

IT Systems for Knowledge Management (used in Software Engineering)

Dr. Peter Kofler, System One GmbH
FHWien, June 2010



Very Short CV ;-)

- In Love with Programming
- Ph.D. in Applied Mathematics
- Professional Software Developer
- Lead Developer at System One

Peter Kofler

- fanatic about code quality since 2004
- ‘Code Cop’ since 2006
- Quality Evangelist, Blog Posts, Articles, ...
- Software Craftsman



Software Craftsmanship



Craftsmanship

Engineering



Mindset

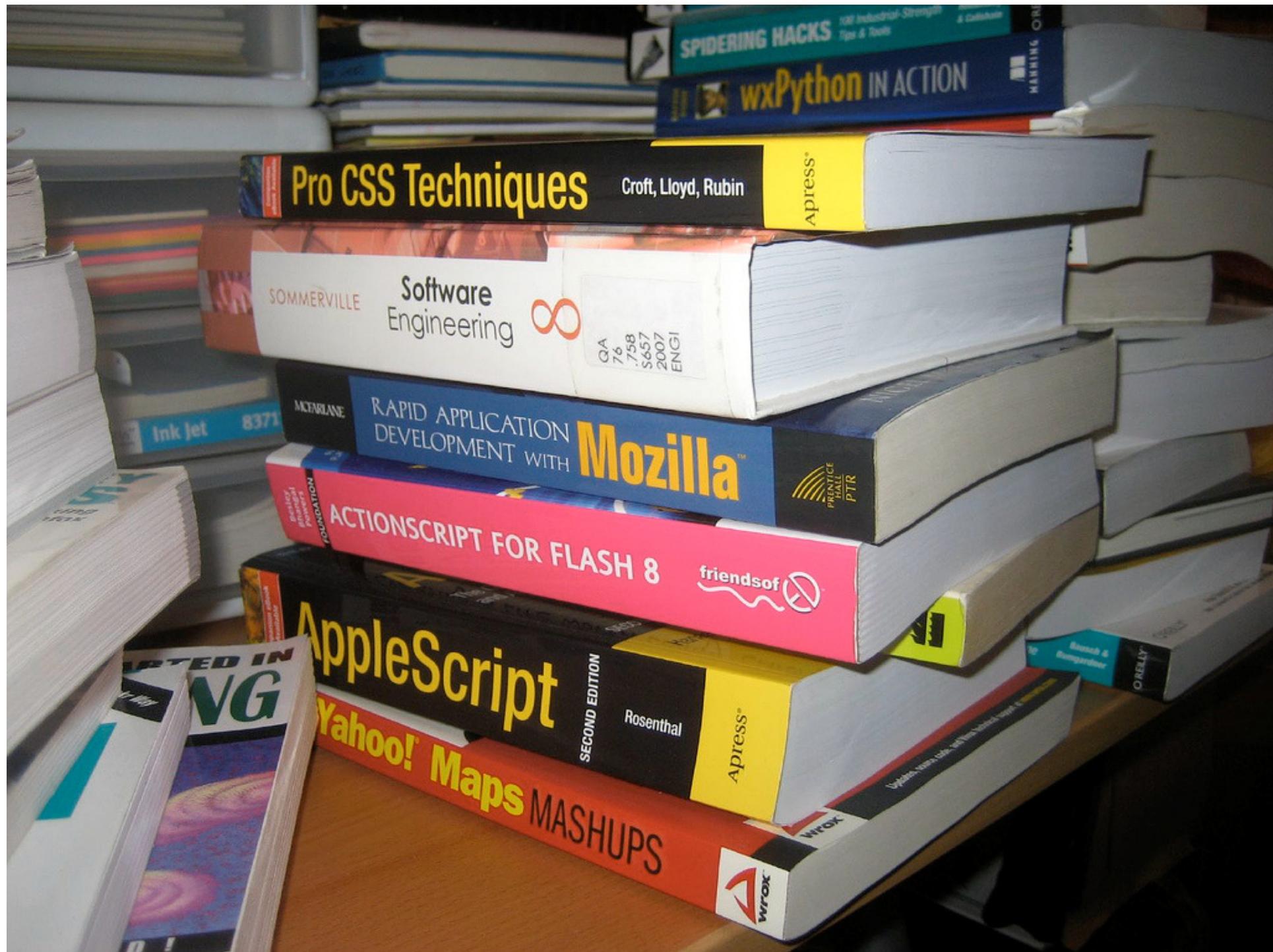
Agenda

- The Problem
- Personal Knowledge Management
- Community of Practice
- Knowledge (hidden) in Code
- Knowledge Management in the Enterprise
- Conclusion

18 Months



Personal



What do I Read?

- (e)Books
- Magazines (Yeah, still Paper)
- Newsletter (Email sucks)
- Blogs, Online Magazines (WWW)
- Aggregator Services, Feeds
- Code (of Other People)

Google Reader (24) - Windows Internet Explorer

http://www.google.com/reader/view/#stream/user%2F10365744210337260297%2Fstate%2Fcom.googler

Datei Bearbeiten Ansicht Favoriten Extras ?
Links Morgen Our openXchange JIRA mite Spring API 1.5 Hibernate Hudson Client

Google Reader (24)

Google Mail Kalender Text & Tabellen Web Reader Mehr ▾ peter.codecop.kofler@gmail.com | Einstellungen ▾ | Hilfe | Abmelden

Google reader Alle Artikel Suchen

+ Abonnement hinzufügen

Alle Artikel (24)

Anzeigen: 24 neue Artikel - Alle Artikel Alle als gelesen markieren Aktualisieren
Einstellungen anzeigen ...

Startseite Alle Artikel (24)
Markierte Artikel ★
Meine Beiträge Trends Browsen

Personen, deren regelmäßiger Leser
Kommentaransicht Michael (1) Thomas
Freigabeeinstellungen »

Erkunden

Abonnements

- News (7)
- Blogs, die ich regelmäßig... (8)
- Friends
- Persons (4)
- Twitter (4)
 - Twitter / GeeCON_News (4)
- Groups
- Fun
- Code Con

Aboverwaltung »

Alle Artikel

Anzeigen: Erweitert - Liste

Code Quality Management Tool Sonar Provides Design and Architecture Metrics 05:17 (Vor 4 Stunden)
von InfoQ Personalized Feed for Peter Kofler von Srini Penchikala
The new version of open source code quality management tool Sonar provides design and architecture metrics. Sonar 2.0 introduced the analysis of design, architecture and object-oriented metrics for Java applications. And Sonar 2.1 version, which was released recently, supports the detection of unused methods and calls to deprecated methods. By Srini Penchikala

Markierung hinzufügen Gefällt mir Empfehlen Mit Kommentar empfehlen E-Mail
Als gelesen markieren Tags bearbeiten: News

GeeCON_News: Most of the #GeeCON presentation slides were published! Visit the schedule page for download: http://bit.ly/dCG5RX (links are marked blue) 23:23 (Vor 10 Stunden)
von Twitter / GeeCON_News
GeeCON_News: Most of the #GeeCON presentation slides were published! Visit the schedule page for download: http://bit.ly/dCG5RX (links are marked blue)

Markierung hinzufügen Gefällt mir Empfehlen Mit Kommentar empfehlen E-Mail
Als gelesen markieren Tags bearbeiten: Twitter

Vorheriger Artikel Nächster Artikel 24 Artikel

Internet | Geschützter Modus: Aktiv

The screenshot shows the Google Reader interface in Internet Explorer. The left sidebar lists various feeds like News, Blogs, and Twitter. The main area displays two articles. The first article is about Sonar, a code quality management tool, and the second is from GeeCON_News. Both articles have standard sharing options below them.

<http://www.google.com/reader/view/>

What do I ...

- ... Listen To?
 - Audiocasts (Podcasts)
 - Software Engineering Radio
- ... Watch?
 - ~~Television~~
 - Screencasts
 - Conference Talks



Trying Out New Things

- Examples
- Code Katas
- Little Projects
- New Technologies
- New Programming Languages
- Open Source



The only stuff I retain
is the stuff I apply.





Plain Text



Just Plain Text

- Temporary Notes
- Things I keep forgetting
- How-To (Processes)
- Extracts of Books/Articles
- Cheat Sheets/“Refcardz”

IntelliJ IDEA 8 Default Keymap



Editing

Ctrl + Space	Basic code completion (the name of any class, method or variable)
Ctrl + Shift + Space	Smart code completion (filters the list of methods and variables by expected type)
Ctrl + Alt + Space	Class name completion (the name of any project class independently of current imports)
Ctrl + Shift + Enter	Complete statement
Ctrl + P	Parameter info (within method call arguments)
Ctrl + Q	Quick documentation lookup
Shift + F1	External Doc
Ctrl + mouse over code	Brief Info
Ctrl + F1	Show descriptions of error or warning at caret
Alt + Insert	Generate code... (Getters, Setters, Constructors, hashCode>equals, EJB)
Ctrl + O	Override methods
Ctrl + I	Implement methods
Ctrl + Alt + T	Surround with... (if..else, try..catch, for, synchronized, etc.)
Ctrl + /	Comment/uncomment with line comment
Ctrl + Shift + /	Comment/uncomment with block comment
Ctrl + W	Select successively increasing code blocks
Ctrl + Shift + W	Decrease current selection to previous state
Alt + Q	Context info
Alt + Enter	Show intention actions
Ctrl + Alt + L	Reformat code
Ctrl + Alt + O	Optimize imports
Ctrl + Alt + I	Auto-indent line(s)
Tab / Shift + Tab	Indent/unindent selected lines
Ctrl + X or Shift + Delete	Cut current line or selected block to buffer
Ctrl + C or Ctrl + Insert	Copy current line or selected block to buffer
Ctrl + V or Shift + Insert	Paste from buffer
Ctrl + Shift + V	Paste from recent buffers...
Ctrl + D	Duplicate current line or selected block
Ctrl + Y	Delete line at caret
Ctrl + Shift + J	Smart line join
Ctrl + Enter	Smart line split
Shift + Enter	Start new line
Ctrl + Shift + U	Toggle case for word at caret or selected block
Ctrl + Shift +] / [Select till code block end/start
Ctrl + Delete	Delete to word end
Ctrl + Backspace	Delete to word start
Ctrl + NumPad+/-	Expand/collapse code block
Ctrl + Shift + NumPad+	Expand all
Ctrl + Shift + NumPad-	Collapse all
Ctrl + F4	Close active editor tab
Search/Replace	
Ctrl + F	Find
F3	Find next
Shift + F3	Find previous
Ctrl + R	Replace
Ctrl + Shift + F	Find in path
Ctrl + Shift + R	Replace in path
Ctrl + Shift + S	Search structurally
Ctrl + Shift + M	Replace structurally

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IntelliJ IDEA 8 Default Keymap



Usage Search

Alt + F7 / Ctrl + F	Find usages / Find usages in file
Ctrl + Shift + F7	Highlight usages in file
Ctrl + Alt + F7	Show usages

Compile and Run

Ctrl + F9	Make project (compile modified and dependent)
Ctrl + Shift + F9	Compile selected file, package or module
Alt+Shift+F10	Open run/debug configurations dropdown
Shift + F10	Run
Shift + F9	Debug
Ctrl + Shift + F10	Run context configuration from editor

Debugging

F8	Step over
F7	Step into
Shift + F8	Step out
Alt + F9	Run to cursor
Alt + F8	Evaluate expression
F9	Resume program
Ctrl + F8	Toggle breakpoint
Ctrl + Shift + F8	View breakpoints

Navigation

Ctrl + N	Go to class
Ctrl + Shift + N	Go to file
Ctrl + Alt + Shift + N	Go to symbol
Alt + Right/Left	Go to next/previous editor tab
F12	Go back to previous tool window
Esc	Go to editor (from tool window)
Shift + Esc	Hide active or last active window
Ctrl + Shift + F4	Close active run/messages/find/... tab
Ctrl + G	Go to line
Ctrl + PgDn	Go to bottom of page
Ctrl + PgUp	Go to top of page
Ctrl + E	Recent files popup
Ctrl + Alt + Left/Right	Navigate back/forward
Ctrl + Shift + Backspace	Navigate to last edit location
Alt + F1	Select current file or symbol in any view
Ctrl + B or Ctrl + Click	Go to declaration
Ctrl + Alt + B	Go to implementation(s)
Ctrl + Shift + I	Open quick definition lookup
Ctrl + Shift + B	Go to type declaration
Ctrl + U	Go to super-method/super-class
Alt + Up/Down	Go to previous/next method
Ctrl +] / [Move to code block end/start
Ctrl + F12	File structure popup
Ctrl + H	Type hierarchy
Ctrl + Shift + H	Method hierarchy
Ctrl + Alt + H	Call hierarchy
F2 / Shift + F2	Next/previous highlighted error
F4 / Ctrl + Enter	Edit source / View source
Alt + Home	Show navigation bar
F11	Toggle bookmark
Ctrl + Shift + #(0-9)	Toggle numbered bookmark
Ctrl + #(0-9)	Go to numbered bookmark
Shift + F11	Show bookmarks

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IntelliJ IDEA 8 Default Keymap



Refactoring

F5	Copy
F6	Move
Alt + Delete	Safe Delete
Shift + F6	Rename
Ctrl + F6	Change Signature
Ctrl + Alt + N	Inline
Ctrl + Alt + M	Extract Method
Ctrl + Alt + V	Introduce Variable
Ctrl + Alt + F	Introduce Field
Ctrl + Alt + C	Introduce Constant
Ctrl + Alt + P	Introduce Parameter

VCS/Local History

Ctrl + K	Commit project to VCS
Ctrl + T	Update project from VCS
Alt + Shift + C	View recent changes

Live Templates

Ctrl + Alt + J	Surround with Live Template
Ctrl + J	Insert Live Template
iter	Iteration according to Java SDK 1.5 style
inst	Check object type with instanceof and downcast i
itca	Iterate elements of java.util.Collection
itit	Iterate elements of java.util.Iterator
itli	Iterate elements of java.util.List
itve	Iterate elements of java.util.List
iten	Iterate elements of java.util Enumeration
itar	Iterate elements of array
iritar	Iterate elements of array in reverse order
lst	Fetch the last element of an array
toar	Store elements of java.util Collection into an array
mn	Set lesser value to a variable
mx	Set greater value to a variable
psf	public static final
psvm	main() method declaration
sevr	Print a string to System.err
sout	Print a string to System.out
soutm	Print current class and method names to System.
soutv	Print a value to System.out
thr	throw new

General

Alt + #(0-9)	Open corresponding tool window
Ctrl + S	Save all
Ctrl + Alt + Y	Synchronize
Ctrl + Alt + F11	Toggle full screen mode
Ctrl + Shift + F12	Toggle maximizing editor
Alt + Shift + F	Add to Favorites
Alt + Shift + I	Inspect current file with current profile
Ctrl + BackQuote (`)	Quick switch current scheme
Ctrl + Alt + S	Open Settings dialog

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To-Do List

- Be Awesome
- Fix table styles in CSS
- Fix js scrolling issues
- Be Awesome ... again
- Take a break



AUTOMATIC

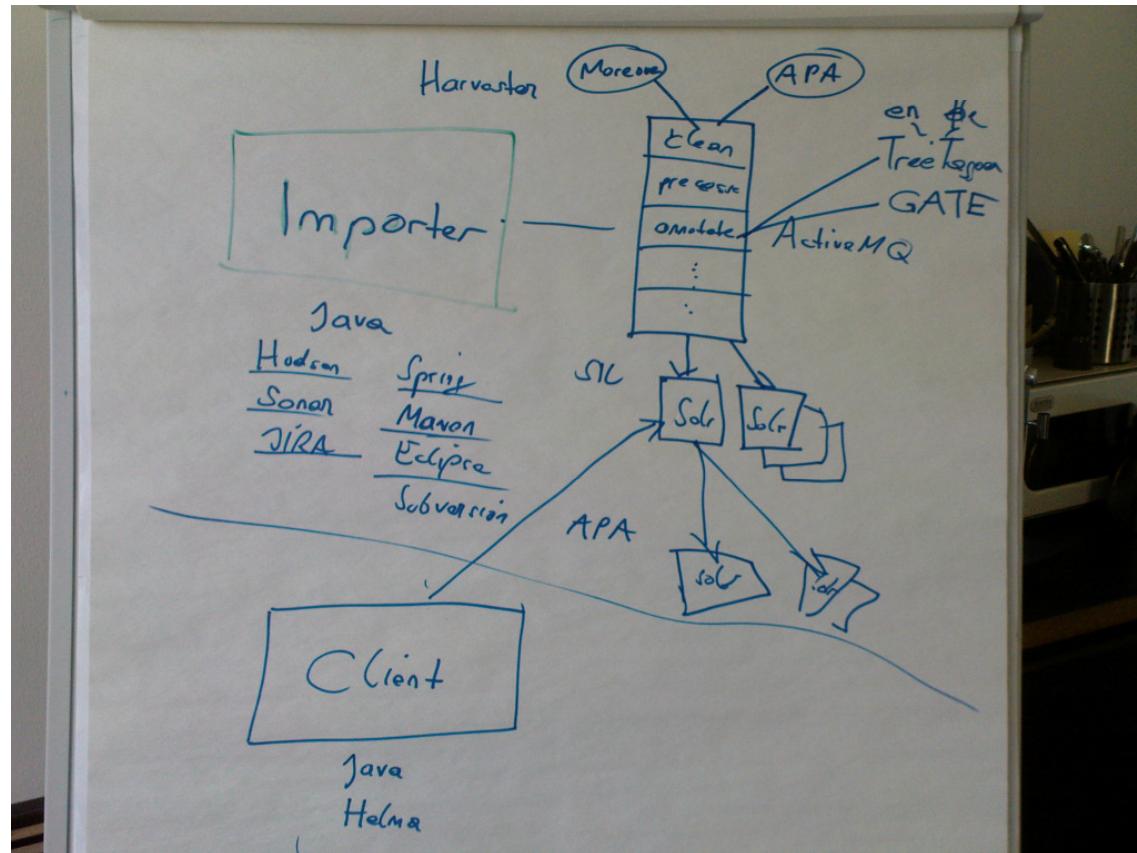
MANUAL

Process Automation

- Operation System Level
 - e.g. Scripts (Batch/Bash)
 - e.g. Apple's 'Folder Actions'
- Application Level
 - e.g. Command-Line Usage
 - e.g. Keyboard Shortcuts
 - e.g. Word Macros (VBA)

Sometimes Text is Not Enough

- Drawings
- Mind Maps
- UML
(sort of)





Community

Few Precious Buddies

Ask, Discuss,
Answer, Exchange

Social Bookmarking

We don't have friends.
We have peers and
treat them as friends.

(Thorbiörn Fritzon)

Community Events

“Stammtisch”

User Groups (JSUG)

“Javaabend” (openForce)

Eclipse DemoCamp

Barcamps

eJugDays (eJUG/irian)

Less Personal, “Community”

- Mailing Lists
- Forums
- Snippets
- Review Services
- Wikis

Hottest 'java' Questions - Stack Overflow - Windows Internet Explorer

http://stackoverflow.com/questions/tagged?tagname=java&sort=hot&pagesize=50

Datei Bearbeiten Ansicht Favoriten Extras ?
Links Morgen Our openXchange JIRA mite Spring API 1.5 Hibernate Hudson Client

☆ Hottest 'java' Questions - Stack Overflow

Peter Kofler 1,387 3 17 | log out | about | faq search

stackoverflow Questions Tags Users Badges Unanswered Ask Question

Tagged Questions stats newest featured hot votes active

How does + operator behaves differently with numbers and strings in Java?
7 votes 8 answers 116 views
Java does not have concept of operator overloading. Still + operator behaves as addition operator with numbers and concatenate operator with strings. This is similar to the operator overloading ...
asked 1 hour ago Abhishek Jain 111 4
java

why many programmers use integer literal on left handside of equality operator?
13 votes 8 answers 241 views
Hi, Many a times in blogs and books, i have seen conditions in if statements like this: if(0 == a.size()){...} or if(-1 == str.indexOf(ch)){...} Is there any performance advantage in using ...
asked 3 hours ago nash 68 3
java programming-languages

50,290 questions tagged java

XpoLog Analysis Platform
Find where others just search

Internet | Geschützter Modus: Aktiv 100%

<http://stackoverflow.com/>

Publishing (advanced)

I have strong opinions

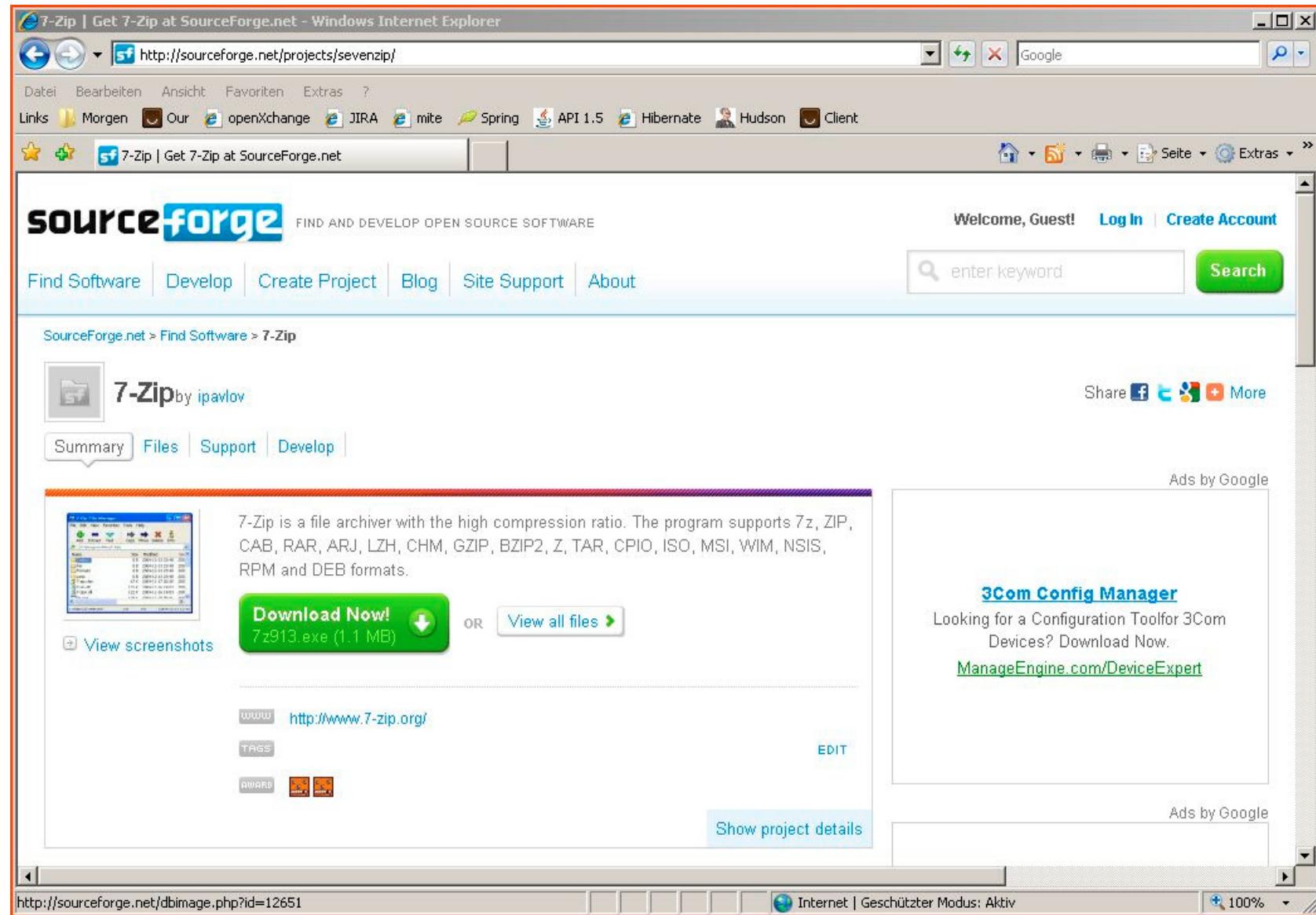


TM

open source

Open Source

- Portal Sites
- Defined Development Process
- Mailing List/Forum
- Wiki
- Issue Tracker
- Review
- Code Repository



http://sourceforge.net/ 40

[#RADAR-736] Vortrag IT Systeme im Wissensmanagement in der Softwareentwicklung - System One - Microsoft Internet Explorer

Datei Bearbeiten Ansicht Favoriten Extras ?
Zurück Suchen Favoriten Medien Tag Google PK Code SP ÖGV1 ÖGV2 UCI Celica SLAY Radio Scala API eBay >

Adresse: https://jira.systemone.at/browse/RADAR-736?page=com.atlassian.jira.plugin.system.issuetabpanels%3Acomment-tabpanel

Links Pending CC Monat Tag Google PK Code SP ÖGV1 ÖGV2 UCI Celica SLAY Radio Scala API eBay >

Peter Kofler | Quick Search + Create Issue

JIRA Dashboards Projects Issues Agile Administration

Issue Details (XML | Word | Printable)

Radar

Vortrag IT Systeme im Wissensmanagement in der Softwareentwicklung

Created: 2010-05-28 16:21 Updated: Yesterday 17:32

Component/s: None
Affects Version/s: None
Fix Version/s: Iteration 9

Time Tracking:

Original Estimate:	3 days, 6 hours
Remaining Estimate:	3 days, 6 hours
Time Spent:	Not Specified

Rank: 249

Description [x Hide](#)

Wie Du weisst unterrichte ich an der FH IT Systeme im Wissensmanagement und ich habe darüber nachgedacht den StudentInnen einen etwas anderen Vortrag zuzumuten: IT Systeme im Wissensmanagement in der Softwareentwicklung.

Hättest Du Lust das zu machen? Es geht um ca. 45 Minuten Vortrag, darum welche Tools und Prozesse verwendet werden um Wissen in der Softwareentwicklung weiterzugeben. Ich denke Du könntest das super machen.

So, nochmal zur Konkretisierung, weil wir das am Mittwoch nicht mehr geschafft haben:

Fertig Internet



Code

Business Process

Business Domain

Full History

Ruby - xcopy.rb - Eclipse SDK

File Edit Navigate Search Project Tomcat Run Window Help

Ruby Structure Compare

Ruby Script Xcopy move_tree

Ruby Source Compare

xcopy.rb [33:7888e1d5f8a6]

```
def self.copy_tree(source, dest, verbose=false)
  File.makedirs(dest)
  Dir.entries(source).each do |e|
    name = source + '/' + e
    if File.file? name
      File.copy(name, dest, verbose)
    elsif e != '.' && e != '..'
      copy_tree(name, dest+ '/' + e, verbose)
    end
  end
end

# Move a whole directory tree from _source_ to _dest_
# Does not move the whole folder but every file inside
def self.move_tree(source, dest, verbose=false)
  File.makedirs(dest)
  Dir.entries(source).each do |e|
    name = source + '/' + e
    if File.file? name
      File.move(name, dest, verbose)
    elsif e != '.' && e != '..'
      move_tree(name, dest+ '/' + e, verbose)
      Dir.delete(name)
    end
  end
end

# Delete a whole tree starting in _folder_ directory
```

xcopy.rb [13:c881f8475979]

```
# Copy a whole directory tree from _source_ to _dest_
def self.copy_tree(source, dest, verbose=false)
  File.makedirs(dest)
  Dir.entries(source).each do |e|
    name = source + '/' + e
    if File.file? name
      File.copy(name, dest, verbose)
    elsif e != '.' && e != '..'
      copy_tree(name, dest+ '/' + e, verbose)
    end
  end
end

# Delete a whole tree starting in _folder_ directory
def self.delete_tree(folder)
  raise "not a folder: #{folder}" unless File.directory?(folder)
  Dir.entries(folder).each do |e|
    name = folder + '/' + e
    if File.file? name
      File.delete name
    elsif e != '.' && e != '..'
      delete_tree(name)
    end
  end
  Dir.rmdir folder
end
```

Cause Tracking

Typical Usage

Implicit Documentation



Enterprise

Enterprise means

Big

(Dan North)

More (Old) Books

Email Hell

(Redundant) Wikis

And Much More...

- More Code
 - Millions of Lines
 - Too Much to Review
- Years of History
- Thousands of Issues
- Longer Checklists (if any)
- ~~Dumps of Office Documents~~

Communication

- ~~Official Meetings~~
- Scrum Meetings (Daily Standup)
- Jour Fixes
- “Breaks”
- Spontaneous Discussions
- Asking and Answering
- Mentoring



(No) Large Conferences

(No) Google Friday

Developer Presentations

Internal Workshops

(Domain/Tech)

(No) External Training

Conclusion



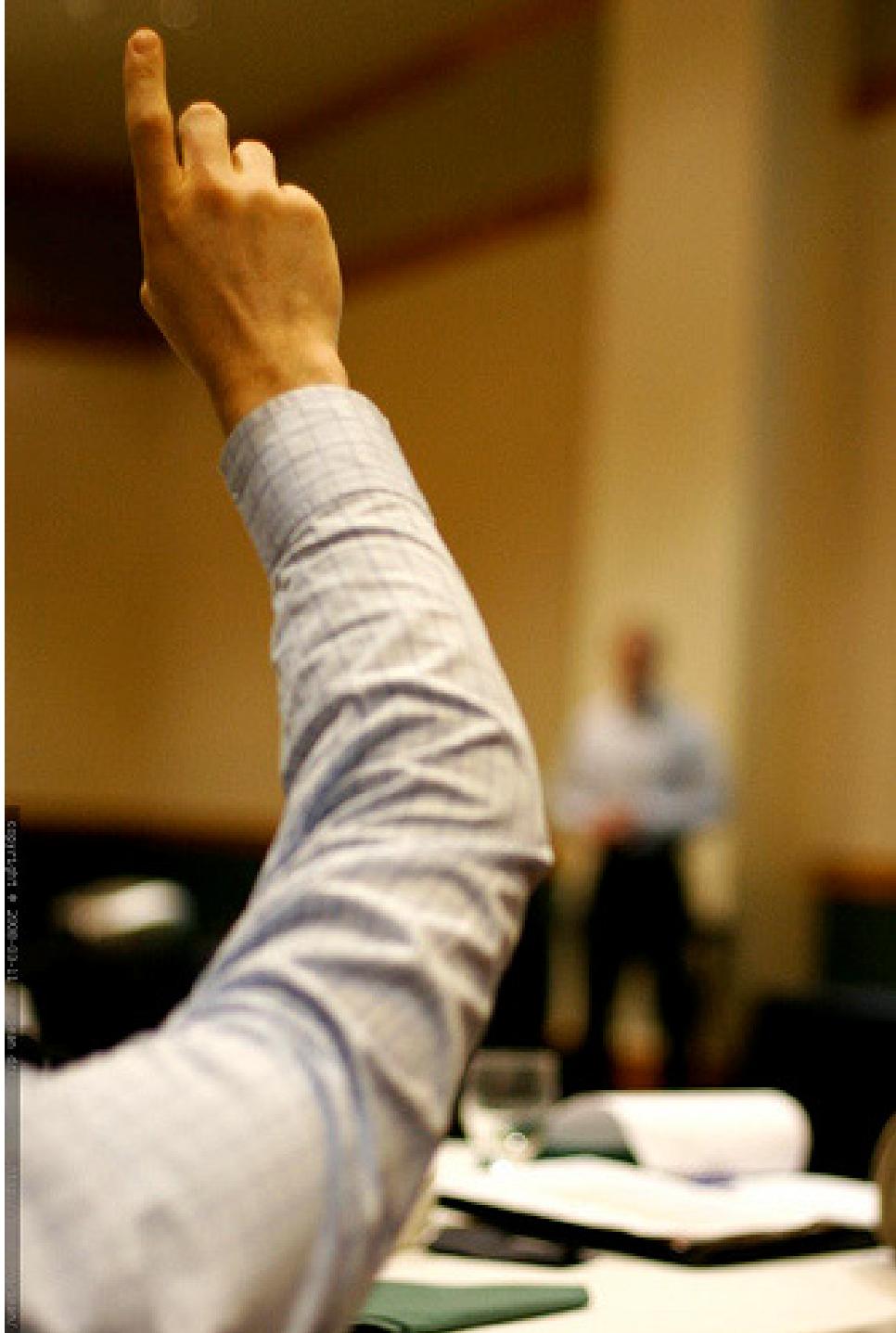
18 Months

Look For Dedicated Individuals



Don't Manage (You Can't)

Support Them



Thank
You

<http://www.systemone.net/>

<http://www.code-cop.org/>

Links #1

Mindset

- http://en.wikipedia.org/wiki/Software_craftsmanship
- <http://blog.objectmentor.com/articles/2008/08/14/quintessence-the-fifth-element-for-the-agile-manifesto>
- <http://pragprog.com/titles/ahptl/pragmatic-thinking-and-learning>
- <http://blog.bigswingingdeveloper.com/2009/08/what-to-do-when-you-f-up-big-time.html>
- <http://andrewboland.blogspot.com/2008/08/five-levels-of-ignorance.html>

18 Months

- http://java.sun.com/developer/technicalArticles/Interviews/community/kabutz_qa.html

Personal ‘Get It’

- <http://www.heise.de/>
- <http://www.google.com/reader/view/>

Links #2

- <http://www.infoq.com/>
- <http://www.se-radio.net/>
- <http://www.parleys.com/>
- <http://www.ted.com/>
- [http://en.wikipedia.org/wiki/Kata_\(programming\)](http://en.wikipedia.org/wiki/Kata_(programming))
- <http://stackoverflow.com/questions/1003940/learn-a-new-language-every-year>
- http://en.wikipedia.org/wiki/Fraggle_Rock#Marjory.2C_the_Trash_Heap

Personal ‘Keep It’

- <http://delicious.com/>
- <http://stackoverflow.com/questions/78756/what-do-you-use-to-keep-notes-as-a-developer>
- http://en.wikipedia.org/wiki/Plain_text
- <http://www.cheat-sheets.org/>
- <http://refcards.com/>

Links #3

- <http://refcardz.dzone.com/>
- <http://www.rememberthemilk.com/>
- http://en.wikipedia.org/wiki/Visual_Basic_for_Applications
- <http://www.autoitscript.com/>
- http://en.wikipedia.org/wiki/Unified_Modeling_Language
- http://freemind.sourceforge.net/wiki/index.php/Main_Page

Community

- <http://meta.stackoverflow.com/questions/10092/why-do-you-help-in-stackflow>
- <http://twitter.com/>
- <https://www.dropbox.com/>
- <http://jsug.at/>
- http://wiki.eclipse.org/Eclipse_DemoCamps_Helios_2010/Vienna
- <http://ejugdays.ejug.at/>

Links #4

- <http://groups.google.de/>
- <http://stackoverflow.com/questions/1571013/snippets-for-productivity-collect-good-code>
- <http://codesnippets.joyent.com/>
- http://en.wikipedia.org/wiki/Code_review
- <http://refactormycode.com/>
- <http://stackoverflow.com/>

Open Source

- <http://sourceforge.net/>
- <http://github.com/>
- <https://code.google.com/>
- <http://www.atlassian.com/software/jira/>

Code

- http://en.wikipedia.org/wiki/Software_configuration_management

Links #5

- <http://subversion.tigris.org/>
- <http://www.atlassian.com/software/fisheye/>
- http://en.wikipedia.org/wiki/Unit_testing
- <http://www.joelonsoftware.com/articles/fog0000000069.html>

Enterprise

- <http://www.spinellis.gr/blog/20100312/>
- <http://stackoverflow.com/questions/2832191/what-tools-do-you-use-to-share-knowledge-amongst-developers-in-your-company>
- <http://stackoverflow.com/questions/178110/what-is-the-best-way-to-remember-technical-knowledge-in-the-organization>
- <http://www.mountaingoatsoftware.com/scrum/daily-scrum>

Conclusion

- <http://sciencev1.orf.at/science/liessmann/144545>

Images #1

- spray face: <http://www.flickr.com/photos/iangallagher/4115047191/>
- shoe maker: <http://www.flickr.com/photos/tbatty/1450209613/>
- shoe factory: <http://www.flickr.com/photos/94693506@N00/4643248587/>
- man at beach: <http://www.flickr.com/photos/kevinkemmerer/2548414335/>
- books: <http://www.flickr.com/photos/raymondyee/591991800/>
- conference: <http://www.flickr.com/photos/sonicwalker/2418497199/>
- experiment: <http://www.flickr.com/photos/delis/4073612774/>
- waste dump: <http://www.flickr.com/photos/sanmartin/2682745838/>
- boxes: <http://www.flickr.com/photos/1suisse/2763887636/>
- pen and note book: <http://www.flickr.com/photos/paulworthington/82648702/>

Images #2

- todo list: <http://www.flickr.com/photos/kylesteeddesign/3724074594/>
- lever to automatic: <http://www.flickr.com/photos/aquilaonline/510921786/>
- sheep: <http://www.flickr.com/photos/slimjim/3316666755/>
- open source: <http://www.flickr.com/photos/27316226@N02/3000888100/>
- matrix code: <http://www.flickr.com/photos/trinity-of-one/20562069/>
- cubicles: <http://www.flickr.com/photos/sundazed/1450388845/>
- education centre: <http://www.flickr.com/photos/kokeshi/234790558/>
- finish line: <http://www.flickr.com/photos/jayneandd/4450623309/>
- racer: <http://www.flickr.com/photos/diekuchars/3690872215/>
- questions: <http://www.flickr.com/photos/seandreilinger/2326448445/>