

สยามชั้นนำคิท
SIAM CHANNON KIT



Shu Ha Ri



We Love Bug

Source Code Management with git



IMC Institute
August 2020, 25-26





Shu Ha Ri



We Love Bug

Agenda

- Version Control System
- Introduction to Git
- Working with Git - Local
- Working with Branching
- Working on Remote Repository
- Git for Good
- Branching Strategy
- Working with Continuous Integration
- Git Log and Statistic



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Opening



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Karan (bomb) Sivarat

**Agile Practitioner and Technical Journey
at Siam Chamnankit Co., Ltd
at Shu Ha Ri Co., Ltd.**

Trainer

**of 3 Days for Agile Development Workshop
of 2 Days for Agile Project Management Workshop
of 2 Days for Source Code Management with Git**

Blogger @ bomb0069.wordpress.com

Blogger @ medium.com/@bomb0069

email: karan@scrum123.com

twitter: [@bomb0069](https://twitter.com/bomb0069)

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Version Control System



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What is Version Control System ?

Why we need it ?



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History - Version Control System

First

Second

Third

No-Networking

Centralised

Distributed

On File @ Time

Multi-Files

Change Set

Lock for Concurrent

Merge before Commit

Commit before Merge

ex.

ex.

ex.

RCS, SCCS

CVS, SourceSafe,

Git, Bazaar,

Subversion

Mercurial



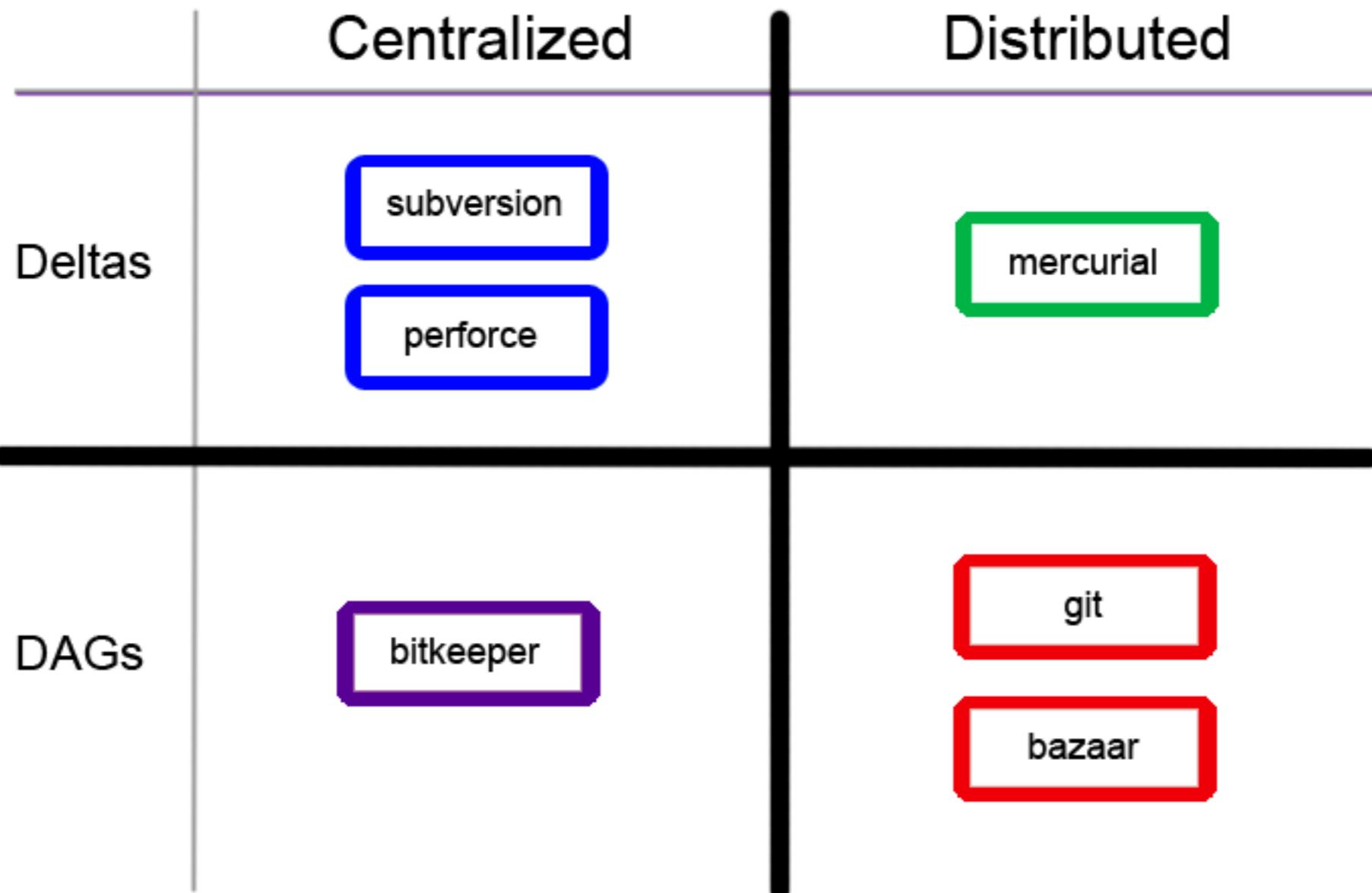
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Version Control



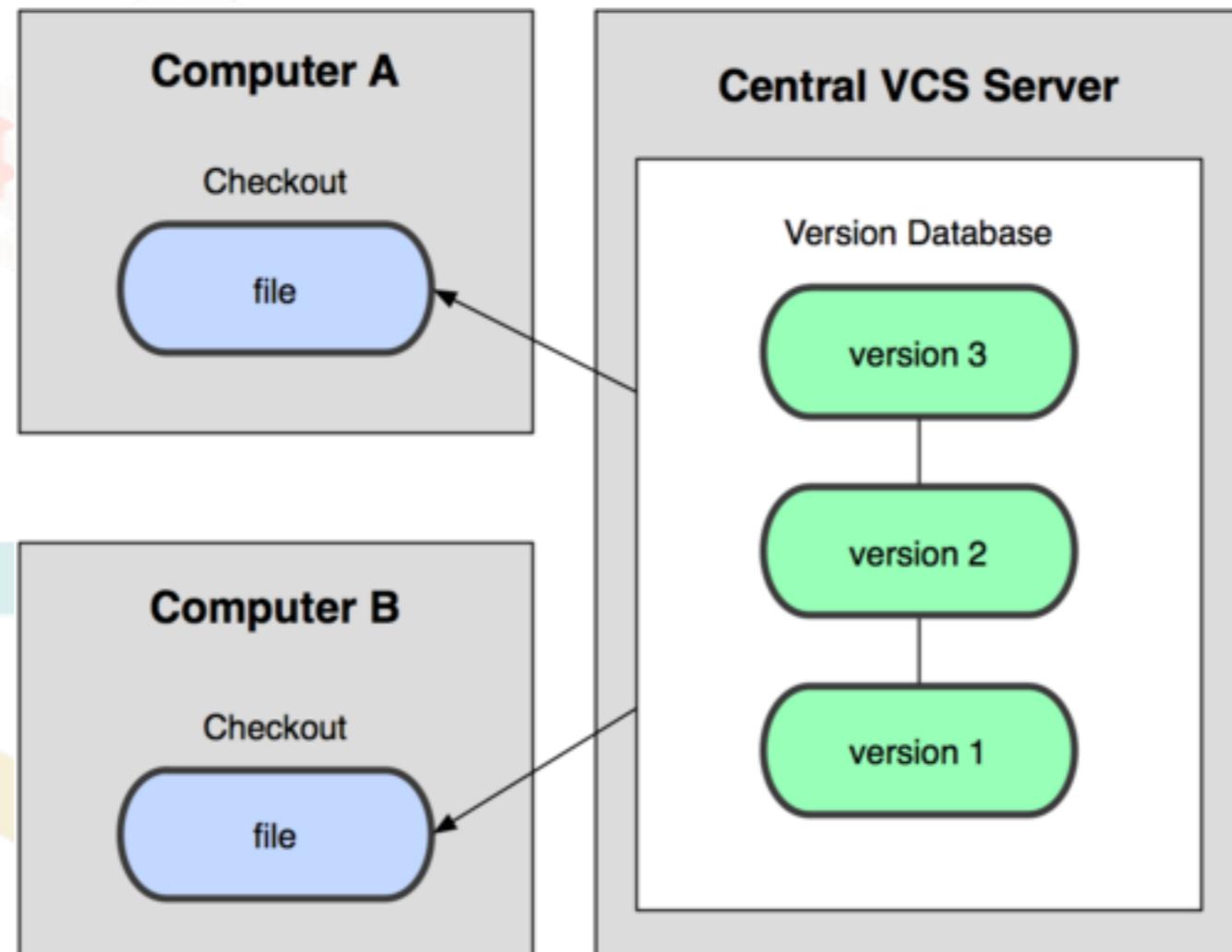
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Centralised Version Control



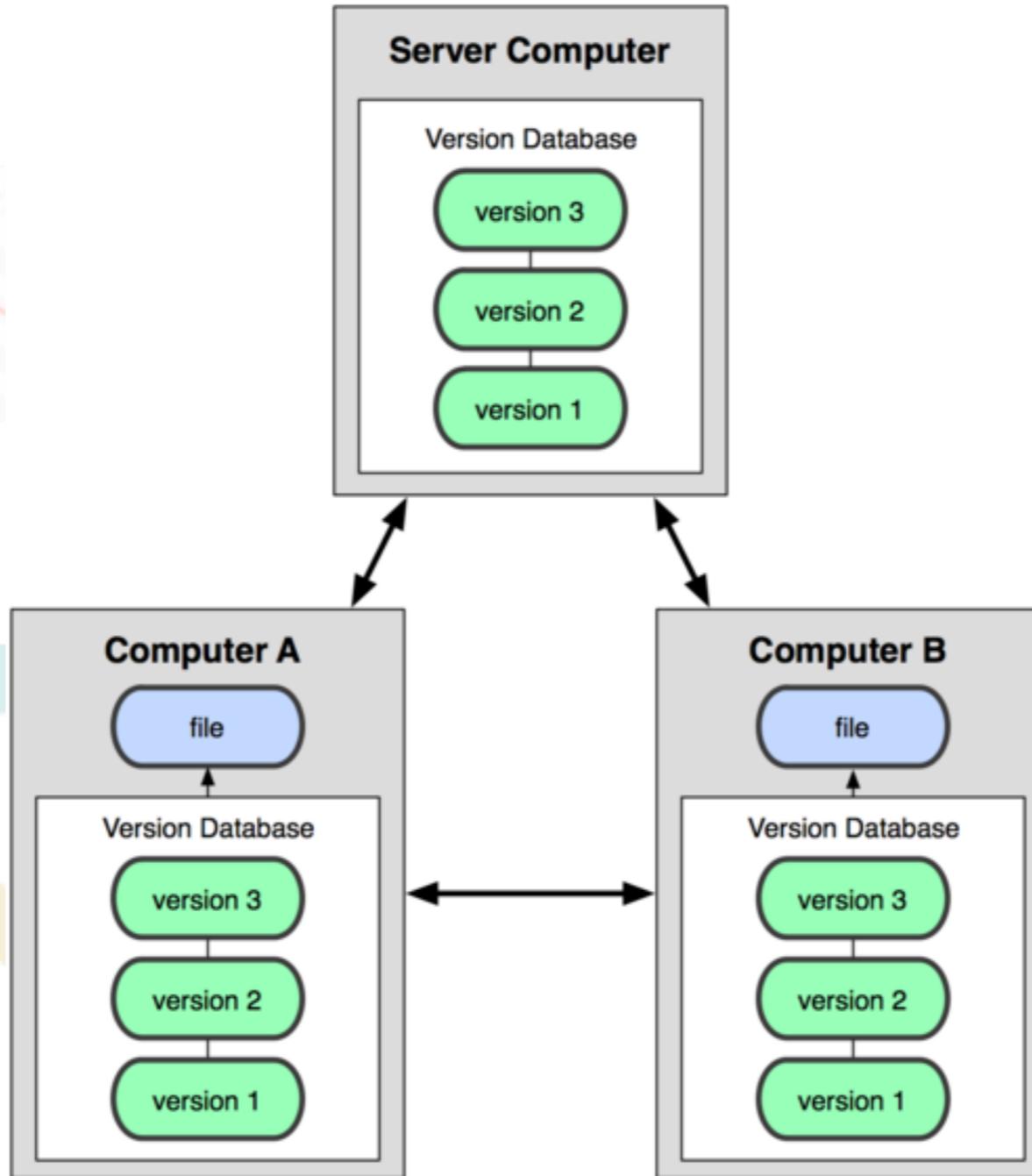
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Distributed Version Control



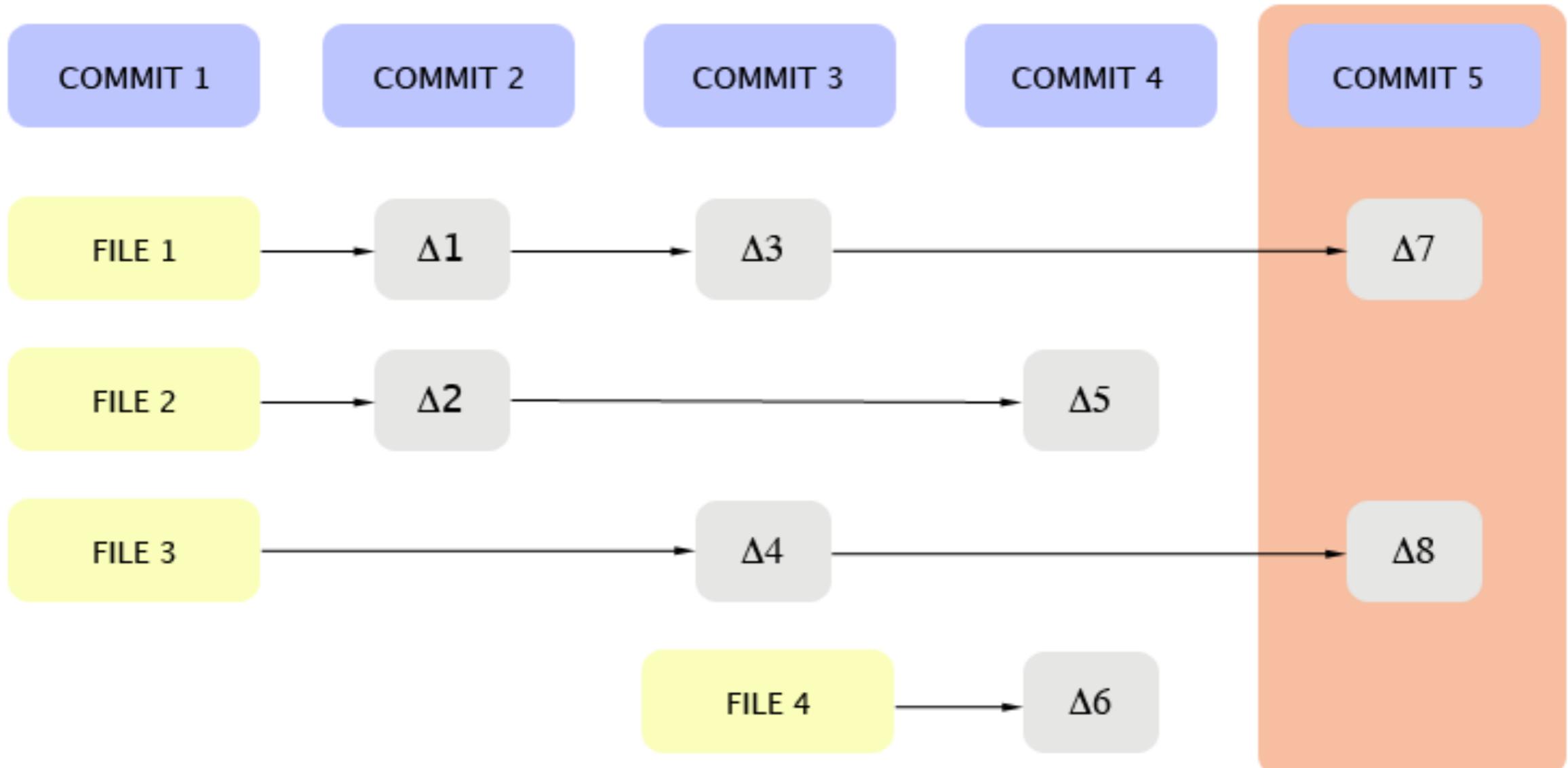
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Delta Repository



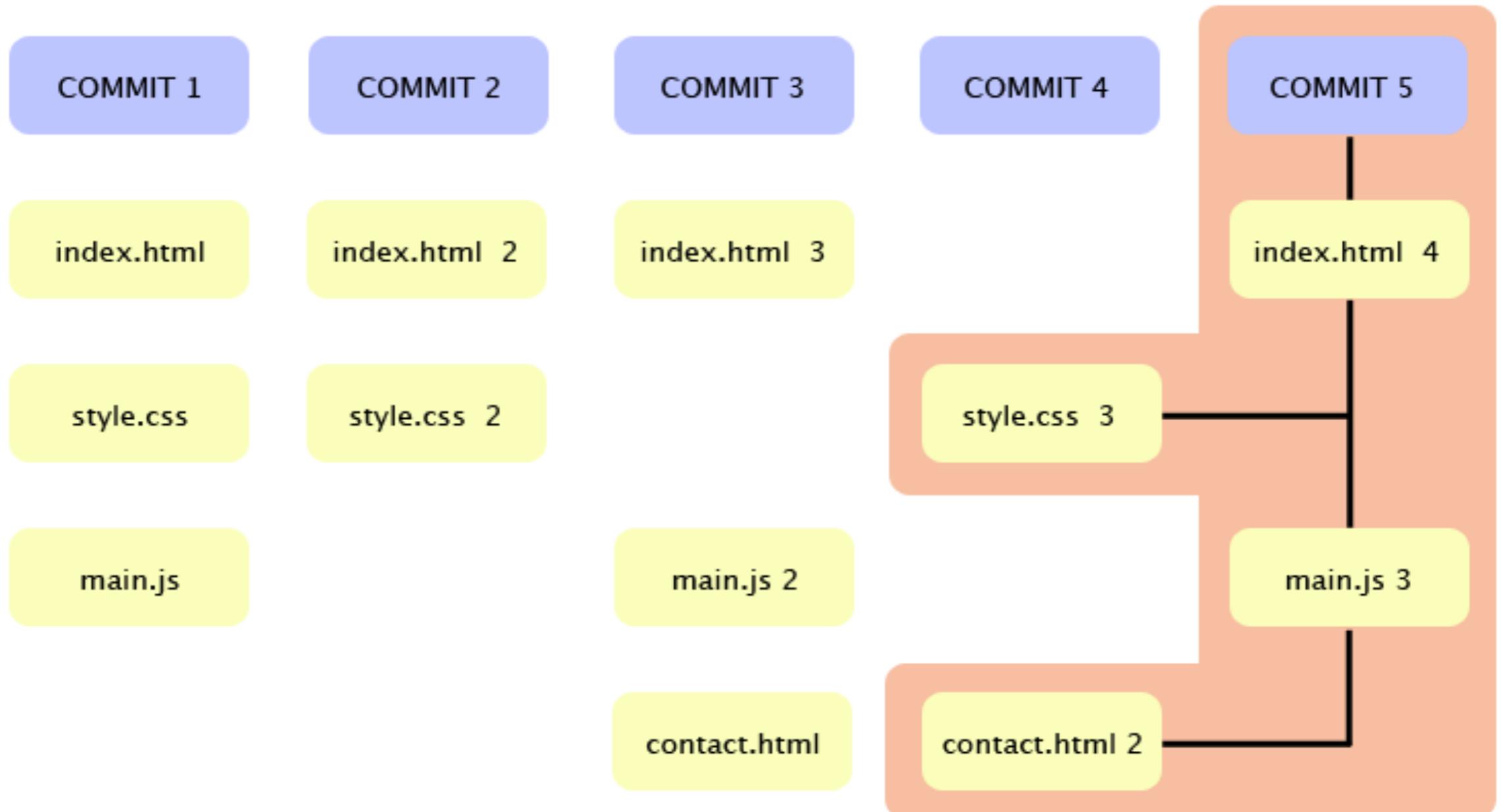
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DAG Repository



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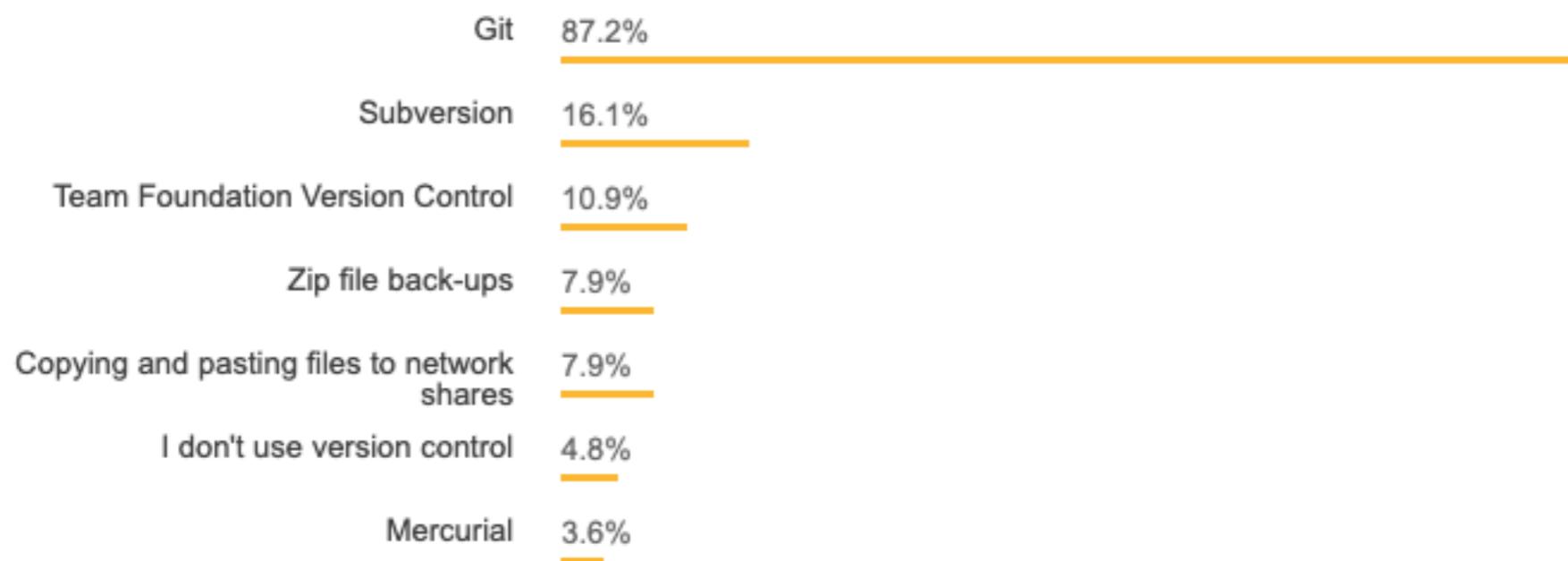
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Stackoverflow : 2018 Subway – Version Control

Version Control

All Respondents Professional Developers



74,298 responses; select all that apply

Git is the dominant choice for version control for developers today, with almost 90% of developers checking in their code via Git.

Source: <https://web.archive.org/web/20190530142357/https://insights.stackoverflow.com/survey/2018/#work--version-control>



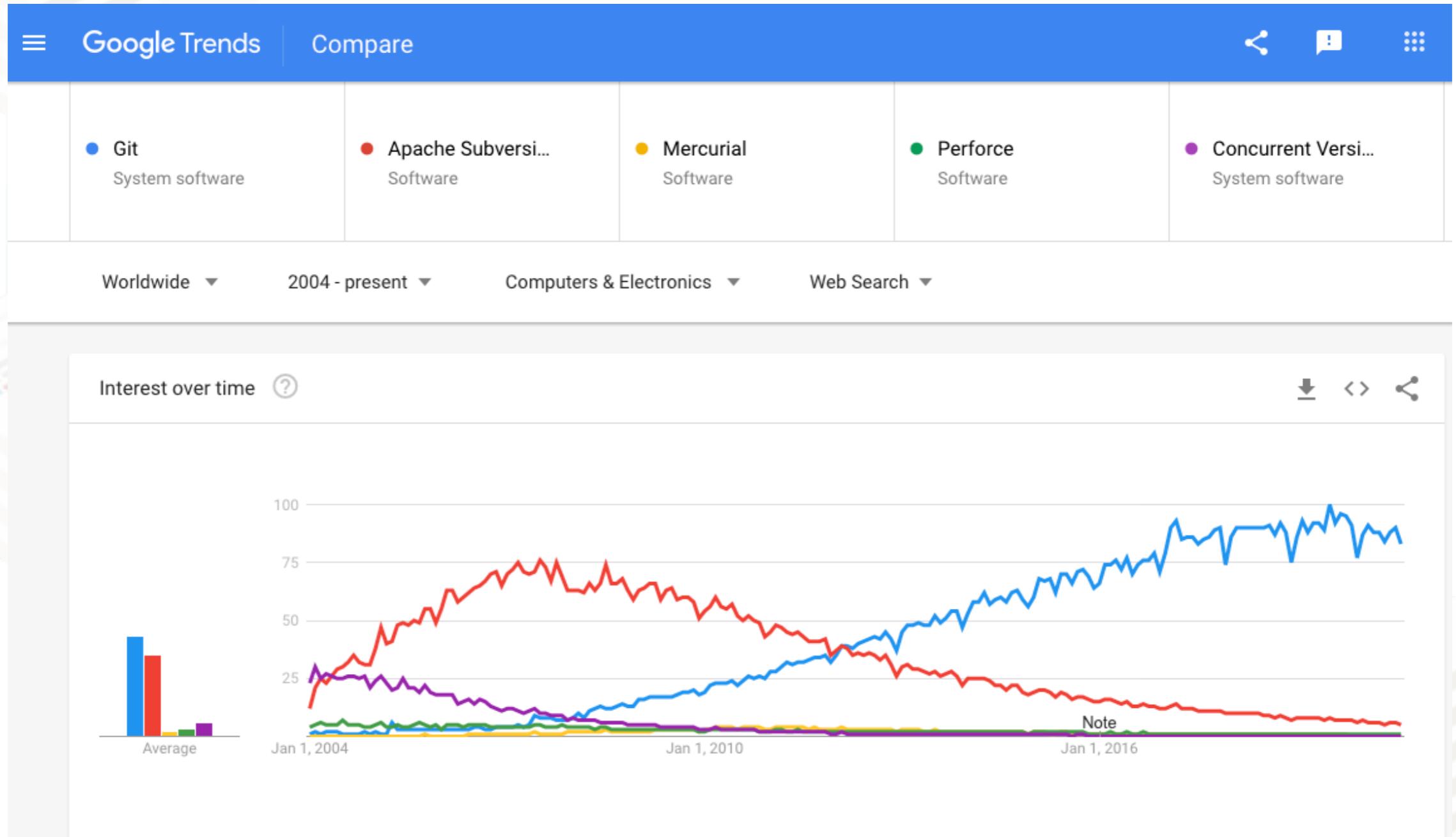
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Google Trend – Version Control System



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Introduction to Git



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Git History

- o Linux submitting patches model is quite interesting & unique in that time
- o Linus hates CVS so much, he never believe in it
- o He was in doomed maintaining Linux Kernel using Tarball + patch
- o BitMover offer BitKeeper free usage. BitKeeper saved his life, but just for a while
- o BitKeeper has a very strict Software License. People start to get upset
- o Politics happened. Linus needs a replacement for BitKeeper
- o Key criteria are:
 - o Needs to be Distributed SCM, like BitKeeper
 - o Needs to be highly Performance. 3 seconds max to apply a patch
 - o Guaranteed what goes in comes out correctly.



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GOALS of git

Speed

Simple design

Support for many parallel branches

Fully distributed

To handle large project like Linux kernel



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Who use Git



Microsoft

twitter

LinkedIn



PostgreSQL



COMPANIES

6227 companies reportedly use Git in their tech stacks, including Netflix, Shopify, and reddit.



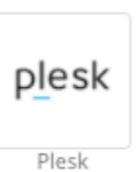
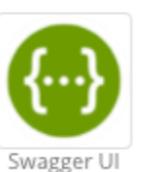
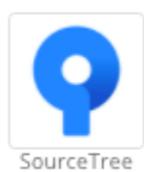
DEVELOPERS

71813 developers on StackShare have stated that they use Git.



Git Integrations

Bitbucket, SourceTree, Datadog, Azure DevOps, and Swagger UI are some of the popular tools that integrate with Git. Here's a list of all 128 tools that integrate with Git.



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Practice Git on Browser

<https://try.github.io>

Resources to learn Git

Learn by reading

- Git Handbook**
Git, GitHub, DVCS, oh my! Learn all the lingo and the basics of Git.
- Cheat Sheets**
Keep these handy! Reference sheets covering Git commands, features, SVN migrations, and bash. Available in multiple languages.

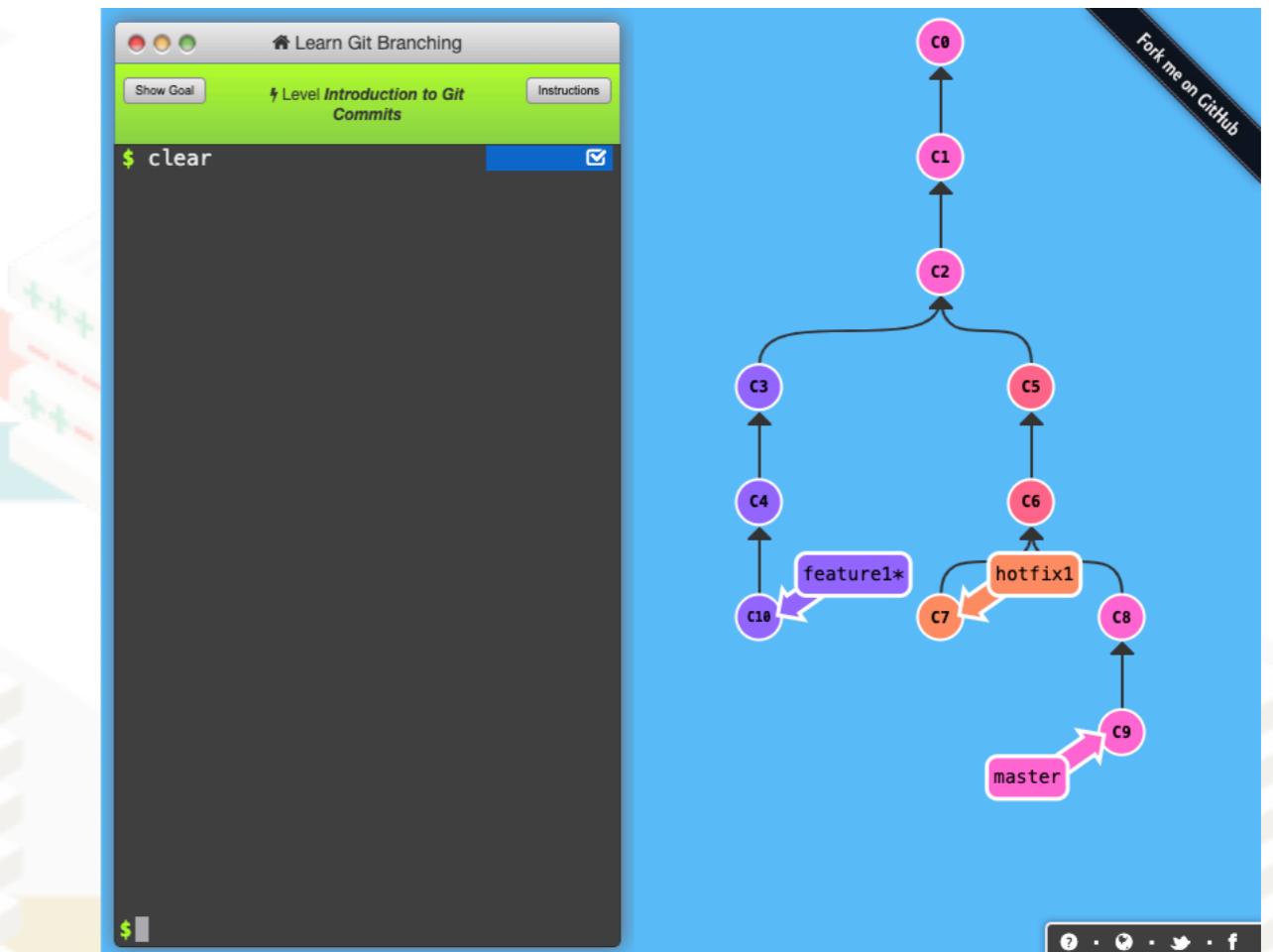
Learn by doing

- Learn Git branching**
Try Git commands right from your web browser. Featuring some of your soon-to-be favorites: branch, add, commit, merge, revert, cherry-pick, rebase!
- Visualizing Git**
Look under the hood! Explore how Git commands affect the structure of a repository within your web browser with a free explore mode, and some constructed scenarios.
- Git-It**
You've downloaded Git, now what? Download Git-It to your machine and you'll get a hands-on tutorial that teaches you to use Git right from your local environment, using commands on real repositories.

Looking for GitHub Training?

- GitHub Learning Lab**
Get the skills you need without leaving GitHub. GitHub Learning Lab takes you through a series of fun and practical projects, sharing helpful feedback along the way.
- Professional training**
Whether you're just getting started or you use GitHub every day, the GitHub Professional Services Team can provide you with the skills your organization needs to work smarter.

<https://learngitbranching.js.org/>



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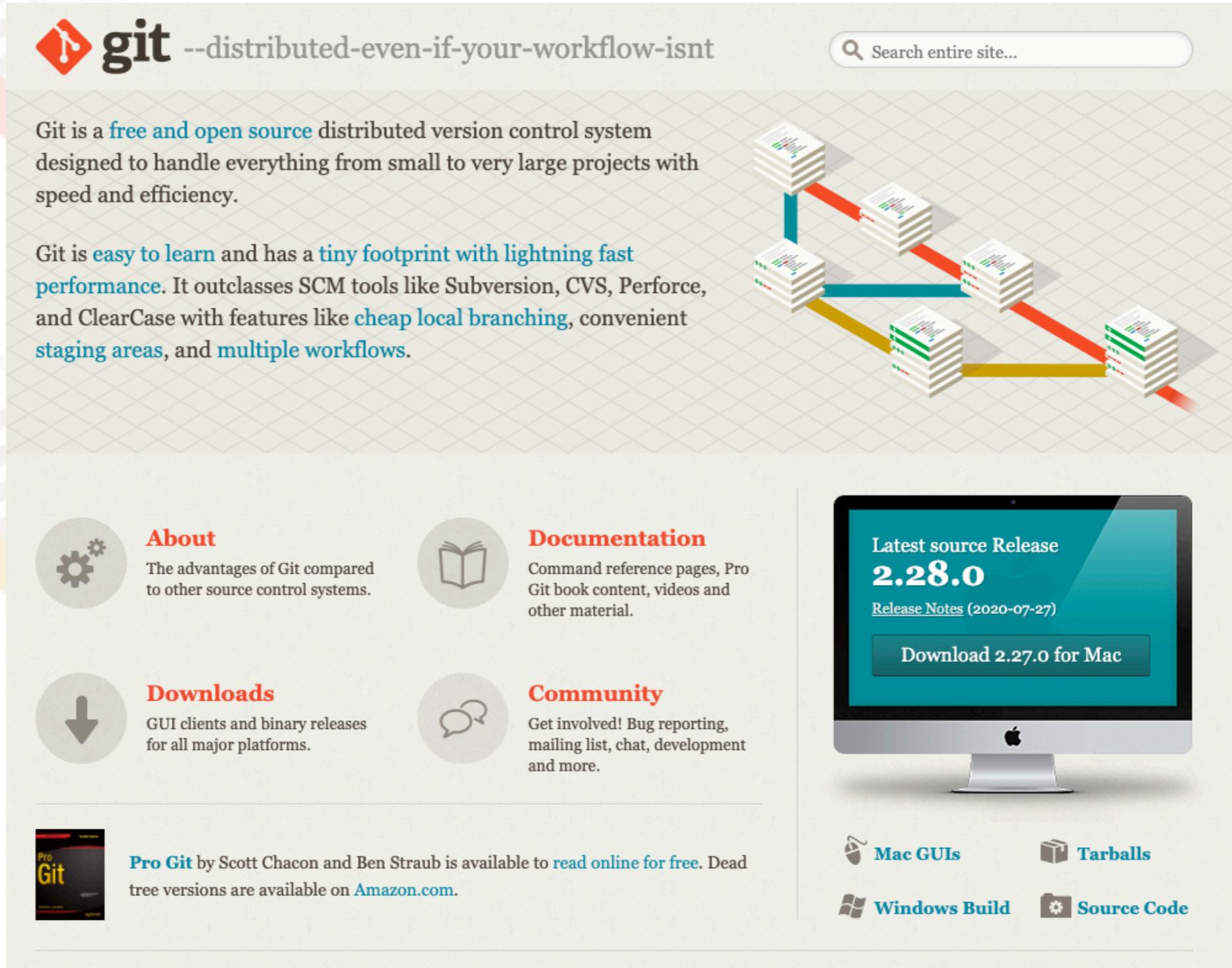
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Install Git

<http://git-scm.com/>



The screenshot shows the official website for Git (<http://git-scm.com/>). At the top left is the Git logo with the tagline "distributed even if your workflow isn't". A search bar is at the top right. Below the header, there's a brief introduction to Git: "Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency." To the right of this text is a diagram illustrating Git's distributed nature, showing multiple repositories connected by red lines on a grid background. The main content area contains several sections: "About" (with a gear icon), "Documentation" (with a book icon), "Downloads" (with a download arrow icon), and "Community" (with a speech bubble icon). On the right side, there's a large image of a computer monitor displaying the "Latest source Release 2.28.0" and a "Download 2.27.0 for Mac" button. Below the monitor are links for "Mac GUIs", "Tarballs", "Windows Build", and "Source Code". At the bottom left, there are icons for GitHub, Bitbucket, and other platforms. The footer contains Creative Commons licensing information: "Share — copy and redistribute the material in any medium or format.", "Adapt — remix, transform, and build upon the material.", and "NonCommercial — You may not use the material for commercial purposes." It also states that the work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.



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Configuration Git on Local Machine

```
$git config --global user.name "your name"
```

```
$git config --global user.email "your email"
```

```
$git config -l
```



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Create a repository

Windows

Select git bash

Mac or Linux

Open Terminal

\$mkdir workspace

\$git init



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Repository structure

\$tree

```
.git
├── HEAD
├── branches
├── config
├── description
└── hooks
    ├── applypatch-msg.sample
    ├── commit-msg.sample
    ├── post-update.sample
    ├── pre-applypatch.sample
    ├── pre-commit.sample
    ├── pre-push.sample
    ├── pre-rebase.sample
    ├── prepare-commit-msg.sample
    └── update.sample
├── info
│   └── exclude
└── objects
    ├── info
    └── pack
└── refs
    ├── heads
    └── tags
```



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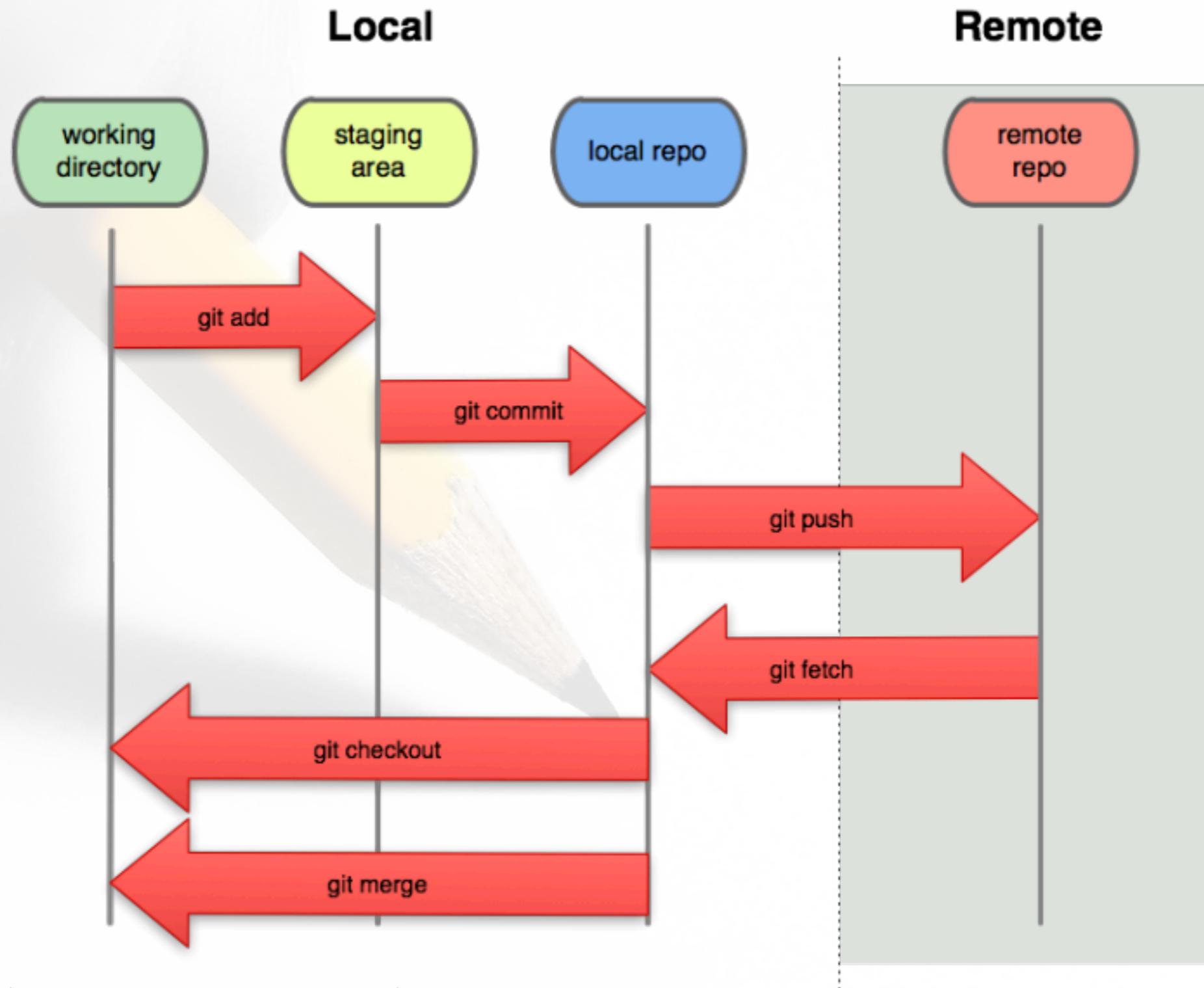
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Working with Git - Local



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Git Workflow



Source: <https://greenido.wordpress.com/2013/07/22/git-101-useful-commands/>



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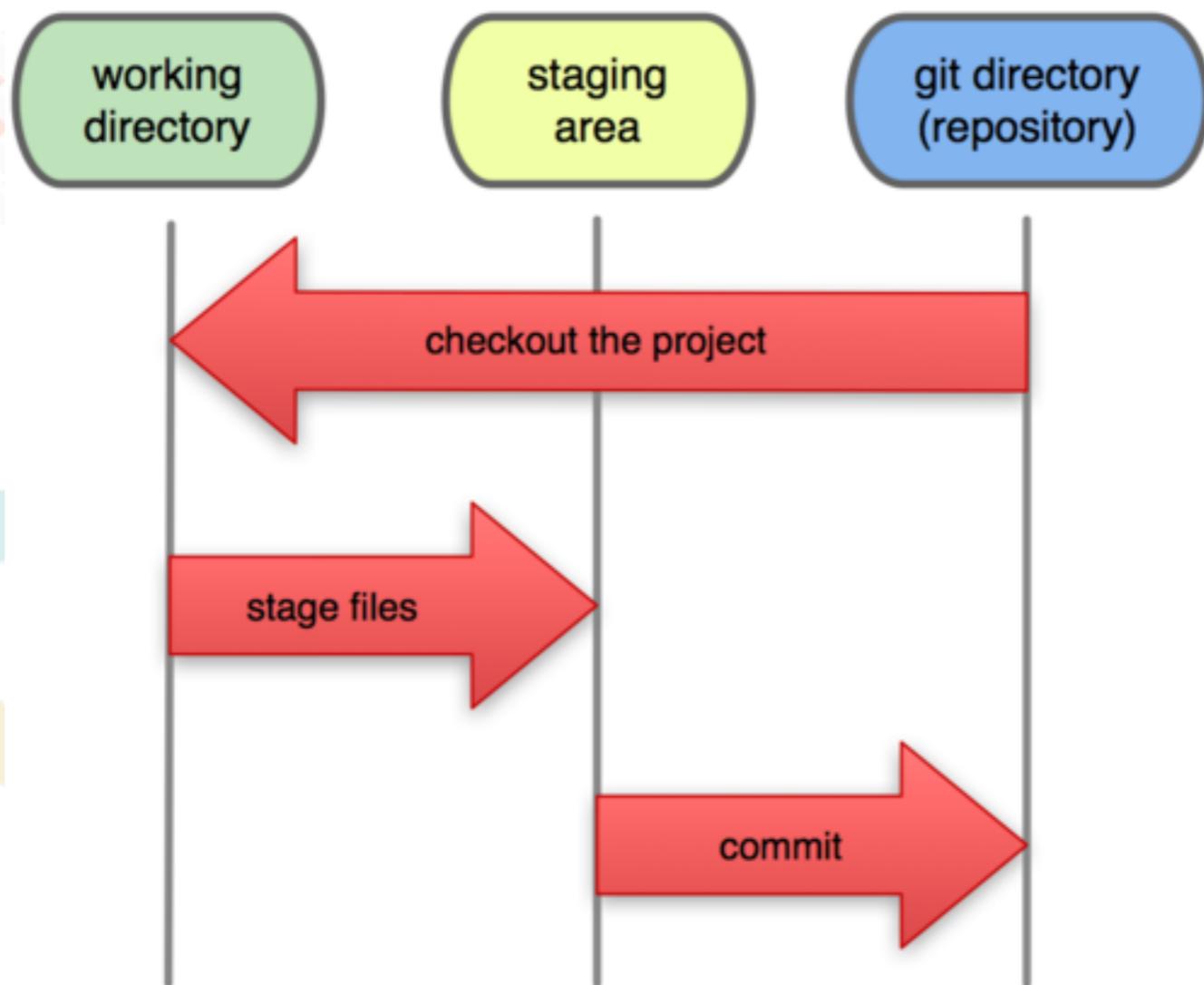
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Git Workflow

Local Operations



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Checking the status

```
$touch README
```

```
$git status
```

```
On branch master
```

```
Initial commit
```

```
Untracked files:
```

```
(use "git add <file>..." to include in what will be committed)
```

```
 README
```

```
nothing added to commit but untracked files present (use "git add" to track)
```



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Lift Cycle of File Status

1. `$touch README`

Untracked

Unmodified

Modified

Staged

Add the file

Edit the file

Stage the file

Remove the file

Commit



README



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Checking the status

```
$git add README
```

```
$git status
```

On branch master

Initial commit

Changes to be committed:

(use "git rm --cached <file>..." to unstage)

new file: README



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Lift Cycle of File Status

1. `$touch README`

Untracked

Unmodified

Modified

Staged

Add the file

2. `$git add README`

Remove the file

Edit the file

Stage the file

Commit



README



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View staged and unstaged change

```
$echo "test" > README
```

```
$git status
```

```
On branch master  
No commits yet  
  
Changes to be committed:  
(use "git rm --cached <file>..." to unstage)  
  new file: README.md  
  
Changes not staged for commit:  
(use "git add <file>..." to update what will be committed)  
(use "git restore <file>..." to discard changes in working directory)  
  modified: README.md
```



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Lift Cycle of File Status

1. `$touch README`

Untracked

Unmodified

Modified

Staged

Add the file

2. `$git add README`

3. `$echo "test" > README`

Edit the file

Remove the file

Stage the file

Commit



README
"TEST"



README
""



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See difference of file

\$git **diff**

```
diff --git a/README b/README
index e69de29..9daeafb 100644
--- a/README
+++ b/README
@@ -0,0 +1 @@
+test
```



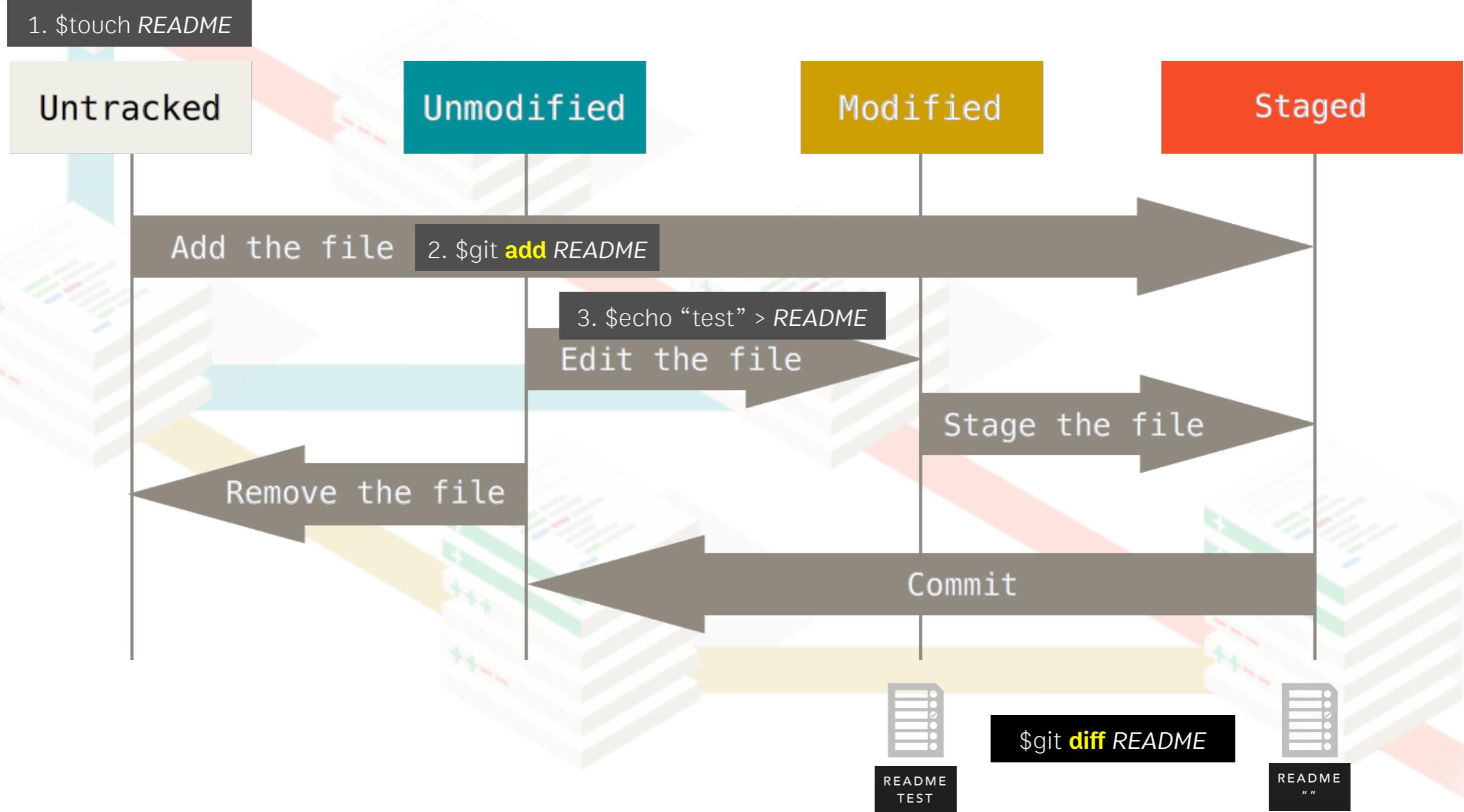
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Lift Cycle of File Status



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Commit your changes

```
$git commit -m "Message for this change"
```

```
[master (root-commit) c928f65] Message for this change
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 README.md
```

```
$git status
```

```
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
    modified:   README

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



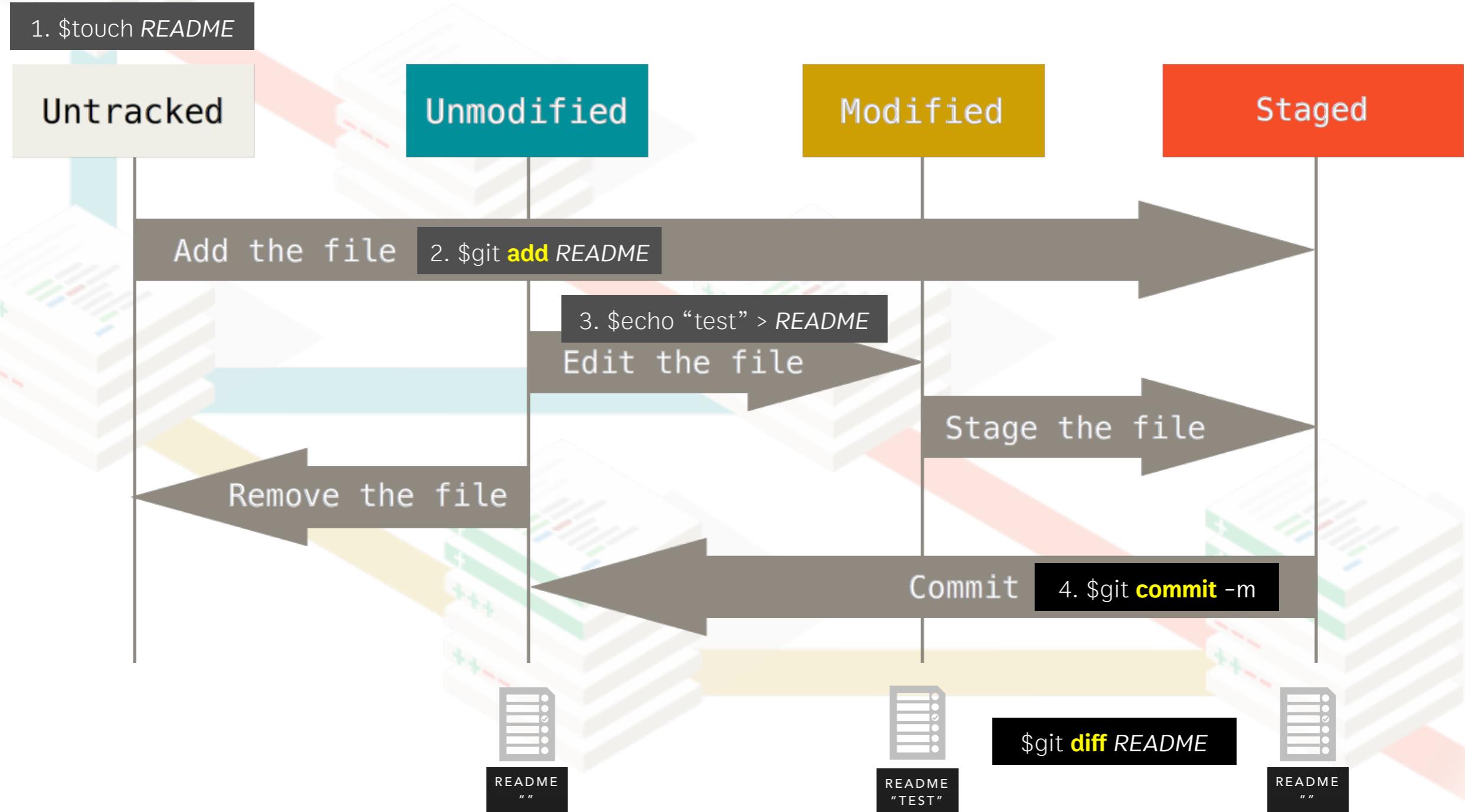
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Lift Cycle of File Status



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Checking the status

```
$git add README
```

```
$git status
```

```
On branch master
```

```
Changes to be committed:
```

```
(use "git restore --staged <file>..." to unstage)  
modified: README
```



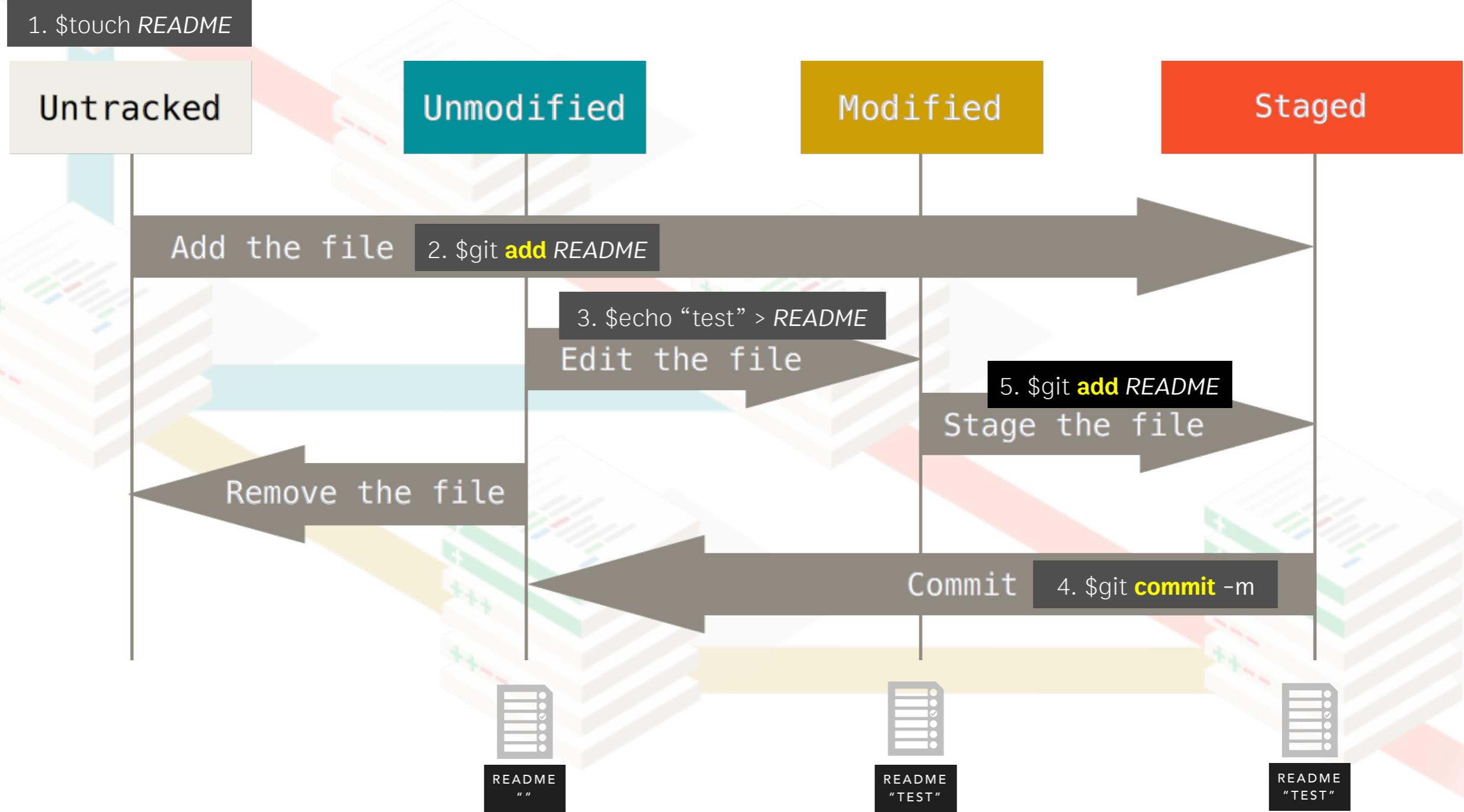
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Lift Cycle of File Status



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See difference of file

\$git **diff**



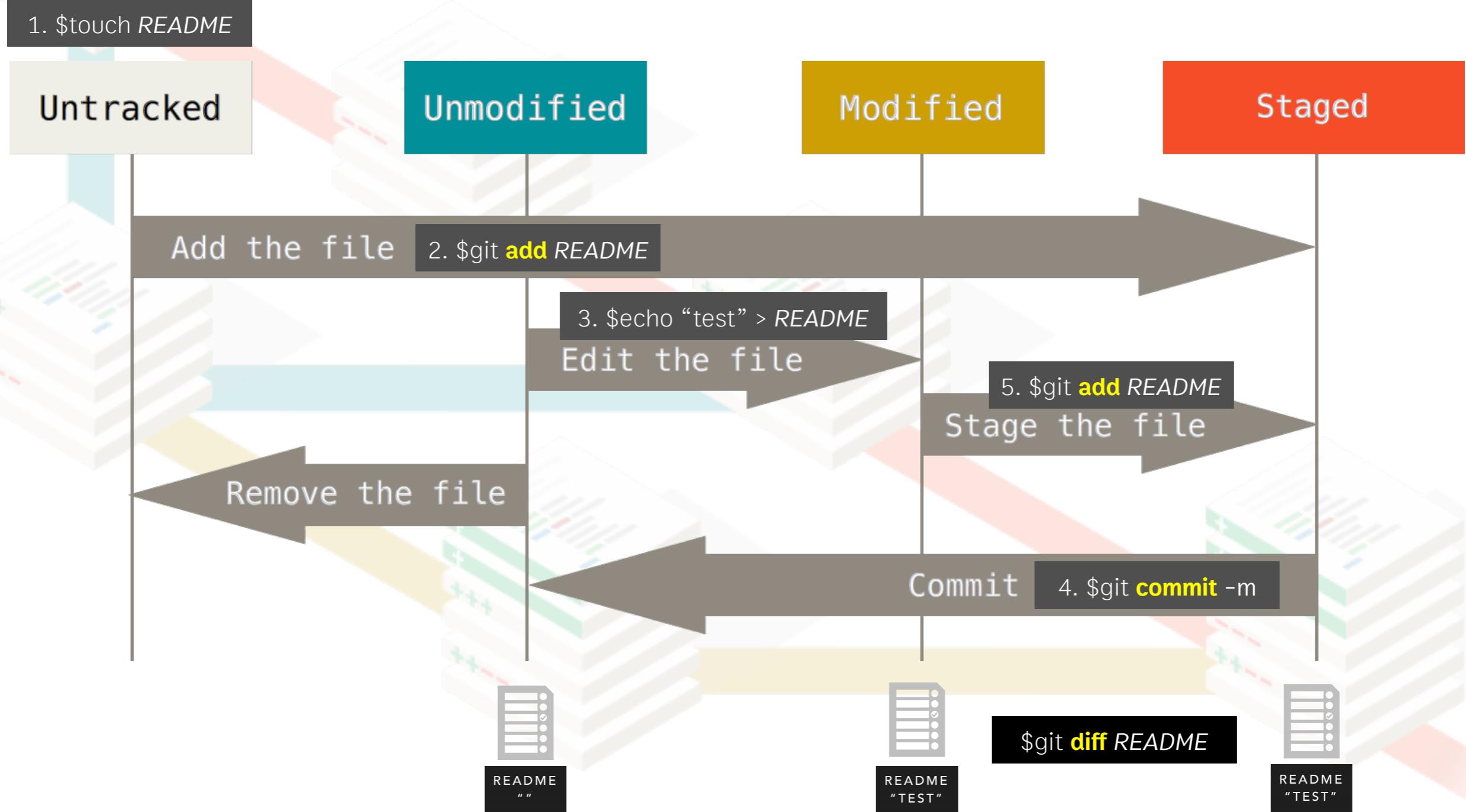
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Lift Cycle of File Status



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See difference of file with history

\$git **diff** --cached

\$git **diff** --staged

```
diff --git a/README b/README
index e69de29..9daeaaf 100644
--- a/README
+++ b/README
@@ -0,0 +1 @@
+test
```



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Lift Cycle of File Status

1. `$touch README`

Untracked

Unmodified

Modified

Staged

Add the file

2. `$git add README`

3. `$echo "test" > README`

Edit the file

5. `$git add README`

Stage the file

Remove the file

Commit

4. `$git commit -m`

`$git diff README --cached`

`$git diff README --staged`

README
"



README
"TEST"



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Modify again ?

\$echo “testing” > README

\$git **status**

\$git **diff**



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Lift Cycle of File Status

1. `$touch README`

Untracked

Unmodified

Modified

Staged

Add the file

2. `$git add README`

3. `$echo "test" > README`

Edit the file

6. `$echo "testing" > README`

Remove the file

5. `$git add README`

Stage the file

Commit

4. `$git commit -m`

`$git diff README`

`README
"TEST"`

`README
"TESTING"`

`README
""`

`$git diff README --cached`



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ADD and Commit

Tips

```
$git commit -a -m "Message for this change"
```



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Lift Cycle of File Status

1. `$touch README`

Untracked

Unmodified

Modified

Staged

Add the file

2. `$git add README`

Remove the file

3. `$echo "test" > README`

Edit the file

6. `$echo "testing" > README`

5. `$git add README`

Stage the file

Commit

4. `$git commit -m`

7. `$git commit -a -m`

`$git diff README`

README
"TESTING"

README
"TESTING"

README
"TESTING"

`$git diff README --cached`



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Checking the status

\$git **status**

On branch master
nothing to commit, working tree clean



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Remove your files

\$rm *README*

\$git **status**

On branch master

Changes not staged for commit:

(use "git add/rm <file>..." to update what will be committed)

(use "git checkout -- <file>..." to discard changes in working directory)

deleted: README

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



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Remove your files

```
$git rm README
```

```
$git status
```

```
On branch master
Changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

    deleted:    README
```



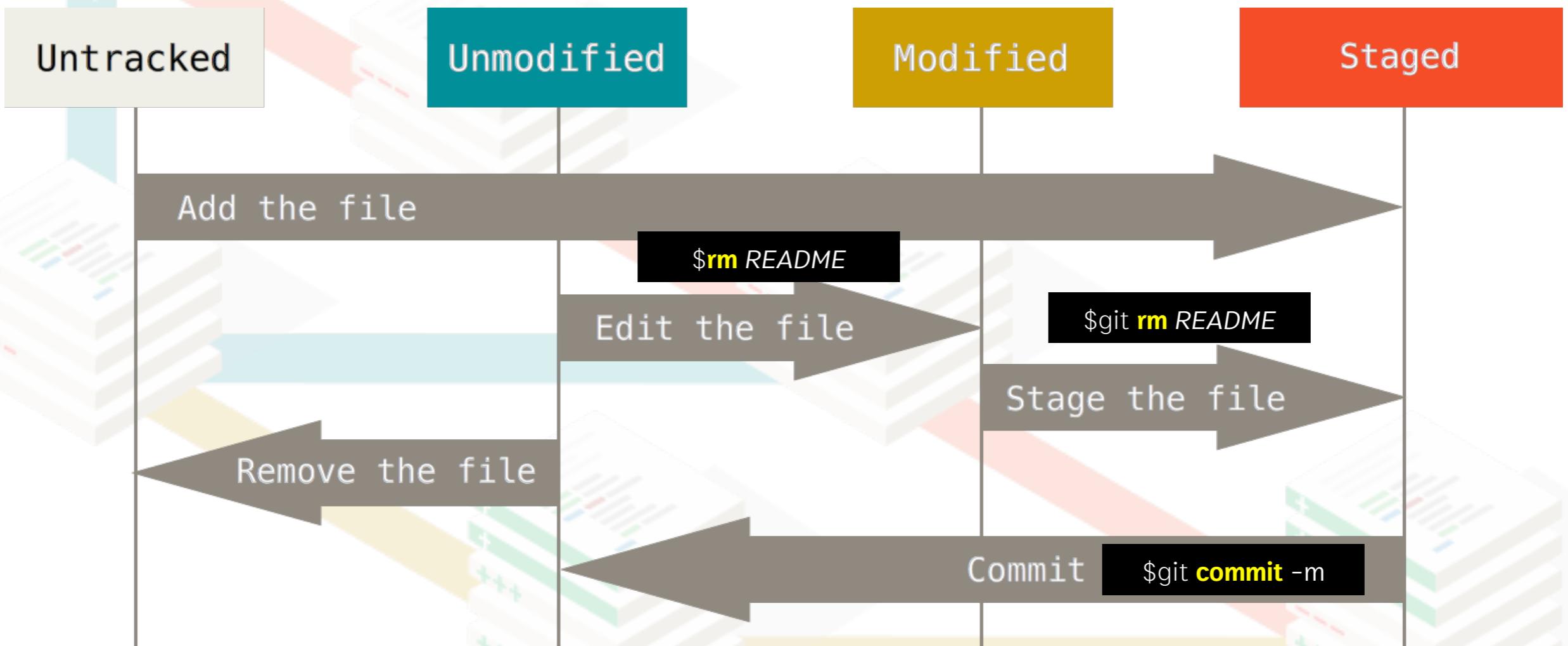
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Lift Cycle of File Status



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Ignore files and folders

\$touch *.gitignore*

\$vi *.gitignore*

\$git **add** *.gitignore*

\$git **status**



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.gitignore Template

A collection of `.gitignore` templates

This is GitHub's collection of `.gitignore` file templates. We use this list to populate the `.gitignore` template choosers available in the GitHub.com interface when creating new repositories and files.

For more information about how `.gitignore` files work, and how to use them, the following resources are a great place to start:

- The [Ignoring Files chapter](#) of the [Pro Git book](#).
- The [Ignoring Files article](#) on the GitHub Help site.
- The [gitignore\(5\)](#) manual page.

<https://github.com/github/gitignore>



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Try to reset README file

\$git **WHAT COMMAND?**

\$git **help**

\$git

\$git **status**

On branch master
nothing to commit, working directory clean



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Move your files

```
$git mv README README.MD
```

```
$git status
```

```
On branch master
Changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

    renamed:  README -> README.md
```



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Move your files

\$git **mv** *README README.MD*

\$mv README README.MD

\$git rm README

\$git add README.md



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Working with Branching



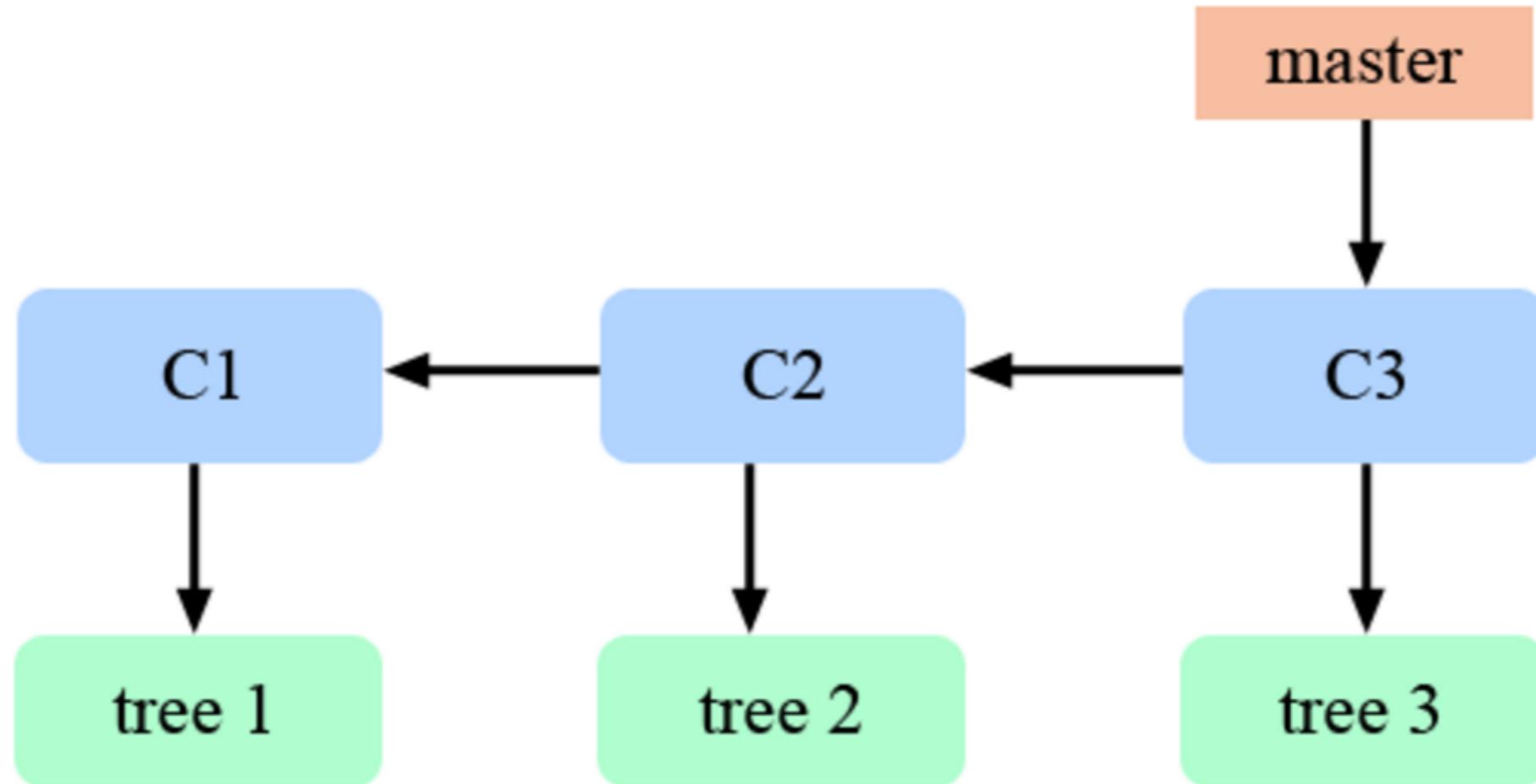
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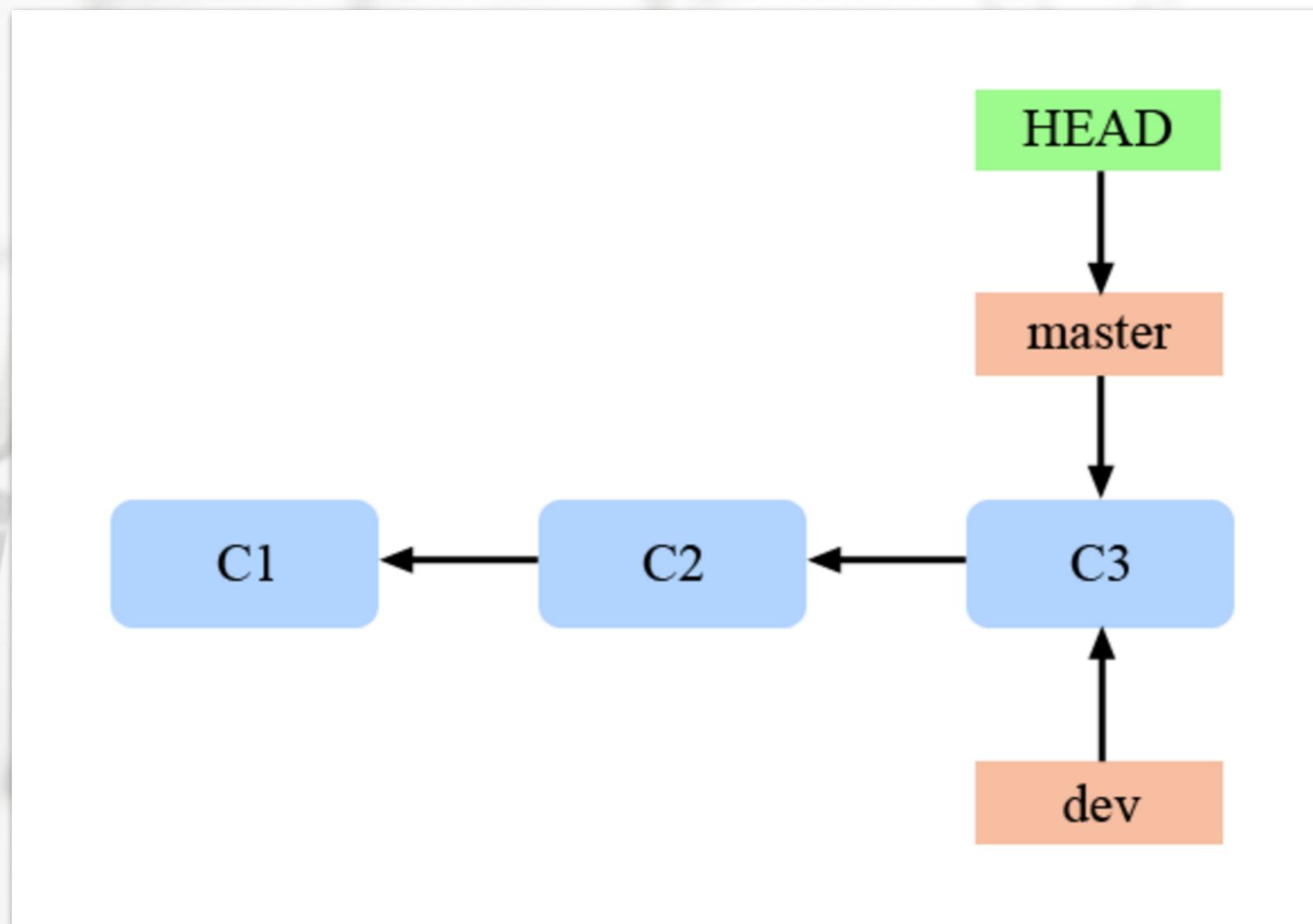
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Each branch points to a commit



Create new branch

\$git **branch** BRANCH NAME



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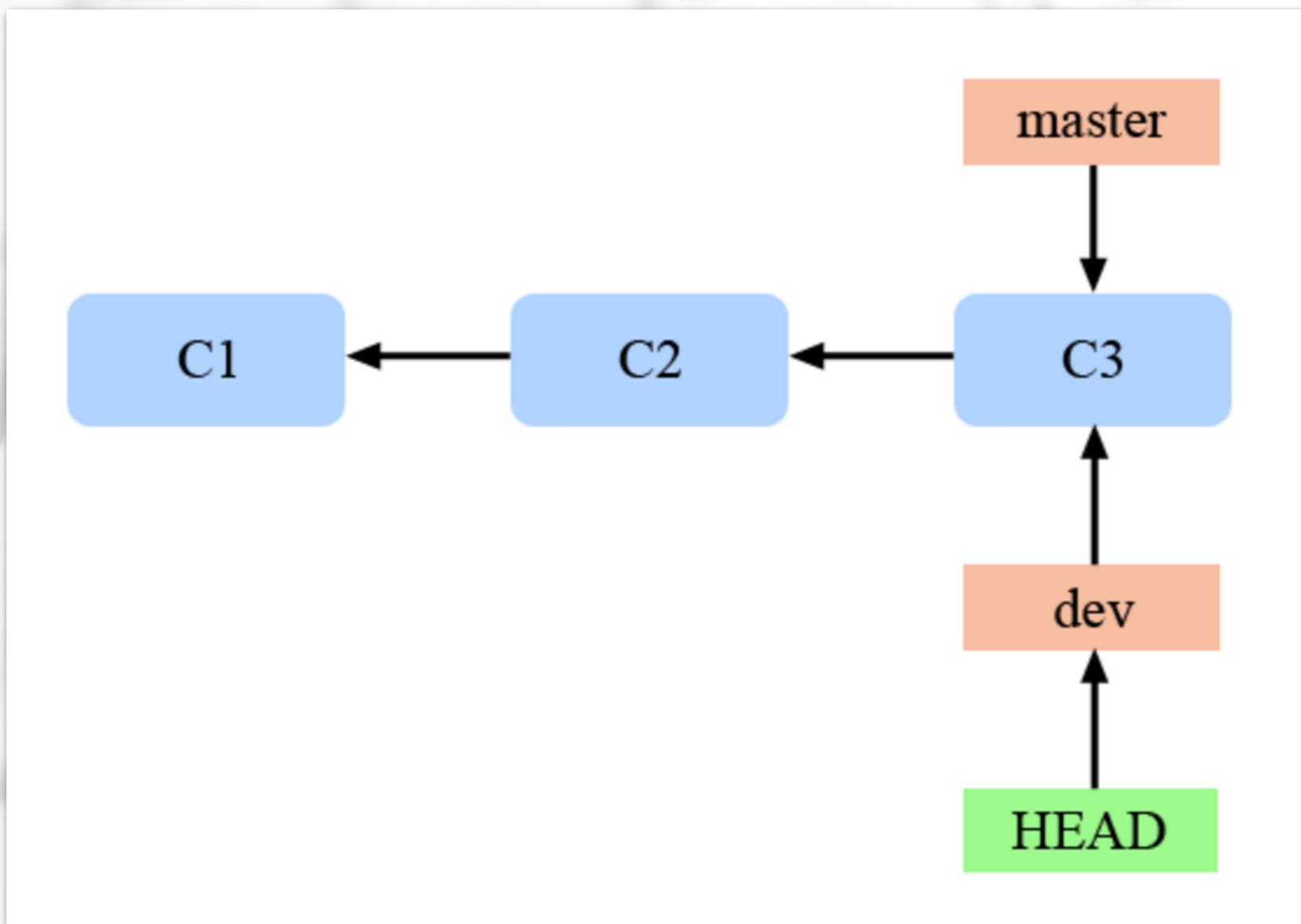
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Switch branch

\$git **checkout** BRANCH NAME



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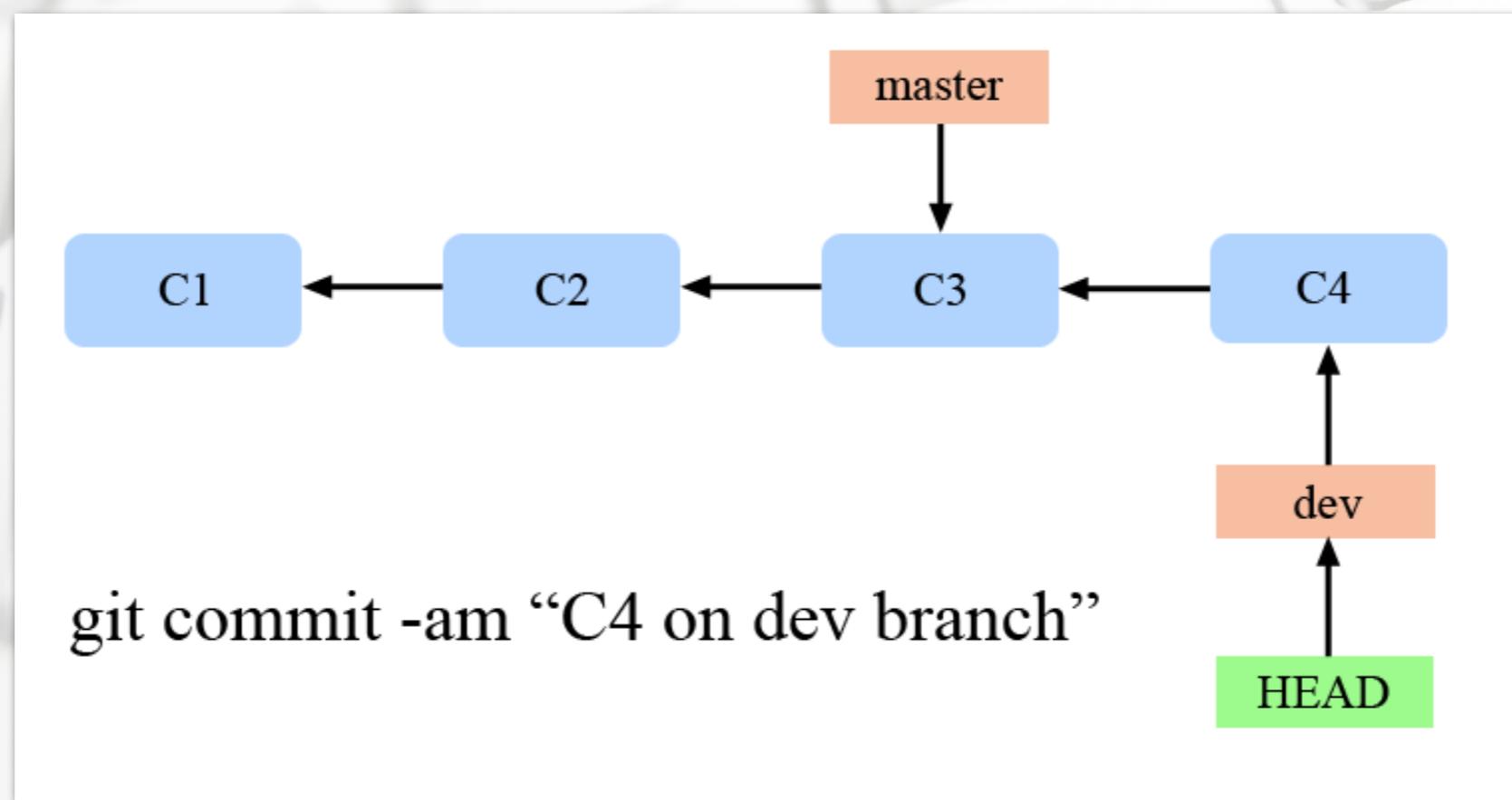
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Modified and commit on branch

\$echo “On Branch” > *README*

\$git **commit** -am “C4 on dev”

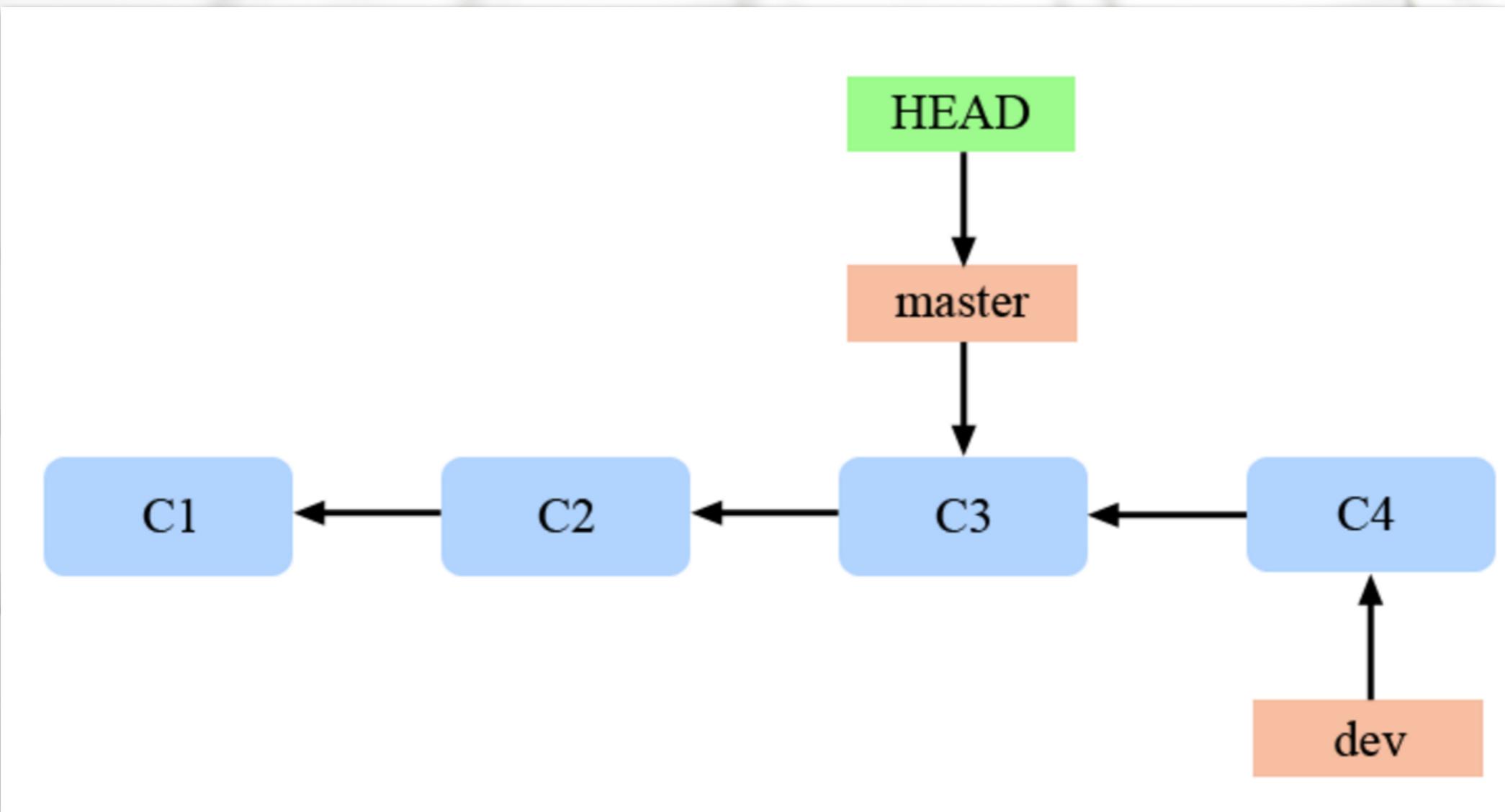


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Switch to master branch

\$git **checkout** master



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Create and Switch branch

`$git checkout -b BRANCH NAME`

`$git branch BRANCH NAME`

`$git checkout BRANCH NAME`



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Delete and Show all branch

```
$git branch -d BRANCH NAME
```

```
$git branch
```



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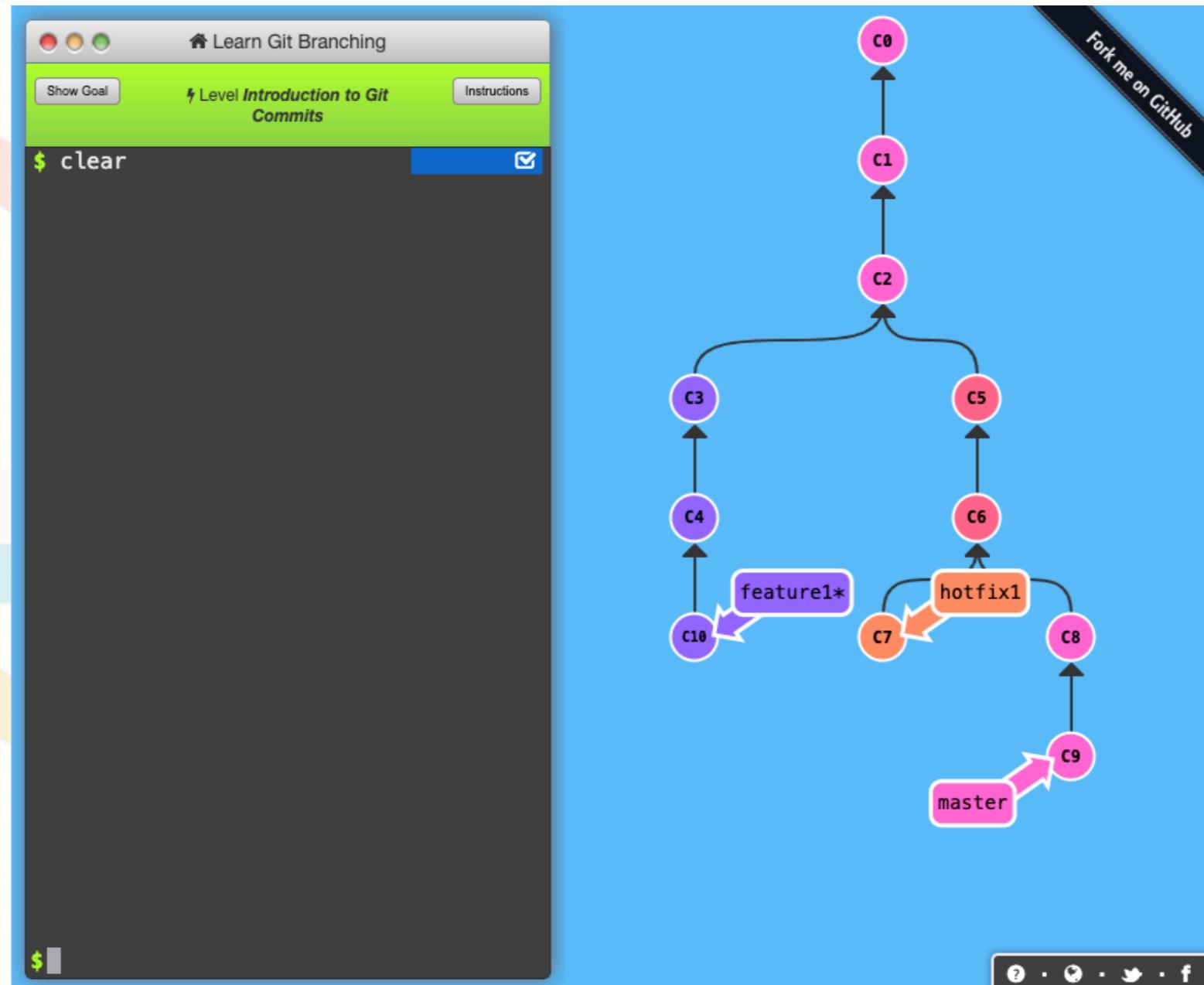
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Let DEMO

<https://learngitbranching.js.org/>



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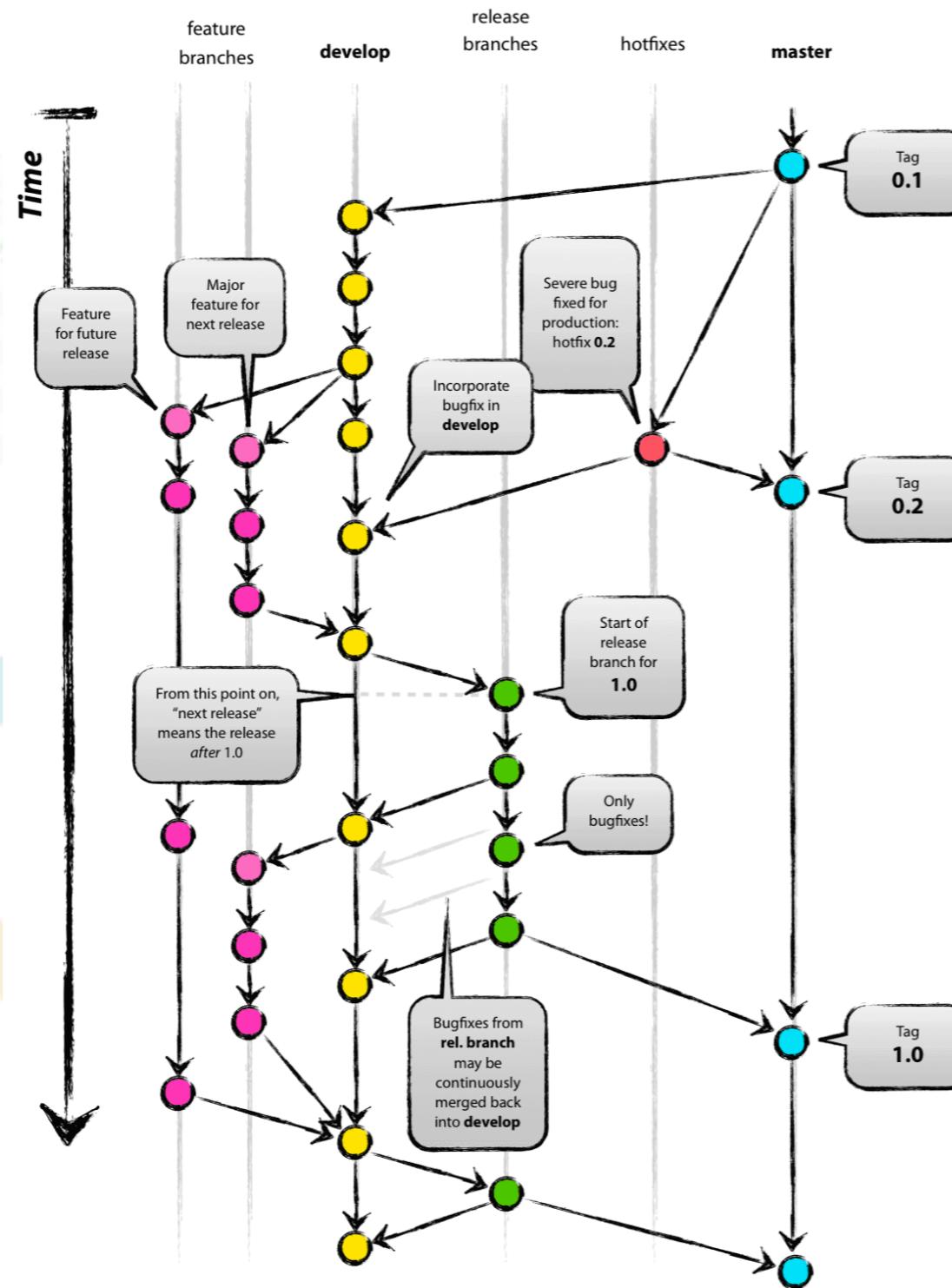
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Git branch

<https://nvie.com/posts/a-successful-git-branching-model/>



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keep master running



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CC



Need to fix bug ?



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Branch by Feature

\$git checkout **feature**

feature

master



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\$git **checkout -b feature**



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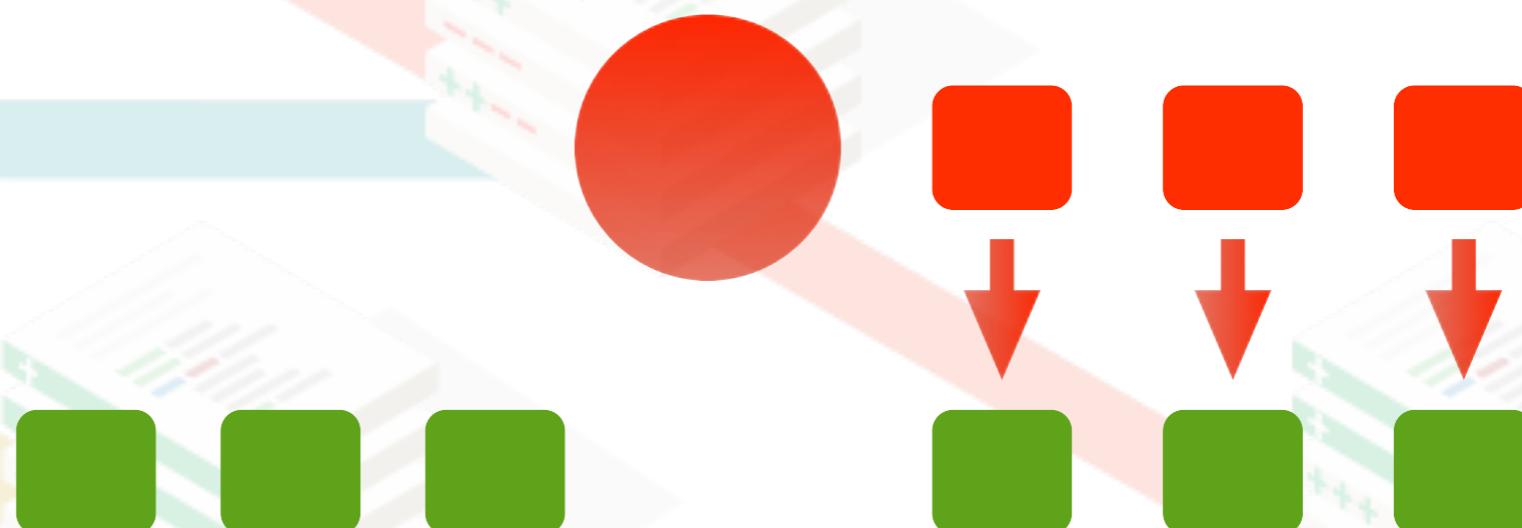
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When ready to merge into master

```
$git merge feature master
```

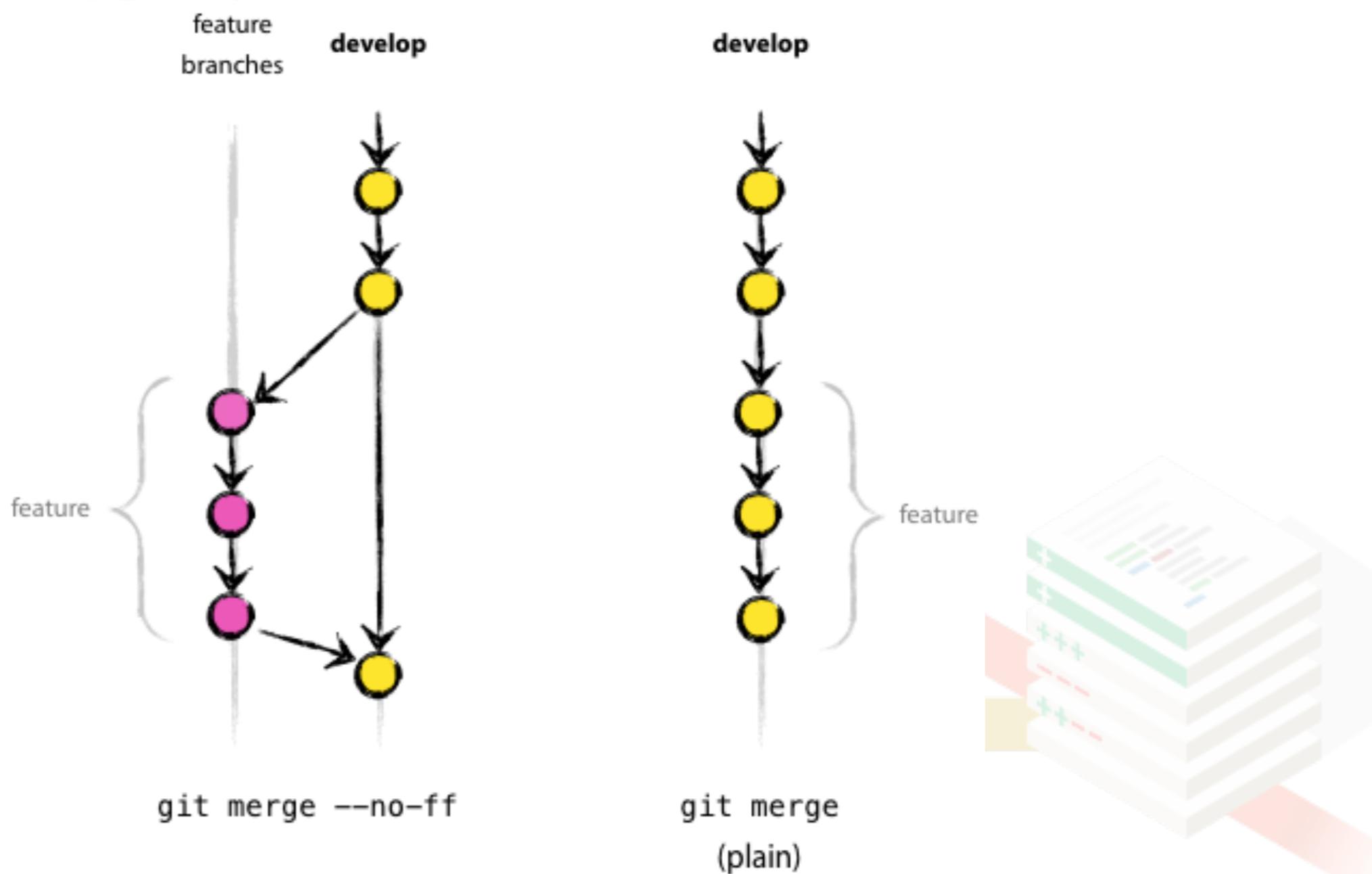
feature

master



Git Merge – no Fast Forward

\$git **merge** —no-ff



Git Branch

branching is cheap

painless development

delete branch if it's not work

delete branch if it's not use



Working with Remote Repository



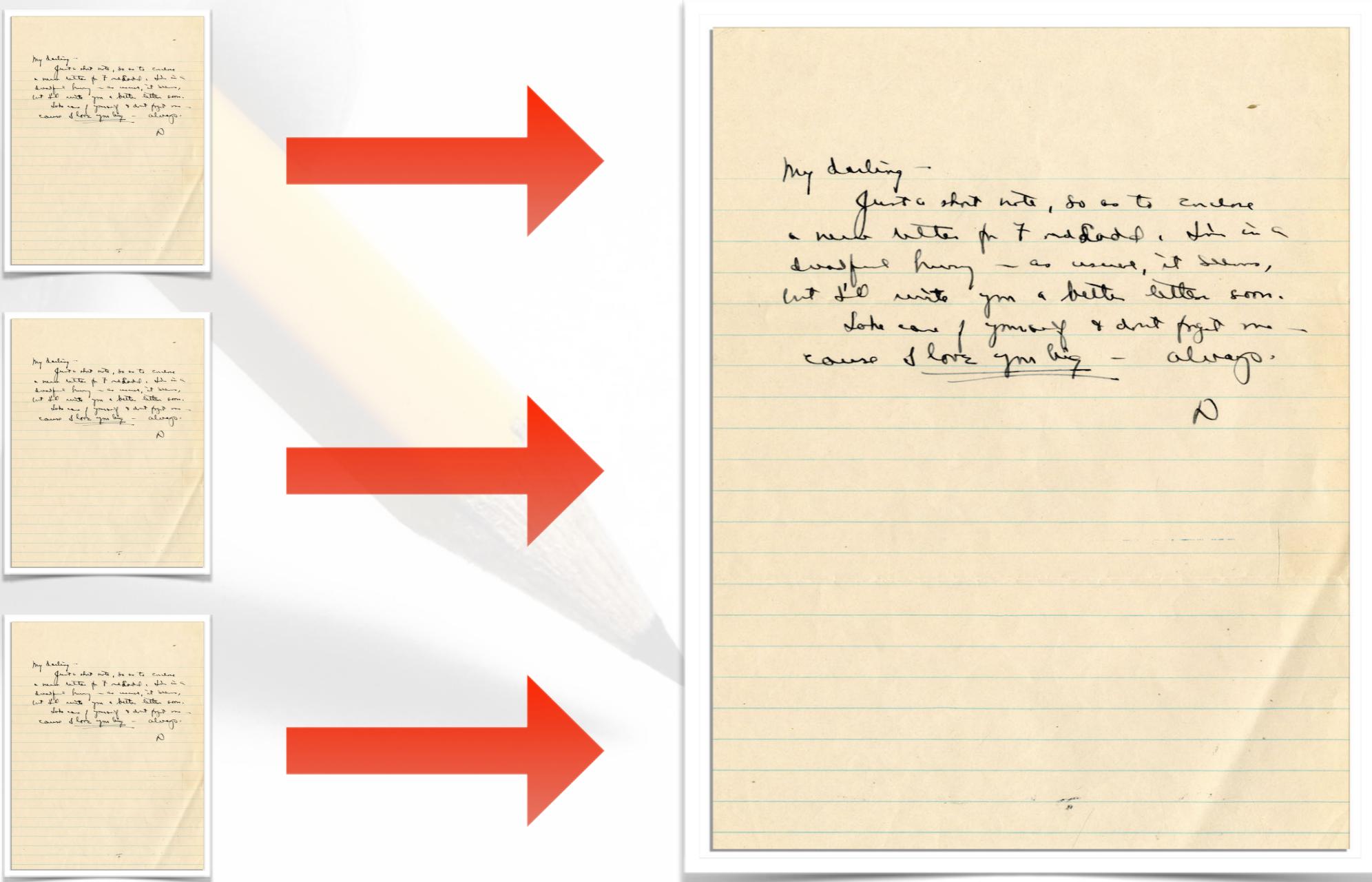
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All become One



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Working on GitHub

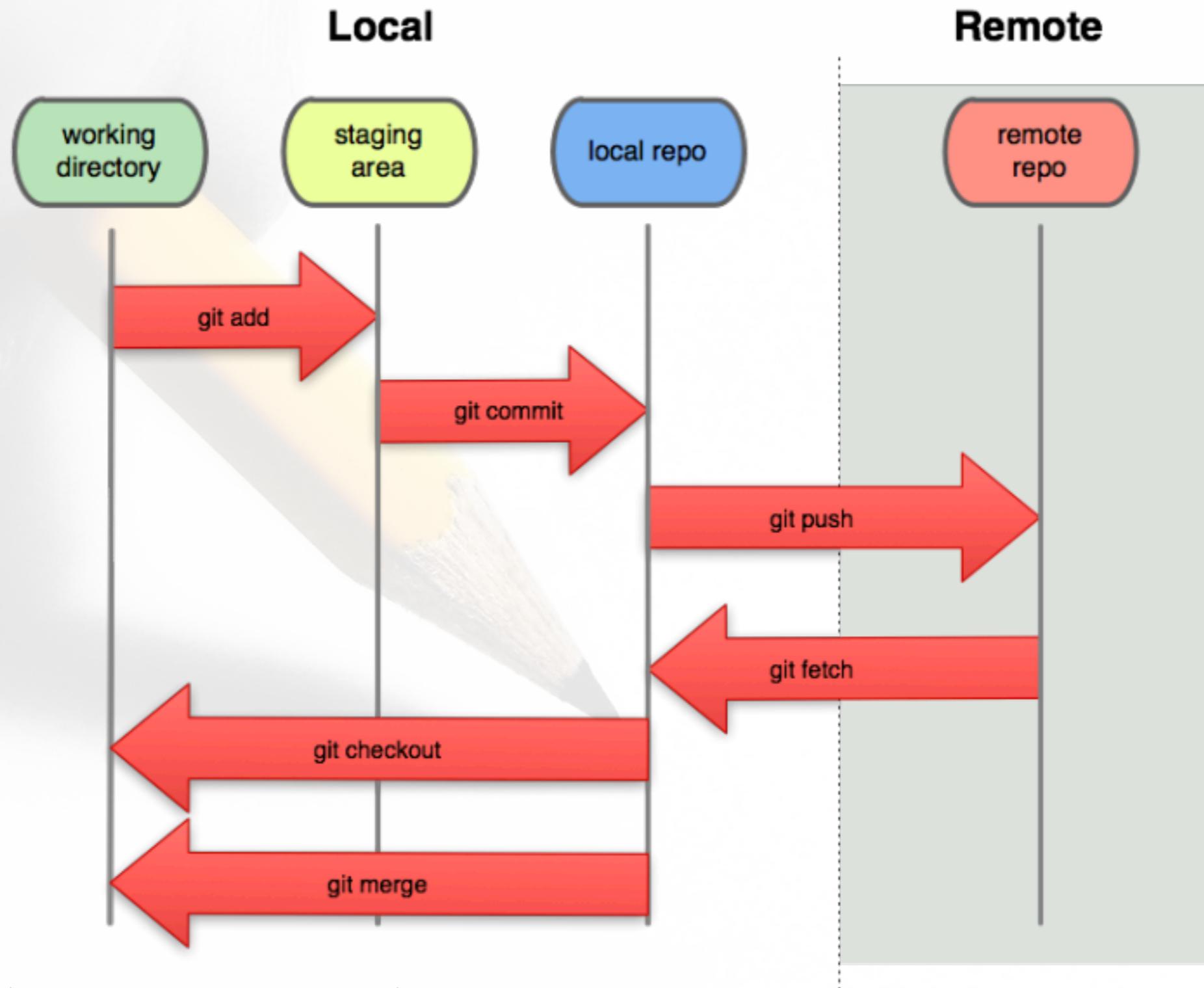
<https://learngitbranching.js.org/>

The screenshot shows the GitHub homepage with a dark background. On the left, there's a large white text "Built for developers". Below it is a paragraph of text: "GitHub is a development platform inspired by the way you work. From open source to business, you can host and review code, manage projects, and build software alongside 50 million developers." At the top, there's a navigation bar with links like "Why GitHub?", "Team", "Enterprise", "Explore", "Marketplace", "Pricing", "Search GitHub", "Sign in", and "Sign up". A prominent sign-up form is on the right, containing fields for "Username", "Email", and "Password", along with a note about password requirements and a "Sign up for GitHub" button.



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Git Workflow



Source: <https://greenido.wordpress.com/2013/07/22/git-101-useful-commands/>



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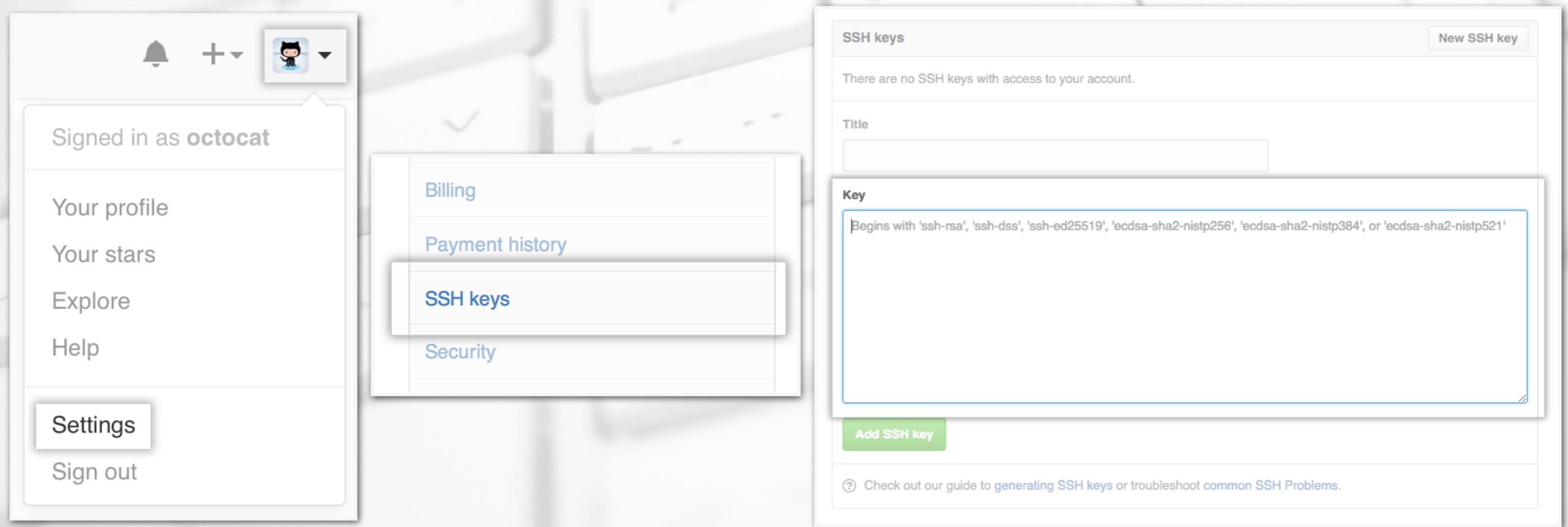
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Generate ssh key and add to Github

\$ssh-keygen

\$pbcopy < ~/.ssh/id_rsa.pub



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Testing your SSH connection

```
$ ssh -T git@github.com
```

The authenticity of host 'github.com (192.30.252.1)' can't be established.
RSA key fingerprint is 16:27:ac:a5:76:28:2d:36:63:1b:56:4d:eb:df:a6:48.
Are you sure you want to continue connecting (yes/no)?

The authenticity of host 'github.com (192.30.252.1)' can't be established.
RSA key fingerprint is nThbg6kXUpJWGl7E1IGOCspRomTxCARLviKw6E5SY8.
Are you sure you want to continue connecting (yes/no)?

Hi *username*! You've successfully authenticated, but GitHub does not provide shell access.



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Add and Rename remote

\$git **remote add** [NICKNAME] [REMOTE URL]

\$git **remote rm** [NICKNAME]

\$git **remote rm** [OLD NICKNAME] [NEW NICKNAME]



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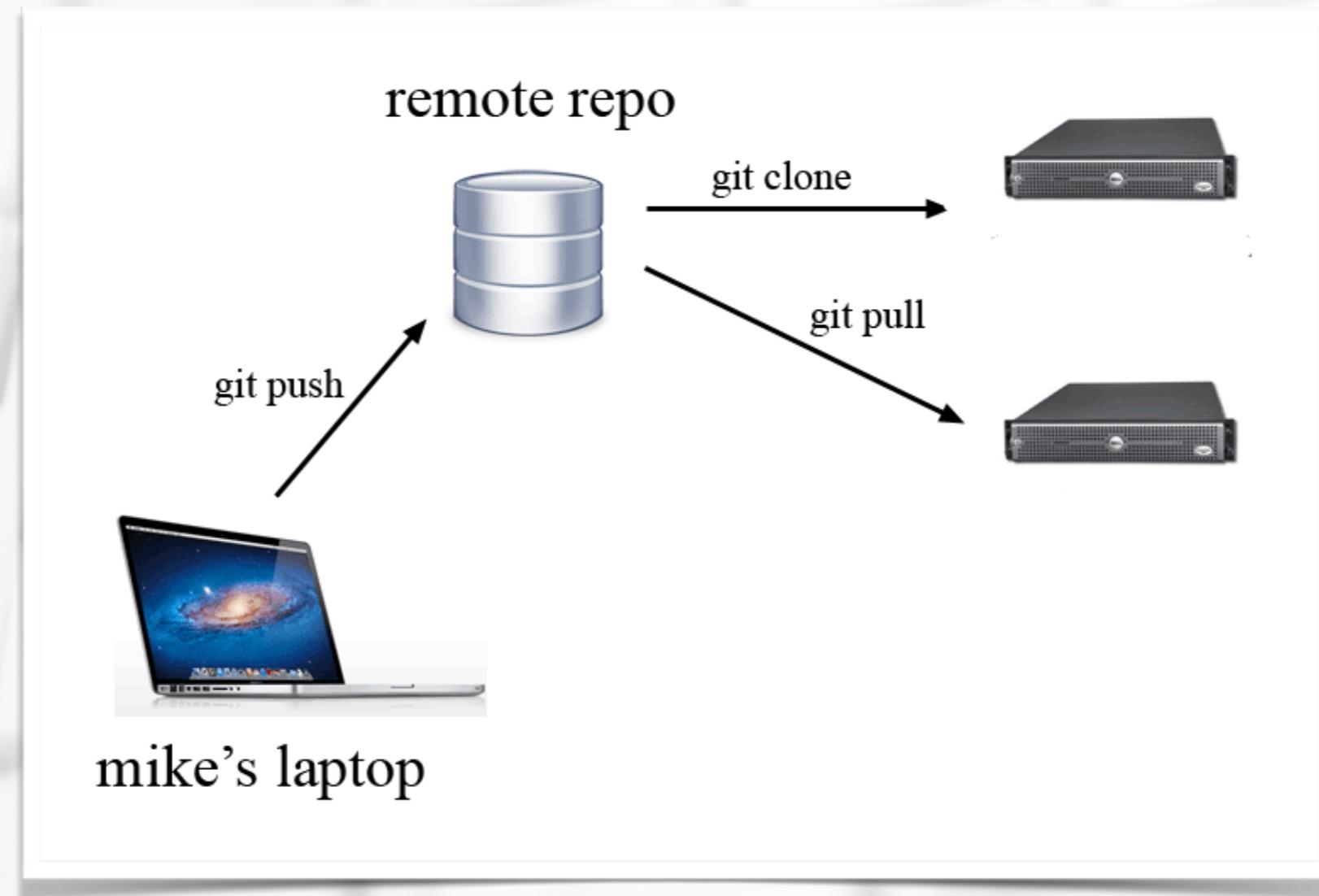
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Push to remote

\$git **push** [NICKNAME] [BRANCH]



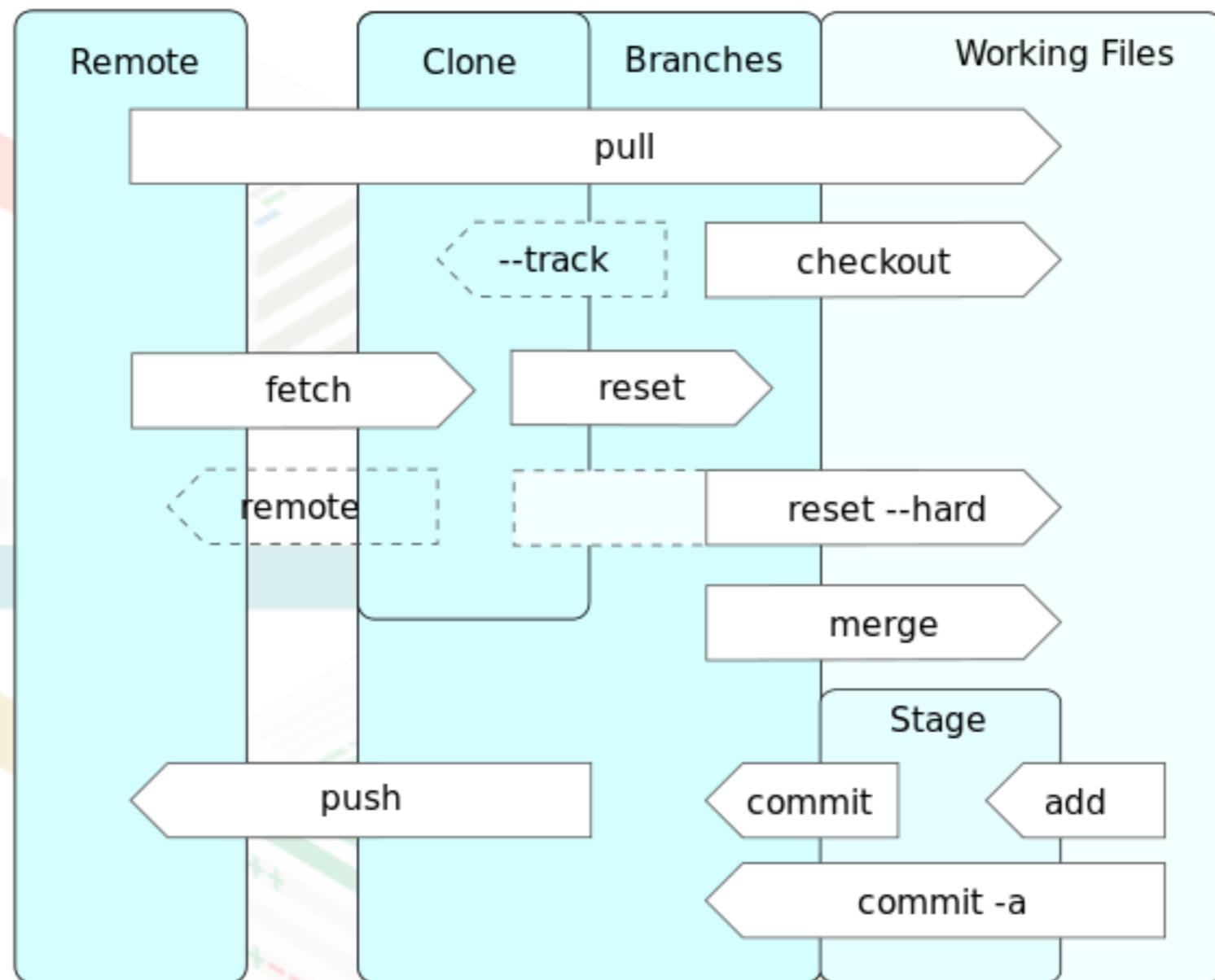
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Git Operation



Source: https://en.wikipedia.org/wiki/Git#/media/File:Git_operations.svg



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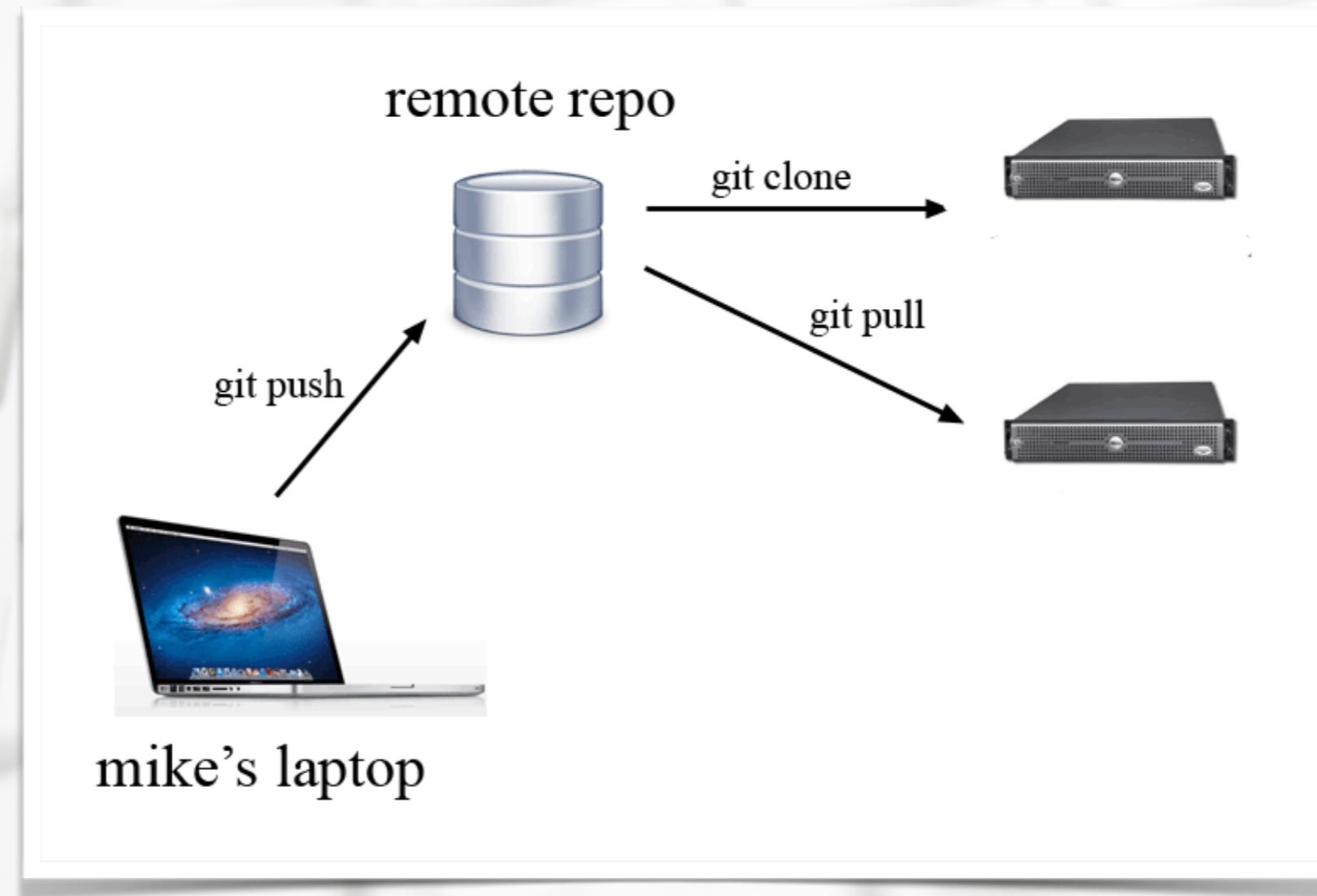
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Fetch and Merge

\$git **pull** [NICKNAME] [BRANCH]



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Fetch and Merge

`$git pull [NICKNAME] [BRANCH]`

`$git fetch [NICKNAME]`

`$git merge [BRANCH]`



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**BRANCHED FROM MASTER 3
WEEKS AGO**



**MERGED BACK WITHOUT
ANY CONFLICTS**



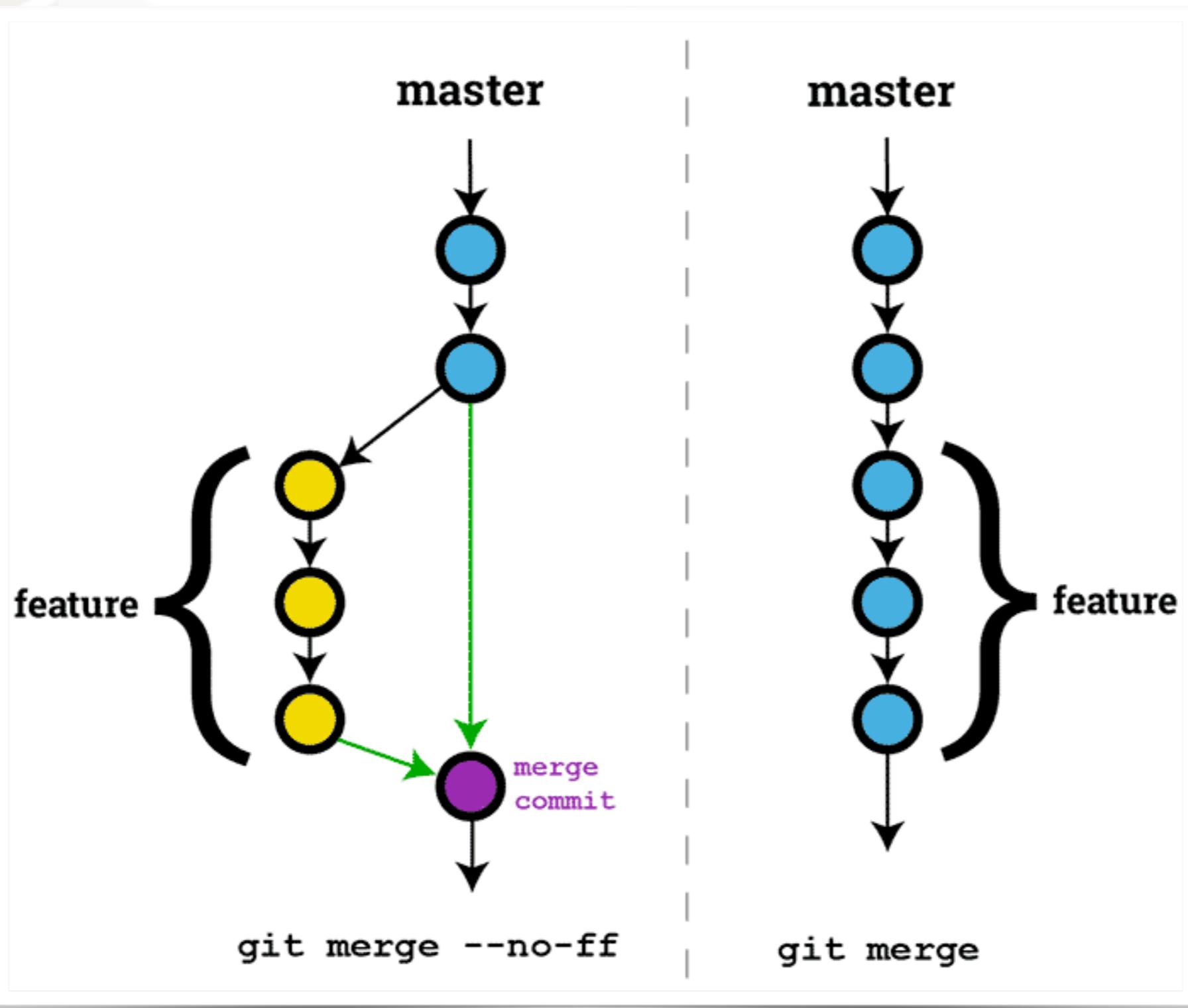
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Merge and Rebase



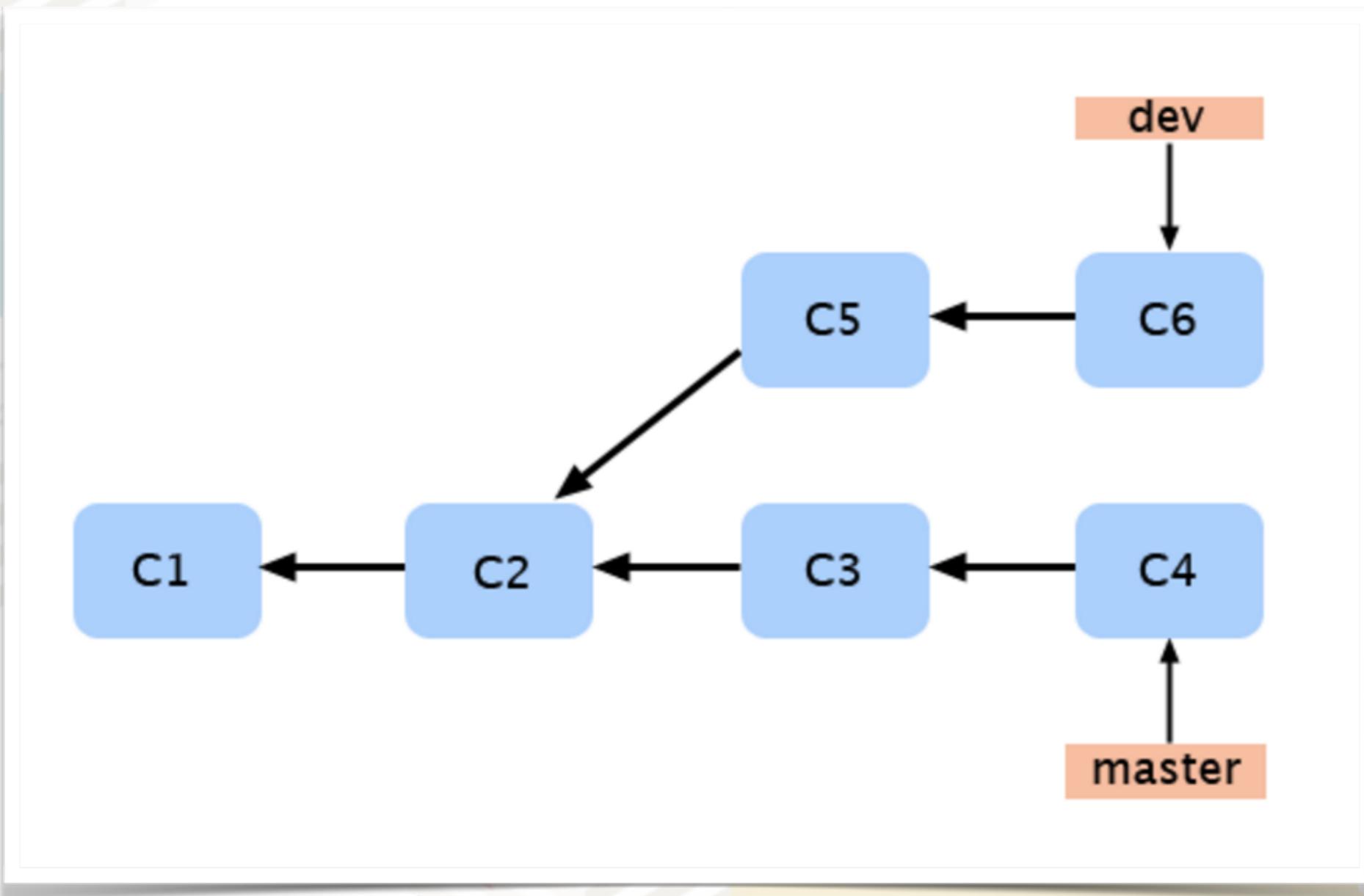
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Start before Merge



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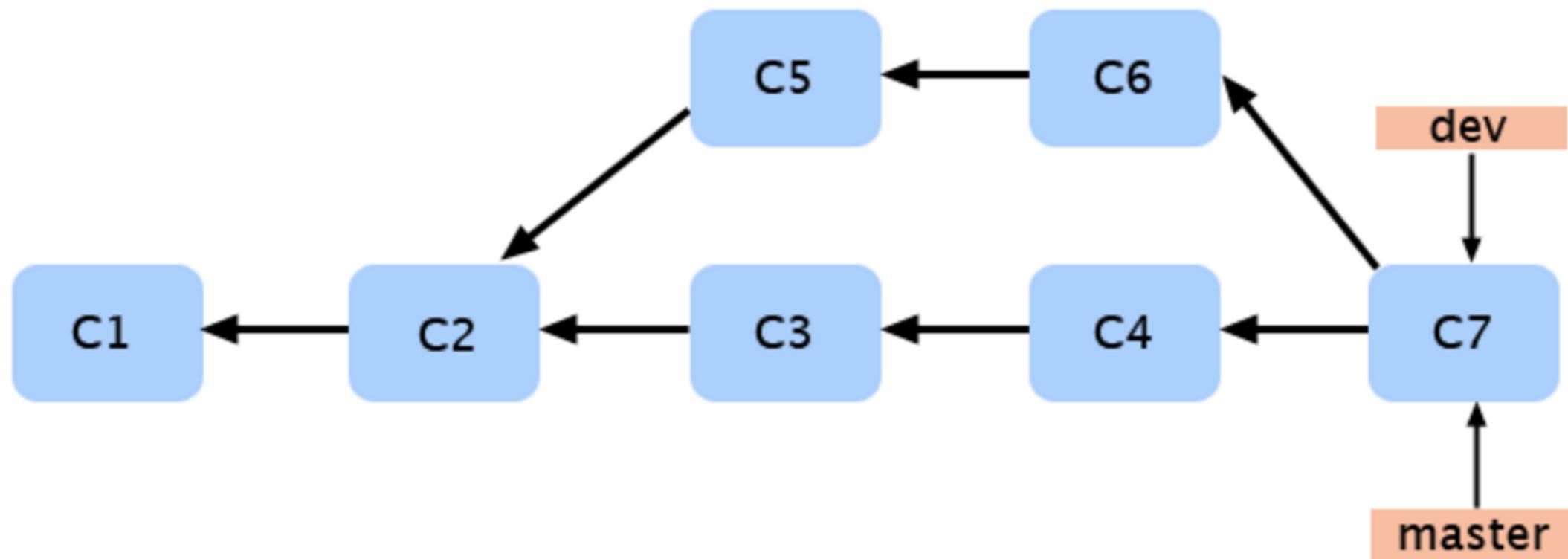
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After Merge

\$git **merge**



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Avoid Merge Conflict

Small change and commit

Early merge

Single Responsibility Principle

Communication is a Key

Mob programming



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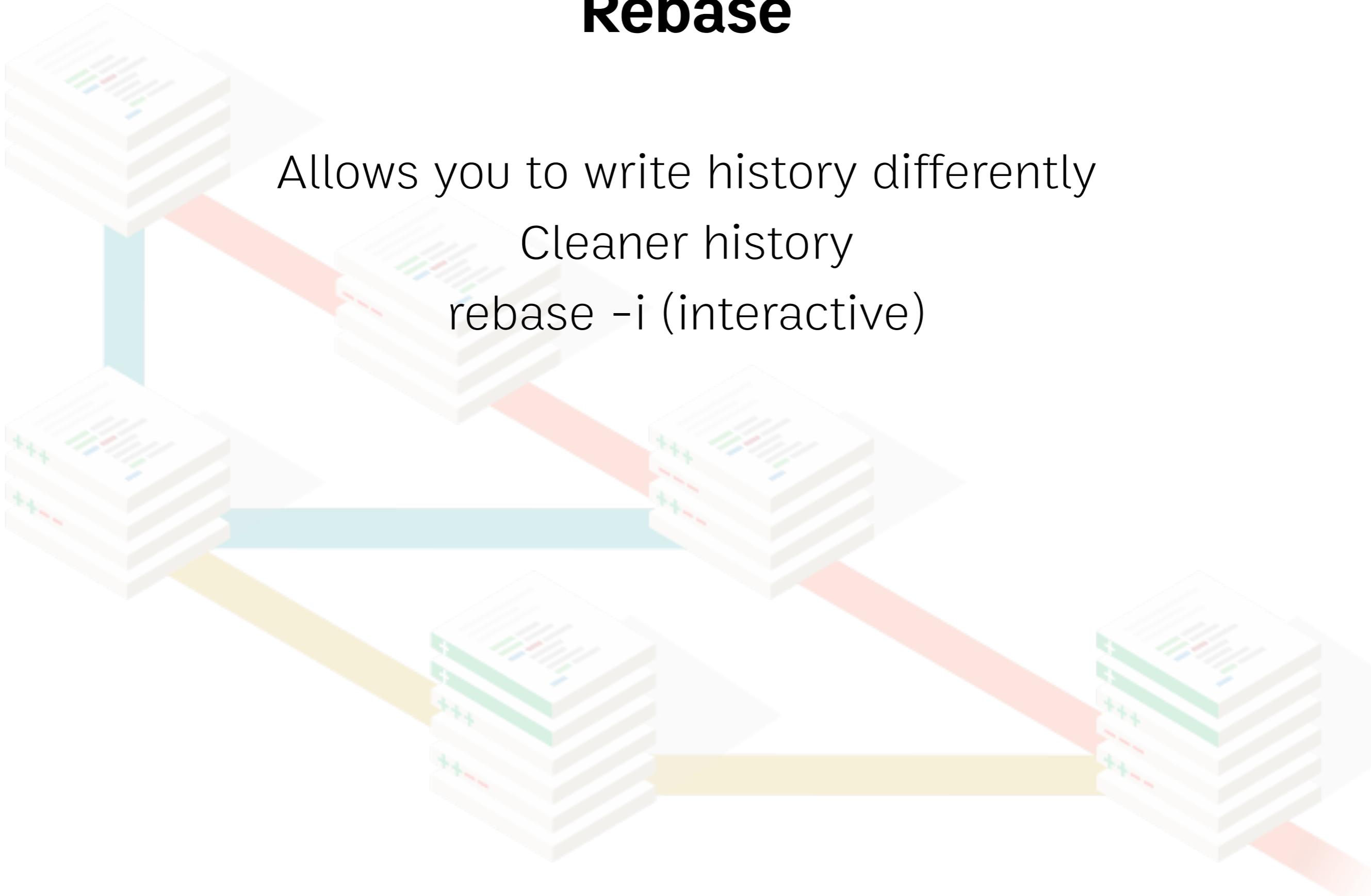
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Rebase

Allows you to write history differently
Cleaner history
`rebase -i (interactive)`



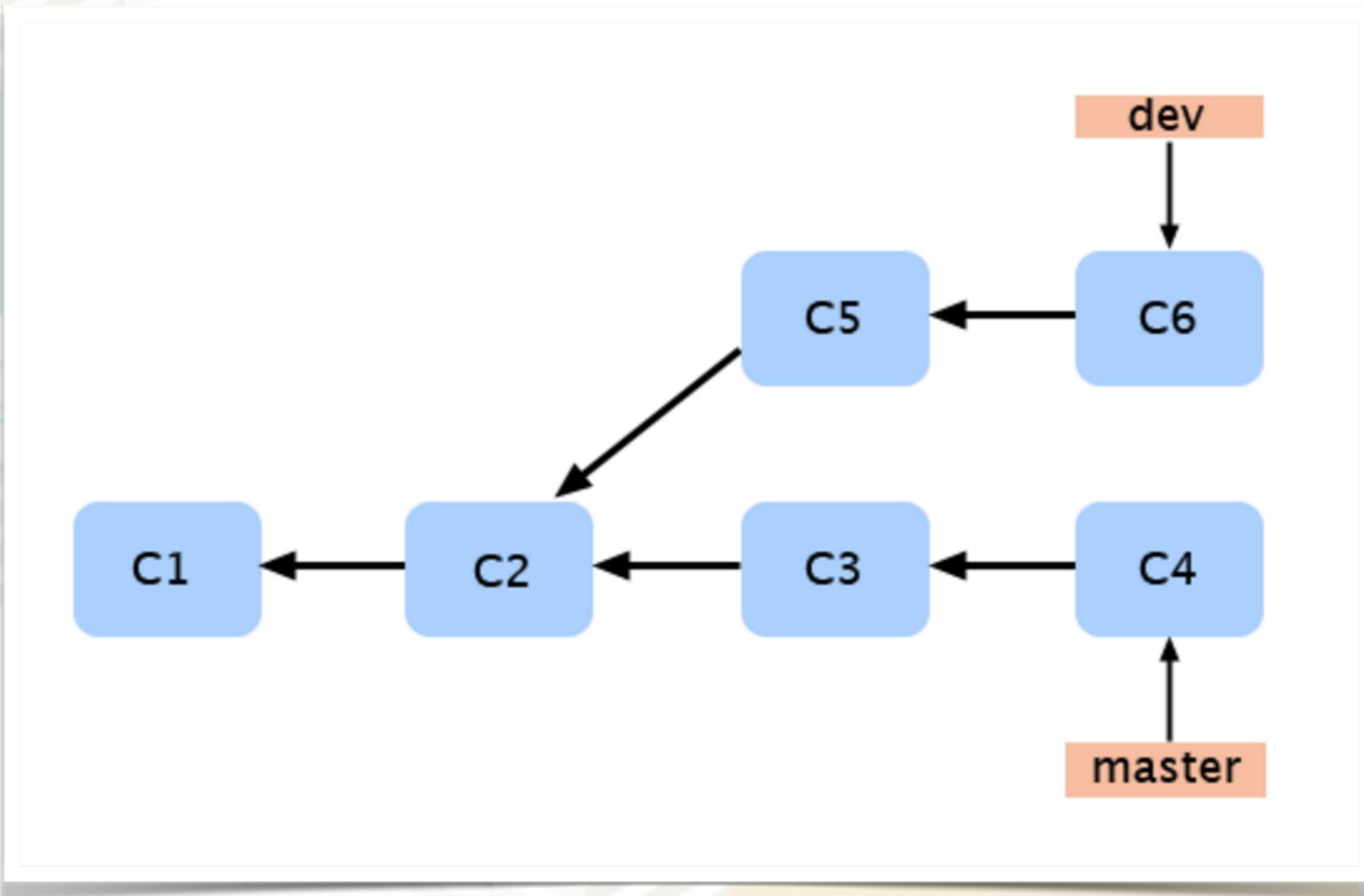
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Start before Rebase



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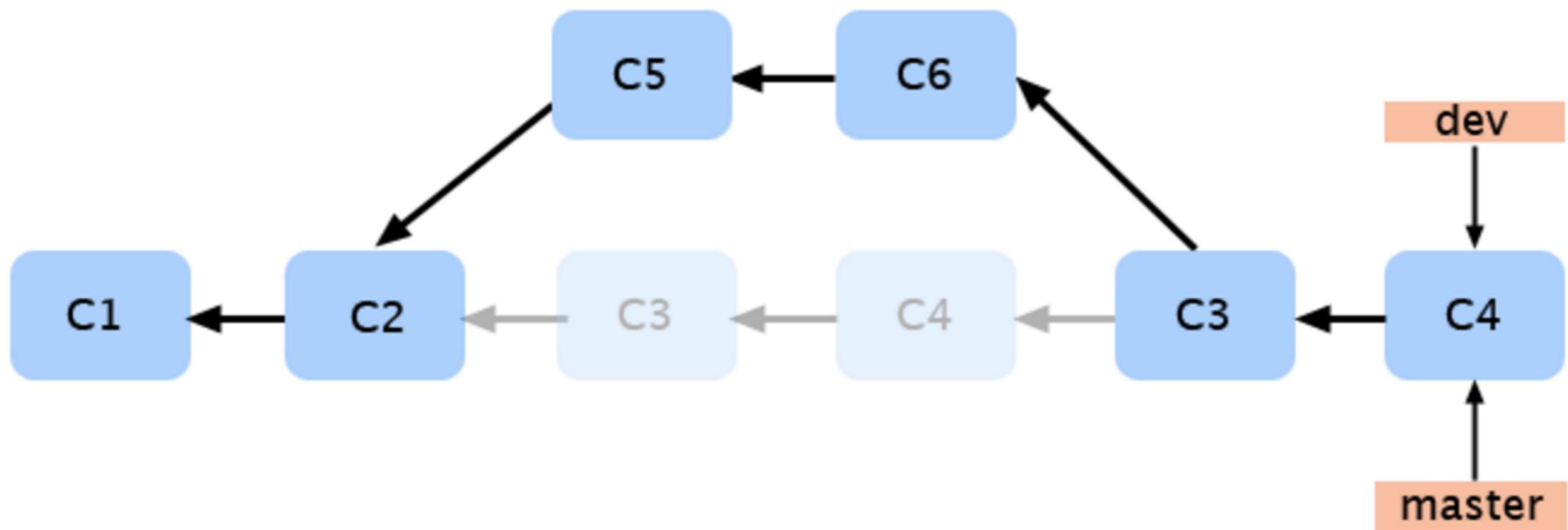
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After Rebase

\$git **rebase** [BRANCH NAME]



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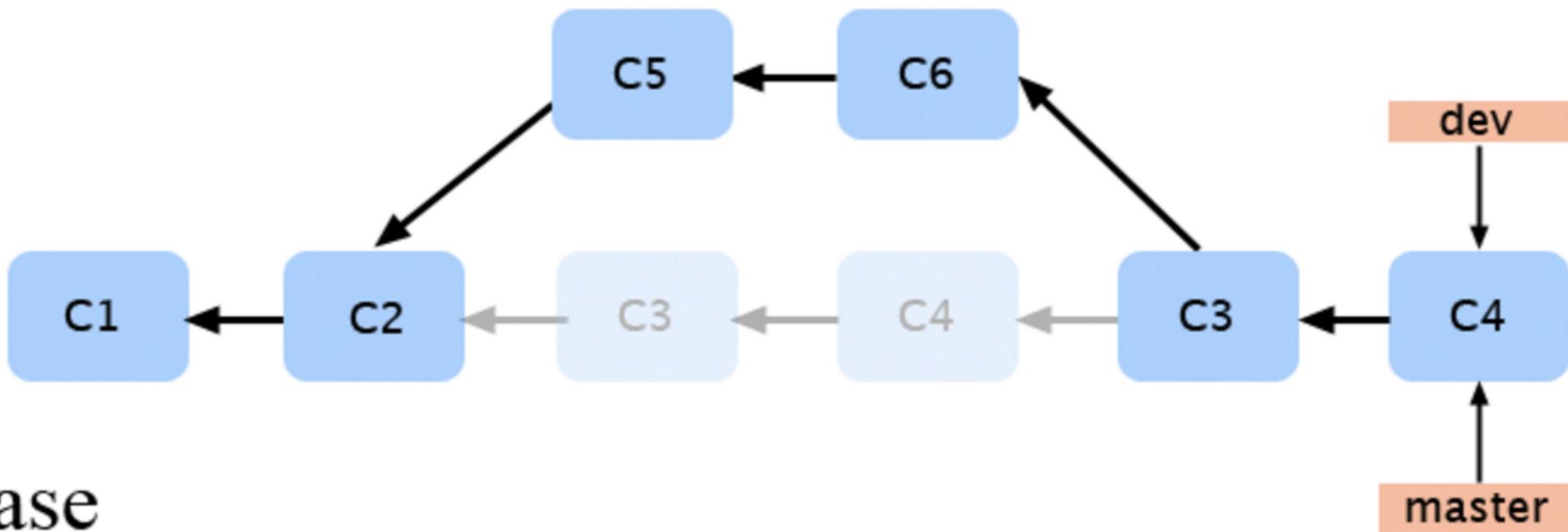
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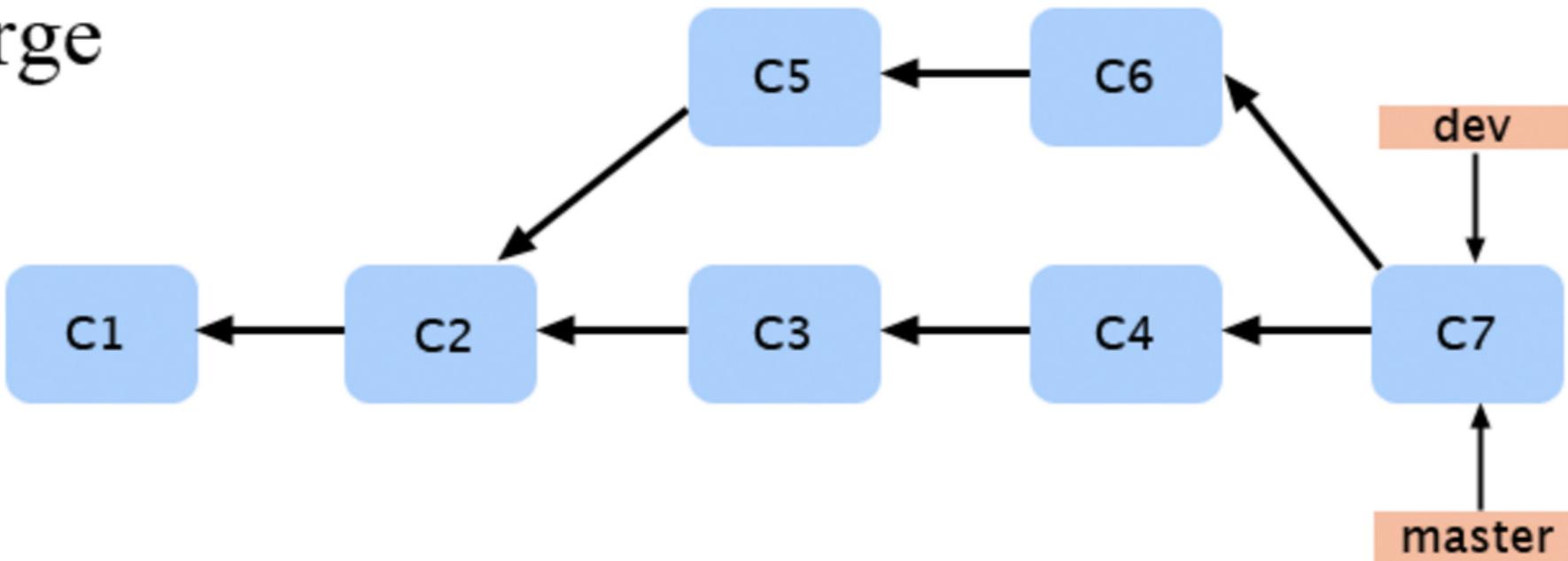
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Merge vs Rebase

rebase



merge



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Git Good



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Git Status



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Git help

\$git **—help**

```
usage: git [--version] [--help] [-C <path>] [-c <name>=<value>]
           [--exec-path[=<path>]] [--html-path] [--man-path] [--info-path]
           [-p | --paginate | -P | --no-pager] [--no-replace-objects] [--bare]
           [--git-dir=<path>] [--work-tree=<path>] [--namespace=<name>]
           <command> [<args>]
```

These are common Git commands used in various situations:

start a working area (see also: git help tutorial)

clone	Clone a repository into a new directory
init	Create an empty Git repository or reinitialize an existing one

work on the current change (see also: git help everyday)

add	Add file contents to the index
mv	Move or rename a file, a directory, or a symlink
restore	Restore working tree files
rm	Remove files from the working tree and from the index
sparse-checkout	Initialize and modify the sparse-checkout

examine the history and state (see also: git help revisions)

bisect	Use binary search to find the commit that introduced a bug
diff	Show changes between commits, commit and working tree, etc
grep	Print lines matching a pattern
log	Show commit logs
show	Show various types of objects
status	Show the working tree status

grow, mark and tweak your common history

branch	List, create, or delete branches
commit	Record changes to the repository
merge	Join two or more development histories together
rebase	Reapply commits on top of another base tip

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Commit Message



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Meaningful ?

...

TODO
asdasfdgafg
stuff
fixed bug
add feature



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Better ?

“Added a user object to the database.
currently only has a name and email.
no authentication yet ”



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Readable

“Fixed the bug that would add something
to everything. Turn to not add something
to everything”



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Issues on GitHub.com

<https://guides.github.com/features/issues/>

bug 01 #1

 **Closed** up1 opened this issue 5 minutes ago · 0 comments



up1 commented 5 minutes ago

Owner



No description provided.

 up1 closed this issue from a commit 4 minutes ago

 Fixed #1 to remove aomething

90db52f

 up1 closed this in 90db52f 4 minutes ago

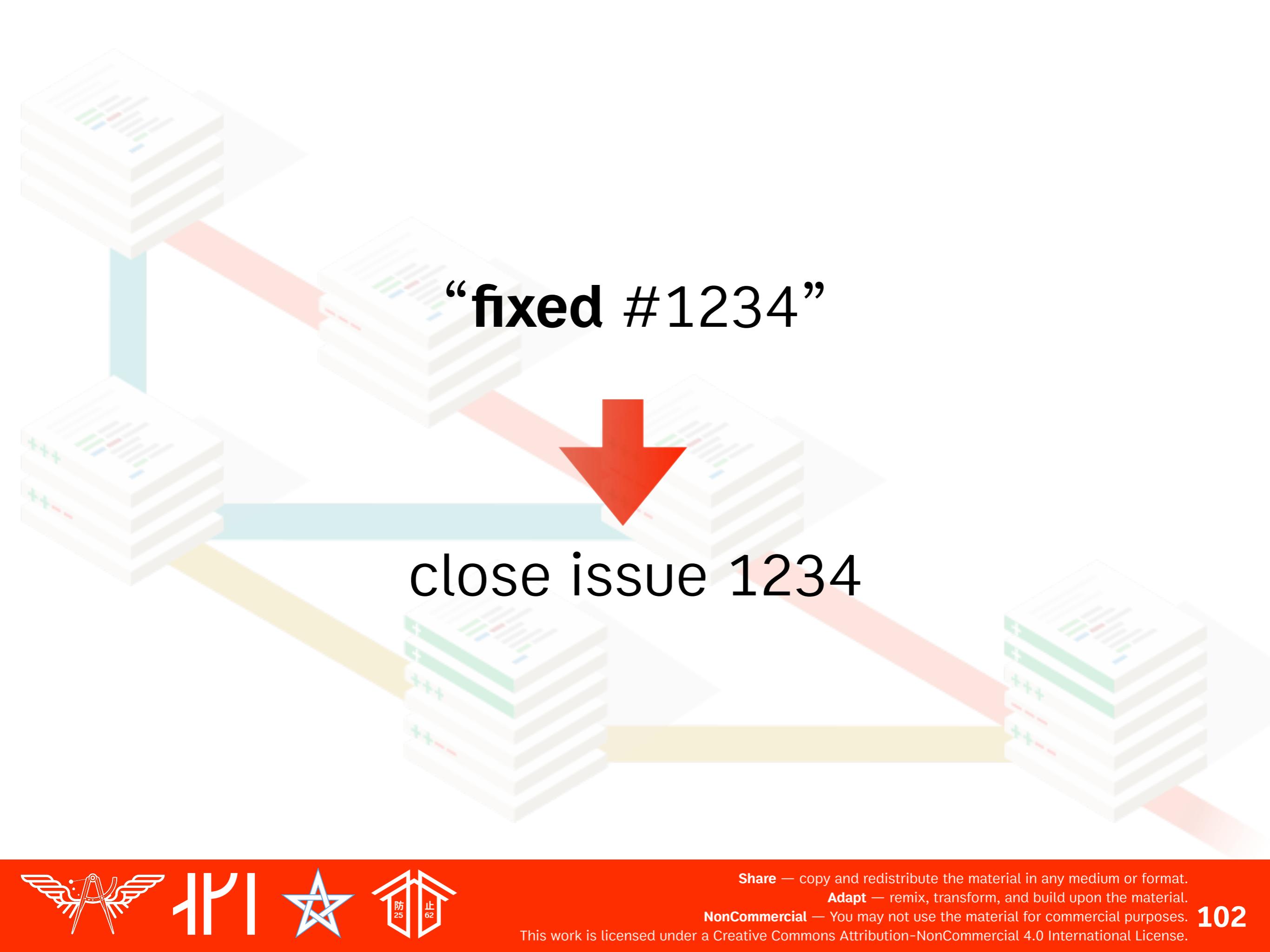


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“fixed #1234”



close issue 1234



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fixed, fix, fixes
closed, close, closes



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Reference to user

@up1



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Branching Strategy



Maintainable Git



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Developer cost

\$\$\$\$\$\$\$\$\$\$

Branching cost
(~40 bytes)

\$



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Developer cost

\$\$\$\$\$\$\$\$\$

Poor branching strategy

\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$



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Branching strategies



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Last good state ?
Mistake break everyone !!
Lead to big commits !!



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What is deployed ?
Where do fixed ?



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What is being worked on ?
How do you switch tasks ?
When do you integrated ?



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ทำอย่างไรดี ?



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Release Process ?



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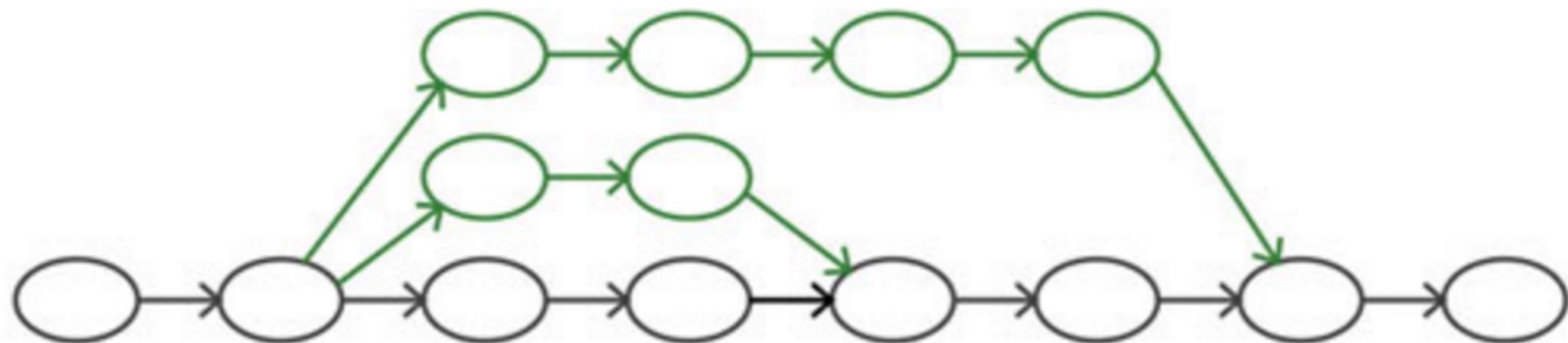
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Create a new branch

when working on any feature, issue or bug

Merged back when it is finished

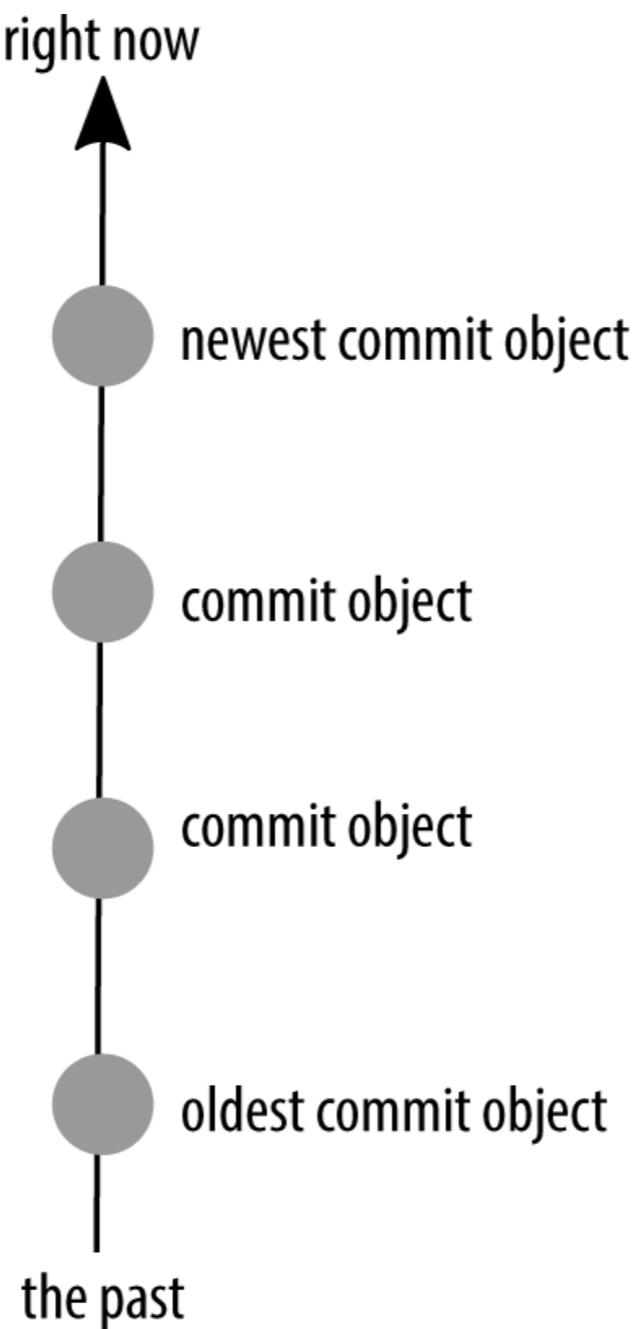


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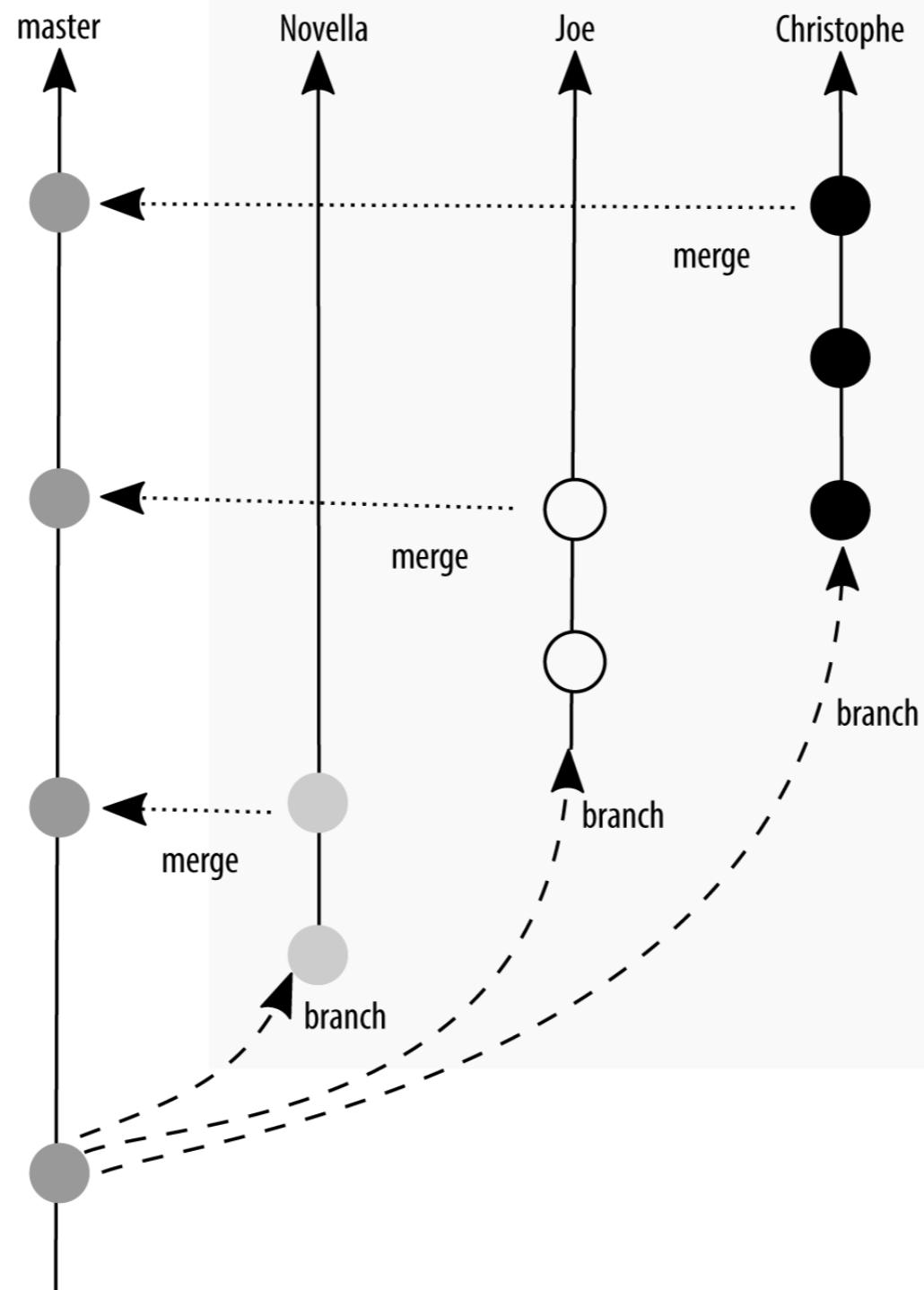
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branches containing changes from editors



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Let's discuss with Your team



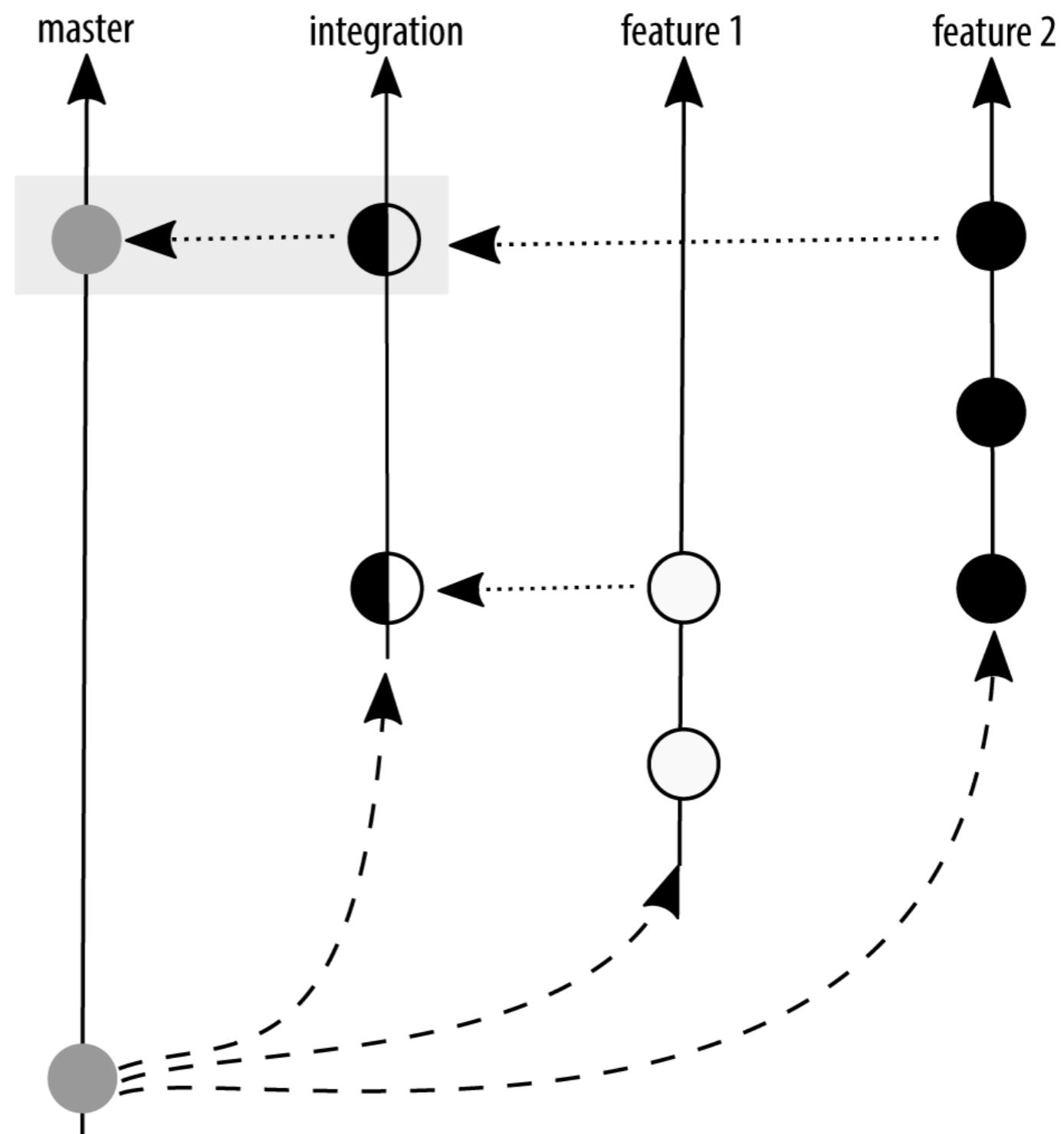
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Assuming feature 1 and feature 2 integrate well: merge the combined changes in the integration branch into the master branch.

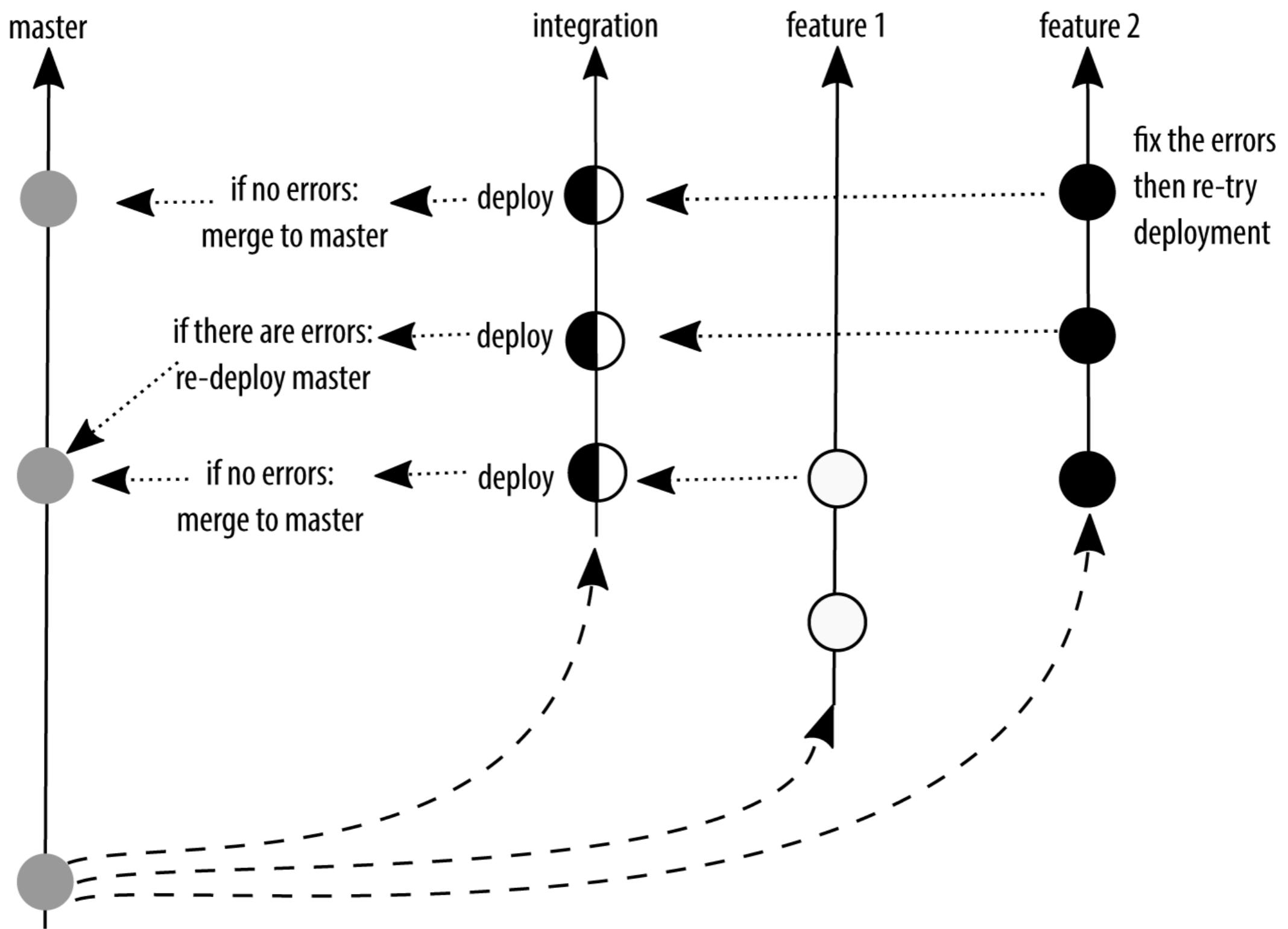


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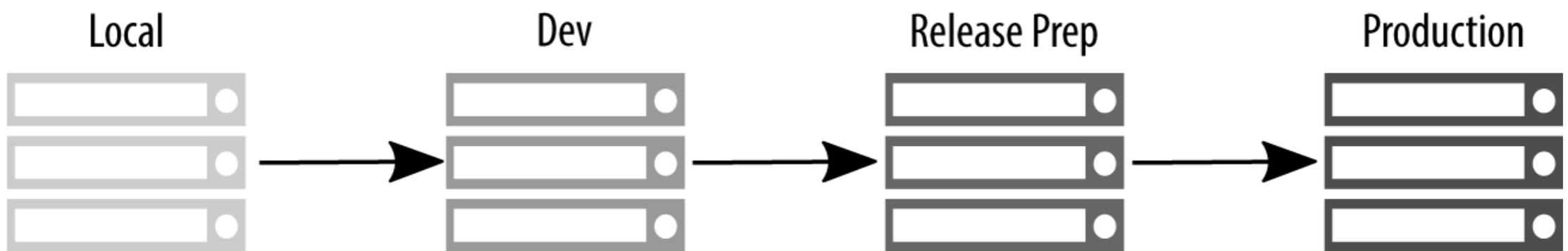
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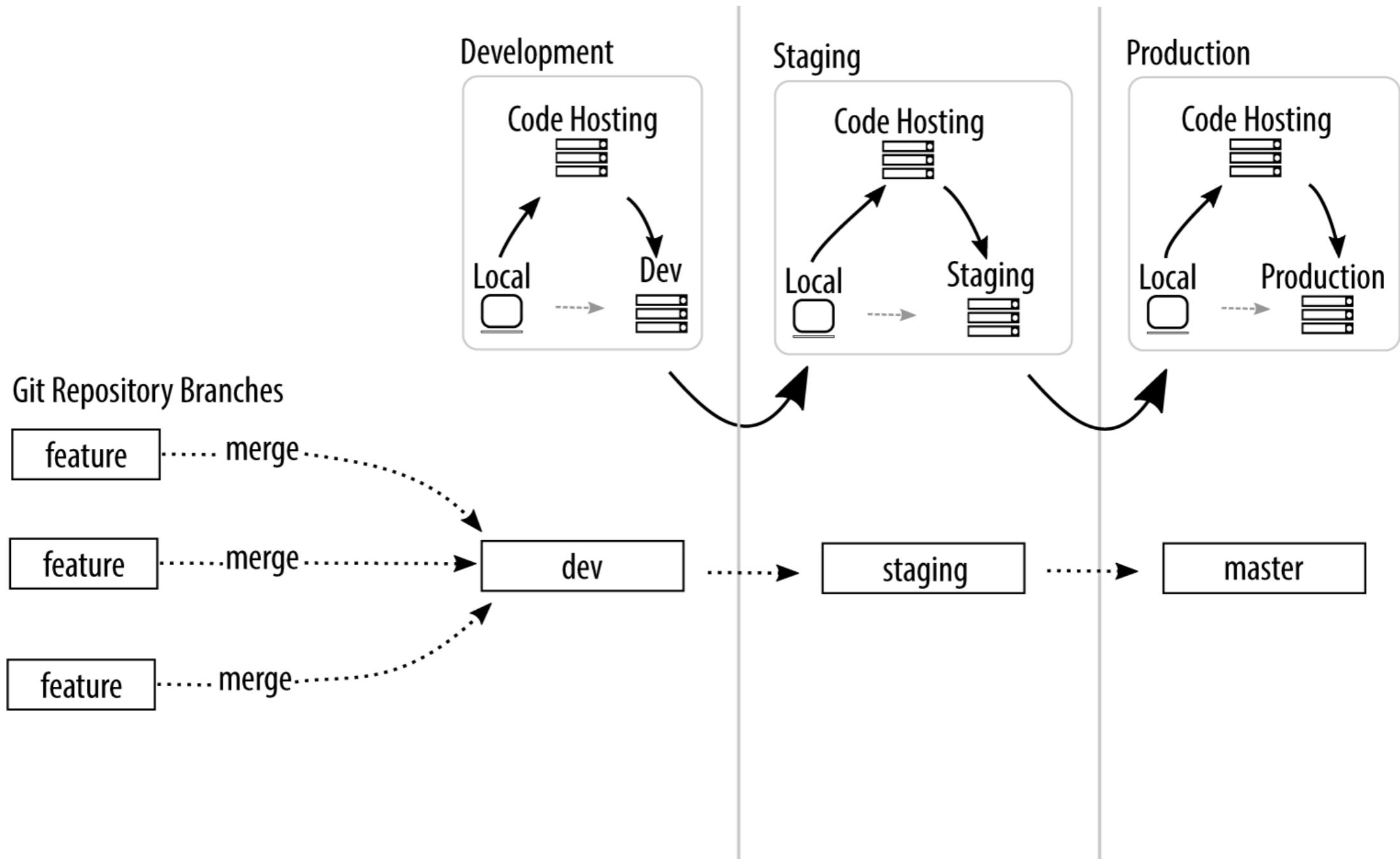
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One branch per platform



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Let's discuss with Your team

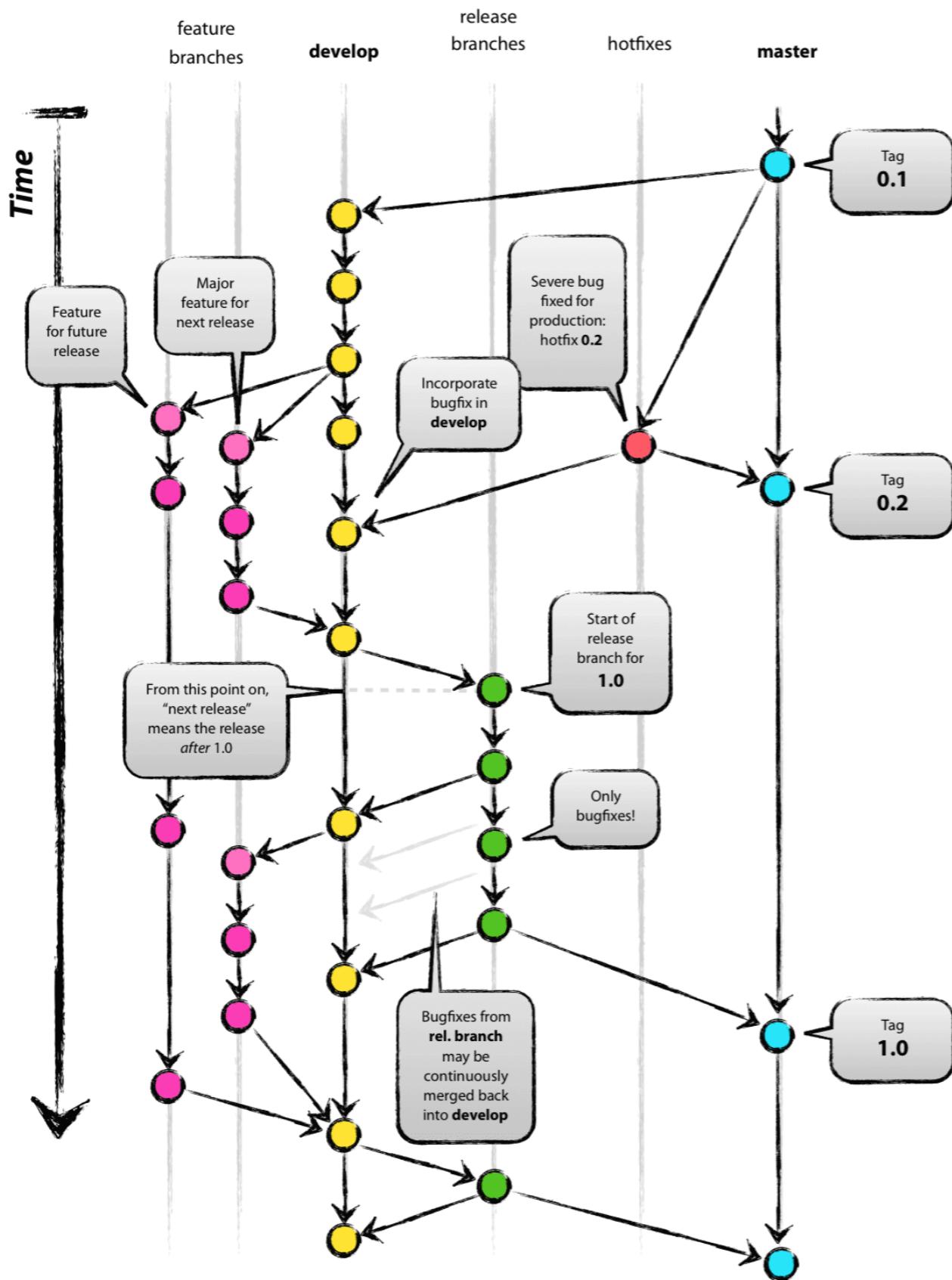


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Let's discuss with Your team

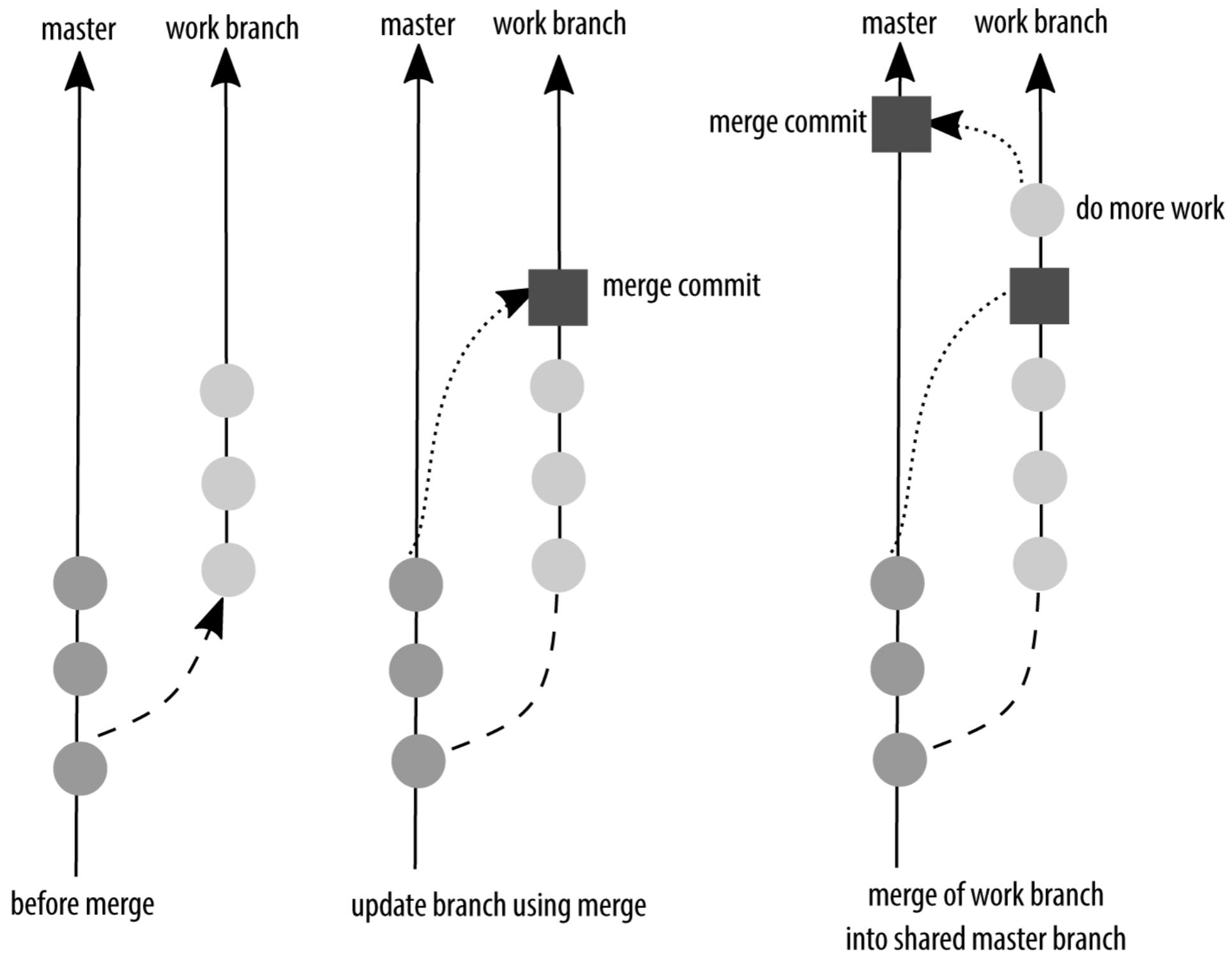


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Continuous Integration



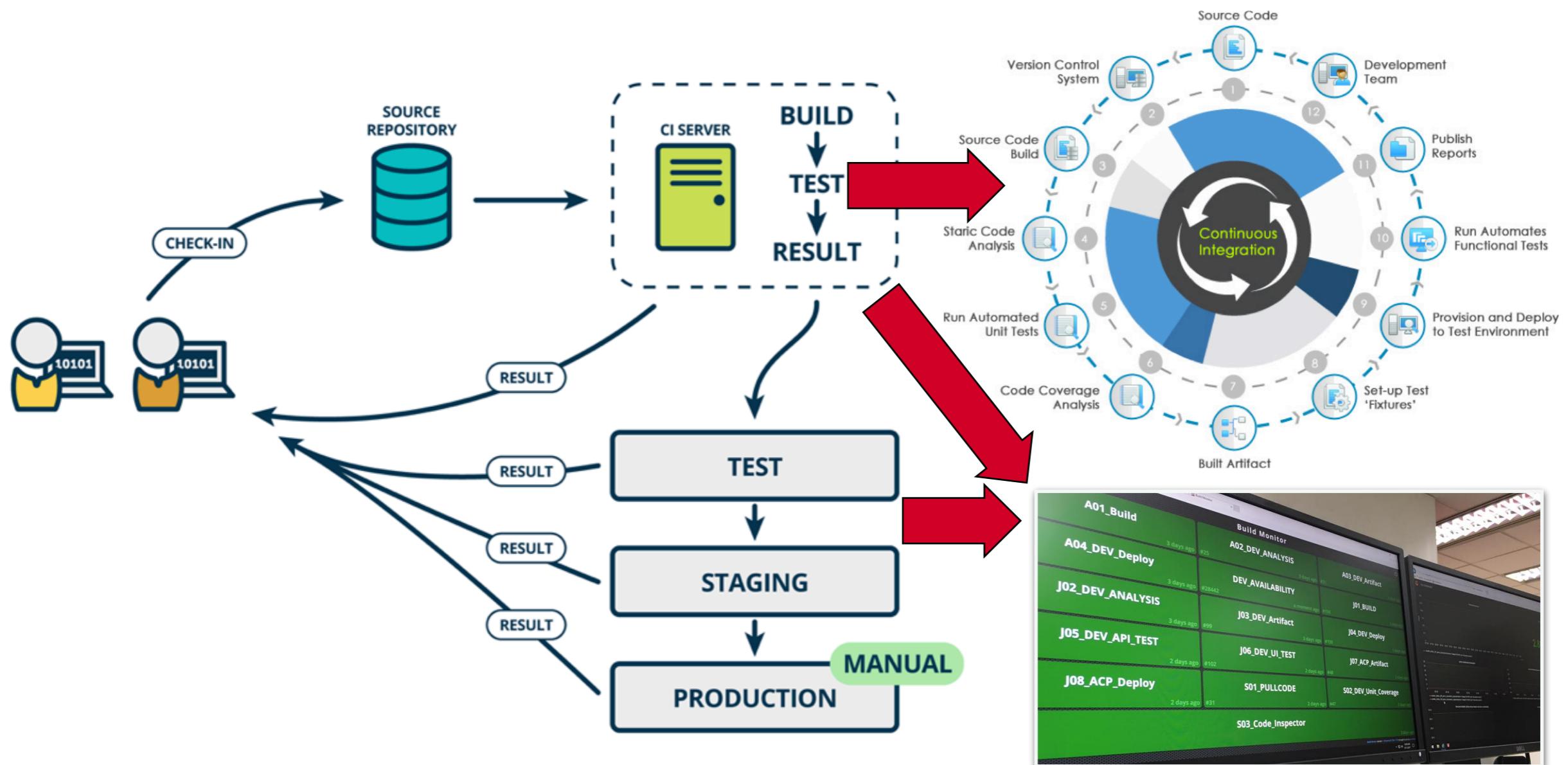
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Continuous Integration and Continuous Delivery



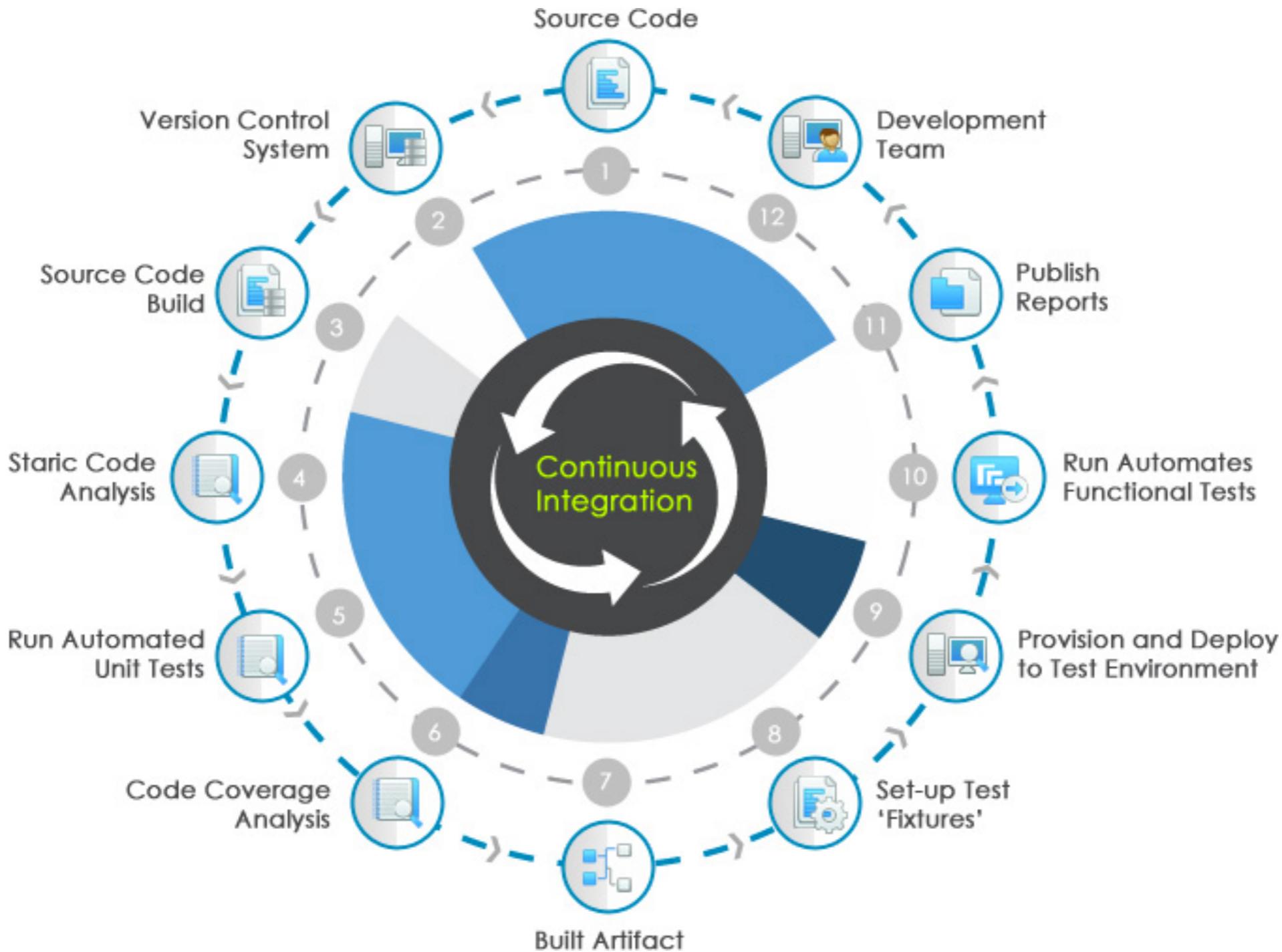
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Continuous Integration



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Simplified Example: Continuous Delivery Pipeline

Visualizing Your Pipeline – Including the Manual Stages

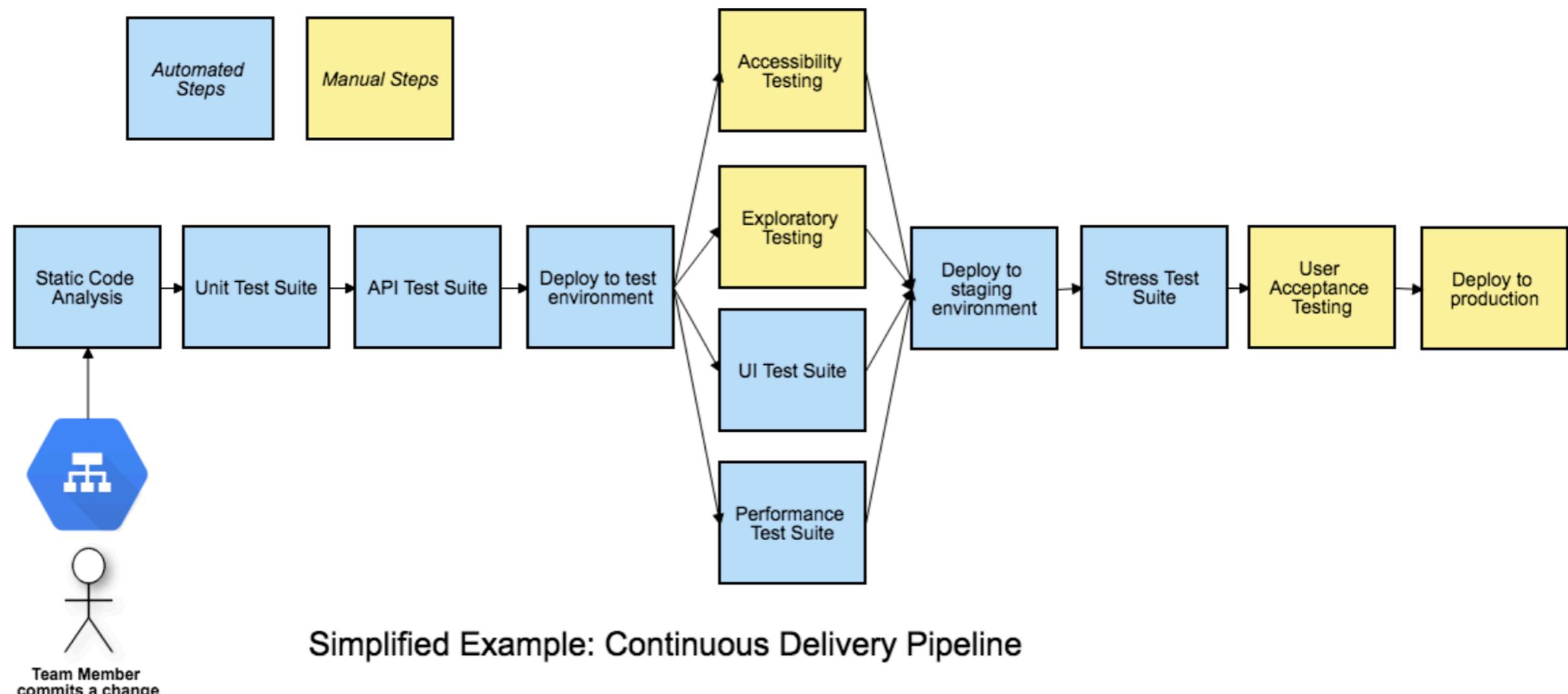


Figure 1: A Continuous Delivery Pipeline (my diagrams are inspired by Katrina Clokie's pipeline diagrams in "A Practical Guide to Testing in DevOps")



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Simplified Example: Asynchronous stage

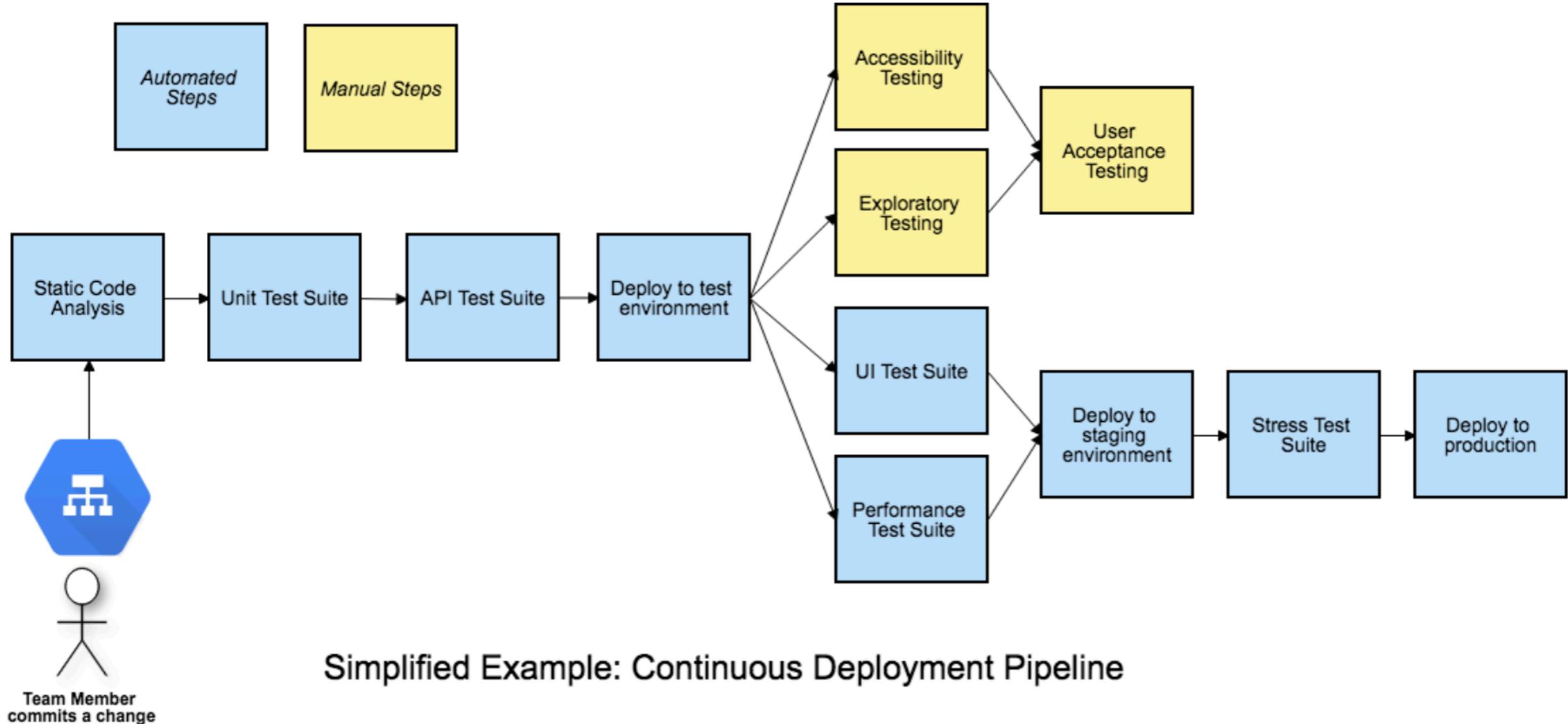


Figure 2: Asynchronous stages in a deployment pipeline



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Git log



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Log in one line

\$git log --oneline



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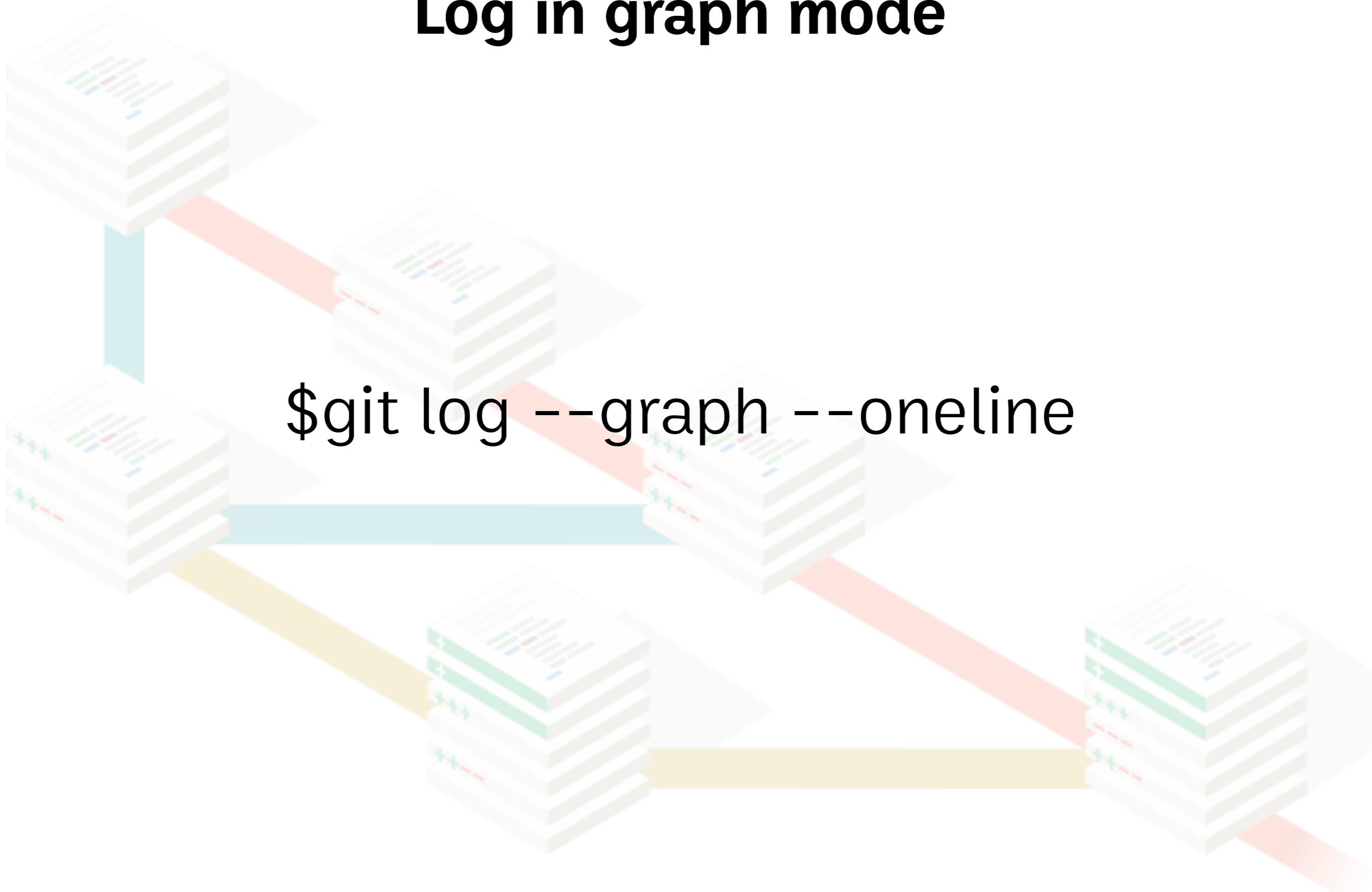
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Log in graph mode

```
$git log --graph --oneline
```



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See diff from log

\$git log --stat

\$git log -p



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Log by user

```
$git log --author=up1
```



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By message

```
$git log --grep="message"
```



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By content with regular expression

\$git log -G “content”



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Log in date range

```
$git log --after="2015-9-1"  
--before="2015-9-12"
```



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Log in date range

```
$git log --since=2.months.ago  
--until=1.day.ago
```



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Filter merge commit

```
$git log --no-merges  
$git log --merges
```



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Git shortlog

GIT-SHORTLOG(1)

NAME

git-shortlog – Summarize 'git log' output

SYNOPSIS

```
git shortlog [<options>] [<revision range>] [[--] <path>...]
git log --pretty=short | git shortlog [<options>]
```

DESCRIPTION

Summarizes git log output in a format suitable for inclusion in release announcements. Each commit will be grouped by author and title.

Additionally, "[PATCH]" will be stripped from the commit description.

If no revisions are passed on the command line and either standard input is not a terminal or there is no current branch, git shortlog will output a summary of the log read from standard input, without reference to the current repository.



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Tips Working on Branch

1. Create your branch
2. Checkout branch
2. Make changes and save file
3. Use diff to see all changes
4. Add and commit on your branch
5. Merge and rebase or discard !!



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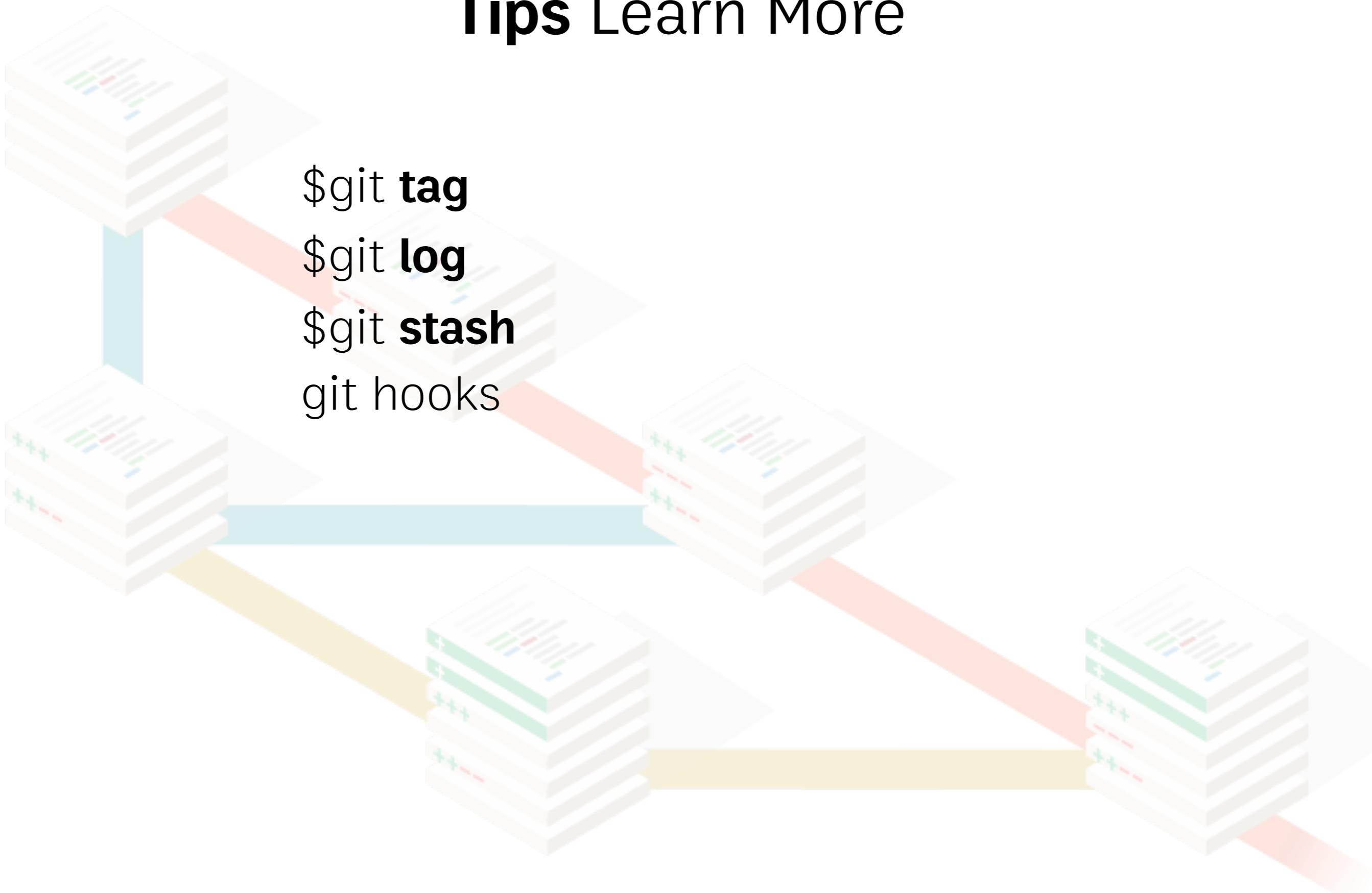
Tips Learn More

\$git **tag**

\$git **log**

\$git **stash**

git hooks



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Tips Workflow

1. initial repository
2. Pull (fetch and merge)
3. Branching in your local repository (optional)
4. Modify and improve your code
5. Commit to local repository
6. push to your branch on remote repository
- 7. Diff file => Review code**



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Tips Learn More

Professional review code to find out **ERRORS**

List of tools for code review

From Wikipedia, the free encyclopedia

This is a list of [software](#) that helps [software developers](#) conduct and manage [code reviews](#).

Software	Maintainer	Development status	License	VCS supported	Platforms supported	Workflow
Swascan	Swascan	actively developed	Proprietary	Any	Java , PHP , csharp, css, erlang, flex, groovy, javascript, python, scmgit, scmsvn, web, xml	pre- and post-commit
Crucible	Atlassian	actively developed	Proprietary	CVS, Subversion, Git, Mercurial, Perforce	Java	pre- and post-commit
Gerrit	Shawn Pearce	actively developed	Apache v2	Git	Java EE	pre-commit
Upsource	JetBrains	actively developed	Proprietary	Git, Subversion, Mercurial, Perforce	Java	post-commit
GitLab	GitLab Inc.	actively developed	MIT	Git	Ruby on Rails	pre- and post-commit
Kallithea	kallithea-scm.org	actively developed	GPL v3	Git, Mercurial	Python	post-commit
Phabricator	Phacility	actively developed	Apache	Git, Subversion, Mercurial	PHP	pre- and post-commit
Review Board	reviewboard.org	actively developed	MIT	CVS, Subversion, Git, Mercurial, Bazaar, Perforce, ClearCase, Plastic SCM	Python , Java	mainly pre-commit
Rietveld	Guido van Rossum	actively developed	Apache v2	Git, Subversion, Mercurial, Perforce, CVS	Python	pre-commit
Understand	SciTools	actively developed	Proprietary	Any	Windows, Mac OSX, Linux	pre- and post-commit

https://en.wikipedia.org/wiki/List_of_tools_for_code_review



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Tips Learn More

Professional review code to find out **ERRORS**

The screenshot shows the Review Board 2.5.3 alpha 0 (dev) interface. At the top, there's a navigation bar with links for 'Review Requests', 'Users', 'Groups', and 'Reports'. A yellow banner at the top of the main content area states: 'The demo server is reset every night at midnight PST.' Below this, a section titled 'ALL REVIEW REQUESTS' includes a 'Hide closed' link. The main content is a table with columns for 'Summary', 'Submitter', 'Posted', and 'Last Updated'. The table lists various review requests, such as 'Diff viewer demo', 'Change history demo', and 'Test review', along with their respective submitters (chipx86, guest576, guest4899, etc.) and posting dates.

Summary	Submitter	Posted	Last Updated
Diff viewer demo	chipx86	March 31st, 2015, 4:28 a.m.	12 hours, 21 minutes ago
Change history demo	chipx86	March 31st, 2015, 4:28 a.m.	18 hours, 16 minutes ago
Test review	guest576	March 11th, 2016, 7:42 a.m.	1 day, 20 hours ago
Fix URL to web hook docs	guest4899	March 9th, 2016, 5:25 a.m.	3 days, 23 hours ago
Tesing	guest9247	March 8th, 2016, 7:18 a.m.	4 days, 21 hours ago
test1	guest8359	August 11th, 2015, 6:50 a.m.	5 days, 8 hours ago
Merge branch 'release-2.6.x'	guest8989	January 31st, 2016, 2:49 p.m.	5 days, 8 hours ago
Add a site setting for the static URL	guest6129	March 4th, 2016, 12:22 p.m.	6 days, 11 hours ago
Initial Review	guest7880	March 4th, 2016, 12:50 p.m.	1 week, 1 day ago
Merge branch 'release-2.6.x'	guest6129	March 4th, 2016, 10:54 a.m.	1 week, 1 day ago
PDF document review demo	chipx86	March 31st, 2015, 4:28 a.m.	1 week, 2 days ago
1111	guest4539	January 26th, 2016, 1:25 a.m.	1 week, 2 days ago
Submitted Merge branch 'release-2.5.x' into release-2.6.x	guest5371	March 3rd, 2016, 3:31 a.m.	1 week, 3 days ago
Test PDF review?	guest3369	March 3rd, 2016, 12:04 a.m.	1 week, 3 days ago

<https://www.reviewboard.org/>



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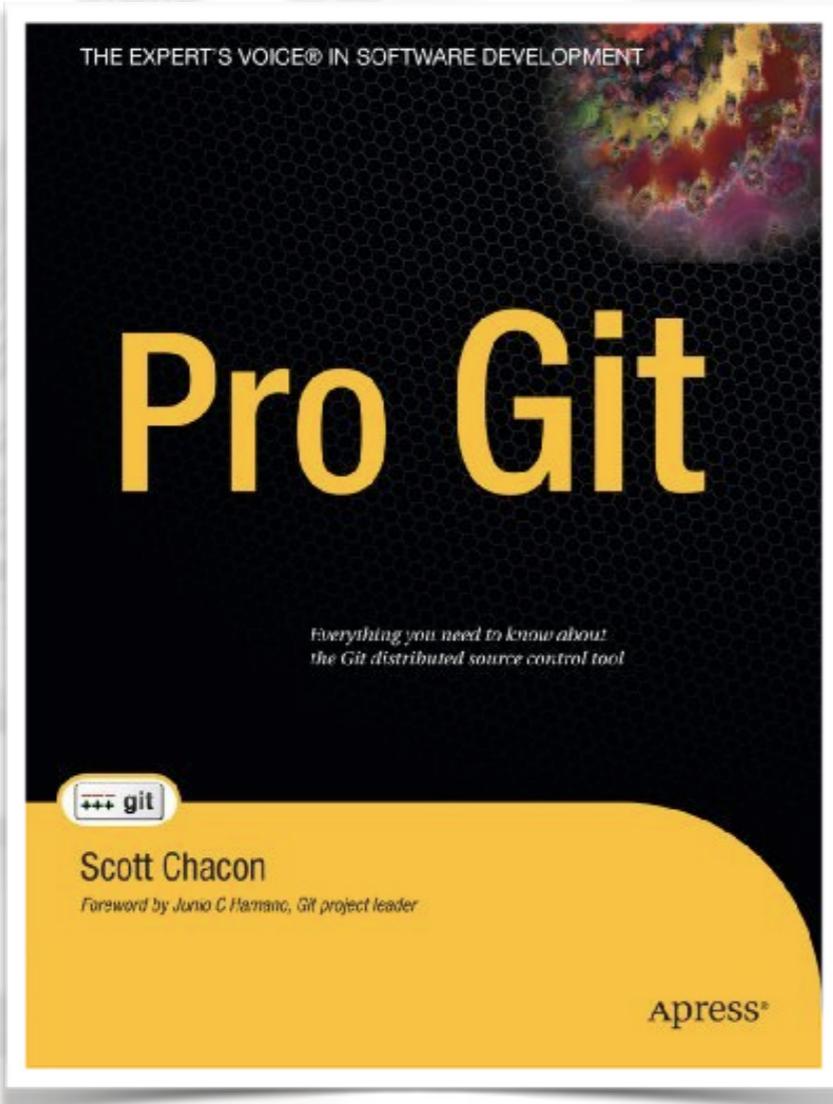
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Books to Read and Practice



<http://www.git-scm.com/book/en/v2>



<http://shop.oreilly.com/product/0636920034520.do>



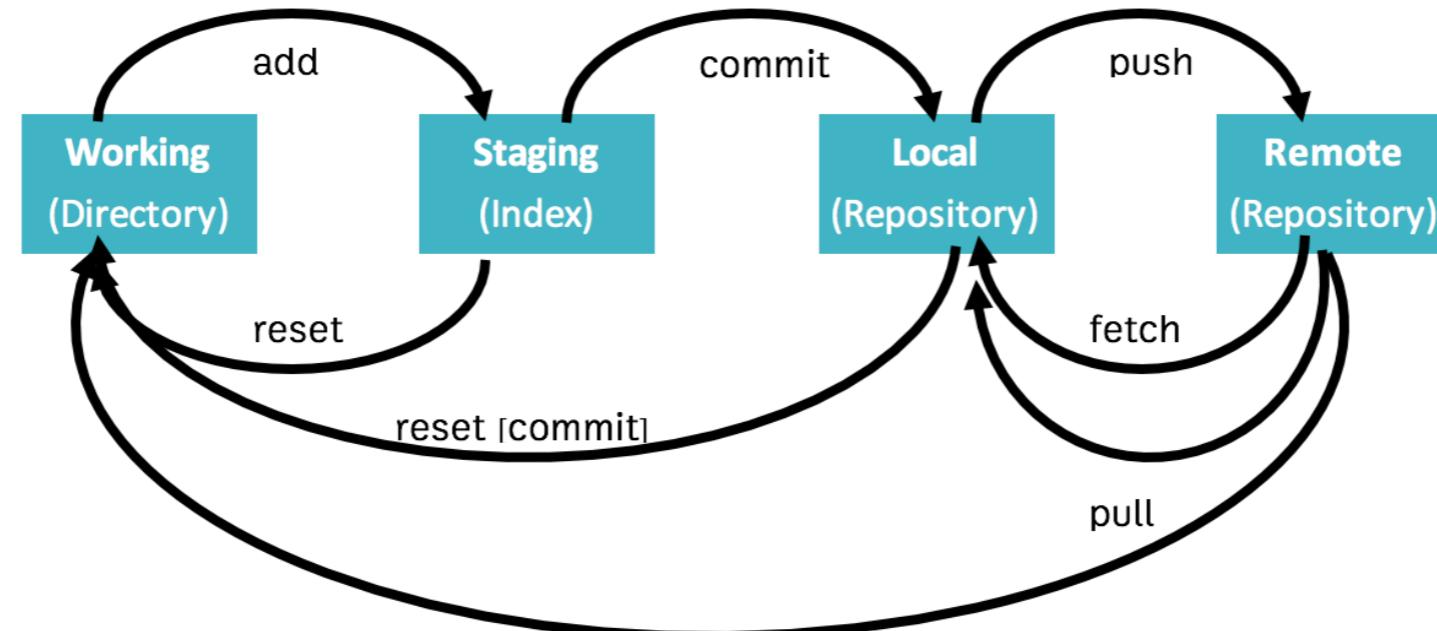
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cheatsheet



CONFIGURE TOOLING

กำหนดข้อมูลสำหรับใช้ใน local repositories

```
$ git config --global user.name "[name]"
```

ตั้งค่าชื่อที่ใช้แสดงผลในการ commit

```
$ git config --global user.email "[email address]"
```

ตั้งค่าอีเมลที่ใช้แสดงผลในการ commit

```
$ git config --global color.ui auto
```

เปิดใช้งานตัวอักษรสีในชุดคำสั่งต่าง ๆ เพื่อง่ายต่อการ

CREATE REPOSITORIES

เริ่มต้นสร้าง repository หรือนำเข้าข้อมูลจาก repository URL อื่นๆ

```
$ git init [project-name]
```

สร้างและกำหนดชื่อ local repository

```
$ git clone [url]
```

ดาวน์โหลดข้อมูลจาก repository URL และประวัติการควบคุมการเปลี่ยนแปลง (version history)



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cheatsheet

SYNCHRONIZE CHANGES

การปรับ local repository ให้เท่ากับ remote repository

\$ git fetch [nickname]

ดาวน์โหลดทุกรายการประวัติของเวอร์ชันจาก remote repository สู่ local repository

\$ git merge [nickname]/[branch]

รวม remote repository จาก branch ที่กำหนดเข้าสู่ local repository

\$ git push [nickname] [branch]

อัพโหลดข้อมูลจาก local branch เข้าสู่ remote branch

\$ git pull

ดาวน์โหลดประวัติของ remote repository และการเปลี่ยนแปลงต่าง ๆ เข้าสู่ local repository

MAKE CHANGES

ตรวจสอบการแก้ไขข้อมูลและ commit

\$ git status

แสดงสถานะการเปลี่ยนแปลง ณ ปัจจุบัน

\$ git add [file]

บันทึกไฟล์ข้อมูลเข้าสู่ index เพื่อเตรียมทำเวอร์ชัน

\$ git reset [file]

ยกเลิกการเปลี่ยนแปลงไฟล์

\$ git diff

แสดงความแตกต่างของไฟล์ที่ยังไม่ได้ทำ index

\$ git diff --staged

แสดงความแตกต่างของไฟล์ที่ได้ทำ index แล้ว กับไฟล์ที่ได้แก้ไขครั้งล่าสุด

\$ git commit -m "[descriptive message]"

บันทึกไฟล์ลงประวัติการแก้ไข



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REVIEW HISTORY

เรียกดูและตรวจสอบวิวัฒนาการของข้อมูล

\$ git log

แสดงประวัติเวอร์ชันทั้งหมดของ branch ที่กำลังใช้งาน

\$ git log --follow [file]

แสดงประวัติเวอร์ชันทั้งหมดของไฟล์และการเปลี่ยนแปลงชื่อไฟล์ด้วย

\$ git diff [first-branch]...[second-branch]

แสดงความแตกต่างของข้อมูลระหว่าง 2 branches

\$ git show [commit]

แสดง metadata และการเปลี่ยนข้อมูลของ

REDO COMMITS

ลบข้อผิดพลาด และประวัติการบันทึก

\$ git reset [commit]

ยกเลิกการ commit ทั้งหมดจนถึง commit ที่ระบุไว้, แต่ยังคงการเปลี่ยนแปลงของข้อมูลใน index

\$ git reset --hard [commit]

ยกเลิกการ commit ทั้งหมดจนถึง commit ที่ระบุไว้



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GROUP CHANGES

ชุดของการ commits ข้อมูล และการรวมชุดต่าง ๆ เข้าด้วยกัน

\$ git branch

แสดงรายการทั้งหมดของ local branches ใน repository ที่กำลังใช้งานอยู่

\$ git branch [branch-name]

สร้าง branch ใหม่

\$ git checkout [branch-name]

สลับการใช้งาน branch และปรับปรุงข้อมูลของ working directory

\$ git merge [branch]

รวบรวม branch ที่กำหนด เข้ากับ branch ที่กำลังใช้งาน

REFACTOR FILENAMES

เปลี่ยนแปลงไฟล์ในเวอร์ชันที่ใช้งาน

\$ git rm [file]

ลบไฟล์จาก working directory และ index

\$ git rm --cached [file]

ลบไฟล์ออกจาก Git แต่ไม่ลบออกจาก working directory

\$ git mv [file-original] [file-renamed]

เปลี่ยนชื่อไฟล์



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