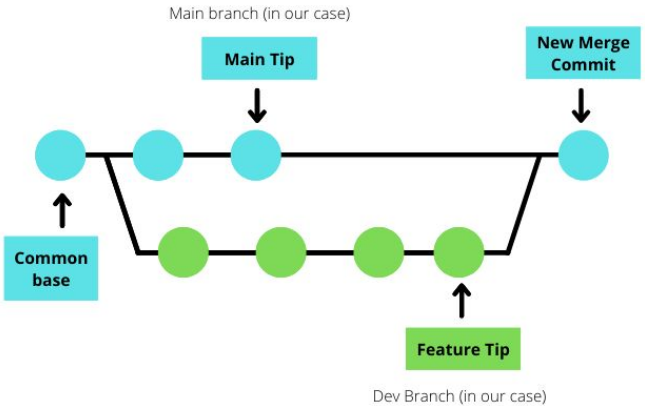
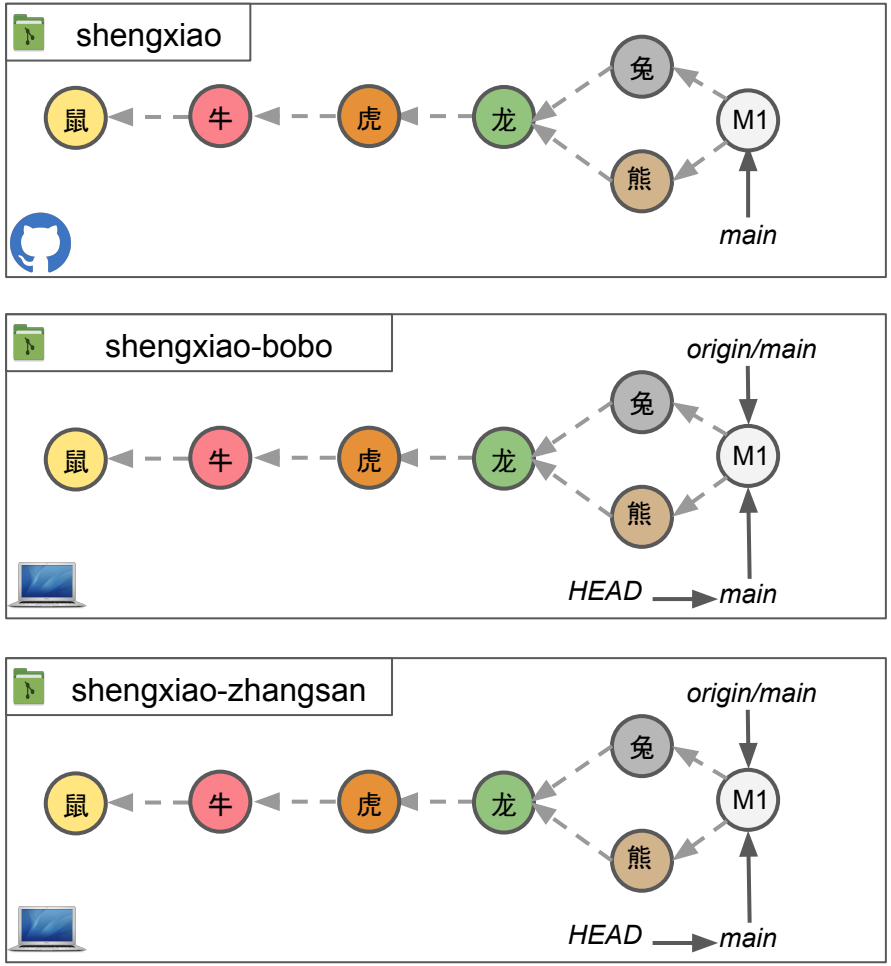
第九章 合并冲突 (Merge Conflicts)



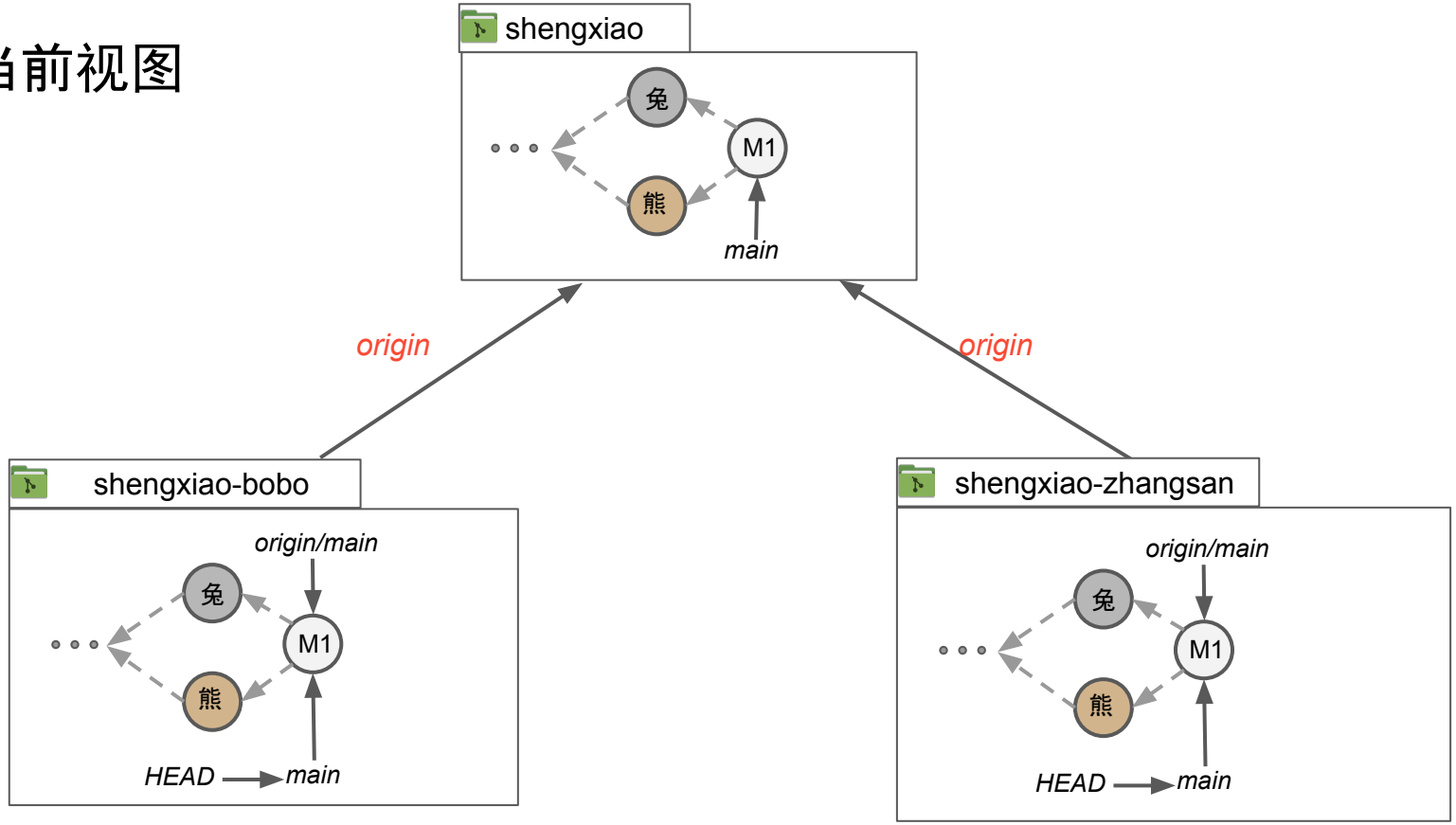
内容大纲

- 演示带有冲突(Conflicts)的三方合并(Three-Way Merge)

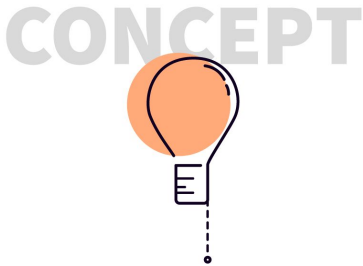
当前本地和远程仓库完整情况



当前视图


shengxiao
兔
M1
熊
main
origin
origin
shengxiao-bobo
origin/main
兔
M1
熊
HEAD
main
shengxiao-zhangsan
origin/main
兔
M1
熊
HEAD
main

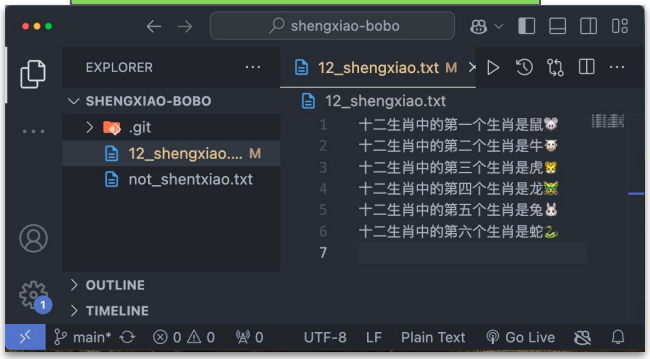
合并冲突(Merge Conflicts)

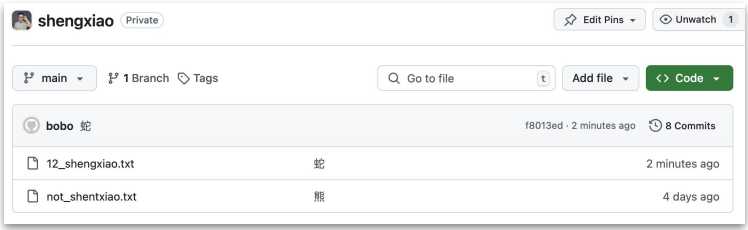


- 原因，在不同的分支上：
  - 两人对同一（或多个）文件的相同部分进行了修改
  - 一人删除了文件，另一人修改了同一文件
- Merge和Rebase过程中都可能发生合并冲突
- 解决合并冲突是Git工作流程的一部分
- 两步流程
  - 编辑+保存
  - 添加到暂存区+提交
- 建议尽早合并

波波准备三方合并+冲突解决场景（shengxiao-bobo）

1. 添加十二生肖蛇🐍





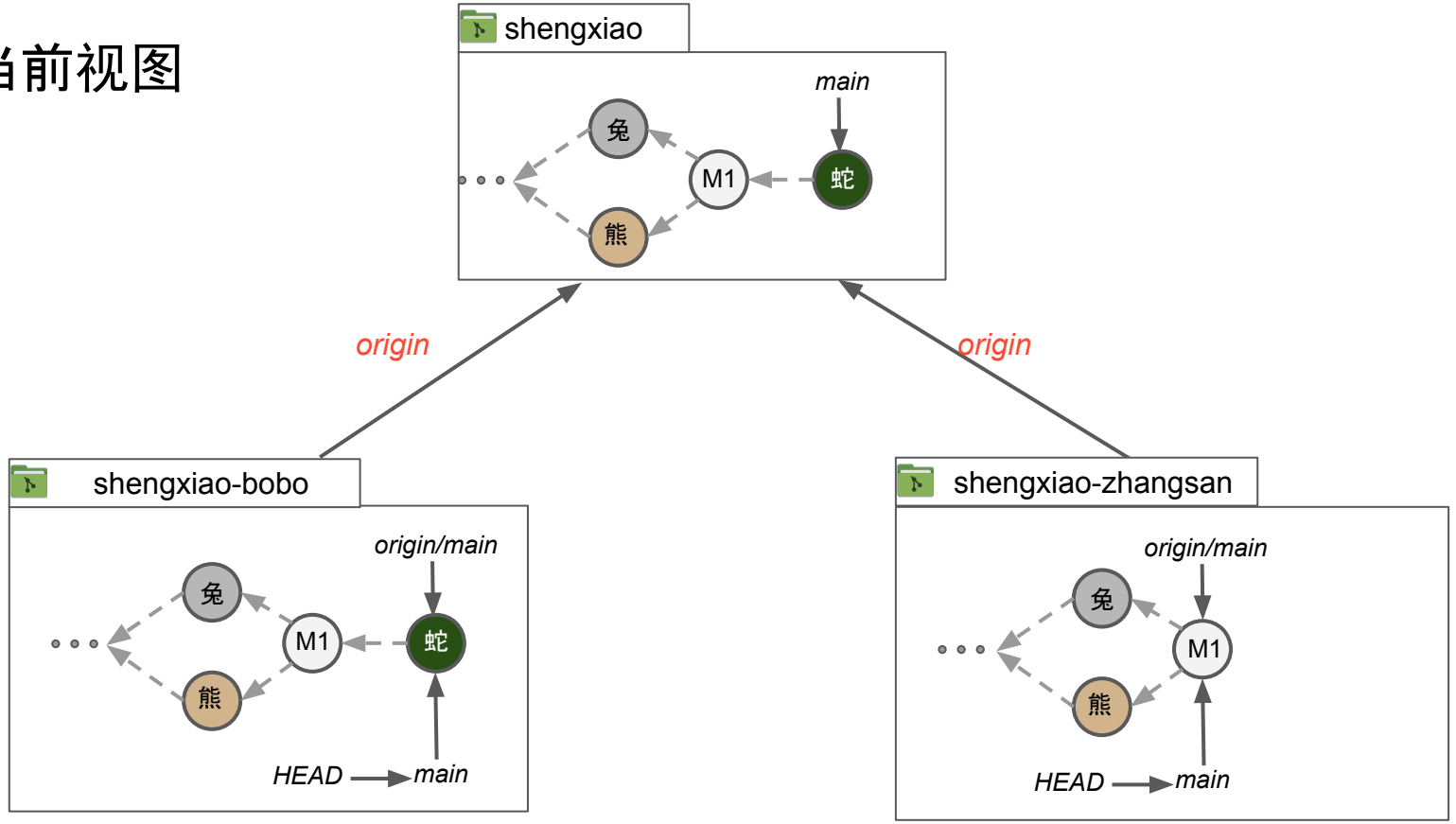
2. add & commit & push

```
shengxiao-bobo — boboweike@bobos-Mac — ..hengxiao-bobo — -zsh — 68×17
→  shengxiao-bobo git:(main) ✗ git add 12_shengxiao.txt
→  shengxiao-bobo git:(main) ✗ git commit -m "蛇"
[main f8013ed] 蛇
 1 file changed, 2 insertions(+), 1 deletion(-)
→  shengxiao-bobo git:(main) git push
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 10 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 330 bytes | 330.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), completed with 1 local object
To https://github.com/bytevigor/shengxiao.git
   032ce56..f8013ed  main -> main
→  shengxiao-bobo git:(main)
```

3. git log

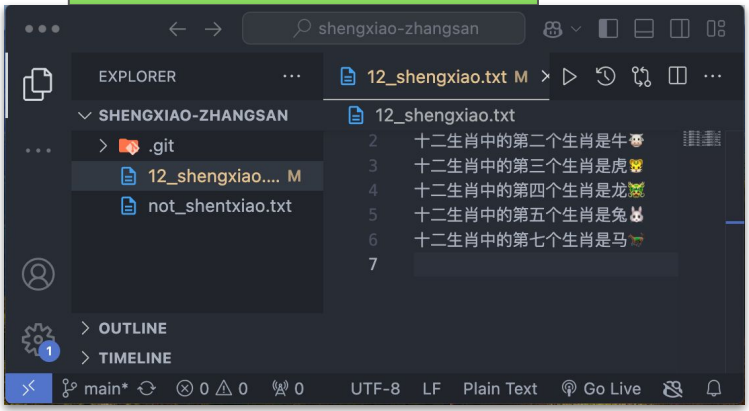
```
shengxiao-bobo — git log — git — less « git log — 62×17
commit f8013ed838aa0b7e2b5a77f1cd2c41c3e7324b43 (HEAD -> main,
 origin/main)
Author: bobo <bobo@boboweike.cn>
Date:   Mon Nov 4 11:40:14 2024 +0800

    蛇

commit 032ce5608ef0e09384c3b272570c790106ed434c
Merge: 235e8f8 85a17ec
Author: bobo <bobo@boboweike.cn>
Date:   Fri Nov 1 20:42:26 2024 +0800

    Merge remote-tracking branch 'origin/main'

commit 235e8f8c38f24804e9955364b443da1f89869d0b
Author: bobo <bobo@boboweike.cn>
:
```

当前视图

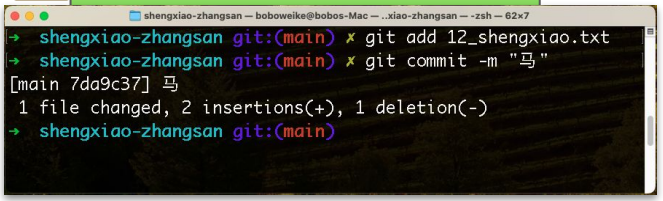

shengxiao
main
兔
M1
蛇
熊
origin
origin
shengxiao-bobo
origin/main
兔
M1
蛇
熊
HEAD
main
shengxiao-zhangsan
origin/main
兔
M1
熊
HEAD
main

张三准备三方合并+冲突解决场景（shengxiao-zhangsan）

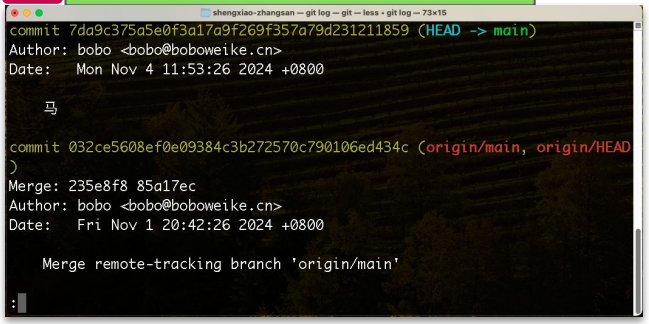
1. 添加十二生肖 马



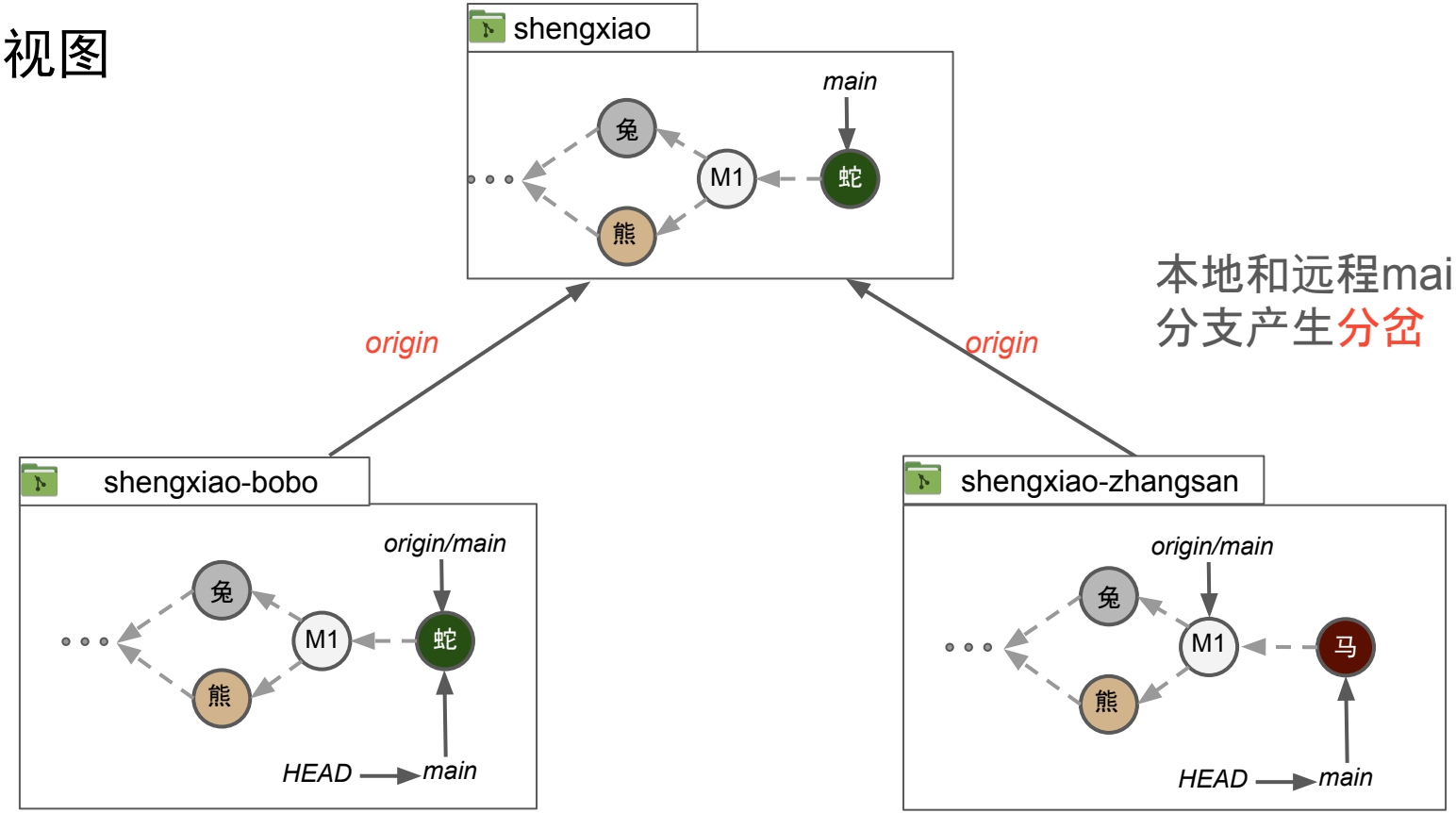
2. add & commit



3. git log

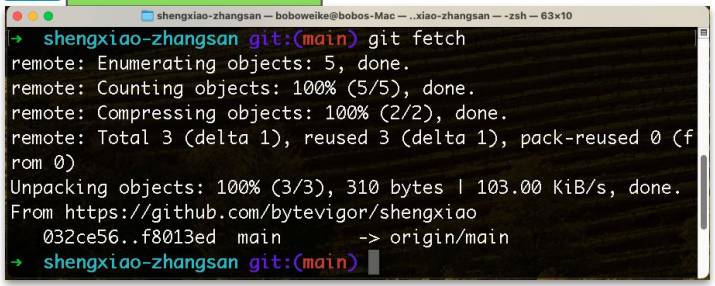


当前视图

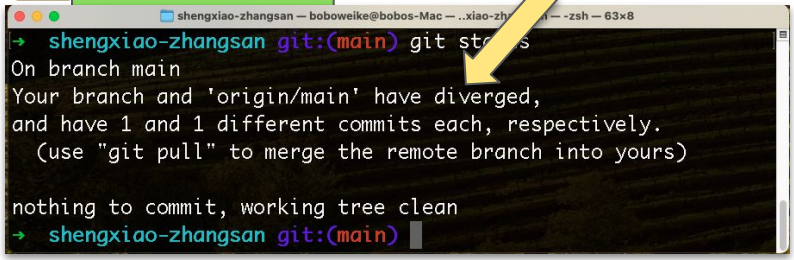

shengxiao
main
兔
M1
蛇
熊
origin
origin
本地和远程main
分支产生分岔
shengxiao-bobo
origin/main
兔
M1
蛇
熊
HEAD
main
shengxiao-zhangsan
origin/main
兔
M1
马
熊
HEAD
main

张三拉取远程变更（shengxiao-zhangsan）

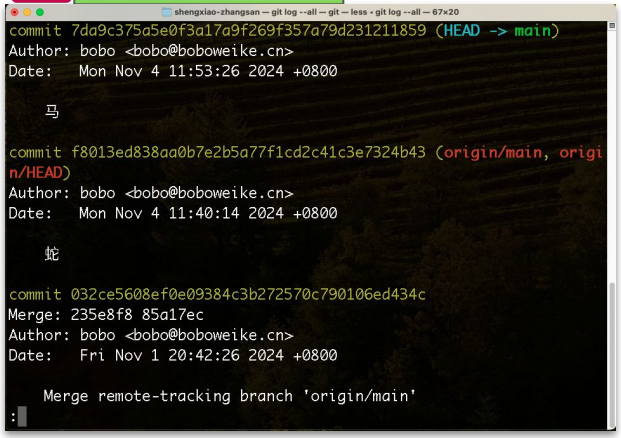
1. git fetch



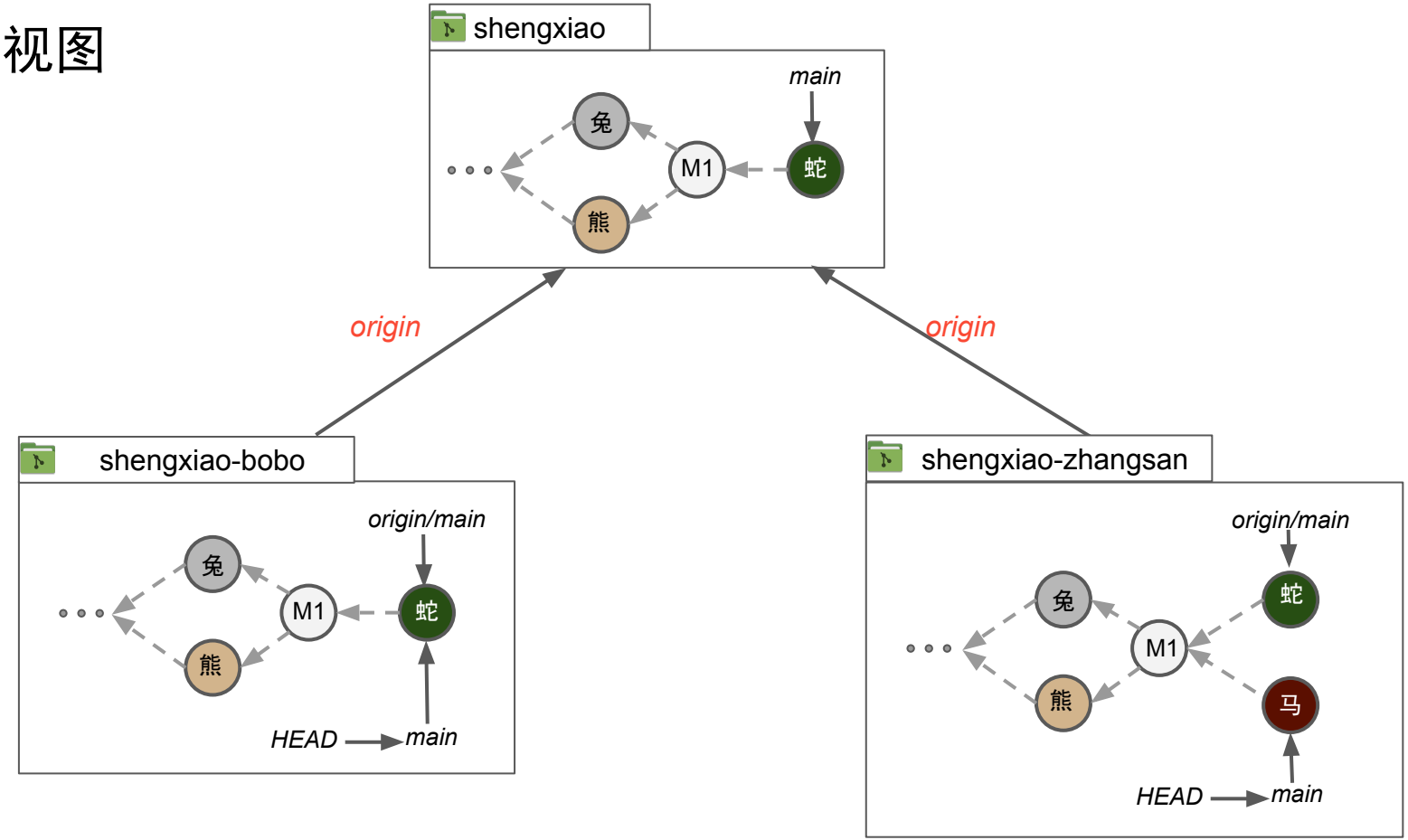
2. git status



3. git log --all

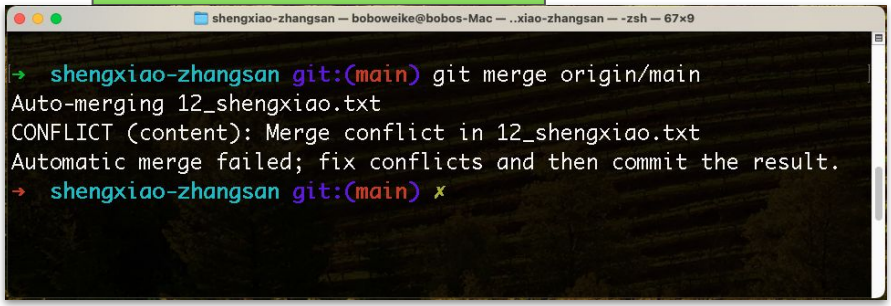


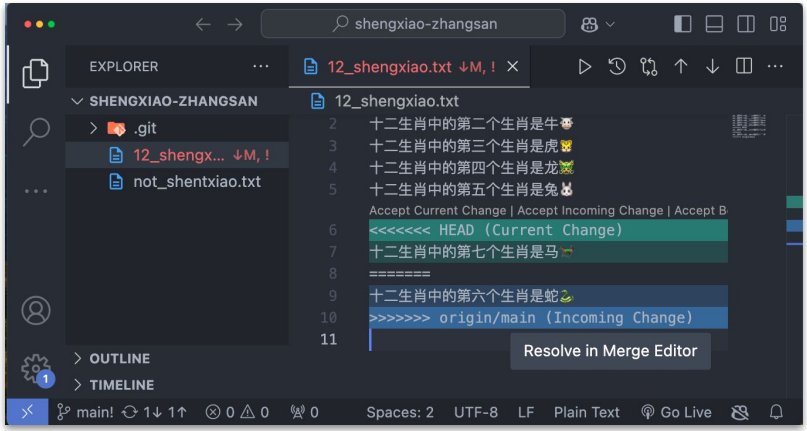
当前视图


shengxiao
main
兔
M1
蛇
熊
origin
origin
shengxiao-bobo
origin/main
兔
M1
蛇
熊
HEAD
main
shengxiao-zhangsan
origin/main
兔
蛇
M1
熊
马
HEAD
main

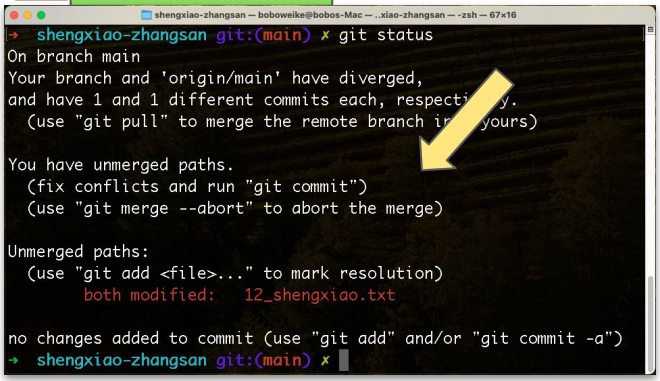
张三合并origin/main(shengxiao-zhangsan)

1. git merge origin/main



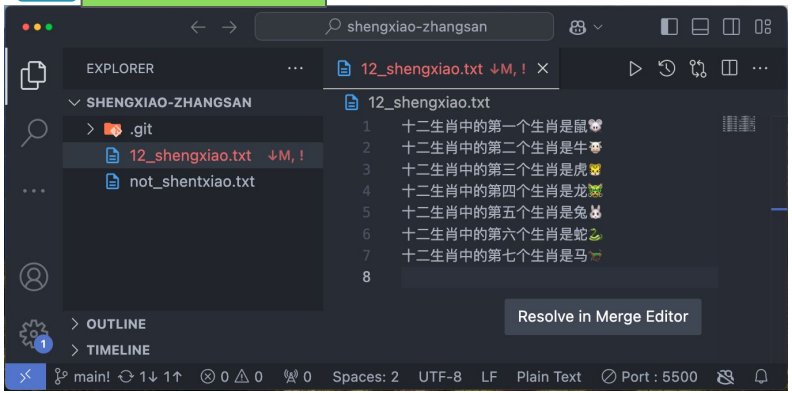


2. git status



张三解决冲突

1. 解析冲突



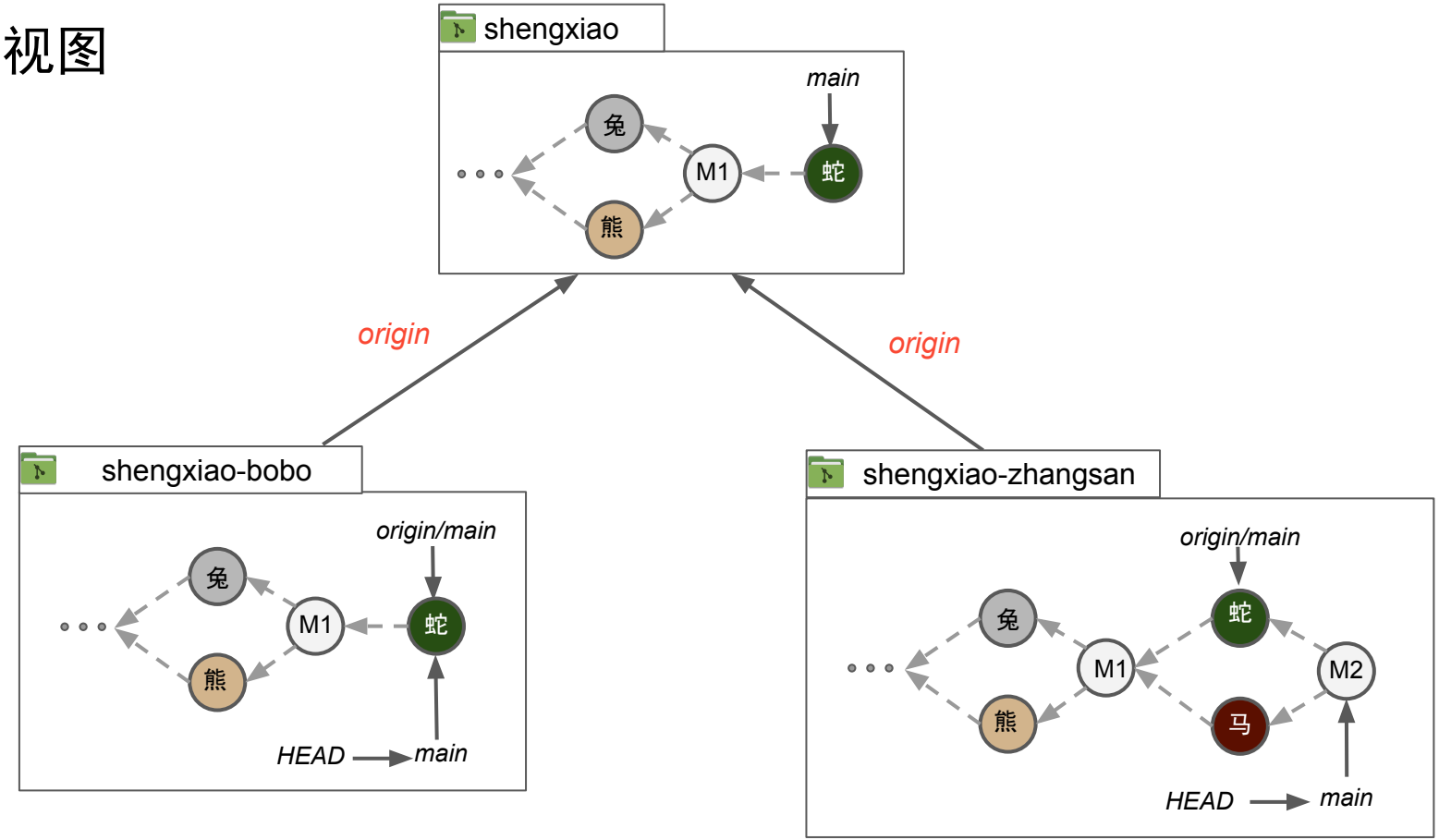
2. git status & add & commit

```
shengxiao-zhangsan — boboweike@bobos-Mac — ..xiao-zhangsan — -zsh — 67×19
➜  shengxiao-zhangsan git:(main) ✗ git status
On branch main
Your branch and 'origin/main' 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:   12_shengxiao.txt

no changes added to commit (use "git add" and/or "git commit -a")
➜  shengxiao-zhangsan git:(main) ✗ git add 12_shengxiao.txt
➜  shengxiao-zhangsan git:(main) ✗ git commit -m "merge commit 2"
[main 1255020] merge commit 2
➜  shengxiao-zhangsan git:(main)
```

3. git log

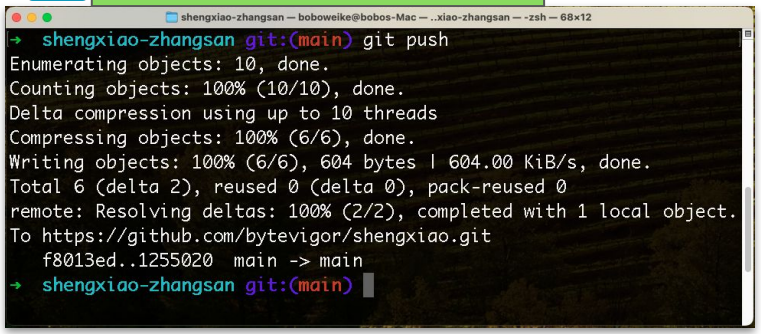
```
shengxiao-zhangsan — git log — git — less • git log — 67×20
commit 1255020d71156185365dd86f0aeda987a2853d55 (HEAD -> main)
Merge: 7da9c37 f8013ed
Author: bobo <bobo@boboweike.cn>
Date:   Mon Nov 4 12:22:47 2024 +0800

    merge commit 2

commit 7da9c375a5e0f3a17a9f269f357a79d231211859
Author: bobo <bobo@boboweike.cn>
Date:   Mon Nov 4 11:53:26 2024 +0800

    马

commit f8013ed838aa0b7e2b5a77f1cd2c41c3e7324b43 (origin/main, origi
n/HEAD)
Author: bobo <bobo@boboweike.cn>
Date:   Mon Nov 4 11:40:14 2024 +0800

    蛇
:
```

当前视图

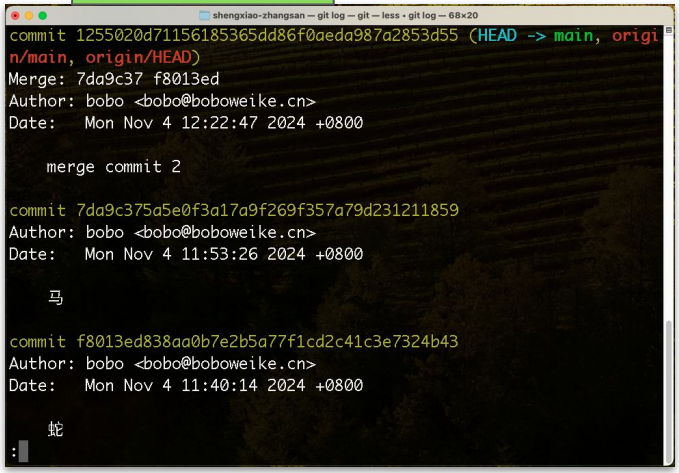

shengxiao
main
兔
M1
蛇
熊
origin
origin
shengxiao-bobo
origin/main
兔
M1
蛇
熊
HEAD
main
shengxiao-zhangsan
origin/main
兔
蛇
M1
M2
熊
马
HEAD
main

张三推到远程仓库(shengxiao-zhangsan)

1. git push

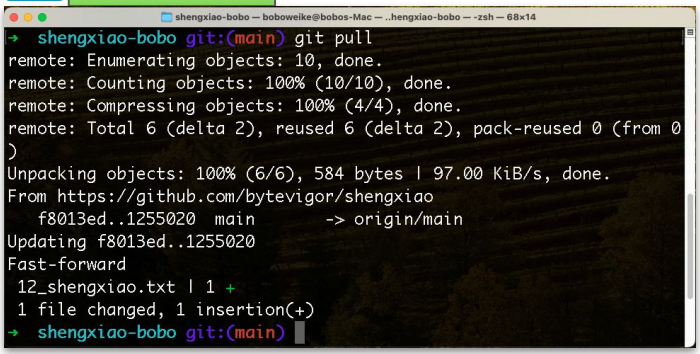


2. git log

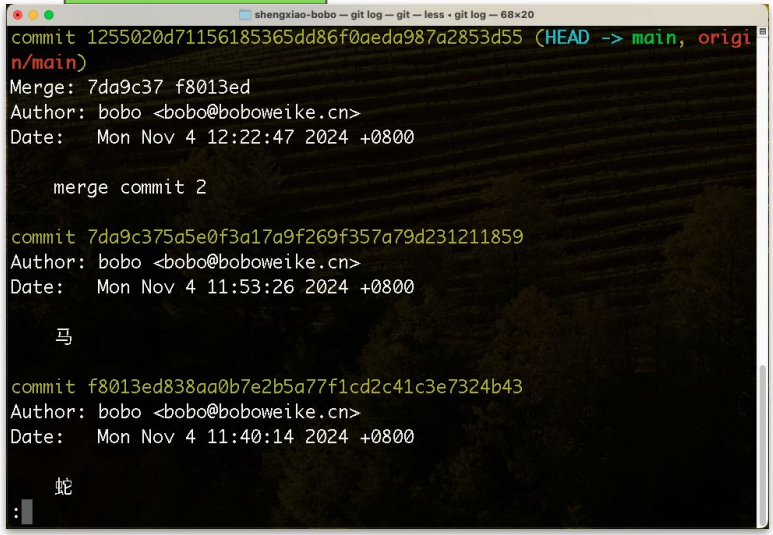


波波拉取合并到本地(shengxiao-bobo)

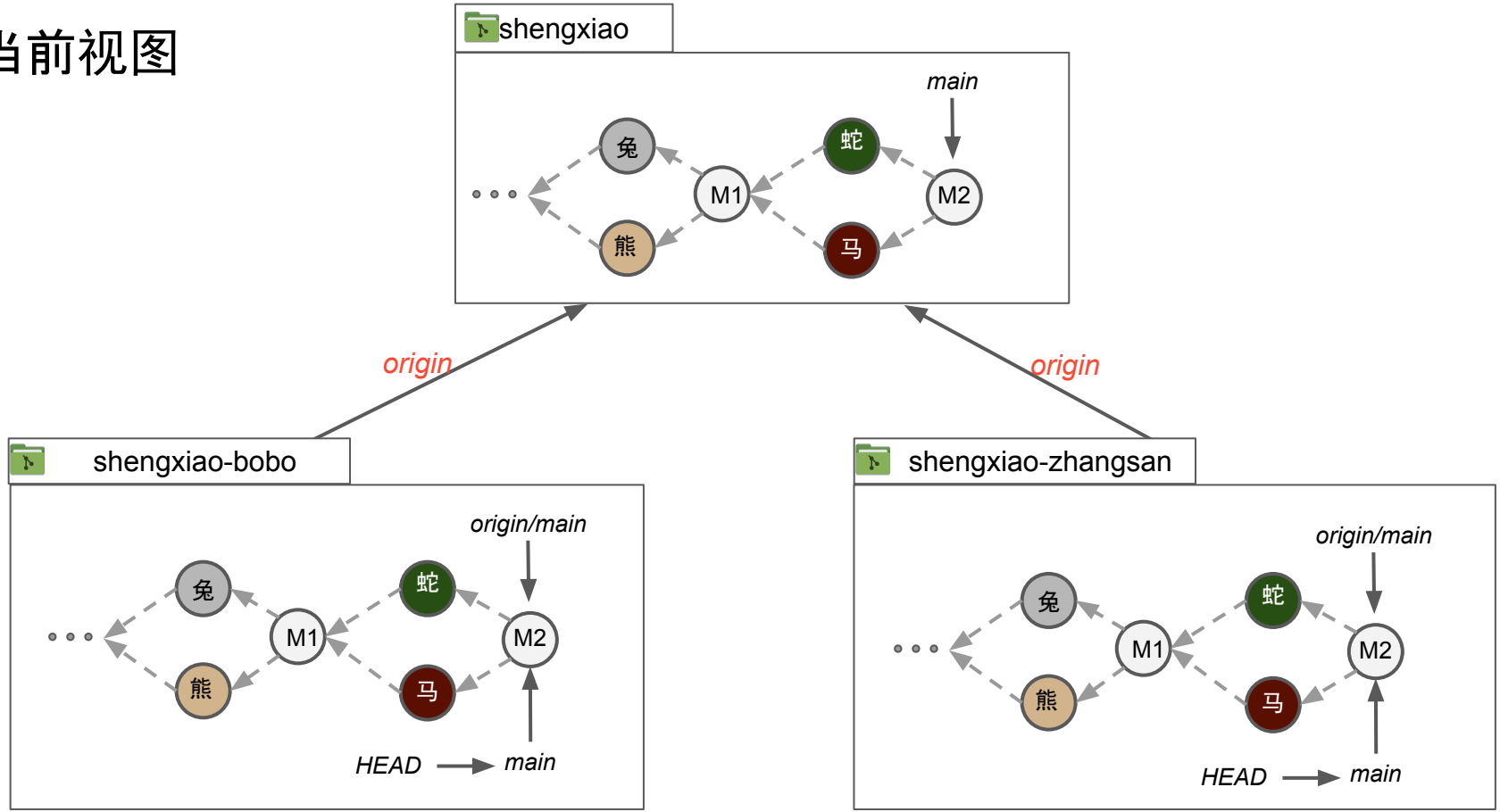
1 1. git pull



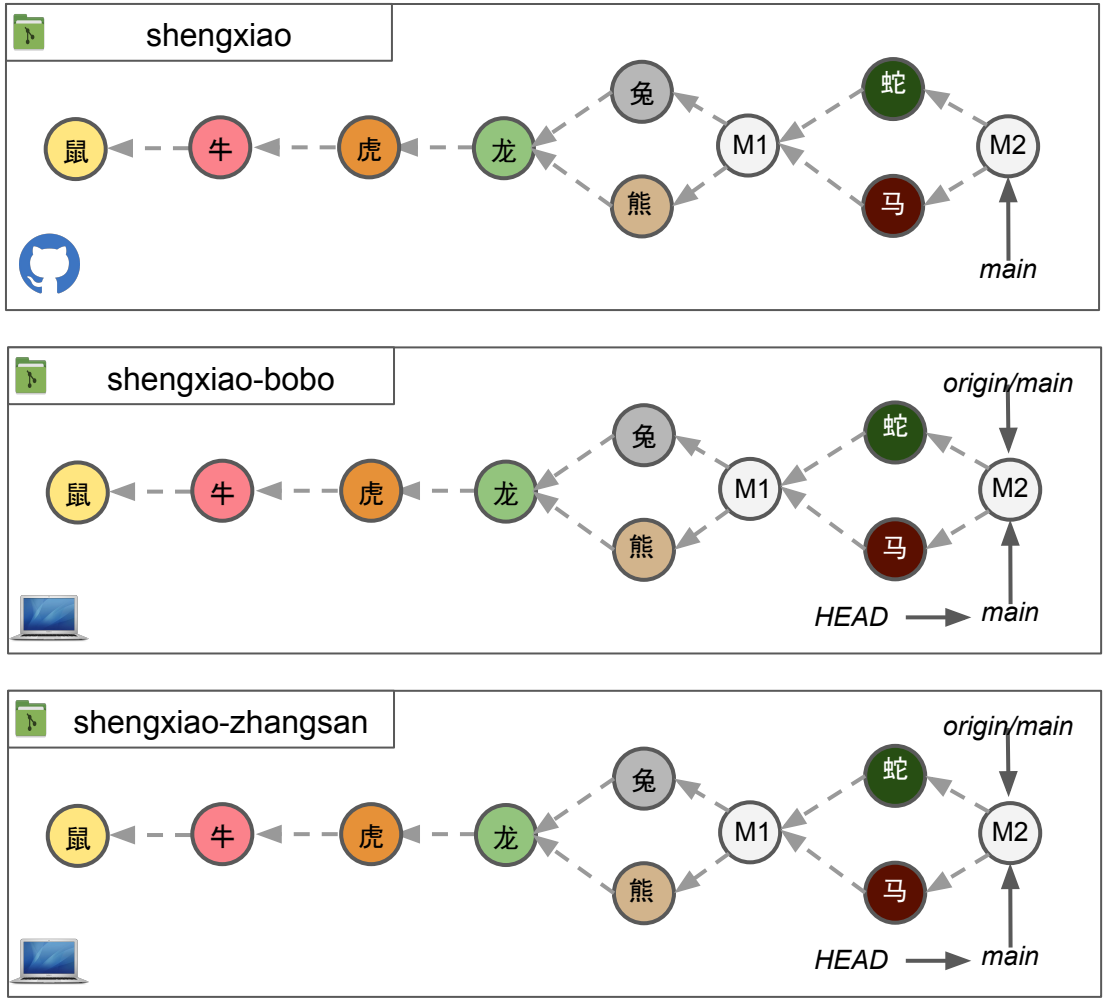
2 2. git log



当前视图


shengxiao
main
兔
蛇
M1
M2
熊
马
origin
origin
shengxiao-bobo
origin/main
兔
蛇
M1
M2
熊
马
HEAD
main
shengxiao-zhangsan
origin/main
兔
蛇
M1
M2
熊
马
HEAD
main

当前本地和远程仓库完整情况



本课小结

- 合并冲突原因
  - 修改了同一(或多个)文件的相同部分
  - 一删一改
- 两步流程
  - 编辑解决冲突+保存
  - 添加到暂存区+提交
- 建议尽早合并
- 下节课预览
  - 变基(Rebasing) + 冲突解决