

# git

A practical overview

THIS IS GIT. IT TRACKS COLLABORATIVE WORK  
ON PROJECTS THROUGH A BEAUTIFUL  
DISTRIBUTED GRAPH THEORY TREE MODEL.

COOL. HOW DO WE USE IT?

NO IDEA. JUST MEMORIZE THESE SHELL  
COMMANDS AND TYPE THEM TO SYNC UP.  
IF YOU GET ERRORS, SAVE YOUR WORK  
ELSEWHERE, DELETE THE PROJECT,  
AND DOWNLOAD A FRESH COPY.



# Topics

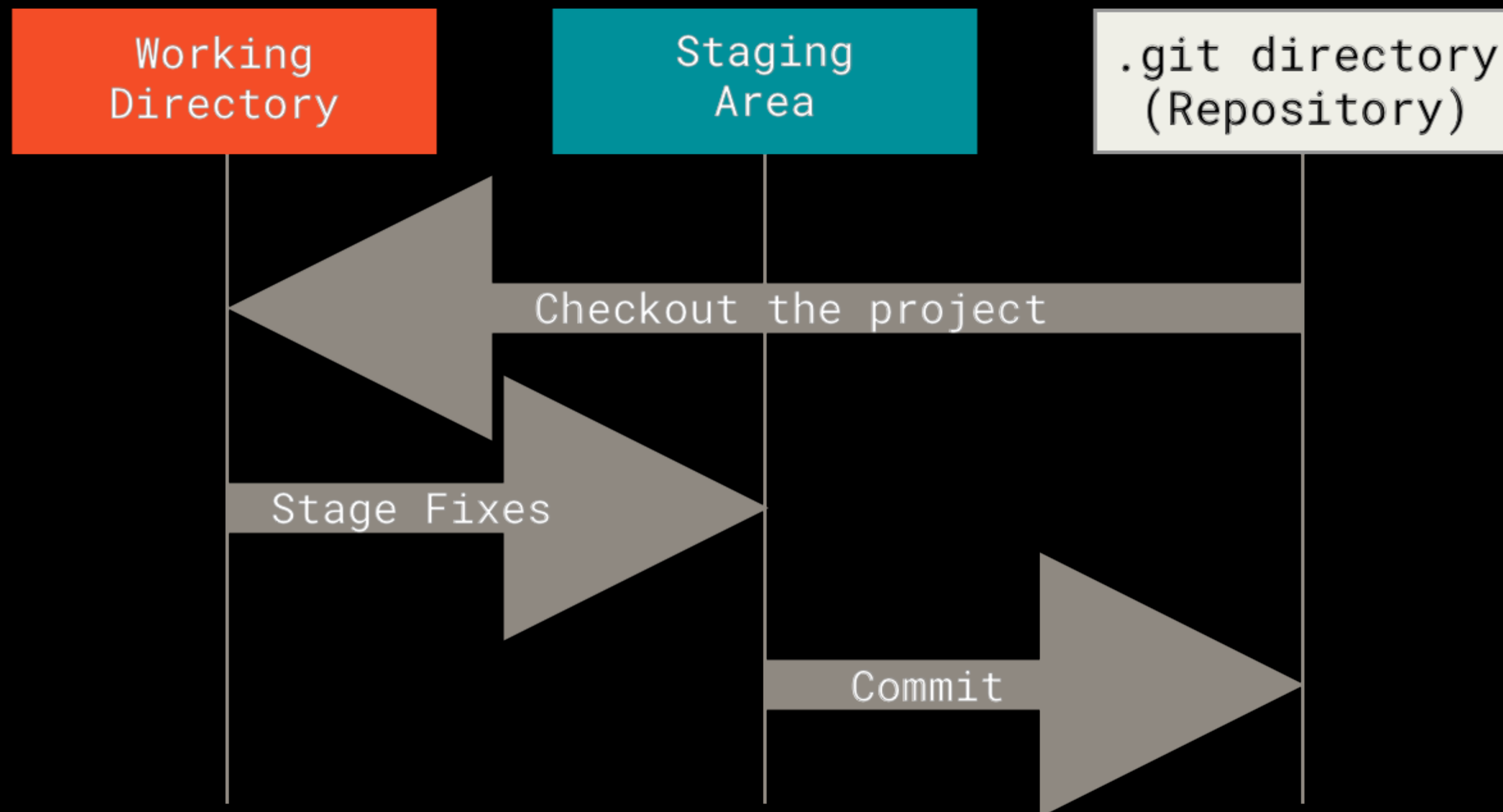
- **Introduction**
- **Configuration**
- **Common commands**
- **Best practice**
- **Advanced topics**
- **Tools**

# Training overview

- interactive, no listen-only mode
- focus on the terminal/CLI
- *git help/man* pages (*man git-<command>*)
- Small tasks after each chapter
- Test repo: <https://github.com/nodeg/test-git>

# Introduction

3 main states that your files can reside in: modified, staged, and committed.



# Basic git workflow

```
git checkout -b feature_x  
git add file1  
git commit  
git push
```

# .gitignore

Files in your working copy are

1. tracked - a file which has been previously staged or committed
2. untracked - a file which has not been staged or committed; or
3. ignored - a file which Git has been explicitly told to ignore.

- local *.gitignore* file or *~/config/git/ignore*

# Configuration

```
[init]
  defaultBranch = main
[pull]
  rebase = true
[user]
  name = Dominik Gedon
  useConfigOnly = true
[core]
  editor = nvim
  excludesfile = ~/.config/git/ignore
  pager = delta
[color "status"]
  added = yellow
  changed = green
  untracked = cyan

[include]
  path = ~/.config/git/alias
```

*~/.config/git/*

- 📄 alias
- 📄 common
- ➔ **config** ⇒ **private**
- 📄 ignore
- 📄 private
- ↓ README.md
- 🔄 template
- 📄 work



# Aliases

```
git config --global alias.co checkout
git config --global alias.br branch
git config --global alias.ci commit
```

```
amend      = commit --amend
branches   = branch -a
contributors= shortlog -s -n
graph      = log --graph -10 --branches --remotes --tags\
| | | | | | | | --format=format:'%Cgreen%h %Creset %<(75,trunc)%s (%cN, %ar) %Cred%d' --date-order
history    = log --pretty=format:\"%C(yellow)%h%Creset %ad | %Cgreen%s%Creset %Cred%d%Creset %Cblue[%an]\" --date=short
last       = log -1 HEAD --format=format:\"%Cred%H\"
logs       = log --stat
what       = show -w
nevermind  = !git reset --hard HEAD && git clean -d -f
```

# Commit Template

`[commit]`

```
template = ~/.config/git/template
```

```
# <type>: If applied, this commit will
# |←—— Using a Maximum Of 50 Characters   —→|
# Type can be
#   feat      (new feature)
#   fix       (bug fix, semver: PATCH)
#   refactor  (refactoring production code, semver: MINOR)
#   style     (formatting, missing semi colons, etc; no code change)
#   docs      (changes to documentation)
#   test      (adding or refactoring tests; no production code change)
#   chore     (updating grunt tasks etc; no production code change)
#   BREAKING CHANGE (introduces a breaking API change, semver: MAJOR)
# Explain why this change is being made
# |←—— Try To Limit Each Line to a Maximum Of 72 Characters   —→|
```

# Signed commits

1. Specify the GPG key in the git configuration
2. Tell git to (always) GPG-sign commits

```
> git log --show-signature
commit c48777ccebe307b9cffb30d87b1343b0c5044b9d (HEAD → main, origin/main, origin/HEAD)
gpg: Signature made Wed Nov 27 15:09:46 2024 CET
gpg:                using RSA key 4F01C768F1A8DEEF49B895E3263BF422CC90C832
gpg: Good signature from "Dominik Gedon <dominik@gedon.org>" [ultimate]
Primary key fingerprint: 4F01 C768 F1A8 DEEF 49B8 95E3 263B F422 CC90 C832
Author: Dominik Gedon <dominik@gedon.org>
Date:   Wed Nov 27 15:09:03 2024 +0100
```

feat: Add Python Cheatsheet submodule

Commits on Nov 27, 2024

**Feature** Add Python Cheatsheet  
submodule

Verified

c48777c



nodeg committed 13 minutes ago



# Configuration - Tasks

1. Create a configuration file and set up commit signing by default
2. Create some aliases that fits your needs
3. Create and include a commit template file
4. Create a *.gitignore* file (locally or globally) that fits your needs

# Common commands

# Common commands

- config
- init
- add, commit, push
- diff
- show
- blame
- fetch
- pull
- merge
- rebase
- stash
- log
- remote
- revert, reset, apply
- cherry-pick
- tag
- branch
- checkout

# git config

Get and set repository or global options.

```
git config list  
git config commit.gpgsign true  
git config --global commit.gpgsign true
```

# git init

Create an empty Git repository.

```
~/git/dom
> la
drwxr-xr-x dgedon staff  64 B Wed Nov 27 22:40:15 2024 .
drwxr-xr-x dgedon staff 320 B Wed Nov 27 22:40:15 2024 ..

~/git/dom
> git init
Initialized empty Git repository in /Users/dgedon/git/dom/.git/

dom on ↗ main
> la
drwxr-xr-x dgedon staff  96 B Wed Nov 27 22:40:23 2024 .
drwxr-xr-x dgedon staff 320 B Wed Nov 27 22:40:15 2024 ..
drwxr-xr-x dgedon staff 288 B Wed Nov 27 22:40:23 2024 .git
```

```
dom on ↗ main
> tree .git/
.git/
├── HEAD
├── config
├── description
├── hooks
│   ├── applypatch-msg.sample
│   ├── commit-msg.sample
│   ├── fsmonitor-watchman.sample
│   ├── post-update.sample
│   ├── pre-applypatch.sample
│   ├── pre-commit.sample
│   ├── pre-merge-commit.sample
│   ├── pre-push.sample
│   ├── pre-rebase.sample
│   ├── pre-receive.sample
│   ├── prepare-commit-msg.sample
│   ├── push-to-checkout.sample
│   ├── sendemail-validate.sample
│   └── update.sample
├── info
│   └── exclude
├── objects
│   ├── info
│   └── pack
└── refs
    ├── heads
    └── tags

9 directories, 18 files
```



# git branch

List, create, or delete branches.

```
> git branch -a
* main
  ruby
remotes/origin/HEAD → origin/main
remotes/origin/main
remotes/origin/ruby

test-git on ↗ main [$!?] via 💎 v3.3.6
> git branch -r
origin/HEAD → origin/main
origin/main
origin/ruby
```

```
> git branch dom_test

~/.config/git on ↗ master [!]
> git branch
  dom_test
* master

~/.config/git on ↗ master [!]
> git branch -d dom_test
Deleted branch dom_test (was e197ef2).
```

# git checkout

Switch branches or restore working tree files.

```
test-git on ↗ main [$!?] via 💎 v3.3.6  
> git branch dom_test
```

```
test-git on ↗ main [$!?] via 💎 v3.3.6  
> git checkout dom_test
```

```
M      git.pdf  
Switched to branch 'dom_test'
```

```
test-git on ↗ dom_test [$!?] via 💎 v3.3.6
```

# git diff

Shows changes between different things.

```
tetra.gemspec
```

```
30: Gem::Specification.new do |s|
```

```
30 : 30   s.add_development_dependency "simplecov", "~> 0.22.0"
31 : 31   s.add_development_dependency "rake", "~> 13.2.0"
32 : 32   s.add_development_dependency "rspec", "~> 3.13.0"
33 :      s.add_development_dependency "rubocop", "~> 1.64.0"
      : 33   s.add_development_dependency "rubocop", "~> 1.64.1"
34 : 34
35 : 35   s.add_runtime_dependency "clamp", "~> 1.3.2"
36 : 36   s.add_runtime_dependency "erb", "~> 4.0.3"
37 : 37   s.add_runtime_dependency "json_pure", "≥ 2.6.3", "< 2.8.0"
38 : 38   s.add_runtime_dependency "open4", "~> 1.3.4"
39 :      s.add_runtime_dependency "rexml", "~> 3.2.8"
      : 39   s.add_runtime_dependency "rexml", "~> 3.2.9"
40 : 40   s.add_runtime_dependency "rubyzip", "~> 2.3.2"
41 : 41   s.add_runtime_dependency "text", "~> 1.3.1"
42 : 42 end
```

# git show

- Shows one or more objects
- For commits it shows the log message and textual diff
- For tags, it shows the tag message and the referenced objects.
- For trees, it shows the names



# git blame

Show what revision and author last modified each line of a file.

```
> git blame lib/tetra/version.rb
```

11 years ago	Silvio Moiola	cfca822a	1	# encoding: UTF-8
			2	
10 years ago	Silvio Moiola	920fd8a0	3	# base module for tetra
			4	module Tetra
4 years ago	Silvio Moiola	02dcf4f0	5	VERSION = "2.0.6"
11 years ago	Silvio Moiola	cfca822a	6	end

# git blame

tetra / lib / tetra / version.rb



moio Bump tetra to 2.0.6

Code

Blame

6 lines (5 loc) · 80 Bytes

Older



Newer

11 years ago



Project gemified

1

# encoding: UTF-8

2

10 years ago



Refactoring: project name cha...



3

# base module for tetra

4

module Tetra

4 years ago



Bump tetra to 2.0.6



5

VERSION = "2.0.6"

11 years ago



Project gemified

6

end

# git fetch / git pull

## *git fetch*

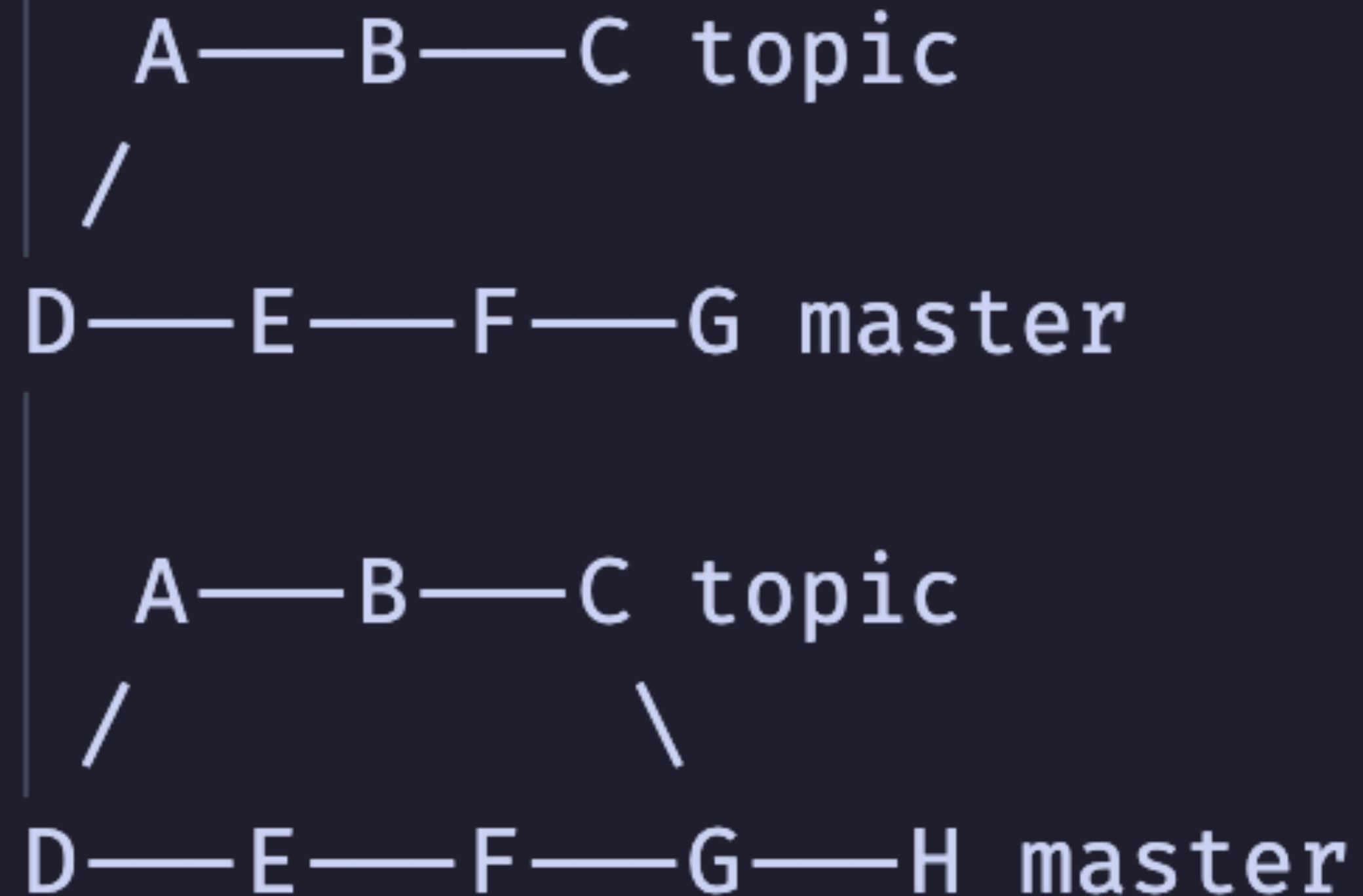
- Download objects and refs from another repository

## *git pull*

- Incorporates changes from a remote repository into the current branch
- basically:
  - *git fetch* +
  - *git merge* or *git rebase*

# git merge

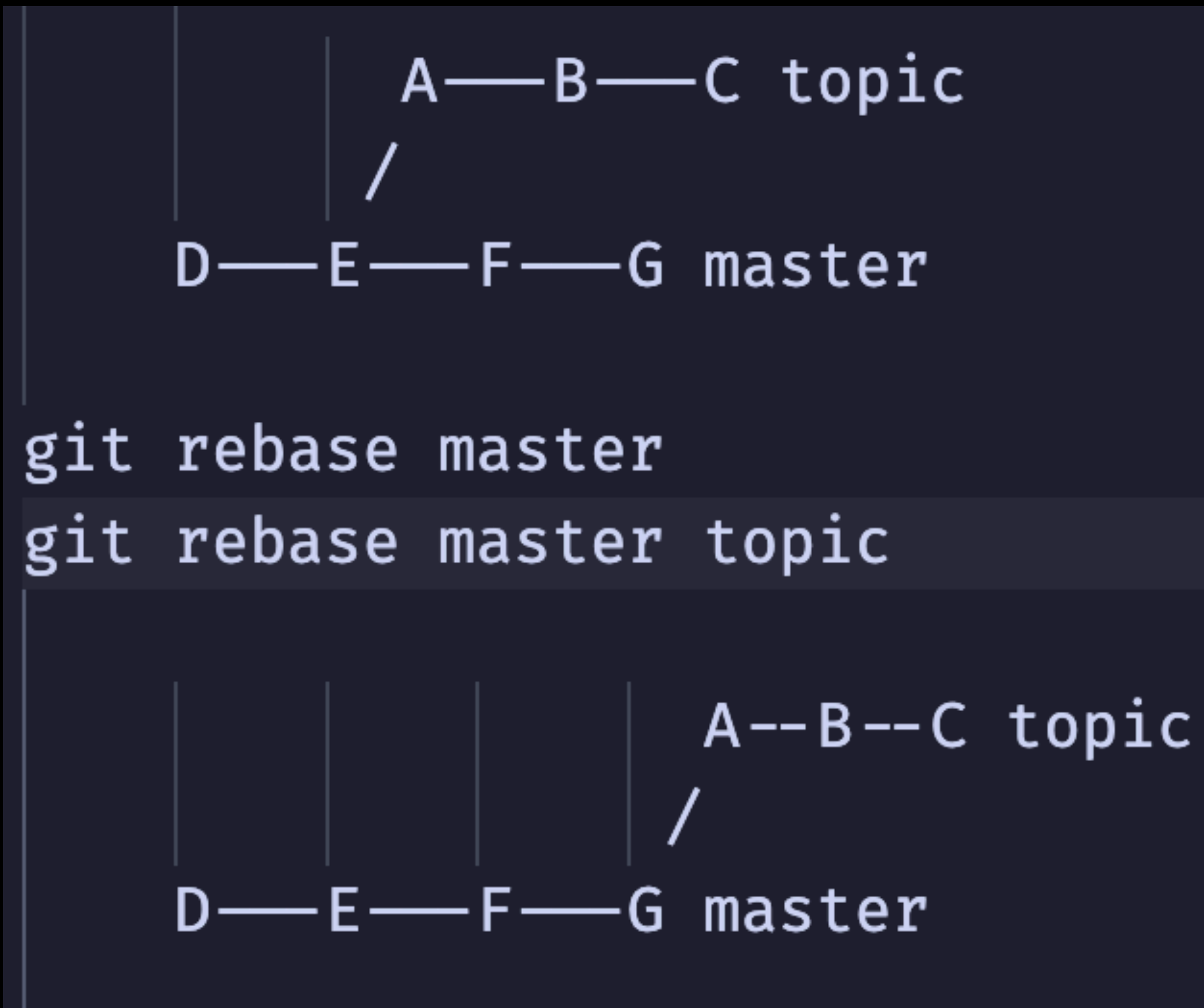
Incorporates changes from the named commits into the current branch.





# git rebase

Reapply commits on top of another base tip.



# git stash

Stash the changes in a dirty working directory away.

```
> git stash
Saved working directory and index state WIP on main: 3065a2a Add a .gitignore file

test-git on | main [$?] via 💎 v3.3.6
> git stash list
stash@{0}: WIP on main: 3065a2a Add a .gitignore file

test-git on | main [$?] via 💎 v3.3.6
> git stash show
test.gemspec | 8 ++++—
version.rb   | 2 +-
2 files changed, 5 insertions(+), 5 deletions(-)
```

# git log

Shows the commit logs.

```
> git log
commit d3c1891ea15c0fcd322654fb7de0d5d1b16f829c (HEAD → main)
Author: Dominik Gedon <dominik@gedon.org>
Date:   Wed Nov 27 17:42:49 2024 +0100

    Add .gitignore file

commit c48777cceb307b9c9fb30d87b1343b0c5044b9d (origin/main, origin/HEAD)
Author: Dominik Gedon <dominik@gedon.org>
Date:   Wed Nov 27 15:09:03 2024 +0100

    feat: Add Python Cheatsheet submodule
```

# git remote

Manage the set of repositories ("remotes") whose branches you track.

```
> git remote -v
origin    git@github.com:nodeg/tetra.git (fetch)
origin    git@github.com:nodeg/tetra.git (push)
upstream  git@github.com:uyuni-project/tetra.git (fetch)
upstream  git@github.com:uyuni-project/tetra.git (push)
```

# git reset

Resets current HEAD to the specified state.

```
git reset [<mode>] [<commit>]
```

`--soft`

Does not touch the index file or the working tree at all.

`--mixed`

Resets the index but not the working tree, the changed files are preserved but not marked for commit.

`--hard`

Resets the index and working tree.



# git revert

Revert some existing commits.

```
> git revert 3065a2a
[main 14a2f40] Revert "Add a .gitignore file"
1 file changed, 1 deletion(-)
delete mode 100644 .gitignore

> glo
14a2f40 (HEAD → main) Revert "Add a .gitignore file"
3065a2a (origin/main, origin/HEAD) Add a .gitignore file
c48777c feat: Add Python Cheatsheet submodule
3b596e6 Add Ruby test files
cb9f20c Add README.md
```

```
test-git on ↗ main [?] via 💎 v3.3.6
> git show 3065a2a
commit 3065a2a11217acb60e7bdc85cc8fef9c152b96d9 (origin/main, origin/HEAD)
Author: Dominik Gedon <dominik@gedon.org>
Date:   Wed Nov 27 21:24:48 2024 +0100
```

Add a .gitignore file

added: .gitignore

1:

: 1 | \*.bin

```
test-git on ↗ main [?] via 💎 v3.3.6
> git show 14a2f40
commit 14a2f4083ec26cef968c2819d1ee4ffaaff072861 (HEAD → main)
Author: Dominik Gedon <dominik@gedon.org>
Date:   Wed Nov 27 21:43:53 2024 +0100
```

Revert "Add a .gitignore file"

This reverts commit 3065a2a11217acb60e7bdc85cc8fef9c152b96d9.

removed: .gitignore

0:

1 : | \*.bin

# git apply

Applies the patch but does not create a commit.

```
Gem::Specification.new do |s|
- s.name      = "tetra"
+ s.name      = "ttra"
  s.version    = Tetra::VERSION
  s.authors    = ["Dominik Gedon", "Silvio Moiola"]
  s.email      = "dgedon@suse.de"
@@ -27,12 +27,12 @@ Gem::Specification.new do |s|
  s.required_ruby_version = '≥ 2.7.0'

  s.add_development_dependency "aruba", "→ 0.6.2"
- s.add_development_dependency "simplecov", "→ 0.22.0"
- s.add_development_dependency "rake", "→ 13.2.0"
- s.add_development_dependency "rspec", "→ 3.13.0"
  s.add_development_dependency "rubocop", "→ 1.64.1"

  s.add_runtime_dependency "clamp", "→ 1.3.2"
+ s.add_development_dependency "simplecov", "→ 0.22.0"
+ s.add_development_dependency "rake", "→ 13.2.0"
+ s.add_development_dependency "rspec", "→ 3.13.0"
```

```
> git apply conflict.diff
```

```
test-git on ↗ main [!?] via 💎 v3.3.6
> git diff
```

```
test.gemspec
```

```
2: $LOAD_PATH.push File.expand_path("../lib", __FILE__)
```

```
2 : 2 require "tetra/version"
3 : 3
4 : 4 Gem::Specification.new do |s|
5 :   s.name      = "tetra"
   : 5   s.name      = "ttra"
6 : 6   s.version    = Tetra::VERSION
7 : 7   s.authors    = ["Dominik Gedon", "Silvio Moiola"]
8 : 8   s.email      = "dgedon@suse.de"
```

```
27: Gem::Specification.new do |s|
```

```
27 : 27 s.required_ruby_version = '≥ 2.7.0'
28 : 28
29 : 29 s.add_development_dependency "aruba", "→ 0.6.2"
30 :   s.add_development_dependency "simplecov", "→ 0.22.0"
31 :   s.add_development_dependency "rake", "→ 13.2.0"
32 :   s.add_development_dependency "rspec", "→ 3.13.0"
33 : 30 s.add_development_dependency "rubocop", "→ 1.64.1"
34 : 31
35 : 32 s.add_runtime_dependency "clamp", "→ 1.3.2"
   : 33 s.add_development_dependency "simplecov", "→ 0.22.0"
   : 34 s.add_development_dependency "rake", "→ 13.2.0"
   : 35 s.add_development_dependency "rspec", "→ 3.13.0"
36 : 36 s.add_runtime_dependency "erb", "→ 4.0.3"
37 : 37 s.add_runtime_dependency "json_pure", "≥ 2.6.3", "< 2.8.0"
38 : 38 s.add_runtime_dependency "open4", "→ 1.3.4"
```

# git cherry-pick

Apply the changes introduced by some existing commits.

```
test-git on ↗ main [!?] via 💎 v3.3.6  
> git cherry-pick c48777c
```



# Commands - Tasks

1. Create an empty local git repository, create a new GitHub repository and link the local one to the remote one
2. Take a look at the git history and use different parameters
3. Stash changes and apply them again. Then delete them/the stash
4. Reset your local repository to 2 commits before the current one
5. Create a patch with some changes
6. Cherry-pick a commit from a different branch
7. Create and push a tag
8. Checkout a GitHub pull request

Best practice

# Proper commit messages

	COMMENT	DATE
○	CREATED MAIN LOOP & TIMING CONTROL	14 HOURS AGO
○	ENABLED CONFIG FILE PARSING	9 HOURS AGO
○	MISC BUGFIXES	5 HOURS AGO
○	CODE ADDITIONS/EDITS	4 HOURS AGO
○	MORE CODE	4 HOURS AGO
○	HERE HAVE CODE	4 HOURS AGO
○	AAAAAAAAAA	3 HOURS AGO
○	ADKFJSLKDFJSDKLFJ	3 HOURS AGO
○	MY HANDS ARE TYPING WORDS	2 HOURS AGO
○	HAAAAAAAAAANDS	2 HOURS AGO

AS A PROJECT DRAGS ON, MY GIT COMMIT MESSAGES GET LESS AND LESS INFORMATIVE.

# Proper commit description

- Why is the change being made?
- Provide references to PRs/issues or resources
- See also Conventional Commits

# Miscellaneous

- commit early and often
- squash related commits
- one change per commit
- do not push straight to main/master, but use a branch
- do not change published history

**Advanced topics**

# Maintenance

- *git fsck* - Verifies the connectivity and validity of the objects in the database
- *git gc* - Cleanup unnecessary files and optimize the local repository
- *git clean* - Remove untracked files from the working tree
- *git remote prune* - deletes stale remote-tracking branches
- *git stash clear* - remove all the stash entries
- *git maintenance* - Run tasks to optimize Git repository data

# Submodules

- one repository embedded inside another repository
- submodule has its own history



**nodeg** feat: Add Python Cheatsheet submodule

c48777c · 1 hour ago



**3 Commits**



**python-cheatsheets @ 625e4d4**

feat: Add Python Cheatsheet submodule

**1 hour ago**



# Working with large files

- extension for versioning large files
- large files are replaced by pointers
- storing the file contents on a remote server e.g. gitlab.suse.de

 Erwartungshorizont\_IHK\_A... LFS Convert Erwartungshorizont images ...

 **.gitattributes**  842 B

```
1 *.mp4 filter=lfs diff=lfs merge=lfs -text
2 *.webm filter=lfs diff=lfs merge=lfs -text
3 *.mkv filter=lfs diff=lfs merge=lfs -text
```

# Working with large repositories

## 1. *git (shallow) clone*

```
> git clone --depth 100 --no-checkout https://github.com/uyuni-project/uyuni.git
```

pulls only the latest n (here 100) commits of the repo's history

## 2. *git-sparse-checkout*

```
> git sparse-checkout set testsuite
```

reduce your working tree to a subset of tracked files

# Hooks

Scripts that run automatically every time a particular event occurs.

```
> ll .git/hooks/
-rwxr-xr-x dgedon staff 478 B   Wed Nov 27 13:55:48 2024  [x] applypatch-msg.sample
-rwxr-xr-x dgedon staff 896 B   Wed Nov 27 13:55:48 2024  [x] commit-msg.sample
-rwxr-xr-x dgedon staff 4.6 KB  Wed Nov 27 13:55:48 2024  [x] fsmonitor-watchman.sample
-rwxr-xr-x dgedon staff 189 B   Wed Nov 27 13:55:48 2024  [x] post-update.sample
-rwxr-xr-x dgedon staff 424 B   Wed Nov 27 13:55:48 2024  [x] pre-applypatch.sample
-rwxr-xr-x dgedon staff 1.6 KB  Wed Nov 27 13:55:48 2024  [x] pre-commit.sample
-rwxr-xr-x dgedon staff 416 B   Wed Nov 27 13:55:48 2024  [x] pre-merge-commit.sample
-rwxr-xr-x dgedon staff 1.3 KB  Wed Nov 27 13:55:48 2024  [x] pre-push.sample
-rwxr-xr-x dgedon staff 4.8 KB  Wed Nov 27 13:55:48 2024  [x] pre-rebase.sample
-rwxr-xr-x dgedon staff 544 B   Wed Nov 27 13:55:48 2024  [x] pre-receive.sample
-rwxr-xr-x dgedon staff 66 B    Wed Nov 27 22:18:28 2024  [x] prepare-commit-msg
-rwxr-xr-x dgedon staff 1.5 KB  Wed Nov 27 13:55:48 2024  [x] prepare-commit-msg.sample
-rwxr-xr-x dgedon staff 2.7 KB  Wed Nov 27 13:55:48 2024  [x] push-to-checkout.sample
-rwxr-xr-x dgedon staff 2.3 KB  Wed Nov 27 13:55:48 2024  [x] sendemail-validate.sample
-rwxr-xr-x dgedon staff 3.6 KB  Wed Nov 27 13:55:48 2024  [x] update.sample
```



# git reflog

Manage reference log information.

```
> git reflog
d3c1891 (HEAD → main) HEAD@{0}: commit: Add .gitignore file
c48777c (origin/main, origin/HEAD) HEAD@{1}: reset: moving to HEAD
c48777c (origin/main, origin/HEAD) HEAD@{2}: reset: moving to HEAD
c48777c (origin/main, origin/HEAD) HEAD@{3}: reset: moving to c48777c
6f1aa04 HEAD@{4}: commit: test: Introduce some merge conflicts
c48777c (origin/main, origin/HEAD) HEAD@{5}: reset: moving to c48777c
a8bf561 HEAD@{6}: merge ruby: Merge made by the 'ort' strategy.
c48777c (origin/main, origin/HEAD) HEAD@{7}: checkout: moving from ruby to main
68fc021 (ruby) HEAD@{8}: checkout: moving from main to ruby
c48777c (origin/main, origin/HEAD) HEAD@{9}: checkout: moving from ruby to main
68fc021 (ruby) HEAD@{10}: checkout: moving from main to ruby
c48777c (origin/main, origin/HEAD) HEAD@{11}: cherry-pick: feat: Add Python Cheatsheet submodule
3b596e6 HEAD@{12}: checkout: moving from ruby to main
68fc021 (ruby) HEAD@{13}: commit: feat: Add Python Cheatsheet submodule
81e3ac8 (origin/ruby) HEAD@{14}: checkout: moving from main to ruby
3b596e6 HEAD@{15}: checkout: moving from ruby to main
81e3ac8 (origin/ruby) HEAD@{16}: checkout: moving from main to ruby
3b596e6 HEAD@{17}: checkout: moving from ruby to main
81e3ac8 (origin/ruby) HEAD@{18}: commit (amend): This is a very bad commit message since we do not stick to the rules and
cd1277c HEAD@{19}: commit: This is a very bad commit message since we do not stick to the rules
b54cf75 HEAD@{20}: commit: fix: reorder Ruby dependencies
3b596e6 HEAD@{21}: checkout: moving from main to ruby
3b596e6 HEAD@{22}: reset: moving to 3b596e6
3b596e6 HEAD@{23}: reset: moving to 3b596e6
3b596e6 HEAD@{24}: checkout: moving from ruby_debug to main
3b596e6 HEAD@{25}: checkout: moving from main to ruby_debug
3b596e6 HEAD@{26}: checkout: moving from ruby_debug to main
3b596e6 HEAD@{27}: checkout: moving from main to ruby_debug
3b596e6 HEAD@{28}: commit (amend): Add Ruby test files
4ec3ece HEAD@{29}: commit: Add Ruby test files
cb9f20c HEAD@{30}: clone: from github.com:nodeg/test-git.git
```

# emailed patches

*git-format-patch*

- Prepares patches for an email submission

*git-am*

- Apply a series of patches from a mailbox (output from *git-format-patch*)



# git bisect

- can help you determine which commit introduced the bug
- fixing needs to be done manually though

```
> git bisect start
status: waiting for both good and bad commits

~/.config/git on ⌵ master (BISECTING) [!]
> git bisect good bad01c9d4ab8ecff8d5786db2155432353a2cbf2
status: waiting for bad commit, 1 good commit known

~/.config/git on ⌵ master (BISECTING) [!]
> git bisect bad 142537b1c66e72726942ea888df5a6c57bfec05e
Bisecting: 0 revisions left to test after this (roughly 0 steps)
[3b102dc743d6f66c7ab7bee1ecdc69aae60c5c60] [lsd] Remove depracted config option

~/.config/git on ⌵ HEAD (3b102dc) (BISECTING) [!]
> git bisect log
git bisect start
# status: waiting for both good and bad commits
# good: [bad01c9d4ab8ecff8d5786db2155432353a2cbf2] [wezterm] Update config for Neovim
git bisect good bad01c9d4ab8ecff8d5786db2155432353a2cbf2
# status: waiting for bad commit, 1 good commit known
# bad: [142537b1c66e72726942ea888df5a6c57bfec05e] Remove old configs
git bisect bad 142537b1c66e72726942ea888df5a6c57bfec05e

~/.config/git on ⌵ HEAD (3b102dc) (BISECTING) [!]
> git bisect reset
M      fish/.config/fish/fish_variables
M      git/.config/git/work
M      gpg/.gnupg/gpg-agent.conf
M      macos/Brewfile
M      neovim/.config/nvim/lazy-lock.json
M      neovim/.config/nvim/lua/plugins/neogit.lua
M      ssh/.ssh/config
M      wezterm/.config/wezterm/wezterm.lua
Previous HEAD position was 3b102dc [lsd] Remove depracted config option
Switched to branch 'master'
Your branch is up to date with 'origin/master'.
```

# Advanced topics - Tasks

1. Read up on and use some of the maintenance commands
2. Add a new submodule to a git repository
3. Make changes to this submodule and incorporate the changes into the parent directory
4. Install and enable git LFS and add a (larger )PDF file to it
5. Create a pre-commit hook

# Tools



# Tools

- *man gittutorial* to get started
- *man giteveryday* for a useful minimum set of commands
- Delta: A syntax-highlighting pager for git, diff, grep, and blame output
- gitk: The git repository browser
- tig: Text-mode interface for git
- awesome-git-addons: curated list that enhance the git CLI
- hub or lab: interacts with repositories on GitHub and GitLab

# Links

# Links

- <https://git-scm.com/book/en/v2>
- <https://think-like-a-git.net>
- <https://github.com/dictcp/awesome-git>
- <https://rogerdudler.github.io/git-guide>
- <https://cbea.ms/git-commit>
- <https://www.conventionalcommits.org>
- <https://nvie.com/posts/a-successful-git-branching-model>
- <https://ndpsoftware.com/git-cheatsheet.html>
- <https://learngitbranching.js.org>
- <https://github.com/github/gitignore>