

Git

(and some other stuff)



Recapping last week

Any lingering administrative issues?

Recapping last week

Any lingering administrative issues?

The readings

- Biculturalism
- Command-line "bullshittery"

What's version control?

What's version control?

Why is it important?

And how might we build a version control system?

What's version control?

Why is it important?

And how might we build a version control system?

Why doesn't everyone use version control for everything?

Git-ing started (I'm so sorry)

- first — `init`
- making commits — `add`, `commit`
- viewing work/history — `status`, `log`

Git-ing started (I'm so sorry)

- first — `init`
- making commits — `add`, `commit`
- viewing work/history — `status`, `log`

Let's peek under the hood

- History is a linked list
- What's `master`, `HEAD`?
- Where's the old versions?

Git-ing started (I'm so sorry)

- first — `init`
- making commits — `add`, `commit`
- viewing work/history — `status`, `log`

Let's peek under the hood

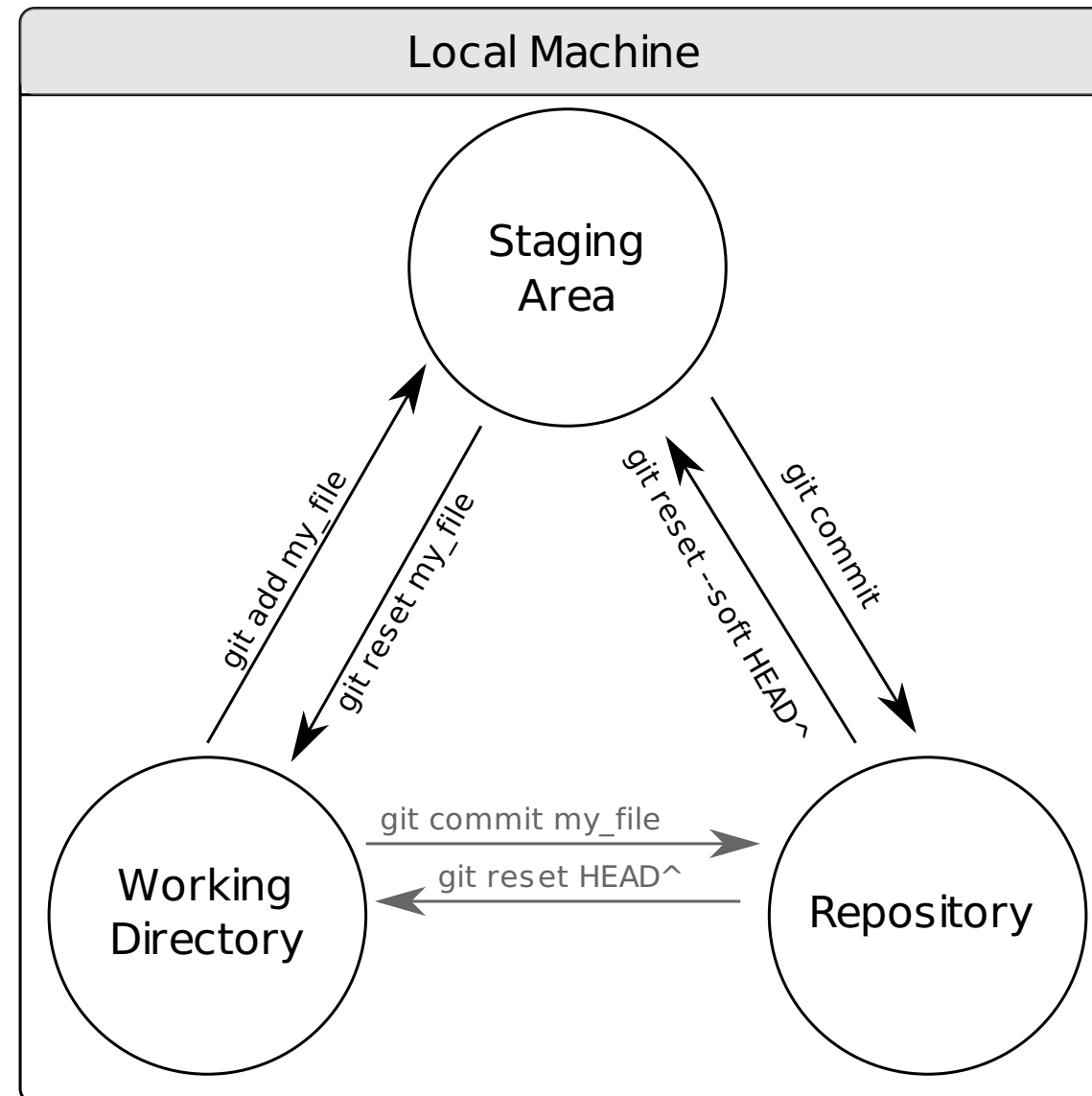
- History is a linked list
- What's `master`, `HEAD`?
- Where's the old versions?

I'm lazy, let's make `git st` == `git status`

- `git config --global --edit`
 - (Fancy way of saying `editor ~/.gitconfig`)
 - (Fancy way of saying `editor /home/ppannuto/.gitconfig`)
 - (Fancy way of saying `[nano/vim/emacs/...] /home/ppannuto/.gitconfig`)

```
[alias]
st = status
```

Using git locally

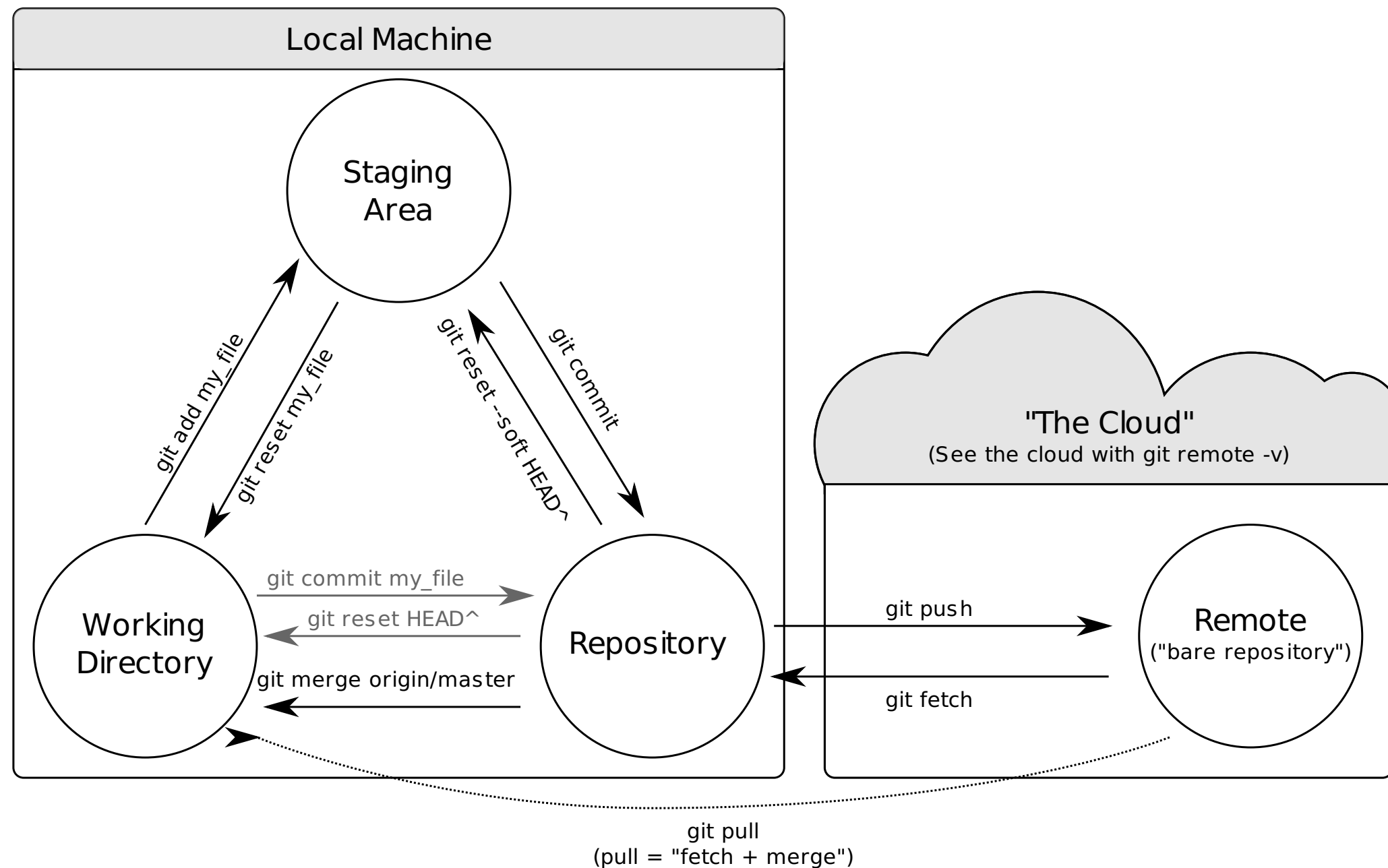


Collaborating with git

First, we have to talk just a little about branches

Collaborating with git

First, we have to talk just a little about branches



Why is git cool?

Let's debug a real-world problem

Phony is a `ruby` library for pretty-printing phone numbers. It's used by a bunch of websites (AirBnB, ZenDesk, etc)

1. `git clone https://github.com/floere/phony`

```
# US phone number
ruby -e 'require "./lib/phony"' -e 'puts Phony.format("17345551212")'
+ 1 (734) 555-1212
# French phone number
ruby -e 'require "./lib/phony"' -e 'puts Phony.format("33123456789")'
+33 1 23 45 67 89
# Emergency phone number in the UK
ruby -e 'require "./lib/phony"' -e 'puts Phony.format("999")'
```

```
ruby -e 'require "./lib/phony"' -e 'puts Phony.format("999")'
```

- Go back in time to when you know it worked
 - `git checkout v1.9.0`

```
ruby -e 'require "./lib/phony"' -e 'puts Phony.format("999")'
```

- Go back in time to when you know it worked
 - `git checkout v1.9.0`
- Search history for the problem

```
ruby -e 'require "./lib/phony"' -e 'puts Phony.format("999")'
```

- Go back in time to when you know it worked
 - `git checkout v1.9.0`
- Search history for the problem
 - The `git bisect` command will help keep track of progress
 - `git bisect start`
 - `git bisect good`
 - `git checkout master`
 - `git describe`
 - `git bisect bad`
 - (magic)
 - `git describe`


```
ruby -e 'require "./lib/phony"' -e 'puts Phony.format("999")'
```

- Go back in time to when you know it worked
 - `git checkout v1.9.0`
- Search history for the problem
 - The `git bisect` command will help keep track of progress
 - `git bisect start`
 - `git bisect good`
 - `git checkout master`
 - `git describe`
 - `git bisect bad`
 - (magic)
 - `git describe`
- But I'm *still* lazy

```
ruby -e 'require "./lib/phony"' -e 'puts Phony.format("999")'
```

- Go back in time to when you know it worked
 - `git checkout v1.9.0`
- Search history for the problem
 - The `git bisect` command will help keep track of progress
 - `git bisect start`
 - `git bisect good`
 - `git checkout master`
 - `git describe`
 - `git bisect bad`
 - (magic)
 - `git describe`
- But I'm *still* lazy
 - `git bisect run ruby -e 'require "./lib/phony"' -e 'puts Phony.normalize("+999")'`

```
ruby -e 'require "./lib/phony"' -e 'puts Phony.format("999")'
```

- Go back in time to when you know it worked
 - `git checkout v1.9.0`
- Search history for the problem
 - The `git bisect` command will help keep track of progress
 - `git bisect start`
 - `git bisect good`
 - `git checkout master`
 - `git describe`
 - `git bisect bad`
 - (magic)
 - `git describe`
- But I'm *still* lazy
 - `git bisect run ruby -e 'require "./lib/phony"' -e 'puts Phony.normalize("+999")'`
- So what changed?
 - `git log -p` — or — github.com/floere/phony/commit/9b4234....
 - <https://github.com/floere/phony/issues/219>

Closing remarks

You must use git for something non-trivial this term

- You *should* use version control for all your class projects
 - And I don't mean folder-copying
 - (*I'm looking at you, freshman-year Pat*)
- Not in any programming classes?
 - Try using it for other homework
- Deadline for this is Week 7 — Git II (Oct 19/21)