Git & MSU GitLab

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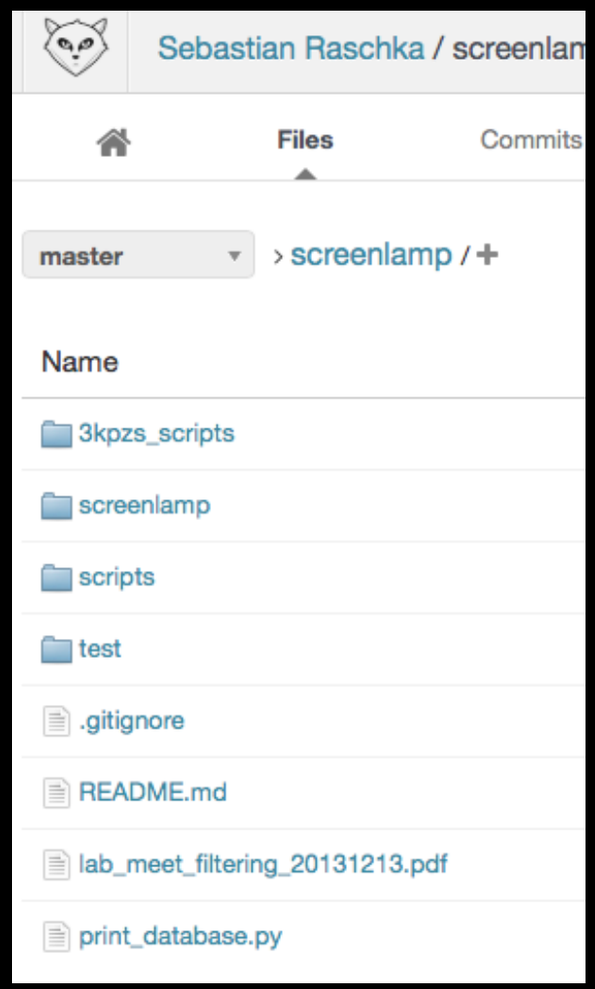
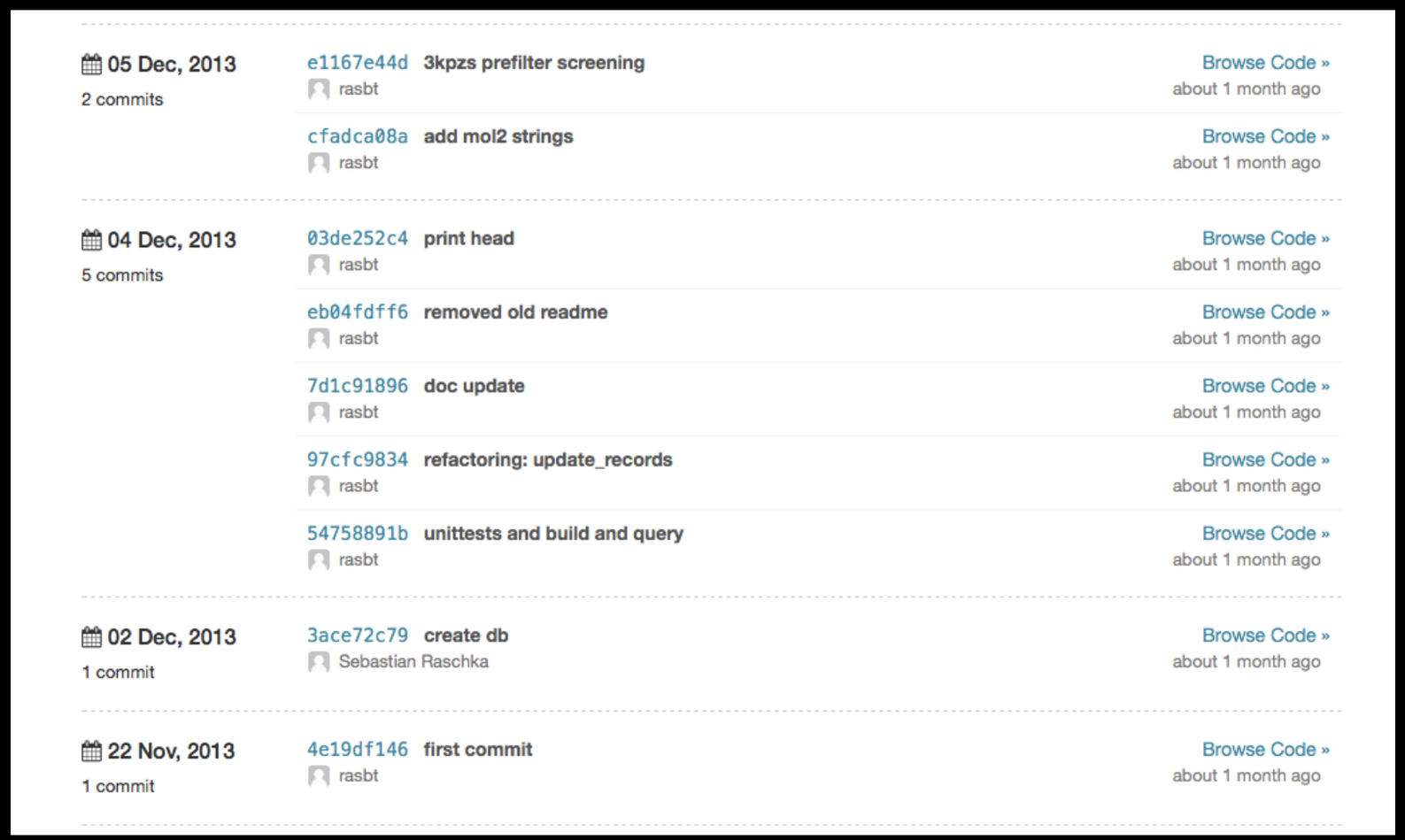
January 8, 2014

http://phdcomics.com/comics.php

What is Version Control?

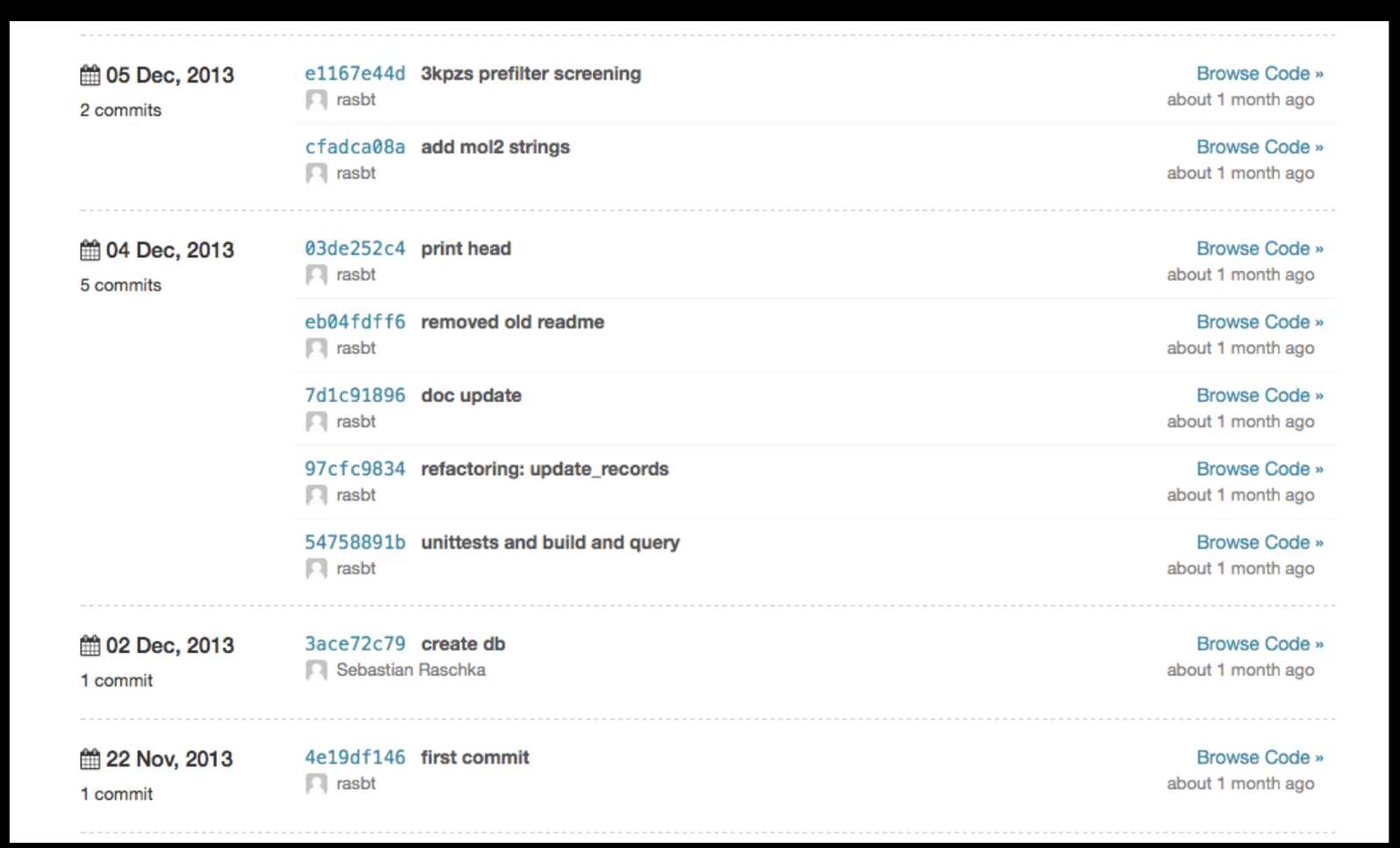
data storage that keeps previous versions





Benefits of Version Control

keep track of changes



05 Dec, 2013
2 commits

e1167e44d **3kpzs prefilter screening** — rasbt — Browse Code » — about 1 month ago

cfadca08a **add mol2 strings** — rasbt — Browse Code » — about 1 month ago

04 Dec, 2013
5 commits

03de252c4 **print head** — rasbt — Browse Code » — about 1 month ago

eb04fdff6 **removed old readme** — rasbt — Browse Code » — about 1 month ago

7d1c91896 **doc update** — rasbt — Browse Code » — about 1 month ago

97cfc9834 **refactoring: update_records** — rasbt — Browse Code » — about 1 month ago

54758891b **unittests and build and query** — rasbt — Browse Code » — about 1 month ago

02 Dec, 2013
1 commit

3ace72c79 **create db** — Sebastian Raschka — Browse Code » — about 1 month ago

22 Nov, 2013
1 commit

4e19df146 **first commit** — rasbt — Browse Code » — about 1 month ago

Benefits of Version Control

revert changes

Benefits of Version Control

share & collaborate

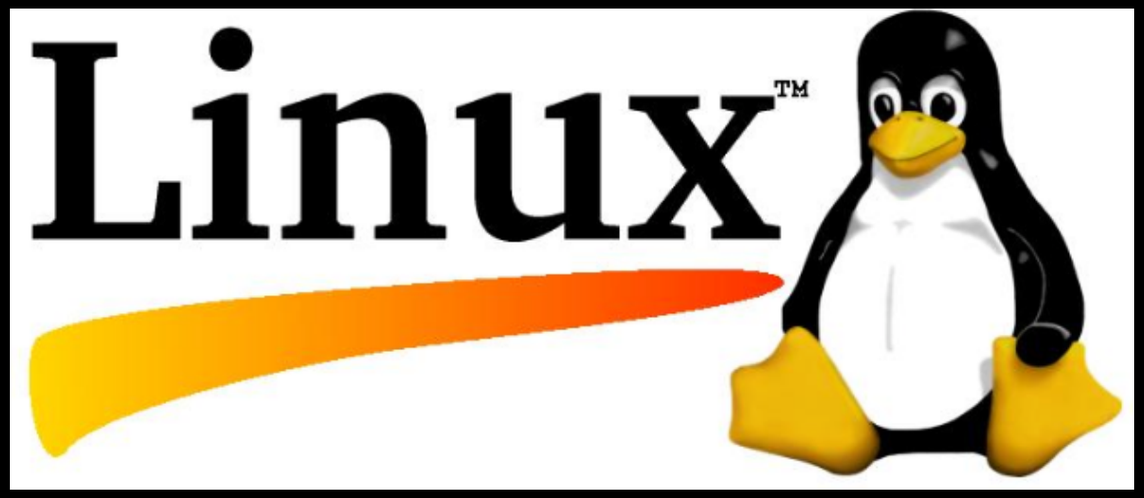
Git vs. other Version Control systems

free and open source distributed

http://git-scm.com/

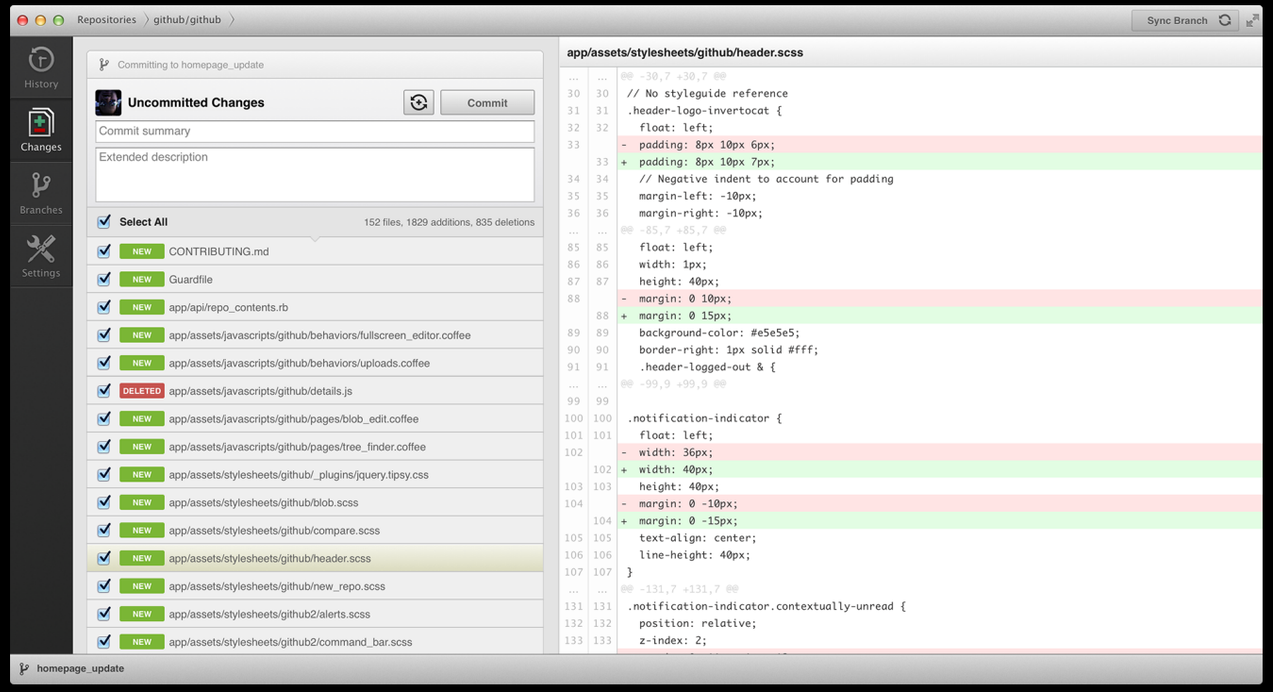
Git vs. other Version Control systems

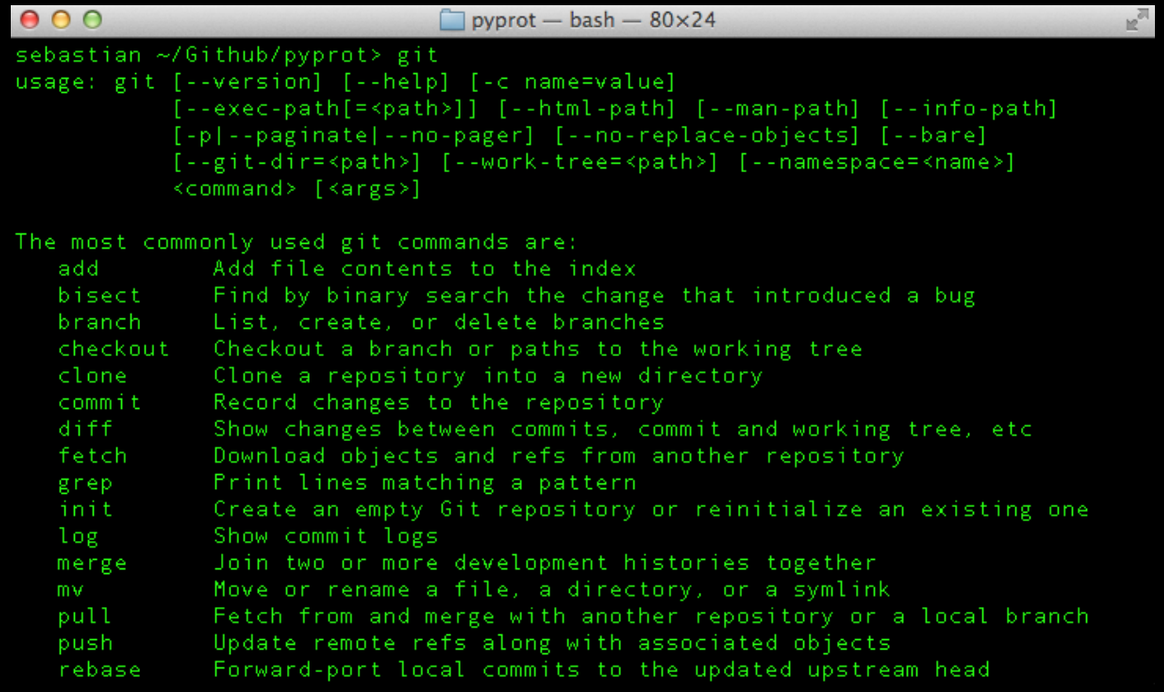
all platforms



Git vs. other Version Control systems

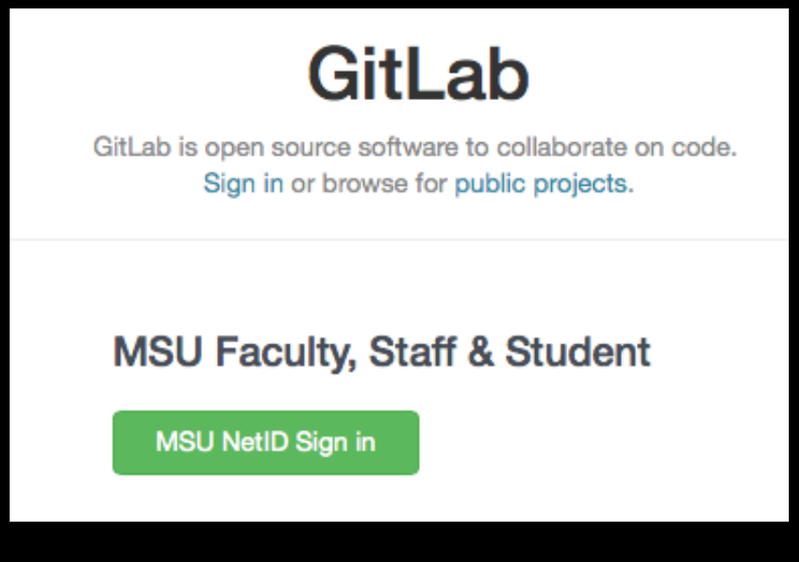
command line or GUI



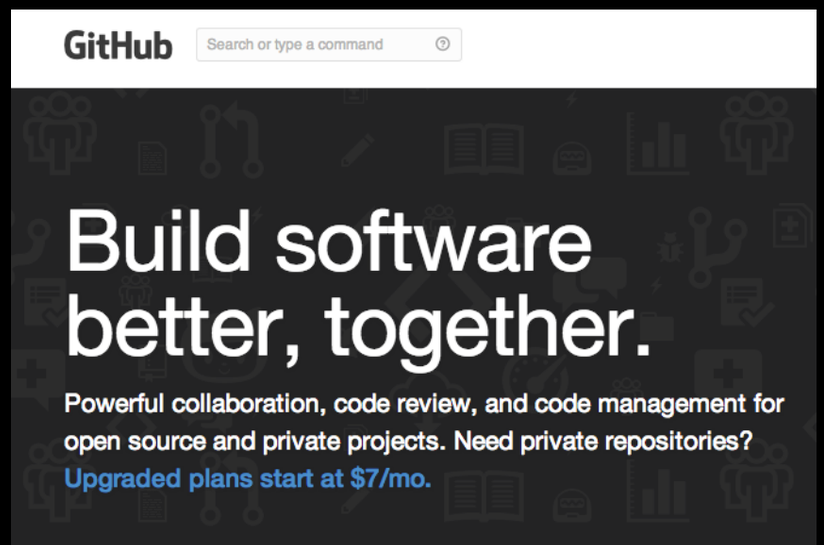


http://mac.github.com

Server platforms



https://gitlab.msu.edu/



https://github.com/

https://bitbucket.org

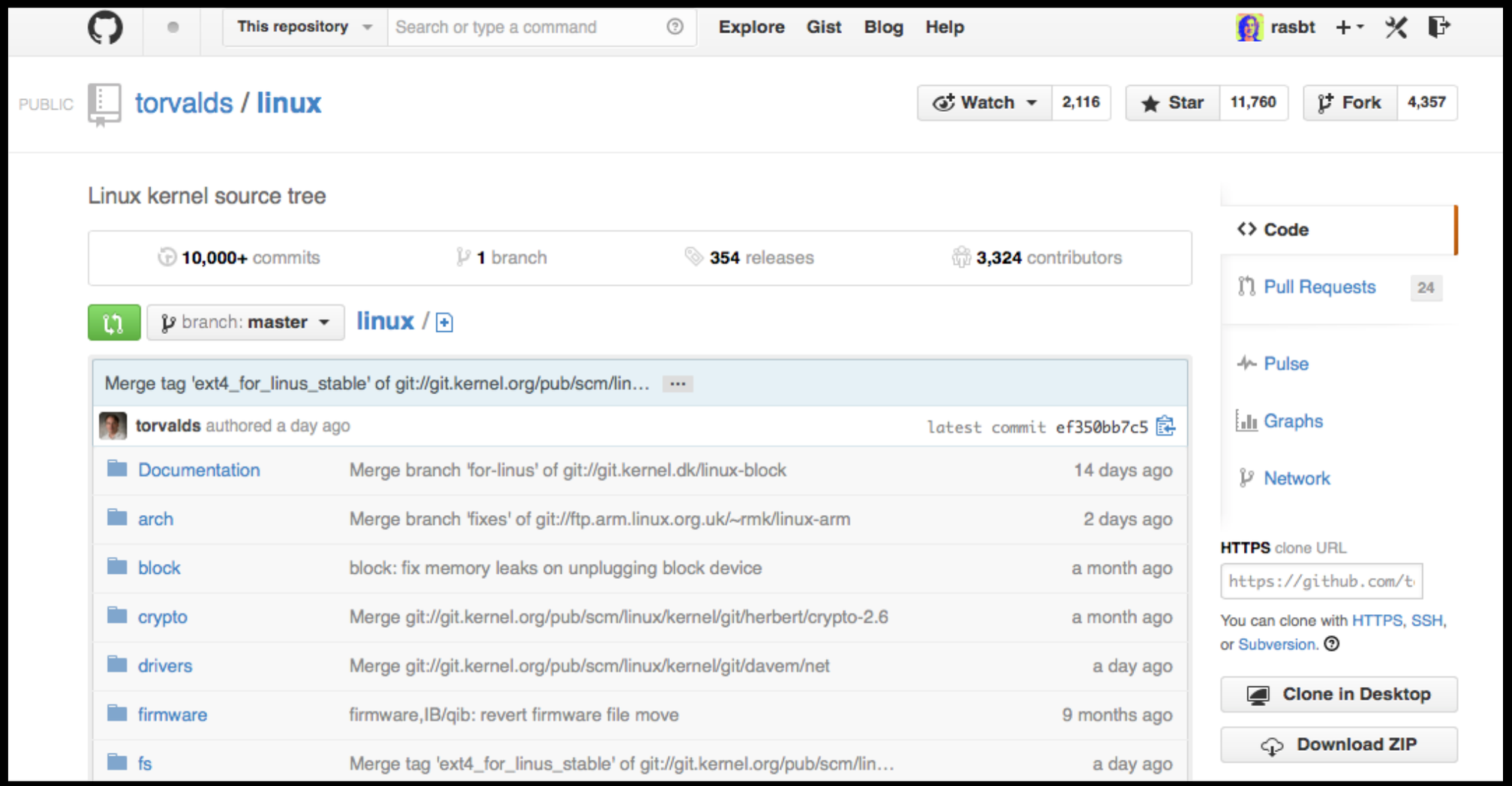
make your own!

Git vs. other Version Control systems

offline editing

Git vs. other Version Control systems

popular (e.g., reddit, linux kernel …)



Git vs. other Version Control systems

efficient: snapshots of whole repository
(unchanged files are links to previous snapshot)

Git vs. other Version Control systems

very clever about merging & conflicts

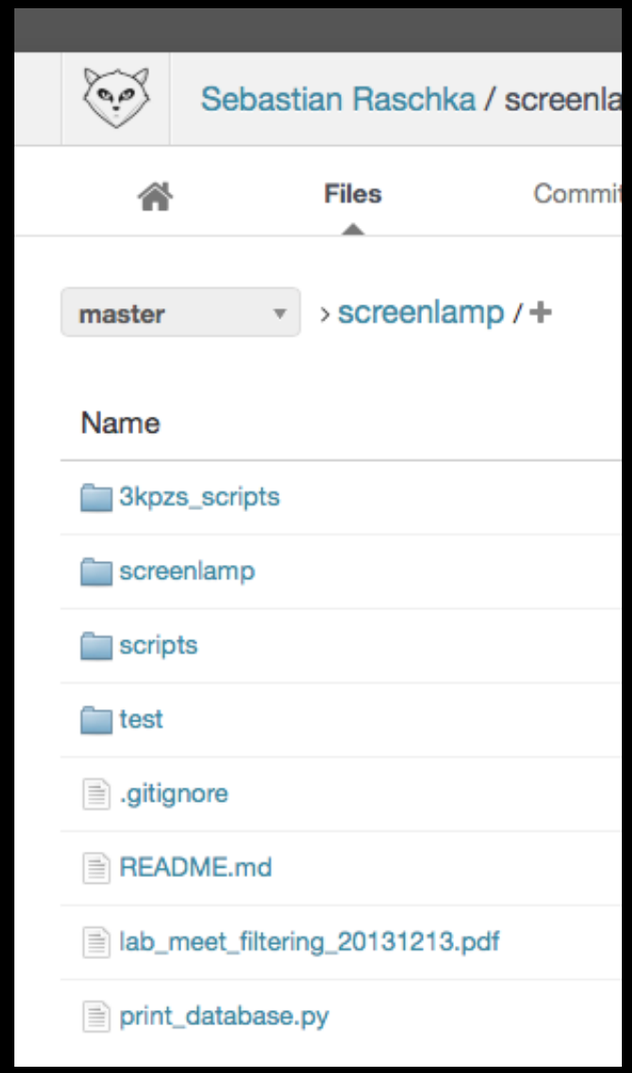
- never lose anything

Git vs. other Version Control systems

data is safe!

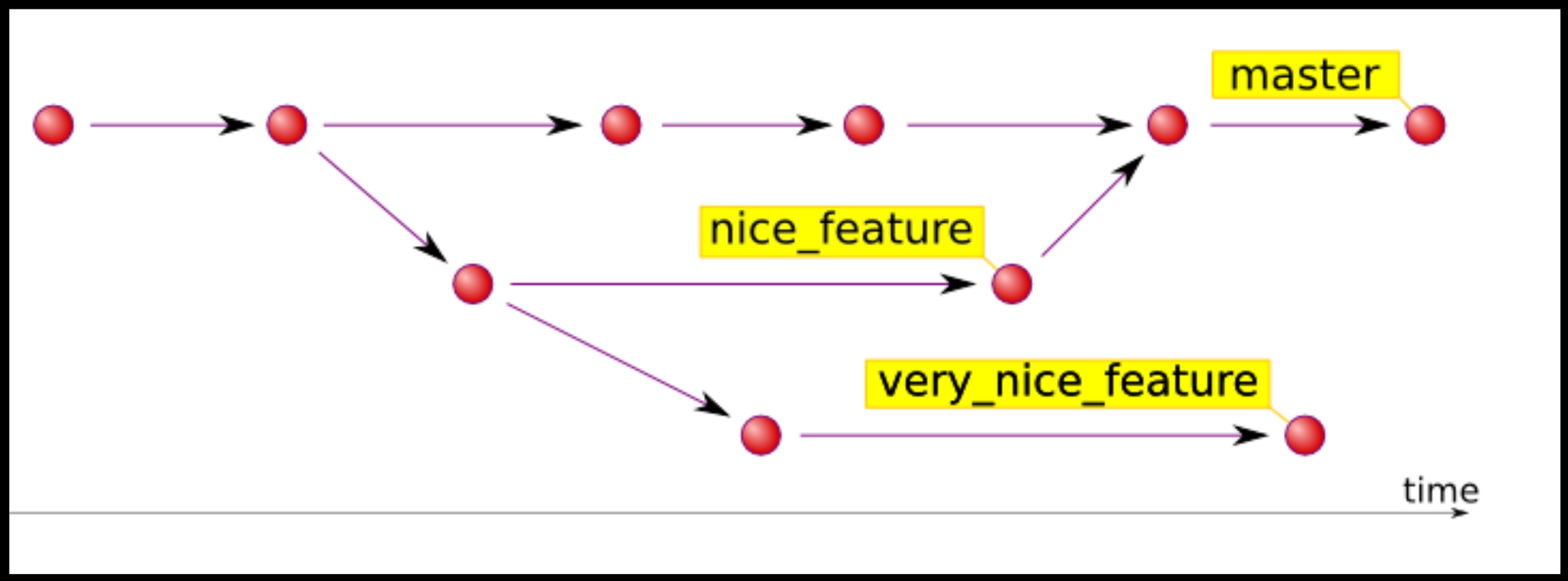
everyone has a full copy
+ copy on server

```
sebastian ~/Gitlab/screenlamp> git branch
  devlop_mac
* master
sebastian ~/Gitlab/screenlamp> ls
3kpzs_scripts                  print_database.py
README.md                      screenlamp
docs                           scripts
lab_meet_filtering_20131213.pdf test
sebastian ~/Gitlab/screenlamp>
```



Git vs. other Version Control systems

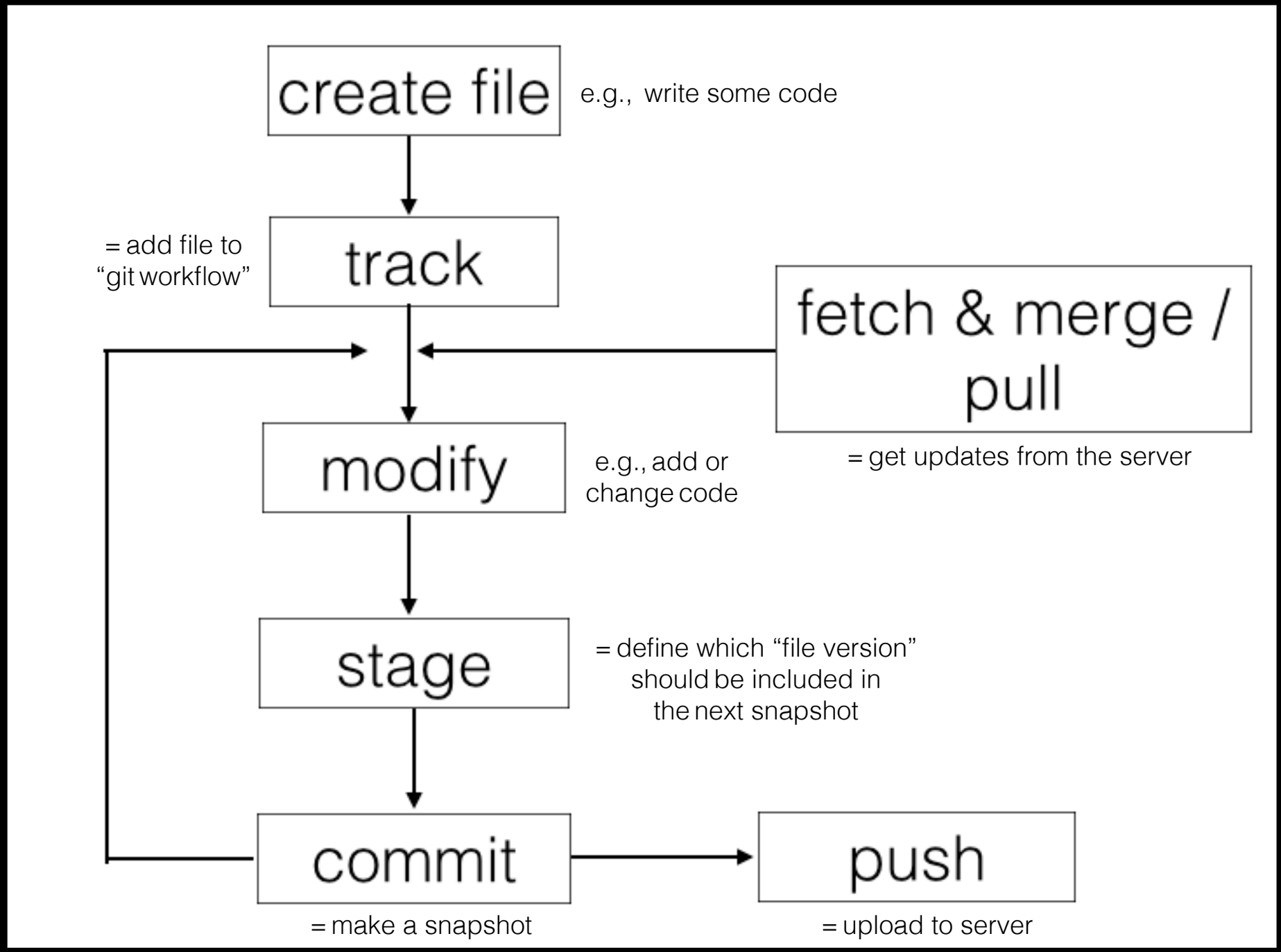
lightweight branching



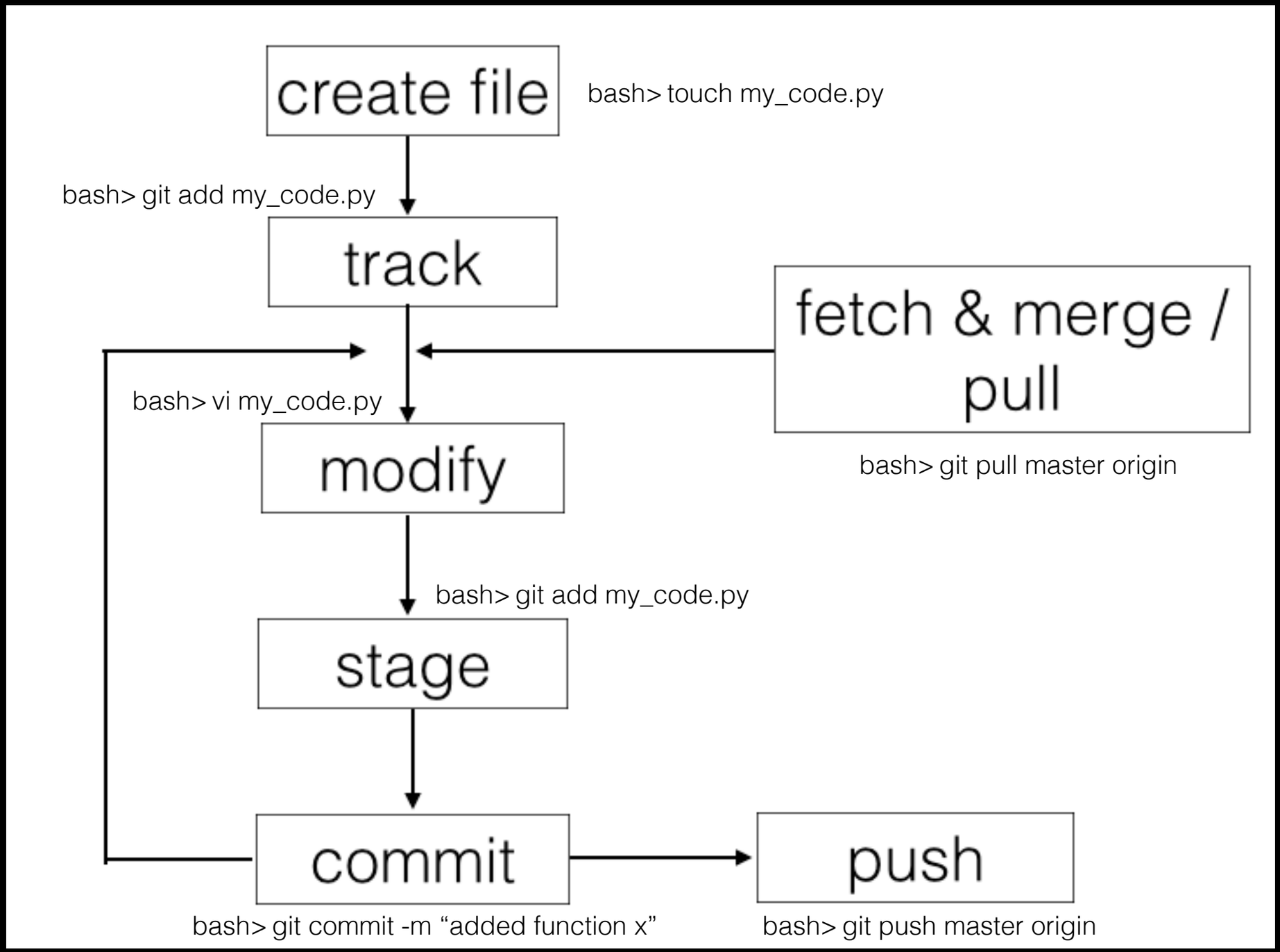
http://img.hades.name/blog-media/git/git-history.png

GitHub vs. MSU GitLab

Workflow overview



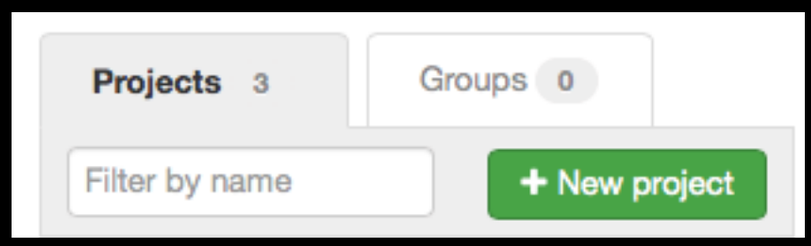
Syntax examples

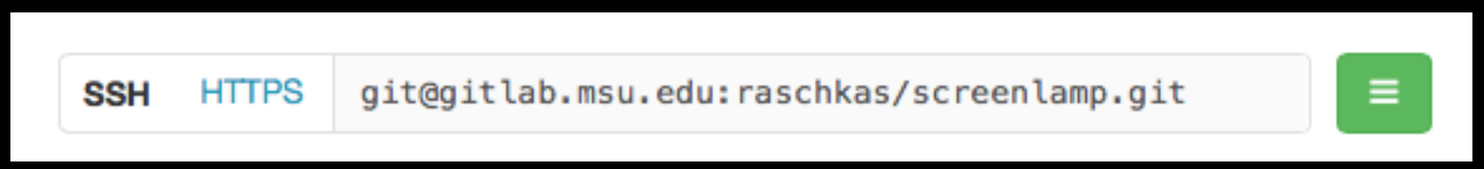


Setting up a new Git repository (existing project)

```
cd my_proj     # go into the projects' folder
git init       # initialize a new git repository
```

create a new "repo" on msu.gitlab

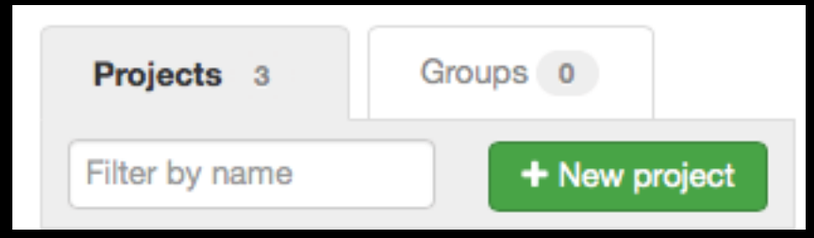


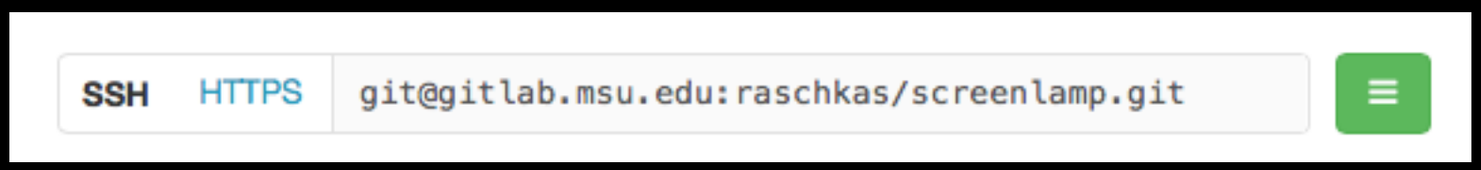



```
git remote add origin git@gitlab.msu.edu:raschkas/screenlamp.gitacm.git
```

Setting up a new Git repository (new project)

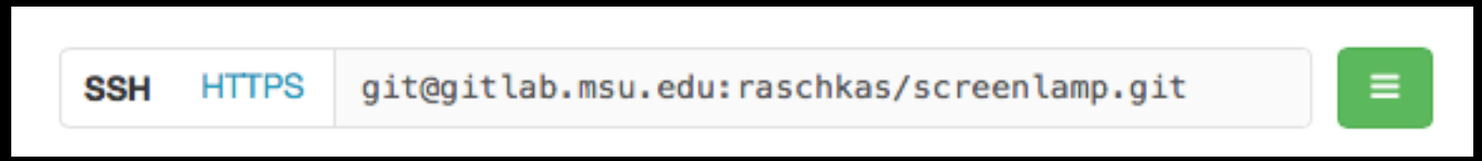
create a new “repo” on msu.gitlab





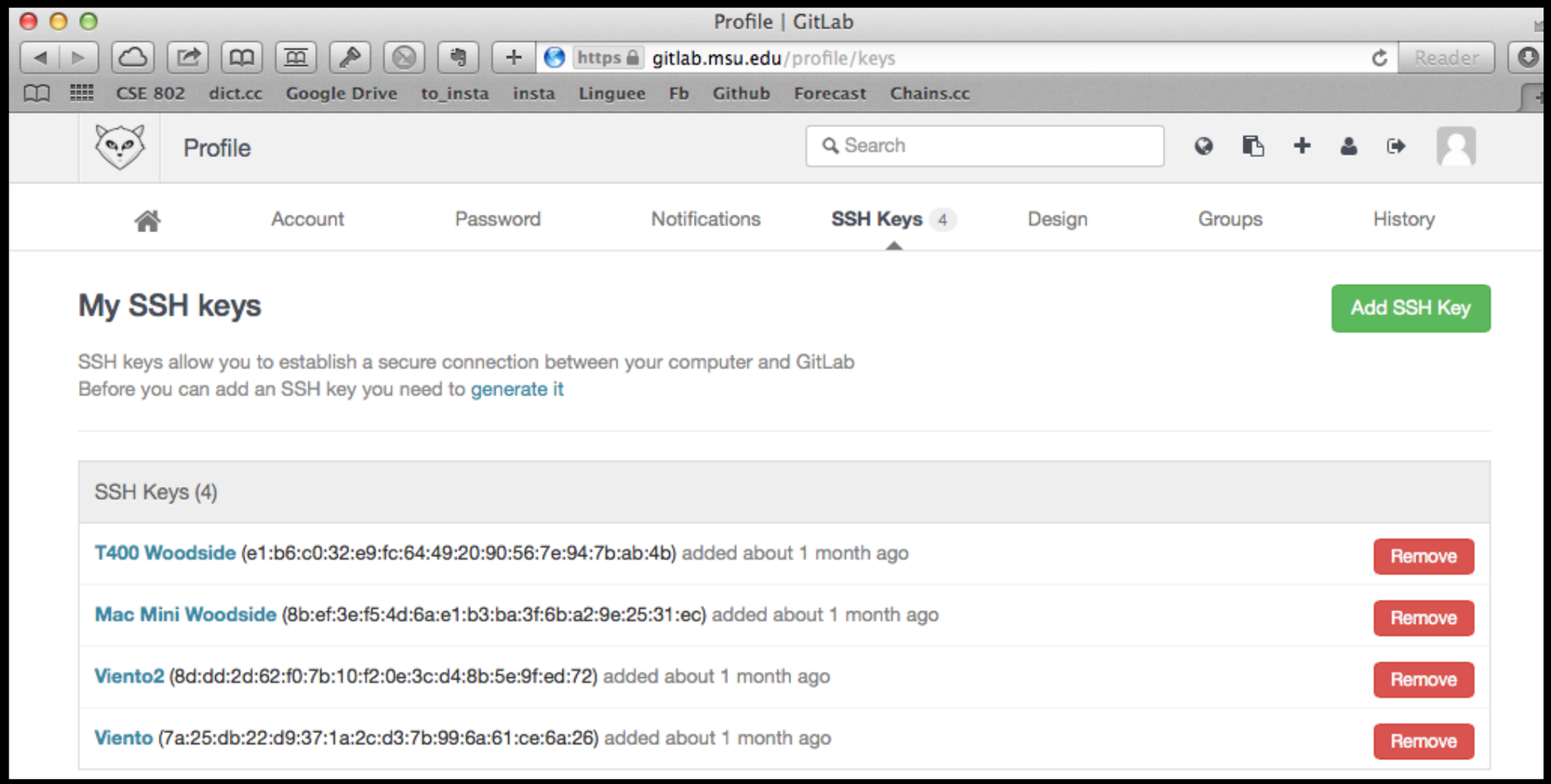

```
git clone git@gitlab.msu.edu:raschkas/screenlamp.gitacm.git
```

Download an existing project




```
git clone git@gitlab.msu.edu:raschkas/screenlamp.gitacm.git
```

SSH keys and Git



https://help.github.com/articles/generating-ssh-keys

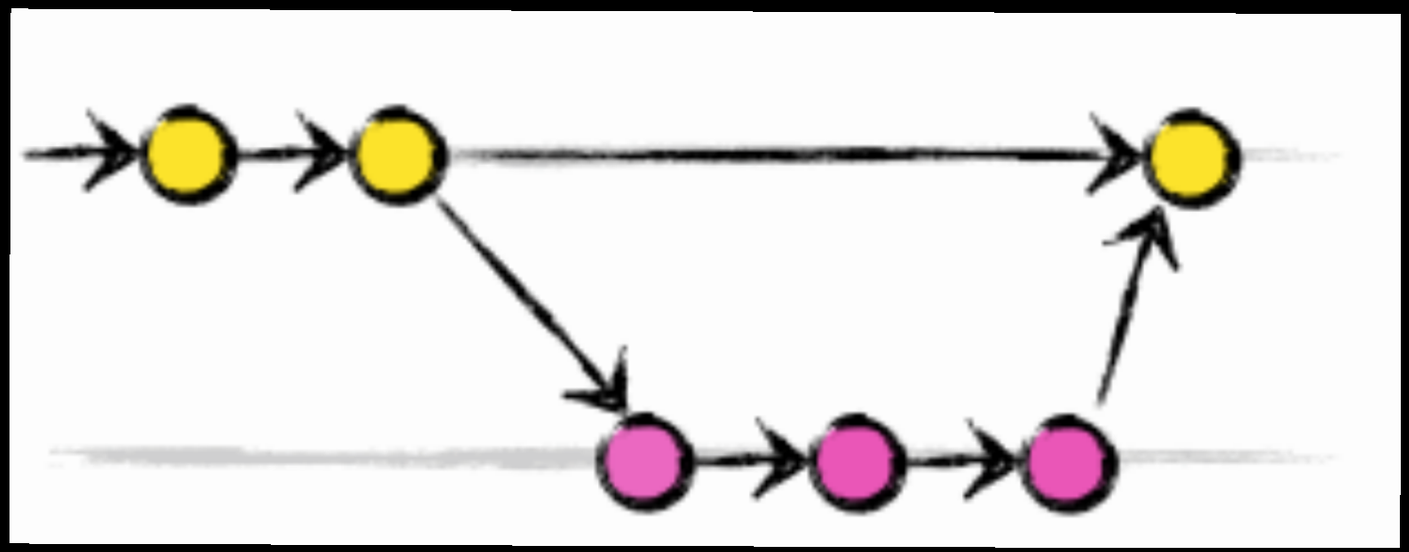
https://sol.bch.msu.edu/mediawiki/index.php/First_setup_instructions_for_gitlab.msu.edu

Branching

```
git branch develop_feature_x    # create new branch
git checkout develop_feature_x  # switch to new branch
# … (do some work)
git checkout master             # switch to master branch
git merge develop_feature_x     # merge changes into master branch
git branch -d develop_feature_x # delete other branch
```

master

develop_feature_x



http://nvie.com/img/2010/01/merge-without-ff.png

More Resources

https://gitlab.msu.edu

https://github.com

https://help.github.com

http://git-scm.com/book

http://git-scm.com/videos