

Git tooty
(fart joke?)

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- ▶ Version control *basics* – reviewing file histories
- ▶ Where to go from here

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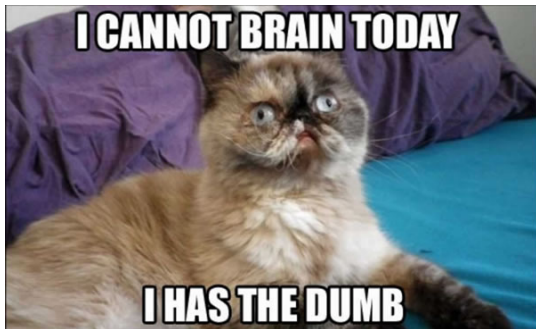


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- ▶ Encourages reproducibility *and* creativity.



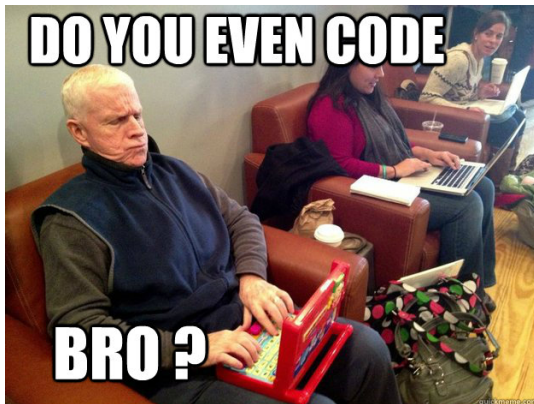
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“I’m not really a coder”



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 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

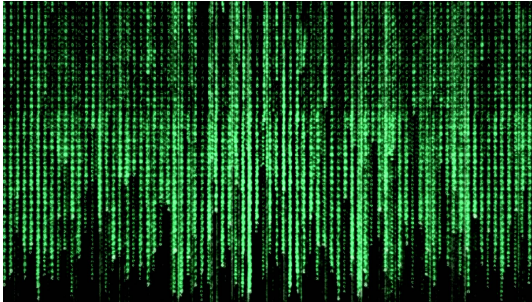
Working with a remote repository – GitHub (or
BitBucket)

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 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

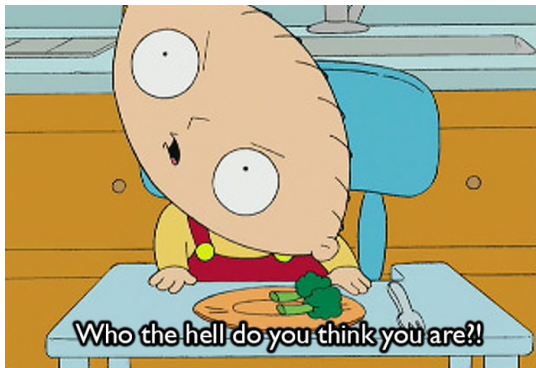
`git commit -m "short discription of code changes"`

#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 – 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 – branch first!

Make a commit now just to be safe

#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. Or remove branch entirely

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

What now?

3. 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?

4. 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?

5. Not your repo? Submit pull request. 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.

Where to go from here

practice lots, read documentation, practice more