

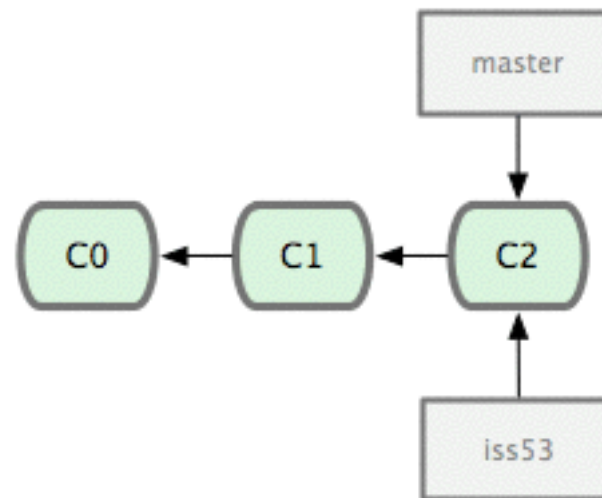
Git Strikes Back

Pete X. Graham

Contents

1. Branching and merging revisited
2. Why use rebase?
3. Rebasing from another branch
4. Dangers of rebase & Git reflog
5. Rebase own branch
6. Further reading / More Git commands

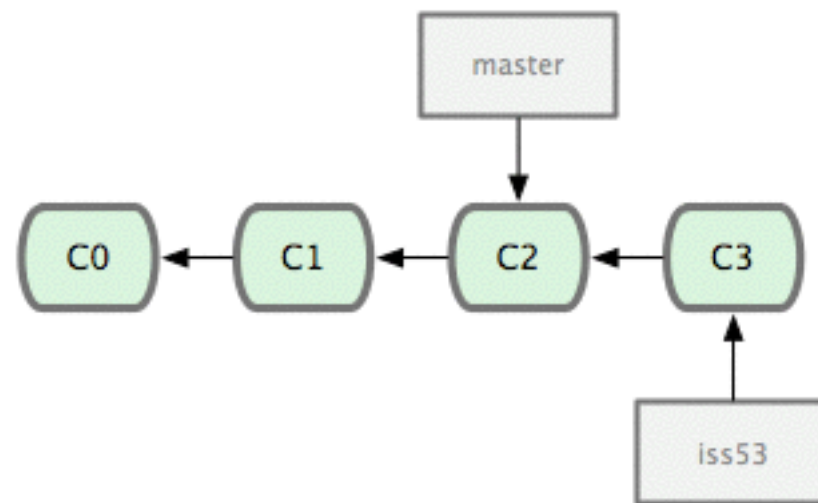
Two Branches



Both branches point at the same commit

We make a commit to iss53

Fast Forward Merge

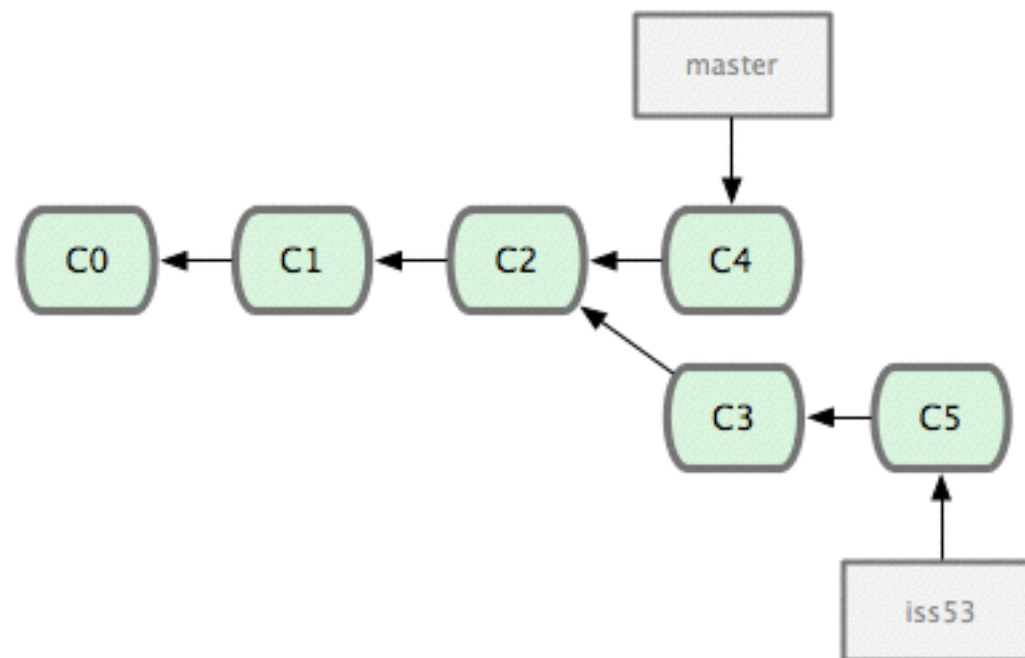


We want to merge back into master

```
git checkout master  
git merge iss53
```

Creates a fast forward merge. Both branches now point at C3.

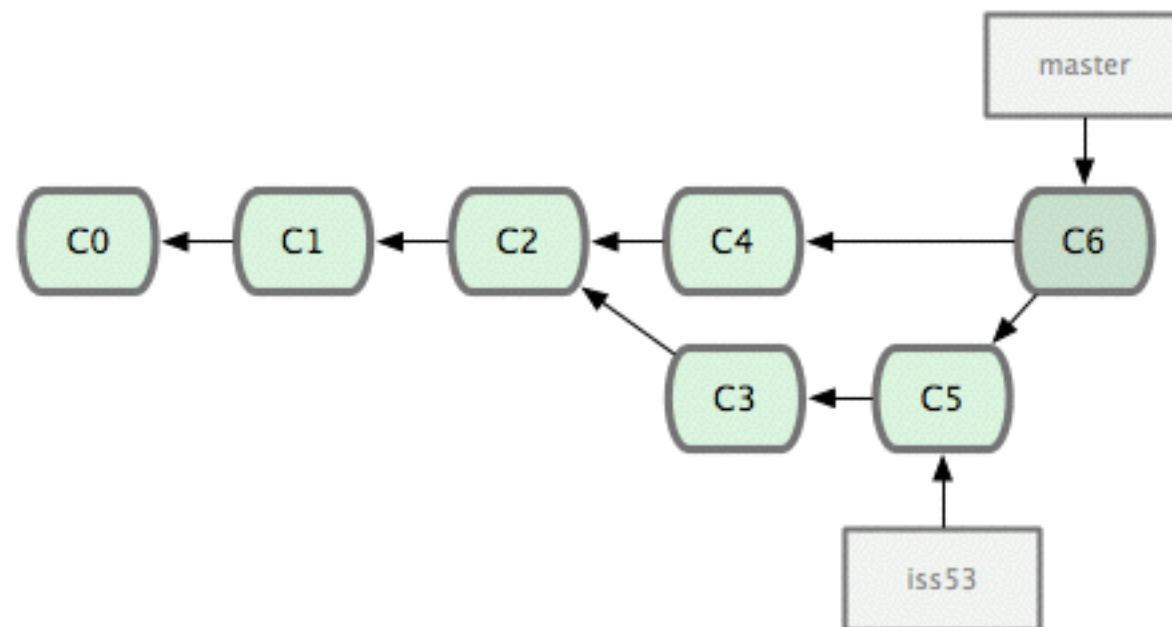
Two Branches Independent Work



Commits have been made on master and iss53.

```
git add .  
git commit -m 'My ace work.'
```

Three-way Merge



```
git checkout master  
git merge iss53
```

Merge commit C6 created.

Merge commit has two parents.

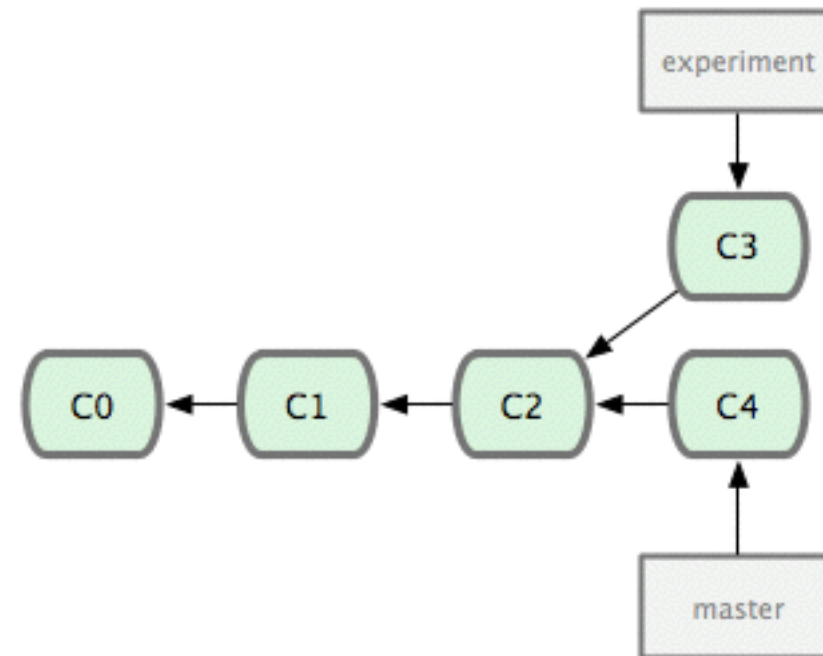
Why Use Rebase?

1. Keep git log clean & organised
2. Understand history of feature development
3. Version control is documentation!
4. Remove stupid mistakes from git log

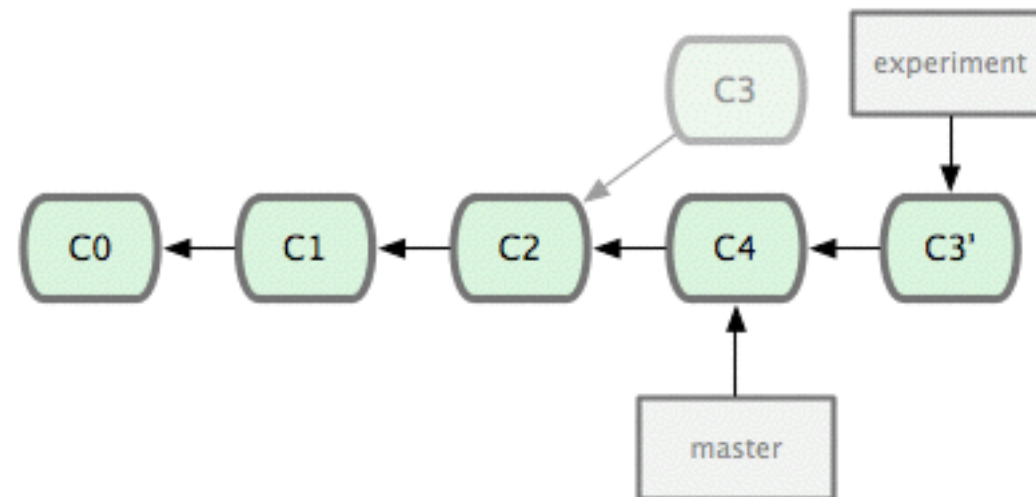


```
noisebox — less — 86x42
* 1e6cc76 Removing unnecessary parameters
* 3a95242 File added to prove ownership of domain for SSL certificate
* e0ef804 Merge pull request #74 from GuntLondon/pete/mobile-styles
|
| * c4f788b updated mobile styles
| * 5f2ee53 Merge pull request #73 from GuntLondon/m-allanson/68-websocket-check
|
| * 7c88129 Disallow non-websocket connections. Fixes #60.
| * 28ec465 Merge pull request #71 from GuntLondon/m-allanson/49-killing-a-host
|
| * fce990c Prevent user page from being cached.
| * e23f59e Ensure noisebox is destroyed when last host leaves.
| * f6ad528 Make bootClient message actually boot out the client.
| * 18f8d5b Add a boot route, redirects to the home page with a flash message.
| * e99a51c Send placeholder message to clients when last host is closed
| * 5ab587e Merge pull request #72 from GuntLondon/jed/58-fix-user-icons
|
| * 28686f9 Fixing icon not prepending to users on host client
|
| * 5c38b34 Merge pull request #70 from GuntLondon/pxg/52-generate-sfx-list
| * ff42578 File list built when server starts. Fixes #53
|
| * ade2715 Merge remote-tracking branch 'origin/dev' into dev
|
| * 5fba789 Merge pull request #69 from GuntLondon/pxg/59-track-ordering
|
| * ea26ebb Fixing lint error for grunt deploy
| * 838381c Stop jshint moaning about curly braces
|
| * e8f4fac Merge pull request #62 from GuntLondon/pxg/59-track-ordering
|
| * 088aee5 Testing for reverse removed
| * d75a735 Sorting function which can take a property as an argument added
| * 92929c6 DRY
| * c9eedb1 Sorting working but reversed for testing locally
```

Rebase from other Branch



Rebase from other Branch



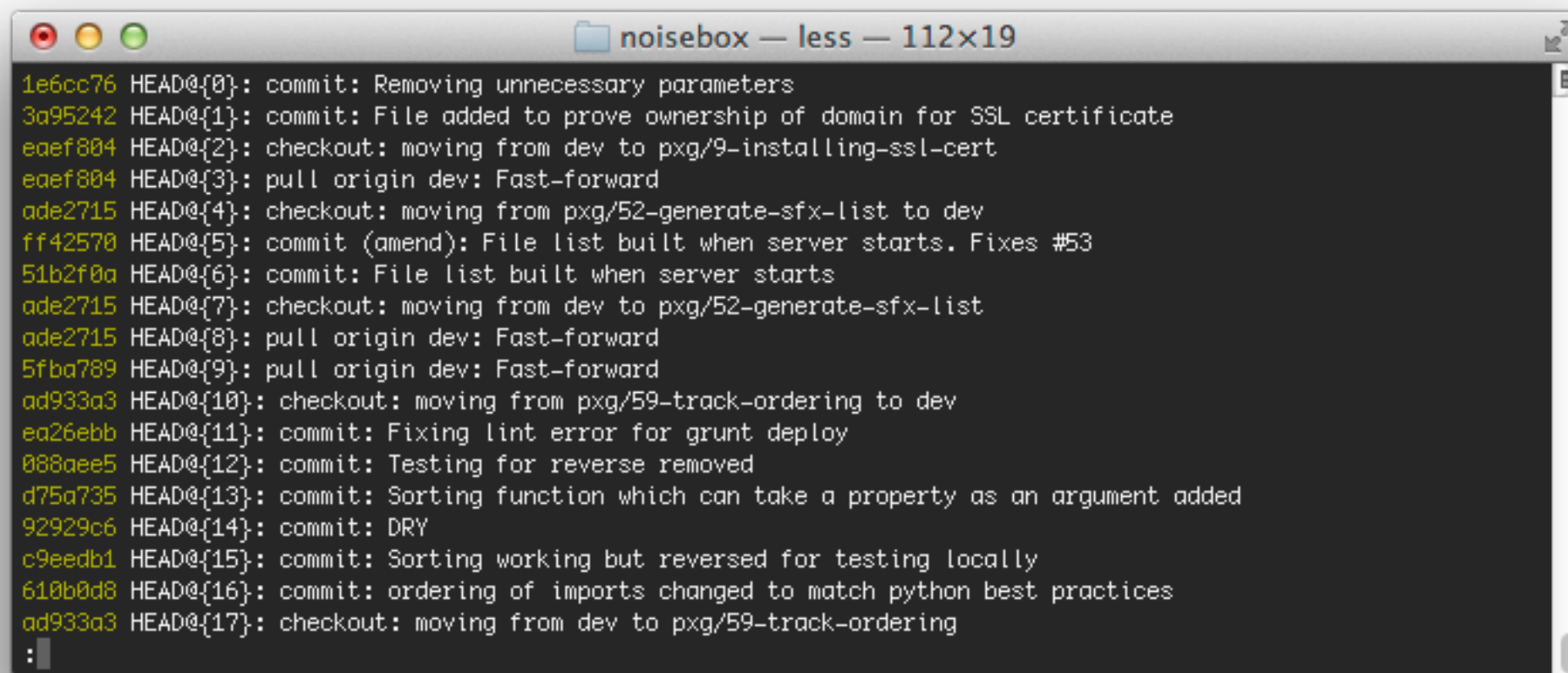
```
git rebase master
```

Dangers of Rebase

1. Can be confusing at first
2. Conflicts more annoying to solve than merge conflicts
3. You are effectively "rewriting history"
4. Don't rebase a branch shared with someone

Git Reflog

- Rebase rewrites the Gitlog the reflog can be used to see what's actually happened.
- Useful to recover from Git booboos



```
noisebox — less — 112x19
1e6cc76 HEAD@{0}: commit: Removing unnecessary parameters
3a95242 HEAD@{1}: commit: File added to prove ownership of domain for SSL certificate
eaef884 HEAD@{2}: checkout: moving from dev to pxg/9-installing-ssl-cert
eaef884 HEAD@{3}: pull origin dev: Fast-forward
ade2715 HEAD@{4}: checkout: moving from pxg/52-generate-sfx-list to dev
ff42578 HEAD@{5}: commit (amend): File list built when server starts. Fixes #53
51b2f8a HEAD@{6}: commit: File list built when server starts
ade2715 HEAD@{7}: checkout: moving from dev to pxg/52-generate-sfx-list
ade2715 HEAD@{8}: pull origin dev: Fast-forward
5fba789 HEAD@{9}: pull origin dev: Fast-forward
ad933a3 HEAD@{10}: checkout: moving from pxg/59-track-ordering to dev
ea26ebb HEAD@{11}: commit: Fixing lint error for grunt deploy
888aee5 HEAD@{12}: commit: Testing for reverse removed
d75a735 HEAD@{13}: commit: Sorting function which can take a property as an argument added
92929c6 HEAD@{14}: commit: DRY
c9eedb1 HEAD@{15}: commit: Sorting working but reversed for testing locally
610b0d8 HEAD@{16}: commit: ordering of imports changed to match python best practices
ad933a3 HEAD@{17}: checkout: moving from dev to pxg/59-track-ordering
```

Rebase own branch - amend

```
git commit --amend  
git push --force
```

Incase you forgot to add something to your last commit. Or you want to change the commit message.

Rebase own branch - Interactive

```
git rebase -i HEAD~4
```

Interactive rebase the last four commits on a branch.

You can squash commits together and modify commit messages.

Squash Them All

```
git branch -c <new_sqaush_branch>  
git merge --squash <feature_branch>
```

If you want to make your branch into one big commit.

Other squashing techniques are available.

Further Reading

<http://git-scm.com/book/en/> Pro Git Book
(Thanks for the diagrams)

<https://www.atlassian.com/git/>

More Git

Alternative Workflows

Undoing things

- checkout
- revert
- rm

Other commands

- git cherry-pick
- git submodule
- git subtree
- git tag
- git show