

diff

head / working dir

\$ git diff

\$ git difftool

commit / working dir

\$ git difftool master

commit1 / commit2

\$ git difftool master dev

commit1 / commit2 for file.txt

\$ git difftool master dev dir/file.txt

\$ git difftool master dev -- "dir/file.txt"

commit1:file1 / commit2:file2

\$ git difftool dev:README.md master:rm.Extensions/Heap.cs

diff of last 2 commits combined w/ head

\$ git difftool head~2 head

diff of last 2 commits combined w/ working dir

\$ git difftool head~2

diff of last 2 commits combined w/ staged working dir

\$ git difftool head~2 --staged

char level diff

\$ git diff --color-words=.

ancestry (parent) refs

^ parent by breadth

~ parent by depth

^ 1st parent (same as ^1)

~ 1st parent (same as ~1)

^2 2nd parent

~2 grandparent (1st parent's 1st parent)

^! no parents (roughly, ^ for parent, ! for no)

How to see a diff of a commit?

\$ git diff 4a5b6c7~ 4a5b6c7

\$ git diff 4a5b6c7^!

```
## commit ranges
```

```
# What's new on origin/master?
```

```
(master)
```

```
$ git log ..origin/master
```

```
# double dot, triple dot
```

```
#             dev..master = { d }
```

```
#
```

```
# a---b---c---d master
```

```
#             \             dev...master = { d, e }
```

```
#             --e dev
```

```
#
```

```
#             master..dev = { e }
```

```
#
```

```
#             dev master = { a, b, c, d, e }
```

```
# .. in e, but not in d
```

```
$ git log d..e
```

```
# ... in d or in e but not both
```

```
$ git log d...e
```

```
# in d or e or both
```

```
$ git log d e
```

```
## commit --amend
```

```
$ git commit
```

```
#           topic
```

```
#  ---o<--o<--A
```

```
#
```

```
$ git commit --amend
```

```
#  ---o<--o<--A
```

```
#           \
```

```
#           A' topic
```

```
## stash
```

```
# -u includes untracked files
```

```
$ git stash save -u "comment"
```

```
# pop will remove if no conflicts, apply does not
```

```
$ git stash apply|pop
```

```
# v2.11+, no need to type stash@{1}
```

```
$ git stash apply|pop 1
```

```
#      // this is the stashed commit
```

```
#
```

```
#      *-.   WIP on dev
```

```
#      | \  \
```

```
#      |  |  |
```

```
#      |  |  | * untracked files on dev
```

```
#      |  |  |
```

```
#      |  |  |
```

```
#      |  |  | * index on dev
```

```
#      |  |  |
```

```
#      |  |  | /
```

```
#      * (dev)
```

```
      // point from where `git stash save -u` is ran
```

```
#
```

```
# use --index to restore index
```

```
$ git stash apply 3 --index
```

commit message convention

50/72:

subject is 50 chars only

body is 72 chars wide. this needs to wrap at 72 chars
like so.

50/*:

subject is 50 chars only

body is freeform. this can go on and on and on and on and on and on.

```
$ git log --oneline -1
```

```
8624263 (HEAD -> dev) subject is 54 chars only
```

Please do not do this:

my subject is more than 54 chars so i decided to break
it down in this horrible, terrible, criminal way

commit body.

```
$ git log --oneline -1
```

```
8624263 (HEAD -> dev) my subject is more than 54 chars so i decided to break  
it down in this horrible, terrible, criminal way
```

There are exceptions:

- Auto-generated messages

- Quoted text

Merge remote-tracking branch 'origin/really-long-branch-name' into next

commit body.

Commits are forever, branches are not.

- Try not to make typos in commits

- Try not to make mistakes by putting incorrect ticket

branch

What branches is my branch merged into?

```
$ git fetch
```

```
$ git branch -r --contains origin/branch
```

tracking branch info

```
$ git branch -v # verbose
```

```
$ git branch -vv # very verbose
```

force move a branch

```
$ git branch -f <branch> <commit|branch>
```

```
$ git branch -f dev origin/dev
```

checkout/clean

undo all unstaged changes

\$ git checkout .

undo a file's unstaged changes

\$ git checkout file.txt

delete untracked files, dirs, build files

\$ git clean -f [-d] [-x]

delete interactive

\$ git clean -i

alias: git undo

\$ git reset --hard && git clean -f

to delete dirs also

\$ git undo -d


```
## revert
```

```
# revert a commit
```

```
$ git revert <commit>
```

```
# revert a merge commit
```

```
$ git revert <merge-commit>
```

```
error: commit <commit> is a merge but no -m option was given.
```

```
fatal: revert failed
```

```
#
```

```
# * Merge branch 'jwt' into next
```

```
# | \
```

```
# | * jwt: Use 'commonName' from 'sub' or 'iss'
```

```
# | |
```

```
# * | Merge branch 'scite' into next
```

```
# |
```

```
#
```

```
# revert a merge commit to 1st parent
```

```
$ git revert -m 1 <merge-commit>
```