

一. 教学内容

- ① 编程的版本控制(以git为例)
- ② PYTHON编程的循环与迭代

二. 教学目标

- ① 掌握github上建立源码库的步骤
- ② 掌握git的基本操作
- ③ 熟悉git回到某一版本的操作步骤
- ④ 掌握PYTHON循环的两种结构(for, while)
- ⑤ 提前结束循环(continue, break)

三. 教学重点

- ① git库的create, clone, commit
- ② git源码库的回溯
- ③ 循环体与循环条件

四. 教学难点

- ① 对git工作方式的理解决
- ② continue与break的区别

五. 教学过程

- ① git中源码仓库的创建及修改提交

```
$ mkdir   leargit
$ cd leargit
$ pwd
```

以上是建立一个文件夹, 将来的源代码放在此处

```
$ vim ex-03-01.py
$ git init
```

以上编写一个程序, 并建立git仓库

```
$ git add ex-03-01.py
$ git commit -m "wrote the first version of exercise 3-1"
```

以上将源代码文件加入git仓库中并确认, 同时添加备注信息。接下来, 将源代码做一定的修改

```
$ vim ex-03-01.py
$ git status
$ git diff ex-03-01.py
```

以上是修改源代码, 然后查看文件状态, 对比修改前后的差异

```
$ git add ex_03_01.py
```

```
$ git commit -m "add try/except to capture traceback"
```

```
$ git status
```

以上是提交修改后的程序并确认

② 版本回退

```
$ git log
```

```
jianhuang@JianHuangdeMacBook-Pro:~/Documents/learnngit$ git log
commit 9b447da5938aea855908e11a3d0115ee2e45a486 (HEAD -> master)
Author: JianHuang <jianhuang@JianHuangdeMacBook-Pro.local>
Date: Mon Nov 9 22:15:44 2020 +0800

    add try/except to capture traceback

commit f541ac54d8c25b597168d75fd5b3386a45111dee
Author: JianHuang <jianhuang@JianHuangdeMacBook-Pro.local>
Date: Mon Nov 9 21:02:34 2020 +0800

    wrote first version of exercise 3-1
```

图1

以上显示各版本的信息及注释。

版本回溯,首先要知道当前属于哪个版本,用 HEAD 表示当前版本,用 HEAD^ 表示上一版本,用 HEAD^^ 表示上上个版本,用 HEAD~100 表示前100个版本

```
$ git reset --hard HEAD^
```

```
jianhuang@JianHuangdeMacBook-Pro:~/Documents/learnngit$ git log
commit f541ac54d8c25b597168d75fd5b3386a45111dee (HEAD -> master)
Author: JianHuang <jianhuang@JianHuangdeMacBook-Pro.local>
Date: Mon Nov 9 21:02:34 2020 +0800

    wrote first version of exercise 3-1
```

图2

以上操作将源代码回溯至上一版本,此时,输入 `git log` 命令时已没有 `try/except` 版本的信息。那么,如何回到 `try/except` 版本呢。

注意图1中, `try/except` 版本有一个版本号
9b447da.....

现在,尝试回到最新版 `try/except`

```
$ git reset --hard 9b447
```

以上操作就可回到“来”,指明版本号即可,不必写全。

Q: 找不到版本号怎么办?

```
$ git reflog
```

Q: 如何删除文件

③ 远程仓库 (github)

(A) 从零出发,先忘记前面的 `learnngit`

a. 注册 `github` 账号

b. 制作并配置 SSH 密钥 (拥有修改推送权限)

c. 创建远程空仓库 (repository)

比如,注册账号后,在Github上创建一个名为 `learn-python` 的仓库,然后用以下命令克隆到本地

```
$ git clone git@github.com:huangjianseven/learn-python.git
```

```
jianhuang@JianHuangdeMacBook-Pro:~$ git clone git@github.com:huangjianseven/learn-python.git
Cloning into 'learn-python'...
The authenticity of host 'github.com (192.30.255.112)' can't be established.
RSA key fingerprint is SHA256:nThbg6kXUpJWGl7E1IGOCspRomTxdCARLviKw6E5SY8.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'github.com,192.30.255.112' (RSA) to the list of known hosts.
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (3/3), done.
```

接下来,写个Python程序并尝试推送到远程仓库

```
$ vim test.py
$ git add test.py
$ git commit -m "message"
$ git push
```

(B) 将已有的代码传到远程仓库

- a. 在远程建空仓库
- b. 准备好SSH

```
$ cd mycode
$ git init
$ git add .
$ git commit -m "submit files"
$ git remote add origin git@github.com:huangjianseven/mycode.git
$ git push -u origin master
```

③ push到远程仓库后的版本回溯

注:不可再用 `reset`,而在使用 `check`

```
$ git check 6e4b3a2
```

```
jianhuang@JianHuangdeMacBook-Pro:~/study_python$ git checkout 3b613eb
Previous HEAD position was dd8270b add try/except to capture traceback
HEAD is now at 3b613eb submit files
```

```
jianhuang@JianHuangdeMacBook-Pro:~/study_python$ git log
commit dd8270bb61333cb6afc917bdf57b6a3d3f72a54b (HEAD, origin/master, master)
Author: huangjianseven <huangjian7@gmail.com>
Date: Tue Nov 10 06:55:21 2020 +0800

    add try/except to capture traceback

commit 3b613ebbab72feaa070964fa1a162450ab63562a
Author: huangjianseven <huangjian7@gmail.com>
Date: Tue Nov 10 00:46:28 2020 +0800

    submit files
```

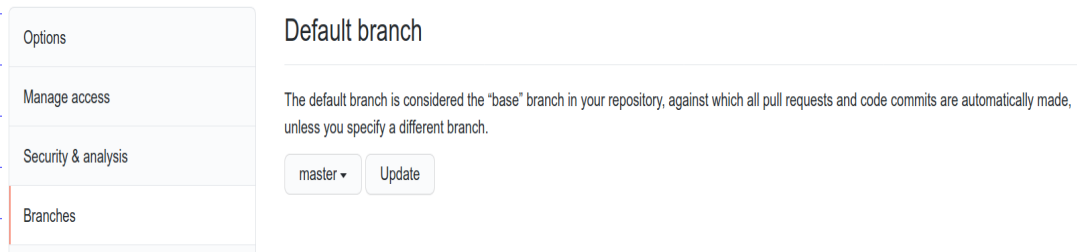
```
jianhuang@JianHuangdeMacBook-Pro:~/study_python$ git push -u origin master
Counting objects: 3, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 435 bytes | 435.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To github.com:huangjianseven/study_python.git
3b613eb..dd8270b master -> master
Branch 'master' set up to track remote branch 'master' from 'origin'.
```

④ 附 SSH 公/私钥生成

`$ ssh-keygen -t rsa -C "your_email@example.com"`

以上就在 `~/.ssh` 下生成了 `id_rsa` 和 `id_rsa.pub`, 在 github 上登记后者

⑤ 克隆后没有得到源代码的解决办法 (设置默认分支)



作业

1. 将本课程已完成的作业源代码上传到远程仓库, 截图, 上传至作业代表处。