

# Effective Code Reviews

Code that actually gets reviewed, and feedback that's actually helpful

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# Why Code Review?

- One of the most [cost effective ways to find defects](#)<sup>[1]</sup>
- Finds non-defect coding issues (maintainability, readability)
- Promotes current best practices
- Educational for all involved

[1]: [Code Complete](#), chapter 20

# Tools help, but aren't necessary

You can make `git format-patch` / `svn diff` + email work

# Rules for effective submissions

“Look, that's why there's rules, understand? So that you think before you break 'em.” – Terry Pratchett

# Post small reviews

- Reviewer effectiveness drops off >400 LOC
- Be respectful of the reviewer's time

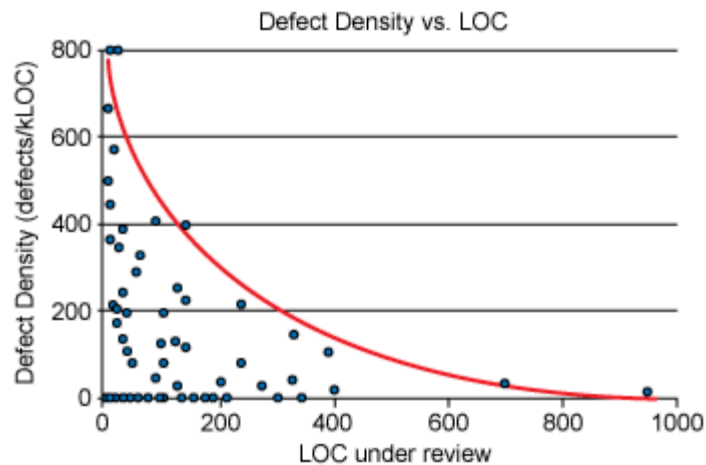


Chart from [SmartBear](#)

# Post even smaller commits

- Don't lump several different changes into a single commit
  - Put style/formatting changes into a different commit
  - Break up into logical commits (things you fix along the way, vs. the intent of your submission)
- `git rebase` and `git commit --fixup` is your friend

# Write good commit messages

Commit history is the guide to why the code is the way it is.



**Programming Wisdom**

@CodeWisdom

Following



"Debugging is like being the detective in a crime movie where you are also the murderer." - Filipe Fortes

3:03 PM - 16 Aug 2017

1,215 Retweets 2,020 Likes



# How to Write a Git Commit Message

From Chris Beams:

1. Separate subject from body with a blank line
2. Limit the subject line to 50 characters
3. Capitalize the subject line
4. Do not end the subject line with a period
5. Use the imperative mood in the subject line
6. Wrap the body at 72 characters
7. Use the body to explain *what* and *why* vs. *how*



# Use the imperative mood in the subject line

- “spoken or written as if giving a command or instruction”
- Examples (again, from Chris Beams)
  - Refactor subsystem X for readability
  - Update getting started documentation
  - Remove deprecated methods
  - Release version 1.0.0
- Should complete the sentence “If applied, this commit will {{subject-line}}.”

# Use the body to explain *what* and *why* vs. *how*

- *how* is either implicit in your code, or belongs in code comments
- *what* and *why* provide context; gives reasons for the change
  - What did the code do before the change?
  - Include references to relevant issues in issue tracker
    - Tooling can link commits/builds/issues

# how is at best useless, or at worst misleading

```
commit 6ab909cdb8426c3c05c8ee253bd5002a77f3172b (HEAD ->
Author: David M. Lee <leedm777@yahoo.com>
Date:   Wed Aug 16 13:44:32 2017 -0500
```

Add 7 to x instead of 5

```
diff --git a/foo.js b/foo.js
index 50be92d2..a4ab74ed 100644
--- a/foo.js
+++ b/foo.js
@@ -1,1 @@
-x = x + 5;
+x = x + 6;
```

# *why* is actually helpful

```
commit 8c5bc990de82b9c5ec910e582643a9cd9c407bbf (HEAD ->
Author: David M. Lee <leedm777@yahoo.com>
Date:    Wed Aug 16 13:44:32 2017 -0500
```

Increase timeout increment

When we need to bump up our timeouts (sadly in a variety of cases we weren't increasing it quite enough to account for slow

See XYZ-8373

```
diff --git a/foo.js b/foo.js
index 50be92d2..a4ab74ed 100644
--- a/foo.js
+++ b/foo.js
@@ -1,1 @@
-x = x + 5;
+x = x + 6;
```

# Bitbucket/GitHub: Use mentions to get someone's attention

- Some of us get too many emails to reasonably handle



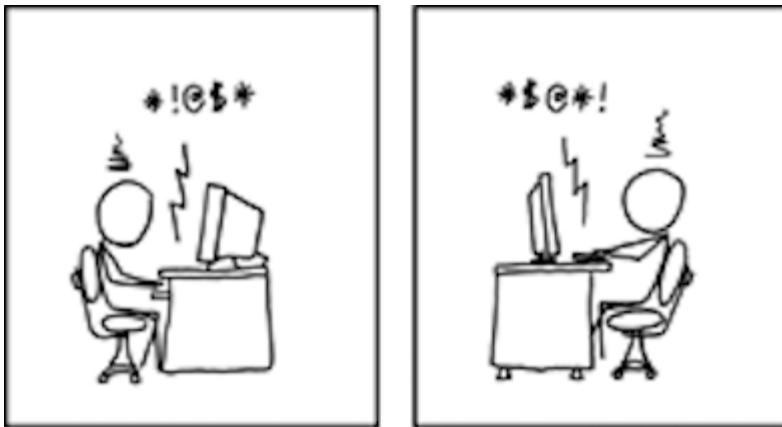
- Mentions help us filter signal from noise

<input type="checkbox"/>	Matches: <b>(cc:dlee@ OR to:dlee@) AND NOT from:(bamboo OR stash OR wiki OR jira OR airbrake)</b> Do this: Apply label "To Me"
<input type="checkbox"/>	Matches: <b>(from:(stash OR jira) "mentioned you")</b> Do this: Apply label "To Me"

# Rules for effective reviewing

“more what you'd call 'guidelines' than actual rules”

# Be polite



"It's easier to be an asshole to words than to people." - Randall Munroe, [XKCD #438](#)

# Take your time; take frequent breaks

- Don't spend more than an hour at a time code reviewing
- Spend the time to properly understand and review the code





# Don't blindly approve changes



marked the pull request as

**APPROVED**

A moment ago

---



**OPENED**

the pull request

1 min ago

---

- If you don't want to review, just remove yourself from it
- If you're not familiar enough to give it a 👍, just leave feedback and leave it unapproved

# Use a checklist

- Are there unit tests?
- Is the code clear? Maintainable?
- Does the code achieve the intended purpose?
- Should docs be updated? (readme, changelog, api docs, ...)

# BitBucket: Use tasks to require a follow-up



**David Lee**

It's bad enough that we have to hard-code  
going to be a maintenance problem wh

We should extract the price tiers to an a

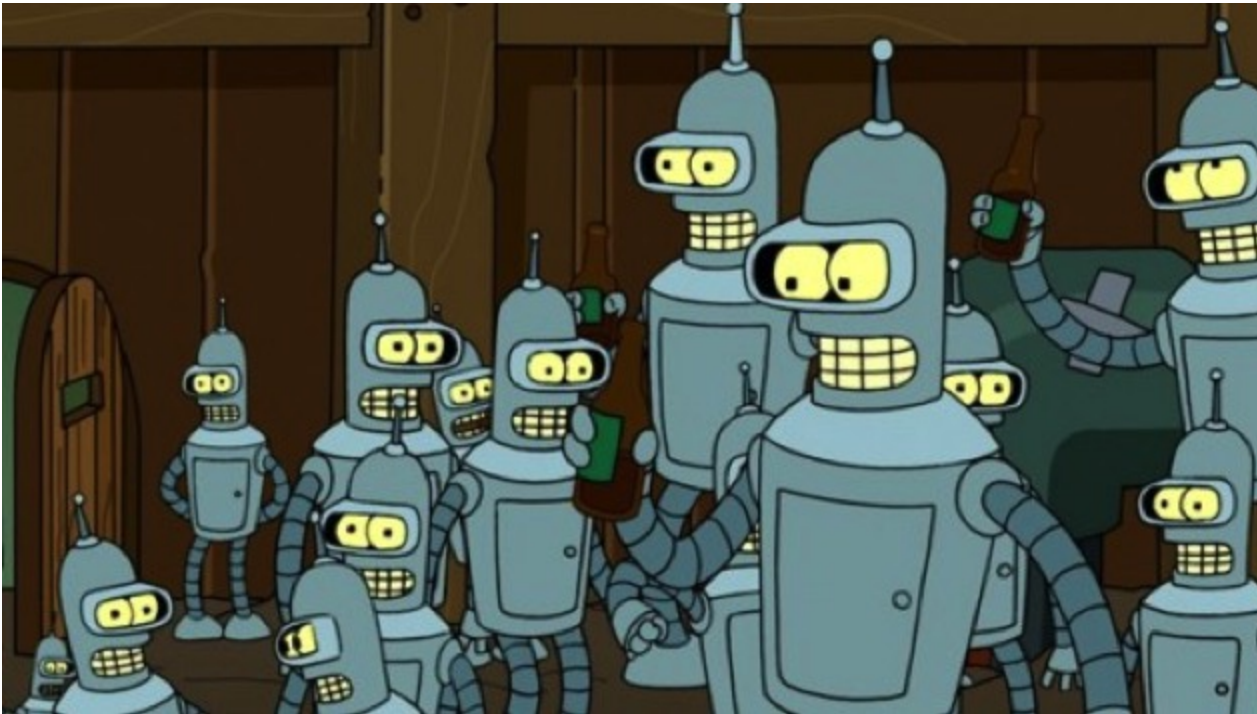
Reply · Edit · Create task ·  Patrick Ande

---

☐ Extract price tiers into an array

Edit · Delete

# Rules for effective tooling



# Integrate CI tools with code review

- Humans can focus on just reading the code
  - Let the bots run the tests and linters

## ITD-5379 dcs fulfillment robustness

Overview

Diff

Commits

### Details



**David Lee** created a pull request Yesterday

- Cleanups and formatting
  - prefer implicit returns
  - prefer interpolation
  - snake\_case
  - formatting


🔄 1 build ✓

🔧 ITD-5379

🔗 [Learn more](#)

# Bitbucket: Set minimum criteria for merging

## Pull requests


☒ Requires   approvers

At a minimum, pull requests must be approved by the number of users above before it can be merged

☐ Requires all reviewers to approve the pull request

All reviewers that are added to a pull request must approve the pull request before it can be merged

☒ Requires all tasks to be resolved

☒ Requires a minimum of   successful builds

If there are more than the specified number of builds, all of them will have to be successful in order to merge the pull request

- Don't overdo it; if it's too much trouble devs will find a way to avoid it

# Bitbucket: Set default reviewers for your repos

No one should ever miss a PR.

# Questions?





# References

- [Code Complete: A Practical Handbook of Software Construction](#), Steve McConnell
- [Best Practices for Code Review](#), SmartBear
- [How to Write a Git Commit Message](#), Chris Beams
- [XKCD-438](#), Randall Munroe
- Futurama, Matt Groening