

Dokumentation

Seminar Open-Source-Softwareentwicklung

Jannis Vamvas

«Good documentation is a sign
of the professional pride
a programmer puts into a program.»

– **Steve McConnell**

«Who is the f*cking MORON that thinks
that <documentation> has any meaning
whatsoever?»

– **Linus Torvalds**

Was verstehe ich unter „Dokumentation“?

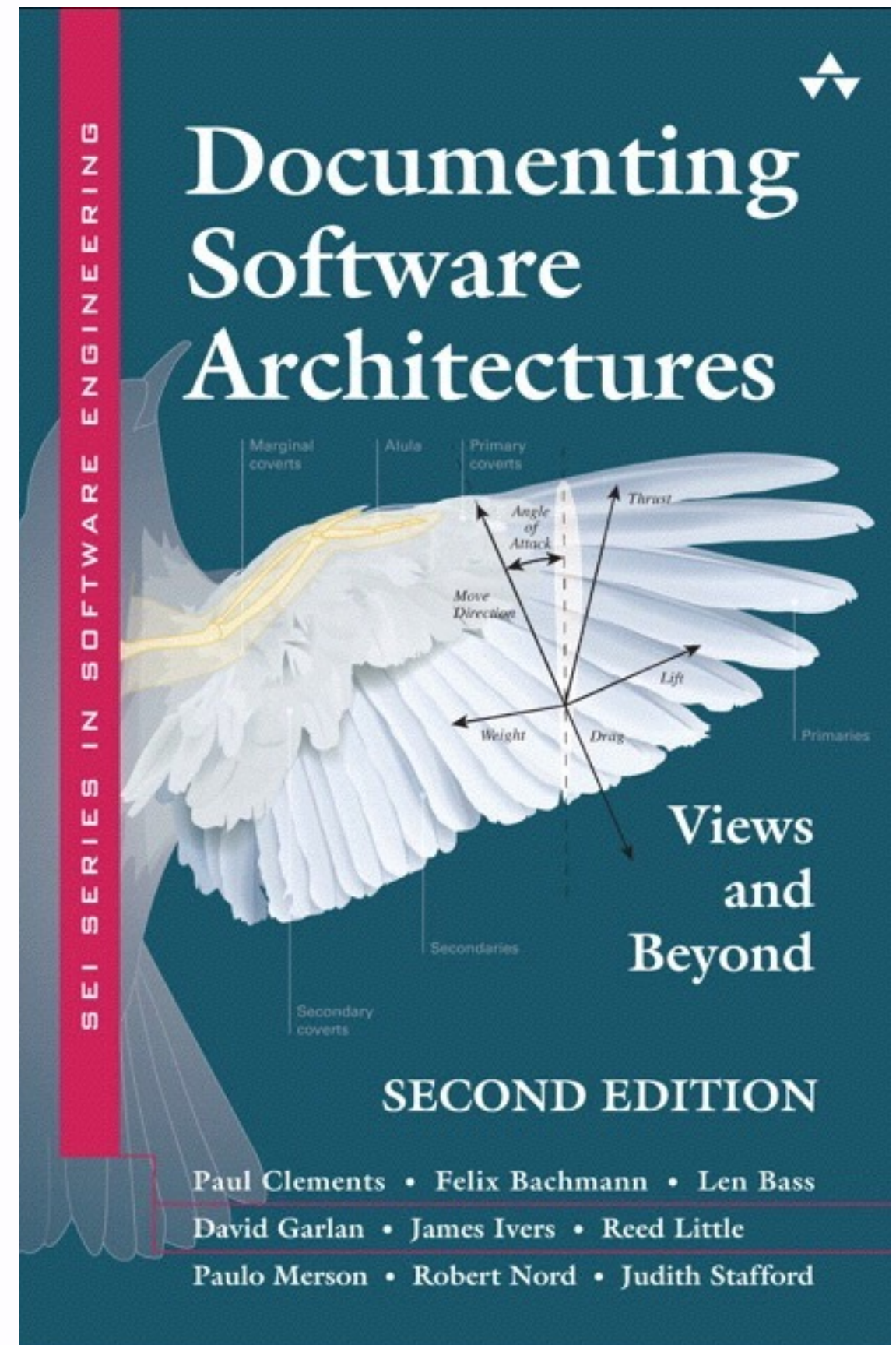
[Das Festhalten von] Informationen,
die es erleichtern, Software zu benutzen,
zu debuggen oder zu modifizieren.

Sieben Prinzipien guter Dokumentation

Nach:

Paul Clements et al.,
*Documenting Software
Architectures.*

Addison-Wesley 2011.
S. 36–45





Schreibe aus der Perspektive der Leserschaft



**Vermeide
Wiederholungen**



**Vermeide
Mehrdeutigkeiten**



**Halte dich an eine
klare Gliederung**



**Dokumentiere deine
Entscheidungen**



**Halte die Dokumentation
auf aktuellem (aber nicht
aktuellstem) Stand**



Teste die Dokumentation

Ein Beispiel für gelungene Dokumentation

django

Beispiel Django

This repository Search

Explore Gist Blog Help

javam + -

django / django

Watch 383 Star 11,942 Fork 4,700

The Web framework for perfectionists with deadlines. <https://www.djangoproject.com/>

19,160 commits 39 branches 86 releases 714 contributors

branch: master django / +

Cleaned up and reformatted autodetector tests

MarkusH authored 2 days ago latest commit 2331650835
→ timgraham committed 2 hours ago

.tx	Added Chinese language aliases in tx client config	3 months ago
django	Fixed GeoSQLCompiler to pass itself correctly to column as_sql.	3 hours ago
docs	Fixed #22248 -- Made RenameModel reversible	6 hours ago
extras	Removed extras/csrf_migration_helper.py	5 months ago
scripts	Converted Django scripts to argparse	5 months ago

Code

Pull Requests 105

Pulse

Graphs

HTTPS clone URL

<https://github.com/>

You can clone with [HTTPS](#), [SSH](#), or [Subversion](#).

Clone in Desktop

Download ZIP

Beispiel Django

```
=====
Django at a glance
=====
```

master/docs/intro/overview.txt

Because Django was developed in a fast-paced newsroom environment, it was designed to make common Web-development tasks fast and easy. Here's an informal overview of how to write a database-driven Web app with Django.

The goal of this document is to give you enough technical specifics to understand how Django works, but this isn't intended to be a tutorial or reference -- but we've got both! When you're ready to start a project, you can :doc:`start with the tutorial </intro/tutorial01>` or :doc:`dive right into more detailed documentation </topics/index>`.

[...]



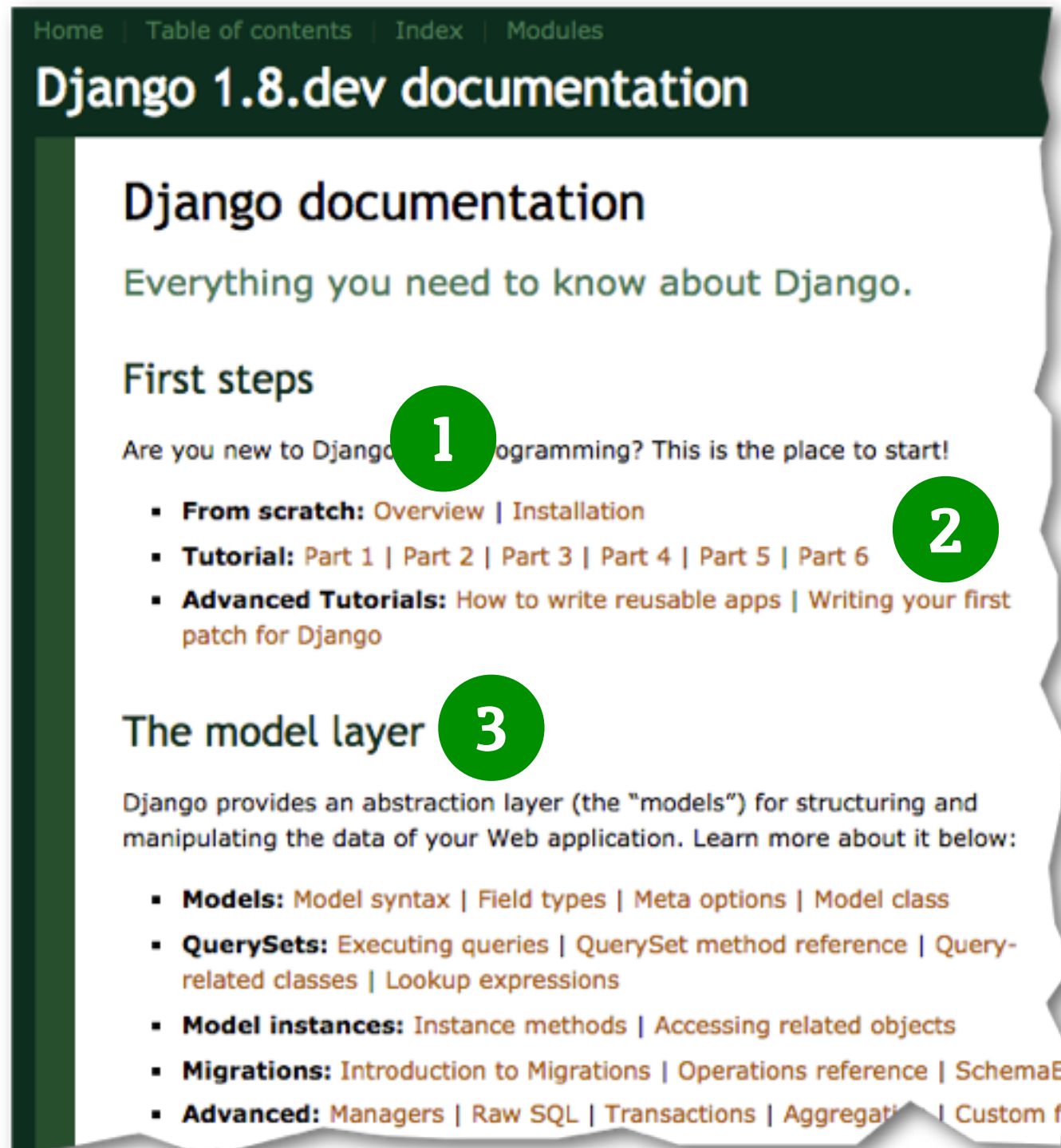
<https://docs.djangoproject.com/en/1.7/intro/overview/>

Django at a glance

Because Django was developed in a fast-paced newsroom environment, it was designed to make common Web-development tasks fast and easy. Here's an informal overview of how to write a database-driven Web app with Django.

The goal of this document is to give you enough technical specifics to understand how Django works, but this isn't intended to be a tutorial or reference – but we've got both! When you're ready to start a project, you can **start with the tutorial** or **dive right into more detailed documentation**.

Beispiel Django



1. Überblick
2. Tutorial
3. Handbuch

Django: Zusammenfassung

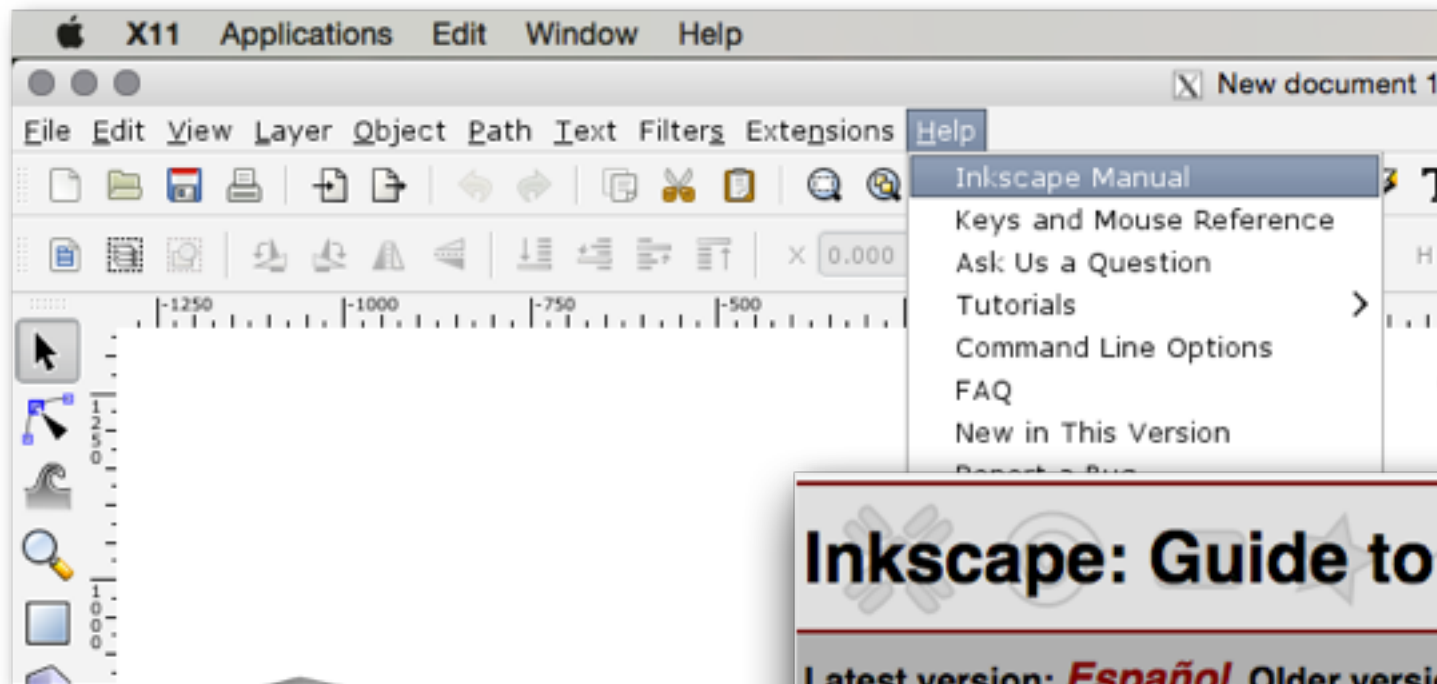
- Dokumentation wird im gleichen Repository verwaltet wie der Code
- Stete Generierung der Dokumentation in verschiedenen Formaten (*Continuous Documentation*)
- Dokumentation ist wiederum gut dokumentiert

Ein Beispiel für verbesserungsfähige Dokumentation



INKSCAPE

Beispiel Inkscape



Inkscape: Guide to a Vector Drawing Program

Latest version: **Español**, Older versions: 0.15 **Français**, 0.14: **Italian**.

Fourth Edition
Tavmjong Bah

0.16 (Documenting Inkscape versions 0.47 and 0.48)

Available from Prentice Hall as a [book](#) or as an [ebook](#).

This book has a website with additional material. Go to: <http://tavmjong.free.fr/INKSCAPE/>.

Suggestions and corrections are welcome and can be sent to [tavmjong @ free . fr](mailto:tavmjong@free.fr).

Copyright © 2000-2011 Tavmjong Bah

<http://tavmjong.free.fr/INKSCAPE/MANUAL/html/index.php>

Beispiel Inkscape

- Handbuch: „It may not be reproduced and distributed in any form without the consent of the author.“
- Das Handbuch kann nicht über ein Web-Interface bearbeitet werden
- E-Book kostet CHF 20.-

Beispiel Inkscape

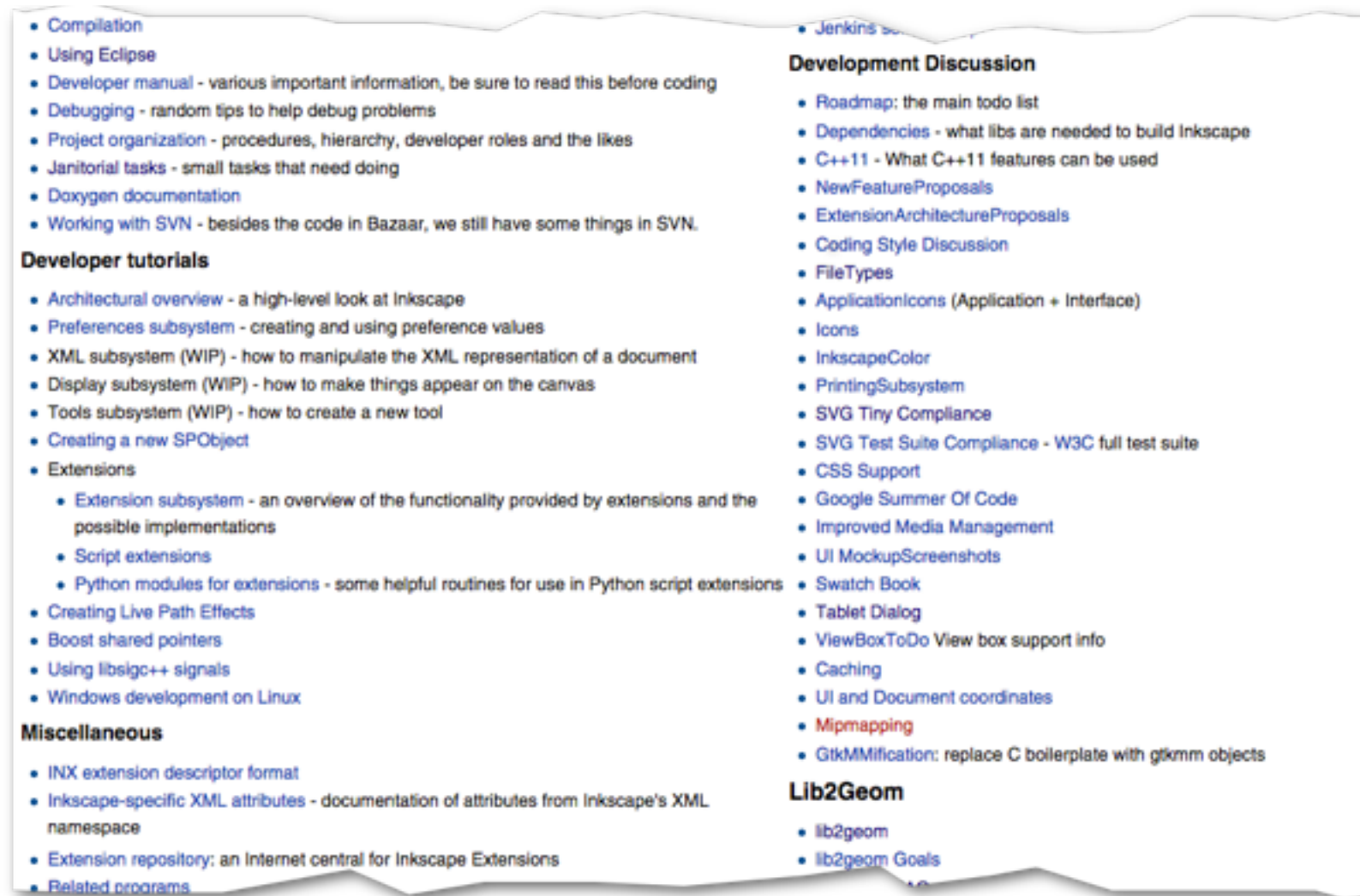
- Die FAQ umfassen 99 Fragen (≈ 10 Meter)



<https://inkscape.org/en/learn/faq/>

Beispiel Inkscape

- Das Entwickler-Wiki enthält 701 Artikel, von denen 129 auf der Hauptseite direkt verlinkt werden.



<http://wiki.inkscape.org/>

Inkscape: Zusammenfassung

- Vollständige, zentral verwaltete Dokumentation fehlt
- Das „offizielle“ Handbuch ist proprietär
- Die niederländische Initiative *FLOSS Manuals* arbeitet an einem GPL-lizenzierten Ersatz (en.flossmanuals.net)

Dokumentation mit GitHub (oder Bitbucket)

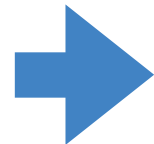
- README.md wird auf der Projektseite dargestellt

Documentation
=====

Seven rules for **sound documentation**:

- > 1. Write documentation from the reader's point of view.
- > 2. Avoid unnecessary repetition.
- > 3. Avoid ambiguity.
- > 4. Use a standard organization.
- > 5. Record rationale.
- > 6. Keep documentation current but not too current.
- > 7. Review documentation for fitness of purpose.

<cite>Source: Clements et al.: **Documenting Software Architectures.** Addison-Wesley 2011. S. 36-45</cite>



Documentation

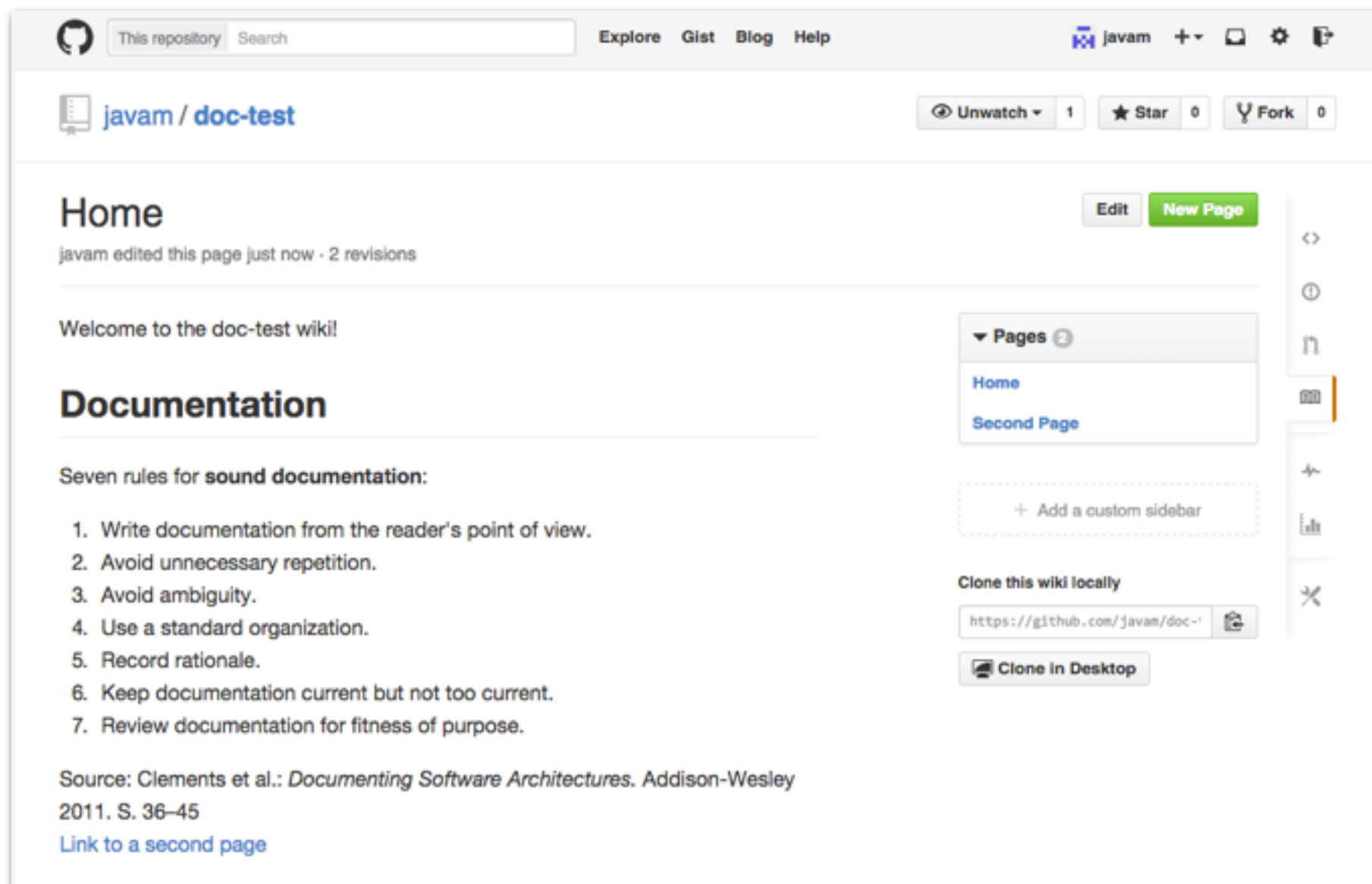
Seven rules for **sound documentation**:

1. Write documentation from the reader's point of view.
2. Avoid unnecessary repetition.
3. Avoid ambiguity.
4. Use a standard organization.
5. Record rationale.
6. Keep documentation current but not too current.
7. Review documentation for fitness of purpose.

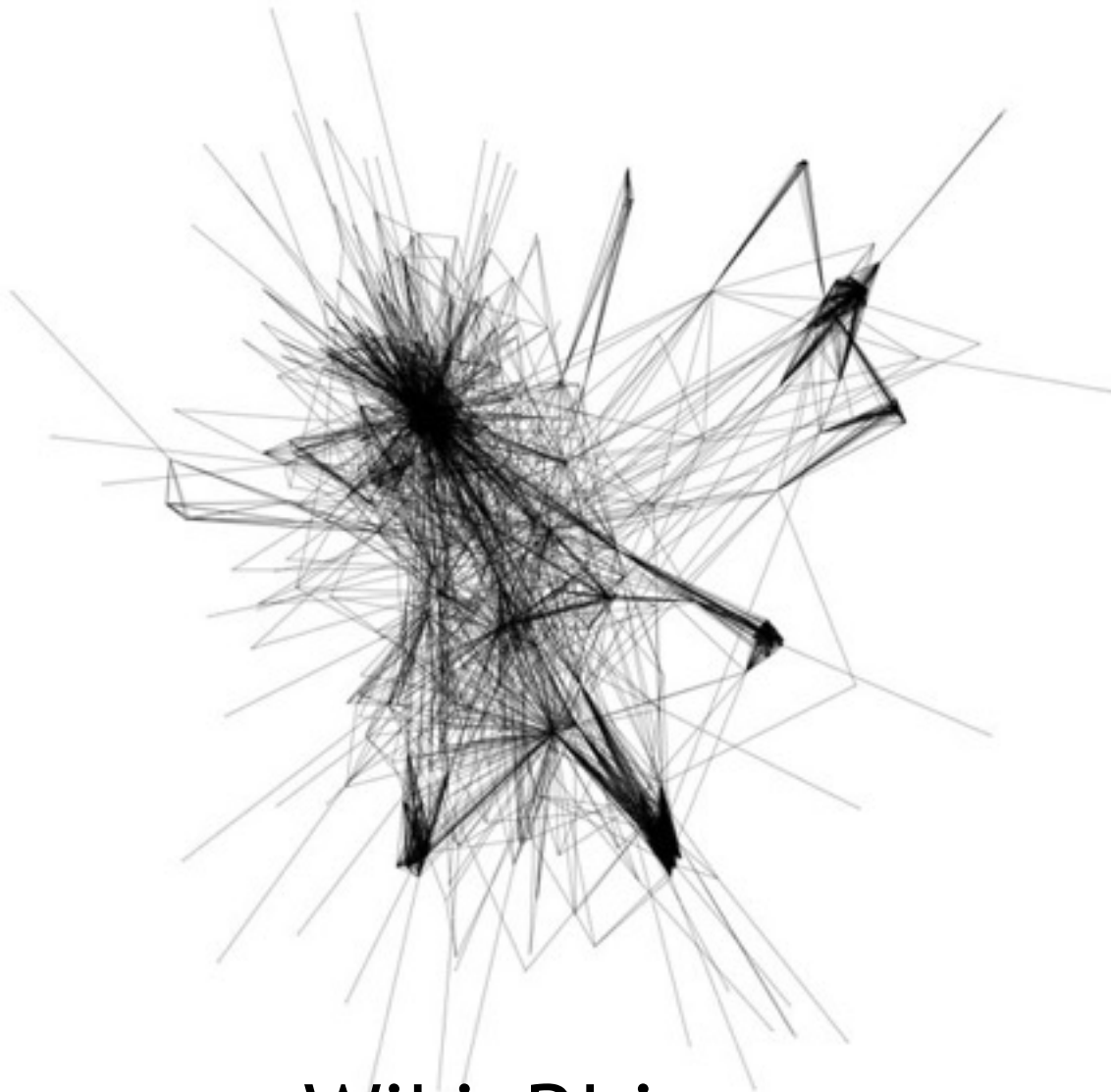
Source: Clements et al.: *Documenting Software Architectures.*

Dokumentation mit GitHub (oder Bitbucket)

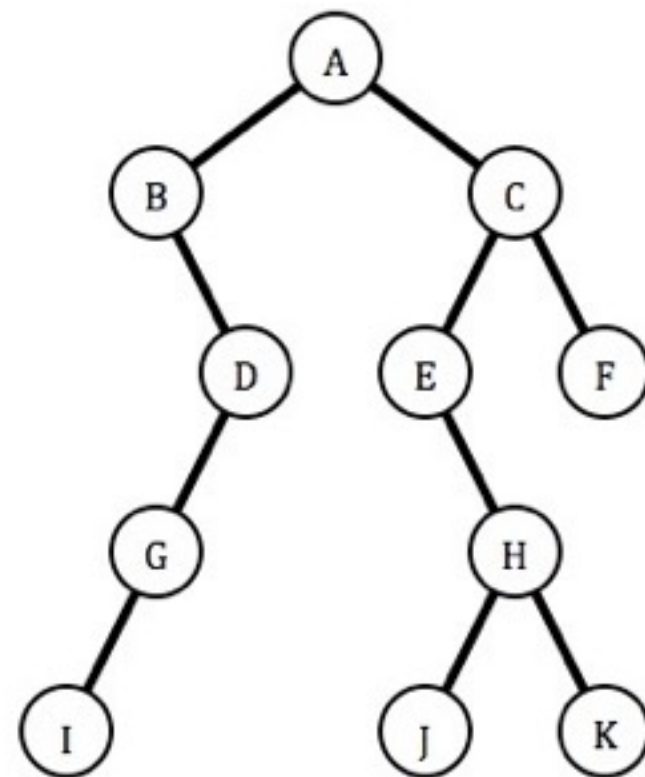
- Zusätzlich hosten beide Anbieter ein Wiki



Das Wiki als Dokumentationsform



Wiki: Rhizom



Handbuch: Baum

Das Wiki als Dokumentationsform

- Buch-Generierung nur mit Zusatzaufwand
- Separate Versionsverwaltung
- Darstellung verschiedener Versionen schwierig

Best Practice für kleinere und mittlere Open-Source-Projekte

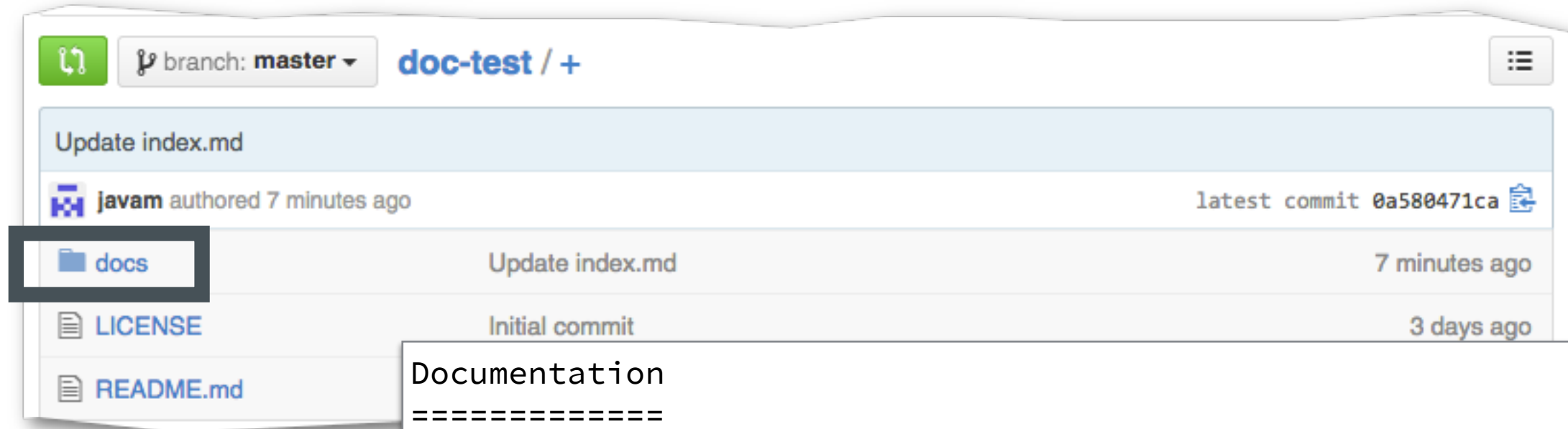


Read the Docs

Read the Docs

- Hostet Dokumentation in grafisch aufbereiteter Form auf <projektname>.readthedocs.org
- Auszeichnungssprachen:
Markdown und reStructuredText
- Versionsverwaltungs-Systeme:
Subversion, Bazaar, Git, Mercurial

Beispiel

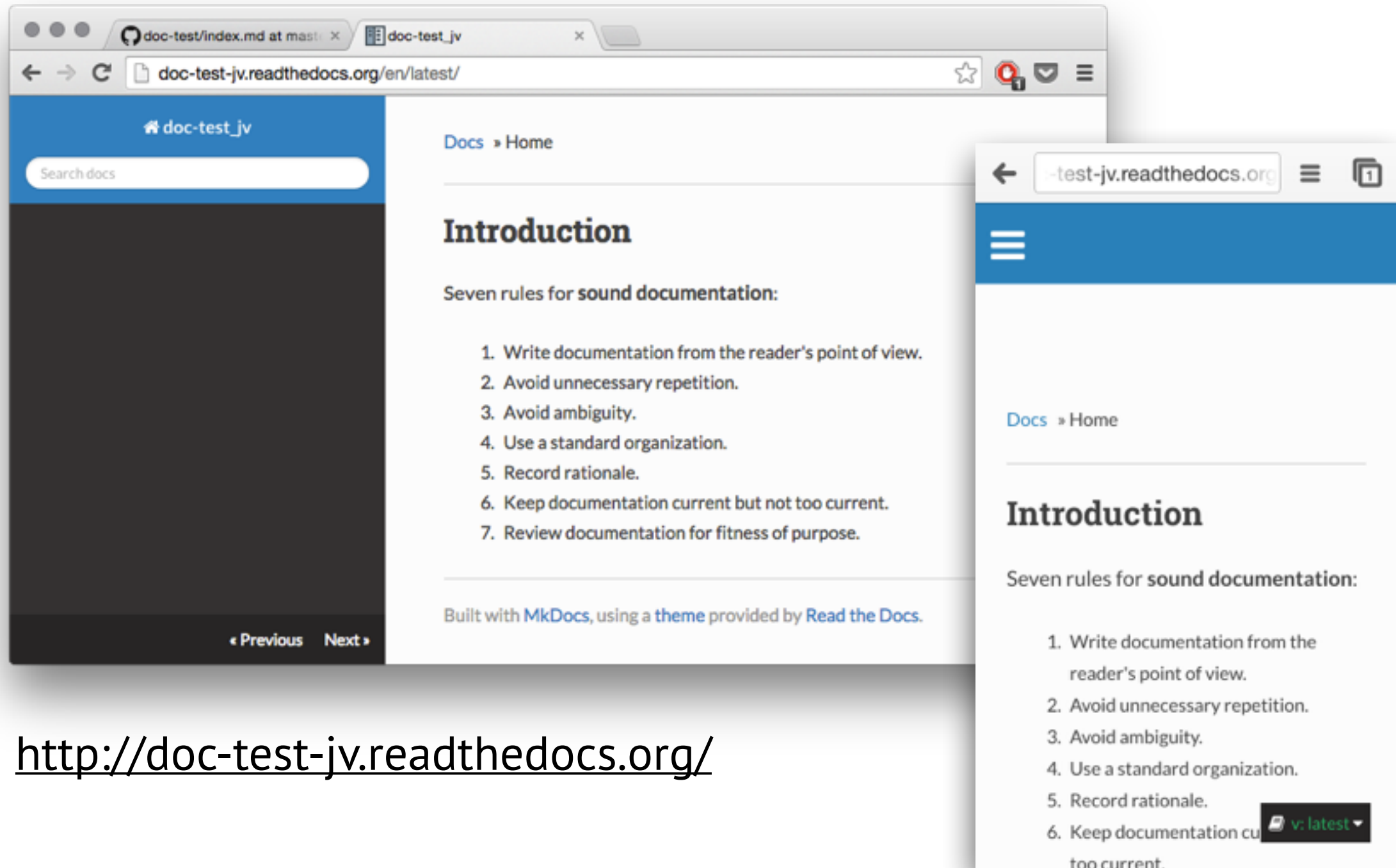


Seven rules for **sound documentation**:

- > 1. Write documentation from the reader's point of view.
- > 2. Avoid unnecessary repetition.
- > 3. Avoid ambiguity.
- > 4. Use a standard organization.
- > 5. Record rationale.
- > 6. Keep documentation current but not too current.
- > 7. Review documentation for fitness of purpose.

master/docs/index.md

Beispiel



<http://doc-test-jv.readthedocs.org/>

Q&A: Stack Exchange

The screenshot shows a Stack Overflow page for a question titled "FLOSS/Free solution to generate PDF documents in Python?". The question is asked by user "pluma" on Jan 9 '11 at 21:18, with 3,227 views and 22 votes. It has 3 answers, with the top answer by user "jle" on Jan 9 '11 at 21:27, marked as the correct answer with a green checkmark. The page includes navigation links like "Questions", "Tags", "Users", "Badges", and "Unanswered", along with a search bar and an "Ask Question" button. A sidebar on the right features "Featured on Meta" and "Hot Meta Posts" sections.

StackExchange 1 help search

stackoverflow Questions Tags Users Badges Unanswered Ask Question

FLOSS/Free solution to generate PDF documents in Python?

What is the easiest way to generate PDF documents with embedded fonts in Python without a commercial/restricted library?

I want to generate documents with tabular data and headers/footers. I've tried reportlab, but while powerful, it seems rather difficult to use.

python pdf pdf-generation

asked Jan 9 '11 at 21:18
pluma
3,227 2 22 29

asked 3 years ago
viewed 346 times
active 3 years ago

Featured on Meta

- Feedback Requested: Stack Overflow design update
- Feedback requested: New "recommended" homepage, phase 4 - filters

Hot Meta Posts

- 5 Unexpected characters in Comment Time
- 40 Help vet the rules for a possible future contest

3 Answers

active oldest votes

You can create the document in html and then use [WKHTMLTOPDF](#) to convert to pdf... It is licensed GNU but it is a pretty good tool.

answered Jan 9 '11 at 21:27
jle
4,961 1 21 53

Love this site?
Get the weekly newsletter

<http://stackoverflow.com/>

Q&A: Askbot

The screenshot displays the Askbot Q&A website interface. At the top, a dark navigation bar contains links for "Hi there! Please sign in", "help", "tags", "people", and "badges". Below this, a light-colored header bar features a home icon, "ALL UNANSWERED" filters, a search bar, and an "ASK YOUR QUESTION" button. The main content area shows a list of questions with their respective statistics and tags. The sidebar on the right includes sections for "Guidelines", "Sticky posts", and "Contributors".

Question	Tags	Votes	Answers	Views	Time Ago	Author
X240 scroll with trackpoint and use fingerprint reader	thinkpad, x240, fingerprint, scroll, touchpad	no votes	2 answers	263 views	25 mins ago	footony
how to convert centos rpm package to fedora	rpm, fedoraproject, centos	1 vote	2 answers	35 views	40 mins ago	atef_myk
How to increase master volume	sound, volume-control	no votes	no answers	1 view	42 mins ago	The Dcoder
broadcom 4321 wireless not working in Fedora 21.	broadcom, wireless, bcm4321, fedora21	no votes	1 answer	32 views	1 hour ago	baoboa
Custom themes not working on all programs	themes, gnome-tweak-tool	no votes	1 answer	20 views	6 hours ago	mether

Guidelines
New to Ask Fedora? Please read the [guidelines!](#)

Sticky posts
These posts help you use the forum better! Please take a peek!

Contributors

<http://ask.fedoraproject.org/>

RTFM-Kultur



Shaun McCance

@shaunm

 Follow

The more likely a project is to say RTFM, the less likely their FM is any good. @rbowen #openhel

5:07 PM - 14 Jun 2014

1 FAVORITE



Q&A als dezentrale Dokumentation

- Grösstmögliche Sichtbarkeit im Web
- Fast jede Frage liefert ein praxisnahes Beispiel
- Wettbewerb um die beste Antwort

Code-Kommentare

«Real programmers don't comment.»

– Volksmund

«There is a great deal of information about code behavior that simply cannot be expressed in source code, but requires the power and flexibility of natural language to state.»

– Jeffrey Kotula

Überflüssige Kommentare

```
/* Check if stderr is a tty */  
if (isatty(fileno(stderr))) {
```

XFree86-3.3/xc/programs/Xserver/hw/
xfree86/common/xf86Beta.c:158–159

```
/**  
 * Method declaration  
 * @param username  
 * @param password  
 *  
 * @return  
 *  
 * @throws SQLException  
 */  
synchronized Channel connect(  
    String username, String password)  
    throws SQLException {
```

hsqldb/src/org/hsqldb/Database.java:
127–139

Sinnvolle Kommentare

```
/**  
 * Look up an LFS dinode number to find its incore vnode.  
 * If not already in core, read it in from the specified  
 * device. Return the inode locked. Detection and  
 * handling of mount points must be done by the calling  
 * routine.  
 */
```

netbsdsrc/sys/ufs/lfs/lfs_vfsops.c:458-462

Sinnvolle Kommentare

```
list = [f (b), f (b), f (c), f (d), f (a), ...];  
// Need a stable sort. Besides, the performance  
// does not matter.  
insertion_sort (list);
```

[http://en.wikipedia.org/wiki/Comment_\(computer_programming\)#Algorithmic_description](http://en.wikipedia.org/wiki/Comment_(computer_programming)#Algorithmic_description)

Donald Knuth: „Literate Programming“ (1984)

Literate Programming

- Quellcode eines *literate* Programms hat zwei Erscheinungsformen:
 - Kompilierbarer Code
 - Ein TeX-Dokument, das den Code beschreibt

Beispiel

- Inhaltsverzeichnis des Programms

Printing primes: An example of WEB	§1
Plan of the program	§3
The output phase	§5
Generating the primes	§11
The inner loop	§22
Index	§27

Beispiel

- Ausschnitt aus Paragraph 13 des Programms

13. So far we haven't needed to confront the issue of what a prime number is. But everything else has been taken care of, so we must delve into a bit of number theory now.

By definition, a number is called prime if it is an integer greater than 1 that is not evenly divisible by any smaller prime number. Stating this another way, the integer $j > 1$ is not prime if and only if there exists a prime number $p_n < j$ such that j is a multiple of p_n .

Therefore the section of the program that is called ' $\langle$ Increase j until it is the next prime number $\rangle$ ' could be coded very simply: '**repeat** $j \leftarrow j+1$; $\langle$ Give to j_prime the meaning: j is a prime number $\rangle$; **until** j_prime '. And to compute the boolean value j_prime , the following would suffice: ' $j_prime \leftarrow true$; **for** $n \leftarrow 1$ **to** k **do** $\langle$ If $p[n]$ divides j , set $j_prime \leftarrow false$ $\rangle$ '.

14. However, it is possible to obtain a much more efficient algorithm by using more facts of number theory. In the first place, we can speed things up a bit by recognizing that $p_1 = 2$ and that all subsequent primes are odd; therefore we can let j run through odd values only. Our program now takes the following form:

$\langle$ Increase j until it is the next prime number 14 $\rangle \equiv$

repeat $j \leftarrow j + 2$;

$\langle$ Update variables that ... $i \leftarrow 20$ $\rangle$;

Moderne Implementierung

DOCCO



Docco is a quick-and-dirty documentation generator, written in Literate CoffeeScript. It produces an HTML document that displays your comments intermingled with your code. All prose is passed through Markdown, and code is passed through Highlight.js syntax highlighting. This page is the result of running Docco against its own source file.

1. Install Docco with **npm**: `sudo npm install -g docco`
2. Run it against your code: `docco src/*.coffee`

<http://jashkenas.github.io/docco/>

Docco: Kommentar vs. Code

Given a string of source code, **parse** out each block of prose and the code that follows it — by detecting which is which, line by line — and then create an individual **section** for it. Each section is an object with `docsText` and `codeText` properties, and eventually `docsHtml` and `codeHtml` as well.

```
parse = (source, code, config = {}) ->
  lines    = code.split '\n'
  sections = []
  lang     = getLanguage source, config
  hasCode  = docsText = codeText = ''

  save = ->
    sections.push {docsText, codeText}
    hasCode = docsText = codeText = ''
```

Referenzen

- **Zitat McConnell:** Steve McConnell, *Code Complete*. Microsoft Press 1993. S. 453 (zitiert nach: http://www.literateprogramming.com/quotes_sd.html).
- **Zitat Torvalds:** <http://lwn.net/Articles/309305/>.
- **Tweet McCance:** <https://twitter.com/shaunm/status/477829661960175616>.
- **Zitat Kotula:** Jeffrey Kotula, Source Code Documentation. An Engineering Deliverable. In: *Proceedings of the Technology of Object-Oriented Languages and Systems*. 2000 (zitiert nach: http://www.literateprogramming.com/quotes_sc.html).
- **Beispiele für Code-Kommentare:** Diomidis Spinellis, *Code Quality. The Open Source Perspective*. Pearson 2006.
- **Literate Programming:** Donald Knuth, Literate Programming. In: *The Computer Journal*. 27, Nr. 2, 1984, S. 97–111.