1. 配置用户名和邮箱

$ git config --global user.name "qiuyunliang"

$ git config --global user.email "qiuyunliang@star-net.cn"

1. 创建版本库

$ mkdir learngit

$ cd learngit

$ pwd

/Users/michael/learngit

$ git init

Initialized empty Git repository in /Users/michael/learngit/.git/

1. 把文件添加到仓库

$ git add readme.txt

1. 把文件提交到仓库

$ git commit -m "wrote a readme file"

$ git commit –amend // recommit

[master (root-commit) cb926e7] wrote a readme file

1 file changed, 2 insertions(+)

create mode 100644 readme.txt

1. 查看仓库当前的状态

$ git status

# On branch 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: readme.txt

#

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

1. 查看文件修改情况

$ git diff readme.txt

1. 查看提交记录

$ git log

$ git log --pretty=oneline

1. 回退到上一个版本

$ git reset --soft HEAD^ // 将版本库指向HEAD^，删除撤销的提交记录，撤销的全部退到暂存区

$ git reset --mixed HEAD^ // 将版本库和暂存区指向HEAD^

$ git reset --hard HEAD^ // 将版本库、暂存区和工作区都指向HEAD^

$ git reset HEAD <file> // 取消已经暂存的文件

$ git checkout -- <file> // 取消对文件的修改

$ git revert HEAD // 撤销前一次 commit

$ git revert HEAD^               // 撤销前前一次 commit

$ git revert <commit> // 撤销指定的commit，版本继续增加

1. 记录你的每一次命令

$ git reflog

1. 查看工作区和版本库里面最新版本的区别

$ git diff HEAD -- readme.txt

diff --git a/readme.txt b/readme.txt

index 76d770f..a9c5755 100644

--- a/readme.txt

+++ b/readme.txt

@@ -1,4 +1,4 @@

Git is a distributed version control system.

Git is free software distributed under the GPL.

Git has a mutable index called stage.

-Git tracks changes.

+Git tracks changes of files.

1. 撤销工作区的修改

$ git checkout -- readme.txt

说明：

1. readme.txt自修改后还没有被放到暂存区，现在，撤销修改就回到和版本库一模一样的状态；
2. readme.txt已经添加到暂存区后，又作了修改，现在，撤销修改就回到添加到暂存区后的状态。
3. 把暂存区的修改撤销掉（unstage），重新放回工作区

$ git reset HEAD readme.txt

Unstaged changes after reset:

M readme.txt

1. 直接在文件管理器中把没用的文件删除，或者用rm命令删除

$ rm test.txt

1. 从版本库中删除该文件

$ git rm test.txt

rm 'test.txt'

$ git commit -m "remove test.txt"

[master d17efd8] remove test.txt

1 file changed, 1 deletion(-)

delete mode 100644 test.txt

1. 创建dev分支，然后切换到dev分支

$ git checkout -b dev

Switched to a new branch 'dev'

$ git branch dev

$ git checkout dev

Switched to branch 'dev'

1. 把dev分支的工作成果合并到master分支上

$ git merge dev

Updating d17efd8..fec145a

Fast-forward

readme.txt | 1 +

1 file changed, 1 insertion(+)

1. 删除dev分支

$ git branch -d dev

Deleted branch dev (was fec145a).

1. 分支的合并情况

$ git log --graph --pretty=oneline --abbrev-commit

\* 59bc1cb conflict fixed

|\

| \* 75a857c AND simple

\* | 400b400 & simple

|/

\* fec145a branch test

…

1. 把当前工作现场暂存，等以后恢复现场后继续工作

$ git stash

1. 使用git stash list命令查看工作现场存放位置

$ git stash list

stash@{0}: WIP on dev: 6224937 add merge

1. 恢复工作现场

$ git stash pop

# On branch dev

# Changes to be committed:

# (use "git reset HEAD <file>..." to unstage)

#

# new file: hello.py

#

# 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: readme.txt

#

Dropped refs/stash@{0} (f624f8e5f082f2df2bed8a4e09c12fd2943bdd40)

$ git stash list

$ git stash apply stash@{0}

说明：

1. 用git stash apply恢复，但是恢复后，stash内容并不删除，需要用git stash drop来删除；
2. 用git stash pop，恢复的同时把stash内容删除。
3. 强行删除分支

$ git branch -D feature-vulcan

Deleted branch feature-vulcan (was 756d4af).

1. 查看远程库的信息

$ git remote -v

1. 推送分支

$ git push origin master

$ git push origin dev

说明：

把该分支上的所有本地提交推送到远程库。推送时，要指定本地分支，Git就会把该分支推送到远程库对应的远程分支上。

1. 在另一台电脑（注意要把SSH Key添加到GitHub）或者同一台电脑的另一个目录下克隆

$ git clone git@github.com:michaelliao/learngit.git

Cloning into 'learngit'...

remote: Counting objects: 46, done.

remote: Compressing objects: 100% (26/26), done.

remote: Total 46 (delta 16), reused 45 (delta 15)

Receiving objects: 100% (46/46), 15.69 KiB | 6 KiB/s, done.

Resolving deltas: 100% (16/16), done.

1. 要在dev分支上开发，必须创建远程origin的dev分支到本地

$ git checkout -b dev origin/dev

1. 现在，某人就可以在dev上继续修改，然后时不时地把dev分支push到远程

$ git commit -m "add /usr/bin/env"

[dev 291bea8] add /usr/bin/env

1 file changed, 1 insertion(+)

$ git push origin dev

Counting objects: 5, done.

Delta compression using up to 4 threads.

Compressing objects: 100% (2/2), done.

Writing objects: 100% (3/3), 349 bytes, done.

Total 3 (delta 0), reused 0 (delta 0)

To git@github.com:michaelliao/learngit.git

fc38031..291bea8 dev -> dev

1. 某人已经向origin/dev分支推送了他的提交，而碰巧自己也对同样的文件作了修改，并试图推送

$ git add hello.py

$ git commit -m "add coding: utf-8"

[dev bd6ae48] add coding: utf-8

1 file changed, 1 insertion(+)

$ git push origin dev

To git@github.com:michaelliao/learngit.git

! [rejected] dev -> dev (non-fast-forward)

error: failed to push some refs to 'git@github.com:michaelliao/learngit.git'

hint: Updates were rejected because the tip of your current branch is behind

hint: its remote counterpart. Merge the remote changes (e.g. 'git pull')

hint: before pushing again.

hint: See the 'Note about fast-forwards' in 'git push --help' for details.

1. 推送失败，某人的最新提交和自己试图推送的提交有冲突，先用git pull把最新的提交从origin/dev抓下来，然后在本地合并解决冲突，再推送

$ git pull

remote: Counting objects: 5, done.

remote: Compressing objects: 100% (2/2), done.

remote: Total 3 (delta 0), reused 3 (delta 0)

Unpacking objects: 100% (3/3), done.

From github.com:michaelliao/learngit

fc38031..291bea8 dev -> origin/dev

There is no tracking information for the current branch.

Please specify which branch you want to merge with.

See git-pull(1) for details

git pull <remote> <branch>

If you wish to set tracking information for this branch you can do so with:

git branch --set-upstream dev origin/<branch>

1. 此时，git pull也失败了，原因是没有指定本地dev分支与远程origin/dev分支的链接，根据提示设置dev和origin/dev的链接

$ git branch --set-upstream dev origin/dev

Branch dev set up to track remote branch dev from origin.

1. 再次尝试pull

$ git pull

Auto-merging hello.py

CONFLICT (content): Merge conflict in hello.py

Automatic merge failed; fix conflicts and then commit the result.

1. 最后git pull成功，但是合并有冲突，需要手动按分支管理中的解决冲突方法解决，解决后提交再次push

$ git commit -m "merge & fix hello.py"

[dev adca45d] merge & fix hello.py

$ git push origin dev

Counting objects: 10, done.

Delta compression using up to 4 threads.

Compressing objects: 100% (5/5), done.

Writing objects: 100% (6/6), 747 bytes, done.

Total 6 (delta 0), reused 0 (delta 0)

To git@github.com:michaelliao/learngit.git

291bea8..adca45d dev -> dev

总结：

1. 查看远程库信息，使用git remote -v；
2. 本地新建的分支如果不推送到远程，对其他人就是不可见的；
3. 从本地推送分支，使用git push origin branch-name，如果推送失败，先用git pull抓取远程的新提交；
4. 在本地创建和远程分支对应的分支，使用git checkout -b branch-name origin/branch-name，本地和远程分支的名称最好一致；
5. 建立本地分支和远程分支的关联，使用git branch --set-upstream branch-name origin/branch-name；
6. 从远程抓取分支，使用git pull，如果有冲突，要先处理冲突。
7. 打一个新标签

$ git tag v1.0

$ git tag v0.9 6224937

$ git tag

v0.9

v1.0

$ git tag -a v0.1 -m "version 0.1 released" 3628164

1. 删除标签

$ git tag -d v0.1

1. 推送某个标签到远程

$ git push origin v1.0

Total 0 (delta 0), reused 0 (delta 0)

To git@github.com:michaelliao/learngit.git

\* [new tag] v1.0 -> v1.0

1. 一次性推送全部尚未推送到远程的本地标签

$ git push origin --tags

Counting objects: 1, done.

Writing objects: 100% (1/1), 554 bytes, done.

Total 1 (delta 0), reused 0 (delta 0)

To git@github.com:michaelliao/learngit.git

\* [new tag] v0.2 -> v0.2

\* [new tag] v0.9 -> v0.9

1. 如果标签已经推送到远程，要删除远程标签需先从本地删除

$ git tag -d v0.9

Deleted tag 'v0.9' (was 6224937)

1. 然后，从远程删除。删除命令也是push，但格式不同

$ git push origin :refs/tags/v0.9

To git@github.com:michaelliao/learngit.git

- [deleted] v0.9

总结：

1. 命令git push origin <tagname>可以推送一个本地标签；
2. 命令git push origin --tags可以推送全部未推送过的本地标签；
3. 命令git tag -d <tagname>可以删除一个本地标签；
4. 命令git push origin :refs/tags/<tagname>可以删除一个远程标签。
5. 一个完整的.gitignore文件

# Windows:

Thumbs.db

ehthumbs.db

Desktop.ini

# Python:

\*.py[cod]

\*.so

\*.egg

\*.egg-info

dist

build

# My configurations:

db.ini

deploy\_key\_rsa

1. 需要添加一个文件到Git，但发现添加不了，原因是这个文件被.gitignore忽略

$ git add App.class

The following paths are ignored by one of your .gitignore files:

App.class

Use -f if you really want to add them.

1. 如果确实想添加该文件，可以用-f强制添加到Git

$ git add -f App.class

1. 或者可能是.gitignore写得有问题，需要找出来规则写错，可以用git check-ignore命令检查

$ git check-ignore -v App.class

.gitignore:3:\*.class App.class

1. 配置别名

$ git config --global alias.co checkout

$ git config --global alias.ci commit

$ git config --global alias.br branch

$ git config --global alias.lg "log --color --graph --pretty=format:'%Cred%h%Creset -%C(yellow)%d

%Creset %s %Cgreen(%cr) %C(bold blue)<%an>%Creset' --abbrev-commit"

说明：

1. 每个仓库的Git配置文件都放在.git/config文件中；
2. 当前用户的Git配置文件放在用户主目录下的一个隐藏文件.gitconfig中。
3. 克隆远程版本库

$ git clone –o <主机名origin> <website> <local path>

1. 查看远程库信息

$ git remote –v

$ git remote show <主机名>

$ git remote add <主机名> <网址>

$ git remote rm <主机名>

$ git remote rename <原主机名> <新主机名>

1. 拉取版本库更新

$ git fetch <远程主机名> <分支名>

1. 取回远程主机某个分支的更新

$ git pull <远程主机名> <远程分支名>:<本地分支名>

$ git fetch origin

$ git merge origin/next

$ git branch --set-upstream master origin/next

1. 本地分支合并远程分支

$ git merge origin/master

$ git rebase origin/master

1. 推送本地分支至远程分支

$ git push <远程主机名> <本地分支名>:<远程分支名>

$ git push origin :master

# 等同于

$ git push origin --delete master

1. 删除远程

git remote remove origin

1. 添加远程主机

$ git remote add origin https://github.com/yunliangqiu/practice.git

1. 将本地分支与远程分支建立连接

$ git push --set-upstream origin master

1. 删除远程主机

$ git remote remove "dev"

1. 设置区分文件名大小写

$ git config core.ignorecase false

1. Changing a remote's URL

The git remote set-url command takes two arguments:

An existing remote name. For example, origin or upstream are two common choices.

A new URL for the remote. For example:

1. If you're updating to use HTTPS, your URL might look like:

$ https://github.com/USERNAME/REPOSITORY.git

1. If you're updating to use SSH, your URL might look like:

$ git@github.com:USERNAME/REPOSITORY.git

1. Switching remote URLs from SSH to HTTPS
2. Open Git Bash.
3. Change the current working directory to your local project.
4. List your existing remotes in order to get the name of the remote you want to change.

git remote -v

origin git@github.com:USERNAME/REPOSITORY.git (fetch)

origin git@github.com:USERNAME/REPOSITORY.git (push)

1. Change your remote's URL from SSH to HTTPS with the git remote set-url command.

git remote set-url origin https://github.com/USERNAME/REPOSITORY.git

1. Verify that the remote URL has changed.

git remote -v

origin https://github.com/USERNAME/REPOSITORY.git (fetch)

origin https://github.com/USERNAME/REPOSITORY.git (push)

The next time you git fetch, git pull, or git push to the remote repository, you'll be asked for your GitHub username and password.

1. If you have two-factor authentication enabled, you must create a personal access token to use instead of your GitHub password.
2. You can use a credential helper so Git will remember your GitHub username and password every time it talks to GitHub.
3. Switching remote URLs from HTTPS to SSH
4. Open Git Bash.
5. Change the current working directory to your local project.
6. List your existing remotes in order to get the name of the remote you want to change.

git remote -v

origin https://github.com/USERNAME/REPOSITORY.git (fetch)

origin https://github.com/USERNAME/REPOSITORY.git (push)

1. Change your remote's URL from HTTPS to SSH with the git remote set-url command.

git remote set-url origin git@github.com:USERNAME/REPOSITORY.git

1. Verify that the remote URL has changed.

git remote -v

origin git@github.com:USERNAME/REPOSITORY.git (fetch)

origin git@github.com:USERNAME/REPOSITORY.git (push)