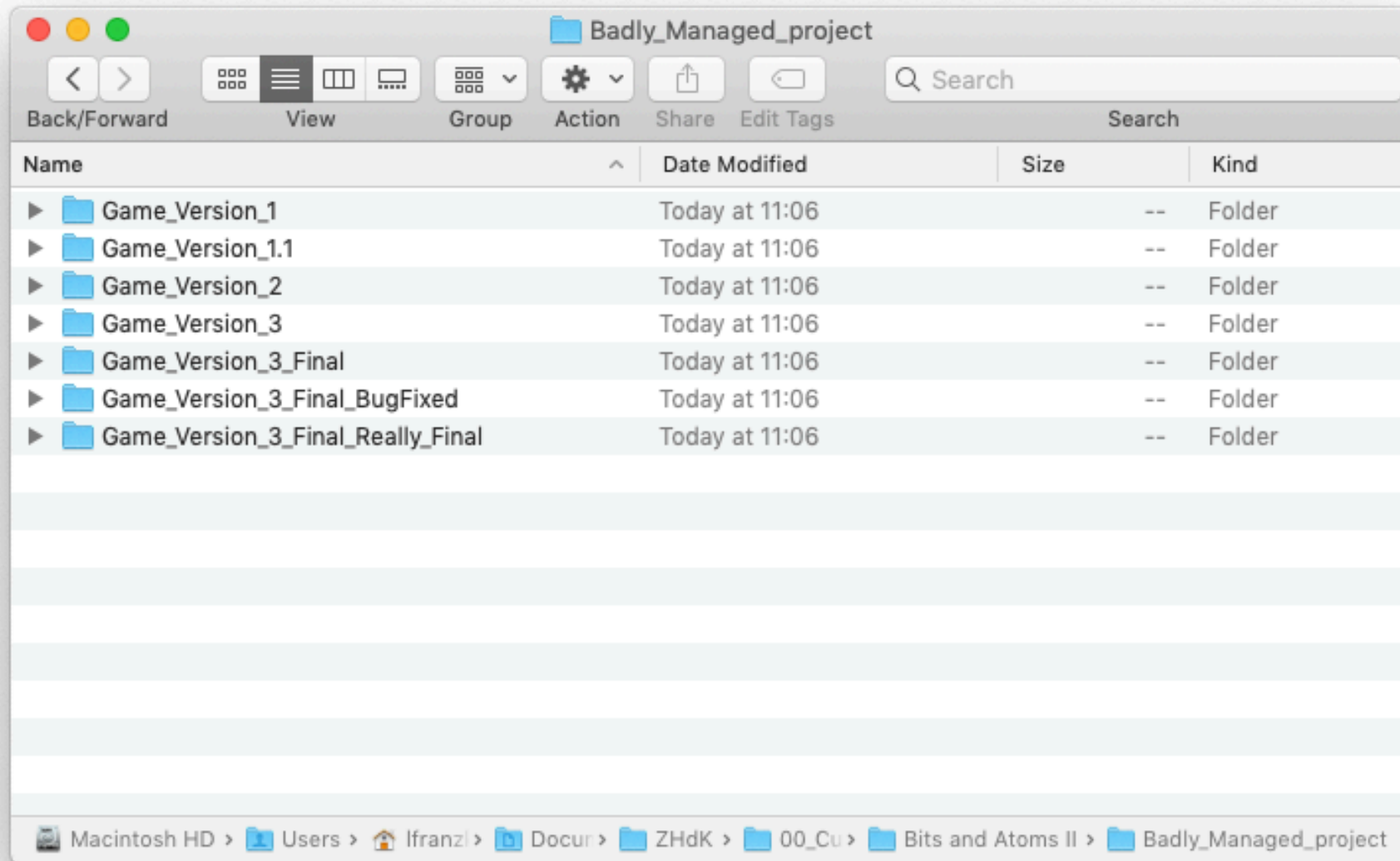BITS and Atoms II 2020

Luke Franzke

A free and open source
distributed version-
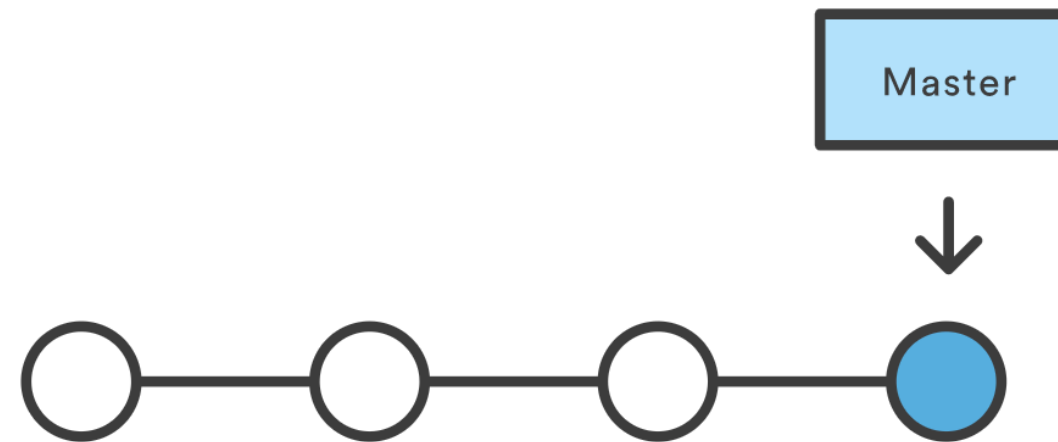control. Git was created
Linus Torvalds
in 2005

A Microsoft owned
platform that provides
hosting and
collaboration tools for
source code managed
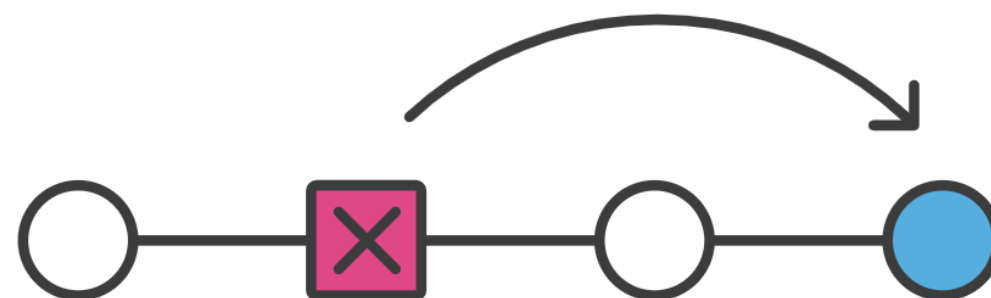with Git. Github offers
both free and paid
services.

Git and Github

Why use git?

Version Control

We have one version of each file
in a **repository**, but we have a
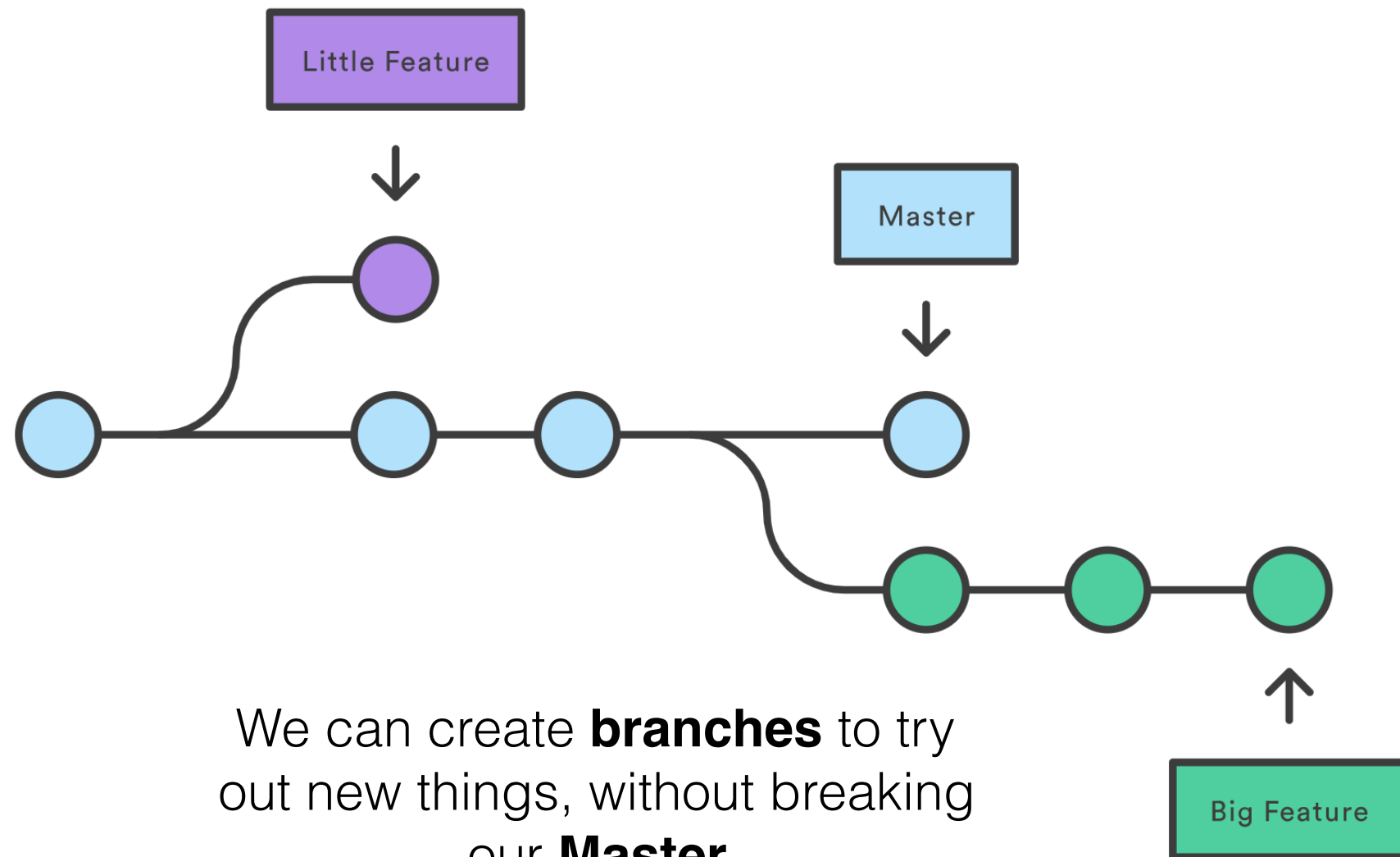history of all **committed** changes

Why use git?

Version Control

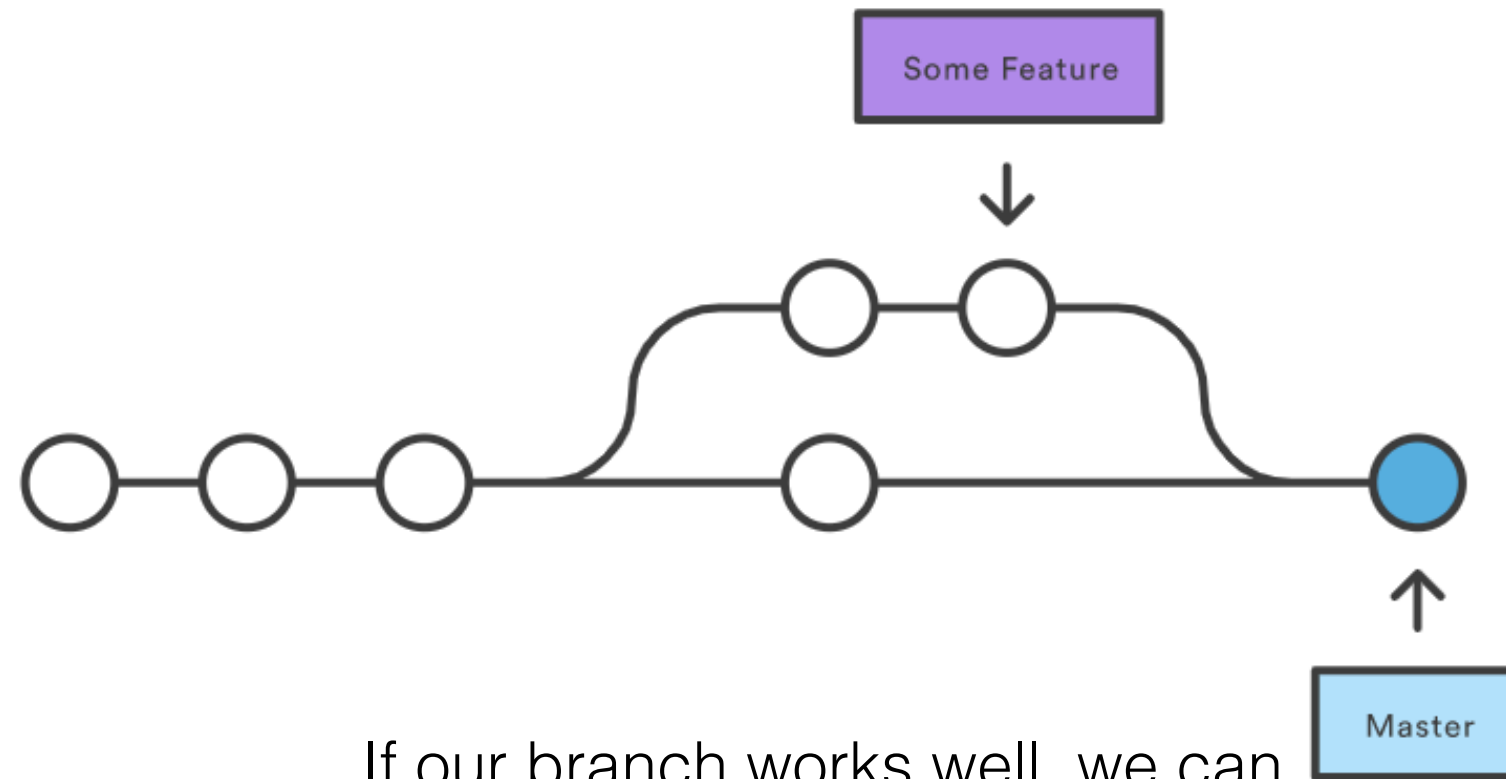We can **revert** to a previous **commit** at any time

Why use git?

Version Control

We can create **branches** to try out new things, without breaking our **Master**
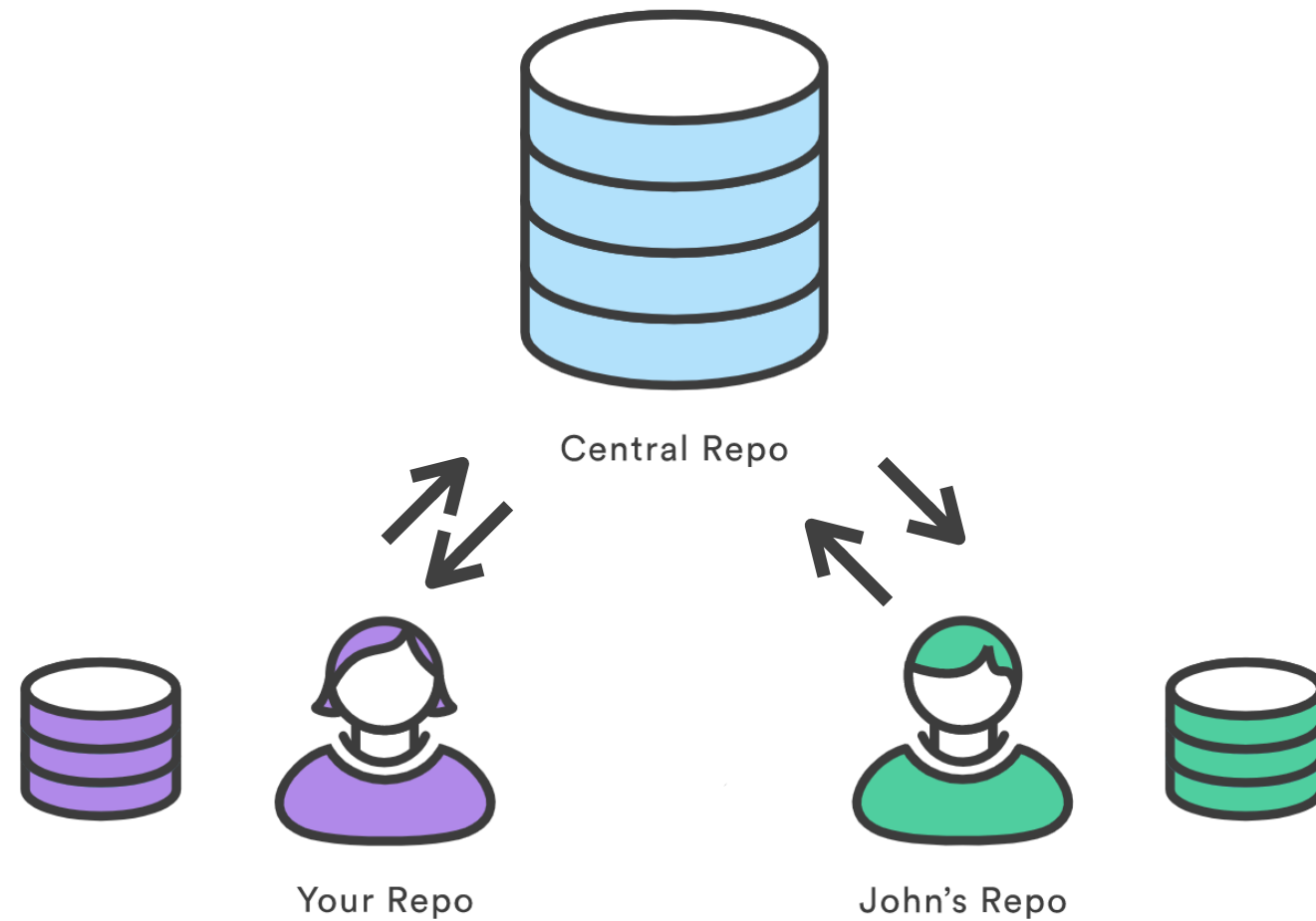
Why use git?

Version Control

If our branch works well, we can **merge** it back into the master branch. The process of merging is handled with a **pull request** to master.

Why use git?

Version Control

Central Repo

Your Repo

John's Repo

Many people can work on local copy of a
repository at the same time, and **push** their
commits to central repository to back up
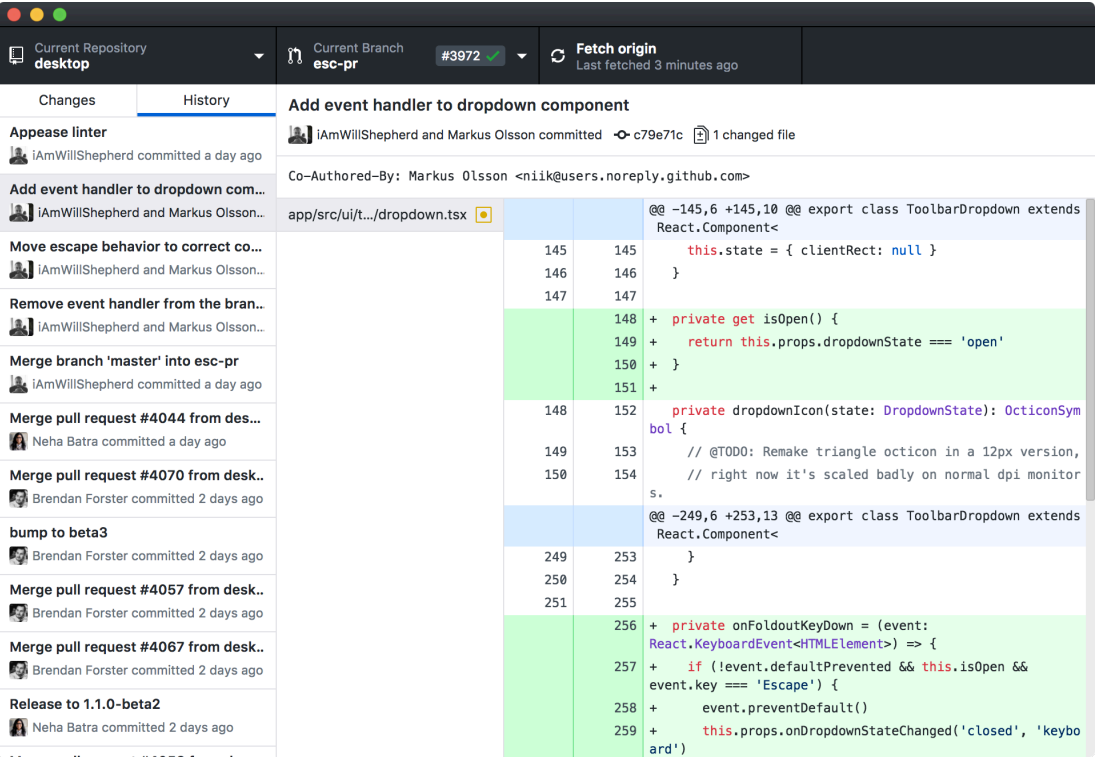their code and share it with a team.
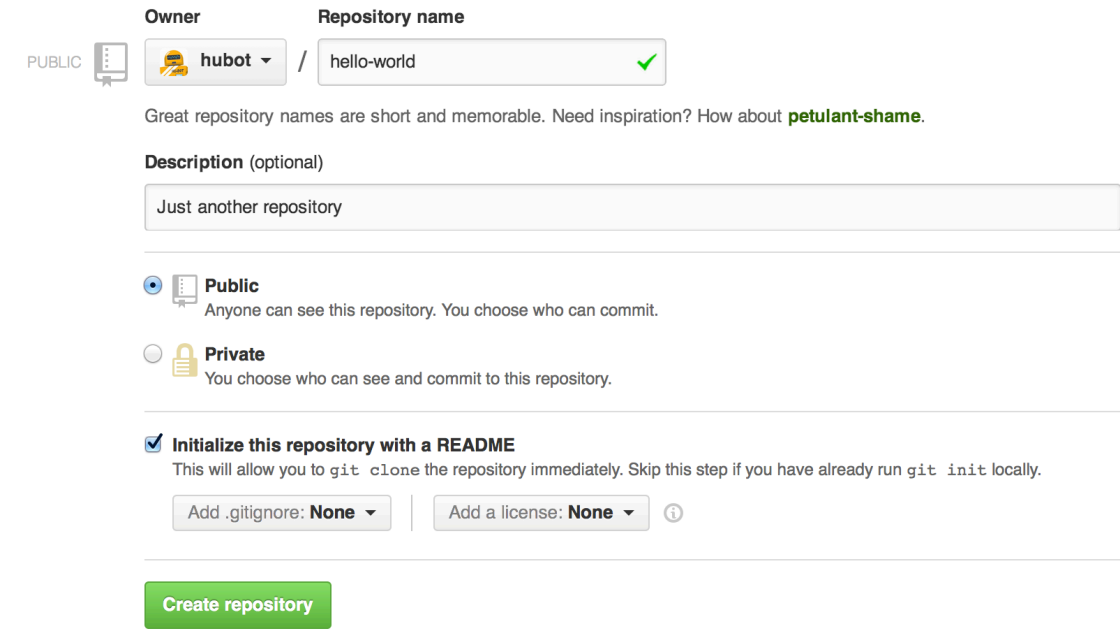
Why use git?

Collaboration

```
$ git init
Initialized empty Git repository in /tmp/tmp.IMBYSY7R8Y/.git/
$ cat > README << 'EOF'
> Git is a distributed revision control system.
> EOF
$ git add README
$ git commit
[master (root-commit) e4dcc69] You can edit locally and push
to any remote.
 1 file changed, 1 insertion(+)
 crate mode 100644 README
$ git remote add origin git@github.com:cdown/thats.git
$ git push -u origin master█
```

Git running in a command-line session

The git process

Git in a GUI (github desktop)

Git in a GUI (github.com)

The git process

Repository - A directory that stores all the files, folders of a project.

Master - The primary branch of all repositories.

Commit - The action of storing a new snapshot of the project's state in the Git history.

Fork - Creates a copy of a repository.

Branch - A version of the repository that diverges from the master of the project.

Push - Updates a remote repository with the commits made to the repository.

Fetch - Download and copy remote repository files to your workstation.

Pull request - A request to merge your branch with a master branch. The repo maintainers can review and merge the branch into master.

gitignore - A file the specifies files or files types that should be ignored in commits

Git Terminology Recap