Git tooty

(fart joke?)

Silas Tittes

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- Version control *basics* – review commits, branching, and merging
- Conclusions and where to go from here

Motivation

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- Public portfolio – because you *should* demonstrate your awesomeness to the world.

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- Public portfolio – because you *should* demonstrate your awesomeness to the world.
- Encourages reproducibility *and* creativity.

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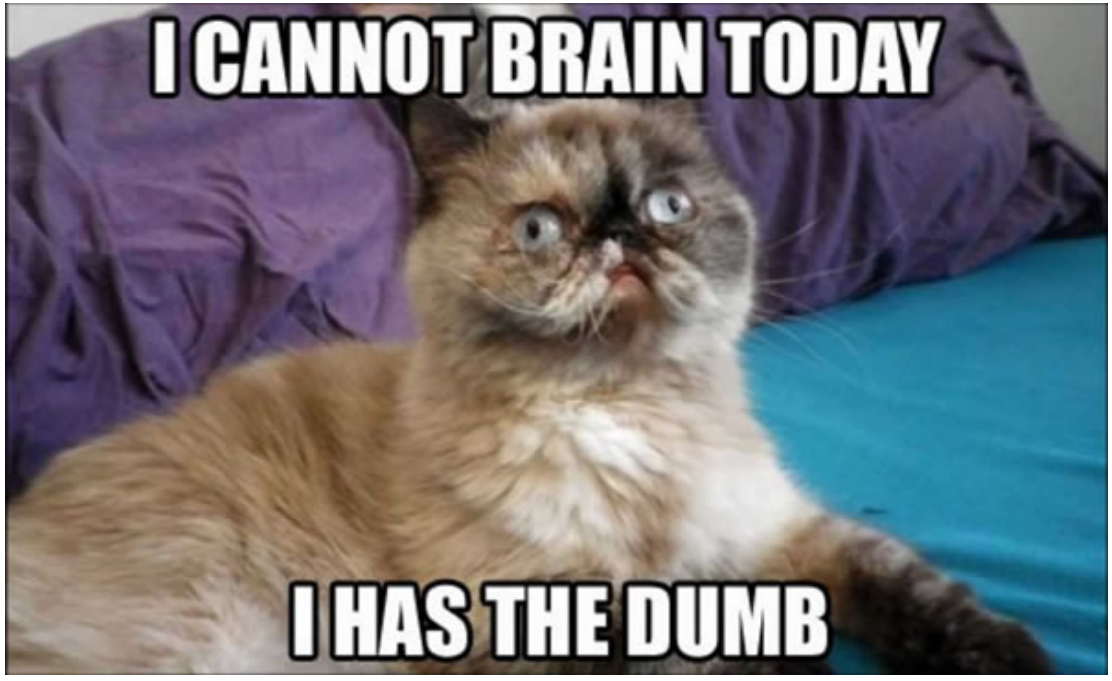
- Teaching materials and teaching diary (not private)
- This presentation

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



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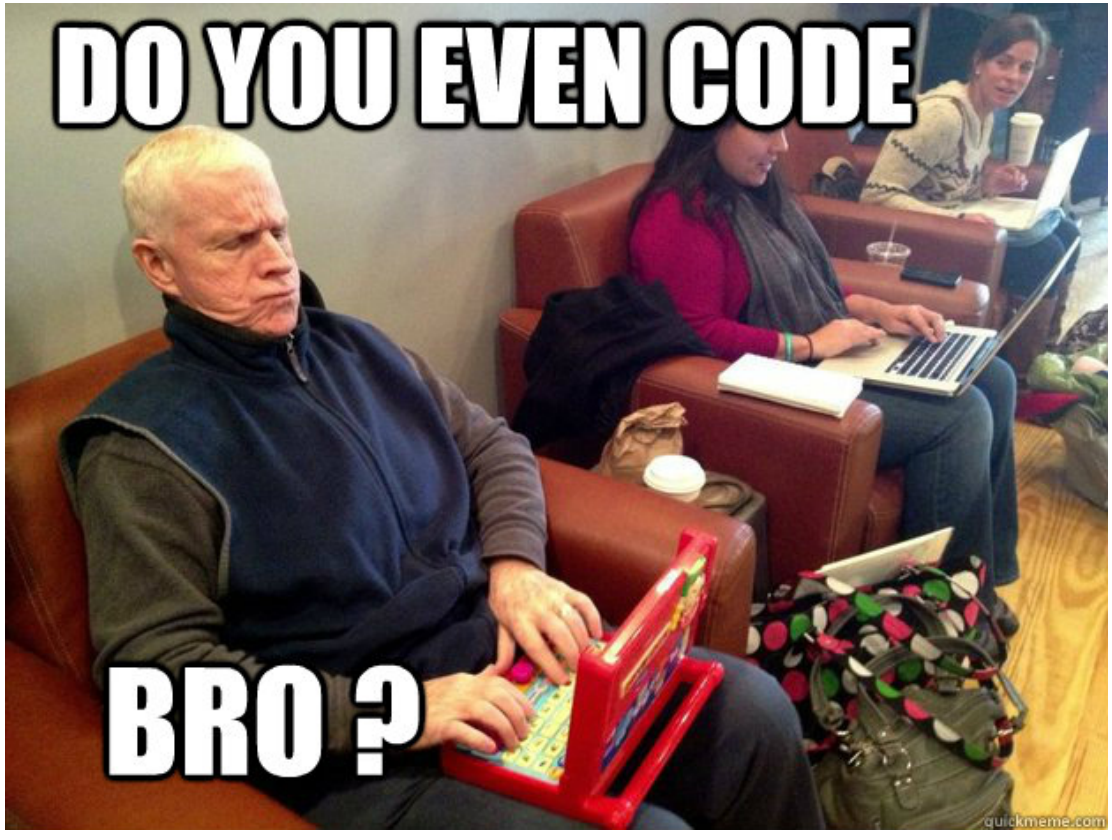
“I’m not really a coder”



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 Quaranto

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

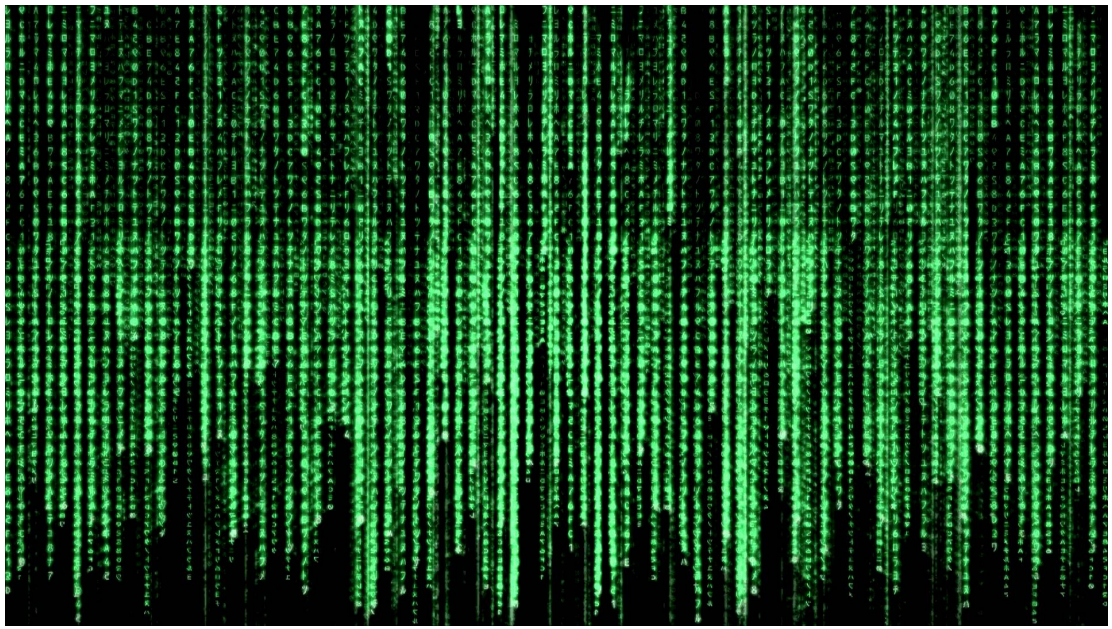
By Jon Udell | Follow
InfoWorld | Feb 24, 2015

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 make some changes to your README.md on your computer, or create a new file. Perhaps `hello.cpp` if you're feeling real crazy.

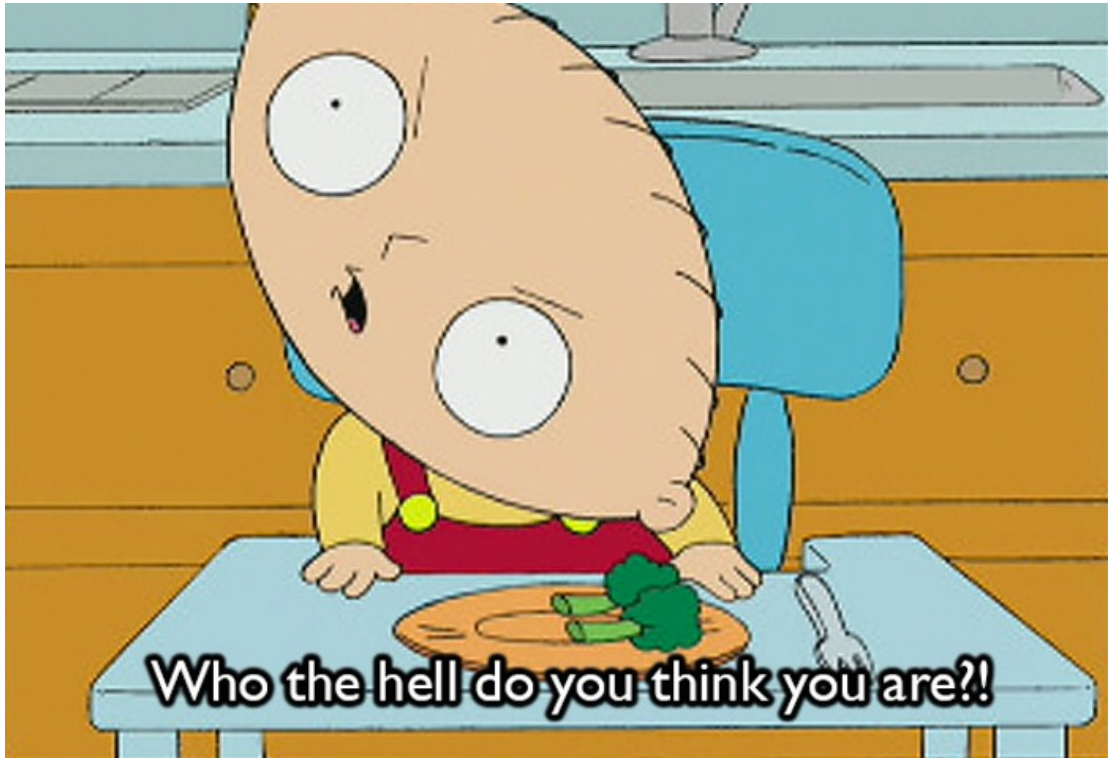
Git used to it – the basics

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 --global user.name "Octocat69"
git config --global 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
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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>
```

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.

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- `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