

Secrets of Code Review

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Agenda

- ▶ **Motivation**
- ▶ **The case for code review**
- ▶ **Benefits**
- ▶ **Problems**
- ▶ **Best Practices**
- ▶ **Summary**

Motivation

Always code as if the guy who ends up maintaining your code will be a violent psychopath who knows where you live.

~Martin Golding

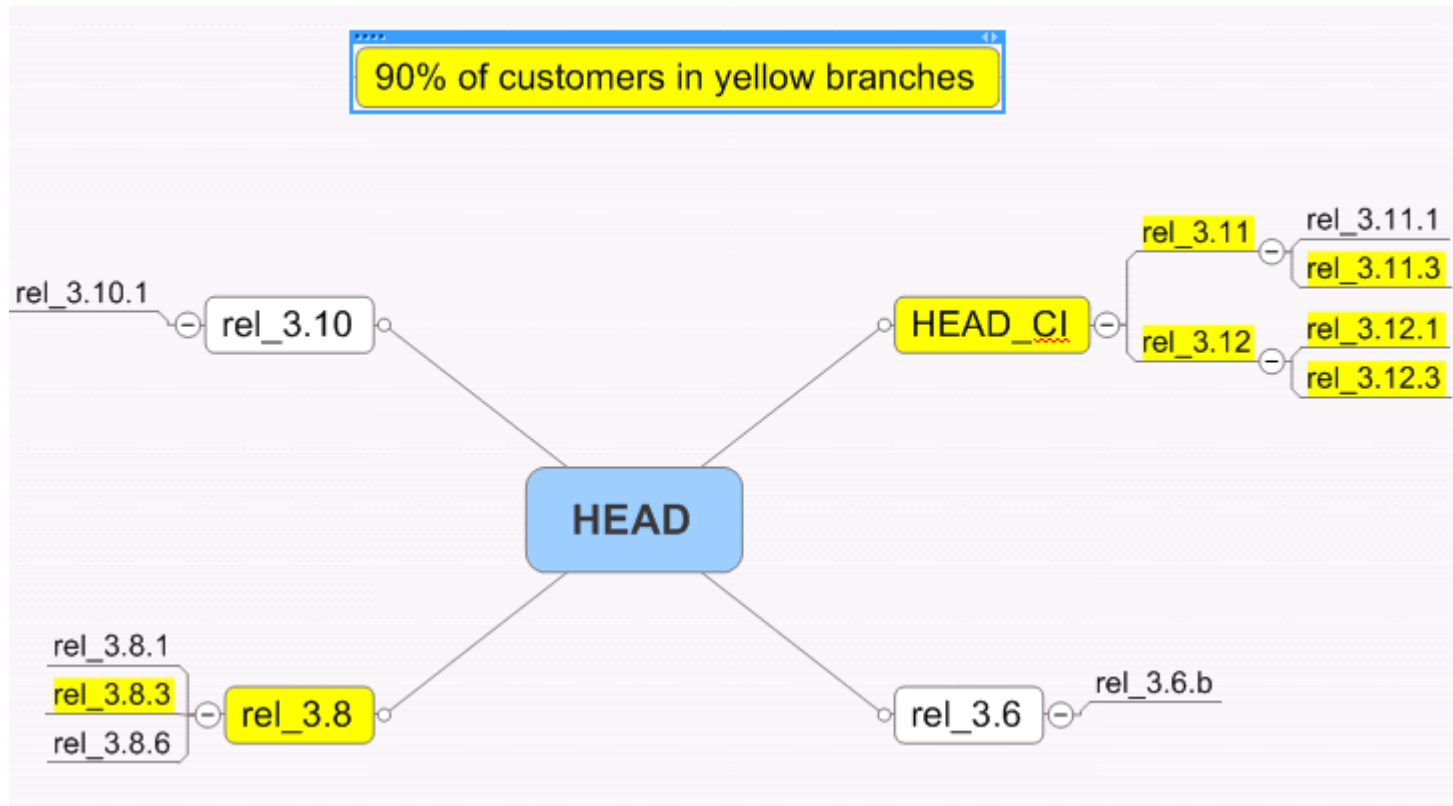
- ▶ **Steps to Do When You've Finished Writing Your Book**
- ▶ **What is the cost of code maintenance?**
- ▶ **Can we prevent bugs?**

MPA – medical process assistant

- ▶ **16 active branches**
- ▶ **34.000 classes**
- ▶ **250 eclipse projects**
- ▶ **About 50 programmers**
- ▶ **12 years old (jdk 1.1)**
- ▶ **More than 100 hospitals**
- ▶ **Austria/Germany/Czech Republic/Serbia**
- ▶ **<http://www.systema.info/en/solutions/mpa-medical-process-assistant/>**

*Programming is like sex. One mistake
and you have to support it for the rest of your life.*
~Michael Sinz

MPA branches



The case for code review

Any fool can write code that a computer can understand. Good programmers write code that humans can understand.

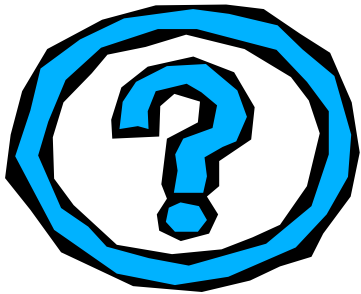
~Martin Fowler

InterventionDao#ensurePriority

► find bugs early & often

after development	code review	qa	rest
463		321	194
463	180	113	32
10\$	25\$	200\$	1000\$

What is bug/defect?



```
if (adapters == null && adapters.length == 0)
    return;
```

```
“Doctor”.equals(role);
role.equals(“Doctor”);
```

*Good code is its own best documentation.
As you're about to add a comment, ask yourself,
"How can I improve the code so that this comment
isn't needed?"*

~Steve McConnell

CatalogImporter.applyParameters

Types of code review

- ▶ **formal inspections**
- ▶ **over the shoulder**
- ▶ **email pass around**
- ▶ **tool assisted (automatic metrics collection, **documentation**)**
- ▶ **pair programming**

Ukaz jupiter, rekni o findbugs ... ;-)

Problems

- ▶ **Programmer's egos**
- ▶ **time spend by preparation and scheduling code review**
- ▶ **how can I make it more difficult**
- ▶ **how to convince XXX to do it**
- ▶ **File's history in VCS**

ProgressEntryPage

Benefits

- ▶ **improved code quality**
- ▶ **fewer defects in code**
- ▶ **improved communication about code base**
- ▶ **education of junior programmers**
- ▶ **Ability to find what is missing**
- ▶ **Ability to detect "wrong places"**

You cannot teach beginners top-down programming, because they don't know which end is up.

~C.A.R. Hoare

Benefits - indirect

- ▶ **shorter development/test cycles**
- ▶ **reduced impact on technical support**
- ▶ **more customer satisfaction**
- ▶ **more maintainable code**

*When debugging, novices insert corrective code;
experts remove defective code.*

~Richard Pattis

Few examples from ZCU

Best practices

- ▶ **slow down reading to detect more defects (size of code is NOT important)**
- ▶ **ommissions are hardest defects to find**
- ▶ **200 LOC per hours (not more than 400)**
- ▶ **tool assisted**
- ▶ **Checklist**
- ▶ **Custom checkstyle checks**

Few examples from ZCU

It is discussion!!!

Should array indices start at 0 or 1?

My compromise of 0.5 was rejected without, I thought, proper consideration.

~Stan Kelly-Bootle

Calendar.getInstance().set(2000, **1**, 1) → 1. **2**. 2000

Calendar.getInstance().set(**2000**, **12**, 31) → 31. **1**. **2001**

Summary

Give it a try

Always code as if the guy who ends up maintaining your code will be a violent psychopath who knows where you live.

~Martin Golding

Questions ...

... and maybe answers



Links

- ▶ <http://www.javaworld.com/javaworld/jw-11-2008/jw-11-checkstyle1.html?page=1>
- ▶ <http://code.google.com/p/jupiter-eclipse-plugin/>
- ▶ **Coding Without Comments -**
<http://www.codinghorror.com/blog/archives/001150.html>
- ▶ **Common Excuses Used To Comment Code**
-
<http://www.codeodor.com/index.cfm/2008/6/18/Common-Excuses-Used-T>
- ▶ <http://smartbear.com/products/development-tools/code-review/features/>

Thank you



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