OPEN SOURCE PRINCIPLES
FOR INTERNAL ENGINEERING TEAMS
TRANSPARENCY
OBVIOUSLY, THE SOURCE CODE IS OPEN.
BUT, THE SOURCE CODE IS AN ARTIFACT OF A PRODUCTION PROCESS
CONWAY’S LAW

Any organization that designs a system will inevitably produce a design whose structure is a copy of the organization's communication structure.

Melvin Conway
melconway.com/research/committees.html
COMMUNITIES ARE DISTRIBUTED ACROSS:

- GEOGRAPHY
- TIMEZONE
- CULTURE
THE MEDIUM IS

ELECTRONIC
ASYNCHRONOUS
LOCK-FREE

THE MESSAGE IS
ARCHIVED
THE MEDIUM IS ELECTRONIC

ISSUE TRACKER

VERSION CONTROL

MAILING LIST

CHAT
THE MEDIUM IS ASYNCHRONOUS
THE MEDIUM IS LOCK-FREE
THE MESSAGE IS ARCHIVED

ISSUE HISTORY
VERSION HISTORY
LIST ARCHIVE
CHAT LOG
SEARCH: “HADOOP @GITHUB”

We've found 334 issues

Hadoop/MapReduce cluster for log archives

Hadoop fair scheduler

Update hadoop settings

Hadoop config tweaks

Install extra packages for Hadoop
### Teams

#### Employees

GitHub Employees Only
353 members

*Add a team: Select team*
THE MEDIUM IS

- LOCK-FREE
- ELECTRONIC
- ASYNCHRONOUS
- LOCK-FREE

THE MESSAGE IS

ARCHIVED

OPEN SOURCE COMMUNICATION

@bkeepers • #ATO2015
Jesse: We should do X
Sam: We tried that a long time ago, it didn’t work.
Jesse: oh, ok
[end of discussion]
SCENARIO 2:

Jesse: We should do X
Sam: We tried that a long time ago, see https://github.com/github/repo/pulls/28483
[...reading...]
Jesse: interesting. It looks like...
Information is exposed to others working toward shared goals.

Work toward a goal is rarely blocked.

Anyone can participate, regardless of geography, timezone, culture, or role.
MINIMIZE FRICTION

AUTOMATE REVIEW
friction

noun
the amount of time that elapses between “I want to contribute”, and “I have contributed”.
A massive stack of information does not magically enable people to participate.
DISTILL KNOWLEDGE

README.md

CONTRIBUTING.md
SCRIPTS TO RULE THEM ALL

**BOOTSTRAP**
$ script/bootstrap

**RUN**
$ script/server

**TEST**
$ script/test
AUTOMATE

REVIEW
CONTINUOUS INTEGRATION

Some checks were not successful
1 failing and 4 successful checks

- prtest/win/dbg/unit32 — Build finished. 60548 tests run, 322 skipped, 1 failed.
- prtest/lin/dbg/unit32 — Build finished. 14962 tests run, 566 skipped, 0 failed.
- prtest/mac/dbg/unit32 — Build finished. 14962 tests run, 565 skipped, 0 failed.
- prtest/win/dbg/eta — Build finished. No test results found.
- prtest/win/dbg/unit64 — Build finished. 60408 tests run, 2516 skipped, 0 failed.

This branch is up-to-date with the base branch
Only those with write access to this repository can merge pull requests.
WHAT ELSE CAN YOU AUTOMATE?
After months of letting our early adopters kick the tires, Git Large File Storage (Git LFS) has reached a 1.0 milestone and is now available to all repositories on GitHub.com.

Git LFS is an open source Git extension that we released in April for integrating large binary files into your Git workflow. Distributed version control systems like Git have enabled new and powerful workflows, but they haven’t always been practical for versioning large files. Git LFS solves this problem by replacing large files with text pointers inside Git, while storing the files elsewhere.
REVIEWING BLOG POSTS

Some checks were not successful
1 failing and 3 successful checks

- blog-posts-calendar — Build #2362762 failed in 3s
- blog-posts — Build #2362761 succeeded in 2s
- blog-posts-nits — Build #2362763 succeeded in 1s
- blog-posts-write-good — Build #2362764 succeeded in 1s

This branch is up-to-date with the base branch
Merging can be performed automatically.

Merge pull request
You can also open this in GitHub Desktop or view command line instructions.
Here are some suggestions on how to write good. Unlike CI in other repos, they're just suggestions. Feel free to ignore them as you wish. Humans generally know better than robots.

In posts/2015-09-00-post-name.md

```
Seating is limited, so please be sure to register early.
```

"is limited" may be passive voice on line 7 at column 179
The post should contain more "yous"s than "we"s. See https://bit.ly/you-vs-we.

All images should be hosted on GitHub. Drag these images into an issue comment and use that URL:
  http://i.imgur.com/xYzaBc123.png
Huh. It looks like your post is scheduled to go out the same day as another post. If you haven't already, please check in with @github/blog to see if there isn't a better date to ship.
we are more receptive to feedback from PEDANTIC ROBOTS than PEDANTIC PEOPLE

...and robots are more reliable...
AUTOMATION ENABLES REVIEWERS TO FOCUS ON SUBSTANCE
COLLABORATION
AVOID BLOCKING

EXPOSE PROCESS
AVOID BLOCKING
PULL REQUESTS

REVIEW

WORK

REVIEW
PULL REQUESTS

STABLE

STABLE
PUT UNSTABLE CHANGES BEHIND

FEATURE FLAGS
function isFeatureEnabled(user) {
  return user.isInGroup("early-access");
}

// ...
if(isFeatureEnabled(user)) {
  // unstable code
} else {
  // stable code
}
```javascript
function isFeatureEnabled(user) {
  return user.isInGroup("early-access");
}

// ...

if(isFeatureEnabled(user)) {
  // unstable code
} else {
  // stable code

```
science "some-feature" do |e|
  e.use { old_code }
  e.try { new_code }
end
# returns the control value
WORK EXPOSES PROCESS
EVERYTHING HAS A URL
LEARN BY LURKING

TEACH BY DOING
“By placing tools directly in the middle of the conversation, everyone is pairing, all of the time.”

Jesse Newland
speakerdeck.com/jnewland/chatops-at-github
TRANSPARENCY enables
PARTICIPATION enables
COLLABORATION
Prefer tools that inherently capture information and expose process.

Document knowledge in prose or, preferably, code.
JESSE’S LAW

“We should model our teams and our communication structures after the architecture we want.”

Jesse Toth
Service Oriented Harmony
https://speakerdeck.com/jesseplusplus/service-oriented-harmony
OTHER LESSONS OF OPEN SOURCE

TECHNICAL

SOCIAL

ECONOMIC

POLITICAL
RECOMMENDED READING

The Success of Open Source
by Steven Weber

Producing Open Source Software
by Karl Fogel – producingoss.com
“The steam engine was the metal behind the first industrial revolution; but the revolution was a set of ideas about organizing factories, limited liability corporations, trade unions, and daily newspapers.”

Steven Weber
The Success of Open Source
THANK YOU

Brandon Keepers
bkeepers@github.com