Git

Joanne Lee
aashish@SLATE-ubuntu: ~/myapp

/home/aashish

aashish@SLATE-ubuntu ~ mkdir myapp
aashish@SLATE-ubuntu ~ cd myapp
aashish@SLATE-ubuntu ~/myapp pwd

/home/aashish/myapp

aashish@SLATE-ubuntu ~/myapp
aashish@SLATE-ubuntu: ~/myapp
   touch myfile.js
aashish@SLATE-ubuntu: ~/myapp
aashish@SLATE-ubuntu: ~/myapp

touch myfile.js

ls
aashish@SLATE-ubuntu: ~/myapp
aashish@SLATE-ubuntu ~/myapp touch myfile.js
aashish@SLATE-ubuntu ~/myapp ls
myfile.js
aashish@SLATE-ubuntu ~/myapp mv myfile.js abc
aashish@SLATE-ubuntu ~/myapp ls
abc
aashish@SLATE-ubuntu ~/myapp
touch myfile.js
ls
mv myfile.js abc
ls
cp abc xyz
ls
```
touch myfile.js
ls

mv myfile.js abc
ls

cp abc xyz
ls

rm abc xyz
ls
```
aashish@SLATE-ubuntu: ~
/home/aashish/myapp
aashish@SLATE-ubuntu ~/myapp pwd
/home/aashish
aashish@SLATE-ubuntu ~ cd ..
/home/aashish
aashish@SLATE-ubuntu ~ pwd
aashish@SLATE-ubuntu: ~

/home/aashish/myapp
aashish@SLATE-ubuntu ~/myapp pwd
aashish@SLATE-ubuntu ~/myapp cd ..
aashish@SLATE-ubuntu ~ pwd
/home/aashish
aashish@SLATE-ubuntu ~ rmdir myapp
aashish@SLATE-ubuntu ~ cd myapp
cd: no such file or directory: myapp

x aashish@SLATE-ubuntu ~
Recap

pwd
ls
cd <directory>
mkdir <directory>
rm <file>
rmdir <directory>
mv <source> <destination>
cp <source> <destination>
echo %cd%
dir
cd <directory>
mkdir <directory>
del <file>
rmdir <directory>
mv <source> <destination>
copy <source> <destination>
git
Story time!
yo man I see you got a dope file there
What can possibly go wrong?
Problems with coding in projects

1. Synchronization of files
2. Collaboration of files
3. Version history
Problems with coding in projects

1. Synchronization of files
2. Collaboration of files
3. Version history
There's a bug in line 3!
Ok I guess I'll submit now
submitted buggy website :'(
Problems with coding in projects

1. Synchronization of files (no one knows which file is the most updated file)
2. Collaboration of files
3. Version history
Problems with coding in projects

1. Synchronization of files (no one knows which file is the most updated file)
2. Collaboration of files
3. Version history
There's a bug!

This formatting is pretty ugly :(
Our code is different!!!!
Hey I know you made changes in like 50 places in that file but can you copy the changes over one by one
Problems with coding in projects

1. Synchronization of files (no one knows which file is the most updated file)
2. Collaboration of files (if there are two version of the same file, both of them fix a different problem, it’s hard to know how to join the files)
3. Version history
Problems with coding in projects

1. Synchronization of files (no one knows which file is the most updated file)
2. Collaboration of files (if there are two version of the same file, both of them fix a different problem, it’s hard to know how to join the files)
3. Version history
Let me change some code
An hour later...
WAIT!!!!!!
I NEEDED
LINES 250-280
Problems with coding in projects

1. Synchronization of files (no one knows which file is the most updated file)
2. Collaboration of files (if there are two versions of the same file, both of them fix a different problem, it’s hard to know how to join the files)
3. Version history (if we break something, we can’t go back to it)
How do we solve these problems?
Version Control!
How does this work?
(a commit)
Git terms

commit (n.) - a packaged set of changes

push (v.) - to send commits to the git server

pull (v.) - to get most updated files from the git server
Later in the day...
Now let’s try this ourselves!
First, we need to make a git repository.
Git repository

Git repository (n.) - A folder (of code, usually) that you tell git to keep track of
mkdir myapp
cd myapp
touch mypage.html
mkdir myapp
cd myapp
touch mypage.html
git init
Initialized empty Git repository in /Users/leekkww/myapp/.git/
mkdir myapp
cd myapp
touch mypage.html
git init
Initialized empty Git repository in /Users/leekkww/myapp/.git/
ls
mynpage.html
ls -a
.
..  .git  mypage.html
On branch master

No commits yet

Untracked files:
   (use "git add <file>..." to include in what will be committed)

   mypage.html

nothing added to commit but untracked files present (use "git add" to track)
leekwv:~/myapp$ git add mypage.html
leekwv:~/myapp$ git status

On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)

    new file:   mypage.html

leekwv:~/myapp$
$ git commit -m "My first commit"

[master (root-commit) 31e1cb6] My first commit
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 mypage.html
commit 31e1cb65dd56404773991a068c6a49489ee5ff38 (HEAD -> master)
Author: leekkww <leekkww@gmail.com>
Date:   Tue Jan 9 02:17:40 2018 -0500

    My first commit
Now, we find a space on a git server to store all this information.
GitHub

Browse activity

- collinsgit pushed to **master** in infolab-csail/welcome-demo
  - a7b5874 Add Collin's favorite number
  - 11 hours ago

- michals pushed to **master** in infolab-csail/welcome-demo
  - eb44866 Add Michal's favorite number
  - 11 hours ago

- michals pushed to **master** in infolab-csail/welcome-demo
  - 9110f33 Add Michal's favorite number
  - 11 hours ago

- sfelsinh pushed to **master** in infolab-csail/omnibase
  - a69656e Merge pull request #540 from infolab-csail/more-update...
  - 9f26dc7 Add exceptions.scm library to documentation index
  - 2 more commits
  - 16 hours ago

- sfelsinh pushed to **master** in infolab-csail/omnibase
  - 9391fca Merge pull request #539 from infolab-csail/update-link...
  - 2ce1be64 Fix pod errors in omnibase.scm
  - 4 more commits
  - a day ago

- sfelsinh pushed to **use-utf8-everywhere** in infolab-csail/infolab-core
  - 1420881 Fix bad conversion from irregxx-replace-all to substitute
  - 6c6d1ad Add comment re Chicken alternative to strip-html-tags
  - 22 more commits
  - a day ago

Repositories you contribute to

- shotbythought/logic
  - 0 stars

- shotbythought/baezos
  - 0 stars

- emuT299/869_final_project
  - 0 stars

- infolab-csail_wikiscout
  - 0 stars

- infolab-csail/start
  - 0 stars

Load more...

Your repositories

- Icolucci/Dialysis
  - Public

- 806final
  - Public

- emuT299/869_final_project
  - Public

- hugeplaces
  - Public

- shotbythought/logic
  - Public

- Icolucci/NMR_Analysis
  - Public

- epiar
  - Public

Load more...
Create a new repository

A repository contains all the files for your project, including the revision history.

Owner

Repository name

[leekkwv] / myapp

Great repository names are short and memorable. Need inspiration? How about legendary-broccoli.

Description (optional)

Public
Anyone can see this repository. You choose who can commit.

Private
You choose who can see and commit to this repository.

Initialize this repository with a README
This will let you immediately clone the repository to your computer. Skip this step if you’re importing an existing repository.

Add .gitignore: None  Add a license: None

Create repository
Create a new repository

A repository contains all the files for your project, including the revision history.

Owner
leekww

Repository name
myapp

Great repository names are short and memorable. Need inspiration? How about legendary-broccoli.

Description (optional)

Public
Anyone can see this repository. You choose who can commit.

Private
You choose who can see and commit to this repository.

Initialize this repository with a README
This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.

Add .gitignore: None
Add a license: None

Create repository
Quick setup — if you’ve done this kind of thing before

- Set up in Desktop
- HTTPS
- SSH

https://github.com/leekkw/myapp.git

We recommend every repository include a README, LICENSE, and .gitignore.

...or create a new repository on the command line

```
echo "# myapp" >> README.md
git init
git add README.md
git commit -m "first commit"
git remote add origin https://github.com/leekkw/myapp.git
git push -u origin master
```

...or push an existing repository from the command line

```
git remote add origin https://github.com/leekkw/myapp.git
git push -u origin master
```

...or import code from another repository

You can initialize this repository with code from a Subversion, Mercurial, or TFS project.

Import code
We already have an existing repository.
So now we go back to our command line...
git remote add origin https://github.com/leekww/myapp.git

git push -u origin master

Counting objects: 3, done.
Writing objects: 100% (3/3), 213 bytes | 213.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To https://github.com/leekww/myapp.git
  * [new branch] master -> master

Branch master set up to track remote branch master from origin.
Now if we refresh our github.com page...
No description, website, or topics provided.

Add topics

1 commit  1 branch  0 releases  1 contributor

Branch: master  New pull request

_repo_root My first commit Latest commit 31e1c36 14 minutes ago

mymage.html My first commit 14 minutes ago

Help people interested in this repository understand your project by adding a README.

Add a README

© 2018 GitHub, Inc. Terms Privacy Security Status Help

Contact GitHub API Training Shop Blog About
Awesome! Now let’s go sleep.
A day later...
[02:45] [lekkww:~/myapp]$ vim mypage.html
I don't know how to make a website so I'm just typing random stuff.
On branch master
Your branch is up-to-date with 'origin/master'.

Changes not staged for commit:
 (use "git add <file>..." to update what will be committed)
 (use "git checkout -- <file>..." to discard changes in working directory)

    modified:    mypage.html

no changes added to commit (use "git add" and/or "git commit -a")
git add mypage.html

git commit -m "I tried to make a webpage"

1 file changed, 1 insertion(+)

git push

To https://github.com/leekww/myapp.git

! [rejected] master -> master (fetch first)

error: failed to push some refs to 'https://github.com/leekww/myapp.git'

hint: Updates were rejected because the remote contains work that you do

hint: not have locally. This is usually caused by another repository pushing

hint: to the same ref. You may want to first integrate the remote changes

hint: (e.g., 'git pull ...') before pushing again.

hint: See the 'Note about fast-forwards' in 'git push --help' for details.
No description, website, or topics provided.

Add topics

2 commits 1 branch 0 releases 1 contributor

Branch: master ▼ New pull request

leekkww Added homepage

leekkww Added homepage

mypage.html

Help people interested in this repository understand your project by adding a README.

Add a README
No longer the first commit! Looks like someone changed the website.
$ git pull
remote: Counting objects: 3, done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), done.
From https://github.com/leekww/myapp
  31e1cb6..4d75a0a  master       -> origin/master
Auto-merging mypage.html
CONFLICT (content): Merge conflict in mypage.html
Automatic merge failed; fix conflicts and then commit the result.
[02:50] [lekkww:~/myapp]$ vim mypage.html
I don't know how to make a website so I'm just typing random stuff

<!DOCTYPE html>
<html>
<body>
<h1>My First Heading</h1>
<p>My first paragraph.</p>
</body>
</html>
<html>
<body>
<h1>My First Heading</h1>
<p>My first paragraph.</p>
</body>
</html>
On branch master
Your branch and 'origin/master' have diverged,
and have 1 and 1 different commits each, respectively.
(use "git pull" to merge the remote branch into yours)

You have unmerged paths.
(fix conflicts and run "git commit")
(use "git merge --abort" to abort the merge)

Unmerged paths:
(use "git add <file>..." to mark resolution)

both modified: mypage.html

no changes added to commit (use "git add" and/or "git commit -a")
On branch master
Your branch and 'origin/master' have diverged, and have 1 and 1 different commits each, respectively.
(use "git pull" to merge the remote branch into yours)

All conflicts fixed but you are still merging.
(use "git commit" to conclude merge)

Changes to be committed:

    modified: mypage.html
git add mypage.html

On branch master
Your branch and 'origin/master' have diverged,
and have 1 and 1 different commits each, respectively.
(use "git pull" to merge the remote branch into yours)

All conflicts fixed but you are still merging.
(use "git commit" to conclude merge)

Changes to be committed:

    modified:   mypage.html

git commit -m "right webpage"

[master d21f5dc] right webpage

git push

Delta compression using up to 4 threads.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (4/4), 486 bytes | 243.00 KiB/s, done.
Total 4 (delta 0), reused 0 (delta 0)
To https://github.com/leekkww/mypage.git
    4d75a0a..d21f5dc  master -> master
right webpage

I tried to make a webpage

Added homepage

My first commit
Recap

To create a local repository:
- `git init`
- `git add [file]`
- `git commit -m "commit message"`

To set the server address for a local repository:
- `git remote add origin [origin.git link]`
- `git push -u origin master`

To send changes to the git server:
- `git add [file]`
- `git commit -m "commit message"`
- `git push`

To get updated files from server:
- `git pull`
  (may need to resolve conflicts here)

Useful commands:
- `git status`
- `git log`