

人生不如意之事十之八九，合并分支往往也不是一帆风顺的。

准备新的 `feature1` 分支，继续我们的新分支开发：

```
$ git switch -c feature1
```

创建并切换分支

```
Switched to a new branch 'feature1'
```

修改 `readme.txt` 最后一行，改为：

```
Creating a new branch is quick AND simple.
```

在 `feature1` 分支上提交：

```
$ git add readme.txt

$ git commit -m "AND simple"
[feature1 14096d0] AND simple
1 file changed, 1 insertion(+), 1 deletion(-)
```

切换到 `master` 分支：

```
$ git switch master
Switched to branch 'master'
Your branch is ahead of 'origin/master' by 1 commit.
(use "git push" to publish your local commits)
```

Git还会自动提示我们当前 `master` 分支比远程的 `master` 分支要超前1个提交。

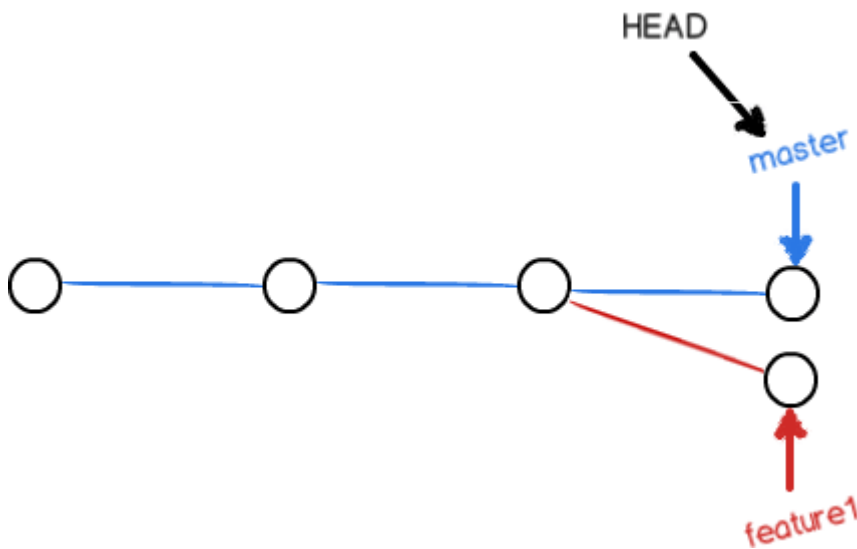
在 `master` 分支上把 `readme.txt` 文件的最后一行改为：

```
Creating a new branch is quick & simple.
```

提交：

```
$ git add readme.txt
$ git commit -m "& simple"
[master 5dc6824] & simple
1 file changed, 1 insertion(+), 1 deletion(-)
```

现在，`master` 分支和 `feature1` 分支各自都分别有新的提交，变成了这样：



这种情况下，Git无法执行“快速合并”，只能试图把各自的修改合并起来，但这种合并就可能会有冲突，我们试试看：

```
$ git merge feature1
Auto-merging readme.txt
CONFLICT (content): Merge conflict in readme.txt
Automatic merge failed; fix conflicts and then commit the result.
```

果然冲突了！Git告诉我们，`readme.txt` 文件存在冲突，必须手动解决冲突后再提交。`git status` 也可以告诉我们冲突的文件：

```
$ git status
On branch master
Your branch is ahead of 'origin/master' by 2 commits.
(use "git push" to publish your local commits)

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:   readme.txt

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

我们可以直接查看readme.txt的内容：

```
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 of files.
```

```
<<<<<< HEAD
Creating a new branch is quick & simple.
=====
Creating a new branch is quick AND simple.
>>>>>> feature1
```

删除红框部分，添加自己需要的内容

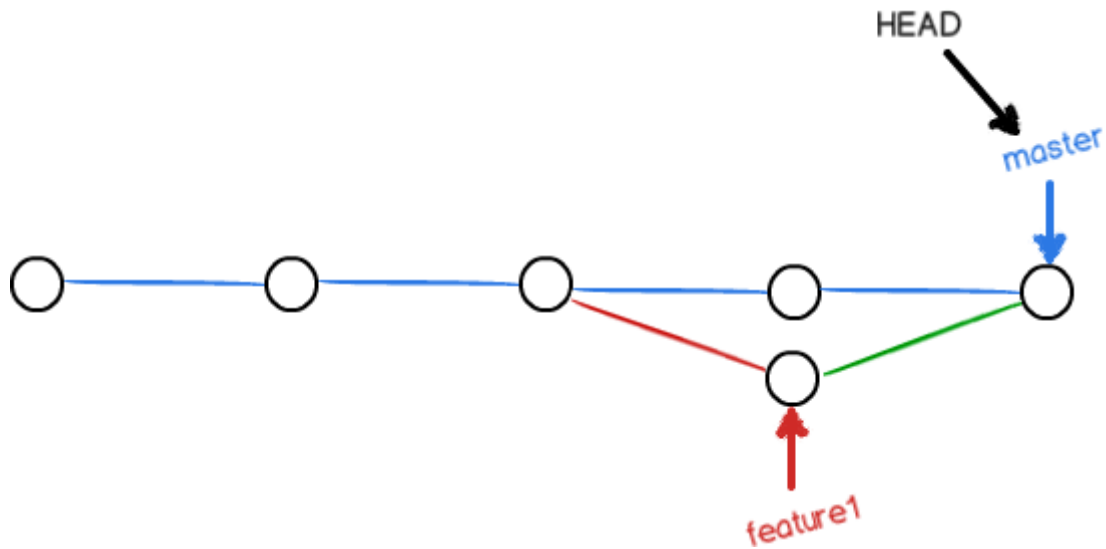
Git用 `<<<<<<`，`=====`，`>>>>>>` 标记出不同分支的内容，我们修改如下后保存：

```
Creating a new branch is quick and simple.
```

再提交：

```
$ git add readme.txt
$ git commit -m "conflict fixed"
[master cf810e4] conflict fixed
```

现在，`master` 分支和 `feature1` 分支变成了下图所示：



用带参数的 `git log` 也可以看到分支的合并情况：

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

产看分支树

```
* cf810e4 (HEAD -> master) conflict fixed
|\
| * 14096d0 (feature1) AND simple
* | 5dc6824 & simple
|/
* b17d20e branch test
* d46f35e (origin/master) remove test.txt
* b84166e add test.txt
* 519219b git tracks changes
* e43a48b understand how stage works
* 1094adb append GPL
* e475afc add distributed
* eaadf4e wrote a readme file
```

最后，删除 `feature1` 分支：

```
$ git branch -d feature1
Deleted branch feature1 (was 14096d0).
```

工作完成。

当Git无法自动合并分支时，就必须首先解决冲突。解决冲突后，再提交，合并完成。

解决冲突就是把Git合并失败的文件手动编辑为我们希望的内容，再提交。

用 `git log --graph` 命令可以看到分支合并图。