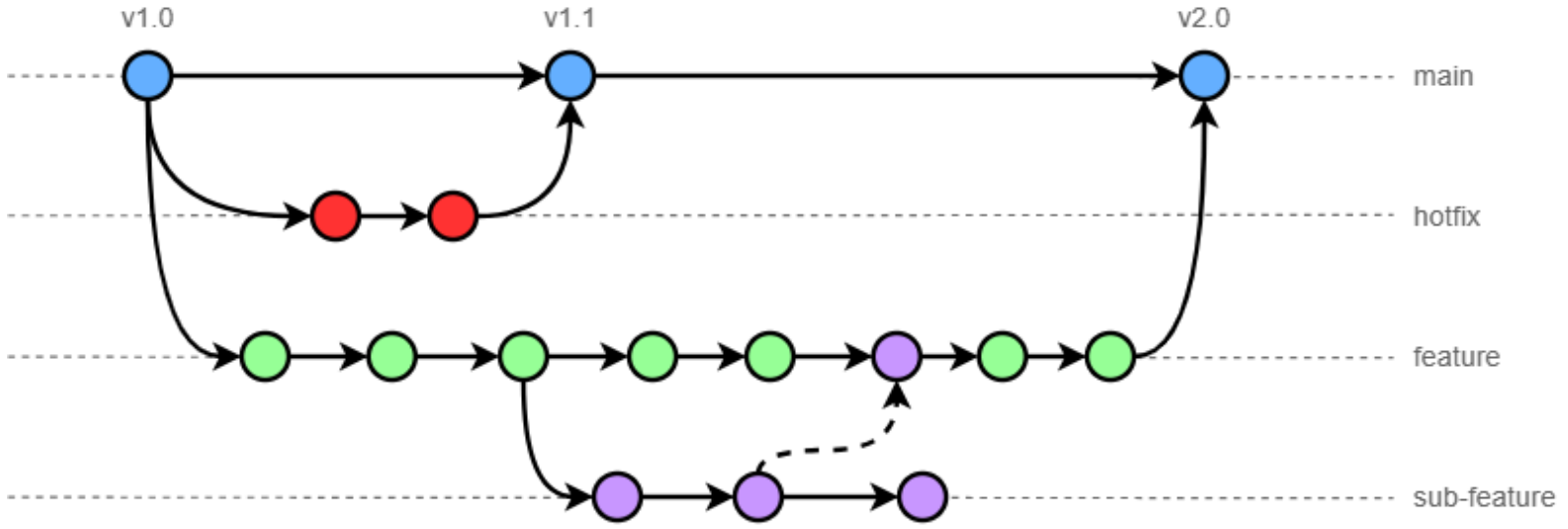
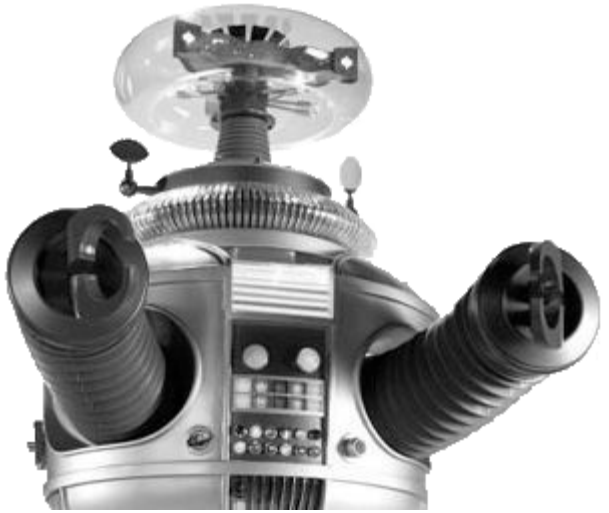
GITTING MORE OUT OF GIT



jordankasper.com/git

Jordan Kasper | @jakerella



DANGER!

GIT IS DISTRIBUTED

A CENTRALIZED VCS

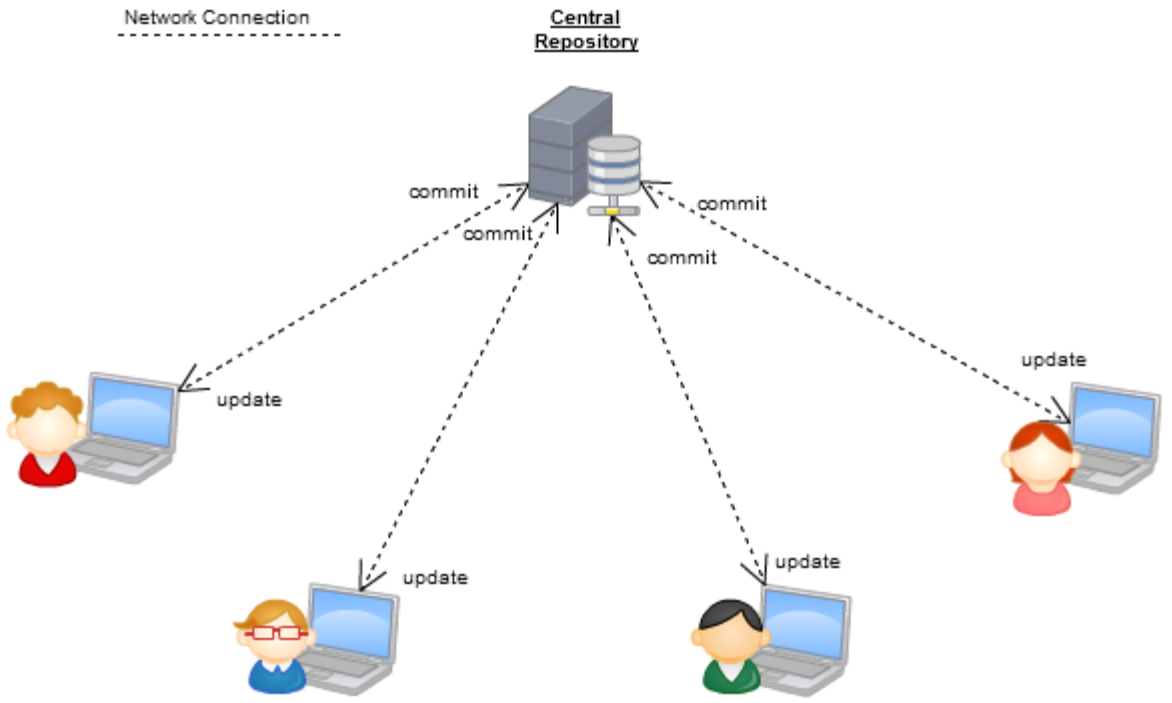


Image credit: https://docs.joomla.org/Dvcs

A DISTRIBUTUED VCS

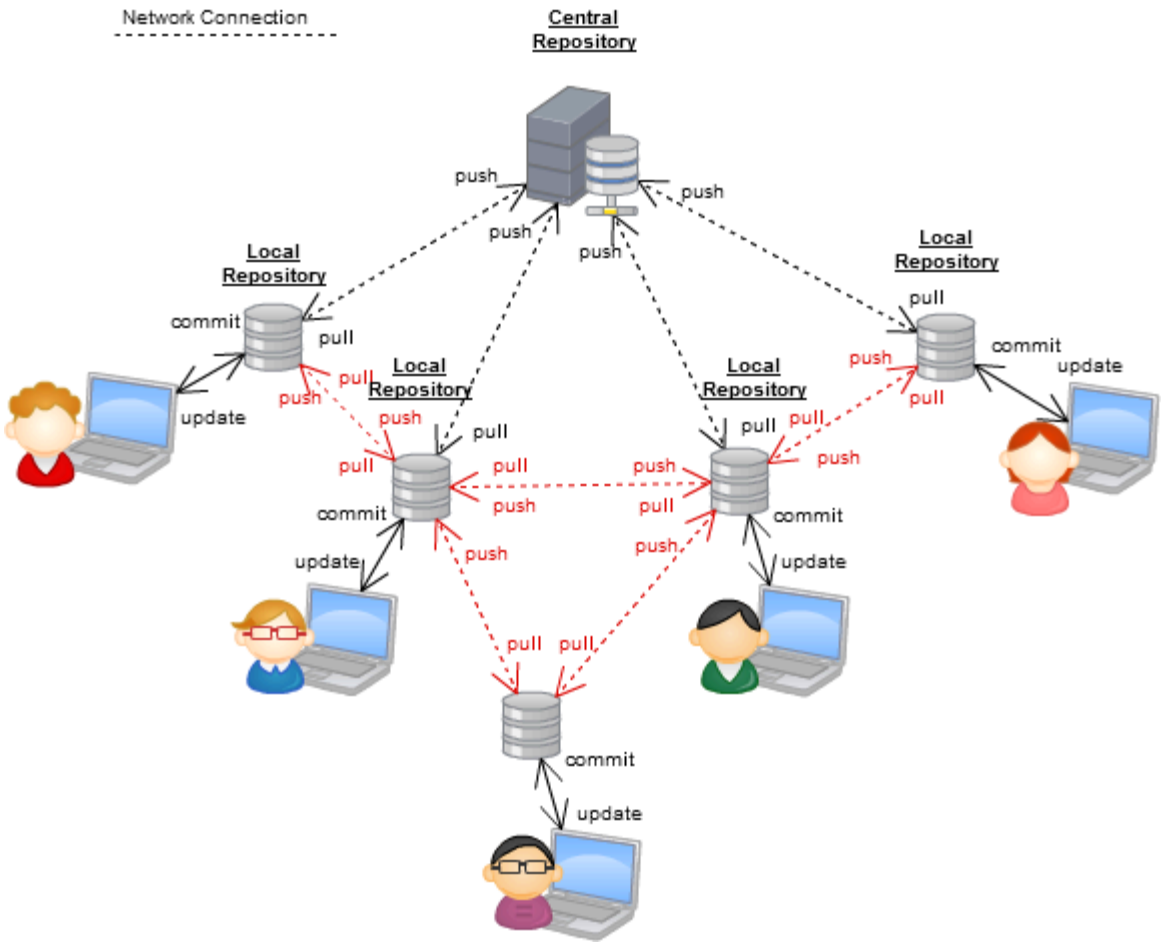


Image credit: https://docs.joomla.org/Dvcs

A DISTRIBUTUED VCS (IN PRACTICE)

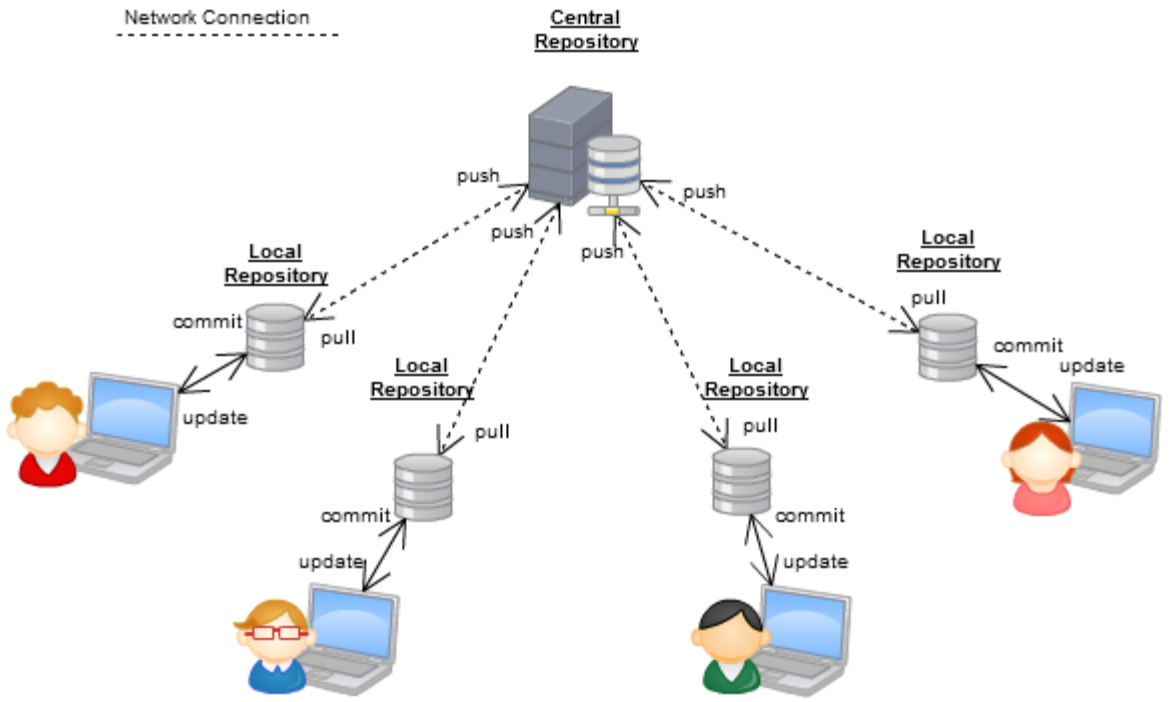


Image credit: https://docs.joomla.org/Dvcs

REMOTES

A "remote" is just a repo outside your local environment.

CLONING

```
~$ git clone git@github.com:jakerella/foo.git repo

~$ cd repo

~/repo$ git branch -a
* main
  remotes/origin/main
```

Cloning creates a remote called "origin",
which appears as a local branch.

TRACKING

Any local branch can "track" a remote URL:

```
~/repo$ git branch -a -vv
* main                 b956c45c [origin/main] Latest working commit
  new-feature          a74b2950 Cool new feature
  remotes/origin/main  98e8fe83 An older commit
```

Note the double "vv" here. A single "v" will not show you the remote branch being tracked.

TRACKING

Any local branch can "track" a remote URL:

```
~/repo$ git branch -a -vv
* main                 b956c45c [origin/main] Latest working commit
  new-feature          a74b2950 Cool new feature
  remotes/origin/main  98e8fe83 An older commit
```

REMOTES HAVE BRANCHES!

```
~/repo$ git checkout remotes/origin/main

Note: switching to 'remotes/origin/main'.

You are in 'detached HEAD' state. You can look around, make experime
changes and commit them, and you can discard any commits you make ir
state without impacting any branches by switching back to a branch.

...
```

WHEREZITAT?

```
~/repo$ git remote -v
origin  git@github.com:jakerella/foo.git (fetch)
origin  git@github.com:jakerella/foo.git (push)
```

Note we can have different URLs for fetching and pushing!

GOING UPSTREAM

How do I make a remote repo "track" my new branch?

```
~/repo$ git checkout -b new-feature
~/repo$ git push -u origin new-feature

~/repo$ git branch -a -vv
  main                          b956c45c [origin/main] Latest working c
* new-feature                   a74b2950 [origin/new-feature] Cool new
  remotes/origin/main           98e8fe83 An older commit
  remotes/origin/new-feature    a74b2950 Cool new feature
```

What if the branch already existed in the remote?

```
~/repo$ git branch --set-upstream-to=origin/new-feature
```

But do you *really* want to do that?

CAN THERE BE OTHER REMOTES?

Assume I've **forked** the Nodejs main repo...

```
~$ git clone git@github.com:jakerella/node.git

~/node$ git remote -v
origin  git@github.com:jakerella/node.git (fetch)
origin  git@github.com:jakerella/node.git (push)

~/node$ git remote add node-source git@github.com:nodejs/node.git

~/node$ git remote -v
origin          git@github.com:jakerella/node.git (fetch)
origin          git@github.com:jakerella/node.git (push)
node-source     git@github.com:nodejs/node.git (fetch)
node-source     git@github.com:nodejs/node.git (push)
```

OPEN SOURCE FLOW

I've been working on this new feature a while, how do I get the latest changes from upstream?

```
~/node$ git fetch node-source
remote: Enumerating objects: 42, done.
...
From github.com/nodejs/node
 * [new branch] ...
...

~/node$ git branch -a -vv
  main                          704f7d5 [origin/main] Some older commit
* new-feature                   a74b2950 [origin/new-feature] Cool new
  remotes/origin/main           704f7d5 Some older commit
  remotes/origin/new-feature a74b2950 Cool new feature
  remotes/node-source/main      d5b0f19 The latest commit
```

OPEN SOURCE FLOW

Okay, I've got the nodejs source changes... now what?

```
~/node$ git checkout main
~/node$ git merge node-source/main
Updating 40f7a8ea..a479419b
...

~/node$ git checkout new-feature

~/node$ git merge main
```

OPEN SOURCE FLOW

Do I really need to do all that?

`git pull` is:
`git fetch` from default remote ("origin") **and**
`git merge` remote branch to current branch (by name).

```
~/node$ git checkout new-feature
~/node$ git pull node-source main
```

BRANCH DIFFERENCES

BRANCH DIFFERENCES

We've added a new file to our local feature branch...

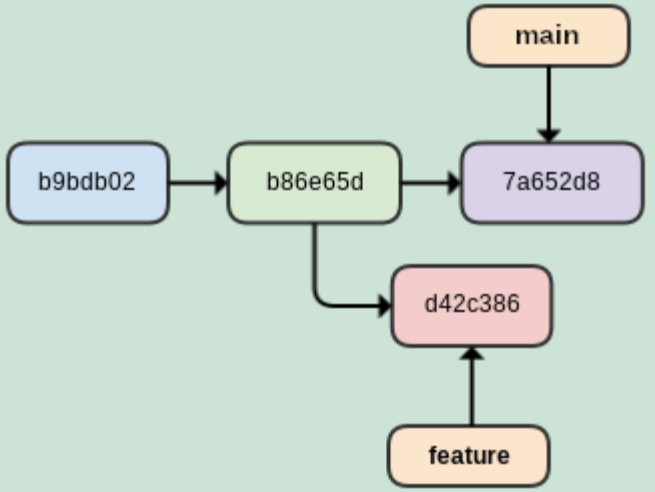
```
~/node$ git diff main new-feature

diff --git a/feature.js b/feature.js
new file mode 100644
index 0000000..b5a9776f
...

diff --git a/README.md b/README.md
index a479419b..b5a9776f 100644
--- a/README.md
+++ b/README.md
@@ -1 +0,0 @@
-This is a bad line, remove it!
```

BRANCH DIFFERENCES - COMPACT SUMMARY

```
~/node$ git diff main new-feature --compact-summary

README.md         | 1 -
feature.js (new) | 1 +
2 files changed, 1 insertion(+), 1 deletion(-)
```

BRANCH DIFFERENCES

What if that README change was from another merge?




```
~$ git diff main new-feature
```

Shows ALL missing commits between `main` and `new-feature`,
(regardless of what branch those came from).

SINGLE-DIRECTION DIFFERENCES (...)

```
~$ git diff main...new-feature --compact-summary

feature.js (new) | 1 +
1 files changed, 1 insertion(+)
```

`...`: show all commits on "new-feature" not on "main"

`space`: show all commit differences between "new-feature" and "main"

`..`: same as `space`

FIXING CHANGES

UNSTAGED CHANGES

```
~/repo$ echo "testing" >> README.md

~/repo$ git status
On branch new-feature
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directo
        modified:   README.md
```

UNSTAGED CHANGES

```
~/repo$ git restore README.md

~/repo$ git status
On branch new-feature
nothing to commit, working tree clean
```

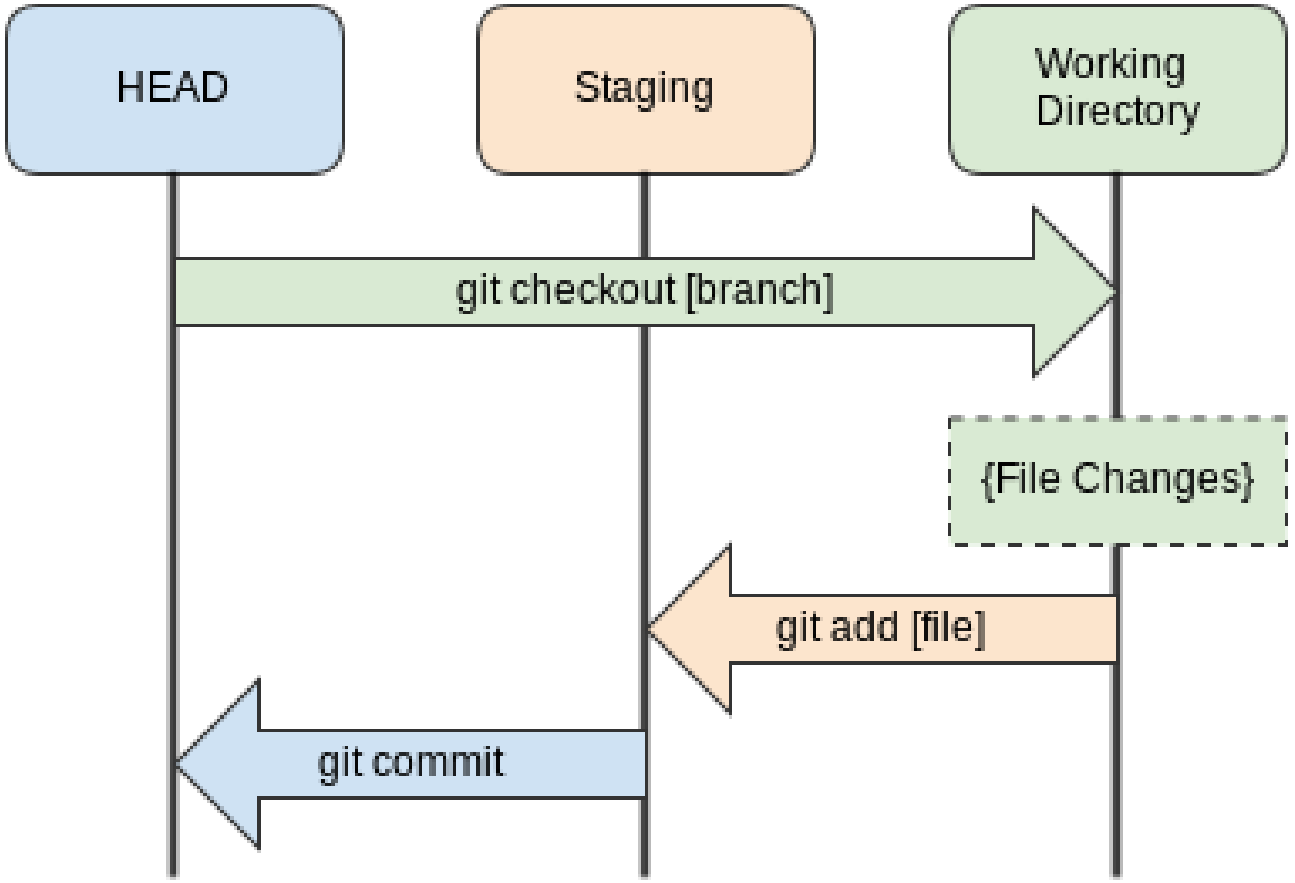
You can also restore entire directories:

```
~/repo$ git restore source/routes/
```

STAGED CHANGES

```
~/repo$ echo "testing" >> README.md
~/repo$ git add README.md

~/repo$ git status
On branch new-feature
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   README.md

~/repo$ git restore --staged README.md
~/repo$ git status
On branch new-feature
Changes not staged for commit:
        modified:   README.md
```

REMEMBER THE THREE STATES!



FIXING THINGS AFTER COMMIT

FIXING COMMIT MESSAGES

```
~/repo$ git commit -m "This is teh best"
[feature-branch 54af593b] This is teh best
1 file changed, 1 insertion(+)

~/repo$ git commit --amend -m "This is the best"
[feature-branch 0486a7d6] This is the best
1 file changed, 1 insertion(+)
```

FIXING COMMIT MESSAGES

```
~/repo$ git commit -m "This is teh best"
[feature-branch 54af593b] This is teh best
1 file changed, 1 insertion(+)

~/repo$ git commit --amend -m "This is the best"
[feature-branch 0486a7d6] This is the best
1 file changed, 1 insertion(+)
```

WHAT ABOUT THE GIT LOG?

```
~/repo$ git log
commit 0486a7d61ee9bcaa31d7eb062c0bcafee3e530f0
Author: jdoe <john@doe.com>
Date:   Thu Jan 29 11:45:14 2026 -0400

This is the best

commit 72267fc26d88fa977d24760252da63b46ca3b81a
Author: fbar <foo@bar.com>
Date:   Wed Jan 28 09:45:10 2026 -0400

Bug fixes for older features

...
```

WHAT IF I FORGOT A FILE?

Stage it and amend it.

```
~/repo$ git add forgotten.js

~/repo$ git commit --amend
[new-feature 3e81873b] This is the best
 Date: Thu Jan 29 11:49:54 2026 -0400
 2 files changed, 1 insertion(+), 1 deletion(-)
 create mode 100644 forgotten.js
```

CAUTION WHEN AMENDING!

If you **push** your bad change,
then amend it,
you might cause a nasty conflict for someone else.

GONE, BUT NOT FORGOTTEN

```
~/repo$ git log --oneline
3e81873b (HEAD -> new-feature) This is the best
72267fc2 (origin/main, origin/HEAD, main) Bug fixes for older featur


~/repo$ git reflog
3e81873b HEAD@{0}: commit (amend): This is the best
0486a7d6 HEAD@{1}: commit (amend): This is the best
54af593b HEAD@{2}: commit: This is teh best.
72267fc2 HEAD@{3}: commit: Bug fixes for older features
...
```

The `reflog` is never pushed to a remote.

WHAT IF I NEED TO AMEND AN OLDER COMMIT?

You'll need to use `git rebase`

INTERACTIVE REBASING

```
~/repo$ git rebase --interactive HEAD^^^
```

```
pick 7e10e41c some old commit
pick 72267fc2 Bug fixes for older features
pick 3e81873b This is the best

# Rebase 5a39902..3e81873b onto 5a39902 (3 command(s))
# Commands:
# p, pick <commit> = use commit
# r, reword <commit> = use commit, but edit the commit message
# e, edit <commit> = use commit, but stop for amending
# s, squash <commit> = use commit, but meld into previous commit
# d, drop <commit> = remove commit
...
```

INTERACTIVE REBASING

```
~/repo$ git rebase --interactive HEAD^^^
```

```
pick 7e10e41c some old commit
edit 72267fc2 Bug fixes for older features
pick 3e81873b This is the best

# Rebase 5a39902..3e81873b onto 5a39902 (3 command(s))
# Commands:
# p, pick <commit> = use commit
# r, reword <commit> = use commit, but edit the commit message
# e, edit <commit> = use commit, but stop for amending
# s, squash <commit> = use commit, but meld into previous commit
# d, drop <commit> = remove commit
...
```

INTERACTIVE REBASING

```
~/repo$ git rebase --interactive HEAD^^^
Stopped at 72267fc2... Bug fixes for older features
...

~/repo$ git add another-file.js

~/repo$ git commit --amend

~/repo$ git rebase --continue
Successfully rebased and updated refs/heads/new-feature.
```

INTERACTIVE REBASING

Careful! You changed **all history** from that amend forward.

```
~/repo$ git reflog
7650aafe HEAD@{0}: rebase -i (finish): returning to refs/heads/new-f
7650aafe HEAD@{1}: rebase -i (pick): This is the best
bcb51f9a HEAD@{2}: commit (amend): Bug fixes for older features
72267fc2 HEAD@{3}: rebase -i: fast-forward
7e10e41c HEAD@{4}: rebase -i (start): checkout HEAD^^^
3e81873b HEAD@{5}: commit (amend): This is the best
0486a7d6 HEAD@{6}: commit (amend): This is the best
54af593b HEAD@{7}: commit This is teh best
72267fc2 HEAD@{8}: commit: Bug fixes for older features
7e10e41c HEAD@{9}: commit: some old commit
```

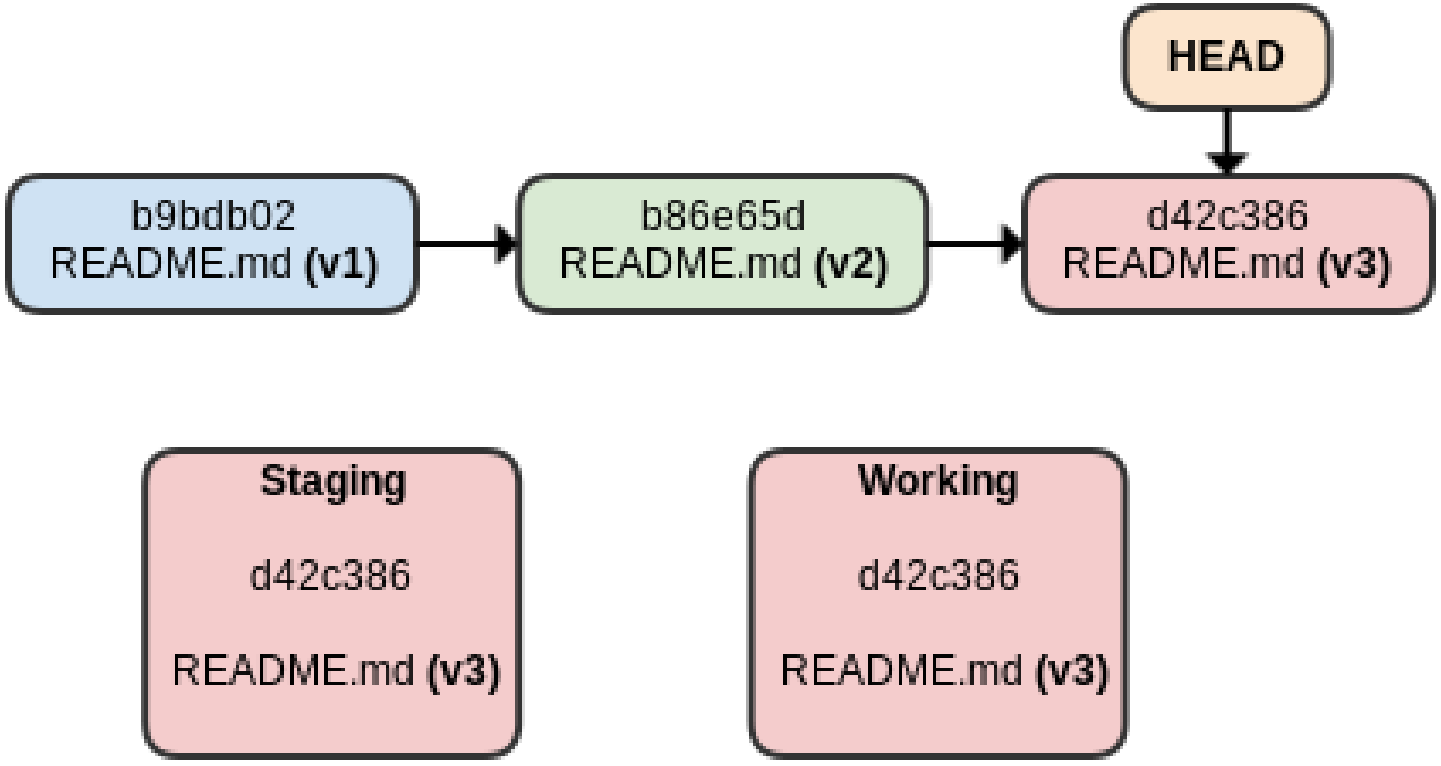
UNDERSTANDING THE THREE ~~SEASHELLS~~ STATES

Or... how to use `reset` for fun and profit.

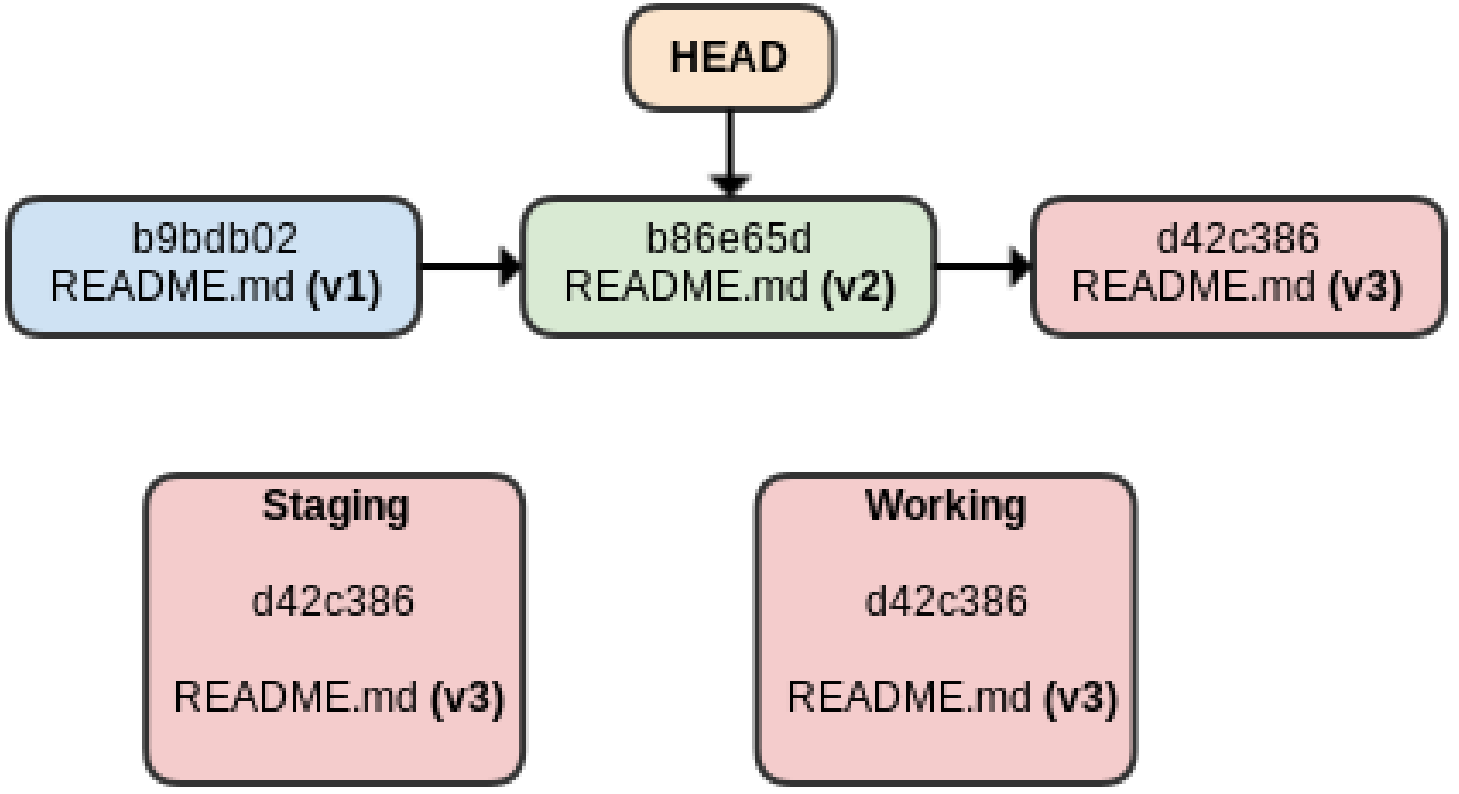
FYI, `reset` is the OG `restore`.

Here's a very helpful StackOverflow answer on the differences.

UNDERSTANDING THE THREE STATES



UNDERSTANDING THE THREE STATES



git reset --soft HEAD^

HEAD IS JUST A POINTER

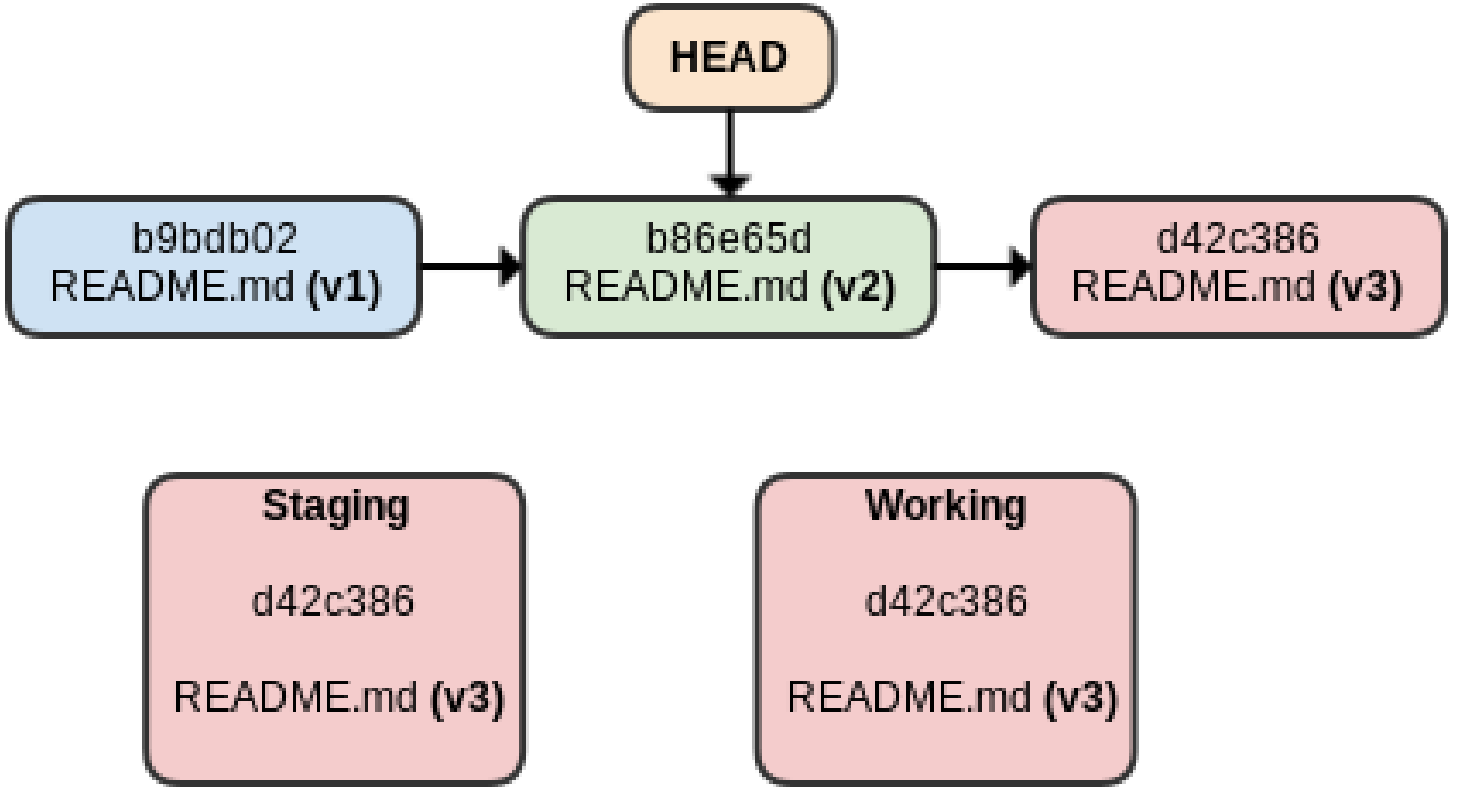
In fact, all branch names are just pointers!

And so are tags!

SOFT RESET

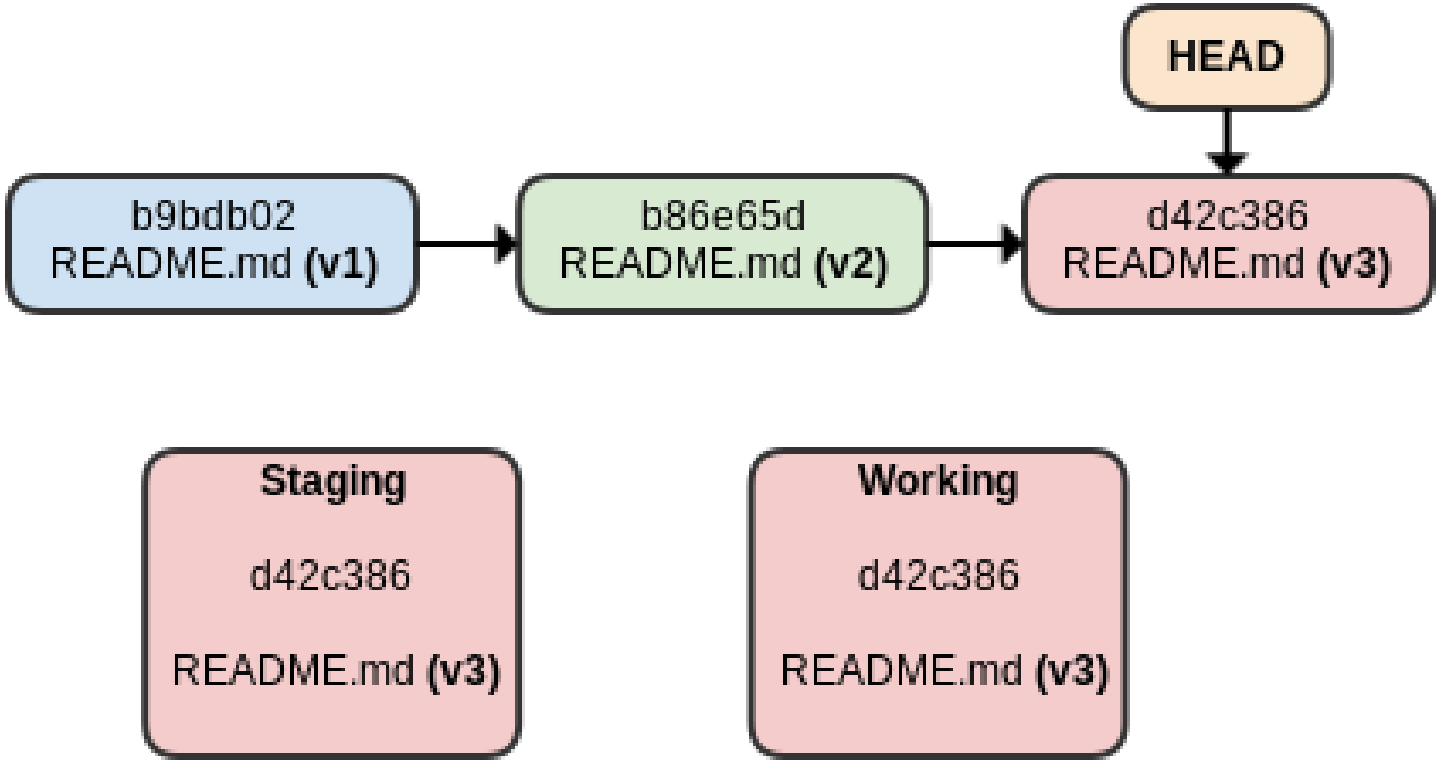
```
~/repo$ git reset --soft HEAD^

~/repo$ git status
On branch new-feature
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   README.md
```

UNDERSTANDING THE THREE STATES

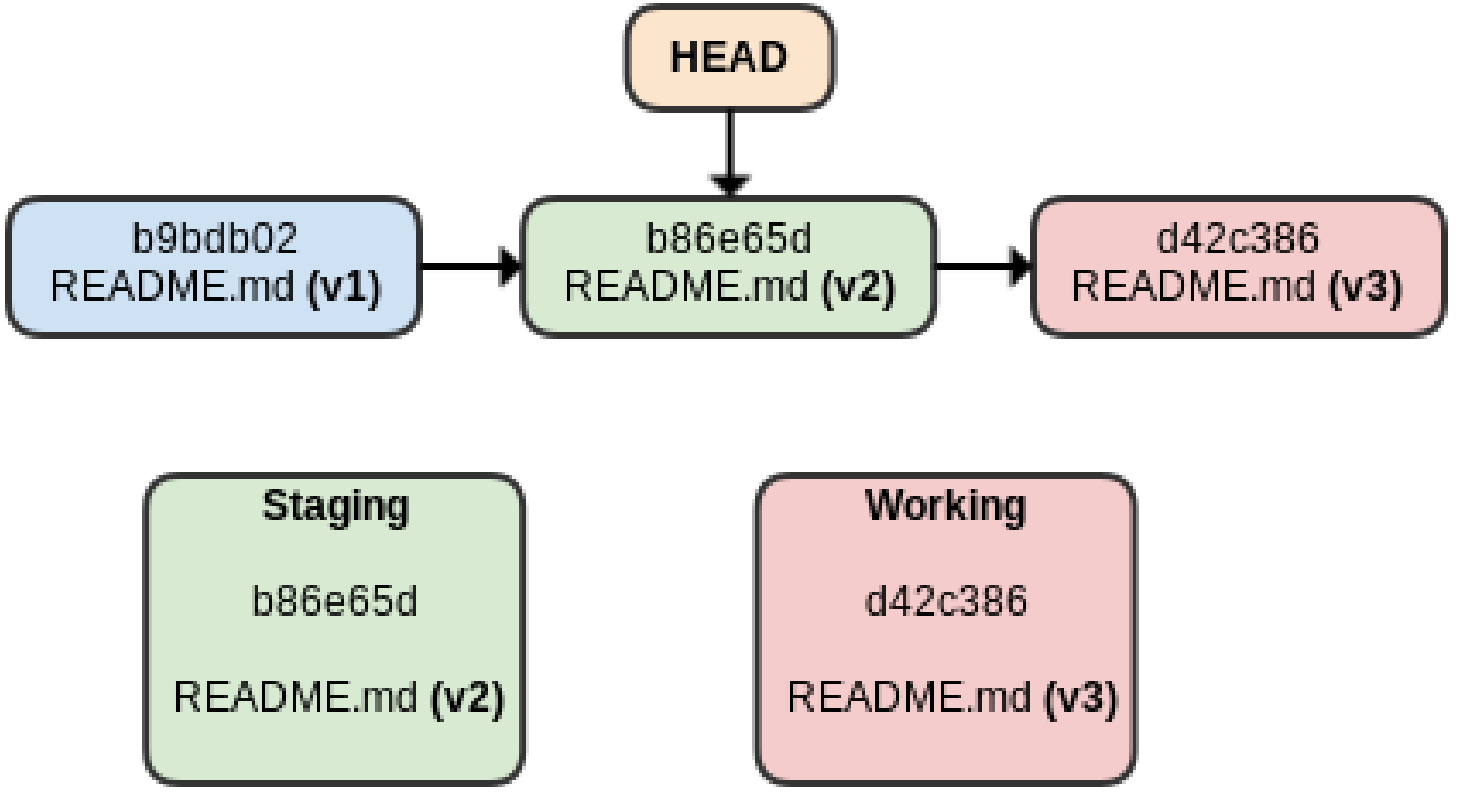


git reset --soft HEAD^

UNDERSTANDING THE THREE STATES



UNDERSTANDING THE THREE STATES

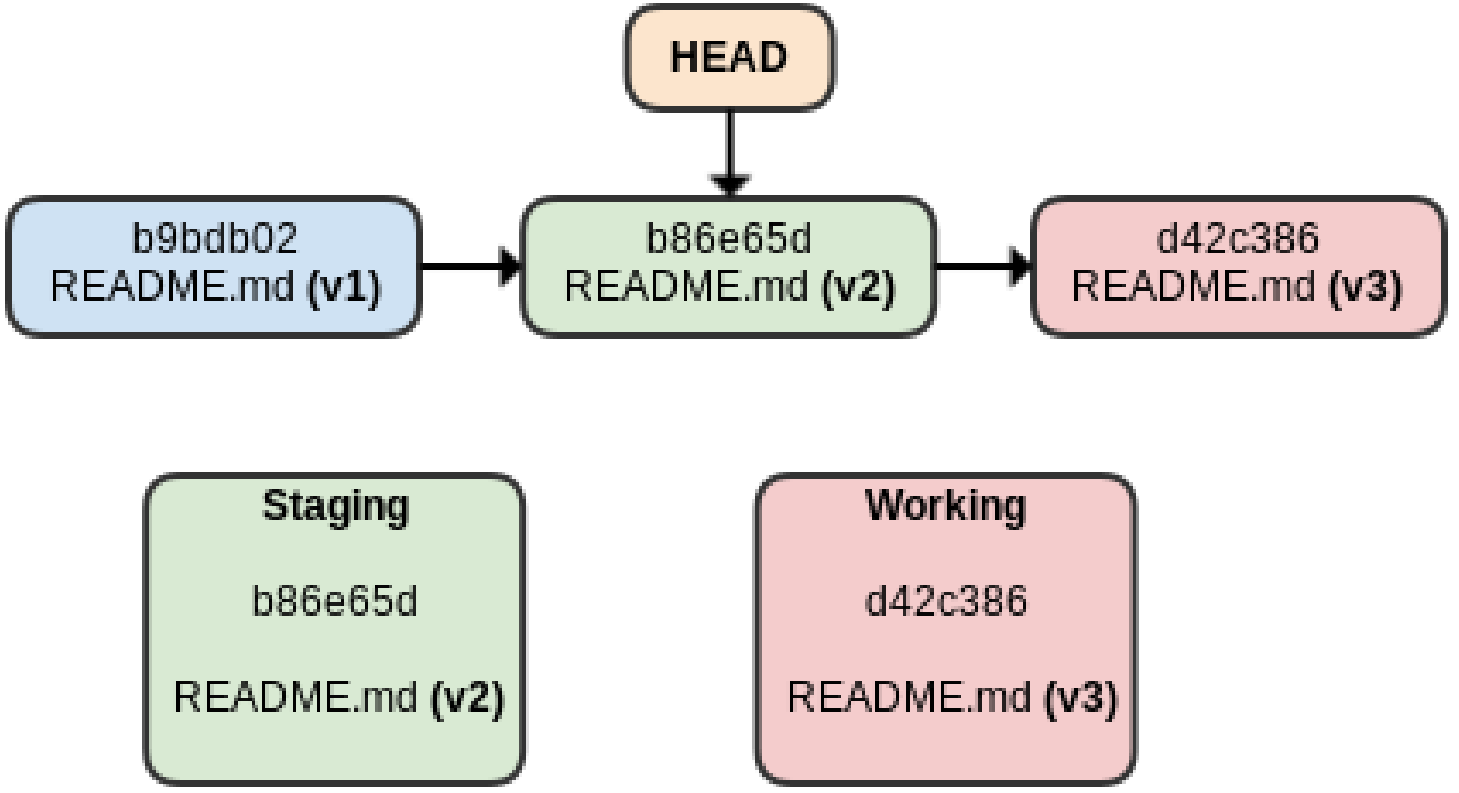


git reset --mixed HEAD^

MIXED RESET

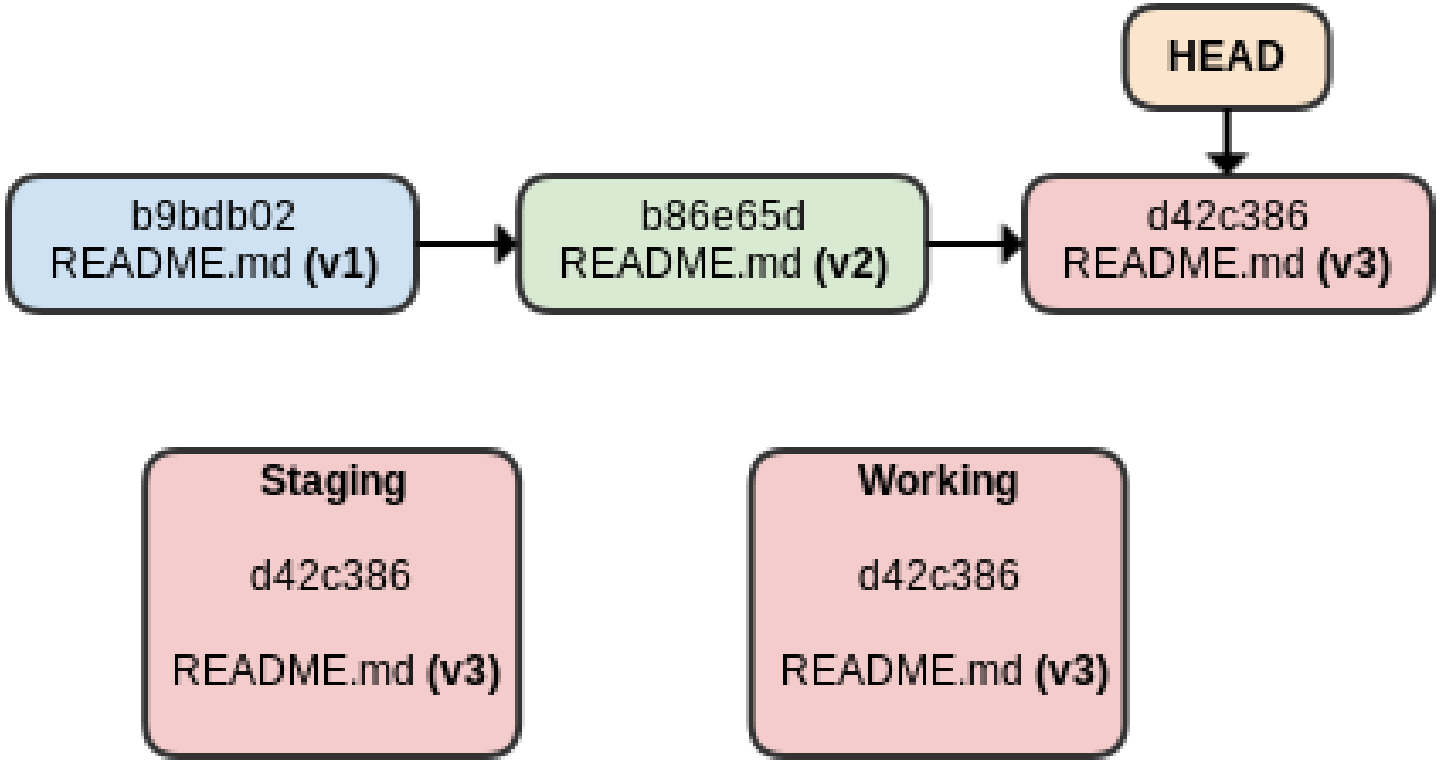
```
~/repo$ git reset --mixed HEAD^

~/repo$ git status
On branch new-feature
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directo
        modified:   README.md
```

UNDERSTANDING THE THREE STATES

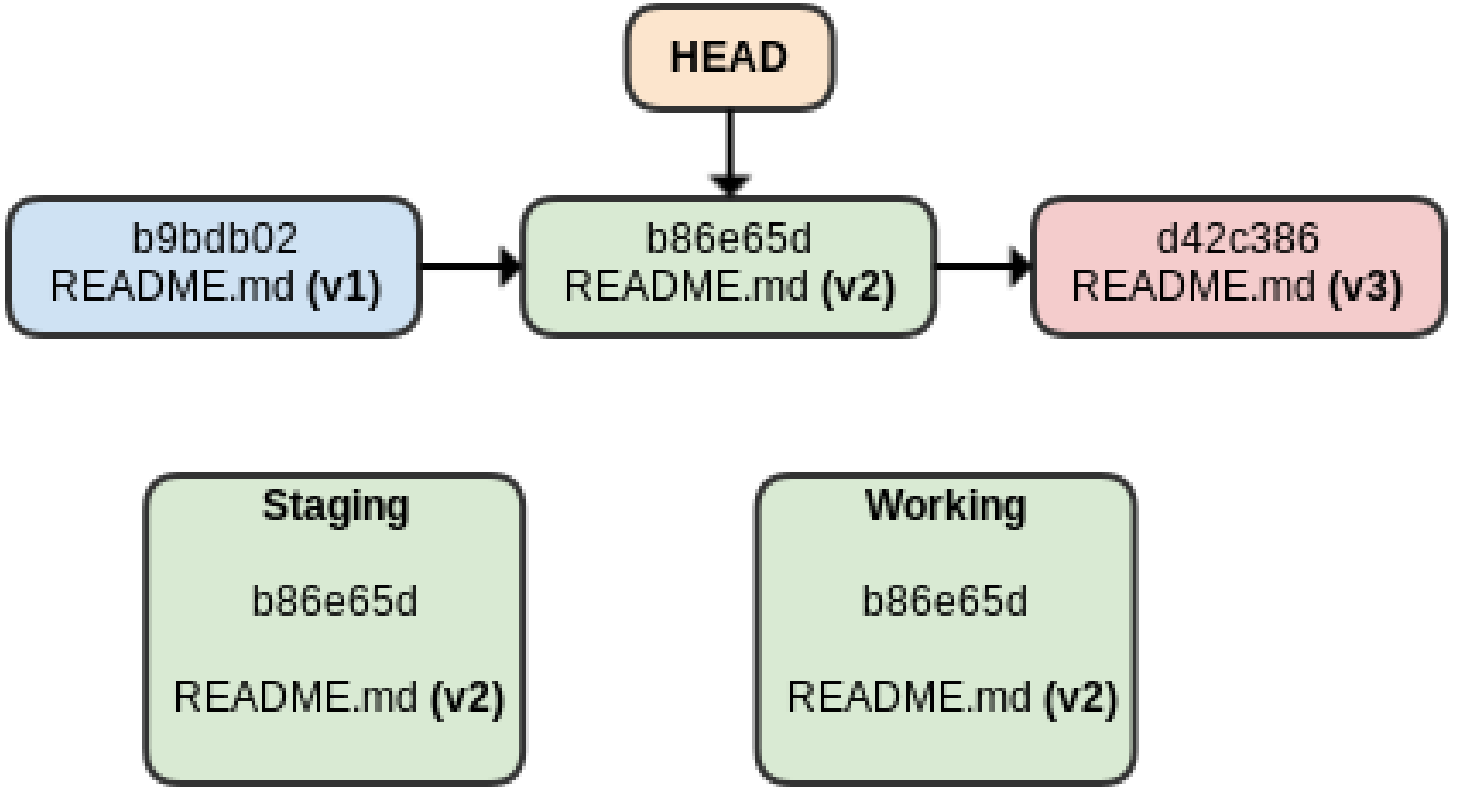


git reset --mixed HEAD^

UNDERSTANDING THE THREE STATES



UNDERSTANDING THE THREE STATES

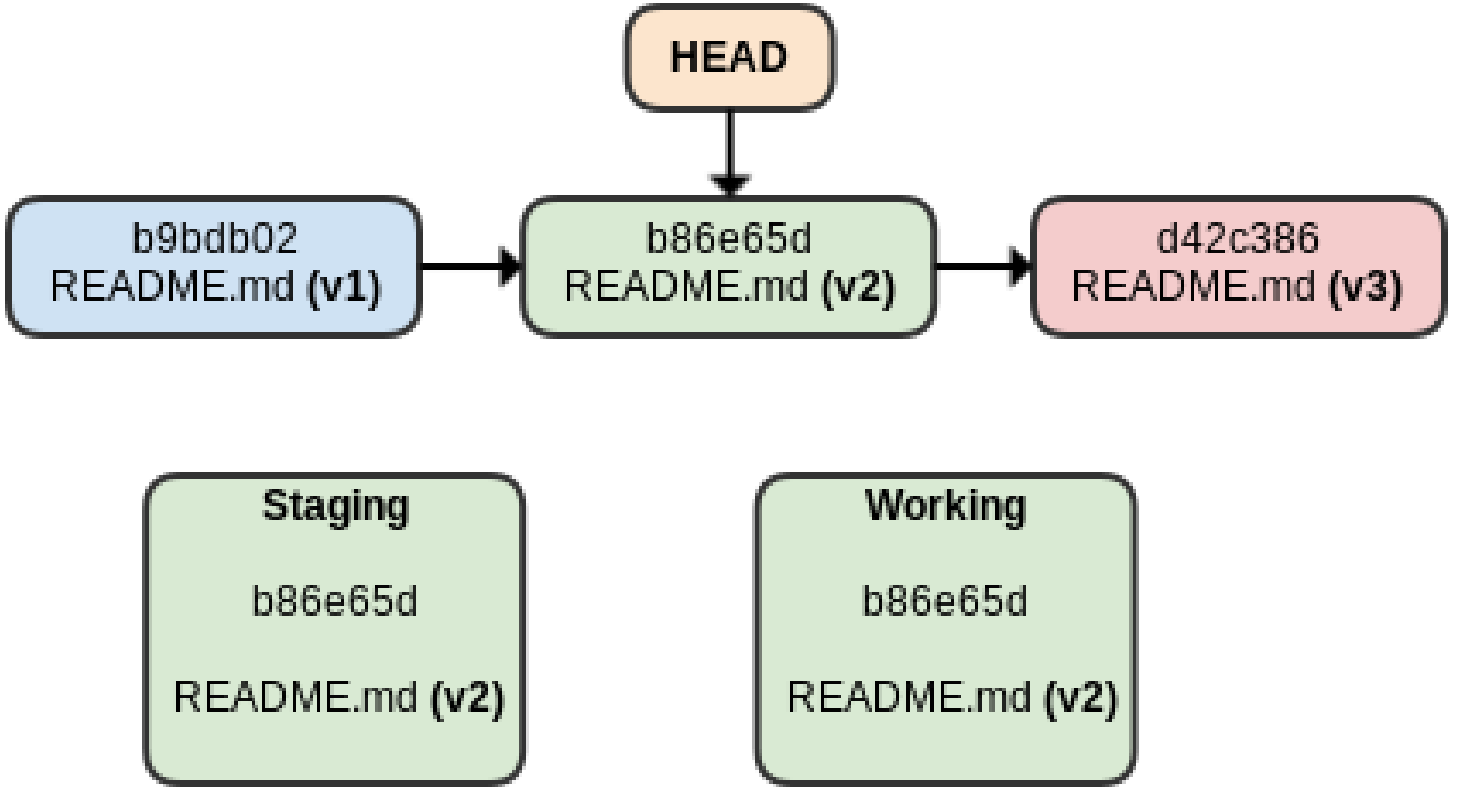


git reset --hard HEAD^

HARD RESET

```
~/repo$ git reset --hard HEAD^

~/repo$ git status
On branch new-feature
nothing to commit, working tree clean
```

UNDERSTANDING THE THREE STATES



git reset --hard HEAD^

OH NO!

I `reset --hard` and lost important work!

GIT DOES NOT REMOVE DATA EASILY.

UNDERSTANDING THE REFLOG

```
~/repo$ git reflog

b86e65da HEAD@{0}: reset: moving to HEAD^
d42c3864 HEAD@{1}: commit: this is not a good change
b86e65da HEAD@{2}: commit: the immediately previous change (totally
b9bdb02f HEAD@{3}: checkout: moving from main to new-feature
b9bdb02f HEAD@{4}: commit: a really good change


~/repo$ git reset --hard HEAD@{1}

HEAD is now at d42c3864 this is not a good change
```

UNDERSTANDING THE REFLOG

```
~/repo$ git reflog
d42c3864 HEAD@{0}: reset: moving to HEAD@{1}
b86e65da HEAD@{1}: reset: moving to HEAD^
d42c3864 HEAD@{2}: commit: this is not a good change
b86e65da HEAD@{3}: commit: the immediately previous change (totally
b9bdb02f HEAD@{4}: checkout: moving from main to new-feature
b9bdb02f HEAD@{5}: commit: a really good change


~$ git log --oneline
d42c386 this is not a good change
b86e65d the immediately previous change (totally normal)
b9bdb02 a really good change
```

HEAD NOTATION

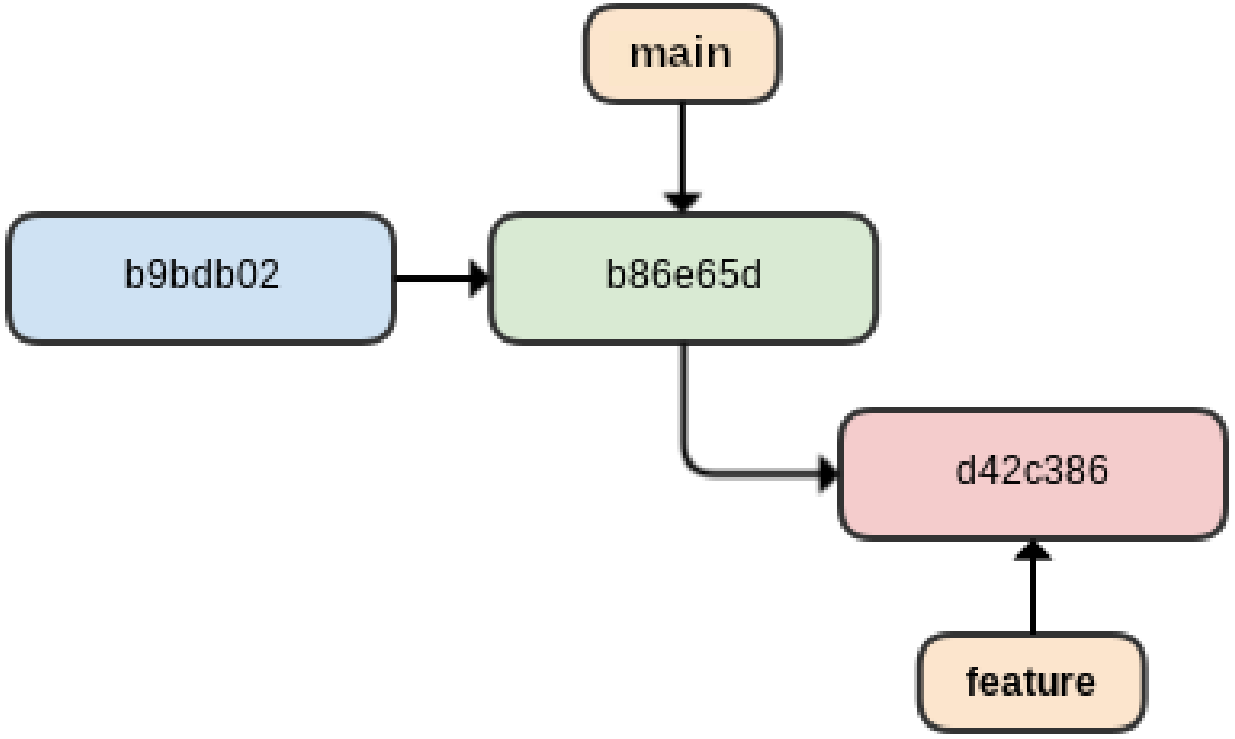
- `HEAD^` (back one place from current HEAD)
- `HEAD^^` (back two places from current HEAD)
- `HEAD~n` (back 'n' places from current HEAD)
- `HEAD@{i}` (back to reflog index 'i')

PLAYING NICE WITH OTHERS

merge, rebase, and cherry-pick

MERGING

With no divergent changes...



FAST FORWARD

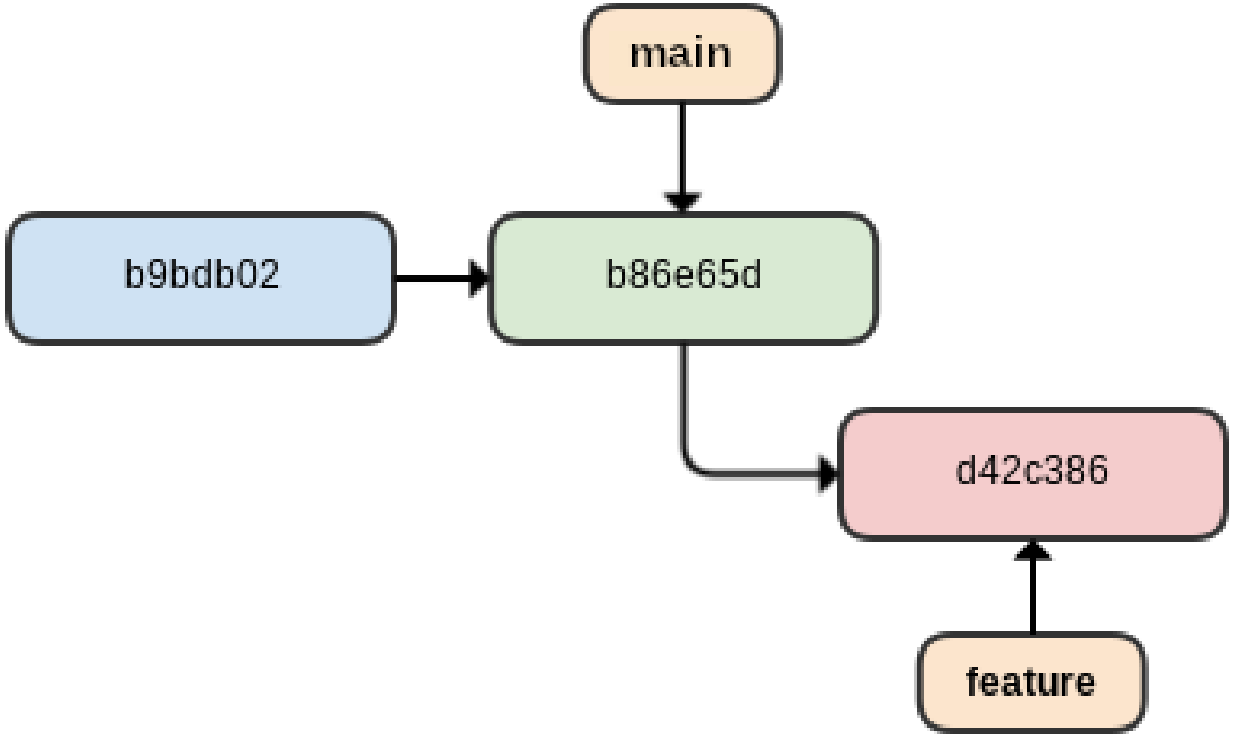
With no divergent changes... we can "fast forward"

```
~/repo$ git checkout main
~/repo$ git merge feature
```

```
Updating b86e65d..d42c386
Fast forward
source/some-file.js |   13 ++++++--+++
1 files changed, 7 insertions(+), 2 deletions(-)
```

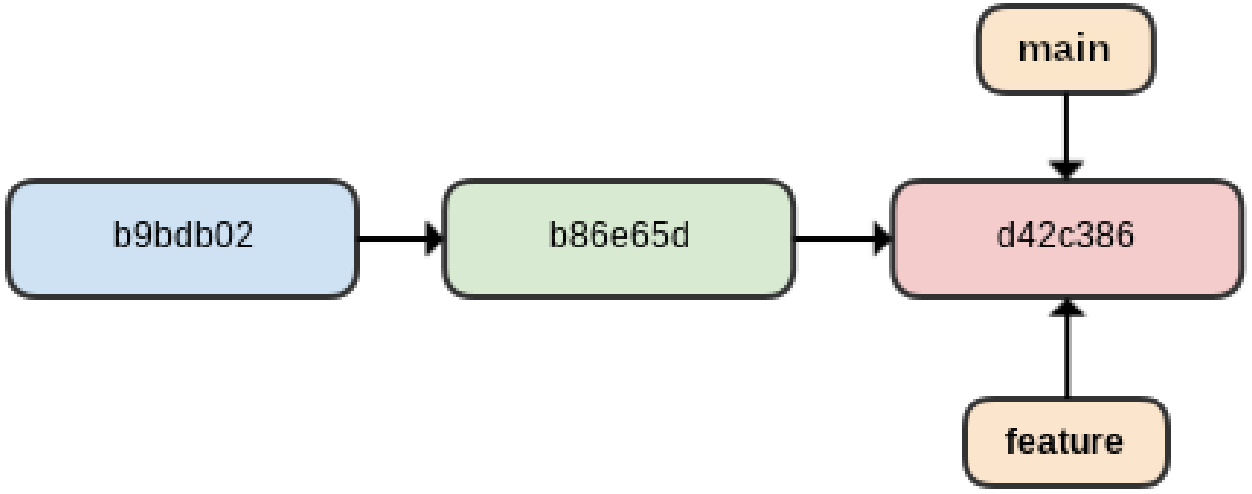
MERGING

With fast forward...



MERGING

With fast forward...



NO FAST FORWARD

```
~/repo$ git checkout main
~/repo$ git merge feature --no-ff
```

WHY?

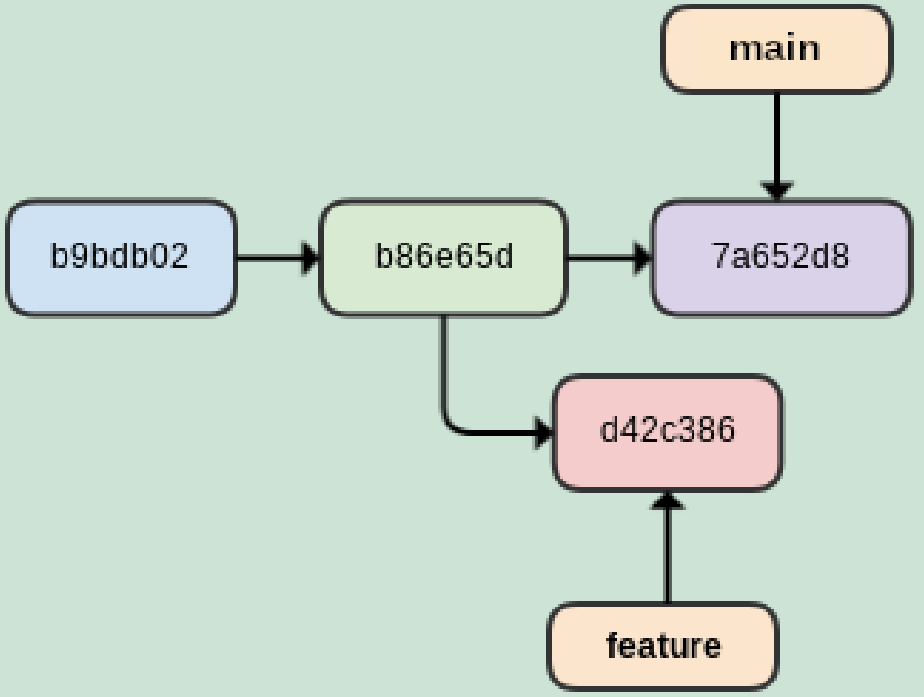
Because you lose merge history with fast-forward.

NO FAST FORWARD

```
~/repo$ git log --oneline

d42c3869 Added new API route to readme docs
b9bdb026 Various grammar edits to documentation
c2cb87e3 Remove unused files from test harness
3e3a8fdf Merge branch 'feature-two-tweak' into feature-two
79eec03a Reorganized documentation sections and renamed
...
```

DIVERGENT CHANGES

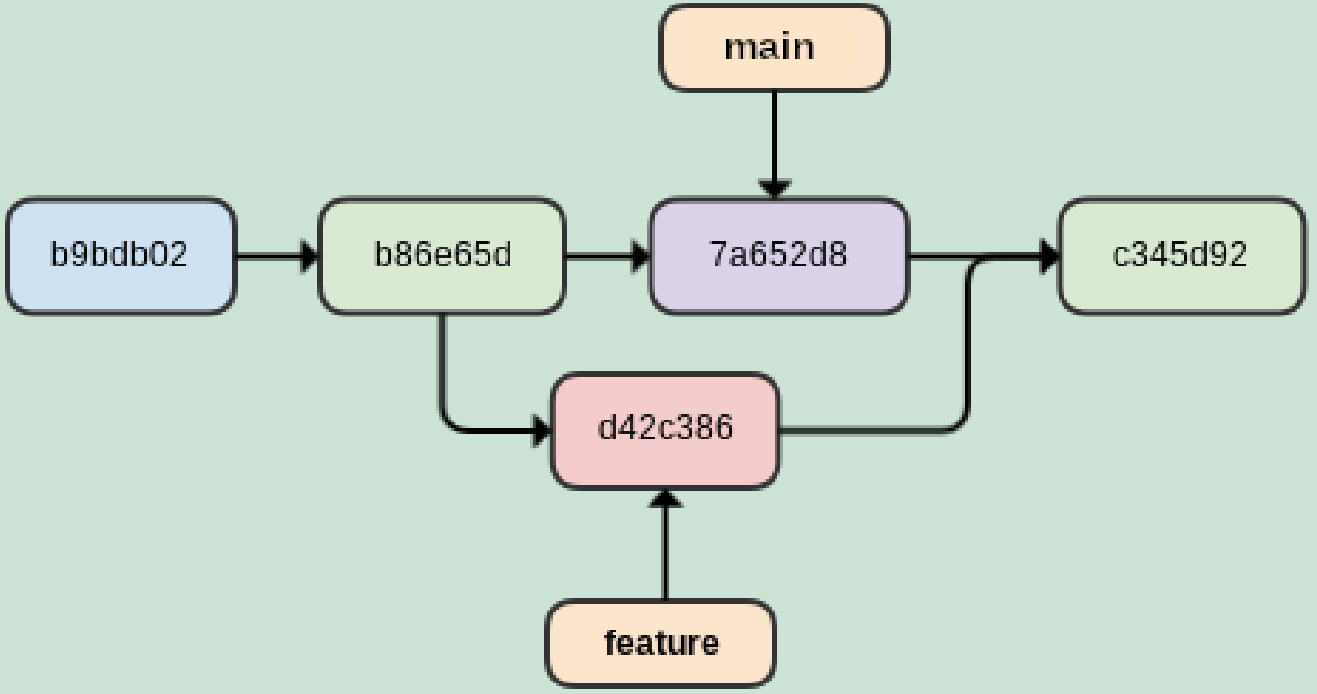
When code in feature diverges from the current trunk...




```
~/repo$ git checkout main
~/repo$ git merge feature
```

DIVERGENT CHANGES

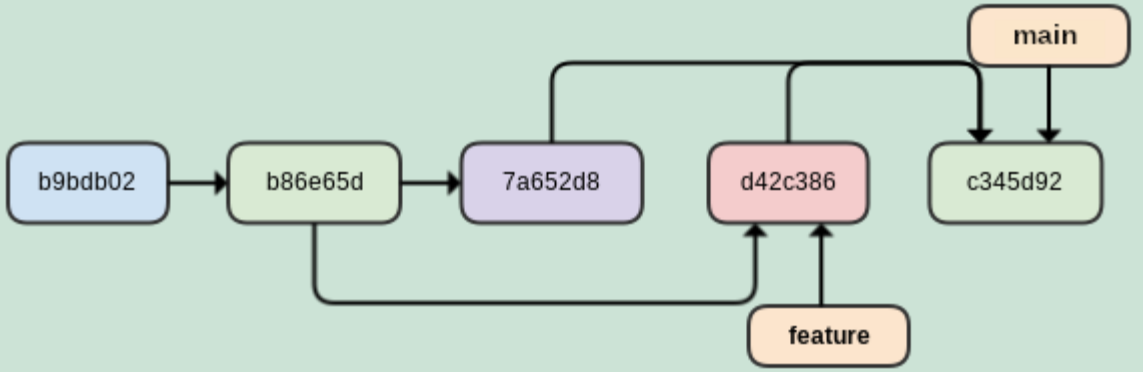
When code in feature diverges from the current trunk...




```
~/repo$ git checkout main
~/repo$ git merge feature
```

DIVERGENT CHANGES

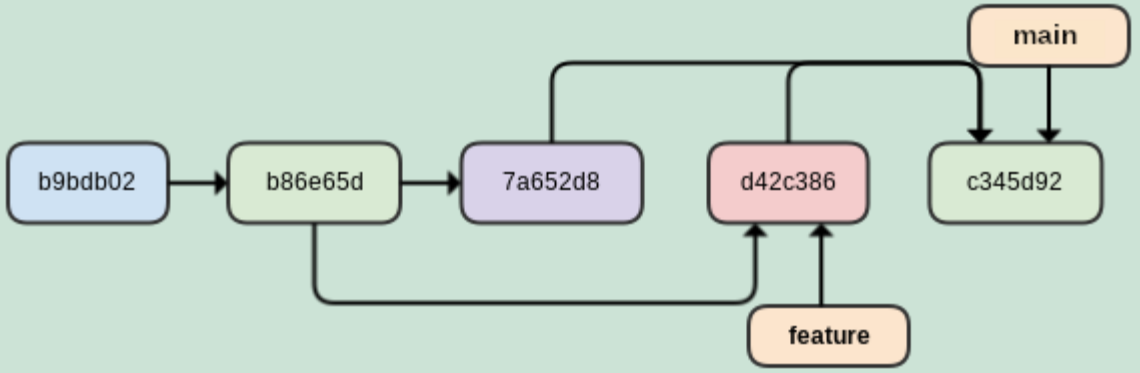
When code in `feature` diverges from the current trunk...




```
~/repo$ git checkout main
~/repo$ git merge feature
```

DIVERGENT CHANGES

When code in `feature` diverges from the current trunk...




```
~/repo$ git log --oneline
c345d92 Merge branch 'feature' into main
d42c386 Added new-feature to library
7a652d8 A piece of divergent work
b86e65d Some older work
```

MERGE CONFLICTS

CONFLICTS

Git can't resolve multiple changes to the same lines.

```
~/repo$ git checkout main
~/repo$ git merge new-feature

Auto-merging README.md
CONFLICT (content): Merge conflict in README.md
Automatic merge failed; fix conflicts and then commit the result.
```

RESOLVING THE CONFLICT

1. Fix the conflict in the file!
2. Stage the fixed file

   ```
   ~$ git add README.md
   ```

3. Commit the files

   (This is your merge commit, it may include other files!)

   ```
   ~$ git commit
   ```

CONFLICTS

Opening up the `README.md` file...

```
...some text common to both branches

<<<<<<< HEAD
text only in main
=======
same line, different text in branch
>>>>>>> new-feature

more common text...
```

RESOLVING THE CONFLICT

Struggling to resolve the conflict?

```
~/repo$ git merge --abort
```

Abort and ask for help!

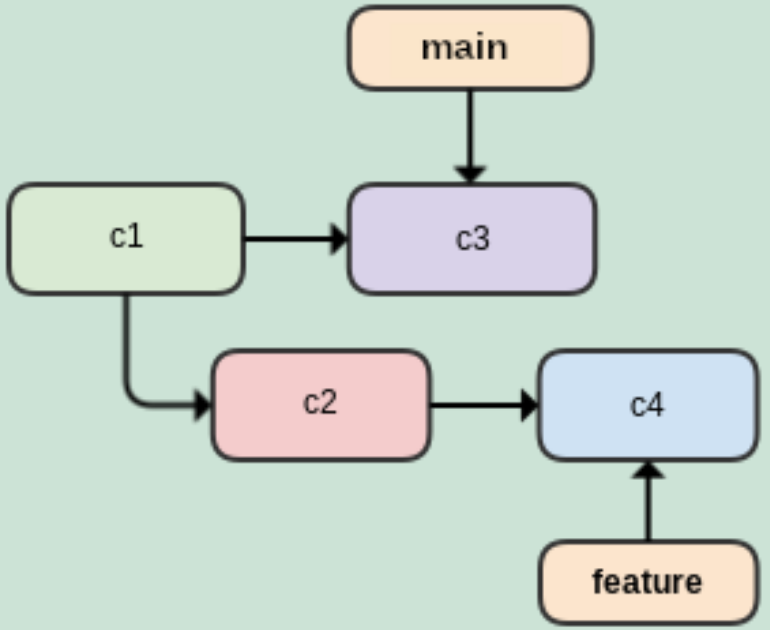
REBASING

Rebasing **rewrites commit history**!

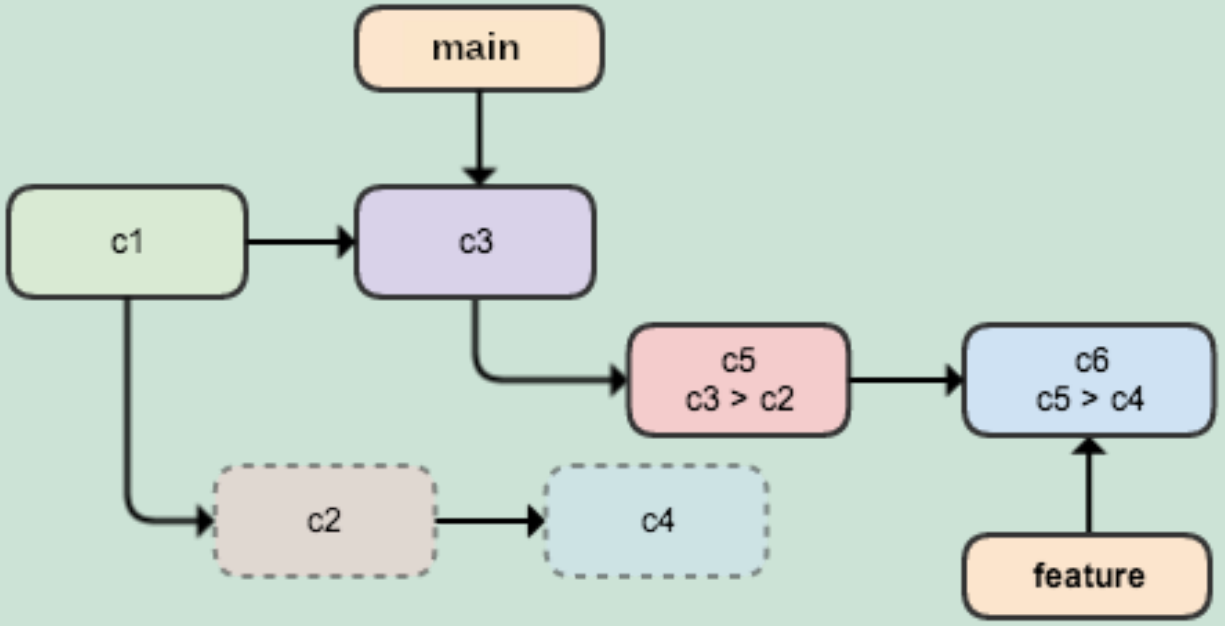
Use this locally, or for your own branches.

Only use with a remote branch if your team has a well-defined git workflow and everyone is using rebase.

DIVERGENT CHANGES



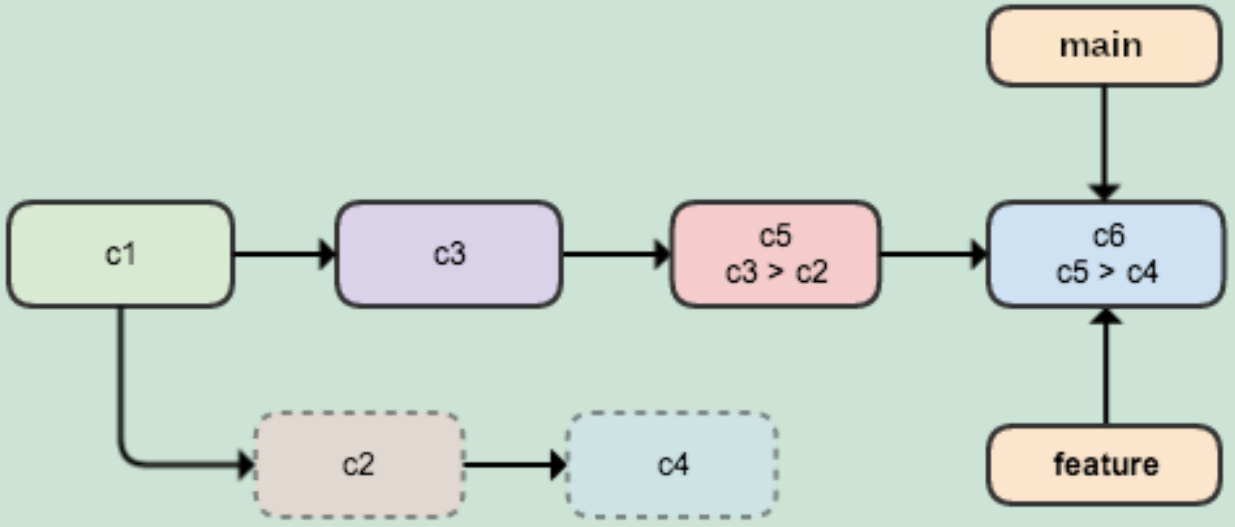
REWRITING HISTORY




```
~/repo$ git checkout feature
~/repo$ git rebase main
```

UPDATING MAIN

We can update `main` with a fast-forward merge.




```
~/repo$ git checkout main
~/repo$ git merge feature
```

YOU CAN STILL GET CONFLICTS WITH `REBASE`!

REBASE CONFLICTS

```
~/repo$ git rebase main

First, rewinding head to replay your work on top of it...
Applying: feature
error: patch failed: README.md:1
error: README.md: patch does not apply
Using index info to reconstruct a base tree...
Falling back to patching base and 3-way merge...
Auto-merging README.md
CONFLICT (content): Merge conflict in README.md
Failed to merge in the changes.
```

RESOLVING THE CONFLICT

1. Fix the conflict in the file!
2. Stage the fixed file

   ```
   ~$ git add README.md
   ```

3. Commit the fix

   ```
   ~$ git commit
   ```

4. Continue the rebase

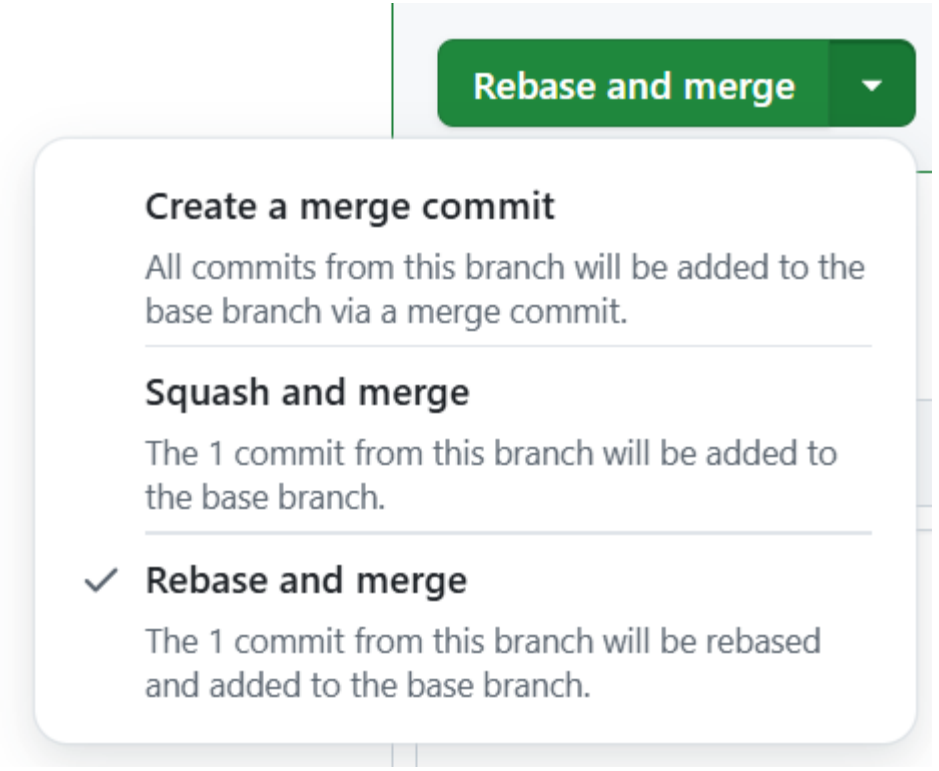
   ```
   ~$ git rebase --continue
   ```

NOT GOING WELL?

You can abort the rebase just like a merge:

```
~/repo$ git rebase --abort
```

USE GITHUB? NO PROBLEM.



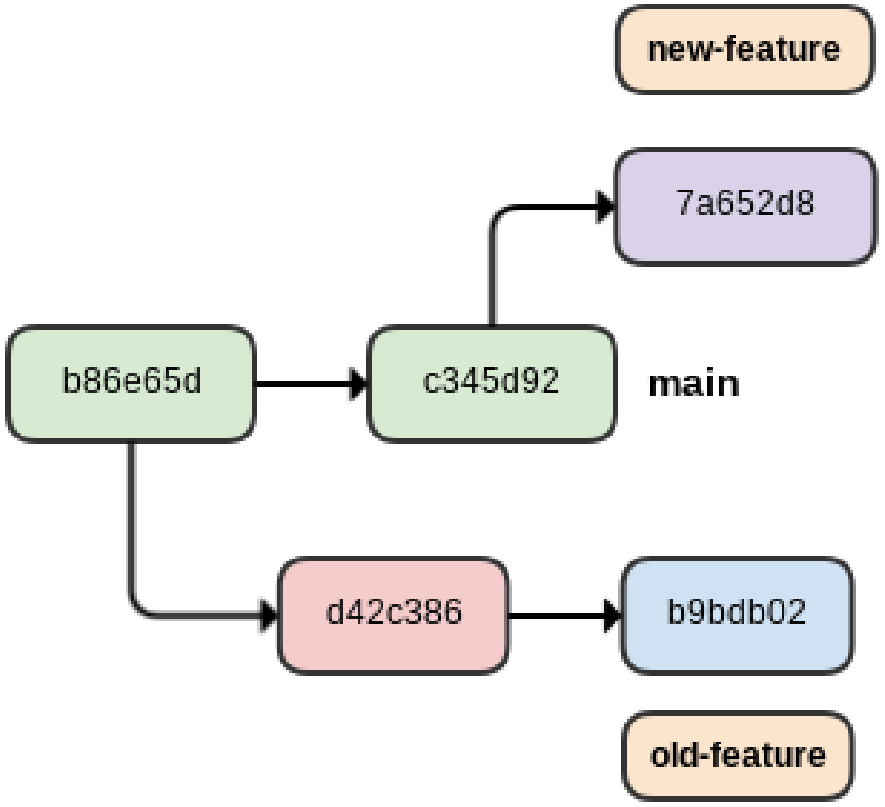
A RECOMMENDATION...

If you plan to use rebase versus merge, **always** use rebase.

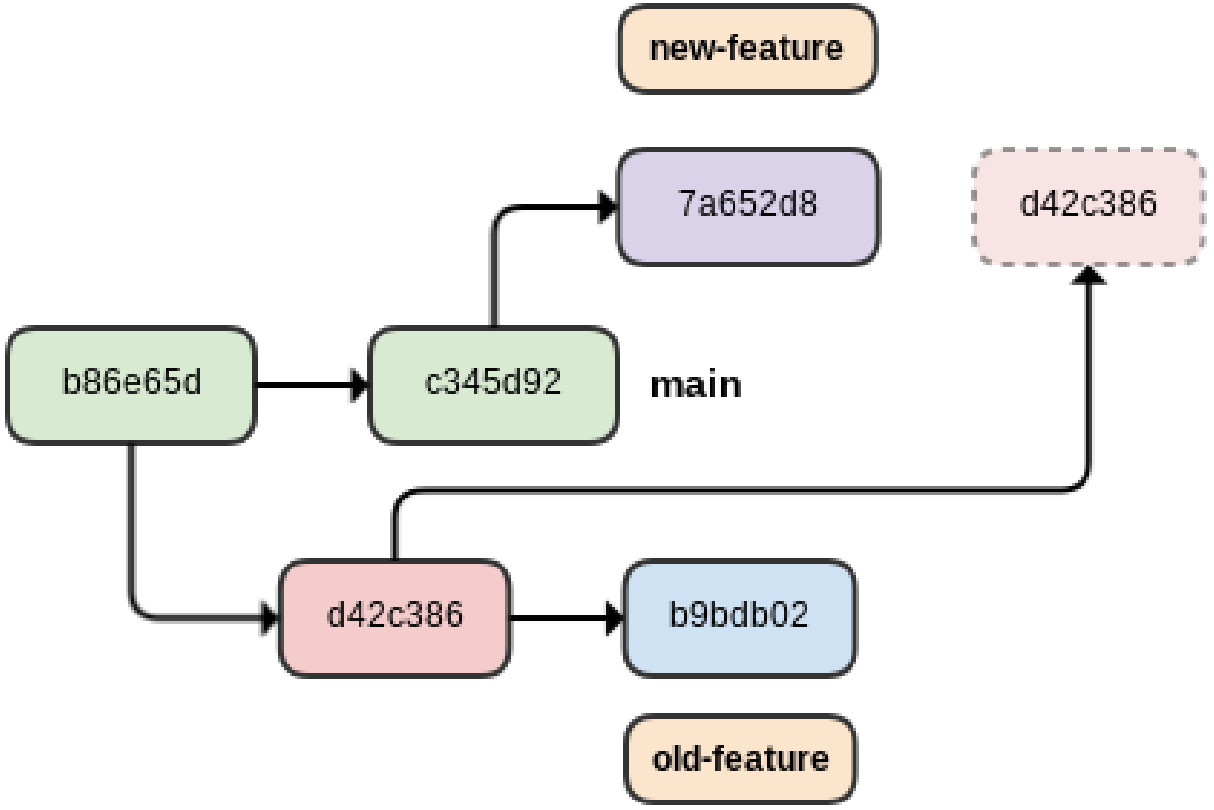
```
~/repo$ git pull

~/repo$ git fetch && git merge

~/repo$ git pull --rebase


~$ git config branch.main.rebase true
~$ git config branch.autosetuprebase always
```

CHERRY-PICKING

CHERRY PICK

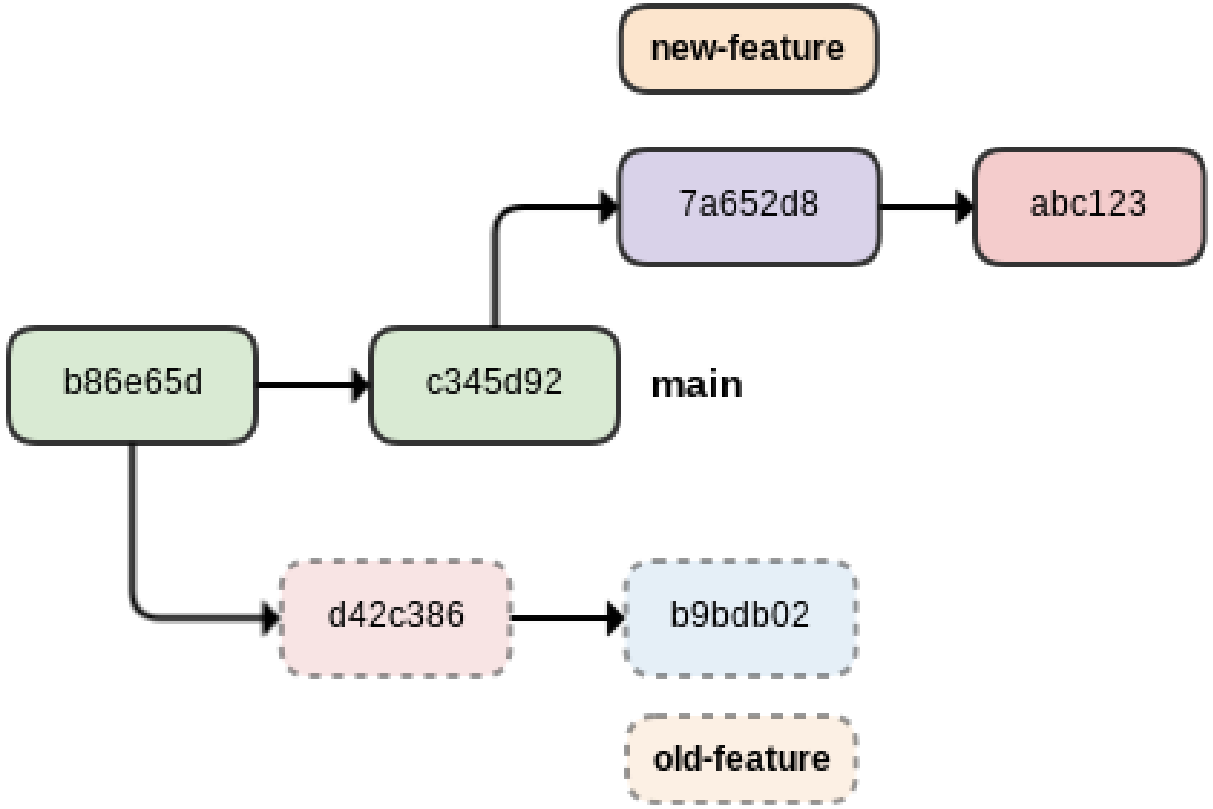

new-feature
7a652d8
b86e65d
c345d92
main
d42c386
b9bdb02
old-feature

CHERRY PICK




```
~/repo$ git checkout new-feature
~/repo$ git cherry-pick d42c386
```

CHERRY PICK




```
~$ git branch -D old-feature
```

CHERRY PICK

Yes, you can still get conflicts with a `cherry-pick`!

Don't keep that old branch around!

THANK YOU!

GITTING MORE OUT OF GIT

Jordan Kasper | @jakerella

Slides: jordankasper.com/git

Session Feedback:

BONUS CONTENT!

GIT AND DATA INTEGRITY

Git uses snapshots

(versus file diffs)

FILE DIFFS

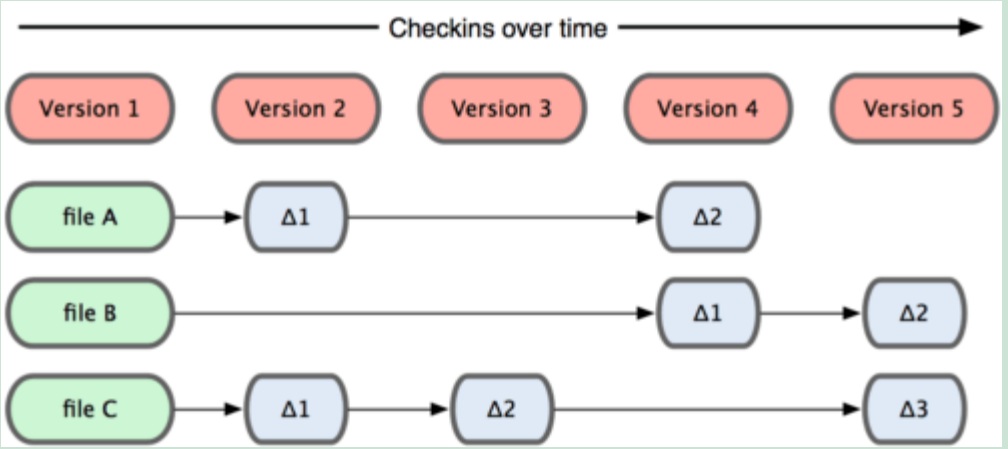


Image credit: http://git-scm.com/book/en/Getting-Started-Git-Basics

SNAPSHOTS

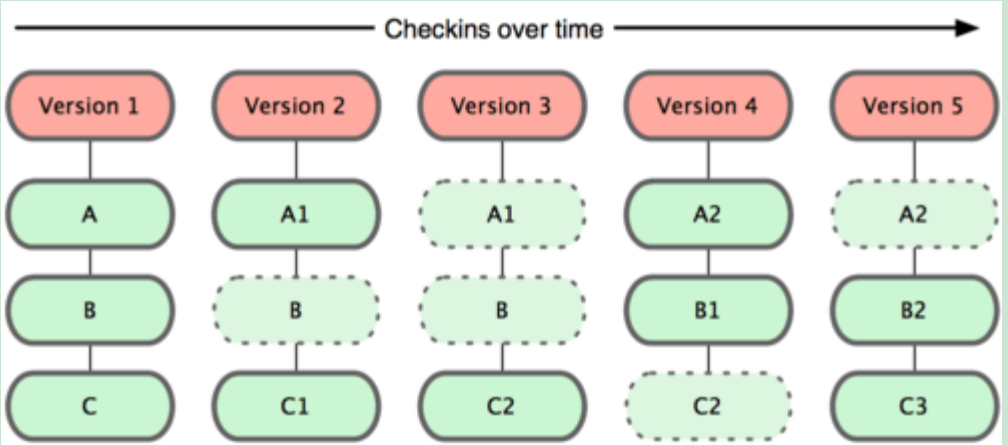


Image credit: http://git-scm.com/book/en/Getting-Started-Git-Basics

COMMIT HASHES

```
~/repo$ git commit -m "Added documentation"
[main (root-commit) b9bdb026] Added documentation


~/repo$ git log
commit b9bdb0261ee9bcaa31d7eb062c0bcafee3e530f0
Author: jdoe <john@doe.com>
Date:   Thu Jan 29 11:27:14 2026 -0400

Added documentation
```

A Git commit hash is a checksum of *everything* in that repository.

Every file, every character, every commit message, etc.

LOCAL REPOS

Every local instance of a git repo has ALL of the data.

That means when GitHub goes down, you keep working...

...even with other people / machines.

A DISTRIBUTUED VCS

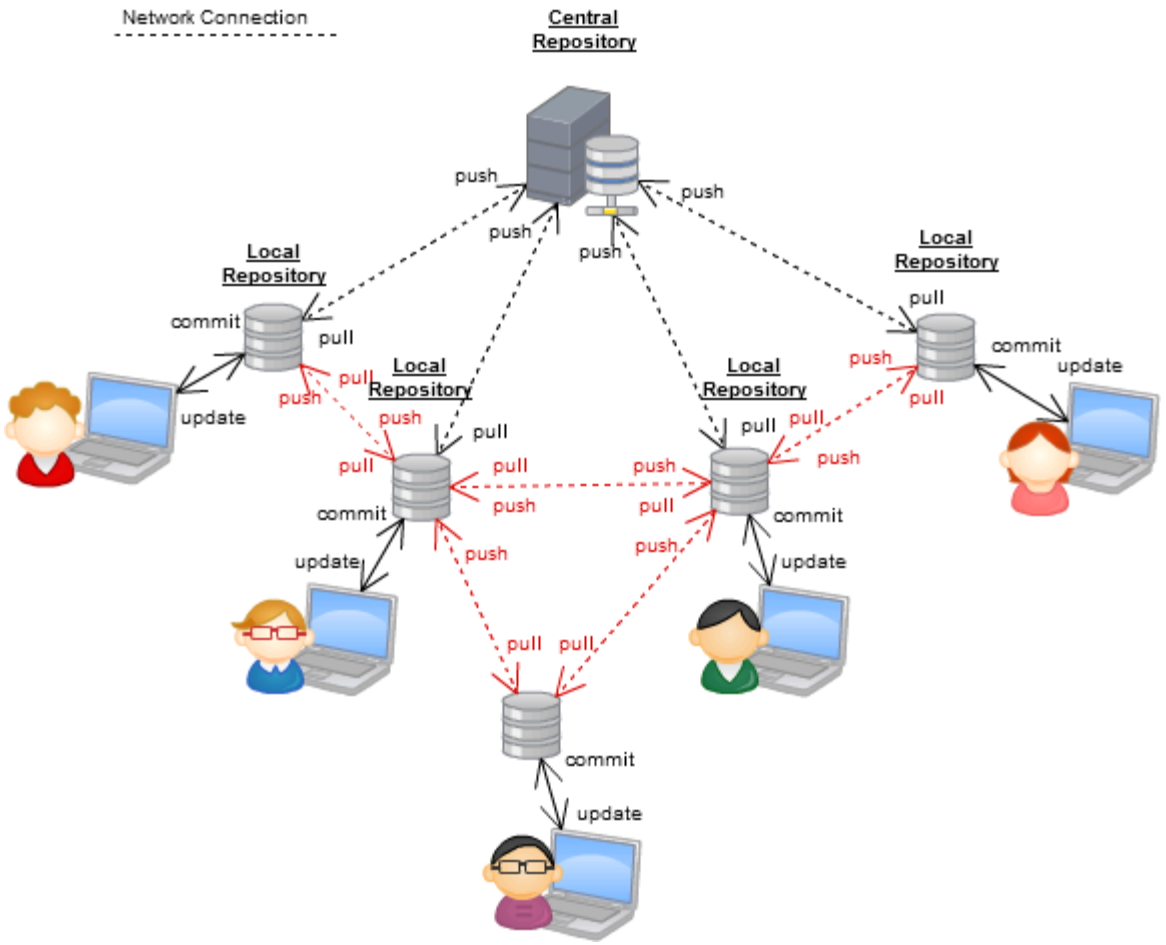


Image credit: https://docs.joomla.org/Dvcs

LOGS

Image credit: http://thedailyomnivore.net/2012/02/20/ren-stimpy/

THE BASIC LOG

```
~/repo$ git log
commit d42c38691161f42fcc07d806f7df4579e8cd189e
Author: jakerella <me@example.com>
Date:   Fri Jan 30 13:57:36 2026 -0400

Added new API route to readme docs

commit b9bdb0261ee9bcaa31d7eb062c0bcafee3e530f0
Author: jakerella <me@example.com>
Date:   Thu Jan 29 09:14:16 2026 -0400

Various grammar edits to documentation
```

LOG OPTIONS

```
~/repo$ git log --oneline

d42c3869 Added new API route to readme docs
b9bdb026 Various grammar edits to documentation
c2cb87e3 Remove unused files from test harness
2e8a119c Merge pull request #186 from jakerella/new-feature
79eec03a Reorganized documentation sections and renamed
...
```

FORMATTING AND GRAPHING

```
~/repo$ git log --pretty="tformat:%h %as %an: %s" --graph

* 714e0dd9 2026-01-30 jakerella: Merge pull request #220 from foobar
|\
| * c8bcfc14 2026-01-29 roro: last update for feature two
| * 3e3a8fdf 2026-01-28 jakerella: Merge branch 'feature-two-tweak'
| |\
| | * 46f4cf12 2026-01-28 drnick: tweak for feature two
| * | 1471f2b8 2026-01-27 drnick: one more thing on feature two
| |/
| * 5ce150bc 2026-01-26 drnick: feature two initial work
|/
* 062b1f01 2026-01-25 roro: some previous work
```

MAKE IT EASY

Add an alias to your bash or gitbash profile:

```
alias gl="git log --pretty='tformat:%h %as %an: %s' --graph"
```

FILTERING THE LOG

```
~/repo$ git log --no-merges

~/repo$ git log --author="jakerella"

~/repo$ git log --before="2026-02-01"

~/repo$ git log -- source/routes

~/repo$ git log --grep=4\.31\.[0-9]+ -E
```

POINTING BLAME

(Possibly at yourself...)

BLAME GAME

```
1.  function divide(x, y) { ... }
2.  function multiply(x, y) { ... }
3.  function add(x, y) {
4.      return x + x;
5.  }
6.  function subtract(x, y) { ... }
```

```
~/repo$ git blame source/math.js

ca5dc559 (roro          2025-03-13   1) function divide(x, y) { ... }
ca5dc559 (roro          2025-03-13   2) function muiltiply(x, y) { ...
d35241e6 (drnick        2026-01-22   3) function add(x, y) {
27cc7225 (jakerella     2026-01-29   4)     return x + x;
d35241e6 (drnick        2026-01-22   5) }
d35241e6 (drnick        2026-01-22   6) function subtract(x, y) { ...
```

BLAME GAME

Know where to look?

```
~/repo$ git blame -L3,5 source/utilities.js

d35241e6 (drnick      2026-01-22   3) function add(x, y) {
27cc7225 (jakerella   2026-01-29   4)     return x + x;
d35241e6 (drnick      2026-01-22   5) }


~/repo$ git log --oneline source/utilities.js

27cc7225 Tweaked math add to double input
d35241e6 Expanded common math ops for new feature use
ca5dc559 Created helper file for common math ops
```

My boss just told me to pivot...

Using `git stash`

THE SITUATION

You've made some changes on a feature branch, but they are not ready to commit yet...

```
~/repo$ git checkout -b hot-fix-123
```

```
~/repo$ git status
On branch hot-fix-123
Changes not staged for commit:
    modified:   borked-code.js
    modified:   some-unrelated-file.js

Untracked files:
    new-code.js
```

SAVING YOUR STASH

Before switching branches...

```
~/repo$ git stash --include-untracked
Saved working directory and index state WIP on new-feature: 3c927dd
HEAD is now at 3c927dd Add a README
```

```
~/repo$ git status
On branch new-feature
nothing to commit, working tree clean
```

MANAGING YOUR STASH

```
~/repo$ git stash list
stash@{0}: WIP on new-feature: 3c927dd Add a README
```

But what if you `stash` multiple times?!

```
~/repo$ git stash list
stash@{0}: WIP on new-feature: 3c927dd Add a README
stash@{1}: WIP on new-feature: 3c927dd Add a README
stash@{2}: WIP on new-feature: 3c927dd Add a README
stash@{3}: WIP on hot-fix-456: a46c33b Replaced old lib with new one
```

NAMING YOUR STASH

```
~/repo$ git stash save 'work on the API for new feature'

~/repo$ git stash list
stash@{0}: On new-feature: work on the API for new feature
stash@{1}: On new-feature: trying out some async behavior
stash@{2}: On hot-fix-456: attempt to fix bug #456, but incomplete
```

GREAT, BUT HOW DO I USE IT?

APPLYING YOUR STASH

```
~/repo$ git checkout new-feature
~/repo$ git stash apply

On branch new-feature
Changes not staged for commit:
    modified:   borked-code.js
    modified:   some-unrelated-file.js

Untracked files:
    new-code.js


~/repo$ git stash list
stash@{0}: On new-feature: work on the API for new feature
stash@{1}: On new-feature: trying out some async behavior
stash@{2}: On hot-fix-456: attempt to fix bug #456, but incomplete
```

DROPPING YOUR STASH

```
~/repo$ git stash drop stash@{0}
Dropped refs/stash@{0} (a52d9c3ba1121dd94eb3925ba60d3f8ef30540c8)
```

Make sure you know which stash you're dropping!

POPPING YOUR STASH

Apply and drop in one command!

```
~/repo$ git stash pop

On branch new-feature
Changes not staged for commit:
    modified:   borked-code.js
    modified:   some-unrelated-file.js

Untracked files:
    new-code.js

Dropped refs/stash@{0} (a52d9c3ba1121dd94eb3925ba60d3f8ef30540c8)
```