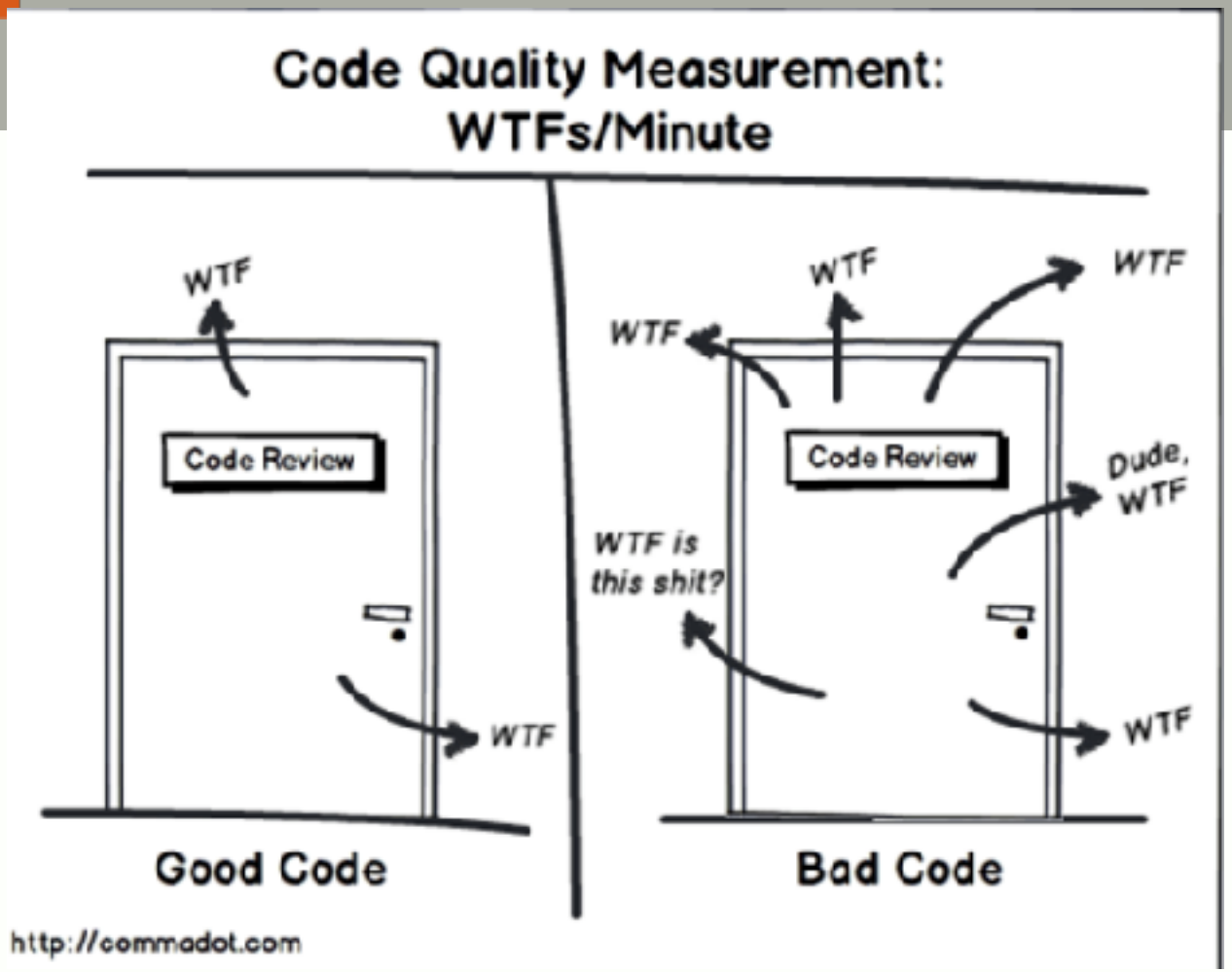
Code Quality Measurement:
WTFs/Minute
WTF
Code Review
WTF
Good Code
WTF
WTF
WTF
WTF
Code Review
Dude,
WTF
WTF is
this shit?
WTF
Bad Code
http://commadot.com

Code Review

- “Code review is having other people look at your code in order to find defects.”

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Code Review Pros and Cons

+ prevents releasing bugs
+ ensures architecture / code quality
+ leads to personal development

- takes time
- is impractical when reviewer doesn't know domain
- hurts feelings

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Formal Inspection

- First developed by Michael Fagan in the mid 1970's.
- Very Specific Heavyweight process with 4 roles and 7 steps

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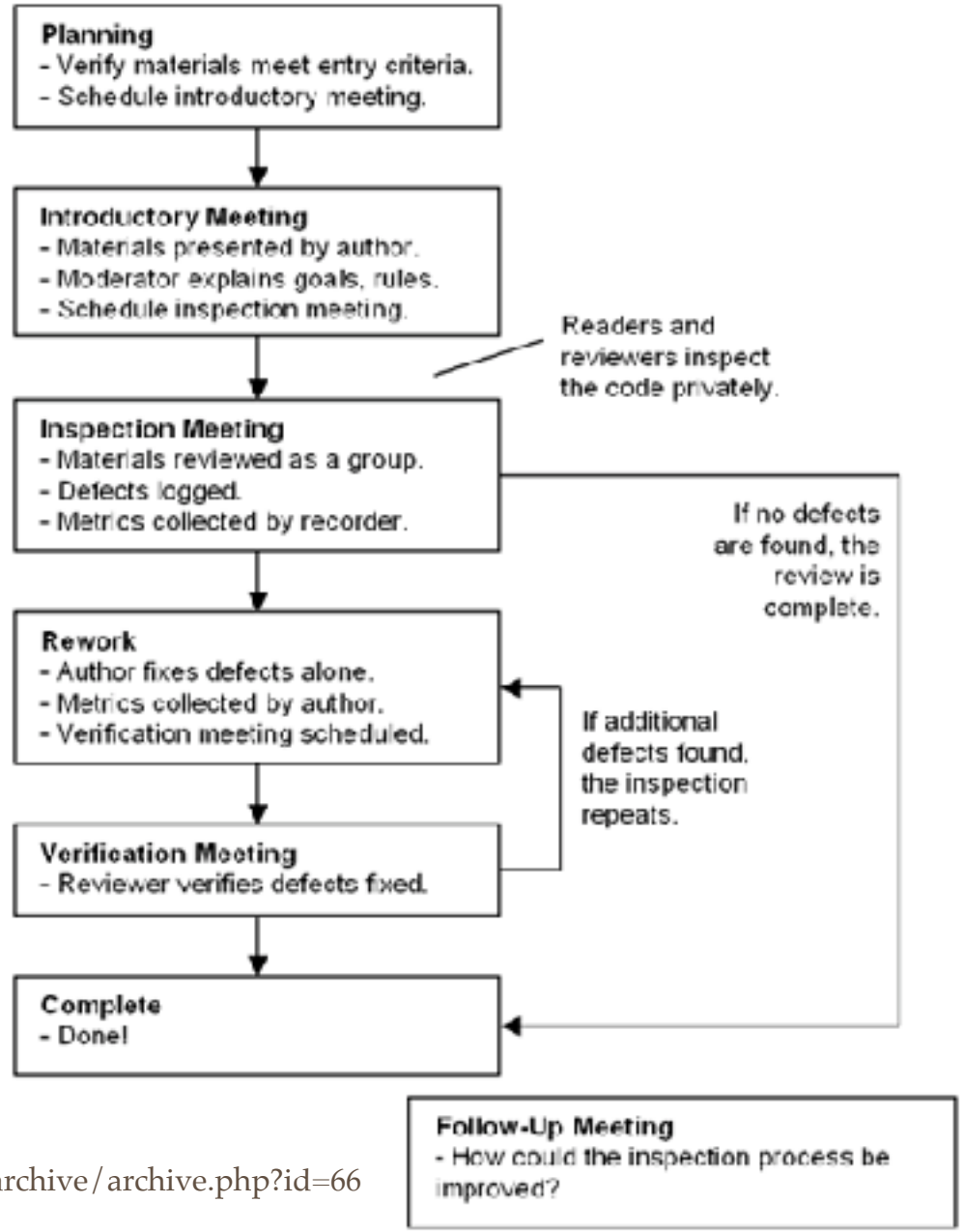
A Typical Formal Inspection Process



http://www.methodsandtools.com/archive/archive.php?id=66

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Formal Inspection

- It Works, but is expensive.
- 9 person-hours per 200 lines of code
- Very impractical for today's realities

Light Weight Approaches

- Over the Shoulder
- Pair Programming
- Pull Requests

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Over the Shoulder

- Reviewer sits with the developer and looks “over their shoulder” at the code.
- The reviewer can give informal feedback which can then be incorporated immediately if possible
- Heard about duck-debugging?

Over the Shoulder

+ Easy to Implement
+ Fast to Complete
+ Easy to quickly incorporate changes

- Reviewer cannot review at their own pace
- No Verification
- Reviewer only sees that developer shows them

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Pair Programming

- Code is written by a pair, so Code Review is “Baked In” to the process

Pair Programming

+ Great for finding bugs and promoting knowledge transfer
+ Review is in-depth

- Reviewer is not objective
- Hard to do remotely
- No Verification

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Pull Requests

- Code is peer reviewed as a part of the Pull Request process
- No pull request should be accepted without being reviewed **by a different developer**

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Pull Requests Pros and Cons

+ Can be enforced by Version Control Practices
+ PR serves as verification of review
+ Can be done asynchronously
+ Reviewers can see all source code

- Might be hard to understand without explanation
- Most important changes can be lost with lots of small insignificant changes

Peer Review Best Practices: Architecture/Design

- Single Responsibility Principle
- Code Duplication
- Squint Test
- Leave Code Better
- Potential Bugs
- Error Handling
- Efficiency

https://www.kevinlondon.com/2015/05/05/code-review-best-practices.html

Peer Review Best Practices: Style

- Method Names
- Variable Names
- Function Length (~20 lines)
- Class Length (<100 lines)
- File Length
- Commented (out) Code
- Number of Method Arguments (<4)
- Readability (do I have to pause?)

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Peer Review Best Practices: Testing

- Test Coverage
- Testing at the right level
- Meets requirements

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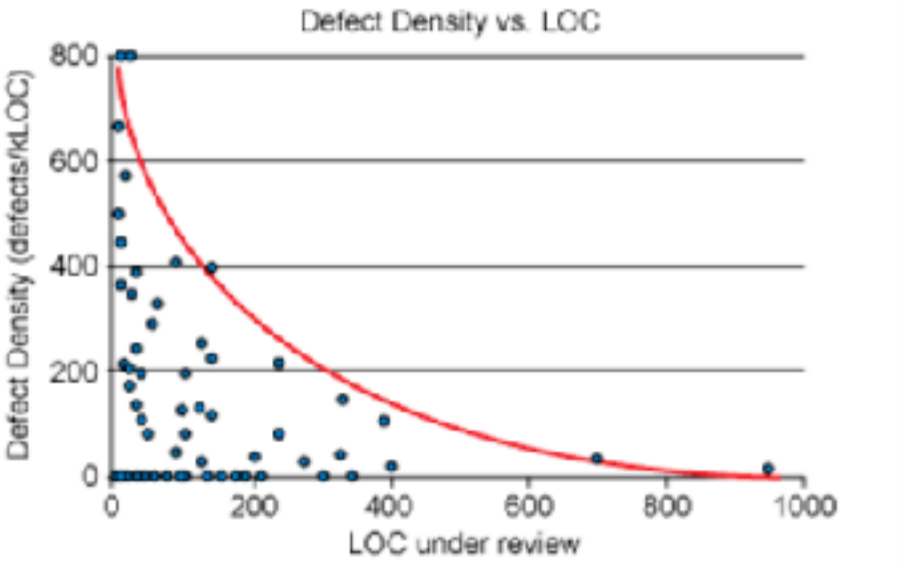
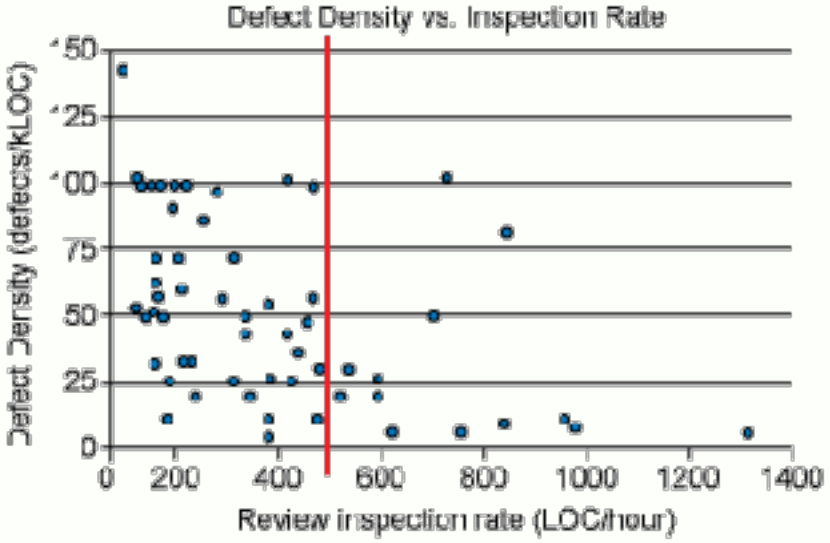
Practical Suggestions

- Review < 400 LOC at a time
- Don't review > 60 min at a time
- Use a Peer Review Checklist (should be domain/language specific)
- Follow up with review comments
- Positive review culture

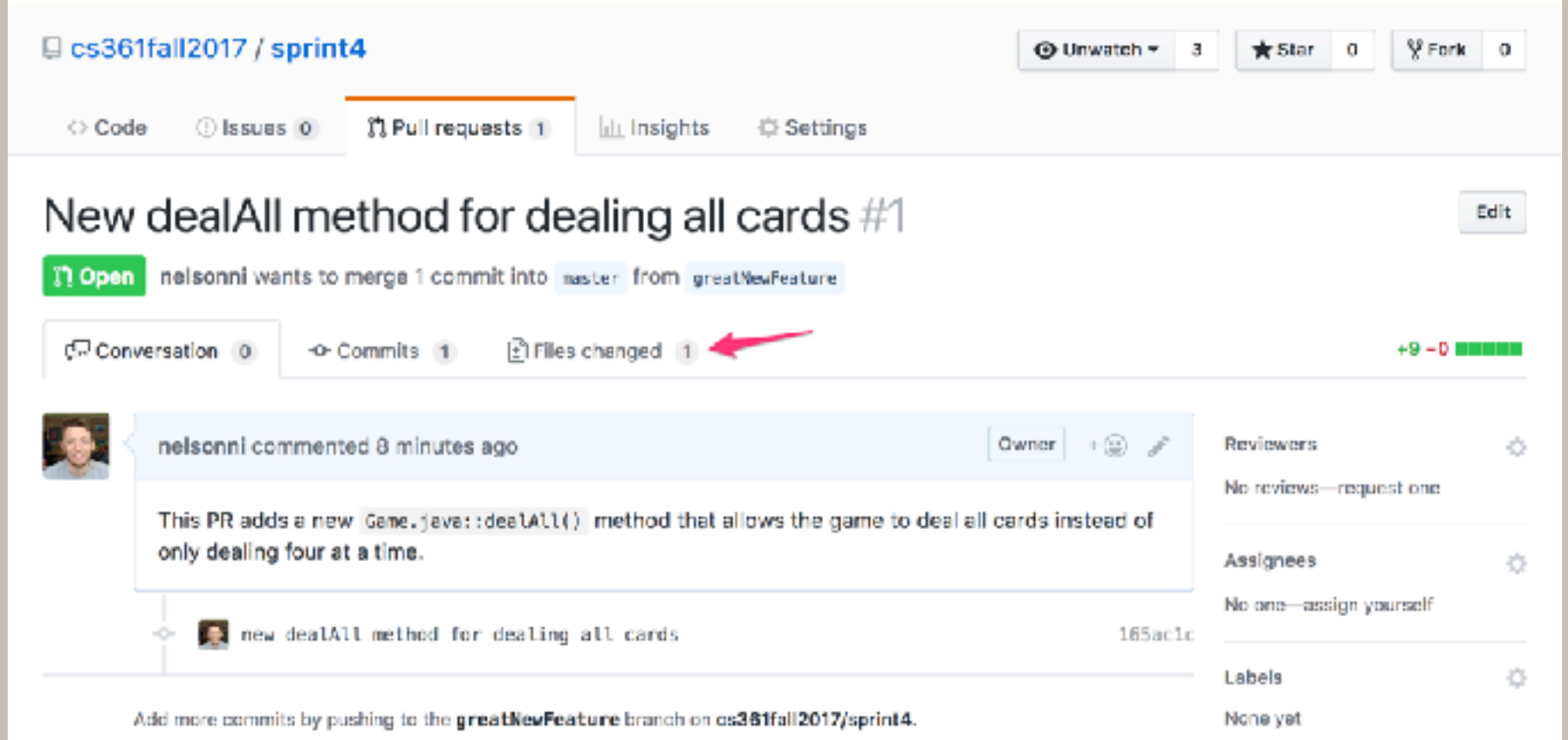




https://smartbear.com/learn/code-review/best-practices-for-peer-code-review/

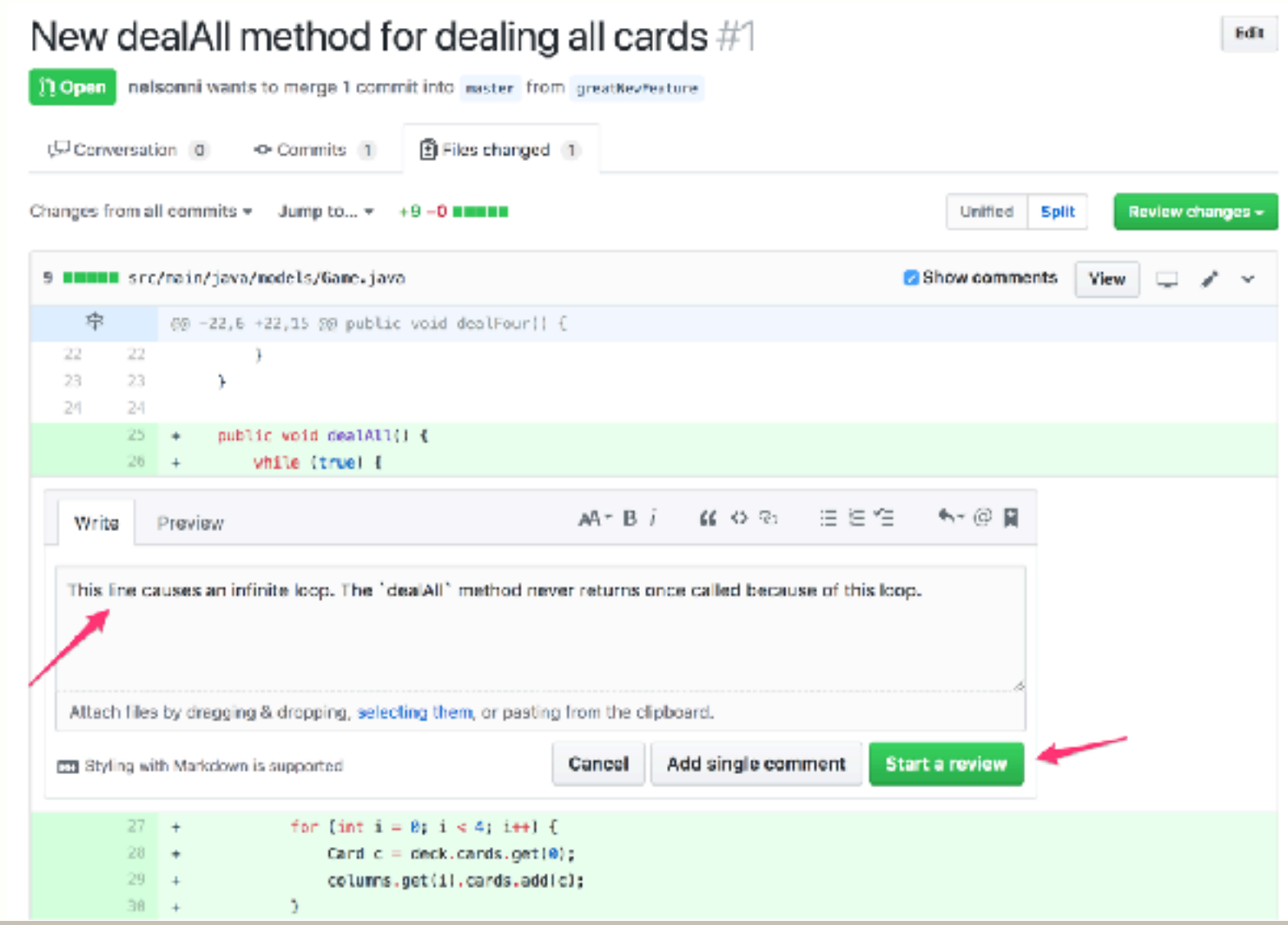
For Sprint 4

Go to a/the specific File changed in the PR



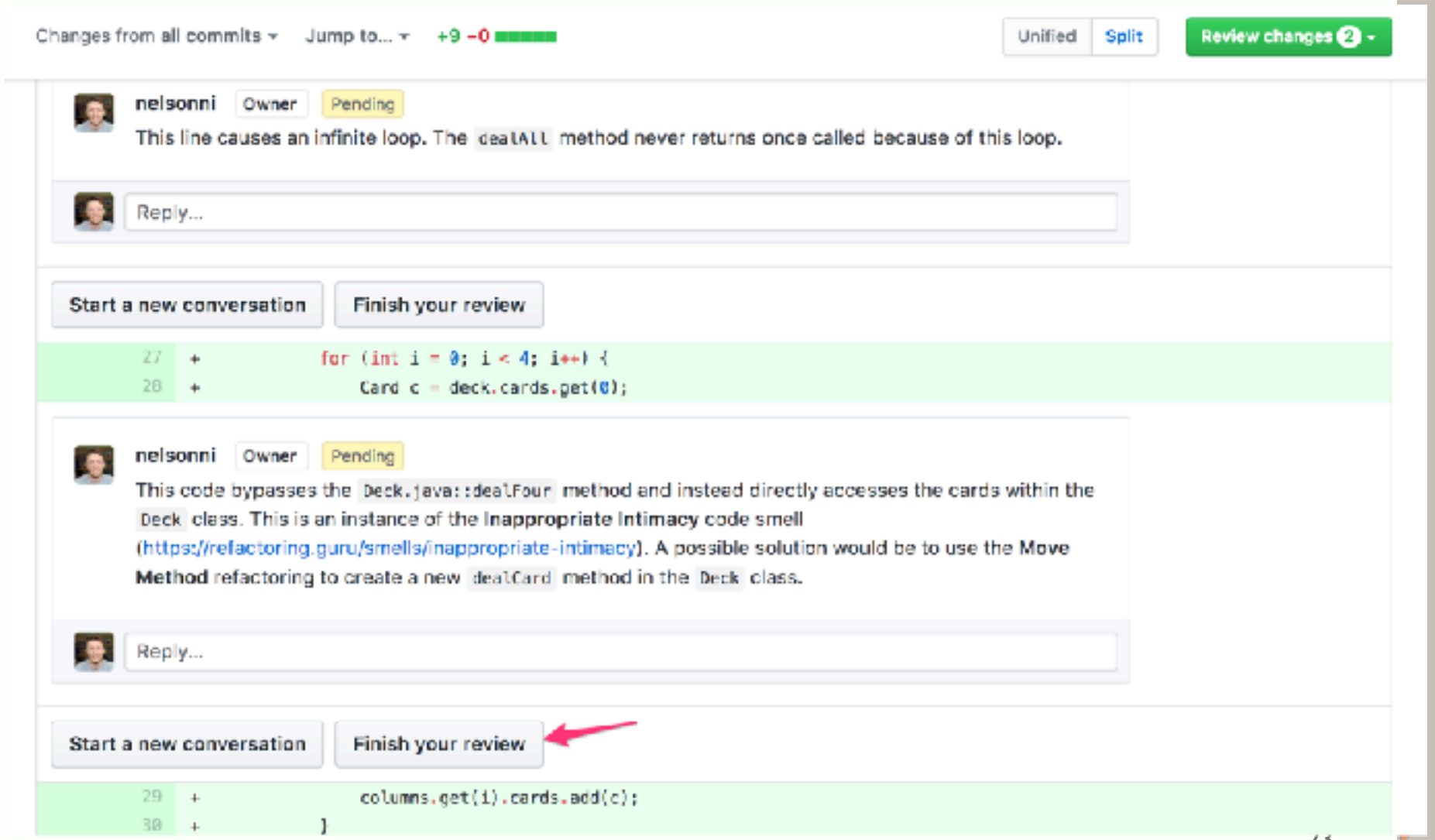
Select the line you want to comment on

Write your “constructive” comment



You can collect comments

Finalize your review

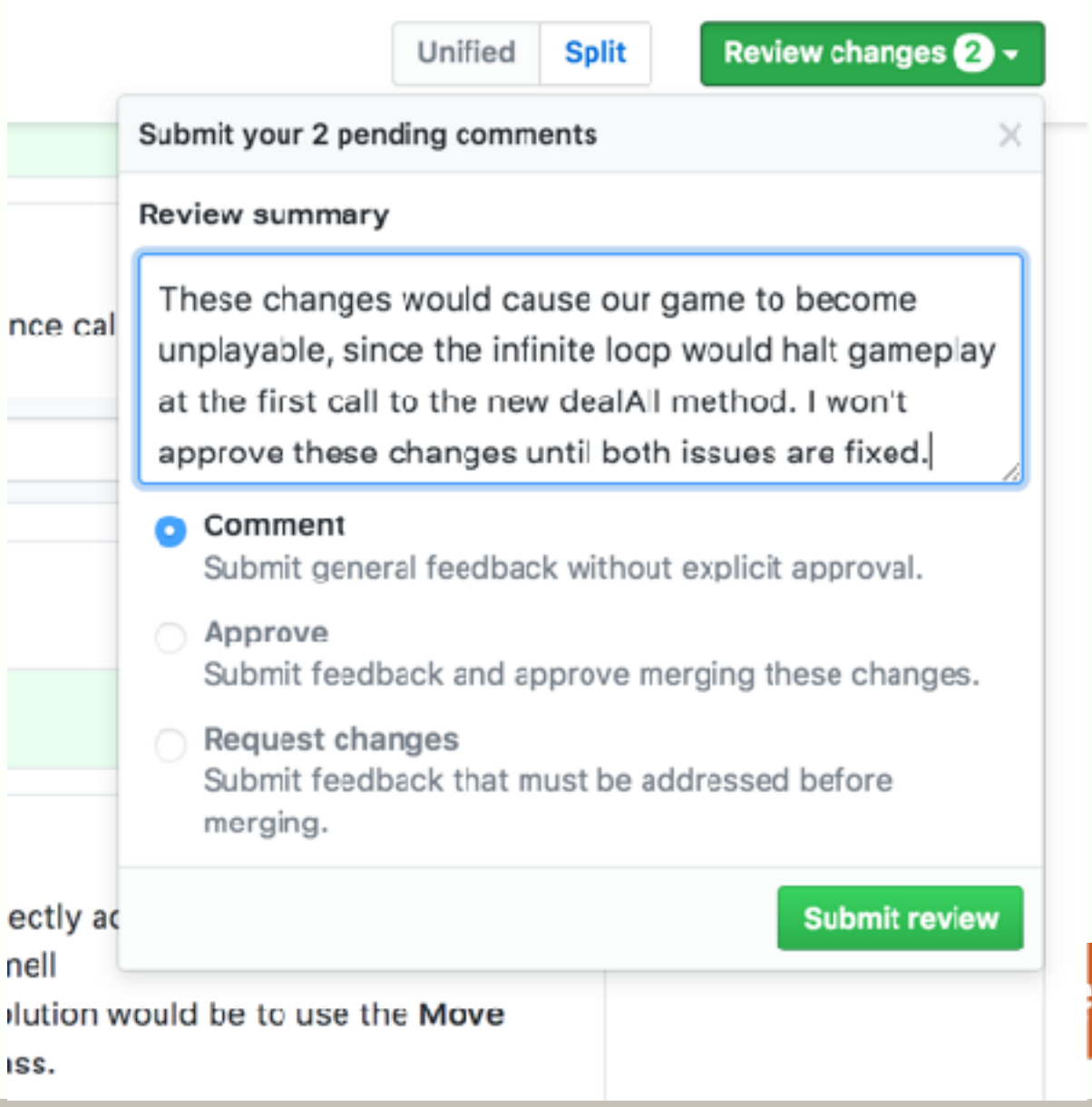


Finalize your review

Summarize all your low level comments

Request change or Comment based on what you want

Approve



Your Turn (in pairs)

- Open a pull request by Nick in Sprint 4
- Use the checklist to find problems
  - Method Names
  - Variable Names
  - Function Length (~20 lines)
  - Class Length (<100 lines)
  - File Length
  - Commented (out) Code
  - Number of Method Arguments (<4)
  - Readability (do I have to pause?)

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Thursday

- No Clicker quiz on Thursday
  - Instead make it a Canvas quiz (Testing-Refactoring)
  - Extra credit
  - Due on Friday

Thank for being a great class!!!

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