

Git tooty

Silas Tittes

27 September, 2016

Outline

- ▶ I don't `git git`, why should I do this?

Outline

- ▶ I don't `git git`, why should I do this?
- ▶ Working with a remote repository – GitHub

Outline

- ▶ I don't `git git`, why should I do this?
- ▶ Working with a remote repository – GitHub
- ▶ Working with a local repository – `git`

Outline

- ▶ I don't `git git`, why should I do this?
- ▶ Working with a remote repository – GitHub
- ▶ Working with a local repository – `git`
- ▶ Version control *basics* – review commits, branching, and merging

Outline

- ▶ I don't git git, why should I do this?
- ▶ Working with a remote repository – GitHub
- ▶ Working with a local repository – git
- ▶ Version control *basics* – review commits, branching, and merging
- ▶ Conclusions and where to go from here

Motivation

“I don't git it, why should I do this?”

- ▶ Version control – because you *will* screw something up.



“I don't git it, why should I do this?”

- ▶ Version control – because you *will* screw something up.
- ▶ Version control – because uncontrolled version proliferation is *the devil*.



“I don't git it, why should I do this?”

- ▶ Version control – because you *will* screw something up.
- ▶ Version control – because uncontrolled version proliferation is *the devil*.
- ▶ Collaboration – because *everything* is better together.



“I don't git it, why should I do this?”

- ▶ Version control – because you *will* screw something up.
- ▶ Version control – because uncontrolled version proliferation is *the devil*.
- ▶ Collaboration – because *everything* is better together.
- ▶ Remote backup – because your computer *will* die.



“I don't git it, why should I do this?”

- ▶ Version control – because you *will* screw something up.
- ▶ Version control – because uncontrolled version proliferation is *the devil*.
- ▶ Collaboration – because *everything* is better together.
- ▶ Remote backup – because your computer *will* die.
- ▶ Public portfolio – because you *should* demonstrate your awesomeness to the world.



“I don't git it, why should I do this?”

- ▶ Version control – because you *will* screw something up.
- ▶ Version control – because uncontrolled version proliferation is *the devil*.
- ▶ Collaboration – because *everything* is better together.
- ▶ Remote backup – because your computer *will* die.
- ▶ Public portfolio – because you *should* demonstrate your awesomeness to the world.
- ▶ Encourages reproducibility *and* creativity.



Things I use git and GitHub for:

- ▶ My blog – silas.tittes.github.io

Things I use git and GitHub for:

- ▶ My blog – silas.tittes.github.io
- ▶ All the code I care about (some private on BitBucket)

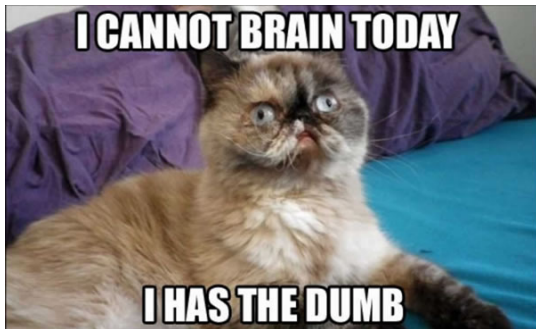
Things I use git and GitHub for:

- ▶ My blog – silas.tittes.github.io
- ▶ All the code I care about (some private on BitBucket)
- ▶ Teaching materials and teaching diary (not private)

Things I use git and GitHub for:

- ▶ My blog – silas.tittes.github.io
- ▶ All the code I care about (some private on BitBucket)
- ▶ Teaching materials and teaching diary (not private)
- ▶ This presentation

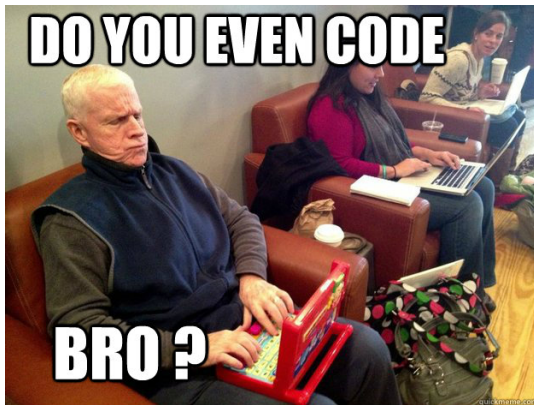
“What if people look at my code and think I’m dumb?”



“What if people look at my code and think I’m dumb?”



“I’m not really a coder”



You are, but even if you're "not"

"GitHub is used to manage the collaborative development of recipes, musical scores, books, fonts, legal documents, lessons and tutorials, and data sets"

GitHub for the rest of us



Credit: Flickr/Nick Guaranto

Git made it possible for programmers to coordinate distributed work across teams -- now GitHub makes it possible for everyone else



By **Jon Udell** | Follow
InfoWorld | Feb 24, 2015

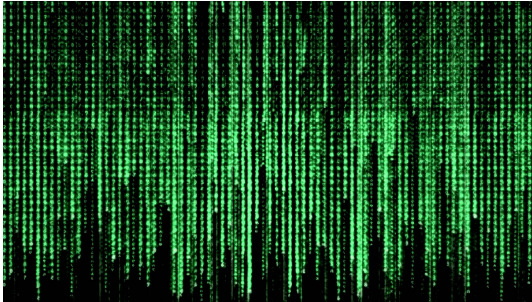
Working with a remote repository – GitHub (or
BitBucket)

Let's make a GitHub log-in and repository!



Working with a local repository – git

Enter the matrix



Clone your new remote repo

```
git clone https://github.com/octocat/lovecatz.git
```

Now add a bash script and a README.md to your local repository on your computer, or create a new file.

Git used to it – the basics

You've made some local repo edits to some code, documentation, draft manuscript, data, or cookie recipe. What now?

#See what's changed

`git status`

#prepare the content for the next commit -- "staging"

`git add --all` *# --all, or specify files*

#"The Rub" -- Record changes to the repository

#This is what creates version control

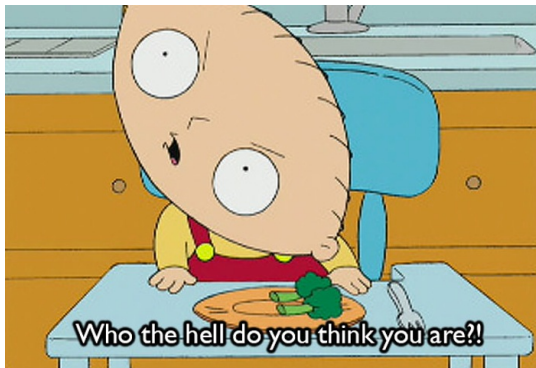
`git commit -m "short discription of code changes"`

#sync local and remote repos on master branch

`git push -u origin master`

Error!

```
git config user.name "Octocat69"  
git config user.email "Octocat69@bbqchikn.com"
```



Back on track

#sync local and remote repos

```
git push -u origin master
```

#Up to date?

```
git status
```

Check out remote GitHub repo to see updates.

Practice the “add, commit, push” cycle 4X



add, commit, push

add, commit, push

add, commit, push

add, commit, push

Version control basics

Version control basics – reviewing file histories

#git overview of commits to repo

`git log` *#for whole repo*

#git overview of commits for one file

`git log <filename>`

#review int-th previous version of file

`git show HEAD~<int>:<filename>`

Conclusions

- ▶ `git` and GitHub are valuable modern tools even for non-programmers – learn how to use them!

Conclusions

- ▶ `git` and GitHub are valuable modern tools even for non-programmers – learn how to use them!
- ▶ You can now make a solo repo and implement add, commit, push cycles for version control and remote storage.

Conclusions

- ▶ `git` and GitHub are valuable modern tools even for non-programmers – learn how to use them!
- ▶ You can now make a solo repo and implement add, commit, push cycles for version control and remote storage.
- ▶ Hopefully you have a sense of the more advanced version control options available to you, even if you aren't comfortable using them yet.

Octocat is watching



git silly

Where to go from here

practice lots, read documentation, practice more

Extra Slides

Explore previous commits, or testing new ideas – branch first!

#create a new branch

```
git checkout -b branch_name
```

#short term cache of current repo

```
git stash
```

#check which branch you're on

```
git branch #prints asterisk next to current branch
```

#go back to old commit by hash value

#see git log for hash values

```
git checkout <commit number>
```

What now?

1. If you were just curious, but like the most recent commits:

```
#go back to most recent commit  
git stash apply
```


What now?

2. If you screwed up bad and need to go back to previous version.

```
#revert to int-th previous commit  
git reset --hard HEAD~<int>  
#add commit to remote repo  
git push origin master
```

Also, check out oh shit, git!

What now?

3. Or remove branch entirely

```
#remove branch name -- caution  
git branch -d branch_name
```

What now?

4. Push your new branch to remote repo

```
git add --all # --all, or specify files
git commit -m "short discription of code changes"
git push -u origin branch_name
```

What now?

5. Merge with master branch,

```
#go back to master branch
```

```
git checkout master
```

```
#merge branch with master branch
```

```
git merge branch_name #read messages carefully!
```

What now?

6. Not your repo? Forking and submitting pull requests. But – too much too soon.

Conclusions and where to go from here

Conclusions

- ▶ `git` and GitHub are valuable modern tools even for non-programmers – learn how to use them!

Conclusions

- ▶ `git` and GitHub are valuable modern tools even for non-programmers – learn how to use them!
- ▶ You can now make a solo repo and implement add, commit, push cycles for version control and remote storage.

Conclusions

- ▶ `git` and GitHub are valuable modern tools even for non-programmers – learn how to use them!
- ▶ You can now make a solo repo and implement add, commit, push cycles for version control and remote storage.
- ▶ Hopefully you have a sense of the more advanced version control options available to you, even if you aren't comfortable using them yet.

Where to go from here

practice lots, read documentation, practice more

Octocat is watching



git silly