
17 }
```

Rack

.. rack::

For more details, see [sphinxcontrib-nwdiag](#) in the extension demonstration and the README.rst in the extension Git repository.

The example

```

1  .. rackdiag:: rackdiag/example.diag
2      :caption: Multiple racks with multiple and blocked units (Rack
3      ↪Diagram example)
4      :align: center
5      :height: 480
```

:which gives:

```

.. rackdiag:: rackdiag/example.diag
:caption: Multiple racks with multiple and blocked units (Rack Diagram
↪example)
```

(continues on next page)

(continued from previous page)

```
:align: center
:height: 480
```

Which needs The example above comes from the original [Sample diagrams: rack-diag](#) web page and processed the following file content:

Listing 2.6: Rack Diagram example file (rackdiag/example.diag)

```

1 rackdiag {
2     default_fontsize = 10;
3
4     // define 1st (height) rack
5     rack {
6         16U;
7
8         // define rack items
9         1: UPS [2U, fontsize = 14];
10        3: DB Server;
11        // put 2 units to rack-level 4
12        4: Web\nServer 1;
13        4: Web\nServer 2;
14        5: Web\nServer 3;
15        5: Web\nServer 4;
16        7: Load Balancer;
17        8: L3 Switch;
18    }
19
20    // define 2nd rack
21    rack {
22        12U;
23
24        // define rack items
25        1: UPS [2U, fontsize = 14];
26        3: DB Server;
27        4: Web Server;
28        5: Web Server;
29        6: Web Server;
30        7: Load Balancer;
31        8: L3 Switch;
32    }
33
34    // define 3rd rack (with not available units)
35    rack {
36        12U;
37
38        1: Server;
```

(continues on next page)

(continued from previous page)

```

39     2: Server;
40     3: Server;
41     4: Server;
42     5: N/A [8U, fontsize = 14];
43 }
44 }
```

Packet

.. packet::

For more details, see [sphinxcontrib-nwdiag](#) in the extension demonstration and the README.rst in the extension Git repository.

The example

```

1 .. packetdiag:: packetdiag/example.diag
2    :caption: Structure of TCP Header (Packet Diagram example)
3    :align: center
4    :width: 640
```

:which gives:

```

.. packetdiag:: packetdiag/example.diag
   :caption: Structure of TCP Header (Packet Diagram example)
   :align: center
   :width: 640
```

Which needs The example above comes from the original [Sample diagrams: packet-diag](#) web page and processed the following file content:

Listing 2.7: Packet Diagram example file (packetdiag/example.diag)

```

1 packetdiag {
2     colwidth = 32;
3     node_height = 40;
4     default_fontsize = 12;
5
6     0-15: Source Port;
7     16-31: Destination Port;
8     32-63: Sequence Number;
9     64-95: Acknowledgment Number;
10    96-99: Data\nOffset;
11    100-105: Reserved;
12    106: URG [rotate = 270];
```

(continues on next page)

(continued from previous page)

```
13      107: ACK [rotate = 270];
14      108: PSH [rotate = 270];
15      109: RST [rotate = 270];
16      110: SYN [rotate = 270];
17      111: FIN [rotate = 270];
18      112-127: Window;
19      128-143: Checksum;
20      144-159: Urgent Pointer;
21      160-191: (Options and Padding);
22      192-223: Data [colheight = 3];
23  }
```

2.8 Tabbed Content

Attention: Only practicable and usable for *HTML* builder.

PyPI Package <https://pypi.org/project/sphinx-tabs/>

Documentation <https://sphinx-tabs.readthedocs.io/>

Git Repository <https://github.com/executablebooks/sphinx-tabs>

Create tabbed content in *Sphinx* documentation when building *HTML*.

Features

1. Basic and nested tabs.
2. Grouped Tabs.
3. Code Tabs.

Todo: activate “Tabbed Content” extension.

.. tabs::

.. tab::

For more details, see [Simple Tabs](#) in the extension demonstration and the README.md in the extension Git repository.

The example

```

1  .. tabs::
2
3      .. tab:: **Apples**
4
5          Apples are green, or sometimes red.
6
7      .. tab:: **Pears**
8
9          Pears are green.
10
11     .. tab:: **Oranges**
12
13         Oranges are orange.
```

:which gives:

```
.. include:: sphinx-tabs/example.rst
```

Nested tabs are also possible.

The example

```
1  .. tabs::
2
3      .. tab:: Stars
4
5          .. tabs::
6
7              .. tab:: The Sun
8
9                  The closest star to us.
10
11              .. tab:: Proxima Centauri
12
13                  The second closest star to us.
14
15              .. tab:: Polaris
16
17                  The North Star.
18
19      .. tab:: Moons
20
21          .. tabs::
22
23              .. tab:: The Moon
24
25                  Orbits the Earth
26
27              .. tab:: Titan
28
29                  Orbits Jupiter
```

:which gives:

```
.. include:: sphinx-tabs/nested/example.rsti
```

.. **group-tab**::

Also tabs can stick together in groups.

The example

```
1  .. rubric:: operating systems
2
3  .. tabs::
4
5      .. group-tab:: Linux
```

(continues on next page)

(continued from previous page)

```

6      **Linux** is Unix-like, but was developed without any Unix
7      ↪code.
8      The Linux kernel originated in 1991, as a project of Linus
9      Torvalds, while a university student in Finland.
10
11     .. group-tab:: Mac OS X
12
13     **Mac OS X** is a line of open core graphical operating
14     ↪systems
15     developed, marketed, and sold by Apple Inc.
16
17     .. group-tab:: Microsoft Windows
18
19     **Microsoft Windows** is a family of proprietary operating
20     ↪systems
21     designed by Microsoft Corporation and primarily targeted to
22     Intel architecture based computers.
23
24     .. rubric:: integrated development environments
25
26     .. tabs::
27
28     .. group-tab:: Linux
29
30     **There is no dedicated or default integrated development
31     environment (IDE)** on *Linux*. Here is a list of IDEs
32     which will run natively on *Linux*.
33
34     .. group-tab:: Mac OS X
35
36     **Xcode** is an integrated development environment (IDE) for
37     *Mac OS X* containing a suite of software development tools
38     developed by Apple Inc.
39
40     .. group-tab:: Microsoft Windows
41
42     **Microsoft Visual Studio** is an integrated development
43     environment (IDE) from Microsoft Corporation. It is used to
44     develop computer programs uses Microsoft software development
45     platforms such as *Windows API*, *Windows Forms*, *Windows
46     Presentation Foundation*, *Windows Store* and *Microsoft
47     Silverlight*.
48     .. \_`Here is a list`:
49     https://en.wikipedia.org/wiki/Category:Linux\_integrated\_
50     ↪development_environments

```

(continues on next page)

(continued from previous page)

:which gives:

```
.. include:: sphinx-tabs/group/example.rst
```

2.9 Paneled Content

Attention: Only practicable and usable for *HTML* builder.

PyPI Package <https://pypi.org/project/sphinx-panels/>

Documentation <https://sphinx-panels.readthedocs.io/>

Git Repository <https://github.com/executablebooks/sphinx-panels>

Create paneled content in *Sphinx* documentation when building *HTML*.

Features

1. Panels in grid or cards layout.
2. Panels with click-able link-button.
3. Panels with toggle-able content by drop-downs.
4. Panels with styling: header, footer, images, icons, badges, animations

For more details, see [sphinx-panels](#) in the extension demonstration and the README .md in the extension Git repository.

Todo: activate “Paneled Content” extension.

.. panels::

For more details, see [Panels Usage](#).

.. dropdown::

For more details, see [Dropdown Usage](#).

.. link-button::

For more details, see [Link Buttons](#).

.. div::

For more details, see [Div Directive](#).

:badge:

:link-badge:

For more details, see [Link Badges](#).

:opticon:

:fa:

For more details, see [Inline Icons](#).

Extension not applicable

This *Sphinx* extension is quite new and is under constant development. The current behavior disturbs the integration, so the extension is disabled for now (see `conf.py`). Currently known bugs are:

- annoying side effects with the *Tabbed Content* (page 119) extension by the automatically integrated and delivered Bootstrap 4.0 *CSS*
 - no proper and practical *LaTeX* builder support
-

2.10 Email Obfuscate

Attention: Only practicable and usable for *HTML* builder.

PyPI Package <https://pypi.org/project/sphinxcontrib-email/>

Documentation <https://github.com/sphinx-contrib/email/blob/master/README.rst>

Git Repository <https://github.com/sphinx-contrib/email>

Python 3 Fixes <https://github.com/rexut/sphinxcontrib-email/tree/python3-fixes>

Todo: activate “Email Obfuscate” extension.

To obfuscate an email address use something like:

```
:email:`Name Surname <user@myplace.org>`  
:email:`Name Surname (user@myplace.org)`
```

That renders as Name Surname with the appropriate mailto link.

```
:email:`user@myplace.org`
```

That renders as user@myplace.org with the appropriate mailto link.

:email:

The example

```
1 * :email:`Name Surname <user@myplace.org>`  
2 * :email:`Name Surname (user@myplace.org)`  
3 * :email:`user@myplace.org`
```

:which gives:

```
.. include:: email/example.rsti
```


Section author: Stephan Linz <linz@li-pro.net>

Let's decorate the project documentation. There are a lot of themes for the *Sphinx HTML* builder available on the [Sphinx Themes Demo Page](#).

This documentation use the [Read the Docs Sphinx Theme](#) as demonstrate at the [Sphinx RTD Theme Demo Page](#).

Another interesting and actively developed theme is [The Sphinx Book Theme](#), the theme by [The Executable Book Project](#).

3.1 Read the Docs Sphinx Theme

PyPI Package <https://pypi.org/project/sphinx-rtd-theme/>

Documentation <https://sphinx-rtd-theme.readthedocs.io/>

Git Repository https://github.com/readthedocs/sphinx_rtd_theme

This theme is primarily focused to be used on [Read the Docs](#) but can work with your own sphinx projects. You can find a working demo of the theme in the [theme documentation](#).

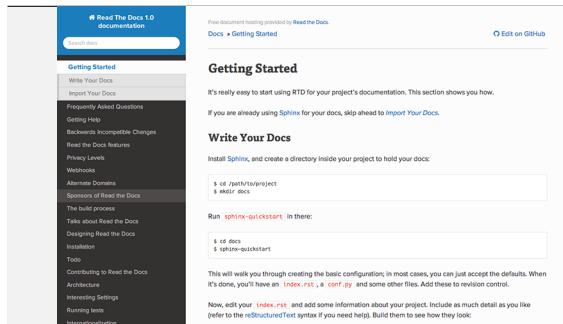


Figure 3.1: Sphinx RTD theme on Desktop

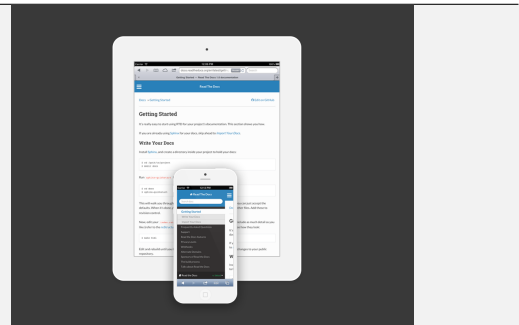


Figure 3.2: Sphinx RTD theme on Mobiles

Section author: Stephan Linz <linz@li-pro.net>

We have made a cheat sheet for helping you remember the syntax for *reStructuredText* & *Sphinx* programs. The basic [reStructuredText Cheat Sheet](#) could also be very helpful.

reStructuredText & Sphinx Cheatsheet

Styles

```
*Italic/emphasis text*
**Bold/strong text**
``Inline literal text/code``
:sup: super \ Script
:sub: sub \ Script
```

Bullet Lists

```
* Unordered item
* Unordered item

1. Nested ordered item
2. Nested ordered item
   a. Nested ordered item

* Unordered item
```

Definition Lists

```
First term
Definition of first term. It can
span multiple lines which alined
on same indentation.

Second term
Definition of second term.

Indent addition paragraphs, which
even can span multiple lines that
aligned on same indentation.
```

Lieral Code Blocks

```
Here is a literal block::

    Its content are indented.

::

    The :: marker is omitted here
```

The `::` marker will inserted a ":" in the output from the example above. To omit the ":" in the output, precede the `::` marker with white space, or use the marker on a line of its own.

Your additional notes and comments

Section Headings

```
=====
Level 1 Heading
=====

Level 2 Heading
-----
```

```
Level 1 Heading
^^^^^^^^^^^^^^^^

Level 2 Heading
+++++
```

- Heading structure is determined only by occurrence order.
- Heading overline is optional.
- Under/overlines use the following characters:

Recommended: = - ` . : ' " ~ ^ * + #
! \$ % & () , / ; < > ? @ [\] { | }

Targets and Links

Anchor target
External target
Footnote target
Citation target

```
.. _anchorbyref:
.. _Anchor by text:
.. _External link name: http://example.com/
.. [1] A footnote
.. [cit1] A global citation
```

External links

```
External link <http://example.com/>`
External link name`_ or `Example <ExTernal link name>`_
```

Internal links

```
`Anchor by text`_ or `Anchor <Anchor by text>`_
`Anchor by ref <anchorbyref>`_
:ref: `anchorbyref`
```

Footnote

```
Reference a footnote [1]_
or a global citation [citel]_
```

Citation

Section link

```
Section Heading
-----
Link <Section Heading>`_
```

Tables

```
=====  =====  =====
Simple table Header 2 Header 3
=====  =====  =====
Column 1   Column 2 Column 3
Horizontal column span ...
...        ...        ...
=====  =====  =====
```

```
+-----+-----+-----+
| Grid  | Header 2 | Header 3 |
| table |          |          |
+-----+-----+-----+
| Column 1 | Column 2 | Vertical |
|          |          | column  |
+-----+-----+-----+
| Horizontal span |          | span |
+-----+-----+-----+
```

Simple tables and grid tables can be replaced with external CSV files, using the `csv-table` directive.

Images and Figures

```
.. image:: image.png
   :height: 100px
   :width: 100px
   :align: bottom
   :target: target_
```

```
.. firgure:: image.png
   :height: 100px
```

Figures are images with captions. They support all image options.

Comments

```
.. This is a single line comment, comments can span multiple lines as well.
.. This is a comment that
   span multiple line.
```

Figure 4.1: Cheat Sheet reStructuredText & Sphinx 1/2

Directives

reStructuredText **directives** consist of a directive **type**, **arguments** and any number of **options**. Some directives expect a block of indented **content**.

```
.. type:: arguments
   :option: option value

Directive content
```

```
.. container:: [container class]
.. csv-table:: [table title]
   :header: CSV data for headers
   :widths: number [, number]
   :file: filename
   :encoding: encoding
   :header-rows: number
   :delim: character, "tab", or "space"
   :quote: character
   :escape: character
.. rubric:: title
```

Content Block Directives

```
.. topic:: [title]
.. sidebar:: [title]
   :subtitle: subtitle
.. admonition:: title
.. attention::
.. caution::
.. danger::
.. error::
.. hint::
.. important::
.. note::
.. tip::
.. warning::
.. seealso::
.. deprecated:: [version]
.. versionadded:: [version]
.. versionchanged:: [version]
.. math::
.. raw:: output format
```

```
.. topic:: Example

A topic block.

.. note::
    This is a note.

.. versionchanged:: 1.3
    Something changed.

.. math::
    a_1 = b_1 + c_1

.. raw:: html

<b>HTML output</b>
```

Table of Contents

```
.. toctree::
   :maxdepth: number (of title levels)
   :glob:
   :hidden:
   :numbered:
   :caption: caption text
   :titlesonly:

[Include paths]
```

Python Domain

Python Domain Directives

```
.. py:module:: module
.. py:class:: signature
.. py:function:: signature
.. py:data:: name
.. py:exception:: name
.. py:attribute:: name
.. py:method:: signature
.. py:staticmethod:: signature
.. py:classmethod:: signature
.. py:decorator:: signature
.. py:currentmodule:: module
```

Python Domain Directive Options

```
:param [type] name: description
:type name: type
:raises class: description
:var name: description
:vartype name: type
:returns description:
:rtype type:
```

Python Domain References

```
:py:mod:`module`
:py:class:`signature`
:py:func:`signature`
:py:data:`name`
:py:exc:`name`
:py:attr:`name`
:py:meth:`signature`
```

```
:py:const:`name`
```

There are a number of other Sphinx language domains for representing code constructs in reference documentation: *rst*, *c*, *cpp*, *js*, *ruby*, *php*, *dotnet*, *scala*, *go*, *lisp*, *coffee*, and others.

Code Examples

```
.. highlight:: language
.. linenothreshold: number
.. codeblock:: [language]
   :linenos:
   :emphasize-lines: numbers [, numbers]
   :caption: caption text
   :name: block target name

[Code example, indented]
.. literalinclude:: filename
   :language: language
   :linenos:
   :emphasize-lines: numbers [, numbers]
   :encoding: encoding
   :diff: filename
   :dedent: number
```

Some of the language lexers supported by the code example **language** option: *none*, *python*, *js*, *php*, *ruby*, *perl*, *c*, *cpp*, *csharp*, *go*, *scala*, *lisp*, *coffee*, *dart*, *julia*, *lua*, *html*, *css*, *sass*, *json*, *yaml*, *diff*, *sql*, *bash*, and *shell-session*.

References

```
:role:`title <target>` Link to target with link text title
:role:`!title` Don't create link or reference
:role:`-module.Object` Use last element, Object, for link text
```

Cross-reference roles

```
:any:`name`
:doc:`document name`
:download:`filename`
:envvar:`name`
:keyword:`python keyword`
:option:`CLI option`
```

Cross-reference roles

```
:abbr:`long (abbreviation)`
:command:`name`
:kbd:`key strokes`
:program:`name`
:pep:`number`
:rfc:`number`
```

Brought to you by **Red the Docs**.
We offer *private hosting* <<https://readthedocs.com/>> and *open source hosting* <<https://readthodocs.org/>> for *Sphinx* documentation projects.

Your additional notes and comments

Figure 4.2: Cheat Sheet reStructuredText & Sphinx 2/2

Section author: Stephan Linz <linz@li-pro.net>

A.1 License

Listing 1.1: License text of the Li-Pro.Net Sphinx Primer

Creative Commons Legal Code

Attribution-ShareAlike 3.0 Unported

CREATIVE COMMONS CORPORATION IS NOT A LAW FIRM AND DOES NOT PROVIDE LEGAL SERVICES. DISTRIBUTION OF THIS LICENSE DOES NOT CREATE AN ATTORNEY-CLIENT RELATIONSHIP. CREATIVE COMMONS PROVIDES THIS INFORMATION ON AN "AS-IS" BASIS. CREATIVE COMMONS MAKES NO WARRANTIES REGARDING THE INFORMATION PROVIDED, AND DISCLAIMS LIABILITY FOR DAMAGES RESULTING FROM ITS USE.

License

THE WORK (AS DEFINED BELOW) IS PROVIDED UNDER THE TERMS OF THIS CREATIVE COMMONS PUBLIC LICENSE ("CCPL" OR "LICENSE"). THE WORK IS PROTECTED BY COPYRIGHT AND/OR OTHER APPLICABLE LAW. ANY USE OF THE WORK OTHER THAN AS AUTHORIZED UNDER THIS LICENSE OR COPYRIGHT LAW IS PROHIBITED.

BY EXERCISING ANY RIGHTS TO THE WORK PROVIDED HERE, YOU ACCEPT AND AGREE TO BE BOUND BY THE TERMS OF THIS LICENSE. TO THE EXTENT THIS LICENSE MAY BE CONSIDERED TO BE A CONTRACT, THE LICENSOR GRANTS YOU THE RIGHTS CONTAINED HERE IN CONSIDERATION OF YOUR ACCEPTANCE OF SUCH TERMS AND CONDITIONS.

(continues on next page)

(continued from previous page)

1. Definitions

- a. "Adaptation" means a work based upon the Work, or upon the Work and other pre-existing works, such as a translation, adaptation, derivative work, arrangement of music or other alterations of a literary or artistic work, or phonogram or performance and includes cinematographic adaptations or any other form in which the Work may be recast, transformed, or adapted including in any form recognizably derived from the original, except that a work that constitutes a Collection will not be considered an Adaptation for the purpose of this License. For the avoidance of doubt, where the Work is a musical work, performance or phonogram, the synchronization of the Work in timed-relation with a moving image ("synching") will be considered an Adaptation for the purpose of this License.
- b. "Collection" means a collection of literary or artistic works, such as encyclopedias and anthologies, or performances, phonograms or broadcasts, or other works or subject matter other than works listed in Section 1(f) below, which, by reason of the selection and arrangement of their contents, constitute intellectual creations, in which the Work is included in its entirety in unmodified form along with one or more other contributions, each constituting separate and independent works in themselves, which together are assembled into a collective whole. A work that constitutes a Collection will not be considered an Adaptation (as defined below) for the purposes of this License.
- c. "Creative Commons Compatible License" means a license that is listed at <https://creativecommons.org/compatiblelicenses> that has been approved by Creative Commons as being essentially equivalent to this License, including, at a minimum, because that license: (i) contains terms that have the same purpose, meaning and effect as the License Elements of this License; and, (ii) explicitly permits the relicensing of adaptations of works made available under that license under this License or a Creative Commons jurisdiction license with the same License Elements as this License.
- d. "Distribute" means to make available to the public the original and copies of the Work or Adaptation, as appropriate, through sale or other transfer of ownership.
- e. "License Elements" means the following high-level license attributes as selected by Licensor and indicated in the title of this License: Attribution, ShareAlike.
- f. "Licensor" means the individual, individuals, entity or entities that offer(s) the Work under the terms of this License.
- g. "Original Author" means, in the case of a literary or artistic work, the individual, individuals, entity or entities who created the Work or if no individual or entity can be identified, the publisher; and in addition (i) in the case of a performance the actors, singers,

(continues on next page)

(continued from previous page)

musicians, dancers, and other persons who act, sing, deliver, declaim, play in, interpret or otherwise perform literary or artistic works or expressions of folklore; (ii) in the case of a phonogram the producer being the person or legal entity who first fixes the sounds of a performance or other sounds; and, (iii) in the case of broadcasts, the organization that transmits the broadcast.

- h. "Work" means the literary and/or artistic work offered under the terms of this License including without limitation any production in the literary, scientific and artistic domain, whatever may be the mode or form of its expression including digital form, such as a book, pamphlet and other writing; a lecture, address, sermon or other work of the same nature; a dramatic or dramatico-musical work; a choreographic work or entertainment in dumb show; a musical composition with or without words; a cinematographic work to which are assimilated works expressed by a process analogous to cinematography; a work of drawing, painting, architecture, sculpture, engraving or lithography; a photographic work to which are assimilated works expressed by a process analogous to photography; a work of applied art; an illustration, map, plan, sketch or three-dimensional work relative to geography, topography, architecture or science; a performance; a broadcast; a phonogram; a compilation of data to the extent it is protected as a copyrightable work; or a work performed by a variety or circus performer to the extent it is not otherwise considered a literary or artistic work.
- i. "You" means an individual or entity exercising rights under this License who has not previously violated the terms of this License with respect to the Work, or who has received express permission from the Licensor to exercise rights under this License despite a previous violation.
- j. "Publicly Perform" means to perform public recitations of the Work and to communicate to the public those public recitations, by any means or process, including by wire or wireless means or public digital performances; to make available to the public Works in such a way that members of the public may access these Works from a place and at a place individually chosen by them; to perform the Work to the public by any means or process and the communication to the public of the performances of the Work, including by public digital performance; to broadcast and rebroadcast the Work by any means including signs, sounds or images.
- k. "Reproduce" means to make copies of the Work by any means including without limitation by sound or visual recordings and the right of fixation and reproducing fixations of the Work, including storage of a protected performance or phonogram in digital form or other electronic medium.

2. Fair Dealing Rights. Nothing in this License is intended to reduce,

(continues on next page)

(continued from previous page)

limit, or restrict any uses free from copyright or rights arising from limitations or exceptions that are provided for in connection with the copyright protection under copyright law or other applicable laws.

3. License Grant. Subject to the terms and conditions of this License, Licensor hereby grants You a worldwide, royalty-free, non-exclusive, perpetual (for the duration of the applicable copyright) license to exercise the rights in the Work as stated below:

- a. to Reproduce the Work, to incorporate the Work into one or more Collections, and to Reproduce the Work as incorporated in the Collections;
- b. to create and Reproduce Adaptations provided that any such Adaptation, including any translation in any medium, takes reasonable steps to clearly label, demarcate or otherwise identify that changes were made to the original Work. For example, a translation could be marked "The original work was translated from English to Spanish," or a modification could indicate "The original work has been modified.";
- c. to Distribute and Publicly Perform the Work including as incorporated in Collections; and,
- d. to Distribute and Publicly Perform Adaptations.
- e. For the avoidance of doubt:
 - i. Non-waivable Compulsory License Schemes. In those jurisdictions in which the right to collect royalties through any statutory or compulsory licensing scheme cannot be waived, the Licensor reserves the exclusive right to collect such royalties for any exercise by You of the rights granted under this License;
 - ii. Waivable Compulsory License Schemes. In those jurisdictions in which the right to collect royalties through any statutory or compulsory licensing scheme can be waived, the Licensor waives the exclusive right to collect such royalties for any exercise by You of the rights granted under this License; and,
 - iii. Voluntary License Schemes. The Licensor waives the right to collect royalties, whether individually or, in the event that the Licensor is a member of a collecting society that administers voluntary licensing schemes, via that society, from any exercise by You of the rights granted under this License.

The above rights may be exercised in all media and formats whether now known or hereafter devised. The above rights include the right to make such modifications as are technically necessary to exercise the rights in other media and formats. Subject to Section 8(f), all rights not expressly granted by Licensor are hereby reserved.

4. Restrictions. The license granted in Section 3 above is expressly made

(continues on next page)

(continued from previous page)

subject to and limited by the following restrictions:

- a. You may Distribute or Publicly Perform the Work only under the terms of this License. You must include a copy of, or the Uniform Resource Identifier (URI) for, this License with every copy of the Work You Distribute or Publicly Perform. You may not offer or impose any terms on the Work that restrict the terms of this License or the ability of the recipient of the Work to exercise the rights granted to that recipient under the terms of the License. You may not sublicense the Work. You must keep intact all notices that refer to this License and to the disclaimer of warranties with every copy of the Work You Distribute or Publicly Perform. When You Distribute or Publicly Perform the Work, You may not impose any effective technological measures on the Work that restrict the ability of a recipient of the Work from You to exercise the rights granted to that recipient under the terms of the License. This Section 4(a) applies to the Work as incorporated in a Collection, but this does not require the Collection apart from the Work itself to be made subject to the terms of this License. If You create a Collection, upon notice from any Licensor You must, to the extent practicable, remove from the Collection any credit as required by Section 4(c), as requested. If You create an Adaptation, upon notice from any Licensor You must, to the extent practicable, remove from the Adaptation any credit as required by Section 4(c), as requested.
- b. You may Distribute or Publicly Perform an Adaptation only under the terms of: (i) this License; (ii) a later version of this License with the same License Elements as this License; (iii) a Creative Commons jurisdiction license (either this or a later license version) that contains the same License Elements as this License (e.g., Attribution-ShareAlike 3.0 US)); (iv) a Creative Commons Compatible License. If you license the Adaptation under one of the licenses mentioned in (iv), you must comply with the terms of that license. If you license the Adaptation under the terms of any of the licenses mentioned in (i), (ii) or (iii) (the "Applicable License"), you must comply with the terms of the Applicable License generally and the following provisions: (I) You must include a copy of, or the URI for, the Applicable License with every copy of each Adaptation You Distribute or Publicly Perform; (II) You may not offer or impose any terms on the Adaptation that restrict the terms of the Applicable License or the ability of the recipient of the Adaptation to exercise the rights granted to that recipient under the terms of the Applicable License; (III) You must keep intact all notices that refer to the Applicable License and to the disclaimer of warranties with every copy of the Work as included in the Adaptation You Distribute or Publicly Perform; (IV) when You Distribute or Publicly Perform the Adaptation, You may not impose any effective technological measures on the

(continues on next page)

(continued from previous page)

Adaptation that restrict the ability of a recipient of the Adaptation from You to exercise the rights granted to that recipient under the terms of the Applicable License. This Section 4(b) applies to the Adaptation as incorporated in a Collection, but this does not require the Collection apart from the Adaptation itself to be made subject to the terms of the Applicable License.

- c. If You Distribute, or Publicly Perform the Work or any Adaptations or Collections, You must, unless a request has been made pursuant to Section 4(a), keep intact all copyright notices for the Work and provide, reasonable to the medium or means You are utilizing: (i) the name of the Original Author (or pseudonym, if applicable) if supplied, and/or if the Original Author and/or Licensor designate another party or parties (e.g., a sponsor institute, publishing entity, journal) for attribution ("Attribution Parties") in Licensor's copyright notice, terms of service or by other reasonable means, the name of such party or parties; (ii) the title of the Work if supplied; (iii) to the extent reasonably practicable, the URI, if any, that Licensor specifies to be associated with the Work, unless such URI does not refer to the copyright notice or licensing information for the Work; and (iv) , consistent with Section 3(b), in the case of an Adaptation, a credit identifying the use of the Work in the Adaptation (e.g., "French translation of the Work by Original Author," or "Screenplay based on original Work by Original Author"). The credit required by this Section 4(c) may be implemented in any reasonable manner; provided, however, that in the case of a Adaptation or Collection, at a minimum such credit will appear, if a credit for all contributing authors of the Adaptation or Collection appears, then as part of these credits and in a manner at least as prominent as the credits for the other contributing authors. For the avoidance of doubt, You may only use the credit required by this Section for the purpose of attribution in the manner set out above and, by exercising Your rights under this License, You may not implicitly or explicitly assert or imply any connection with, sponsorship or endorsement by the Original Author, Licensor and/or Attribution Parties, as appropriate, of You or Your use of the Work, without the separate, express prior written permission of the Original Author, Licensor and/or Attribution Parties.
- d. Except as otherwise agreed in writing by the Licensor or as may be otherwise permitted by applicable law, if You Reproduce, Distribute or Publicly Perform the Work either by itself or as part of any Adaptations or Collections, You must not distort, mutilate, modify or take other derogatory action in relation to the Work which would be prejudicial to the Original Author's honor or reputation. Licensor agrees that in those jurisdictions (e.g. Japan), in which any exercise of the right granted in Section 3(b) of this License (the right to make Adaptations) would be deemed to be a distortion, mutilation,

(continues on next page)

(continued from previous page)

modification or other derogatory action prejudicial to the Original Author's honor and reputation, the Licensor will waive or not assert, as appropriate, this Section, to the fullest extent permitted by the applicable national law, to enable You to reasonably exercise Your right under Section 3(b) of this License (right to make Adaptations) but not otherwise.

5. Representations, Warranties and Disclaimer

UNLESS OTHERWISE MUTUALLY AGREED TO BY THE PARTIES IN WRITING, LICENSOR OFFERS THE WORK AS-IS AND MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE WORK, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF TITLE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NONINFRINGEMENT, OR THE ABSENCE OF LATENT OR OTHER DEFECTS, ACCURACY, OR THE PRESENCE OF ABSENCE OF ERRORS, WHETHER OR NOT DISCOVERABLE. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES, SO SUCH EXCLUSION MAY NOT APPLY TO YOU.

6. Limitation on Liability. EXCEPT TO THE EXTENT REQUIRED BY APPLICABLE LAW, IN NO EVENT WILL LICENSOR BE LIABLE TO YOU ON ANY LEGAL THEORY FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR EXEMPLARY DAMAGES ARISING OUT OF THIS LICENSE OR THE USE OF THE WORK, EVEN IF LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

7. Termination

- a. This License and the rights granted hereunder will terminate automatically upon any breach by You of the terms of this License. Individuals or entities who have received Adaptations or Collections from You under this License, however, will not have their licenses terminated provided such individuals or entities remain in full compliance with those licenses. Sections 1, 2, 5, 6, 7, and 8 will survive any termination of this License.
- b. Subject to the above terms and conditions, the license granted here is perpetual (for the duration of the applicable copyright in the Work). Notwithstanding the above, Licensor reserves the right to release the Work under different license terms or to stop distributing the Work at any time; provided, however that any such election will not serve to withdraw this License (or any other license that has been, or is required to be, granted under the terms of this License), and this License will continue in full force and effect unless terminated as stated above.

8. Miscellaneous

- a. Each time You Distribute or Publicly Perform the Work or a Collection,

(continues on next page)

(continued from previous page)

- the Licensor offers to the recipient a license to the Work on the same terms and conditions as the license granted to You under this License.
- b. Each time You Distribute or Publicly Perform an Adaptation, Licensor offers to the recipient a license to the original Work on the same terms and conditions as the license granted to You under this License.
 - c. If any provision of this License is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this License, and without further action by the parties to this agreement, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.
 - d. No term or provision of this License shall be deemed waived and no breach consented to unless such waiver or consent shall be in writing and signed by the party to be charged with such waiver or consent.
 - e. This License constitutes the entire agreement between the parties with respect to the Work licensed here. There are no understandings, agreements or representations with respect to the Work not specified here. Licensor shall not be bound by any additional provisions that may appear in any communication from You. This License may not be modified without the mutual written agreement of the Licensor and You.
 - f. The rights granted under, and the subject matter referenced, in this License were drafted utilizing the terminology of the Berne Convention for the Protection of Literary and Artistic Works (as amended on September 28, 1979), the Rome Convention of 1961, the WIPO Copyright Treaty of 1996, the WIPO Performances and Phonograms Treaty of 1996 and the Universal Copyright Convention (as revised on July 24, 1971). These rights and subject matter take effect in the relevant jurisdiction in which the License terms are sought to be enforced according to the corresponding provisions of the implementation of those treaty provisions in the applicable national law. If the standard suite of rights granted under applicable copyright law includes additional rights not granted under this License, such additional rights are deemed to be included in the License; this License is not intended to restrict the license of any rights under applicable law.

Creative Commons Notice

Creative Commons is not a party to this License, and makes no warranty whatsoever in connection with the Work. Creative Commons will not be liable to You or any party on any legal theory for any damages whatsoever, including without limitation any general, special, incidental or consequential damages arising in connection to this license. Notwithstanding the foregoing two (2) sentences, if Creative Commons has expressly identified itself as the Licensor hereunder, it

(continues on next page)

(continued from previous page)

shall have all rights and obligations of Licensor.

Except for the limited purpose of indicating to the public that the Work is licensed under the CCPL, Creative Commons does not authorize the use by either party of the trademark "Creative Commons" or any related trademark or logo of Creative Commons without the prior written consent of Creative Commons. Any permitted use will be in compliance with Creative Commons' then-current trademark usage guidelines, as may be published on its website or otherwise made available upon request from time to time. For the avoidance of doubt, this trademark restriction does not form part of the License.

Creative Commons may be contacted at <https://creativecommons.org/>.

A.2 Credits

Listing 1.2: Authors cited when creating the Li-Pro.Net Sphinx Primer

AUTHORS (in alphabetical order)

Armin Ronacher <armin.ronacher@active-4.com>	Sphinx Code and Documentation
Bareos GmbH & Co. KG <info@bareos.org>	Bareos Documentation
David Goodger <goodger@python.org>	Docutils and reStructuredText
Eric Holscher <eric@ericholscher.com>	Sphinx Tutorial
Georg Brandl <georg@python.org>	Sphinx Code and Documentation
Richard Jones <rjones@ekit-inc.com>	ReStructuredText Primer
Stephan Linz <linz@li-pro.net>	Li-Pro.Net Sphinx Primer

Section author: Stephan Linz <linz@li-pro.net>

B.1 Terms

B.1.1 Commons

Docutils [Docutils](#) is an open-source text processing system for processing plaintext documentation into useful formats, such as *HTML*, *LaTeX*, man-pages, open-document or *XML*. It includes *reStructuredText*, the easy to read, easy to use, what-you-see-is-what-you-get plaintext markup language.

See also:

- [English Wikipedia: reStructuredText](#)

LaTeX [LaTeX](#) is a document preparation system for high-quality typesetting. It is most often used for medium-to-large technical or scientific documents but it can be used for almost any form of publishing. LaTeX uses the *TeX* typesetting program for formatting its output, and is itself written in the *TeX* macro language.

See also:

- [English Wikipedia: LaTeX](#)

PyEnchant [PyEnchant](#) is a *Python* binding for *Enchant*.

Pygments [Pygments](#) is a generic syntax highlighter written in *Python* which supports a wide range of over 500 [languages](#) with related [lexers](#) and other text formats and is ready for new languages and formats added easily.

reStructuredText [reStructuredText](#) (**RST**, **ReST**, or **reST**) is a file format for textual data used primarily in the *Python* programming language community for technical documentation. It is part of the *Docutils* project of the *Python* Doc-SIG (Documentation Special Interest Group).

See also:

- [English Wikipedia: reStructuredText](#)

Sphinx [Sphinx](#) is a documentation generator written and used by the *Python* community. It is written in *Python*, and also used in other environments. Sphinx converts *reStructuredText* files into *HTML* websites and other formats including PDF, EPub, Texinfo and man.

reStructuredText is extensible, and Sphinx exploits its extensible nature through a number of extensions—for autogenerating documentation from source code, writing mathematical notation or highlighting source code, etc.

See also:

- [English Wikipedia: Sphinx \(documentation generator\)](#)

B.1.2 Programming Languages

C [C](#) is a general-purpose, imperative procedural computer programming language supporting structured programming, lexical variable scope, and recursion, with a static type system. It was designed to be compiled to provide low-level access to memory and language constructs that map efficiently to machine instructions, all with minimal runtime support. C has been standardized by the ANSI (American National Standards Institute) X3J11 since 1989 (**ANSI C**) and by the ISO (International Organization for Standardization)/IEC (International Electrotechnical Commission) JTC1/SC22/WG14 (**ISO C**).

See also:

- [English Wikipedia: C \(programming language\)](#)
- [English Wikipedia: Compatibility of C and C++](#)
- [English Wikipedia: C18 \(C standard revision\)](#): standard ratified in 2018 as **ISO/IEC 9899:2018**
- [English Wikipedia: C11 \(C standard revision\)](#): standard ratified in 2011 as *ISO/IEC 9899:2011*
- [English Wikipedia: C99](#): standard ratified in 1999 as *ISO/IEC 9899:1999*
- [English Wikipedia: C95 \(C version\)](#): Amendment 1 ratified in 1995 as *ISO/IEC 9899:1990/AMD1:1995*
- [English Wikipedia: C90 \(C version\)](#): standard ratified in 1990 as *ISO/IEC 9899:1990*
- [English Wikipedia: C89 \(C version\)](#): standard ratified in 1989 as *ANSI X3.159-1989*

C++ [C++](#) is a general-purpose programming language as an extension of the C programming language, or “C with Classes”. Modern C++ implementations now has object-oriented, generic, and functional features in addition to facilities for low-level memory manipulation. C++ is standardized by the ISO/IEC JTC1/SC22/WG14 since 1998.

See also:

- [English Wikipedia: C++](#)
- [English Wikipedia: Compatibility of C and C++](#)
- [English Wikipedia: C++17](#): standard ratified in 2017 as **ISO/IEC 14882:2017**
- [English Wikipedia: C++14](#): standard ratified in 2014 as *ISO/IEC 14882:2014*
- [English Wikipedia: C++11](#): standard ratified in 2011 as *ISO/IEC 14882:2011*
- [English Wikipedia: C++03](#): standard ratified in 2003 as *ISO/IEC 14882:2003*
- initially standardized in 1998 as *ISO/IEC 14882:1998*

ES (ECMAScript)

ECMAScript ES is a general-purpose programming language, standardized by [Ecma International](#) since 1997 according to the document [ECMA-262](#). It is a *JavaScript* standard meant to ensure the interoperability of Web pages across different Web browsers. ES is standardized by the ISO/IEC JTC1/SC22 since 1998.

See also:

- [English Wikipedia: ECMAScript](#)
- [English Wikipedia: ECMAScript engine](#)
- [English Wikipedia: List of ECMAScript engines](#)
- (ES Edition 11): standard ratified in 2020 as **ECMA-262-11:2020**
- (ES Edition 5.1): standard ratified in 2011 as *ISO/IEC 16262:2011*
- (ES Edition 2): initially standardized in 1998 as *ISO/IEC 16262:1998*

JS (JavaScript)

JavaScript JS is a programming language that conforms to the *ECMAScript* specification. JavaScript is high-level, often just-in-time compiled, and multi-paradigm. It has curly-bracket syntax, dynamic typing, prototype-based object-orientation, and first-class functions.

Alongside *HTML* and *CSS*, JavaScript is one of the core technologies of the World Wide Web. JavaScript enables interactive web pages and is an essential part of web applications. The vast majority of websites use it for client-side page behavior, and all major web browsers have a dedicated JavaScript engine to execute it.

See also:

- [English Wikipedia: JavaScript](#)
- [English Wikipedia: JavaScript engine](#)
- [English Wikipedia: List of JavaScript engines](#)

Python [Python](#) is an interpreted, high-level and general-purpose programming language. Python interpreters are available for many operating systems. A global community of programmers develops and maintains CPython, a free and open-source reference implementation. A non-profit

organization, the Python Software Foundation, manages and directs resources for Python and CPython development.

CPython is the reference implementation of Python. It is written in [C](#), meeting the [C89](#) standard with several select [C99](#) features. Python's development is conducted largely through the PEP process, the primary mechanism for proposing major new features, collecting community input on issues and documenting Python design decisions. Python coding style is covered in [PEP 8](#).

See also:

- [English Wikipedia: Python \(programming language\)](#)
- [English Wikipedia: CPython](#)

B.1.3 Technologies

BibTeX [BibTeX](#) is a widely used bibliography management tool in [LaTeX](#), with BibTeX the bibliography entries are kept in a separate file and then imported into the main document.

See also:

- [English Wikipedia: BibTeX](#)

CSS (Cascading Style Sheets) [CSS](#) is a style sheet language used for describing the presentation of a document written in a markup language like [HTML](#). CSS is a cornerstone technology of the WWW (World Wide Web), alongside [HTML](#) and [JavaScript](#). In addition to [HTML](#), other markup languages support the use of CSS including plain [XML](#) and [SVG](#). The CSS specifications is standardized by the W3C (World Wide Web Consortium)/TR/CSS since 1996.

See also:

- [English Wikipedia: CSS](#)
- ([CSS 2.1](#)): standard ratified in 2011 **W3C REC-CSS2-20110607**
- ([CSS 2.0](#)): standard ratified in 1998 *W3C REC-CSS2-19980512*
- ([CSS 1.0](#)): initially standardized in 1996 *W3C REC-CSS1-961217*

Enchant [Enchant](#) is a free software project developed as part of the AbiWord word processor with the aim of unifying access to the various existing spell-checker software.

See also:

- [English Wikipedia: Enchant \(software\)](#)

HTML (Hypertext Markup Language) [HTML](#) is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as [CSS](#) and scripting languages such as [JavaScript](#). The HTML specifications is standardized by the W3C/TR/HTML since 1997 and ISO/IEC JTC1/SC34 since 1998.

See also:

- [English Wikipedia: HTML](#)

- [English Wikipedia: HTML5](#): latest live standard was released in 2017 **W3C REC-HTML5-20171214**
- [English Wikipedia: HTML4](#): standard ratified in 1999 *W3C REC-HTML40* and 2000 *ISO/IEC 15445:2000*
- [English Wikipedia: HTML3](#): standard ratified in 1997 *W3C REC-HTML32*
- [English Wikipedia: HTML2](#): initially standardized in 1995 as *RFC 1866* (**RFC 1866**)

PDF (Portable Document Format) [PDF](#) is a file format developed by Adobe in 1993 to present documents, including text formatting and images, in a manner independent of application software, hardware, and operating systems. Based on the PS language, each PDF file encapsulates a complete description of a fixed-layout flat document, including the text, fonts, vector graphics, raster images and other information needed to display it. PDF is standardized by the ISO TC171/SC2/WG8 since 2008, and no longer requires any royalties for its implementation.

ISO standardized subsets of PDF:

- [English Wikipedia: PDF/X](#): since 2001, series of *ISO 15929* and *ISO 15930* standards
- [English Wikipedia: PDF/A](#): since 2005, series of *ISO 19005* standards
- [English Wikipedia: PDF/E](#): since 2008, series of *ISO 24517*
- [English Wikipedia: PDF/VT](#): since 2010, *ISO 16612-2*
- [English Wikipedia: PDF/UA](#): since 2012, *ISO 14289-1*

See also:

- [English Wikipedia: PDF](#)
- [English Wikipedia: History of the Portable Document Format \(PDF\)](#)
- (PDF 2.0): standard ratified in 2017 as **ISO 32000-2:2017**
- (PDF 1.7): initially standardized in 2008 as *ISO 32000-1:2008*

PGF (Portable Graphic Format)

TikZ (TikZ ist kein Zeichenprogramm)

PGF/TikZ [PGF/TikZ](#) is a pair of languages for producing vector graphics (for example: technical illustrations and drawings) from a geometric/algebraic description, with standard features including the drawing of points, lines, arrows, paths, circles, ellipses and polygons. PGF, is a lower-level language, while TikZ, which is written in *TeX*, is a set of higher-level macros that use PGF.

See also:

- [English Wikipedia: PGF/TikZ](#)

PNG (Portable Network Graphics) [PNG](#) is a raster-graphics file format that supports lossless data compression. PNG was developed as an improved, non-patented replacement for GIF with support for interactivity and animation. The PNG specification is standardized by the W3C/TR/PNG since 1996 and ISO/IEC JTC1/SC24/WG7 since 2003 as an open standard.

See also:

- [English Wikipedia: PNG](#)
- [\(PNG 1.2\)](#): standard ratified in 2004 **ISO/IEC 15948:2004**
- [\(PNG 1.2\)](#): standard ratified in 2003 *REC-PNG-20031110*
- [\(PNG 1.0\)](#): initially standardized in 1996 as *RFC 2083* (**RFC 2083**)

SVG (Scalable Vector Graphics) [SVG](#) is an [XML](#)-based vector image format for two-dimensional graphics with support for interactivity and animation. The SVG specification is standardized by the W3C/TR/SVG since 1999 as an open standard.

SVG drawings can be dynamic and interactive. Time-based modifications to the elements can be described in SMIL (Synchronized Multimedia Integration Language), or can be programmed in a scripting language (e.g. *ECMAScript* or *JavaScript*). The W3C explicitly recommends SMIL as the standard for animation in SVG.

See also:

- [English Wikipedia: SVG](#)
- [\(SVG 2.0\)](#): latest standard draft was released in 2020
- [\(SVG 1.1 Second Edition\)](#): standard ratified in 2011 **W3C REC-SVG11-20110816**
- [\(SVG 1.1\)](#): standard ratified in 2003 *W3C REC-SVG11-20030114*
- [\(SVG 1.0\)](#): initially standardized in 2001 *W3C REC-SVG-20010904*

TeX [TeX](#) is a computer language designed for use in typesetting system; in particular, for typesetting math and other technical material. It has been noted as one of the most sophisticated digital typographical systems and is also used for many other typesetting tasks, especially in the form of *LaTeX*, ConTeXt, and other macro packages.

See also:

- [English Wikipedia: TeX](#)

XML (Extensible Markup Language) [XML](#) is a markup language that defines a set of rules for encoding documents in a format that is both human-readable and machine-readable. The design of XML focuses on documents, the language is widely used for the representation of arbitrary data structures. Several schema systems exist to aid in the definition of XML-based languages. The XML specification is standardized by the W3C/TR/XML since 1998 as an open standard.

See also:

- [English Wikipedia: XML](#)
- [\(XML 1.1 Second Edition\)](#): standard ratified in 2006 **W3C REC-XML11-20060816**
- [\(XML 1.1\)](#): standard ratified in 2004 *W3C REC-XML11-20040204*
- [\(XML 1.0 Fifth Edition\)](#): standard ratified in 2008 *W3C REC-XML-20081126*

- ([XML 1.0](#)): initially standardized in 1998 *W3C REC-SVG-20010904*


Listings

1.1	CSV example file (tables/csv/srcfile/example.csv)	56
1.2	Documentation	59
1.3	Script	59
2.1	TikZ example file (ctrloop.tikz)	101
2.2	Block Diagram example file (blockdiag/example.diag)	105
2.3	Sequence Diagram example file (seqdiag/example.diag)	109
2.4	Activity Diagram example file (actdiag/example.diag)	112
2.5	Network Diagram example file (nwdiag/example.diag)	115
2.6	Rack Diagram example file (rackdiag/example.diag)	116
2.7	Packet Diagram example file (packetdiag/example.diag)	117
1.1	License text of the Li-Pro.Net Sphinx Primer	135
1.2	Authors cited when creating the Li-Pro.Net Sphinx Primer	144

List of Tables

1	Li-Pro.Net Sphinx Primer Document Revisions	5
1.1	Sphinx directives for command-line programs	18
1.2	Sphinx directives for unspecific objects without referencing	18
1.3	The legend for the Li-Pro.Net@GitHub logo.	47
1.4	Example table in grid style	49
1.5	Example table in simple style	50
1.6	Example list table	51
1.7	Example CSV table	53
1.8	Example CSV table with customized delimiter	54
1.9	Example CSV table with right alignment	55
1.10	Example CSV table from source file	55

List of Figures

1.1	Example of transparent SVG	41
1.2	Example of animated SVG	41
1.3	Demonstration of differences between bitmapped raster and vector images.	42
1.4	Example of transparent PNG	43
1.5	Example of animated PNG	43
1.6	Demonstration of differences between lossy encoding and lossless method.	44
1.7	The Li-Pro.Net@GitHub  logo.	47
3.1	Sphinx RTD theme on Desktop	129
3.2	Sphinx RTD theme on Mobiles	129
4.1	<i>Cheat Sheet</i> reStructuredText & Sphinx 1/2	133
4.2	<i>Cheat Sheet</i> reStructuredText & Sphinx 2/2	134

List of Equations

1.1	Equation 1.1	62
1.2	Equation 1.2	62
1.3	Equation 1.3	62

List of Downloads

Note: *List of Downloads* is not fully supported for [LaTeX](#). All entries in the list are not linked and can not be provided together with the document.

Legal Notice of Li-Pro.Net Sphinx Primer

All artifacts were selected and download by using this reference URLs:

- LICENSE
- CREDITS

List of Issues (To-Do)

Todo: activate “BibTeX Citations” extension.

(The [original entry](#) (page 84) is located in /home/docs/checkouts/readthedocs.org/user_builds/lpn-doc-sphinx-primer/checkouts/0.0.4/source/extensions/bibtex.rst, line 28.)

Todo: activate “Block Diagram Family” extensions.

(The [original entry](#) (page 103) is located in /home/docs/checkouts/readthedocs.org/user_builds/lpn-doc-sphinx-primer/checkouts/0.0.4/source/extensions/blockdiag.rst, line 9.)

Todo: activate “Activity Diagram” extension.

(The [original entry](#) (page 110) is located in /home/docs/checkouts/readthedocs.org/user_builds/lpn-doc-sphinx-primer/checkouts/0.0.4/source/extensions/blockdiag/actdiag.rst, line 25.)

Todo: activate “Block Diagram” extension.

(The [original entry](#) (page 104) is located in /home/docs/checkouts/readthedocs.org/user_builds/lpn-doc-sphinx-primer/checkouts/0.0.4/source/extensions/blockdiag/blockdiag.rst, line 25.)

Todo: activate “Network Diagram” extension.

(The [original entry](#) (page 113) is located in /home/docs/checkouts/readthedocs.org/user_builds/lpn-doc-sphinx-primer/checkouts/0.0.4/source/extensions/blockdiag/nwdiag.rst, line 25.)

Todo: activate “Sequence Diagram” extension.

(The [original entry](#) (page 107) is located in /home/docs/checkouts/readthedocs.org/user_builds/lpn-doc-sphinx-primer/checkouts/0.0.4/source/extensions/blockdiag/seqdiag.rst, line 25.)

Todo: activate “Email Obfuscate” extension.

(The [original entry](#) (page 125) is located in /home/docs/checkouts/readthedocs.org/user_builds/lpn-doc-sphinx-primer/checkouts/0.0.4/source/extensions/email.rst, line 20.)

Todo: activate “LinuxDoc” extension.

(The [original entry](#) (page 86) is located in /home/docs/checkouts/readthedocs.org/user_builds/lpn-doc-sphinx-primer/checkouts/0.0.4/source/extensions/linuxdoc.rst, line 25.)

Todo: activate “Mathematical Plots” extension.

(The [original entry](#) (page 94) is located in /home/docs/checkouts/readthedocs.org/user_builds/lpn-doc-sphinx-primer/checkouts/0.0.4/source/extensions/matplotlib.rst, line 32.)

Todo: activate “Program Output” extension.

(The [original entry](#) (page 89) is located in /home/docs/checkouts/readthedocs.org/user_builds/lpn-doc-sphinx-primer/checkouts/0.0.4/source/extensions/programoutput.rst, line 18.)

Todo: activate “Paneled Content” extension.

(The [original entry](#) (page 123) is located in /home/docs/checkouts/readthedocs.org/user_builds/lpn-doc-sphinx-primer/checkouts/0.0.4/source/extensions/sphinx-panels.rst, line 31.)

Todo: activate “Tabbed Content” extension.

(The [original entry](#) (page 119) is located in /home/docs/checkouts/readthedocs.org/user_builds/lpn-doc-sphinx-primer/checkouts/0.0.4/source/extensions/sphinx-tabs.rst, line 27.)

Todo: activate “PGF/TikZ LaTeX Pictures” extension.

(The [original entry](#) (page 100) is located in /home/docs/checkouts/readthedocs.org/user_builds/lpn-doc-sphinx-primer/checkouts/0.0.4/source/extensions/tikz.rst, line 41.)

Bibliography

[CIT2002] This is the citation. It's just like a footnote, except the label is textual.

[juh2019swdocwsp] Jan Ulrich Hasecke. *Software-Dokumentation mit Sphinx*. CreateSpace (was part of Amazon.com Inc.), today Kindle Direct Publishing (KDP), Seattle, United States of America, 2. edition, 2019. ISBN 1793008779. ISBN-10: 1-79300-877-9, ISBN-13: 978-1793008770, OCLC: 889425279, URL: <https://www.amazon.com/dp/1793008779> (March 2020).

Symbols

:align: (*directive option*)
 csv-table (*directive*), 54
 :delim: (*directive option*)
 csv-table (*directive*), 54
 :file: (*directive option*)
 csv-table (*directive*), 55
 :fill-cells: (*directive option*)
 flat-table (*directive*), 87
 :header: (*directive option*)
 csv-table (*directive*), 54
 :header-rows: (*directive option*)
 flat-table (*directive*), 86
 :stub-columns: (*directive option*)
 flat-table (*directive*), 86
 :url: (*directive option*)
 csv-table (*directive*), 55
 :widths: (*directive option*)
 csv-table (*directive*), 53
 flat-table (*directive*), 86
 --force
 dlapp command line option, 73
 --ignore <regex>
 dlapp command line option, 73
 -f
 dlapp command line option, 73
 -i <regex>
 dlapp command line option, 73

A

abbr (*role*), 76
 actdiag (*directive*), 110
 Activity Diagram
 Sphinx Extension, 110
 Additional
 Sphinx Admonitions, 68
 admonition (*directive*), 64
 Admonitions

Additional, Sphinx, 68
 Attention, Sphinx, 64
 Caution, Sphinx, 65
 Danger, Sphinx, 65
 Error, Sphinx, 66
 Generic, Sphinx, 64
 Hint, Sphinx, 66
 Important, Sphinx, 66
 Note, Sphinx, 67
 Seealso, Sphinx, 69
 Specific, Sphinx, 64
 Sphinx Syntax, 64
 Tip, Sphinx, 67
 Warning, Sphinx, 68

Appendix

Li-Pro.Net Sphinx Primer, 135

Attention

Sphinx Admonitions, 64

attention (*directive*), 64

B

badge (*role*), 123

Bibliography

Li-Pro.Net Sphinx Primer, 165

BibTeX, 148

BibTeX Citations

Sphinx Extension, 84

Block Diagram

Sphinx Extension, 104

Block Diagram Family

Sphinx Extension, 103

Block Quotation

Sphinx Syntax, 25

blockdiag (*directive*), 104

C

C, 146

C++, 146

Caution

- Sphinx Admonitions, 65

caution (*directive*), 65

Cheat Sheet

- Li-Pro.Net Sphinx Primer, 131

Citations

- Sphinx Syntax, 36

code (*role*), 13

Code Blocks

- Sphinx Syntax, 59

Code Example

- Sphinx Syntax, 57

code-block (*directive*), 59

command (*role*), 76

command-output (*directive*), 90

Comments

- Sphinx Syntax, 35

Concepts

- Li-Pro.Net Sphinx Primer, 9

configuration value

- spelling_word_list_filename, 83

Credits

- Li-Pro.Net Sphinx Primer, 144

cspan (*role*), 87

CSS, 148

CSV Table

- Sphinx Syntax, 53

csv-table (*directive*), 53

- :align: (*directive option*), 54
- :delim: (*directive option*), 54
- :file: (*directive option*), 55
- :header: (*directive option*), 54
- :url: (*directive option*), 55
- :widths: (*directive option*), 53

D

Danger

- Sphinx Admonitions, 65

danger (*directive*), 65

Definition Lists

- Sphinx Syntax, 32

dfn (*role*), 76

Directives

- Sphinx Syntax, 15, 35

div (*directive*), 123

dlapp command line option

- force, 73
- ignore <regex>, 73
- f, 73
- i <regex>, 73

DLAPPRC, 74

doc (*role*), 70

Doctest Blocks

- Sphinx Syntax, 27

Docutils, 145

Domains

- Sphinx Syntax, 18

download (*role*), 72

Downloadable Files

- Sphinx Syntax, 72

Downloads

- Li-Pro.Net Sphinx Primer, 159

dropdown (*directive*), 123

E

ECMAScript, 147

email (*role*), 125

Email Obfuscate

- Sphinx Extension, 125

emphasis (*role*), 13

Enchant, 148

environment variable

- DLAPPRC, 73, 74

envvar (*directive*), 73

envvar (*role*), 74

eq (*role*), 62

Equations

- Li-Pro.Net Sphinx Primer, 157

Error

- Sphinx Admonitions, 66

error (*directive*), 66

ES, 147

Explicit Markup

- Sphinx Syntax, 35

Extension

- Activity Diagram, Sphinx, 110
- BibTeX Citations, Sphinx, 84
- Block Diagram Family, Sphinx, 103
- Block Diagram, Sphinx, 104
- Email Obfuscate, Sphinx, 125
- LinuxDoc, Sphinx, 86
- Mathematical Plots, Sphinx, 94
- Network Diagram, Sphinx, 113
- Paneled Content, Sphinx, 123
- PGF/TikZ LaTeX Pictures, Sphinx, 100
- Program Output, Sphinx, 89
- Sequence Diagram, Sphinx, 107
- Spelling Checker, Sphinx, 83
- Tabbed Content, Sphinx, 119

Extensions

- Li-Pro.Net Sphinx Primer, 81

External Referencing

- Sphinx Syntax, 71

F

fa (*role*), 123

Field Lists

- Sphinx Syntax, 33

figure (*directive*), 46

Figures

- Li-Pro.Net Sphinx Primer, 155
 - Sphinx Syntax, 41
- file (*role*), 30
- Files
 - Sphinx Syntax, 30
- flat-table (*directive*), 86
 - :fill-cells: (*directive option*), 87
 - :header-rows: (*directive option*), 86
 - :stub-columns: (*directive option*), 86
 - :widths: (*directive option*), 86
- Footnotes
 - Sphinx Syntax, 36

G

- Generic
 - Sphinx Admonitions, 64
- Glossary
 - Li-Pro.Net Sphinx Primer, 145
 - Sphinx Syntax, 77
- glossary (*directive*), 77
- Grid Table
 - Sphinx Syntax, 49
- group-tab (*directive*), 120
- guilabel (*role*), 75

H

- Header
 - Sphinx Syntax, 20
- highlight (*directive*), 57
- Hint
 - Sphinx Admonitions, 66
- hint (*directive*), 66
- HTML, 148
- Hyperlink
 - Sphinx Syntax, 70

I

- image (*directive*), 45
- Images
 - Sphinx Syntax, 41
- Important
 - Sphinx Admonitions, 66
- important (*directive*), 67
- include (*directive*), 38
- Includes
 - Sphinx Syntax, 38
- Index
 - Sphinx Syntax, 79
- index (*directive*), 79
- index (*role*), 79
- Inline Image
 - Sphinx Syntax, 40
- Inline Markup
 - Sphinx Syntax, 28
- Issues

- Li-Pro.Net Sphinx Primer, 161

J

- JavaScript, 147
- JS, 147

K

- kbd (*role*), 75

L

- LaTeX, 145
- Li-Pro.Net Sphinx Primer
 - Appendix, 135
 - Bibliography, 165
 - Cheat Sheet, 131
 - Concepts, 9
 - Credits, 144
 - Downloads, 159
 - Equations, 157
 - Extensions, 81
 - Figures, 155
 - Glossary, 145
 - Issues, 161
 - License, 135
 - List of Downloads, 159
 - List of Equations, 157
 - List of Figures, 155
 - List of Issues, 161
 - List of Listings, 152
 - List of Tables, 153
 - Listings, 152
 - Tables, 153
 - Themes, 127
- License
 - Li-Pro.Net Sphinx Primer, 135
- Line Blocks
 - Sphinx Syntax, 26
- link-badge (*role*), 123
- link-button (*directive*), 123
- LinuxDoc
 - Sphinx Extension, 86
- List of Downloads
 - Li-Pro.Net Sphinx Primer, 159
- List of Equations
 - Li-Pro.Net Sphinx Primer, 157
- List of Figures
 - Li-Pro.Net Sphinx Primer, 155
- List of Issues
 - Li-Pro.Net Sphinx Primer, 161
- List of Listings
 - Li-Pro.Net Sphinx Primer, 152
- List of Tables
 - Li-Pro.Net Sphinx Primer, 153
- List Table
 - Sphinx Syntax, 51

`list-table` (*directive*), 51
Listings
 Li-Pro.Net Sphinx Primer, 152
Lists, Definition Lists
 Sphinx Syntax, 31
`literal` (*role*), 13
`Literalinclude`
 Sphinx Syntax, 61
`literalinclude` (*directive*), 61

M

`math` (*directive*), 62
`math` (*role*), 13
`math:numref` (*role*), 62
Mathematical Plots
 Sphinx Extension, 94
Mathematics
 Sphinx Syntax, 62
`mathmpl` (*directive*), 94
`menuselection` (*role*), 75

N

Naming
 Sphinx Syntax, 13
Network Diagram
 Sphinx Extension, 113
Note
 Sphinx Admonitions, 67
`note` (*directive*), 67
`numref` (*role*), 70
`nwdiag` (*directive*), 113

O

`opticon` (*role*), 123
`option` (*directive*), 73
`option` (*role*), 74
Ordered Lists
 Sphinx Syntax, 32
Other Semantic Markup
 Sphinx Syntax, 75

P

`packet` (*directive*), 117
Paneled Content
 Sphinx Extension, 123
`panels` (*directive*), 123
Paragraphs
 Sphinx Syntax, 25
PDF, 149
`pep` (*role*), 71
`pep-reference` (*role*), 13
PGF, 149
PGF/TikZ, 149
PGF/TikZ LaTeX Pictures
 Sphinx Extension, 100

`plot` (*directive*), 95
PNG, 149
`program` (*directive*), 73
`program` (*role*), 74
Program Output
 Sphinx Extension, 89
`program-output` (*directive*), 89
`pull-quote` (*directive*), 26
PyEnchant, 145
Pygments, 145
Python, 147
Python Enhancement Proposals
 PEP 8, 71, 148

Q

Quotes
 Sphinx Syntax, 25

R

`rack` (*directive*), 115
Read the Docs
 Sphinx Themes, 129
`ref` (*role*), 70
Referencing
 Sphinx Syntax, 70
`replace` (*directive*), 39
`reStructuredText`, 145
Reuse Content
 Sphinx Syntax, 38
RFC
 RFC 1866, 149
 RFC 1984, 71
 RFC 2083, 150
`rfc` (*role*), 71
`rfc-reference` (*role*), 14
Roles
 Sphinx Syntax, 13
`rspan` (*role*), 87
RST Epilog
 Sphinx Syntax, 39
RST Prolog
 Sphinx Syntax, 39

S

Seealso
 Sphinx Admonitions, 69
`seealso` (*directive*), 69
Semantic Descriptions and Referencing
 Sphinx Syntax, 73
`seqdiag` (*directive*), 107
Sequence Diagram
 Sphinx Extension, 107
Simple Table
 Sphinx Syntax, 50
Specific

- Sphinx Admonitions, 64
- spelling (*directive*), 83
- Spelling Checker
 - Sphinx Extension, 83
- spelling_word_list_filename
 - configuration value, 83
- Sphinx, **146**
- Sphinx
 - Admonitions Additional, 68
 - Admonitions Attention, 64
 - Admonitions Caution, 65
 - Admonitions Danger, 65
 - Admonitions Error, 66
 - Admonitions Generic, 64
 - Admonitions Hint, 66
 - Admonitions Important, 66
 - Admonitions Note, 67
 - Admonitions Seealso, 69
 - Admonitions Specific, 64
 - Admonitions Tip, 67
 - Admonitions Warning, 68
 - Extension Activity Diagram, 110
 - Extension BibTeX Citations, 84
 - Extension Block Diagram, 104
 - Extension Block Diagram Family, 103
 - Extension Email Obfuscate, 125
 - Extension LinuxDoc, 86
 - Extension Mathematical Plots, 94
 - Extension Network Diagram, 113
 - Extension Paneled Content, 123
 - Extension PGF/TikZ LaTeX Pictures, 100
 - Extension Program Output, 89
 - Extension Sequence Diagram, 107
 - Extension Spelling Checker, 83
 - Extension Tabbed Content, 119
 - Syntax Admonitions, 64
 - Syntax Block Quotation, 25
 - Syntax Citations, 36
 - Syntax Code Blocks, 59
 - Syntax Code Example, 57
 - Syntax Comments, 35
 - Syntax CSV Table, 53
 - Syntax Definition Lists, 32
 - Syntax Directives, 15, 35
 - Syntax Doctest Blocks, 27
 - Syntax Domains, 18
 - Syntax Downloadable Files, 72
 - Syntax Explicit Markup, 35
 - Syntax External Referencing, 71
 - Syntax Field Lists, 33
 - Syntax Figures, 41
 - Syntax Files, 30
 - Syntax Footnotes, 36
 - Syntax Glossary, 77
 - Syntax Grid Table, 49
 - Syntax Header, 20
 - Syntax Hyperlink, 70
 - Syntax Images, 41
 - Syntax Includes, 38
 - Syntax Index, 79
 - Syntax Inline Image, 40
 - Syntax Inline Markup, 28
 - Syntax Line Blocks, 26
 - Syntax List Table, 51
 - Syntax Lists, Definition Lists, 31
 - Syntax Literalinclude, 61
 - Syntax Mathematics, 62
 - Syntax Naming, 13
 - Syntax Ordered Lists, 32
 - Syntax Other Semantic Markup, 75
 - Syntax Paragraphs, 25
 - Syntax Quotes, 25
 - Syntax Referencing, 70
 - Syntax Reuse Content, 38
 - Syntax Roles, 13
 - Syntax RST Epilog, 39
 - Syntax RST Prolog, 39
 - Syntax Semantic Descriptions and Referencing, 73
 - Syntax Simple Table, 50
 - Syntax Styled Reference, 39
 - Syntax Substitutions, 39
 - Syntax Table of Contents Tree, 22
 - Syntax Tables, 48
 - Syntax Term, 77
 - Syntax Unordered Lists, 31
 - Syntax Use of whitespace, 11
 - Syntax User Interface, 75
 - Themes Read the Docs, 129
- strong (*role*), 13
- Styled Reference
 - Sphinx Syntax, 39
- subscript (*role*), 13
- Substitutions
 - Sphinx Syntax, 39
- superscript (*role*), 13
- SVG, **150**
- Syntax
 - Admonitions, Sphinx, 64
 - Block Quotation, Sphinx, 25
 - Citations, Sphinx, 36
 - Code Blocks, Sphinx, 59
 - Code Example, Sphinx, 57
 - Comments, Sphinx, 35
 - CSV Table, Sphinx, 53
 - Definition Lists, Sphinx, 32
 - Directives, Sphinx, 15, 35
 - Doctest Blocks, Sphinx, 27
 - Domains, Sphinx, 18
 - Downloadable Files, Sphinx, 72

- Explicit Markup, Sphinx, 35
- External Referencing, Sphinx, 71
- Field Lists, Sphinx, 33
- Figures, Sphinx, 41
- Files, Sphinx, 30
- Footnotes, Sphinx, 36
- Glossary, Sphinx, 77
- Grid Table, Sphinx, 49
- Header, Sphinx, 20
- Hyperlink, Sphinx, 70
- Images, Sphinx, 41
- Includes, Sphinx, 38
- Index, Sphinx, 79
- Inline Image, Sphinx, 40
- Inline Markup, Sphinx, 28
- Line Blocks, Sphinx, 26
- List Table, Sphinx, 51
- Lists, Definition Lists, Sphinx, 31
- Literalinclude, Sphinx, 61
- Mathematics, Sphinx, 62
- Naming, Sphinx, 13
- Ordered Lists, Sphinx, 32
- Other Semantic Markup, Sphinx, 75
- Paragraphs, Sphinx, 25
- Quotes, Sphinx, 25
- Referencing, Sphinx, 70
- Reuse Content, Sphinx, 38
- Roles, Sphinx, 13
- RST Epilog, Sphinx, 39
- RST Prolog, Sphinx, 39
- Semantic Descriptions and Referencing, Sphinx, 73
- Simple Table, Sphinx, 50
- Styled Reference, Sphinx, 39
- Substitutions, Sphinx, 39
- Table of Contents Tree, Sphinx, 22
- Tables, Sphinx, 48
- Term, Sphinx, 77
- Unordered Lists, Sphinx, 31
- Use of whitespace, Sphinx, 11
- User Interface, Sphinx, 75

T

- `tab` (*directive*), 119
- Tabbed Content
 - Sphinx Extension, 119
- `table` (*directive*), 48
- Table of Contents Tree
 - Sphinx Syntax, 22
- Tables
 - Li-Pro.Net Sphinx Primer, 153
 - Sphinx Syntax, 48
- `tabs` (*directive*), 119
- `tabularcolumns` (*directive*), 48
- Term

- Sphinx Syntax, 77
- `term` (*role*), 78
- TeX, 150
- Themes
 - Li-Pro.Net Sphinx Primer, 127
 - Read the Docs, Sphinx, 129
- TikZ, 149
- `tikz` (*directive*), 100
- `tikz` (*role*), 100
- Tip
 - Sphinx Admonitions, 67
- `tip` (*directive*), 68
- `title-reference` (*role*), 14
- `toctree` (*directive*), 22

U

- Unordered Lists
 - Sphinx Syntax, 31
- Use of whitespace
 - Sphinx Syntax, 11
- User Interface
 - Sphinx Syntax, 75

W

- Warning
 - Sphinx Admonitions, 68
- `warning` (*directive*), 68

X

- XML, 150