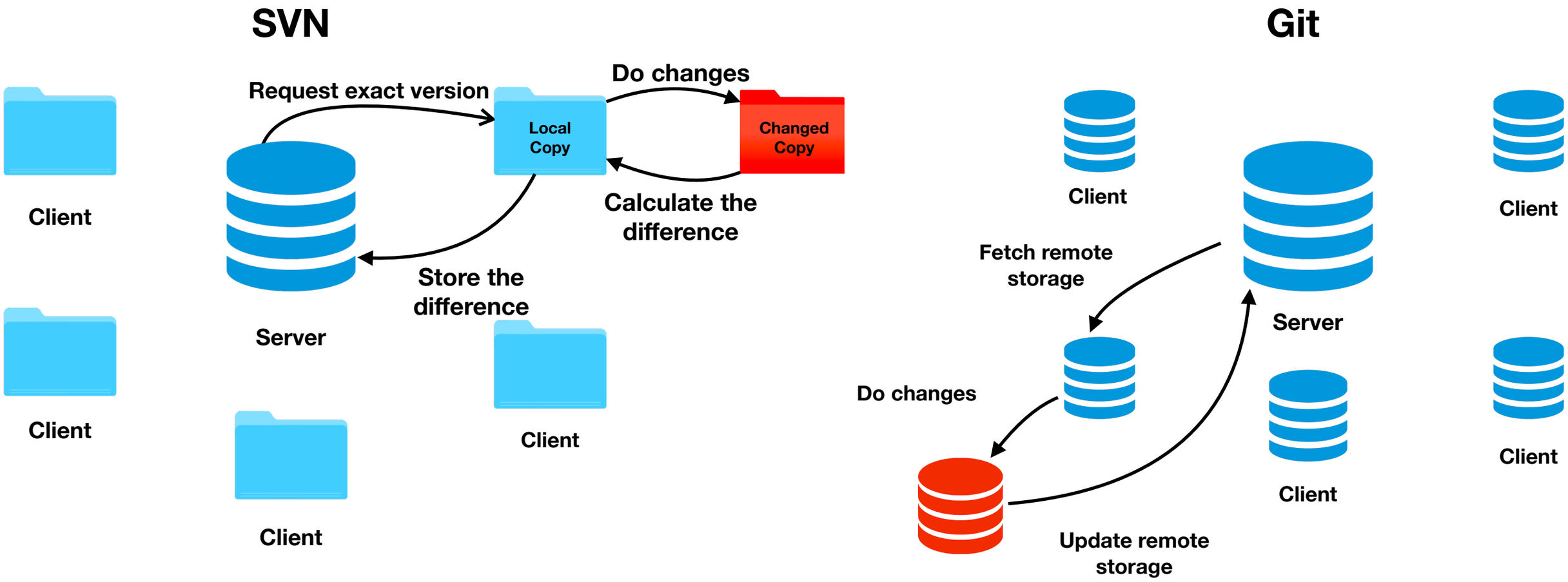
itransition
SOFTWARE DEVELOPMENT COMPANY

Git

Versions control system (VCS)



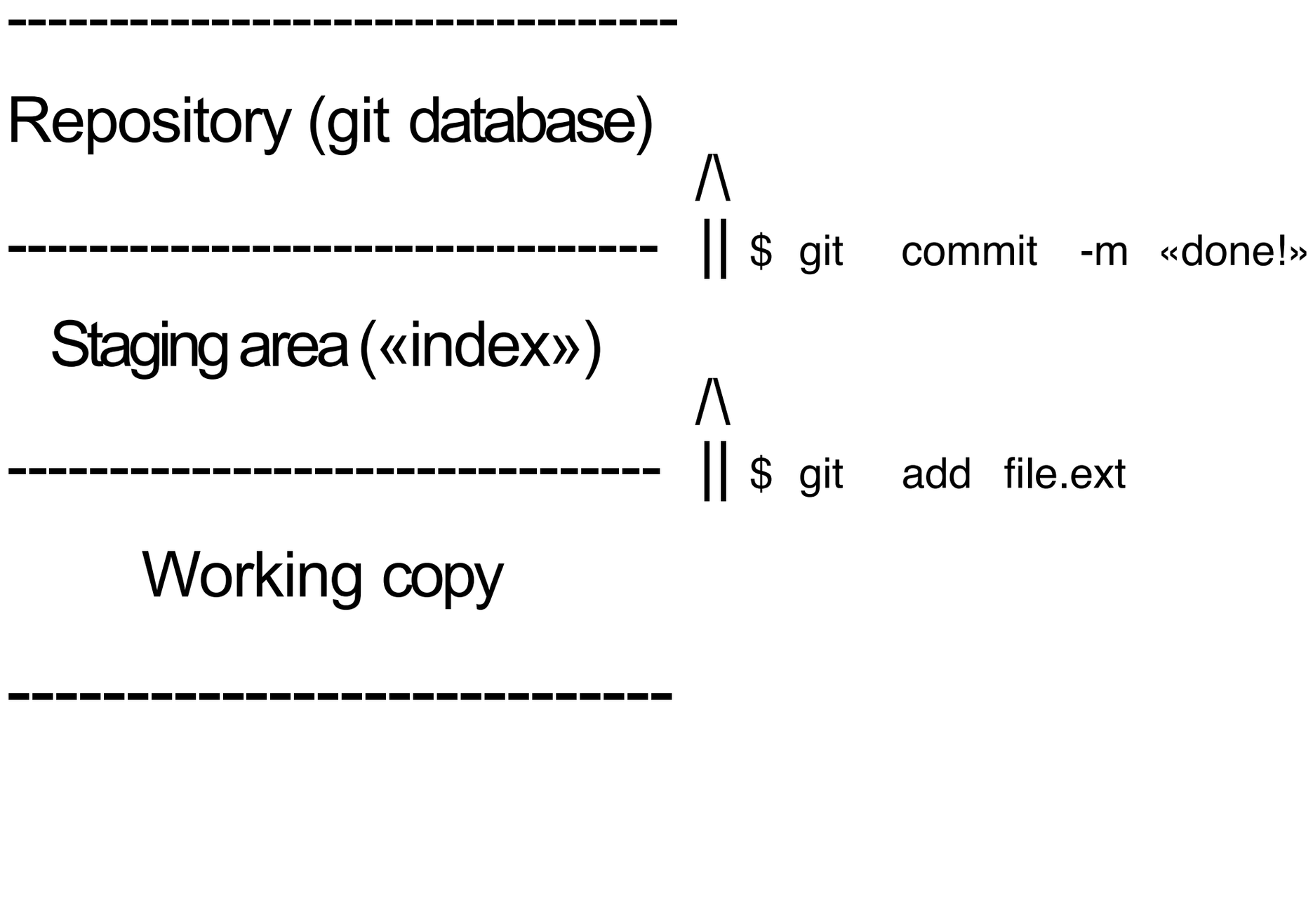
Git - distributed version control system

Git

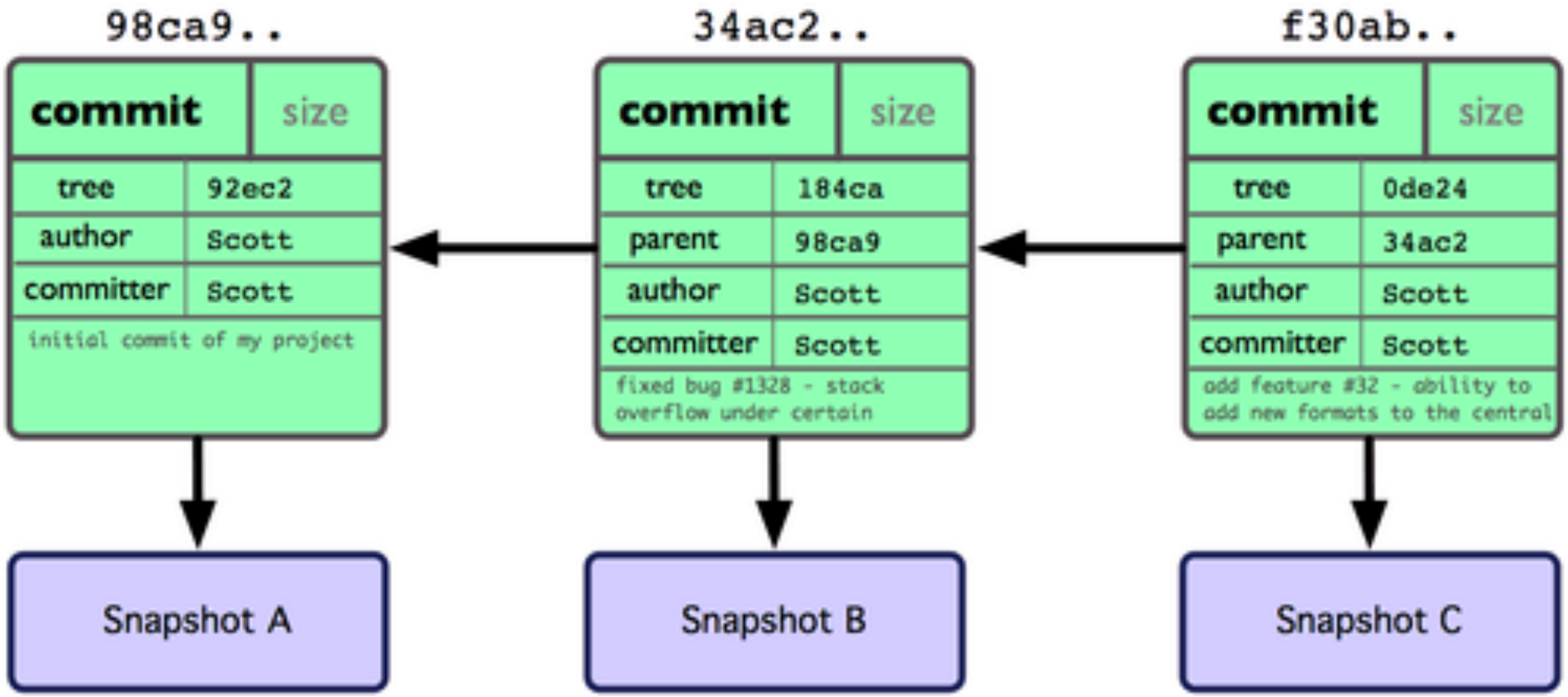
Git was originally authored by Linus Torvalds in 2005 for development of the Linux kernel

- Git is a connected, directed graph without cycles
- Graph vertices can have labels

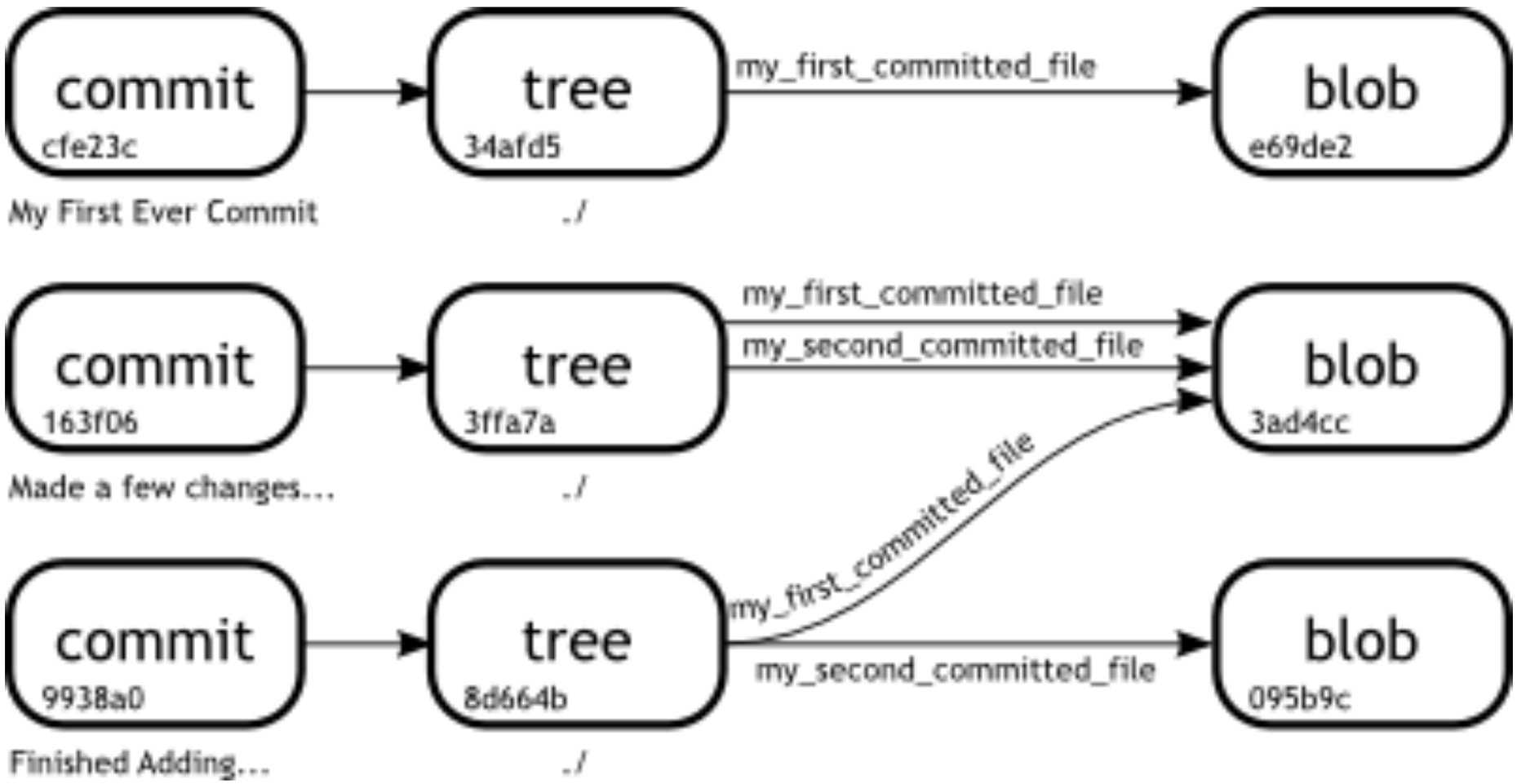
Commit


Repository (git database)
$ git commit -m «done!»
Staging area («index»)
$ git add file.ext
Working copy

Commit


98ca9..
commit
size
tree
92ec2
author
Scott
committer
Scott
initial commit of my project
34ac2..
commit
size
tree
184ca
parent
98ca9
author
Scott
committer
Scott
fixed bug #1328 - stack overflow under certain
f30ab..
commit
size
tree
0de24
parent
34ac2
author
Scott
committer
Scott
add feature #32 - ability to add new formats to the central
Snapshot A
Snapshot B
Snapshot C

Commit


commit
cfe23c
My First Ever Commit
tree
34afd5
./
my_first_committed_file
blob
e69de2
commit
163f06
Made a few changes...
tree
3ffa7a
./
my_first_committed_file
my_second_committed_file
blob
3ad4cc
commit
9938a0
Finished Adding...
tree
8d664b
./
my_first_committed_file
my_second_committed_file
blob
095b9c

```
$ git config --global user.name "John Doe"
$ git config --global user.email johndoe@example.com
```

/etc/gitconfig	git config --system
~/.gitconfig	git config –global
.git/config	git config

Branches

Creating the branch and switching on it

--o--o--o
[master]

$ git checkout -b new-branch

Branches

Creating the branch and switching on it

--o--o--o
[master, new-branch]

$ git checkout -b new-branch

Branches

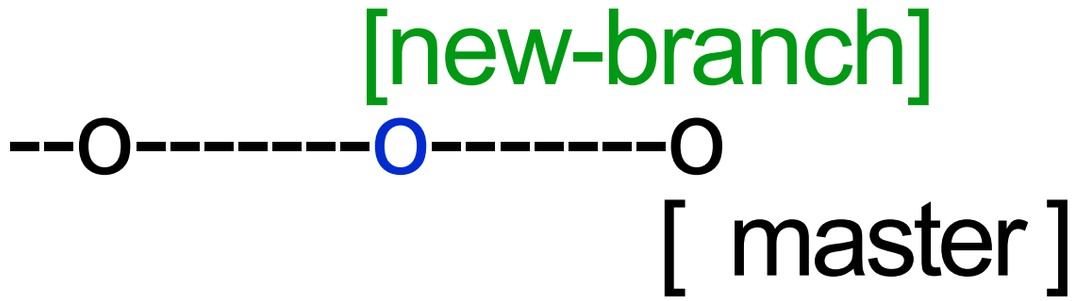
Creating the branch and switching on it

--o-------O-------o
[master]

$ git checkout -b new-branch master~1

Branches

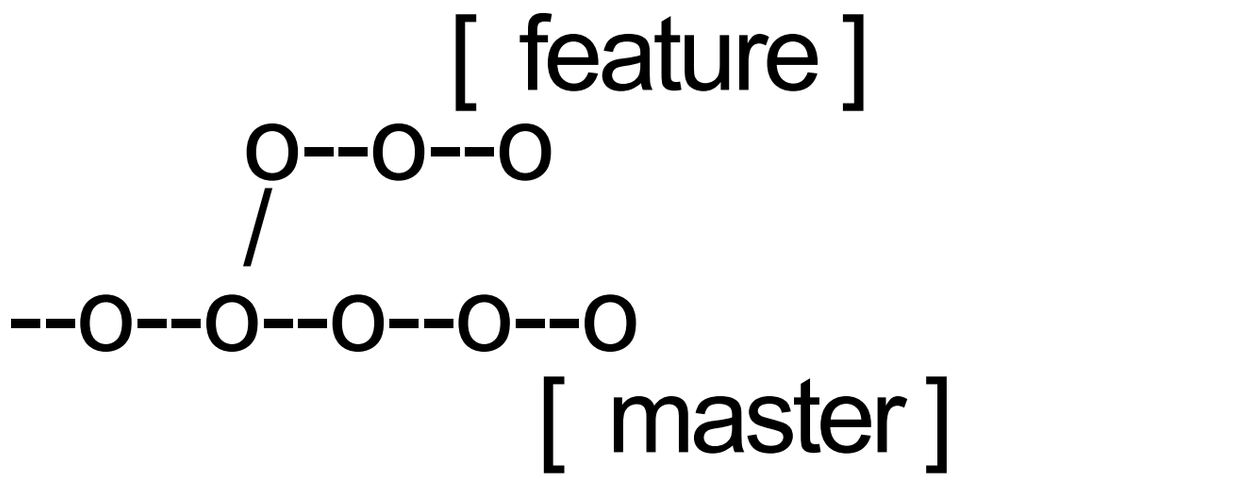
Creating the branch and switching on it




```
$ git checkout -b new-branch master~1
```

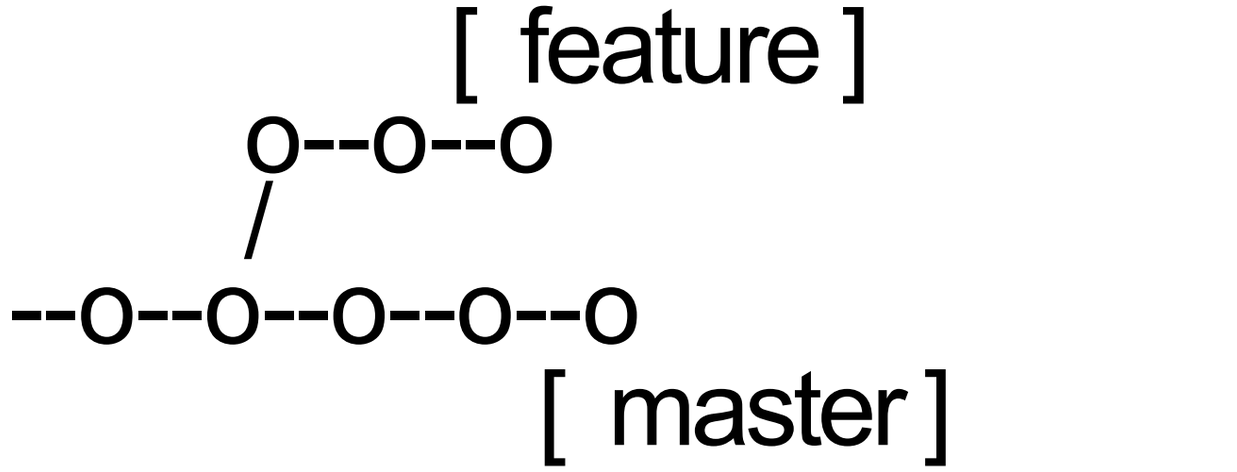
Merge

Join two or more development histories together



Merge

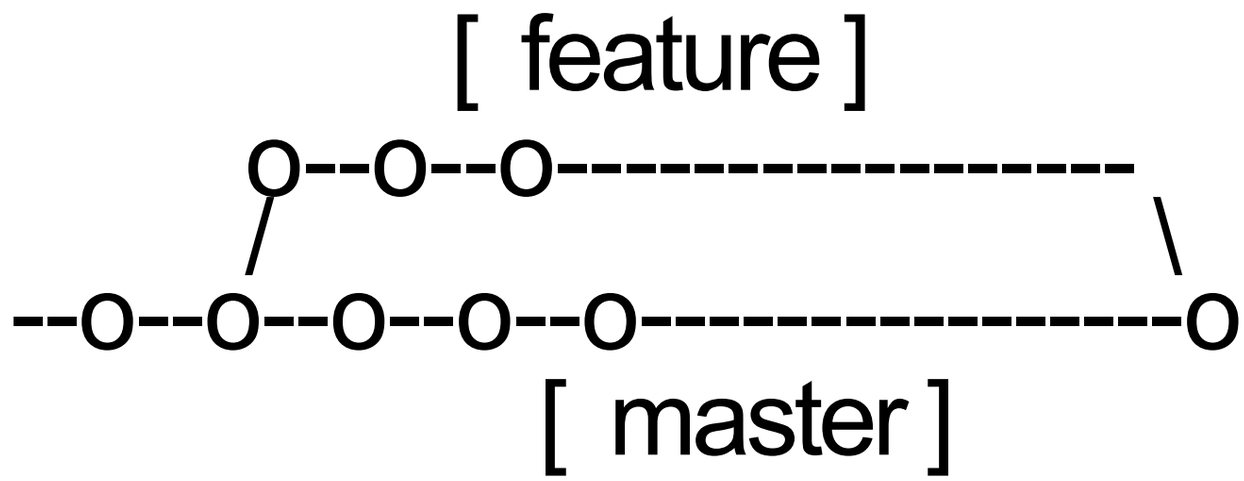
Join two or more development histories together




```
$ git checkout master
$ git merge feature
```

Merge

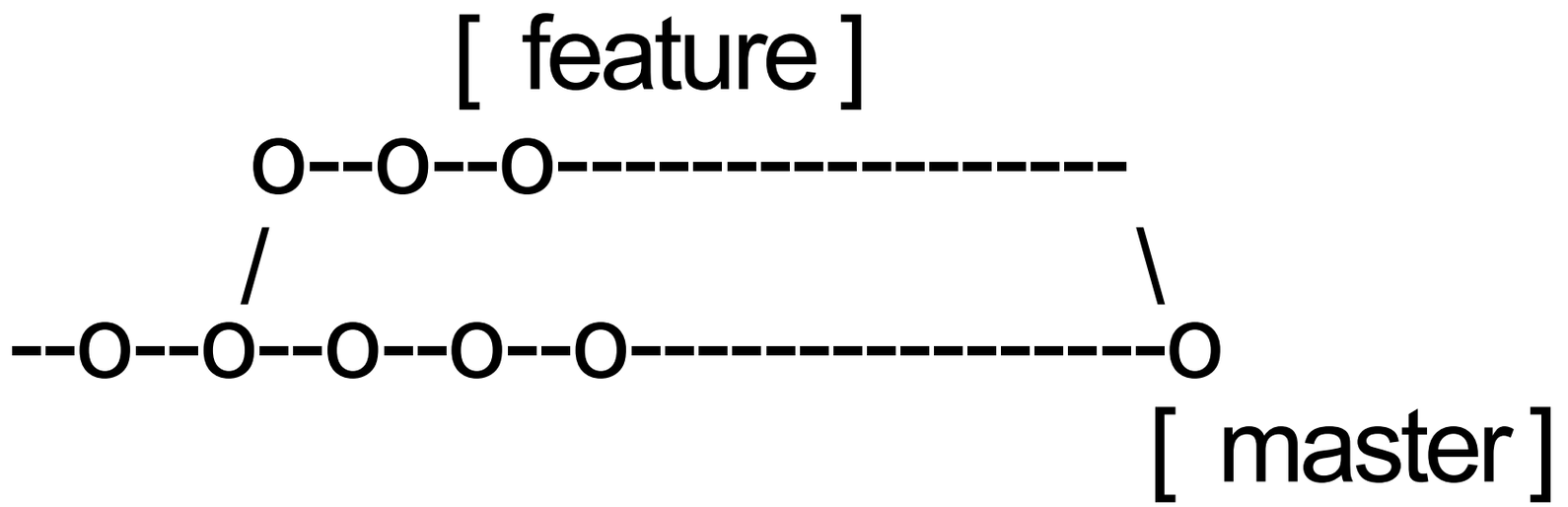
Join two or more development histories together




```
$ git checkout master
$ git merge feature
```

Merge

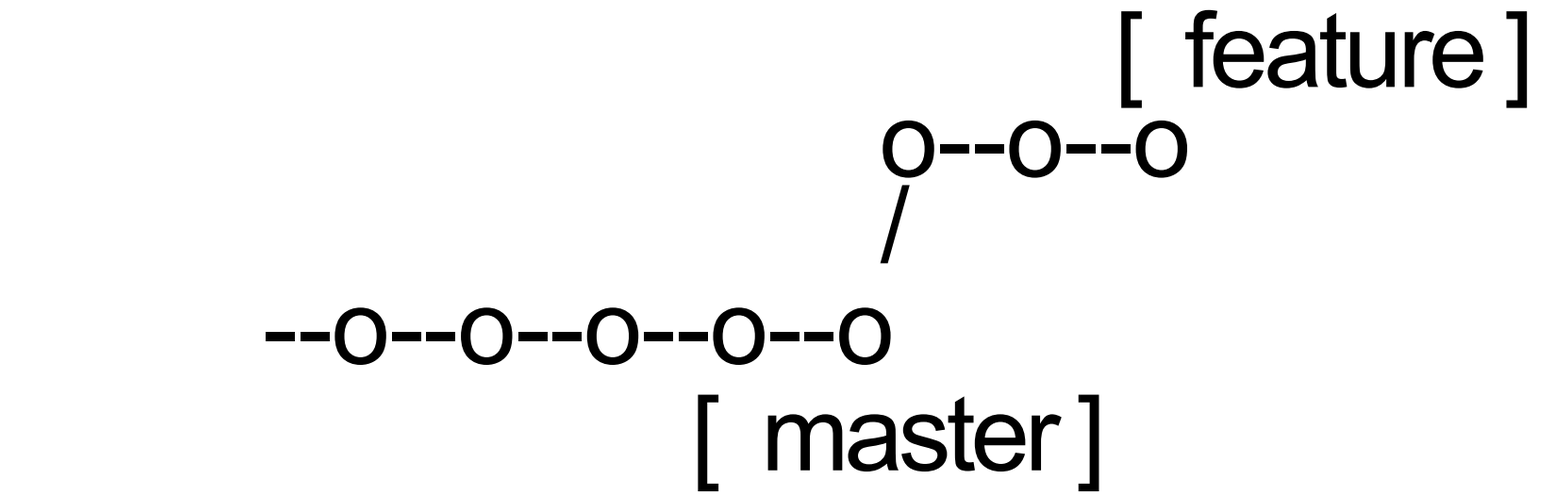
Join two or more development histories together




```
$ git checkout master
$ git merge feature
```

Merge

Fast-forward



Fast forward merge can be performed when there is a direct linear path from the source branch to the target branch.

Merge

Fast-forward

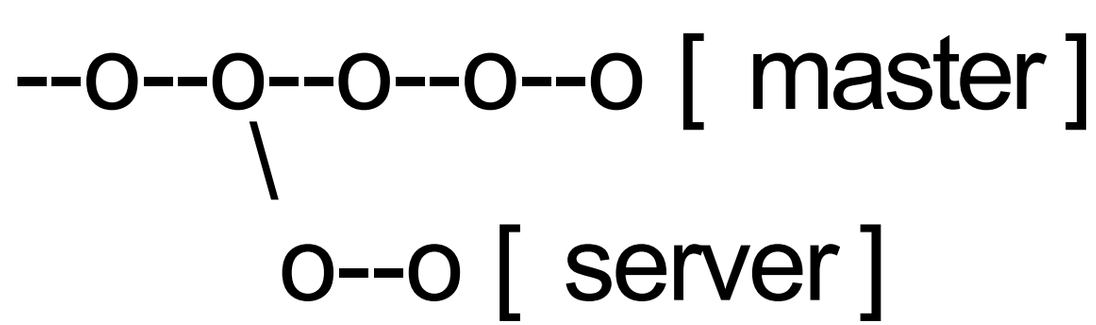
--o--o--o--o--o--o--o--o

[master, feature]

In fast-forward merge, git simply moves the source branch pointer to the target branch pointer without creating an extra merge commit.

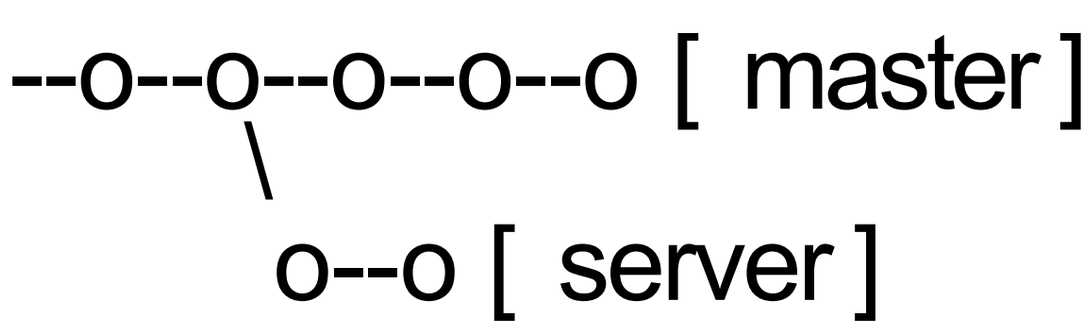
Rebase

Reapply commits on top of another base tip



Rebase

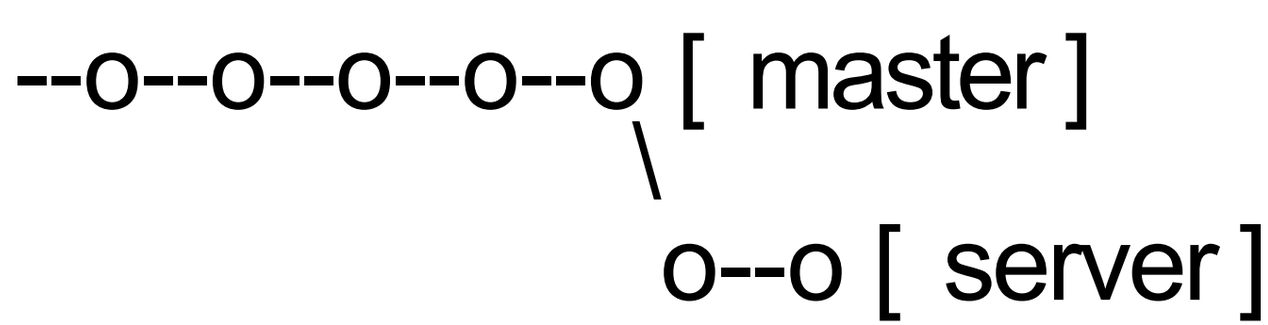
Reapply commits on top of another base tip




```
$ git checkout server
$ git rebase master
```

Rebase

Reapply commits on top of another base tip




```
$ git checkout server
$ git rebase master
```

Remote Repository

```
$ git clone https://git.itransition.com/project/site.git
Cloning into site
...

$ git remote -v
origin https://git.itransition.com/project/site.git
```

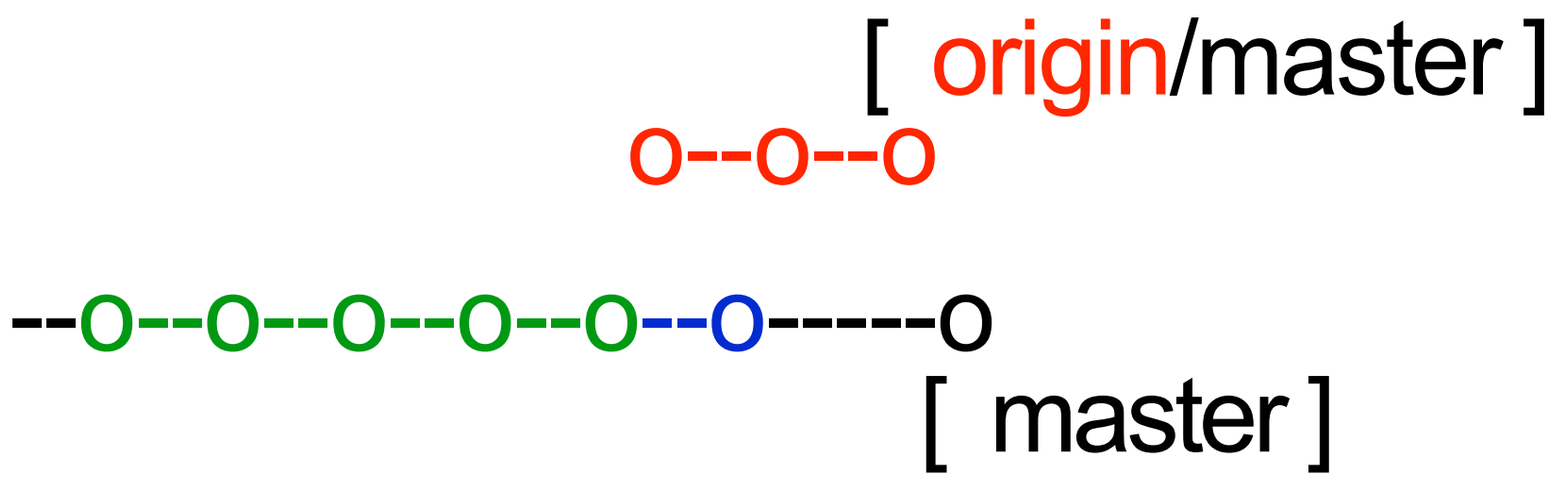
Clone a repository into a new directory

Remote Repository

Fetch from and integrate with a local branch

$ git pull

1. $ git fetch

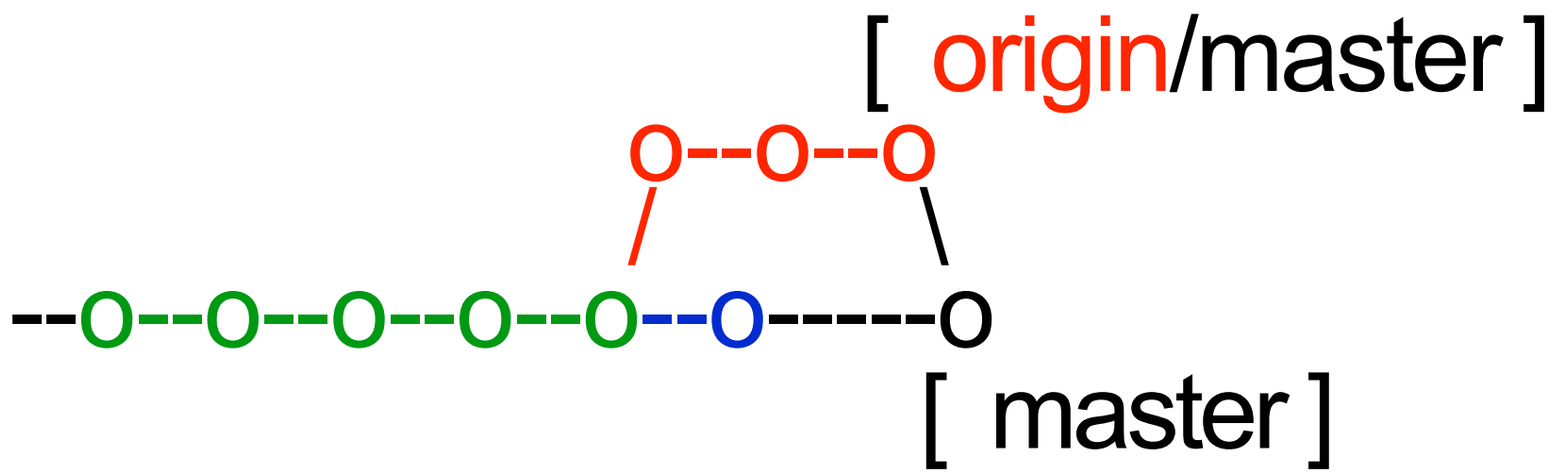


Remote Repository

Fetch from and integrate with a local branch

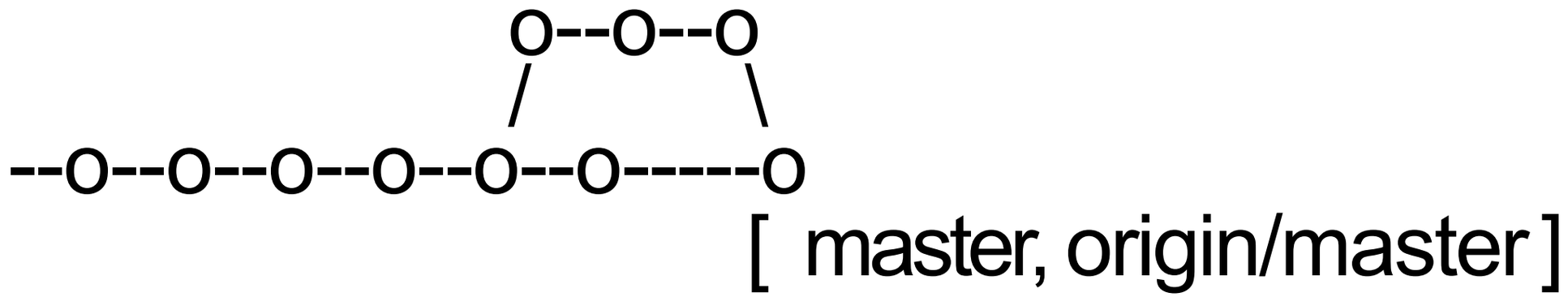
$ git pull

2. $ git merge



Remote Repository

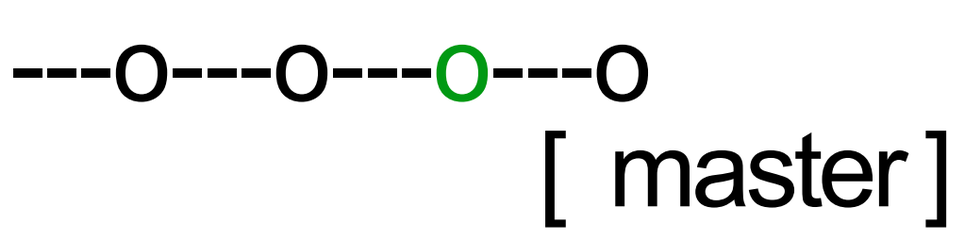
Publish your changes - push



$ git push origin master

Revert commit changes

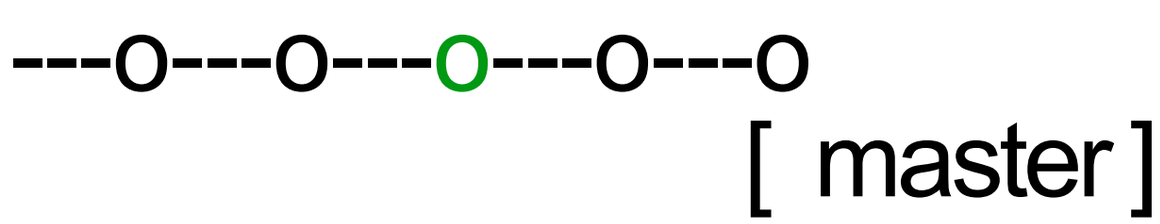
Git Revert:




```
$ git revert master~1
```

Revert commit changes

Git Revert:



$ git revert master~1

Revert commit changes

What if you need to reset your working copy to some exact state?

Revert commit changes

What if you need to reset your working copy to some exact state?

First of all stop any process which is in progress

```
$ git merge --abort
$ git rebase --abort
$ git revert --abort
```

Revert commit changes

What if you need to reset your working copy to some exact state?

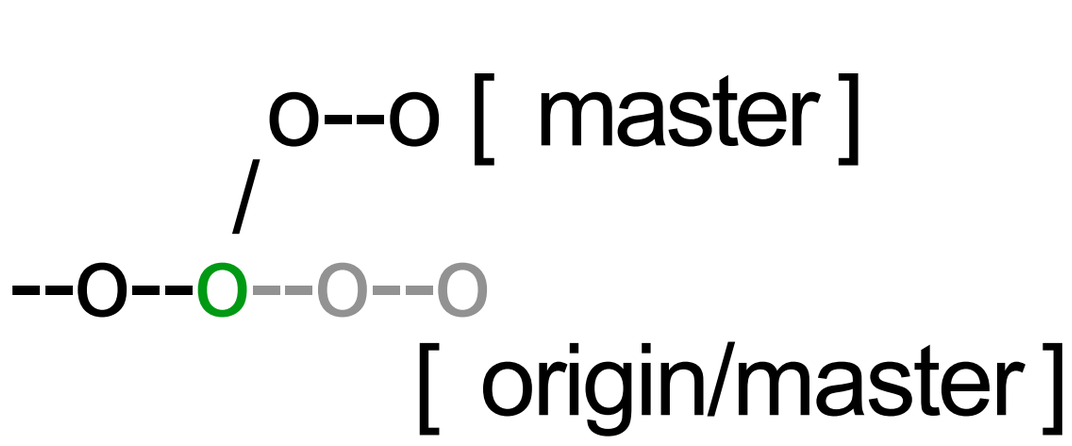
And then update your local version to some commit state

```
$ git reset --hard COMMIT_SHA
```

Revert commit changes

$ git reset --hard 12345

$ git commit, git push



.GITIGNORE

```
## Directory-based project format:
.idea/
### Node ###
# Logs
logs
*.log
# Runtime data
pids
*.pid
*.seed
# Dependency directory
# https://www.npmjs.org/doc/misc/npm-faq.html#should-i-check-my-node_modules-folder-into-git
node_modules
```

Gitflow

There is a “development” branch for the test purposes

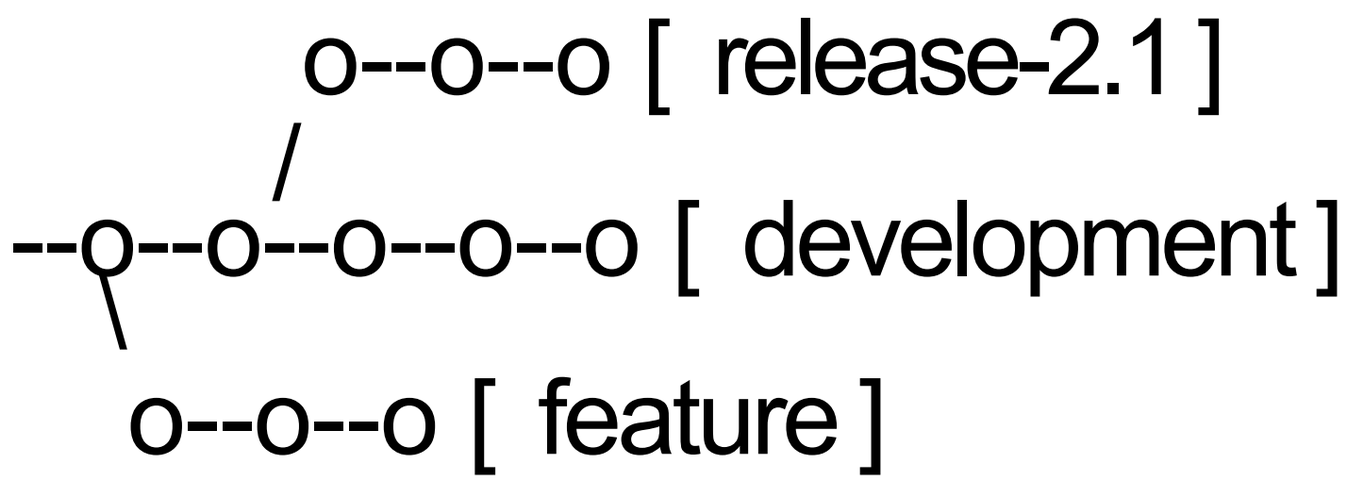
--o--o--o--o--o [development]

Gitflow

There are “feature” branches for the feature development

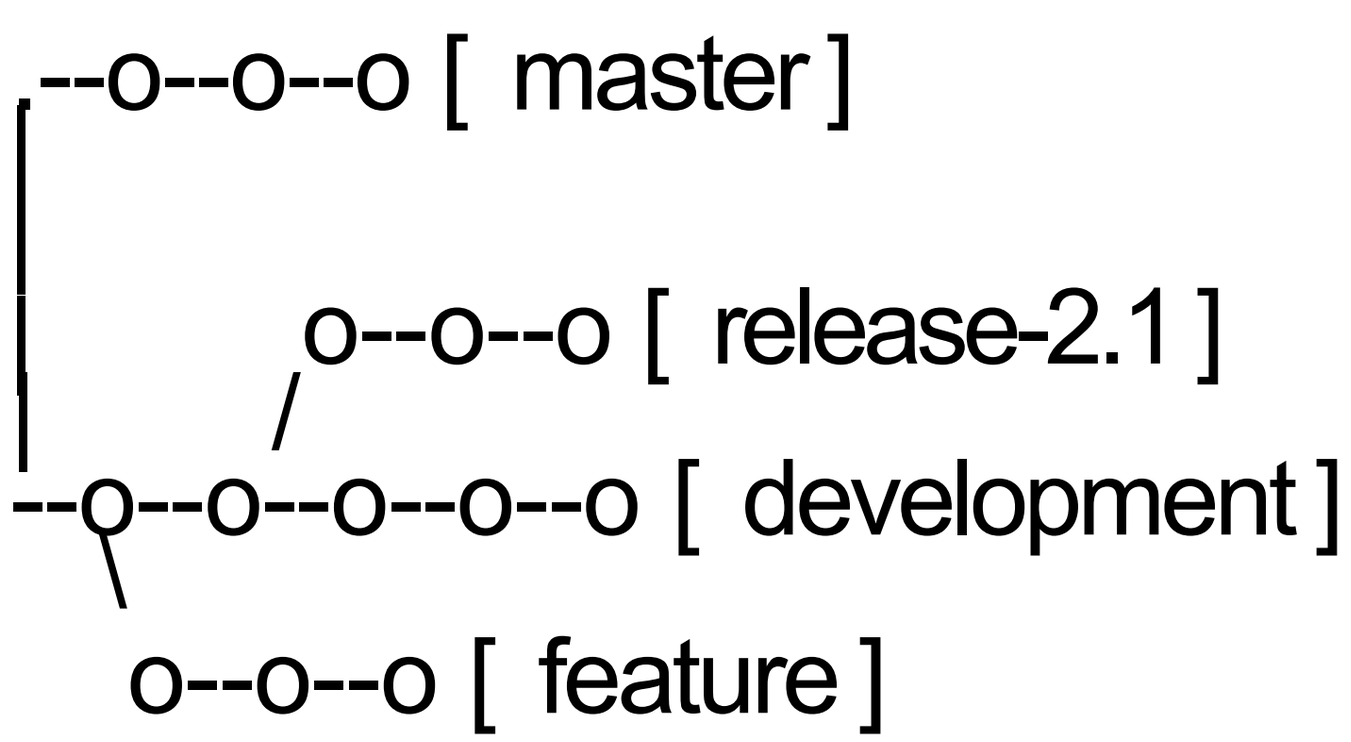
Gitflow

There are “release-candidate” branches



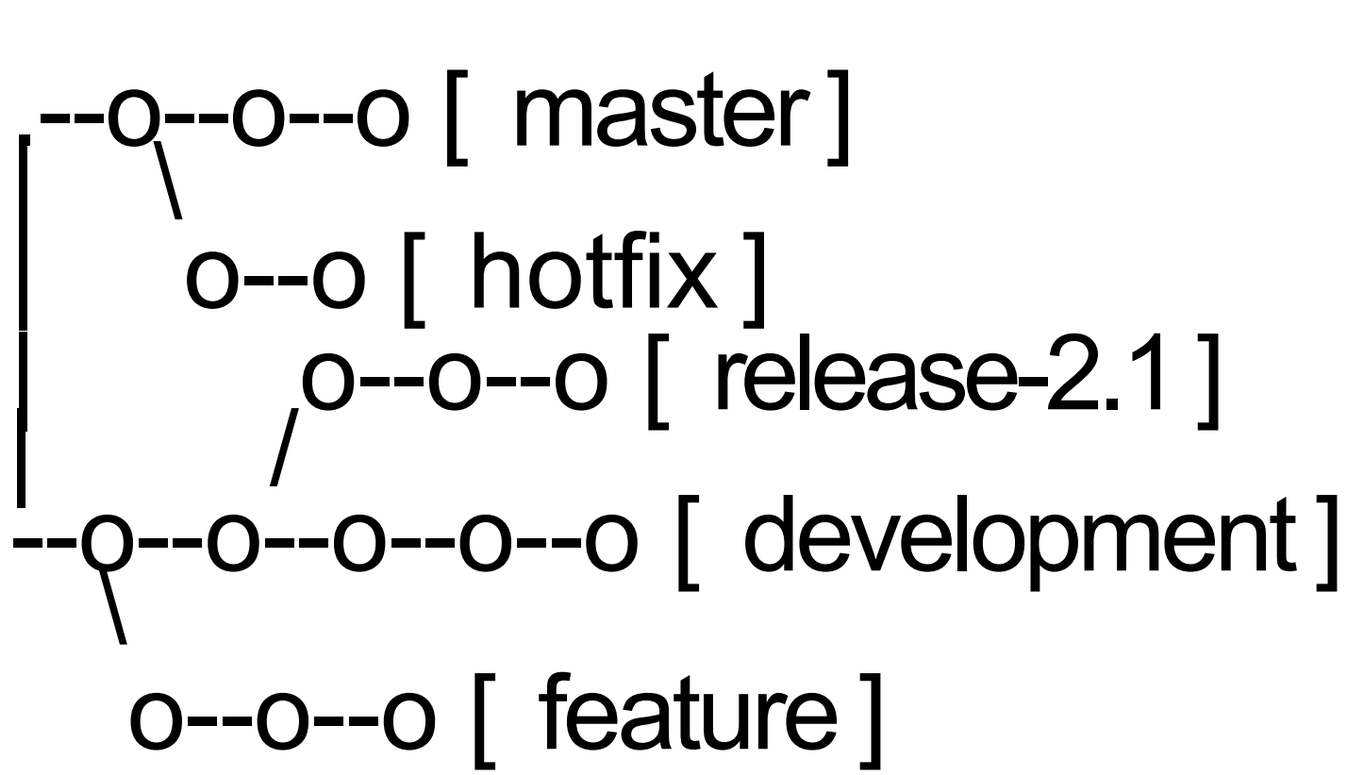
Gitflow

There is a “master” branch for releases

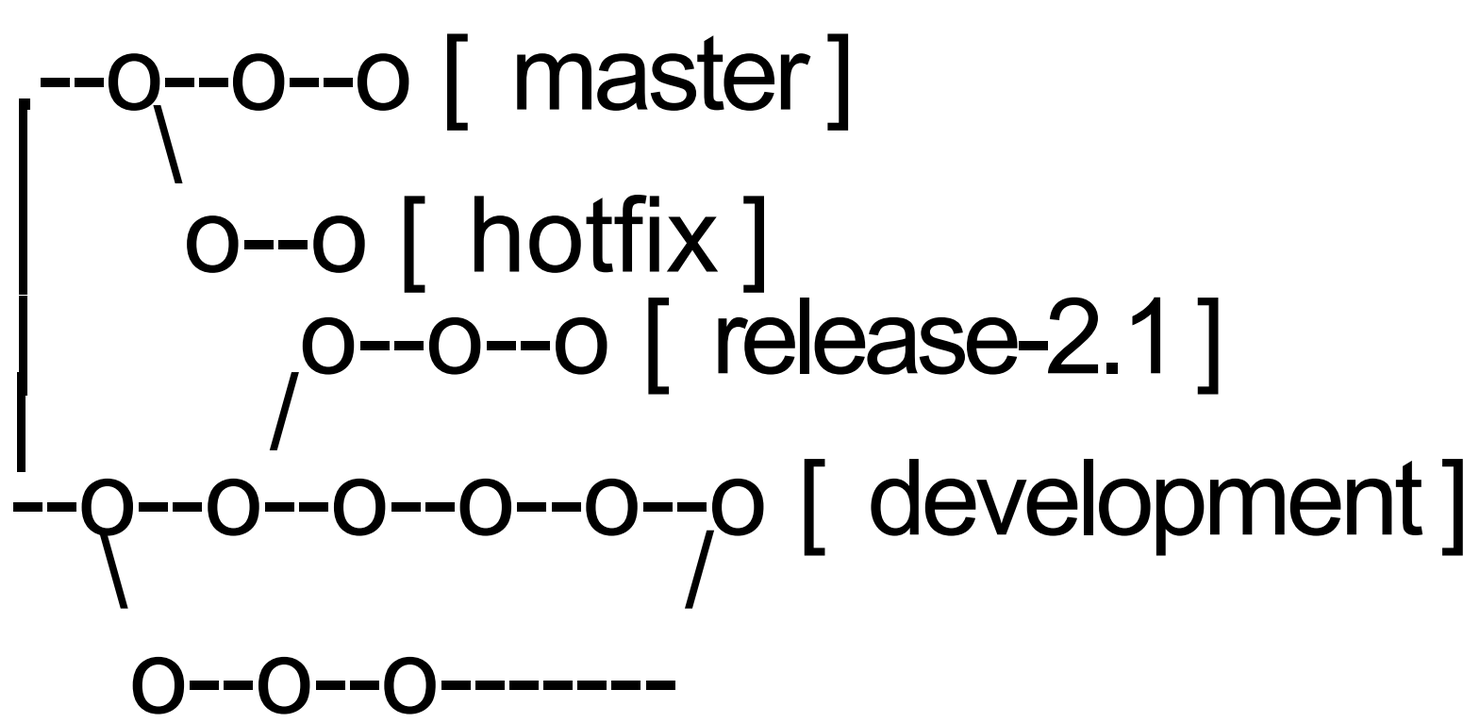


Gitflow

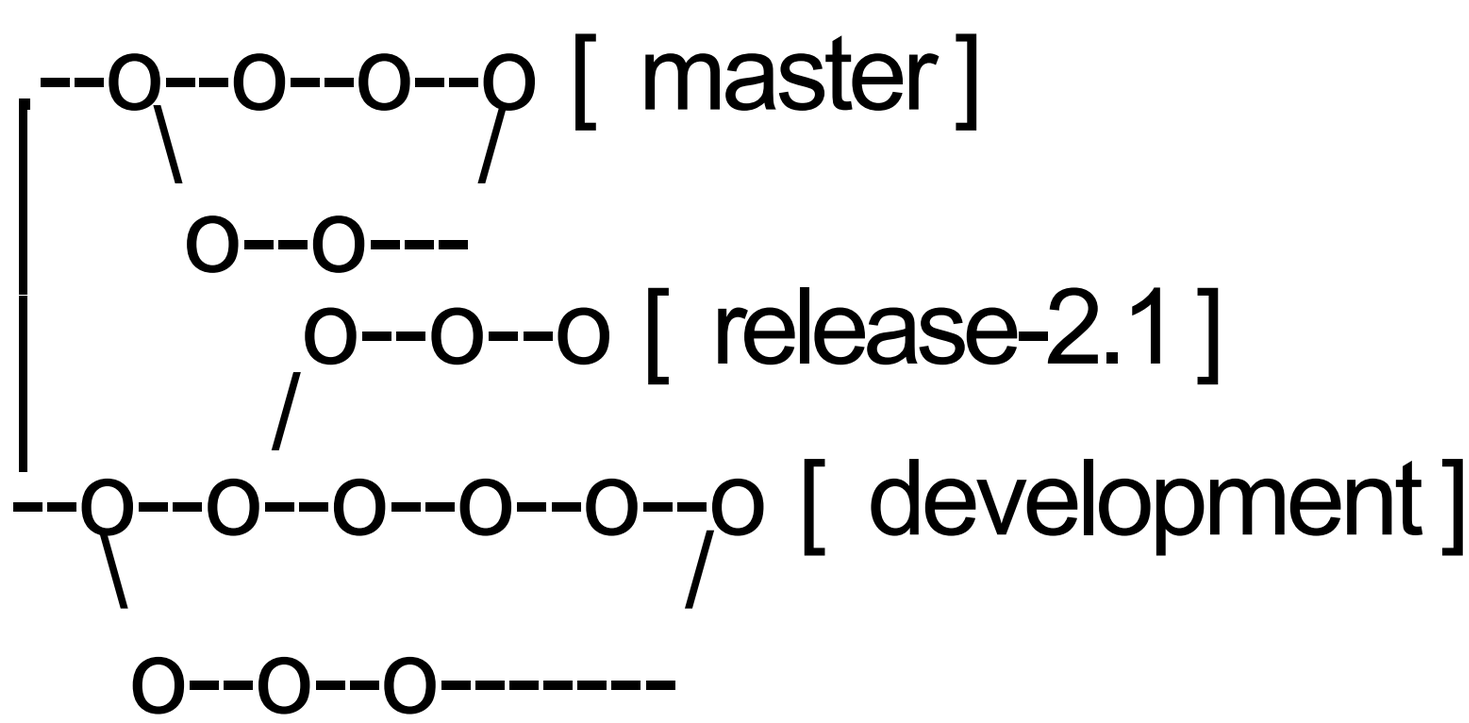
There are “hotfix” branches



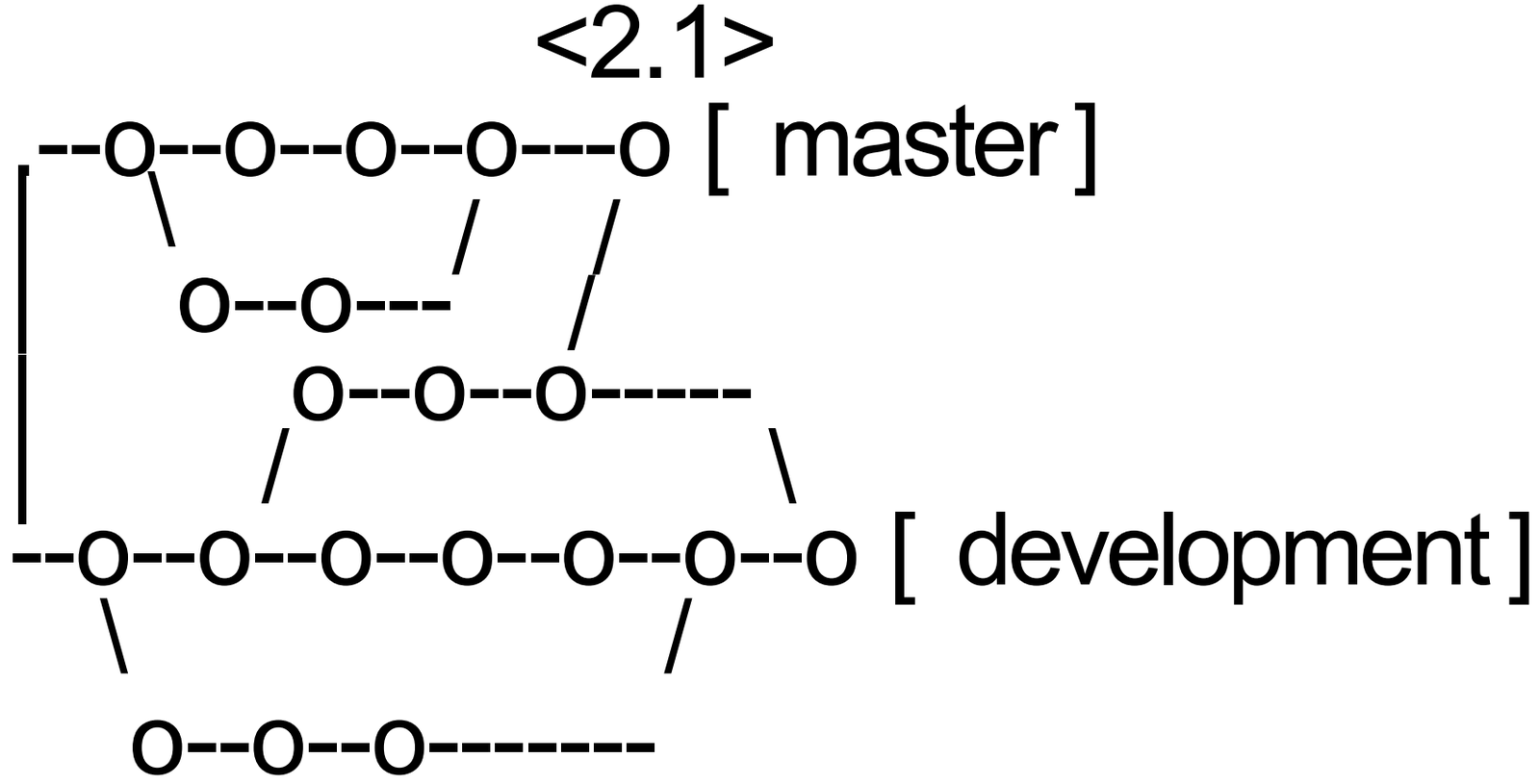
Gitflow



Gitflow



Gitflow



Pros

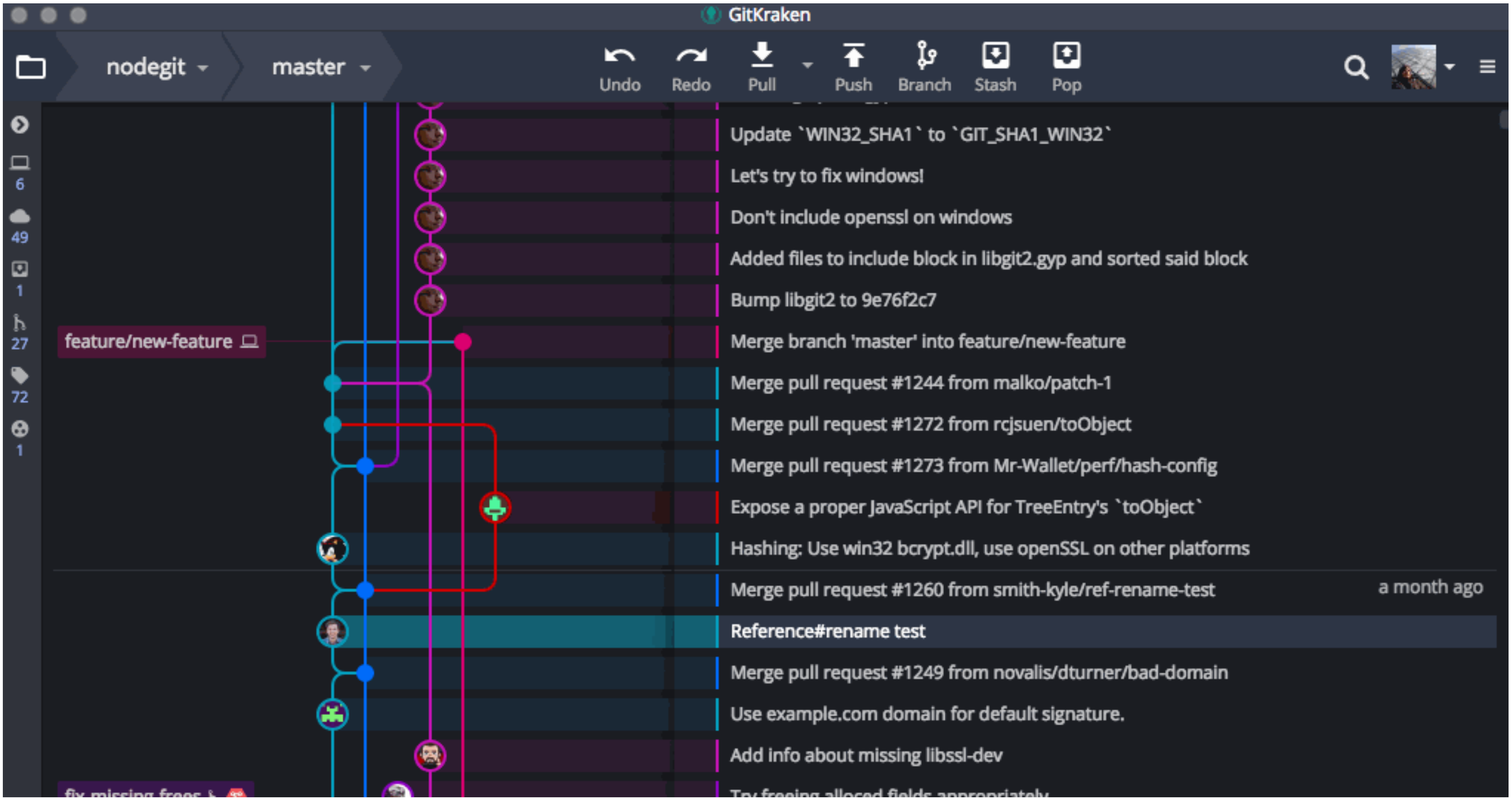
- Distributed
- Fast
- Light weight branches

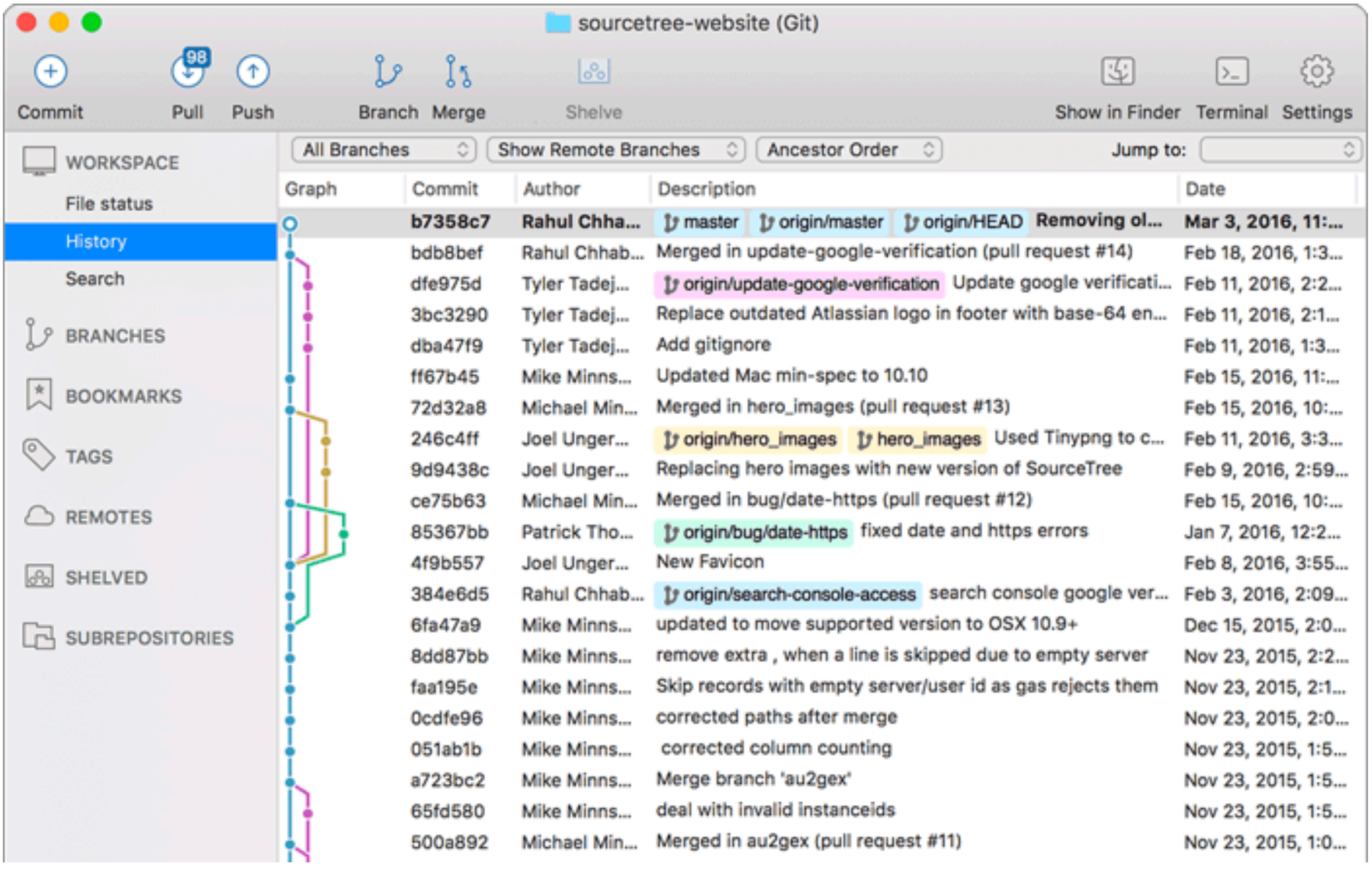
Cons

- Complexity

What to use

- Console
- Built-in IDE or notepad tools
- *GitKraken*
- *SourceTree*


GitKraken
nodegit
master
Undo
Redo
Pull
Push
Branch
Stash
Pop
6
49
1
27
72
1
feature/new-feature
Update `WIN32_SHA1` to `GIT_SHA1_WIN32`
Let's try to fix windows!
Don't include openssl on windows
Added files to include block in libgit2.gyp and sorted said block
Bump libgit2 to 9e76f2c7
Merge branch 'master' into feature/new-feature
Merge pull request #1244 from malko/patch-1
Merge pull request #1272 from rcjsuen/toObject
Merge pull request #1273 from Mr-Wallet/perf/hash-config
Expose a proper JavaScript API for TreeEntry's `toObject`
Hashing: Use win32 bcrypt.dll, use openSSL on other platforms
Merge pull request #1260 from smith-kyle/ref-rename-test
a month ago
Reference#rename test
Merge pull request #1249 from novalis/dturner/bad-domain
Use example.com domain for default signature.
Add info about missing libssl-dev


sourcetree-website (Git)
Commit
Pull
98
Push
Branch
Merge
Shelve
Show in Finder
Terminal
Settings
WORKSPACE
File status
History
Search
BRANCHES
BOOKMARKS
TAGS
REMOTES
SHELVED
SUBREPOSITORIES
All Branches
Show Remote Branches
Ancestor Order
Jump to:
Graph
Commit
Author
Description
Date
b7358c7 Rahul Chha... master origin/master origin/HEAD Removing ol... Mar 3, 2016, 11:...
bdb8bef Rahul Chhab... Merged in update-google-verification (pull request #14) Feb 18, 2016, 1:3...
dfe975d Tyler Tadej... origin/update-google-verification Update google verificati... Feb 11, 2016, 2:2...
3bc3290 Tyler Tadej... Replace outdated Atlassian logo in footer with base-64 en... Feb 11, 2016, 2:1...
dba47f9 Tyler Tadej... Add gitignore Feb 11, 2016, 1:3...
ff67b45 Mike Minns... Updated Mac min-spec to 10.10 Feb 15, 2016, 11:...
72d32a8 Michael Min... Merged in hero_images (pull request #13) Feb 15, 2016, 10:...
246c4ff Joel Unger... origin/hero_images hero_images Used Tinypng to c... Feb 11, 2016, 3:3...
9d9438c Joel Unger... Replacing hero images with new version of SourceTree Feb 9, 2016, 2:59...
ce75b63 Michael Min... Merged in bug/date-https (pull request #12) Feb 15, 2016, 10:...
85367bb Patrick Tho... origin/bug/date-https fixed date and https errors Jan 7, 2016, 12:2...
4f9b557 Joel Unger... New Favicon Feb 8, 2016, 3:55...
384e6d5 Rahul Chhab... origin/search-console-access search console google ver... Feb 3, 2016, 2:09...
6fa47a9 Mike Minns... updated to move supported version to OSX 10.9+ Dec 15, 2015, 2:0...
8dd87bb Mike Minns... remove extra , when a line is skipped due to empty server Nov 23, 2015, 2:2...
faa195e Mike Minns... Skip records with empty server/user id as gas rejects them Nov 23, 2015, 2:1...
0cdfe96 Mike Minns... corrected paths after merge Nov 23, 2015, 2:0...
051ab1b Mike Minns... corrected column counting Nov 23, 2015, 1:5...
a723bc2 Mike Minns... Merge branch 'au2gex' Nov 23, 2015, 1:5...
65fd580 Mike Minns... deal with invalid instanceIds Nov 23, 2015, 1:5...
500a892 Michael Min... Merged in au2gex (pull request #11) Nov 23, 2015, 1:0...

Where to host

- GitHub
- GitLab
- Bitbucket

What to read

Scott Chacon and Ben Straub ‘Pro Git’

https://git-scm.com/book/pl/v2

Questions?