CLI & VCS

An acronym-filled introduction to hackathons.

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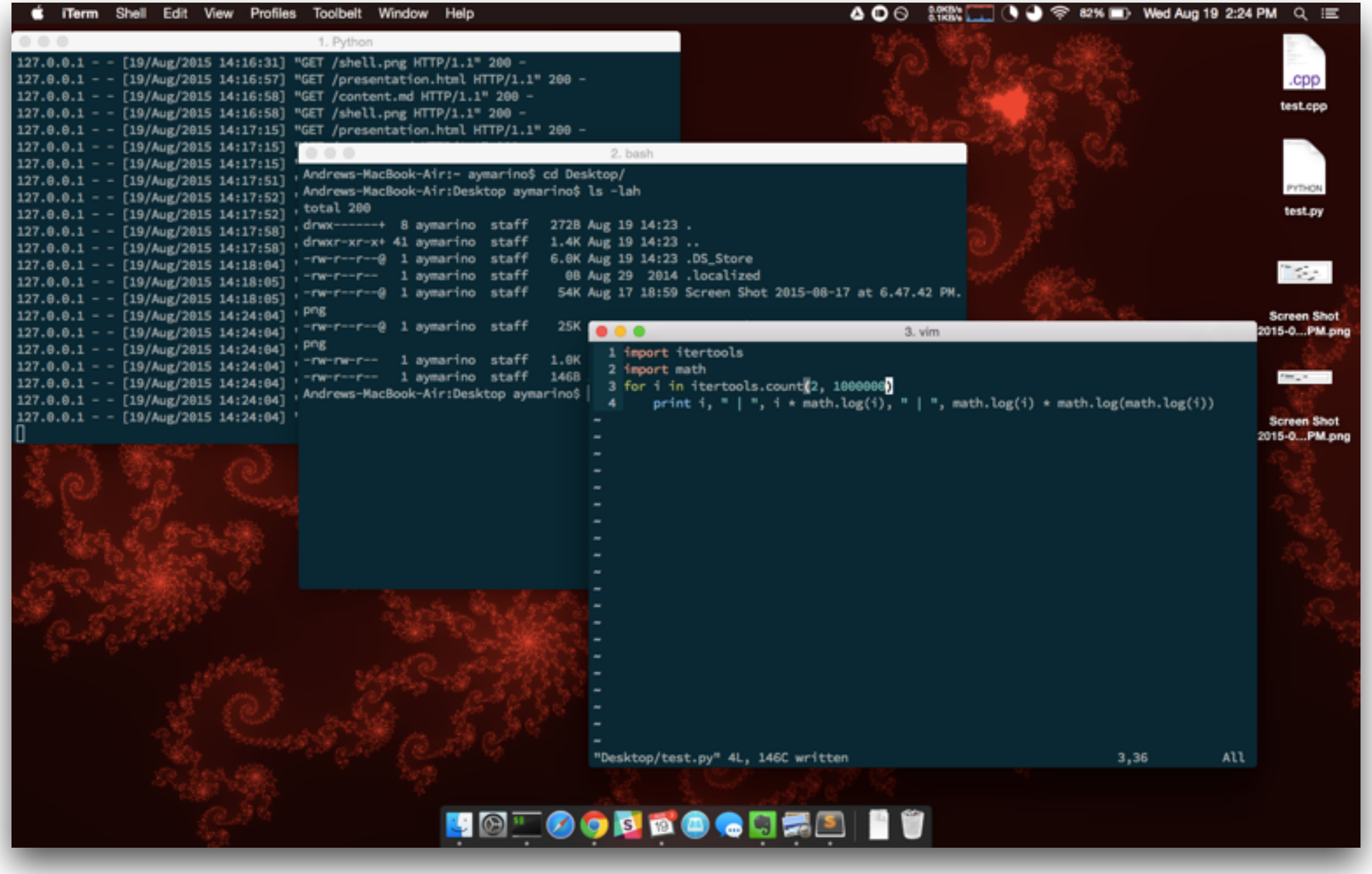
Midnight September 12, 2015

Command Line Interfaces (CLI)

A textual user interface



```
127.0.0.1 - - [19/Aug/2015 14:16:31] "GET /shell.png HTTP/1.1" 200 -
127.0.0.1 - - [19/Aug/2015 14:16:57] "GET /presentation.html HTTP/1.1" 200 -
127.0.0.1 - - [19/Aug/2015 14:16:58] "GET /content.md HTTP/1.1" 200 -
127.0.0.1 - - [19/Aug/2015 14:16:58] "GET /shell.png HTTP/1.1" 200 -
127.0.0.1 - - [19/Aug/2015 14:17:15] "GET /presentation.html HTTP/1.1" 200 -
127.0.0.1 - - [19/Aug/2015 14:17:15]
127.0.0.1 - - [19/Aug/2015 14:17:15]
127.0.0.1 - - [19/Aug/2015 14:17:51]
127.0.0.1 - - [19/Aug/2015 14:17:52]
127.0.0.1 - - [19/Aug/2015 14:17:52]
127.0.0.1 - - [19/Aug/2015 14:17:58]
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127.0.0.1 - - [19/Aug/2015 14:18:04]
127.0.0.1 - - [19/Aug/2015 14:18:05]
127.0.0.1 - - [19/Aug/2015 14:18:05]
127.0.0.1 - - [19/Aug/2015 14:24:04]
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127.0.0.1 - - [19/Aug/2015 14:24:04]
```

```
Andrews-MacBook-Air:~ aymarino$ cd Desktop/
Andrews-MacBook-Air:Desktop aymarino$ ls -lah
total 200
drwx------+  8 aymarino  staff   272B Aug 19 14:23 .
drwxr-xr-x+ 41 aymarino  staff   1.4K Aug 19 14:23 ..
-rw-r--r--@  1 aymarino  staff   6.0K Aug 19 14:23 .DS_Store
-rw-r--r--   1 aymarino  staff     0B Aug 29  2014 .localized
-rw-r--r--@  1 aymarino  staff    54K Aug 17 18:59 Screen Shot 2015-08-17 at 6.47.42 PM.
png
-rw-r--r--@  1 aymarino  staff    25K
png
-rw-rw-r--   1 aymarino  staff   1.0K
-rw-r--r--   1 aymarino  staff   146B
Andrews-MacBook-Air:Desktop aymarino$
```

```
import itertools
import math
for i in itertools.count(2, 1000000):
    print i, " | ", i * math.log(i), " | ", math.log(i) * math.log(math.log(i))

"Desktop/test.py" 4L, 146C written                              3,36          All
```

The original command line

(A different kind of textual interface)

The *actual* original command line

Basic Unix Command Reference

cd [path]	**c**hange **d**irectory to [path]	
ls	**l**i**s**t files/folders in directory	ls -la (detailed list)
pwd	**p**rint **w**orking **d**irectory	
cat [file]	show (text) content of file	
mkdir [folder name or path]	**m**a**k**e **dir**ectory	
cp [origin] [destination]	**c**o**p**y	
mv [origin] [destination]	**m**o**v**e	
rm [file] [-r for folders] [-f for force delete]	**r**e**m**ove	CAUTION

| less	Pipe output to “less”	Easier for reading long outputs (files, compiler
tail [- #] file	Last # of lines of file	
head [- #] file	First # of lines of file	
grep [search] [file]	Finds lines with search term in file(s)	Use with regex: “-E”
ssh user@hostname	Secure shell into “hostname” as “user”	Connect into a remote host’s shell
Ctrl-A	Cursor to front of command	
Ctrl-E	Cursor to end of command	
Ctrl-L	Clear screen	
Ctrl-R	Reverse command search	Find that one long-ass command you typed a few minutes ago

Git & GitHub

An introductory workflow

Motivations behind version control

- Ease of collaboration & sharing

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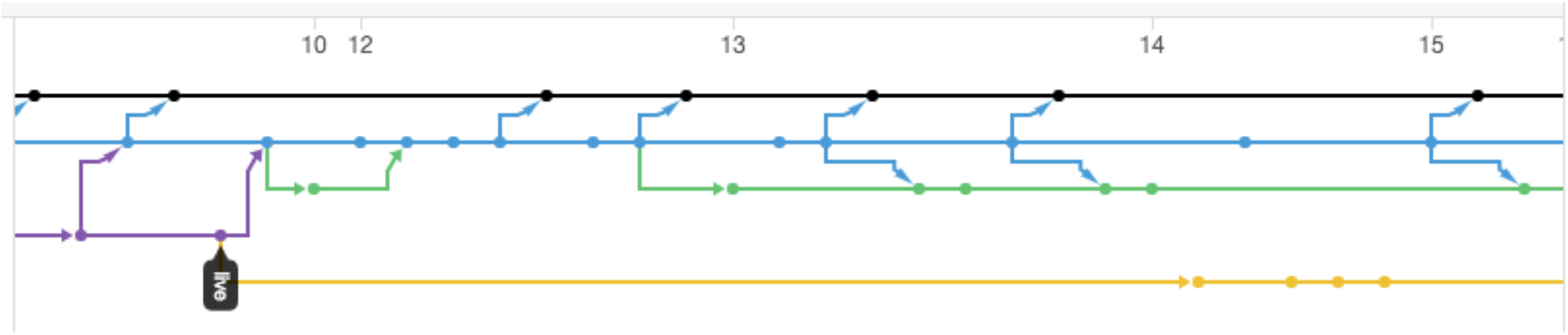
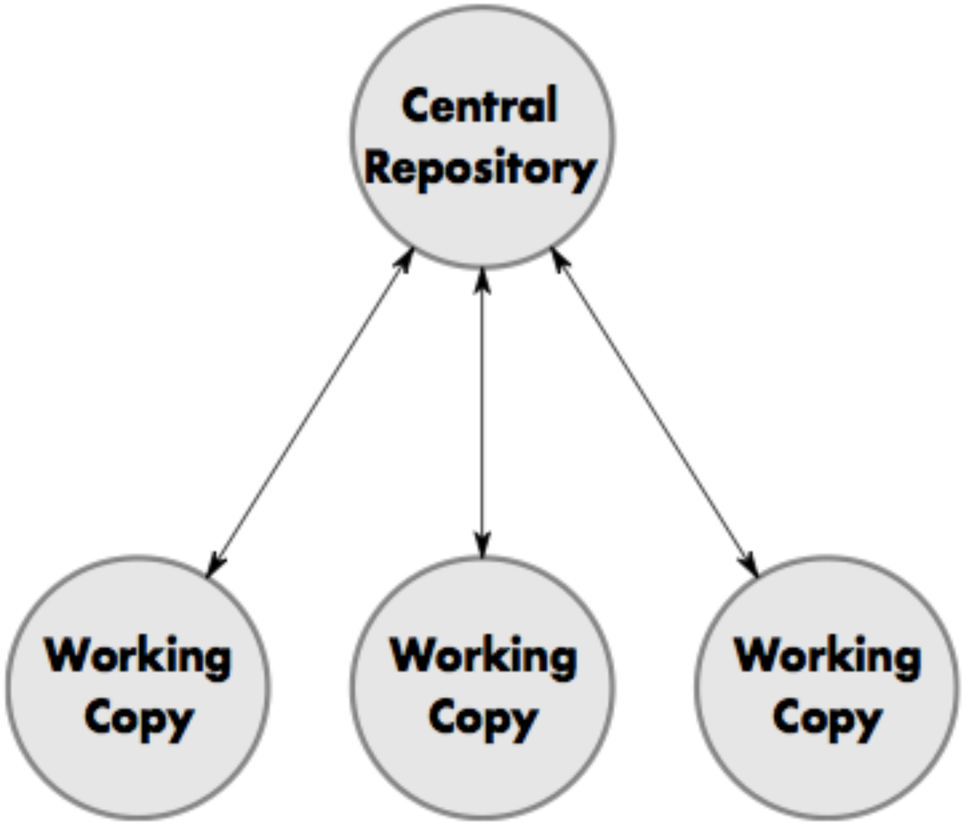
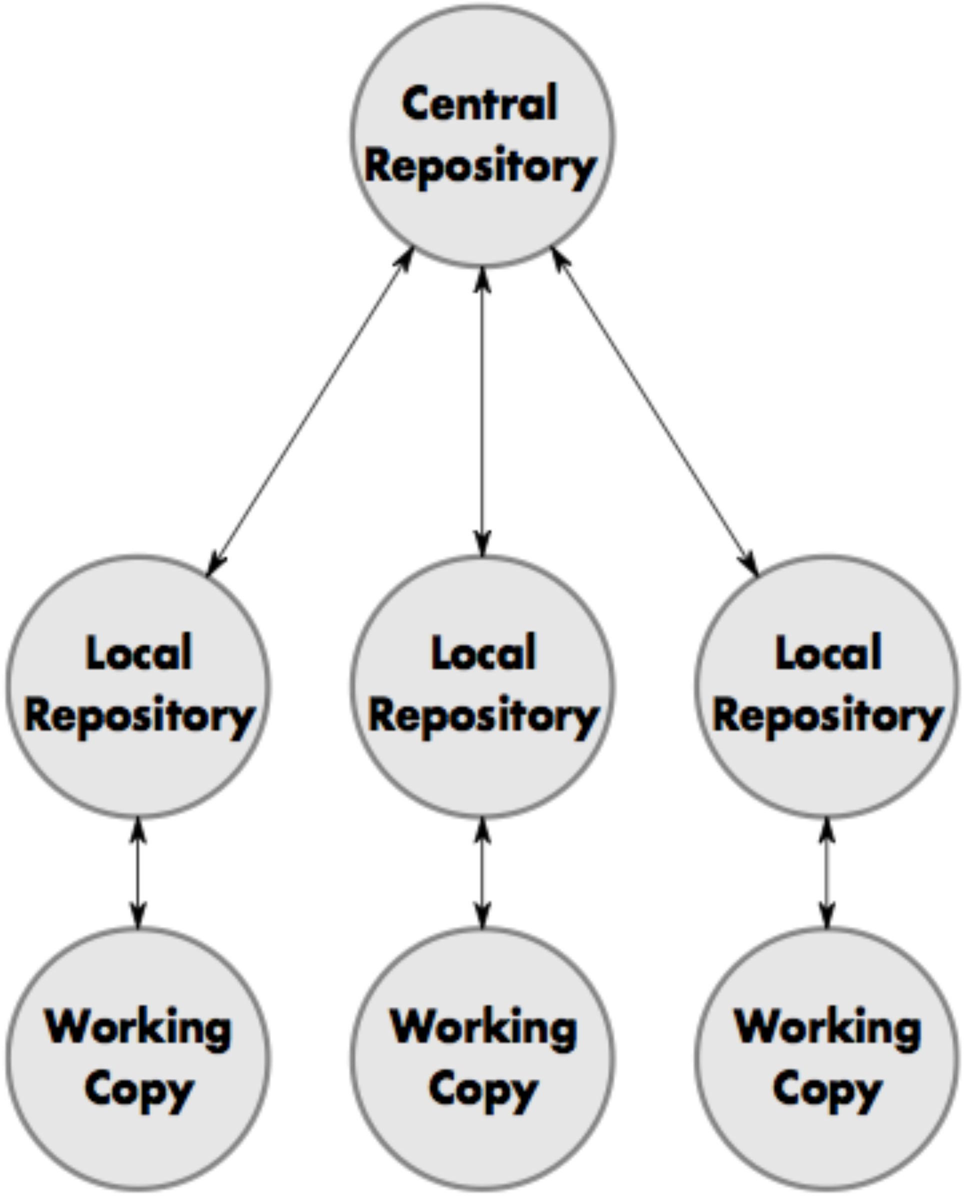
- Ease of collaboration & sharing
- Serves as a distributed backup
- Builds a *narrative* of your project:



Distributed





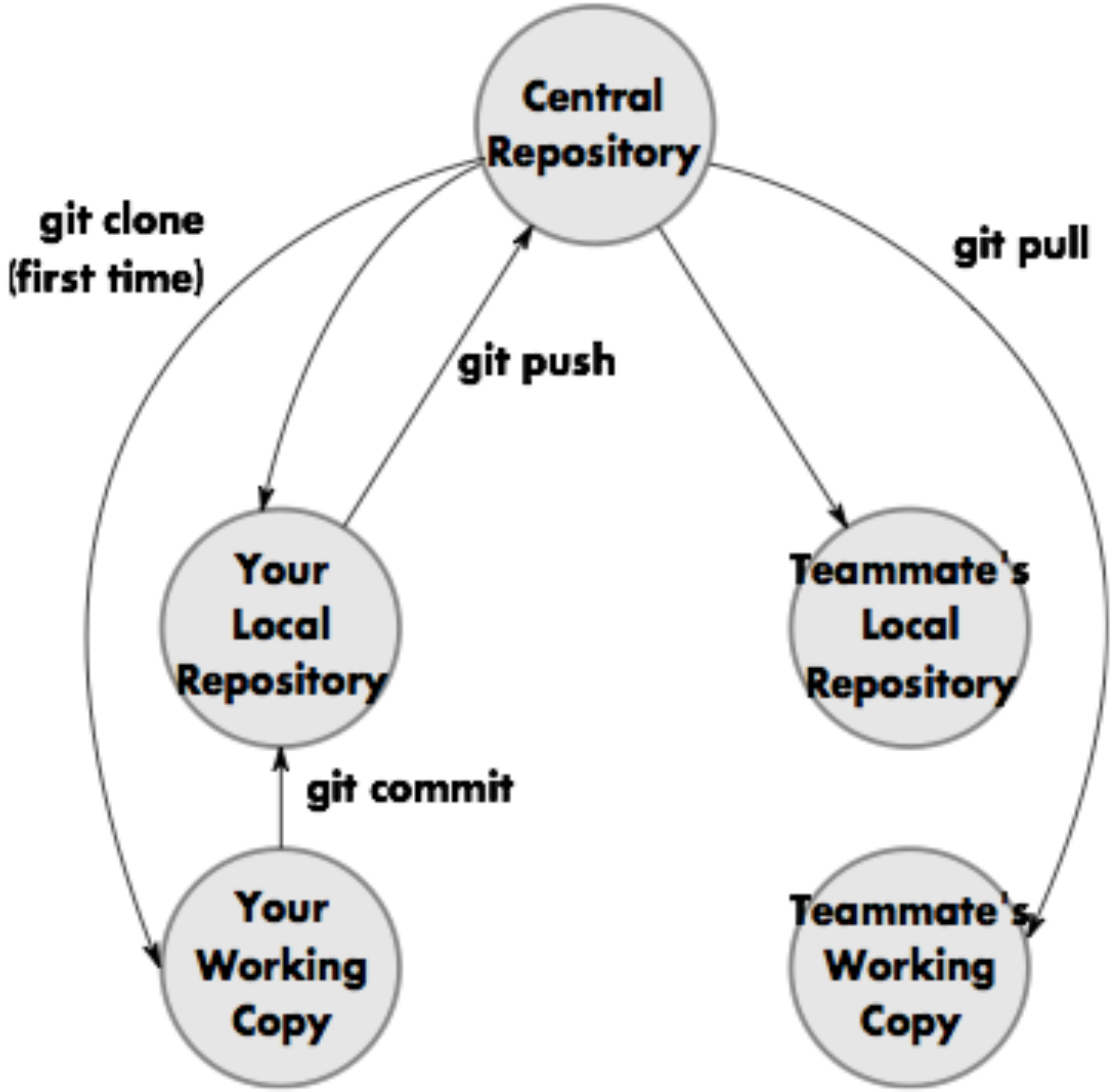
Centralized (à la SVN)

Distributed repos (à la git)

Ways to use git

- Graphical interfaces:
  - Xcode
  - GitHub Desktop
  - Sublime Text
- **Command Line**

Collaborating via git



Git Reference

- Git commands: init, clone, add, commit, push, pull, checkout, branch, merge, diff, log, status
- Live workflow example
- Reference for these commands: Google Search “git cheat sheet”

Best practices with git

- Don’t use commits as “save”.
- Don’t wait too long to commit.
- Careful not to commit sensitive info when pushing to GitHub.
- Choose helpful commit messages. (Spoiler: good luck with this one at 4 AM.)

Best practices with git

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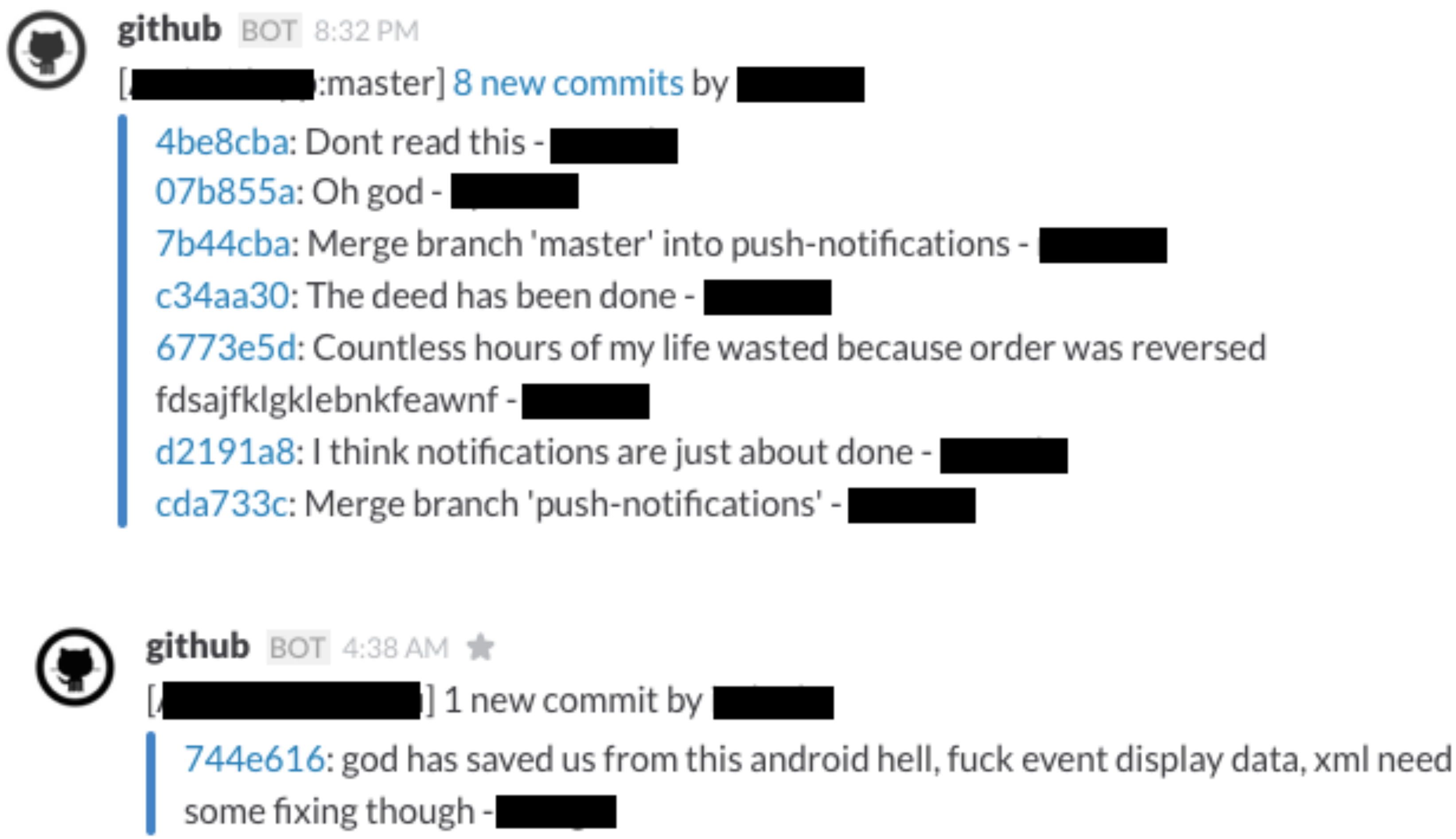

github BOT 8:32 PM
[[redacted]:master] 8 new commits by [redacted]
4be8cba: Dont read this - [redacted]
07b855a: Oh god - [redacted]
7b44cba: Merge branch 'master' into push-notifications - [redacted]
c34aa30: The deed has been done - [redacted]
6773e5d: Countless hours of my life wasted because order was reversed
fdsajfklgklebnkfeawnf - [redacted]
d2191a8: I think notifications are just about done - [redacted]
cda733c: Merge branch 'push-notifications' - [redacted]

github BOT 4:38 AM ★
[[redacted]] 1 new commit by [redacted]
744e616: god has saved us from this android hell, fuck event display data, xml need
some fixing though - [redacted]