Secrets of Code Review
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
Programming is like sex. One mistake and you have to support it for the rest of your life.
~Michael Sinz
MPA branches

90% of customers in yellow 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

► find bugs early & often

<table>
<thead>
<tr>
<th></th>
<th>after development</th>
<th>code review</th>
<th>qa</th>
<th>rest</th>
</tr>
</thead>
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<tr>
<td>InterventionDao#ensurePriority</td>
<td>463</td>
<td>463</td>
<td>180</td>
<td>113</td>
</tr>
<tr>
<td></td>
<td>10$</td>
<td>25$</td>
<td>200$</td>
<td>1000$</td>
</tr>
</tbody>
</table>
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
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
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)
► ommitions 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
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~Martin Golding
Questions ...

... and maybe answers
Links


Thank you

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