

# Lecture 4: Teams and Communication

17-313 Fall 2023

# Learning Goals

- Describe the pros and cons of working as a team
- Recognize the importance of communication in collaboration
- Recognize the need to have multiple communication channels
- Select an appropriate communication tool for a given communication goal
- Ask technical questions effectively
- Write clear and specific GitHub issues, pull requests, and comments

# We all work in a team

Bubble Sort

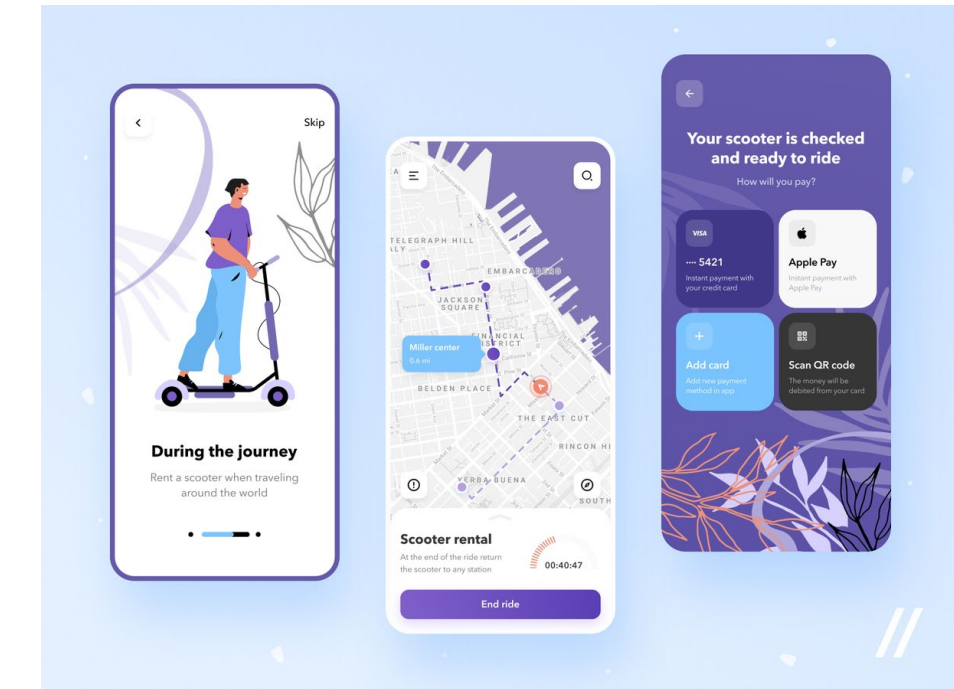
|            |   |   |   |   |    |
|------------|---|---|---|---|----|
| First pass | 6 | 2 | 8 | 4 | 10 |
| Next pass  | 2 | 6 | 8 | 4 | 10 |
| Next pass  | 2 | 6 | 4 | 8 | 10 |
|            | 2 | 4 | 6 | 8 | 10 |

Review complete

Bubble Sort



Monopoly Game



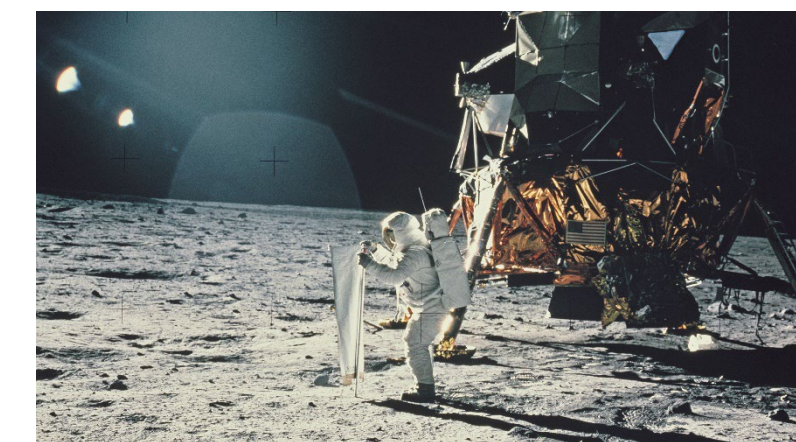
Scooter App

teedy

Teedy



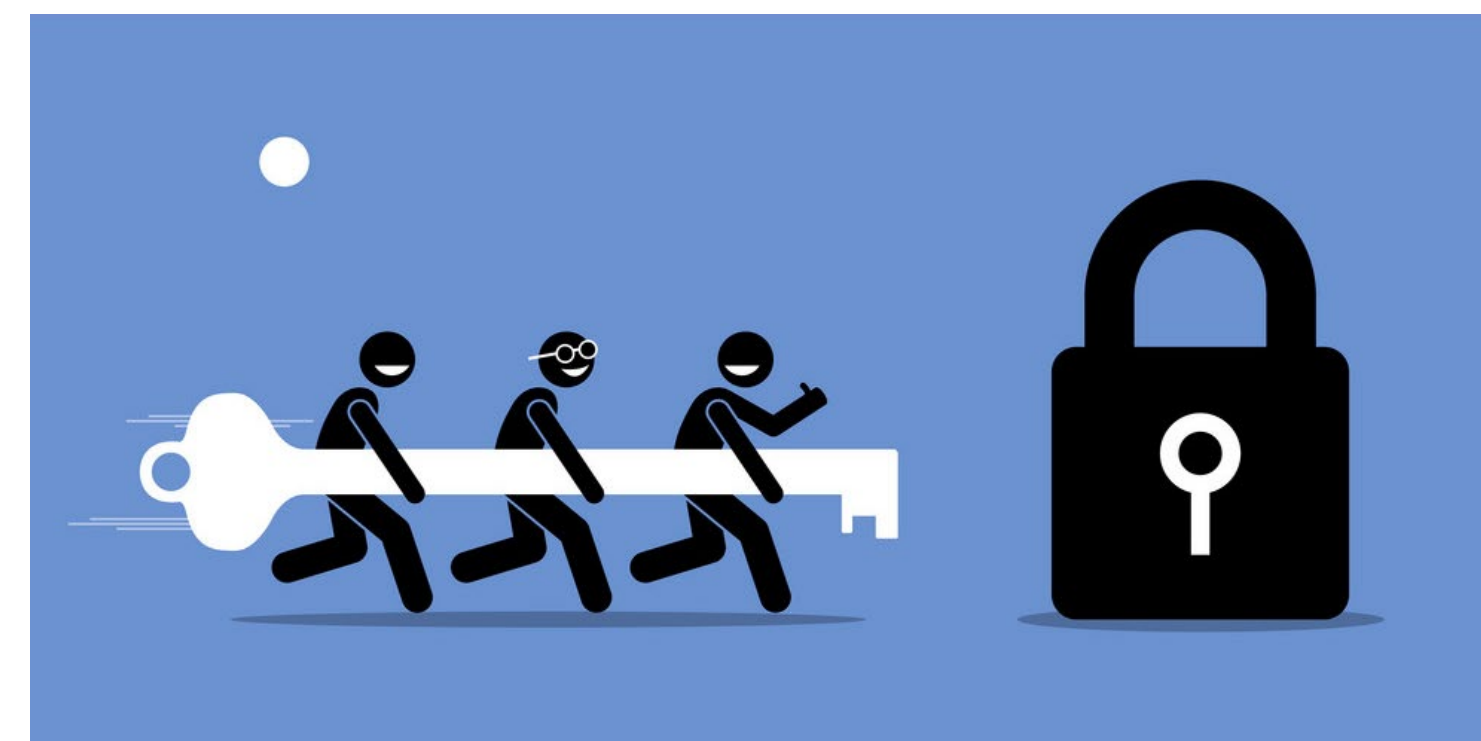
Self-driving car



Moon landing

<https://www.productplan.com/glossary/bubble-sort/>  
<https://www.amazon.com/Monopoly-Classic-Replacement-Board-Hasbro/dp/B00DOZ21BM>  
<https://www.forbes.com/sites/bernardmarr/2020/07/17/5-ways-self-driving-cars-could-make-our-world-and-our-lives-better/>  
<https://dribbble.com/shots/12512417-Scooter-Rental-App/>  
<https://teedy.io/en/#/>

# [Activity] Working solo vs as a team



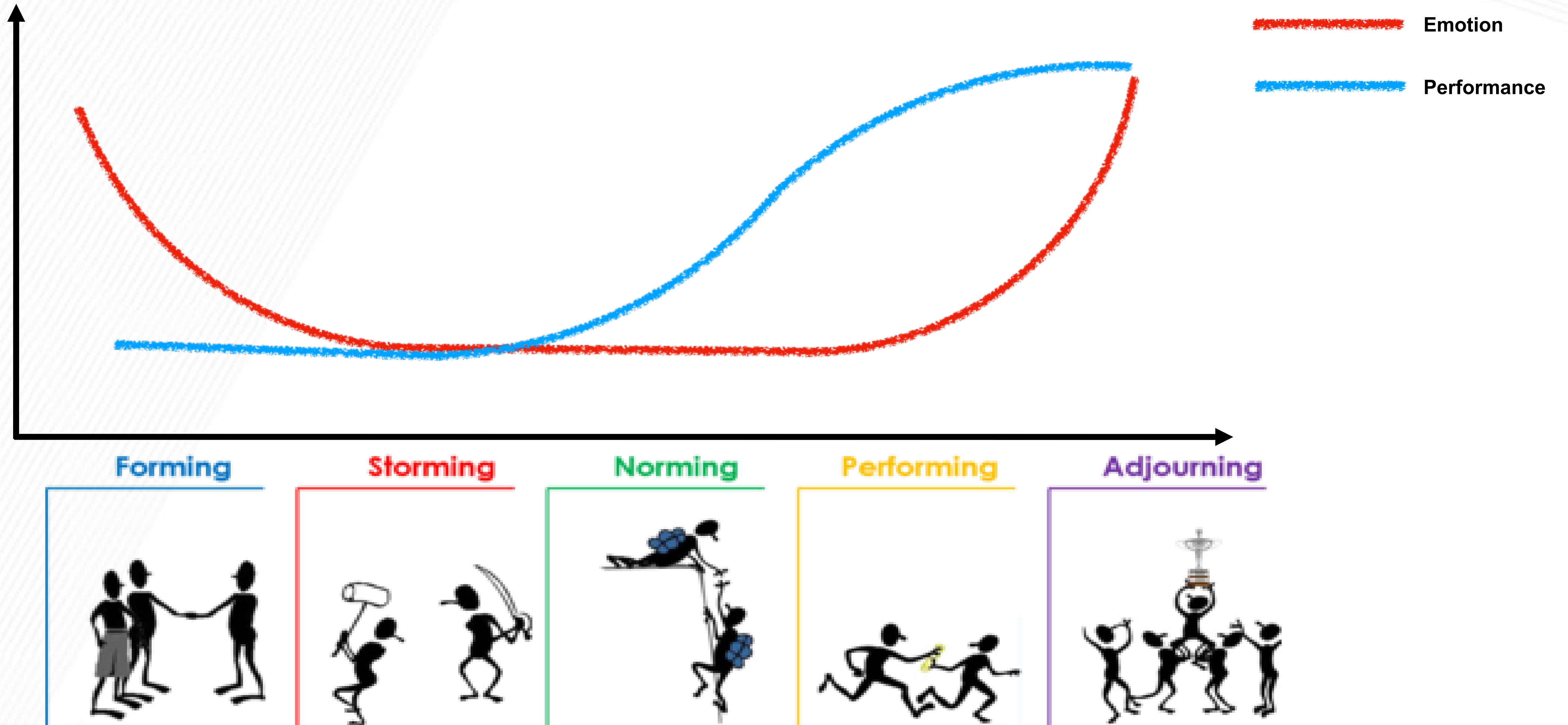
# Working as a team to design & implement software

- + Establish a collaboration process
- + Meet with the team
- + Divide work and integrate
- + Share knowledge
- + Resolve conflicts

# Working as a team to design & implement software

- + **Establish a collaboration process**
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# Stages of Team Formation



# Establishing norms is an important part of team formation.



## Main Deliverables

### Teamwork Contract (40 pts)

When working with a team, it is important to discuss each team member's background, and establish common expectations of the team. Miscommunication or the general lack of communication are often the most common causes of team conflict.

#### Team Conflict Example

A common conflict in working style is when there are team members who always want to get a headstart on their work, while there are team members who are fine with doing work a few days before the deadline. It causes panic in the former team members, while the latter team members feel frustrated as to why they are being rushed.

As such, your first process task of the semester will be creating a teamwork contract with your teammates. It is a **1 - 2 page** document containing information that all teammates agree to follow. You should work on the contract **with all members present**. We recommend that you keep it to around 1 page, 2 page is a **hard limit**.

Additionally, **it is more important that you only include statements that the team will adhere to** than it is to fulfill the length requirement (quality over quantity!) You do not need to write full sentences (bullet points are okay), but your decisions must be clearly conveyed in the document.

You are free to include anything that your team deems necessary, but you should minimally address the following sections:

#### 1. Expectations

How much time is each team member expected to be putting into working on projects? Punctuality? How would your team accommodate when unexpected commitments come up for a team member (e.g. interviews, sickness, competitions)?

Do accommodate for the fact that project load can get heavier towards the end of the semester.

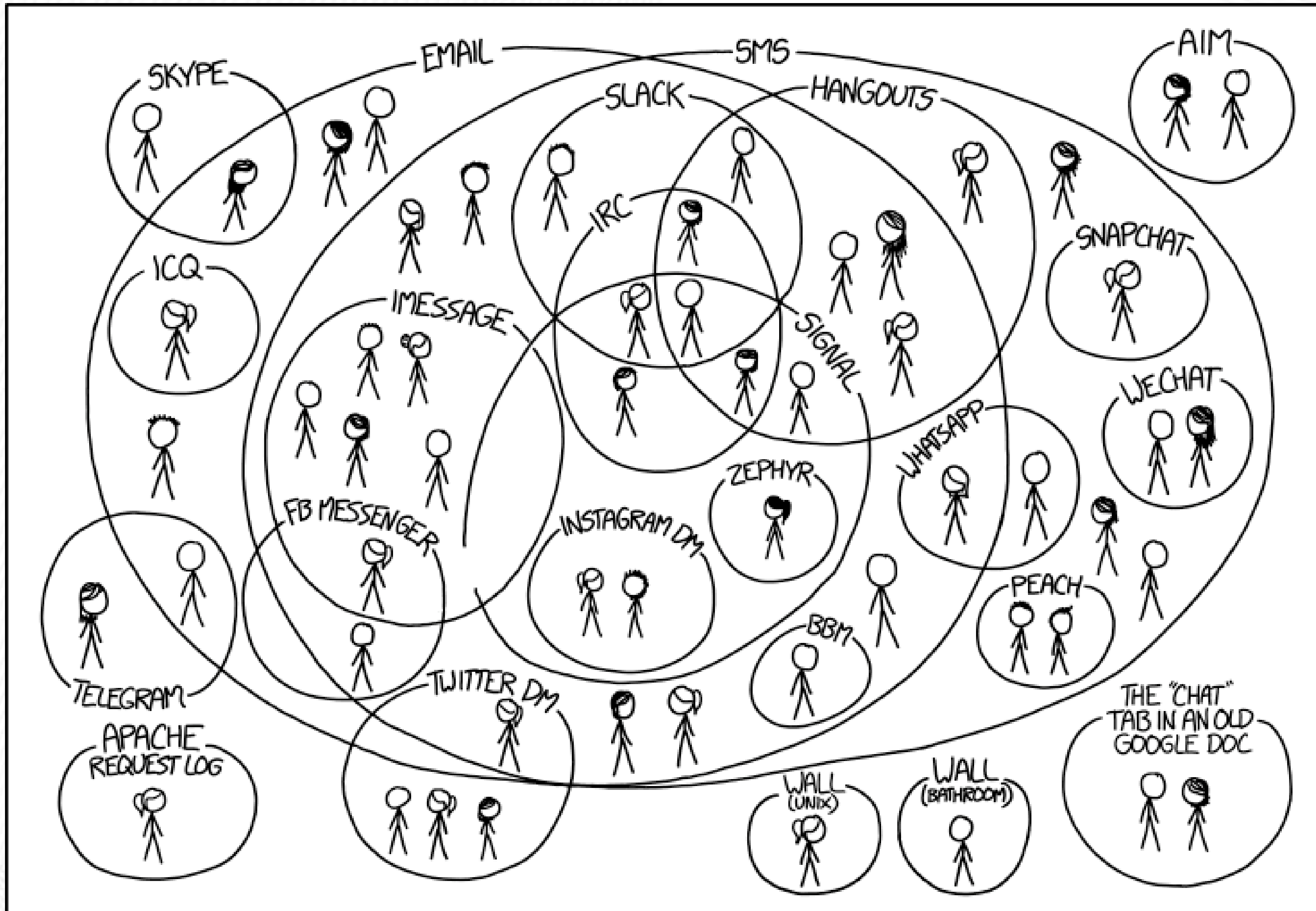
#### 2. Communication

What platform (s) will your team be using to communicate? What's the expected time to get a response?

[https://cmu-17313q.github.io/projects/P2/1\\_teamprocess/](https://cmu-17313q.github.io/projects/P2/1_teamprocess/)

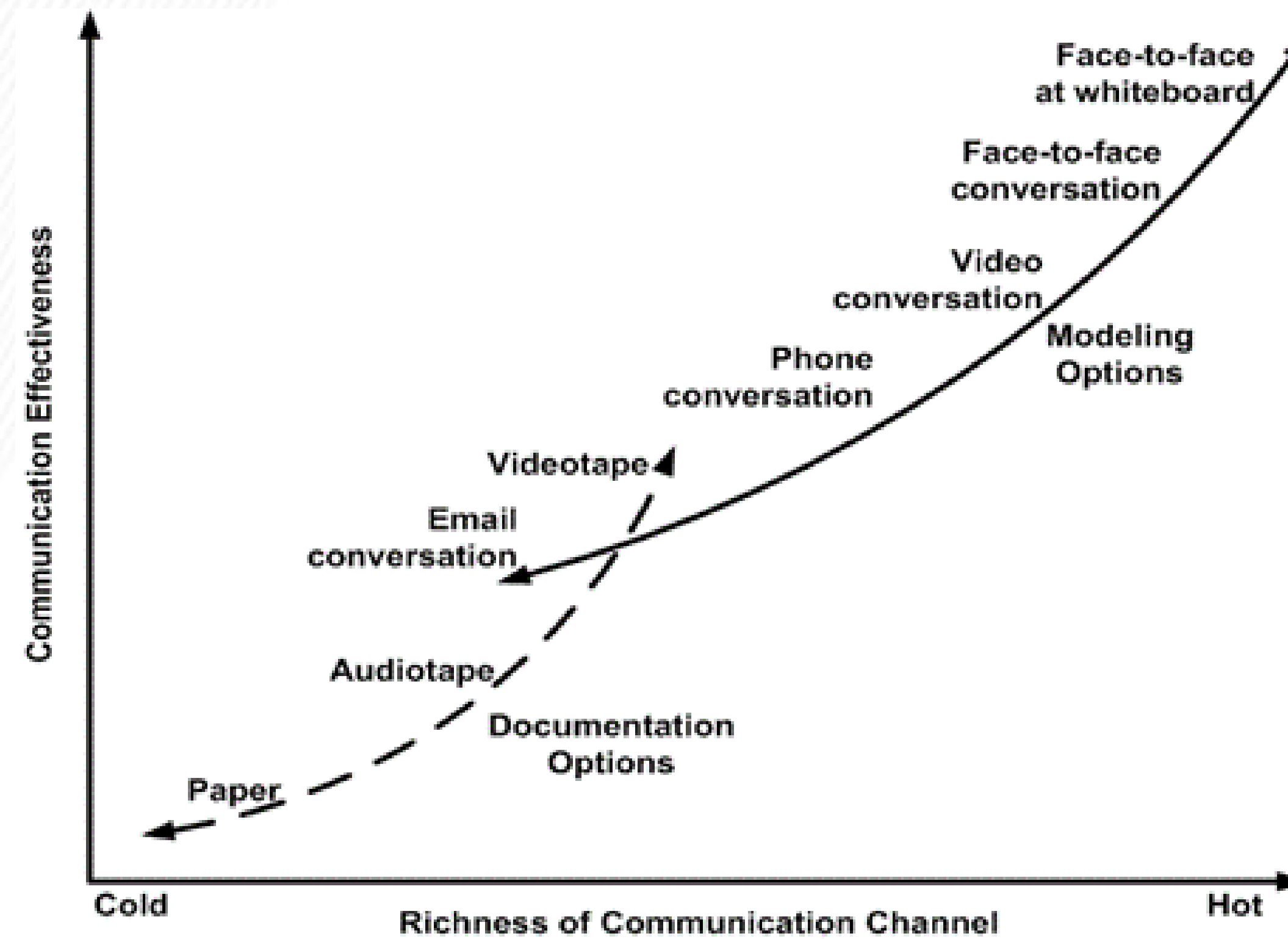






I HAVE A HARD TIME KEEPING TRACK OF WHICH CONTACTS USE WHICH CHAT SYSTEMS.

# Select the right comm. tools



Copyright 2002-2005 Scott W. Ambler  
Original Diagram Copyright 2002 Alistair Cockburn

Q. Why would you need multiple communication channels?

# Establish communication patterns

- Asana, Trello, Microsoft Projects, ...
- Github Wiki, Google Docs, Notion, ...
- Github Issues, Jira, ...
- Email, Slack, Facebook groups, ...
- Zoom, Microsoft Teams, Skype, Phone call, ...
- Face-to-face meetings

# 17-313 Communication channels

- Slack
- Regular meetings (Lectures, Recitations)
- Office Hour
- Gradescope
- Webpage

# Check out other projects'

The screenshot shows the MDN Web Docs website's navigation menu with links for 'References', 'Guides', 'Plus', 'Blog', 'Play', and 'AI Help'. The breadcrumb trail indicates the current page is 'The MDN Web Docs project > Community guidelines > Communication channels'. A sidebar on the left lists various community guidelines, with 'Communication channels' selected. The main content area is titled 'Communication channels' and contains several sections: 'Chat rooms', 'Discord server', 'Matrix chat rooms', and 'GitHub Discussions'. Each section provides a brief description and links to relevant resources.

## Communication channels

There are various communication channels using which community can contact MDN Web Docs staff and participate in discussions.

### Chat rooms

Chat rooms are for posting queries, seeking clarifications, sharing information, and meeting other folks. They are also great place to get to know other community members, share your work, and get help for your contributions.

### Discord server

MDN Web Docs community Discord server is open to the public. This server is a great place to see what staff and members of the community are doing on a daily basis.

You can ask questions, seek clarifications, and find out how you can get involved. You can also join specific channels based on your areas of interest or expertise.

Join the MDN Web Docs community on Discord [here](#).

### Matrix chat rooms

The Matrix chat rooms are an alternative to the Discord server.

- [MDN room](#) on Mozilla Element web app
- [MDN room](#) on Matrix Element web app
- [Add-ons room](#)
- [List of all Mozilla rooms](#)

### GitHub Discussions

[GitHub Discussions](#) on MDN Web Docs is the place to look out for any project-wide [announcements](#).

Use GitHub discussions to post your questions and propose your suggestions. Choose the appropriate [discussion category](#) when starting a thread. Your answered questions can be really useful for other people looking for similar information in the future.

We strongly recommend you to use GitHub Discussions to share the work you're planning to do and

## Communication

- **Forums:** Discuss implementations, research, etc. <https://discuss.pytorch.org>
- **GitHub Issues:** Bug reports, feature requests, install issues, RFCs, thoughts, etc.
- **Slack:** The [PyTorch Slack](#) hosts a primary audience of moderate to experienced PyTorch users and developers for general chat, online discussions, collaboration, etc. If you are a beginner looking for help, the primary medium is [PyTorch Forums](#). If you need a slack invite, please fill this form: <https://goo.gl/forms/PP1AGvNHpSaJP8to1>
- **Newsletter:** No-noise, a one-way email newsletter with important announcements about PyTorch. You can sign-up here: <https://eepurl.com/cbG0rv>
- **Facebook Page:** Important announcements about PyTorch. <https://www.facebook.com/pytorch>
- **For brand guidelines,** please visit our website at [pytorch.org](https://pytorch.org)



# Communication expectation

- Quality of service guarantee
  - How soon will you get back to your teammates?
  - Weekend? Evening?
- Emergency
  - Tag w/ 911
  - Notify everyone with @channel

# Working as a team to design & implement software

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- + Share knowledge
- + Resolve conflicts

# How to run a meeting

- The Three Rules of Running a Meeting
  - Set the **Agenda**
  - Start **on Time**. End **on Time**.
  - End with **Action Items** (and share them - GitHub Issues, Meeting Notes, ...)



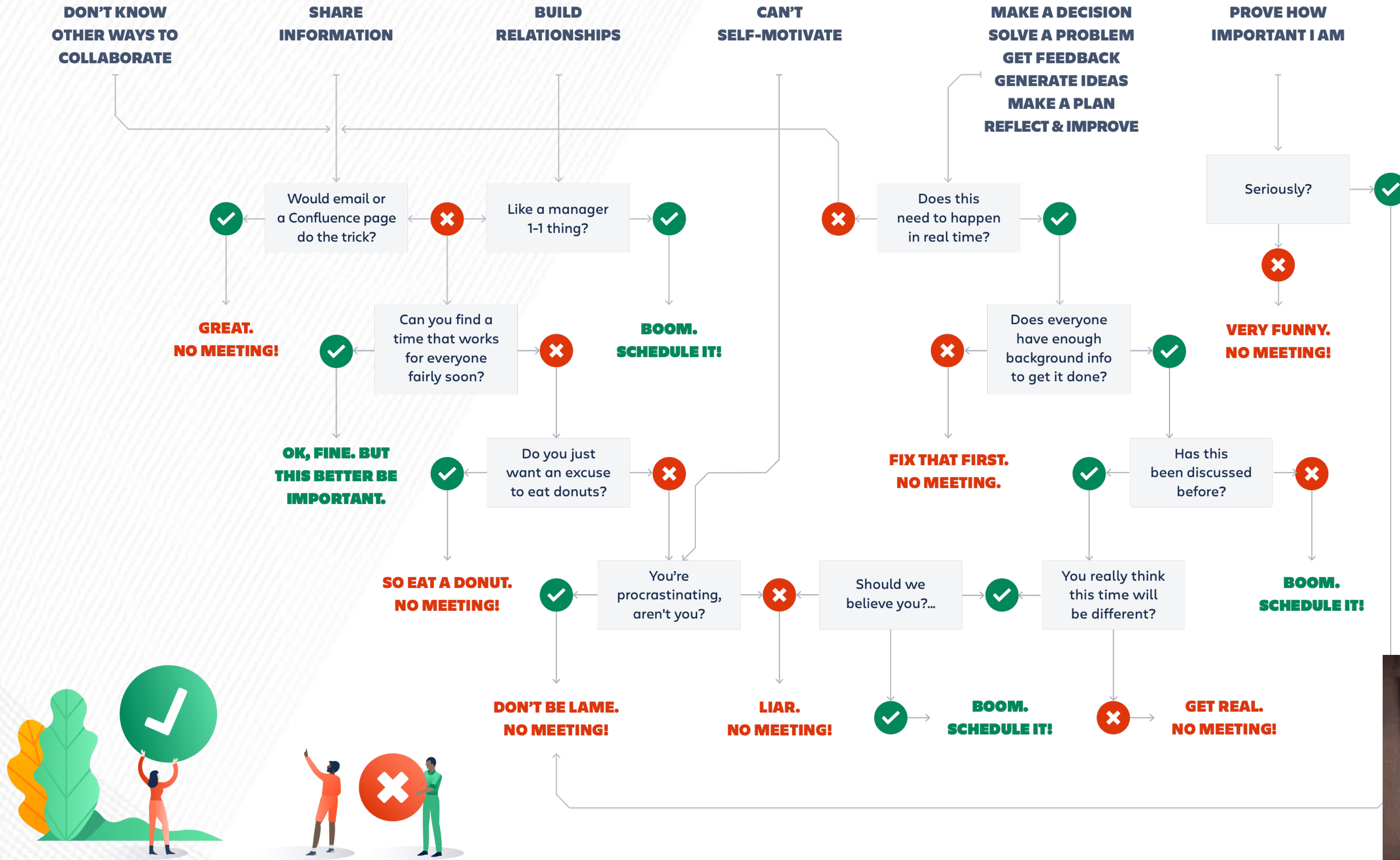
# How to run a meeting

- Set and document clear responsibilities and expectations
- Make everyone contribute
  - Possible Roles: Coordinator, Scribe, Checker
  - Manage Personalities
  - Be Vulnerable

# Random Advice

- Note takers have a lot of power to steer the meeting
  - Collaborative notes are even better!
- Different meeting types have different best practices
  - Decision-making meeting
  - Brainstorming meeting
  - One-on-one meeting
  - Working sessions

# WHY DO YOU WANT TO CALL A MEETING?



# Working as a team to design & implement software

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# Is this issue useful?

The screenshot shows a GitHub issue page for 'Image Slider #2'. At the top, it says 'Open' and 'calebsylvest opened this issue just now · 0 comments'. There is one comment from 'calebsylvest' that says 'The image slider is broken'. Below the comment is a 'Write' box with a 'Preview' tab and a 'Comment' button. The right sidebar shows the issue is labeled 'bug', has no milestone, and is assigned to 'calebsylvest'. There is an 'Unsubscribe' button and a notification that says 'You are receiving notifications because you were assigned.'.

Q. What is missing from this issue?

# Writing useful Github issues

## ← Cropping of Image Slider Pics #3

Edit New Issue

**Open** calebsylvest opened this issue just now · 0 comments



calebsylvest commented just now

<http://calebsylvest.com/>

The cropping of the images in the slideshow seem to be off. The text is not visible and partially hidden by content below. The Developer Tools show the full-size un-cropped image is being loaded, but obviously not displaying.

Browser: Google Chrome

OS: Mavericks

Hardware: MacBook Pro Retina



Labels

bug

Milestone

No milestone

Assignee

calebsylvest

Notifications

Unsubscribe



# Writing useful Github issues

- Issue should include:
  - Context: Explain the conditions that 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)
- Don't be vague!
  - Include environment settings, versions, error messages, and code examples when necessary

# Writing useful Github issues

- Check out guidelines
  - Google: <https://developers.google.com/issue-tracker/concepts/issues>
  - Rust: <https://rustc-dev-guide.rust-lang.org/contributing.html#bug-reports>
- Don't assume the solution
- One issue per issue
- Keep titles short and descriptive
- Format your messages



# Mention or assign appropriate people

Update game to use new rendering engine

Write Preview

H B I

Now that we've decided on our new rendering engine (see #824), we need to update our collision logic to use the engine, build an engine prototype, and update the game logic.

- [ ] #740
- [ ] <https://github.com/octo-org/octo-repo/issues/1752>
- [ ] Update aliens and cannon game logic

Attach files by dragging & dropping, selecting or pasting them.

Styling with Markdown is supported Submit new issue

**Assignees**

octocat

**Labels**

**Projects**

None yet

**Milestone**

**beta release**

**Linked pull requests**

Successfully merging a pull request may close this issue.

None yet

# You can use label

- 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

## Commit changes

Duplicate completion items are no more

Closes #1, resolves #dup|

! #1 Duplicate items in code completion

! #2 Duplicate items in code completion

! #13 Class completion list contains duplicates

- Commit directly to the `main` branch.
- Create a **new branch** for this commit and start a pull request. [Learn more about pull requests.](#)

# Pull requests

## update stuff #13

[Open](#) bunnymatic wants to merge 7 commits into `master` from `chores/fix-all-the-things`

[Conversation](#) [Commits](#) [Checks](#) [Files changed](#)



bunnymatic commented 3 minutes ago

Owner + 👤 ...

*No description provided*



bunnymatic added 7 commits 3 minutes ago

# How to write good pull requests

```
## What?  
## Why?  
## How?  
## Testing?  
## Screenshots (optional)  
## Anything Else?
```



## 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

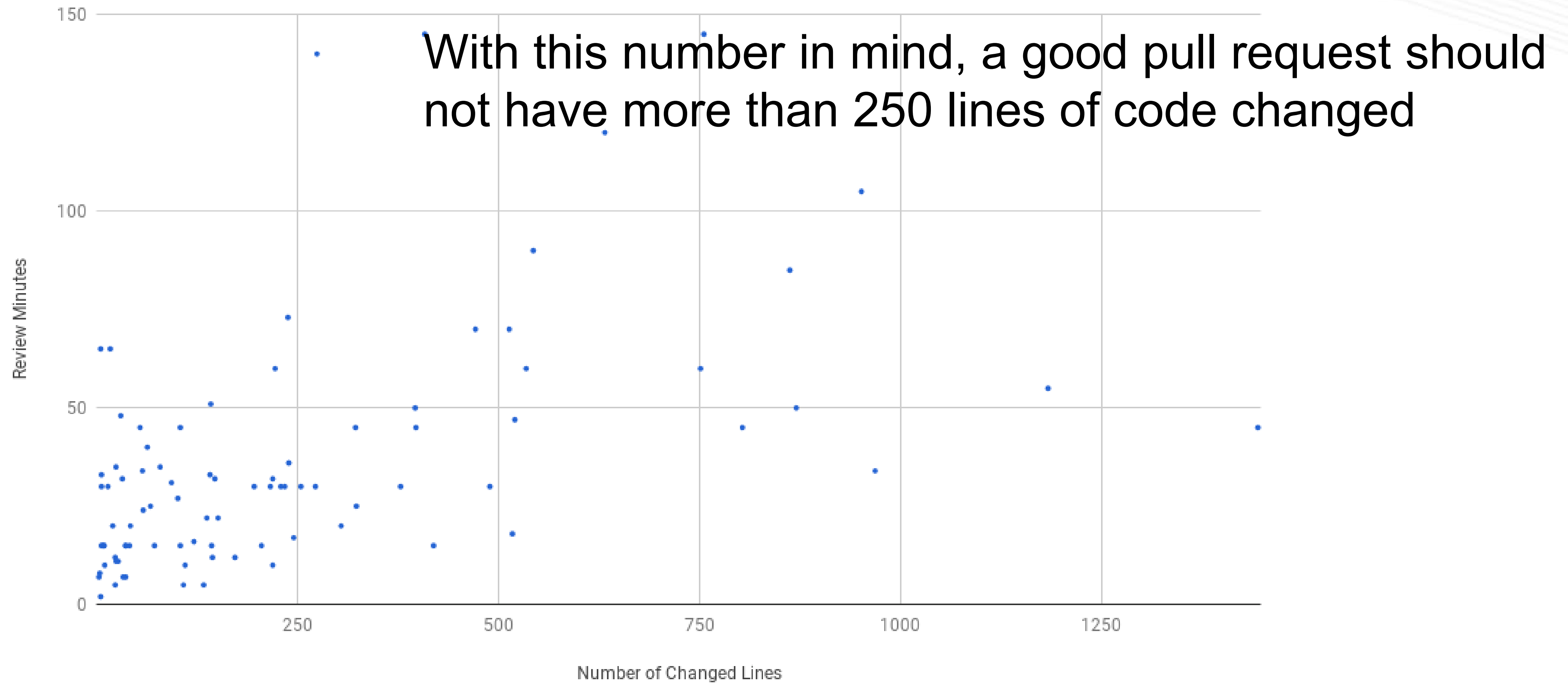
- Remember that anyone (in the company) could be reading your PR
- Be explicit about what/when feedback you want
- @mention individuals you want to involve in the discussion and mention why.
  - `/cc @jesseplusplus for clarification on this logic`

# Consider the size of PRs





## Relationship between Pull Request Size and Review Time

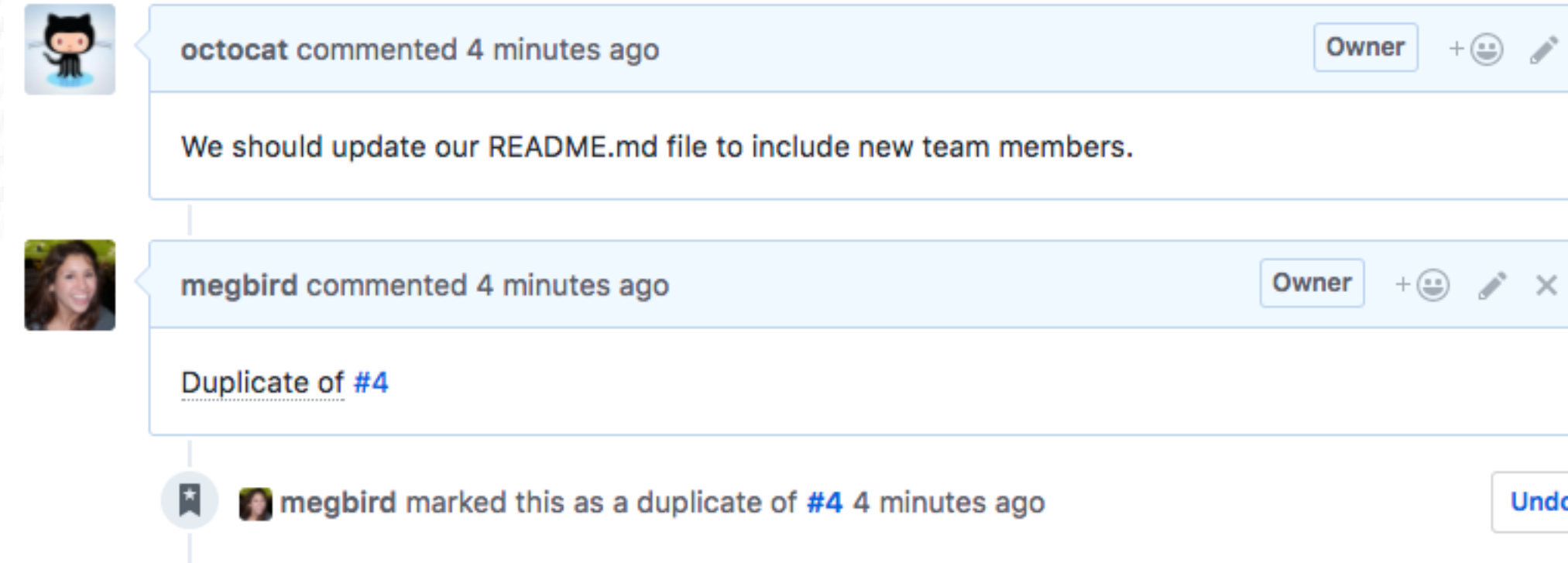


# Offer useful feedback

- 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



The screenshot shows a GitHub comment thread. The first comment is from user 'octocat' (owner) stating: "We should update our README.md file to include new team members." The second comment is from user 'megbird' (owner) stating: "Duplicate of #4". Below the second comment, a notification indicates that 'megbird' marked the issue as a duplicate of '#4' 4 minutes ago, with an 'Undo' button.

# 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 <>
```

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

```
>
> * Guarantee IDT page alignment
```

What the F [REDACTED], guys?

This piece-of-s [REDACTED] 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 [REDACTED] 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 } } },
  ^
```




linus torvalds rants

Images Videos News Shopping Books Maps Flights Finance

About 13,200 results (0.27 seconds)

**GitHub**  
https://github.com › corollari › linusrants  
[corollari/linusrants: Dataset of Linus Torvalds' rants ...](#)  
Just a collection of all the rants from Linus Torvalds on the kernel mailing list from 2012 to 2015 classified by the amount of hate and sorted by it.

**Reddit**  
https://www.reddit.com › linusrants  
[This subreddit aims to collect all rants of Linus Torvalds.](#)  
Linus Torvalds talking with people. r/linusrants. This subreddit aims to collect all rants of Linus Torvalds. 10.1K members • 4 online.

**YouTube**  
https://www.youtube.com › watch  
[Linus Torvalds Rants About Last Minute Linux Patches](#)  
 It's time again for Linus Torvalds to go on another rant, it's not the first and certainly not the last time, this time it's about people ...  
YouTube · Brodie Robertson · Oct 29, 2022  
4 key moments in this video

**ADTmag**  
https://adtmag.com › blogs › dev-watch › 2014/04 › li...  
[Top \[Expletive\] Linus Torvalds Rants](#)  
Apr 9, 2014 — Ol' Linus is at it again. Outspoken Linux creator Linus Torvalds last week, in his usual imitable style, blasted a volunteer developer for ...

**Quora**  
https://www.quora.com › What-are-some-must-read-L...  
[What are some must read Linus Torvalds rants?](#)  
"My name is Linus, and I am your God." · "Software is like sex; it's better when it's free." · "In my opinion Microsoft is a lot better at making money than it is ...  
4 answers · 12 votes: Great dataset of Linus Torvalds' rants via email from 2012–2015 on dat...

**News YCombinator**  
https://news.ycombinator.com › item  
[Linus Torvalds Rants](#)  
Mar 3, 2018 — The thing about Linus's rants is that he's almost always completely right. As far as I am concerned, his attitude is part of the reason the ...

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- + **Share knowledge**
- + Resolve conflicts

# Knowledge Sharing

# 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.

# 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 knowledge
- User manual for end users



# [Activity] 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)
```



Q. what is wrong with this SO question?

# Make it easy for people to help you

I am trying to \_\_\_\_, so that I can \_\_\_\_.

I am running into \_\_\_\_.

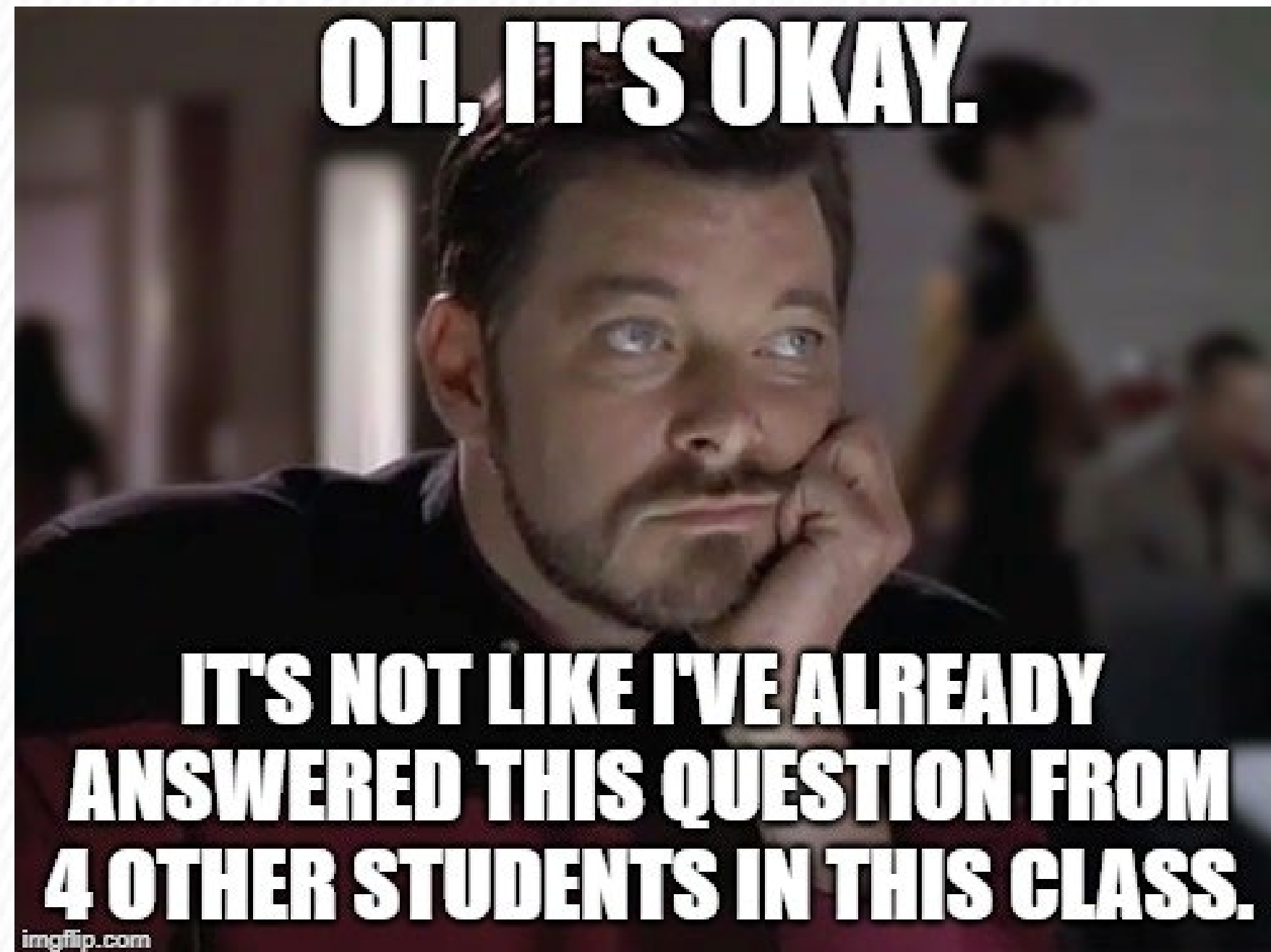
I have looked at \_\_\_\_ and tried \_\_\_\_.

+ 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](#)

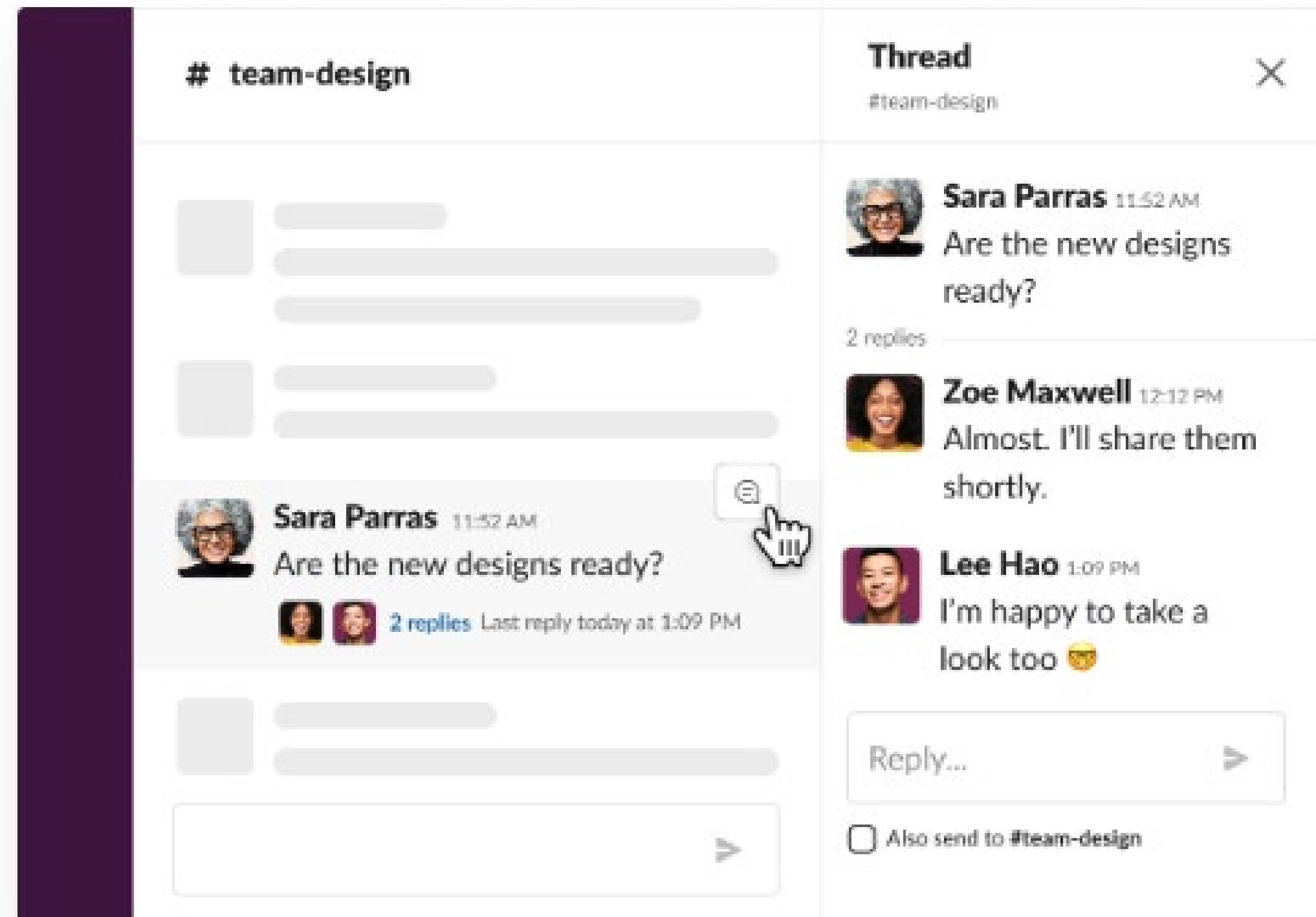
*Empirical Software Engineering* 21, 1960–1989 (2016) | [Cite this article](#)

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

# Use threads



- Threads help us create organized discussions around specific messages, without adding clutter to a channel.
- You can manage thread notifications.

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# Escalation

- Make sure that everybody is working from the same set of facts.
- If an impasse occurs, find the person who can resolve.
- Ensure that every problem has an ultimate decider
  
- Goal: Find a resolution to the problem and move forward.
  - (Not “score points”)

# Team survey

RESEARCH-ARTICLE



## Identifying Struggling Teams in Software Engineering Courses Through Weekly Surveys

Authors:  [Kai Presler-Marshall](#),  [Sarah Heckman](#),  [Kathryn T. Stolee](#) [Authors Info & Claims](#)

SIGCSE 2022: Proceedings of the 53rd ACM Technical Symposium on Computer Science Education V. 1 • February 2022

• Pages 126–132 • <https://doi.org/10.1145/3478431.3499367>

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# What you need to know

- Describe the pros and cons of working as a team
- Recognize the importance of communication in collaboration
- Recognize the need to have multiple communication channels
- Select an appropriate communication tool for a given communication goal
- Ask technical questions effectively
- Write clear and specific GitHub issues, pull requests, and comments