

```
## 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
```

```
# see diff of previous 2 commits combined
```

```
$ git difftool head~2 head
```

```
# see diff of previous 2 commits combined w/ working dir
```

```
$ git difftool head~2
```

```
# see diff of previous 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 54/\*

subject is 54 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

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

```
$ 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

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

### # 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