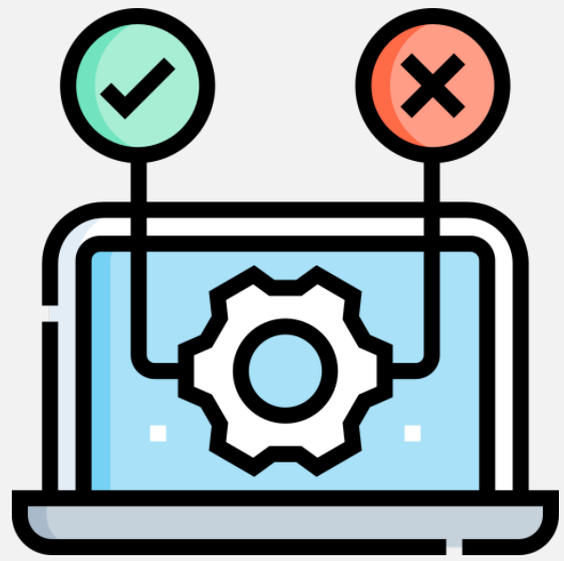
CEN 5016:
Software
Engineering

Spring 2026

University of
Central Florida

Dr. Kevin Moran

Week 3- Class II:
Software Teams & Communication Pt. II



Administrivia

- *Team-forming due by Friday!*
  - If you are not on a team, let me know and I can try to help
- *Assignment 2 Posted*
  - Getting familiar with FakeFlix, the subject of our SDE project
  - Both parts of the Assignment due Fri Jan 30th @ 11:59pm!
  - I have posted resources related to Javascript and React from my past web dev courses to assist.
  - Get started today!!!
- *SDE Project Checkpoint 1 will be posted by Tuesday, will review next week.*

Software Teams & Communication

Every Team Needs a Leader & a Manager

- Note: these are not the same thing.
- A leader inspires with their vision of how everyone could work together.
  - They maintain a positive working environment.
  - They actively create their team culture.
  - They promote fair play among team members.
  - They acknowledge their team members' individuality.
  - They are humble and understand that others may know more than they do.

How to be a Great Manager

- Managers handle work assignments and day-to-day scheduling.
- Managers find resources to support their team's tasks.
- Managers continuously improve their team's processes.
- Managers allow team members to work autonomously, without micromanaging them.
- Managers facilitate communicate between team members.

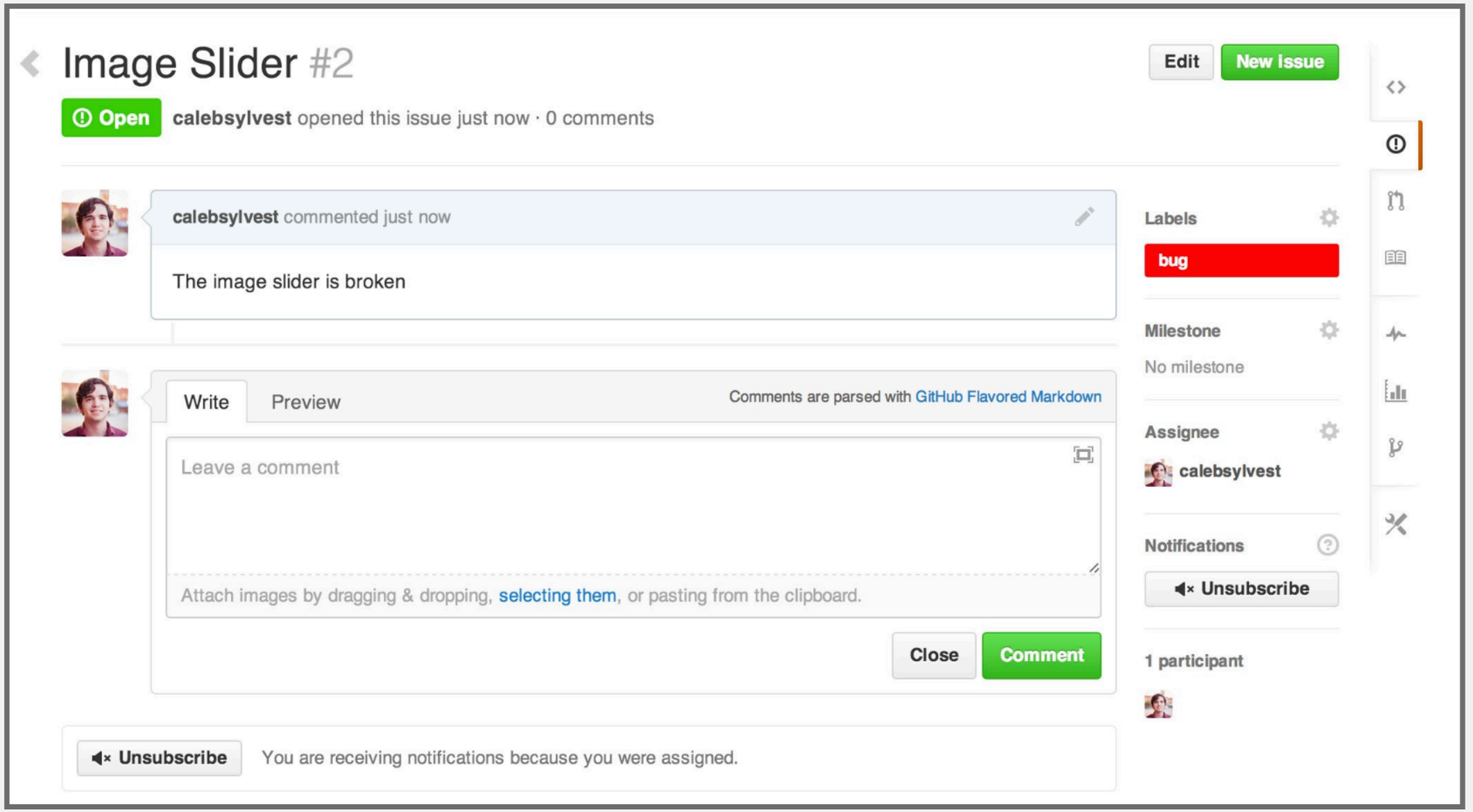
Choosing a Team Leader

- Some leaders are respected for technical excellence.
- Some leaders are chosen based on past accomplishments.
- Some leaders have high EQ (emotional quotient) and earn everyone's trust.
- Some leaders ***take*** the position through force of will and because others acquiesce.

Why do you want to be team leader?

Divide Work and Integrate

Is this Issue Useful?

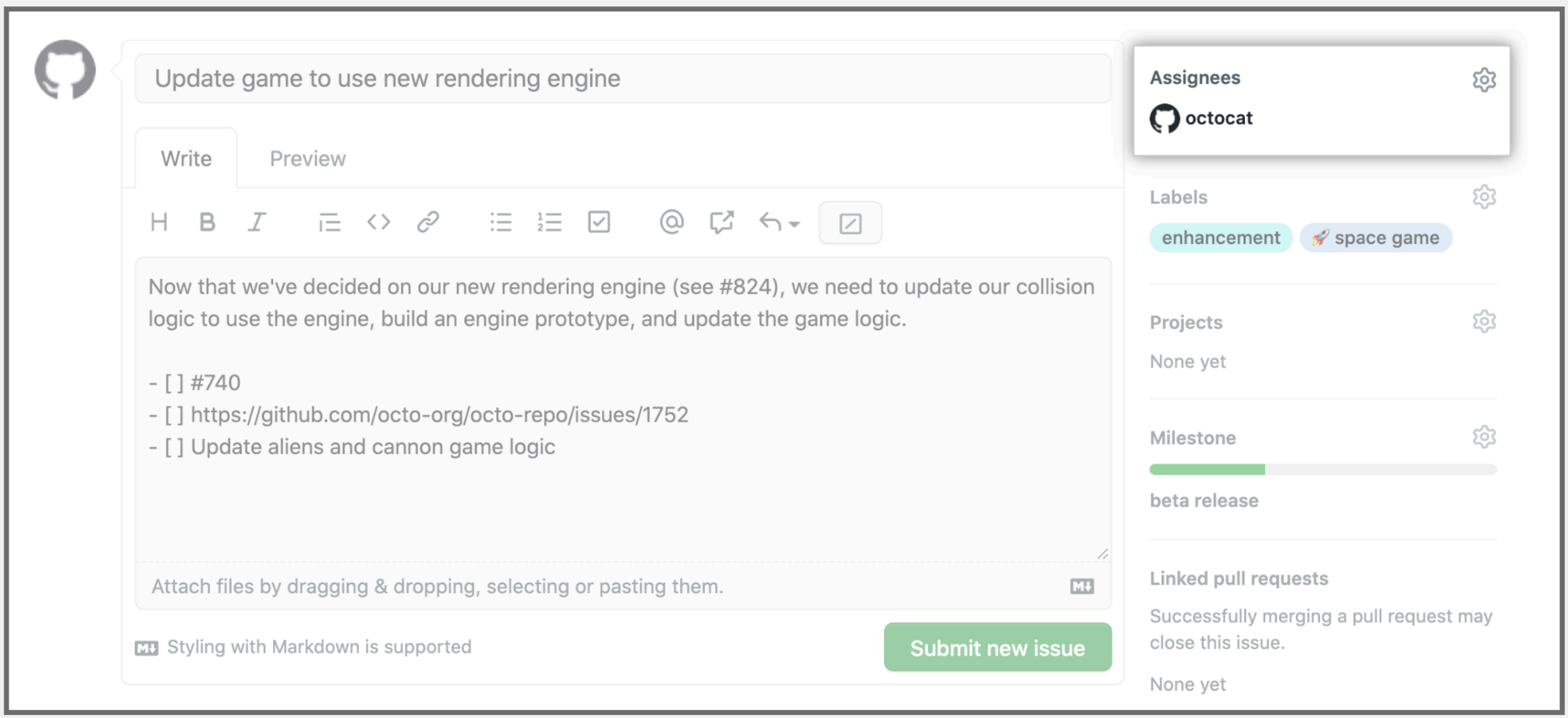


Writing Useful Github Issues

Writing Useful Github Issues

- Issue should include
  - Context: explain the conditions which led you to write the issue
  - Problem or idea: the context should lead to something
  - Previous attempts to solve
  - Solution or next step (if possible)
- Be specific!
  - Include environment settings, versions, error messages, code examples when necessary

@Mention or Assign Appropriate People

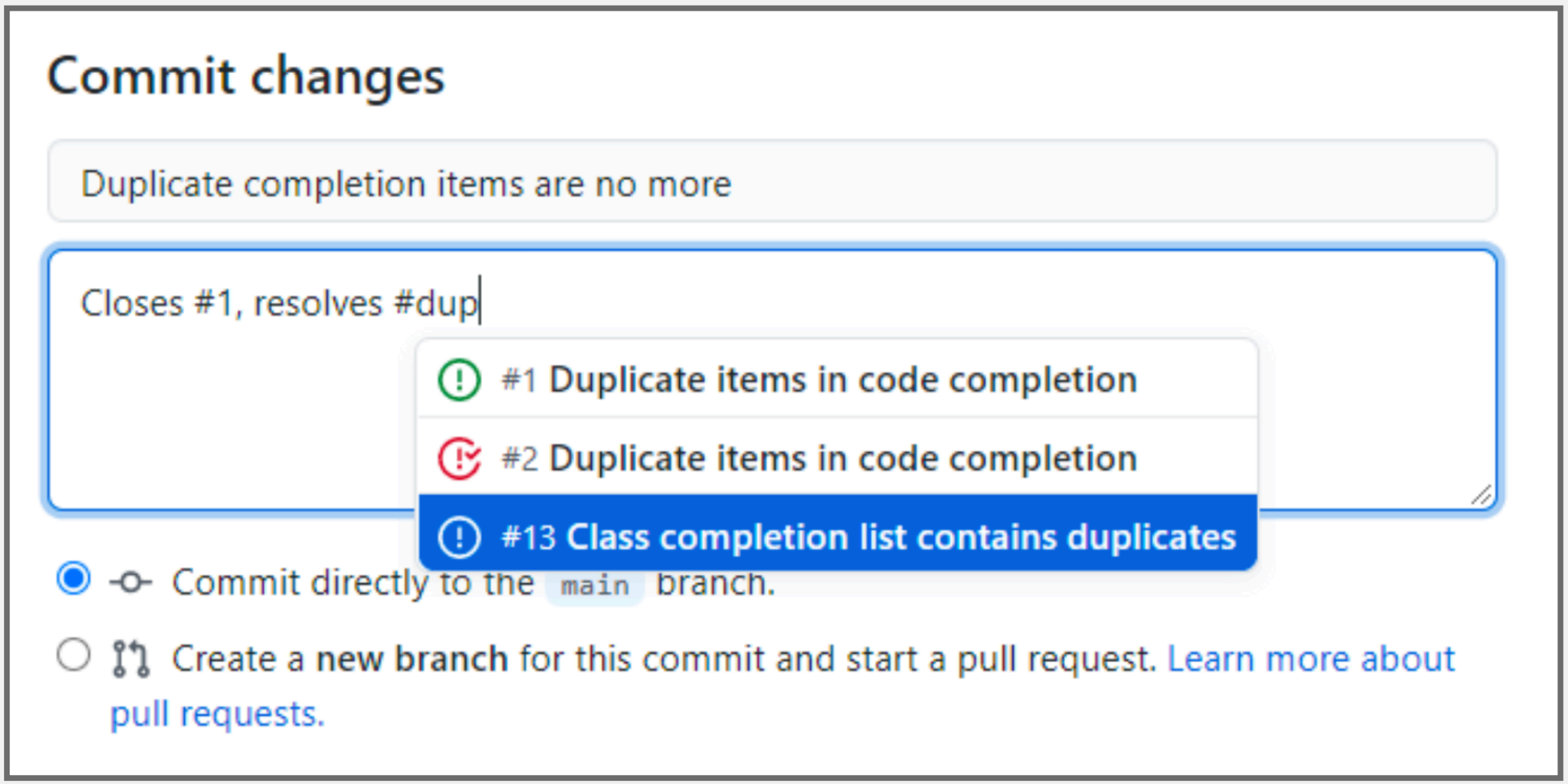


Use Labels

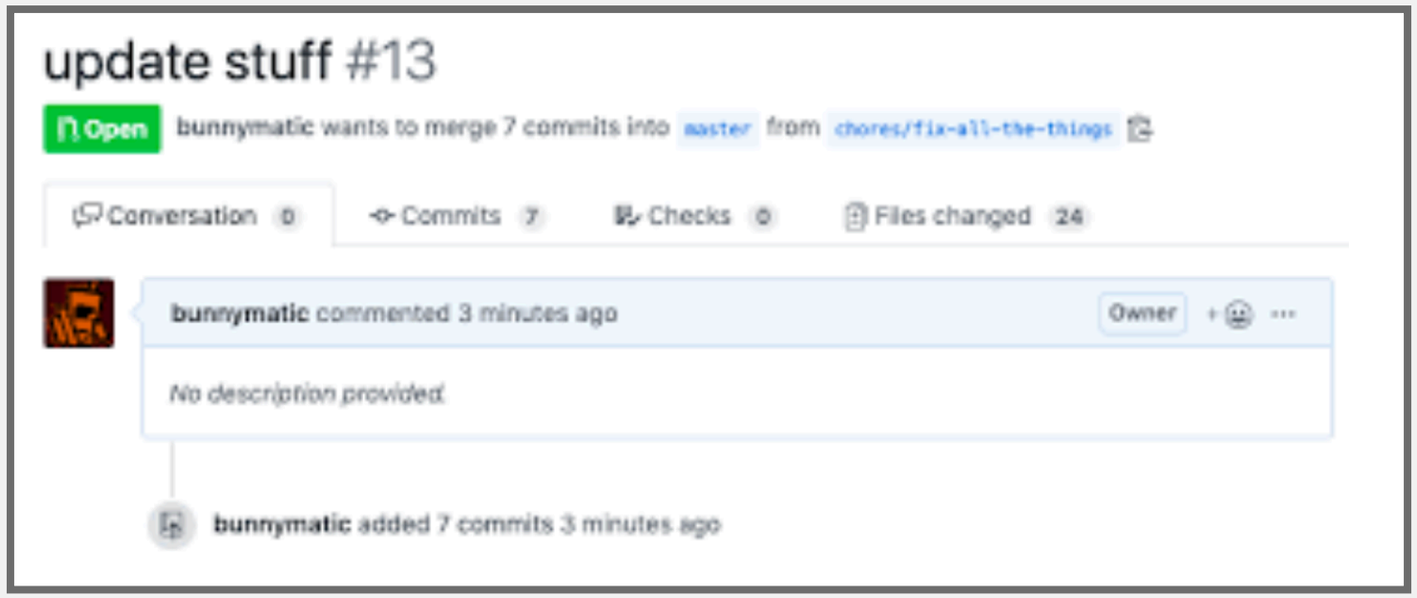
- Break the project down by areas of responsibility
- Mark non-triaged issues
- Isolate issues that await additional information from the reporter
- Example:
  - Bug / Duplicate / Documentation / Help Wanted / Invalid / Enhancement
  - status: wip, status: ready to implement, status: needs discussion

Don’t Forget to Follow Up and Close Issues

- closes/resolves #issue_number



Pull Requests



How to Write Good Pull Requests


```
## What?

## Why?

## How?

## Testing?

## Screenshots (optional)

## Anything Else?
```

How to Write Good Pull Requests

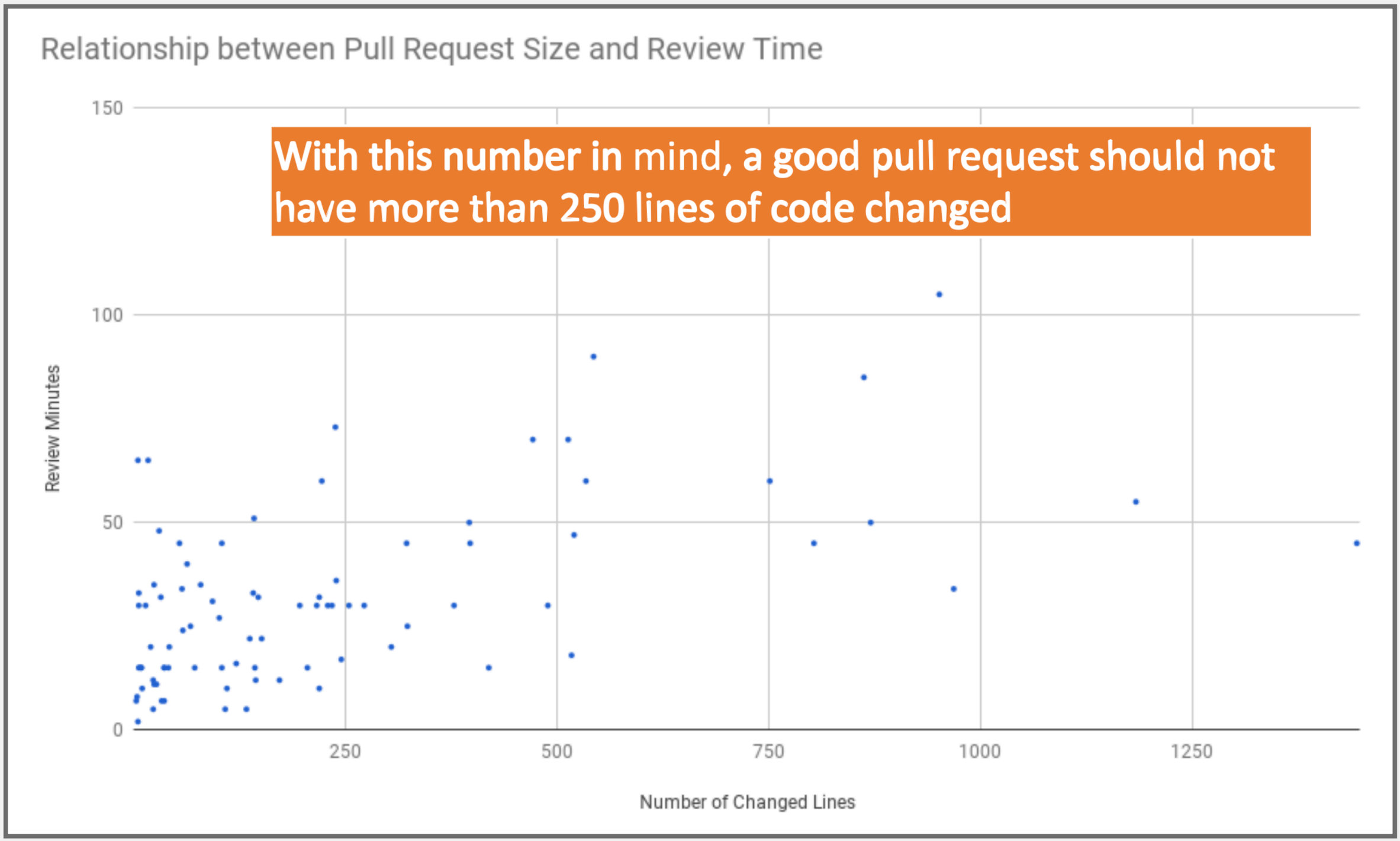
```
## What?
I've added support for authentication to implement Key Result 2 of OKR1. It includes model, table,
controller and test. For more background, see ticket
#JIRA-123.
## Why?
These changes complete the user login and account creation experience. See #JIRA-123 for more
information.
## How?
This includes a migration, model and controller for user authentication. I'm using Devise to do the
heavy lifting. I ran Devise migrations and those are included here.
## Testing?
I've added coverage for testing all new methods. I used Faker for a few random user emails and
names.
## Screenshots (optional)
0
## Anything Else?
Let's consider using a 3rd party authentication provider for this, to offload MFA and other
considerations as they arise and as the privacy landscape evolves. AWS Cognito is a good option, so
is Firebase. I'm happy to start researching this path. Let's also consider breaking this out into
its own service. We can then re-use it or share the accounts with other apps in the future.
```

How to Write Good Pull Requests

- Remember that anyone (in the company) could be reading your PR
- Be explicit about what/when feedback you want
- @mention individuals that you specifically want to involve in the discussion, and mention why.
  - “/cc @jesseplusplus for clarification on this logic”

Keep your PRs Small

Keep your PRs Small

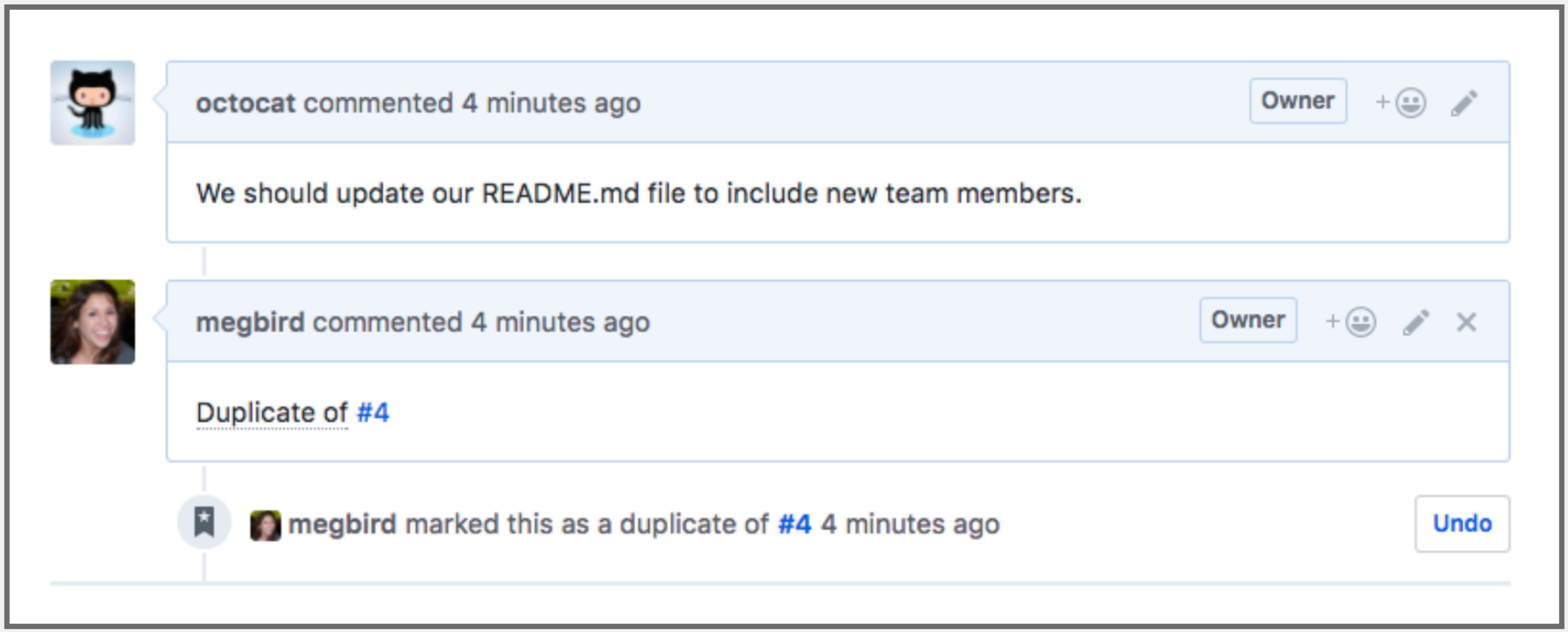


Offer Useful Feedback

- If you disagree strongly, consider giving it a few minutes before responding; think before you react.
- Ask, don't tell. ("What do you think about trying...?" rather than "Don't do...")
- Explain your reasons why code should be changed. (Not in line with the style guide? A personal preference?)
- Be humble. ("I'm not sure, let's try...")
- Avoid hyperbole. ("NEVER do...")
- Be aware of negative bias with online communication.

Avoid Duplicates

- “Duplicate of” issue/pull request number



Be a Nice Person

Date Sat, 13 Jul 2013 15:40:24 -0700
Subject Re: [GIT pull] x86 updates for 3.11
From Linus Torvalds <>

share 638

On Sat, Jul 13, 2013 at 4:21 AM, Thomas Gleixner <tglx@linutronix.de> wrote:
>
> * Guarantee IDT page alignment

What the F*CK, guys?

This piece-of-shit commit is marked for stable, but you clearly never
even test-compiled it, did you?

Because on x86-64 (the which is the only place where the patch
matters), I don't see how you could have avoided this honking huge
warning otherwise:

  arch/x86/kernel/traps.c:74:1: warning: braces around scalar
initializer [enabled by default]
   gate_desc idt_table[NR_VECTORS] __page_aligned_data = { { { { 0, 0 } } }, };
   ^

Knowledge Sharing

Importance of Documentation

No matter the format, documentation is important

Building on top of others' work in a community-like way can be an accelerator, both in open source and in companies. Documentation often signals if a repository is reliable to reuse code from, or if it's an active project to contribute to. What signs do developers look for?

In both open source projects and enterprises, developers see about

50%

productivity boost with easy-to-source documentation

What the data shows: At work, developers consider documentation trustworthy when it is up-to-date (e.g., looking at time-stamps) and has a high number of upvotes from others. Open source projects use READMEs, contribution guidelines, and GitHub Issues, to elevate the quality of any project, and to share information that makes them more attractive to new contributors. Enterprises can adopt the same best practices to achieve similar success.

In both environments, developers see about a 50% productivity boost when documentation is up-to-date, detailed, reliable, and comes in different formats (e.g. articles, videos, forums).

Using the data: Review the documentation your team consumes: When was the last time it was updated? Can everyone on your team improve the documentation? Check this frequently to stay on track.

Types of Documentation

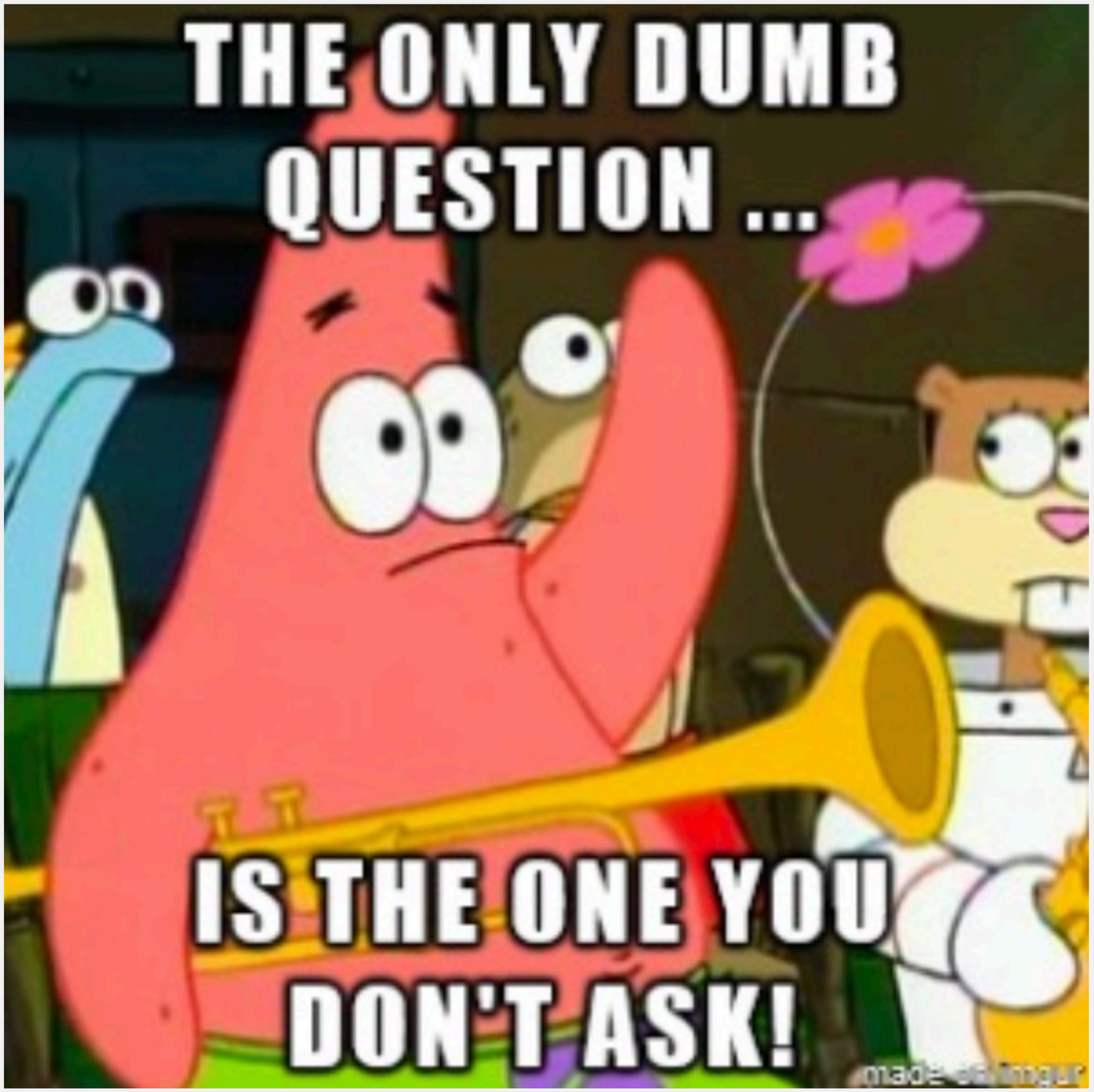
Knowledge Type	Description (Excerpt)
Functionality and Behavior	Describes what the API does (or does not do) in terms of functionality or features. Describes what happens when the API is used (a field value is set, or a method is called).
Concepts	Explains the meaning of terms used to name or describe an API element, or describes design or domain concepts used or implemented by the API.
Directives	Specifies what users are allowed / not allowed to do with the API element. Directives are clear contracts.
Purpose and Rationale	Explains the purpose of providing an element or the rationale of a certain design decision. Typically, this is information that answers a "why" question: Why is this element provided by the API? Why is this designed this way? Why would we want to use this?
Quality Attributes and Internal Aspects	Describes quality attributes of the API, also known as non-functional requirements, for example, the performance implications. Also applies to information about the API's internal implementation that is only indirectly related to its observable behavior.
Control-Flow	Describes how the API (or the framework) manages the flow of control, for example by stating what events cause a certain callback to be triggered, or by listing the order in which API methods will be automatically called by the framework itself.
Structure	Describes the internal organization of a compound element (e.g. important classes, fields, or methods), information about type hierarchies, or how elements are related to each other.
Patterns	Describes how to accomplish specific outcomes with the API, for example, how to implement a certain scenario, how the behavior of an element can be customized, etc.
Code **Examples**	Provides code examples of how to use and combine elements to implement certain functionality or design outcomes.
Environment	Describes aspects related to the environment in which the API is used, but not the API directly, e.g., compatibility issues, differences between versions, or licensing information.
References	Includes any pointer to external documents, either in the form of hyperlinks, tagged "see also" reference, or mentions of other documents (such as standards or manuals).
Non-information	A section of documentation containing any complete sentence or self-contained fragment of text that provides only uninformative boilerplate text.

Maalej, W., & Robillard, M. P. (2013). Patterns of knowledge in API reference documentation. IEEE Transactions on Software Engineering, 39(9), 1264-1282.

Know Your Audience

- Internal document for your team (e.g., meeting note)
- Documentation for project contributors
- Documentation for non-developer collaborators (e.g., UX researchers)
- Documentation for developer users
- Documentation for clients with no software knowldge
- User manual for end users

Importance of Asking Questions



How to Ask Questions

New To Coding. Can anyone assist me?

Asked 7 years, 1 month ago Modified 7 years, 1 month ago Viewed 47 times

I am trying to make a word counter and I just cant seem to get it. Can anyone help?

-4

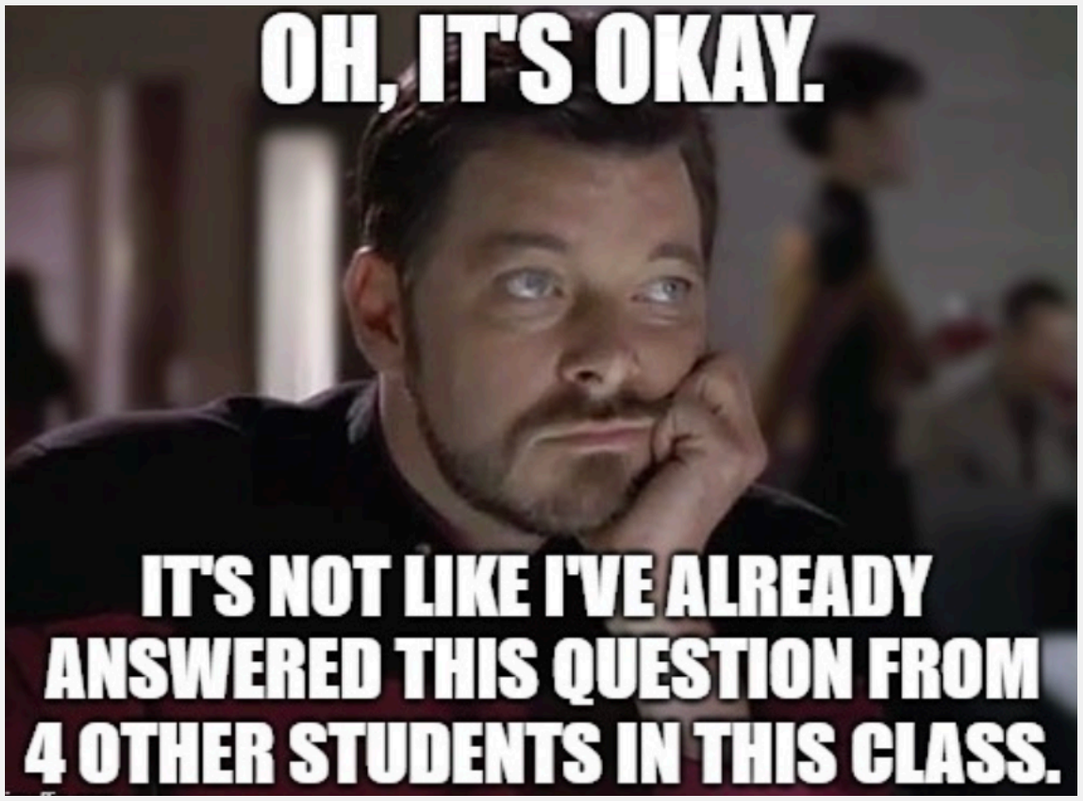
```
import re
print("Welcome To This Software Made By Aaron!")
word = raw_input("Enter Your Words: ")
Check = 0
Right = 0
Length = len(word)
while True:
    if Right == 1:
        if Length < Check:
            Check = Check + 1
            print(Check)
    if Length == Check:
        Right = 1

print("Your Word Count Is " +Check)
```

Make it Easy for People to Help You

- I am trying to ___, so that I can ___. I am running into ___.
  I have looked at ___ and tried ___.
- + I'm using this tech stack: ___.
- + I'm getting this error/result: ___.
- + I think the problem could be ___.

Avoid Duplication



RESEARCH-ARTICLE

Mining duplicate questions in stack overflow

Authors: Muhammad Ahasanuzzaman, Muhammad Asaduzzaman, Chanchal K. Roy, Kevin A. Schneider

Authors Info & Claims

Published: 04 November 2015

Studying the needed effort for identifying duplicate issues

Mohamed Sami Rakha, Weiyi Shang & Ahmed E. Hassan

Empirical Software Engineering **21**, 1960–1989 (2016) | Cite this article

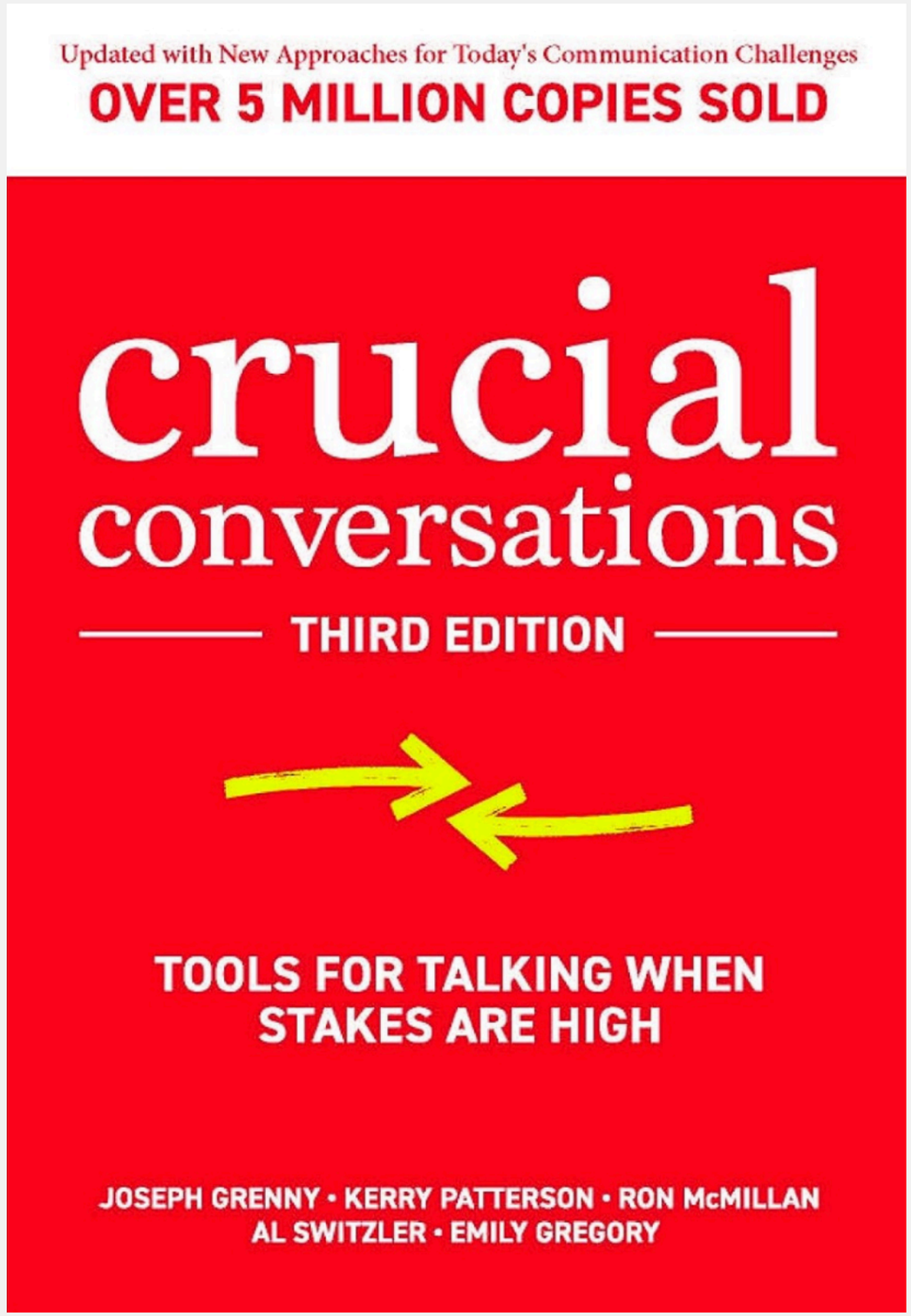
748 Accesses | **19** Citations | **1** Altmetric | Metrics

Abstract

Many recent software engineering papers have examined duplicate issue reports. Thus far, duplicate reports have been considered a hindrance to developers and a drain on their resources. As a result, prior research in this area focuses on proposing automated approaches to accurately identify duplicate reports. However, there exists no studies that attempt to

Resolving Conflicts

Resolving Conflicts



Communication!

Communication

Communication

You can’t solve any Problem without Communication!

Communication

Communication

Conflict Resolution

- Your goal: Find a solution to the problem and move forward.
  - As a smart person on ”TedLasso” once said,“Fight forward,not back.”
- Make sure that everybody works from the same set of facts.
- Establish ground rules for your team’s discussion.
  - Talk about how the situation made you feel.Never presume anything about anyone else.
- Remain calm and rational. If you feel triggered or threatened, extract yourself from the situation, wait an hour to chill out, and then try again.
- If you reach an impasse, talk to your team leader.
- If your team remains in conflict, escalate to Dr. Moran.
  - I can help to mediate