

„SPHINX“

The documentation generator for Python.

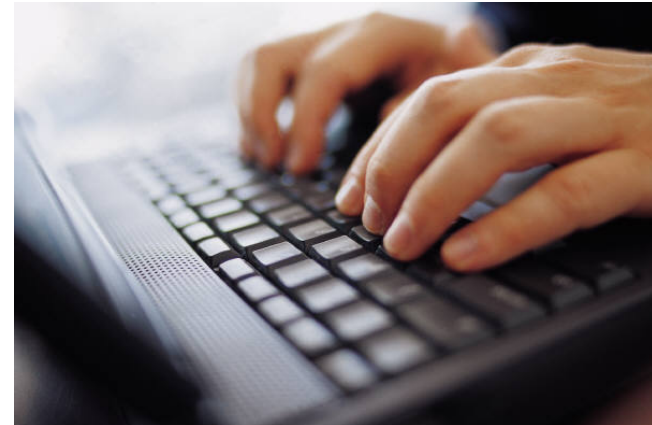
29. January 2014 | Rajalekshmi Deepu

Simulation lab Neuroscience, JSC

Outline

- Software Documentation.
- Introduction to SPHINX.
- reStructuredText.
- SPHINX for ElePhAnT.
- Summary.

Software Documentation.



- ❖ Documentation isn't read, it's referenced.
- ❖ Improves customer satisfaction and business efficiency.
- ❖ Consistent structure.
- ❖ Task based.
- ❖ Self-documenting code.



29. Januar 2014

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Motivation for auto-documentation tools.

- ❖ Difficult “after-thought” process.
- ❖ Time consuming.

Literate Programming.

- ❖ Writing code and documentation at the same time and location and extracted by automatic means.
- ❖ Technical or Code documentation.

Pros and Cons of Literate Programming

- ❖ Allows for better communication of thought.
- ❖ Easier to keep the documentation up-to-date.
- ❖ Only the programmer could change the comments or documentation in the code.

Introduction to SPHINX.

- ❖ Documentation Tool for Python.
- ❖ Written in Python.
- ❖ Uses reST (reStructuredText) as its markup language and Docutils(Documentation Utilities) as parsing and translating suite.
- ❖ Works well with source control systems.

Introduction to SPHINX.

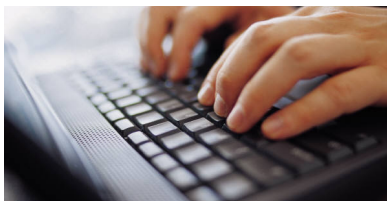
❖ Notable Features:

- ✧ Hierarchial Structure.
- ✧ Automatic Indexing.
- ✧ Output formats.(HTML,LaTeX,TeXinfo>manual pages,plain text)
- ✧ Extensive Cross-references.
- ✧ Code handling.(Automatic highlighting using Pygments)
- ✧ Extensions.(Inclusion of docstrings)

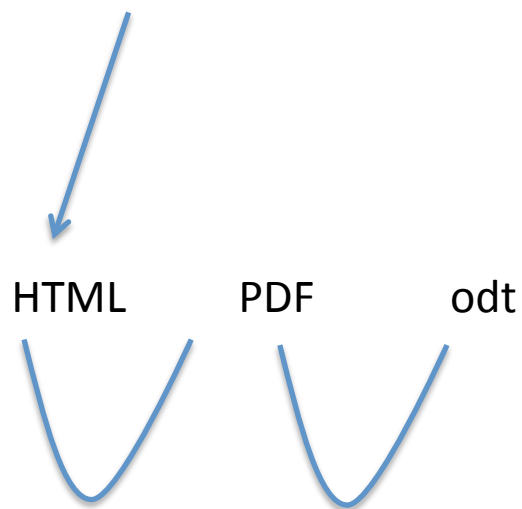
reStructuredText (reST)

- ❖ Revised Structured Text.
- ❖ Plain text mark-up language.
- ❖ Easy to read / write without specific tools.
- ❖ Compilable to many output formats

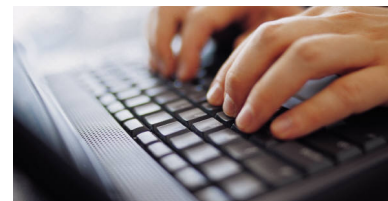
Providing documents.



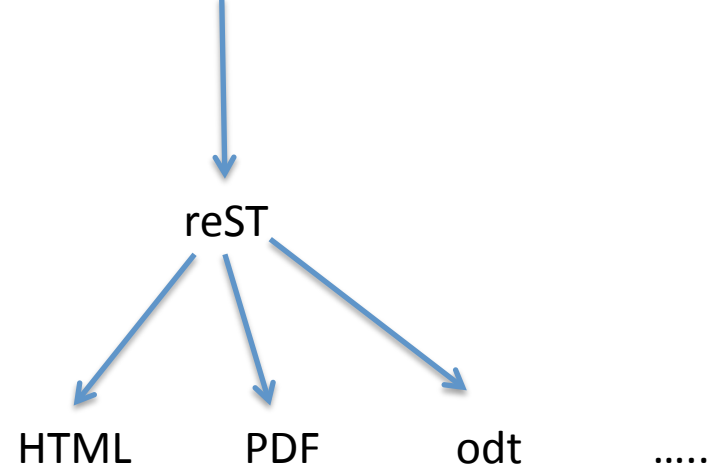
Old fashion



- ❖ Difficulty in version control.
- ❖ Error prone.
- ❖ Time consuming.



Now..



SPHINX for ElePhAnT.

Installation Steps.

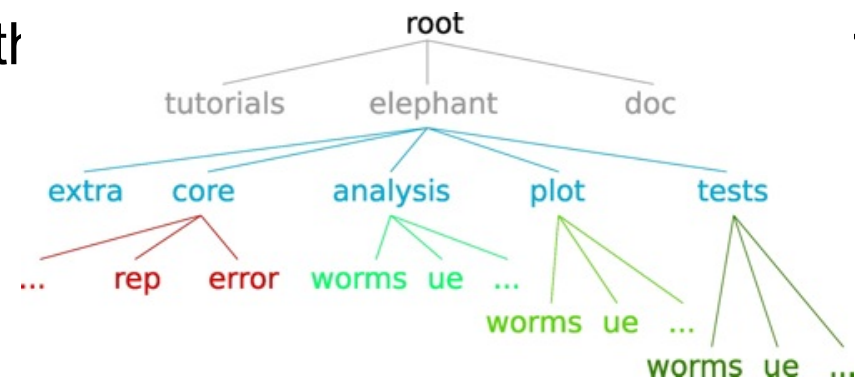
- ❖ Cloning ElePhAnT repository.

```
(myelephant)zam117:virtualenvs lekshmi$ git clone ssh://git@gitty.inm.kfa-juelich.de/elephant
```

- ❖ Installing SPHINX (Ver: 1.1.3)

```
(myelephant)zam117:virtualenvs lekshmi$ pip install sphinx
```

- ❖ Create a directory `doc` in the folder.



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Initial Configuration of SPHINX.

sphinx-quickstart

```
(myelephant)zam117:doc lekshmi$ sphinx-quickstart  
Welcome to the Sphinx 1.1.3 quickstart utility.
```

Please enter values for the following settings (just press Enter to accept a default value, if one is given in brackets).

Enter the root path for documentation.

>Root path for the documentation [.]:

*You have two options for placing the build directory for Sphinx output.
Either, you use a directory "_build" within the root path, or you separate
"source" and "build" directories within the root path.*

>Separate source and build directories (y/N) [n]:

.....
Please indicate if you want to use one of the following Sphinx extensions:

>autodoc: automatically insert docstrings from modules (y/N) [n]: y
.....

Initial Configuration of SPHINX.....

sphinx-apidoc

Usage: sphinx-apidoc [options] -o <output_path> <module_path> [exclude_paths, ...]

Looks recursively in <module_path> for Python modules and packages and create one reST file with automodule directives per package in the <output_path>.

Note: By default this script will not overwrite already created files

Initial Configuration of SPHINX.....

```
(myelephant)zam117:myelephant lekshmi$ sphinx-apidoc -A "Lekshmi" -F -o  
doc elephant/
```

```
Creating file doc/elephant.rst.
```

```
Creating file doc/elephant.analysis.rst.
```

```
Creating file doc/elephant.core.rst.
```

```
Creating file doc/elephant.plot.rst.
```

```
Creating file doc/conf.py.
```

```
Creating file doc/index.rst.
```

```
File doc/Makefile already exists, skipping.
```

```
File doc/make.bat already exists, skipping.
```

Example:

```
(myelephant)zam117:source lekshmi$ sphinx-apidoc -A "Lekshmi" -o ~/.virtualenvs/myelephant/docs/source ~/.virtualenvs/myelephant/elephant
```

File ~/.virtualenvs/myelephant/docs/source/elephant.rst already exists, skipping.
File ~/.virtualenvs/myelephant/docs/source/elephant.analysis.rst already exists, skipping.
File ~/.virtualenvs/myelephant/docs/source/elephant.core.rst already exists, skipping.
File ~/.virtualenvs/myelephant/docs/source/elephant.plot.rst already exists, skipping.
Creating file /Users/lekshmi/.virtualenvs/myelephant/docs/source/modules.rst.

```
(myelephant)zam117:source lekshmi$ sphinx-apidoc -A "Lekshmi" -f -o ~/.virtualenvs/myelephant/docs/source ~/.virtualenvs/myelephant/elephant
```

Creating file ~/.virtualenvs/myelephant/docs/source/elephant.rst.
Creating file ~/.virtualenvs/myelephant/docs/source/elephant.analysis.rst.
Creating file ~/.virtualenvs/myelephant/docs/source/elephant.core.rst.
Creating file ~/.virtualenvs/myelephant/docs/source/elephant.plot.rst.
Creating file ~/.virtualenvs/myelephant/docs/source/modules.rst.

Building Output.

```
(myelephant)zam117:doc lekshmi$ make
```

Please use ``make <target>'` where `<target>` is one of

- `html` to make standalone HTML files
- `dirhtml` to make HTML files named `index.html` in directories
- `singlehtml` to make a single large HTML file
- `pickle` to make pickle files
- `json` to make JSON files
- `htmlhelp` to make HTML files and a HTML help project
- `qthelp` to make HTML files and a qthelp project
- `devhelp` to make HTML files and a Devhelp project
- `epub` to make an epub
- `latex` to make LaTeX files, you can set `PAPER=a4` or `PAPER=letter`
- `latexpdf` to make LaTeX files and run them through `pdflatex`
- `text` to make text files
- `man` to make manual pages
- `texinfo` to make Texinfo files
- `info` to make Texinfo files and run them through `makeinfo`
- `gettext` to make PO message catalogs
- `changes` to make an overview of all changed/added/deprecated items
- `linkcheck` to check all external links for integrity
- `doctest` to run all doctests embedded in the documentation (if enabled)

Basics of reST (reStructuredText).

❖ `.. toctree::`
`:maxdepth: <integer number>`

- Overview
- Prerequisites/installing
- Code Guidelines
- Data Representations
- Packages

`.. toctree::`
`:maxdepth: 1`

- Overview
- Prerequisites/installing
 - Prerequisites
 - Installing
- Code Guidelines
 - Why Code Guidelines?
 - Code Style Guidelines
- Data Representations
 - Binning
- Packages
 - **elephant** Package
 - Subpackages

`.. toctree::`
`:maxdepth: 2`

- Overview
- Prerequisites/installing
 - Prerequisites
 - Installing
- Code Guidelines
 - Why Code Guidelines?
 - Code Style Guidelines
- Data Representations
 - Binning
- Packages
 - **elephant** Package
 - Subpackages
 - analysis Package
 - analysis Package
 - UEver0 Module
 - spec_utils Module
 - sta Module
 - ue_utils Module
 - xcorr Module
 - core Package
 - core Package
 - error Module
 - rep Module
 - stocmod Module
 - surrogates Module
 - plot Package
 - plot Package
 - sta Module

`.. toctree::`
`:maxdepth: 4`

Basics of reST (reStructuredText).

Indentation is significant in reST

Few Keywords:

- ❖ `..ref:`label-name``
- ❖ `.. note::`
- ❖ `.. warning::`
- ❖ `.. seealso:: http://sphinx-doc.org/contents.html`
- ❖ `.. literalinclude:: code_style_guideline.py`
- ❖ `:keyword:`while``

Basics of reST (reStructuredText).

❖ .. code::

.. code:: python

```
def __init__(self, likes_spam=False):  
    """Inits SampleClass with blah."""  
    self.likes_spam = likes_spam  
    self.eggs = 0
```

```
def __init__(self, likes_spam=False):  
    """Inits SampleClass with blah."""  
    self.likes_spam = likes_spam  
    self.eggs = 0
```

❖ Comments.

.. This is a comment.

..
This whole indented block
is a comment.

Still in the comment.

❖ Hyperlinks.

Please check `Sphinx Documentation: <<http://sphinx-doc.org/contents.html>>`_

Basics of reST (reStructuredText).

Sections:

Section titles are underlined or overlined & underlined
 with a punctuation character, at least as long as the text.

dashes "-----",

equals "=====",

tildes "~~~~~",

or

any of the non-alphanumeric characters

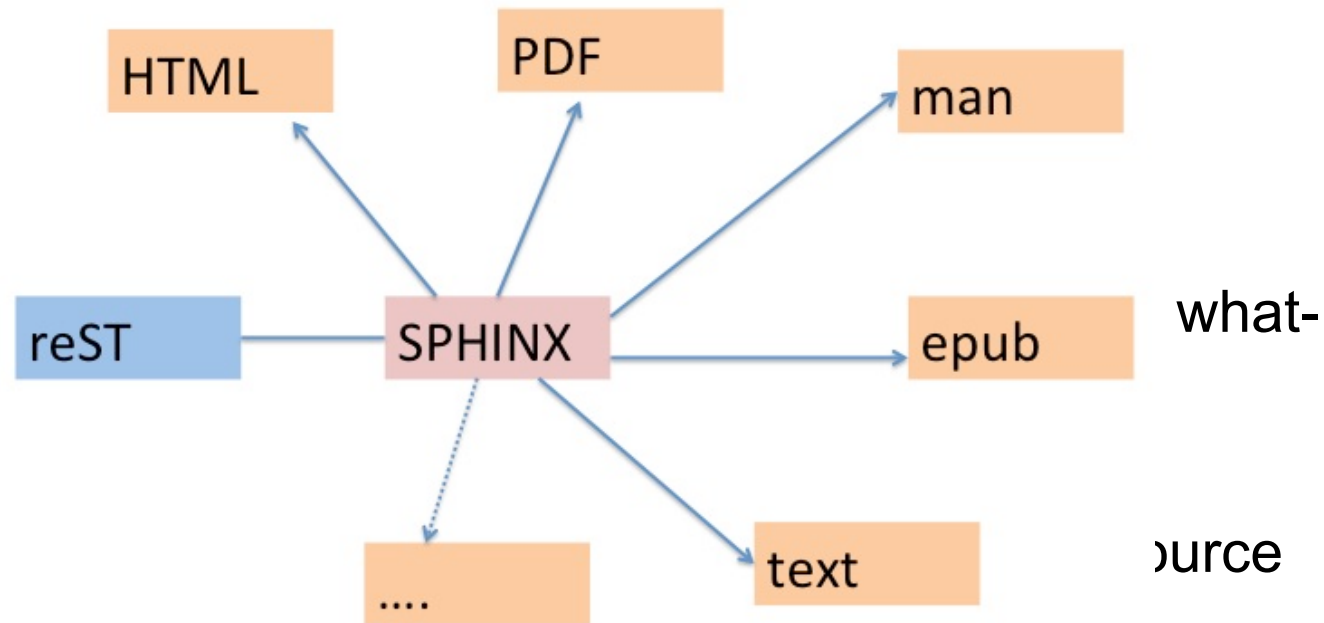
= - ` : ' " ~ ^ _ * + # < >

Summary

❖ Sphinx

- Fast
- Easy to use

❖ Generates various formats



❖ Refer <http://sphinx-doc.org/contents.html>

Thank you for your Attention!

Discussion