Git Cheat Sheet

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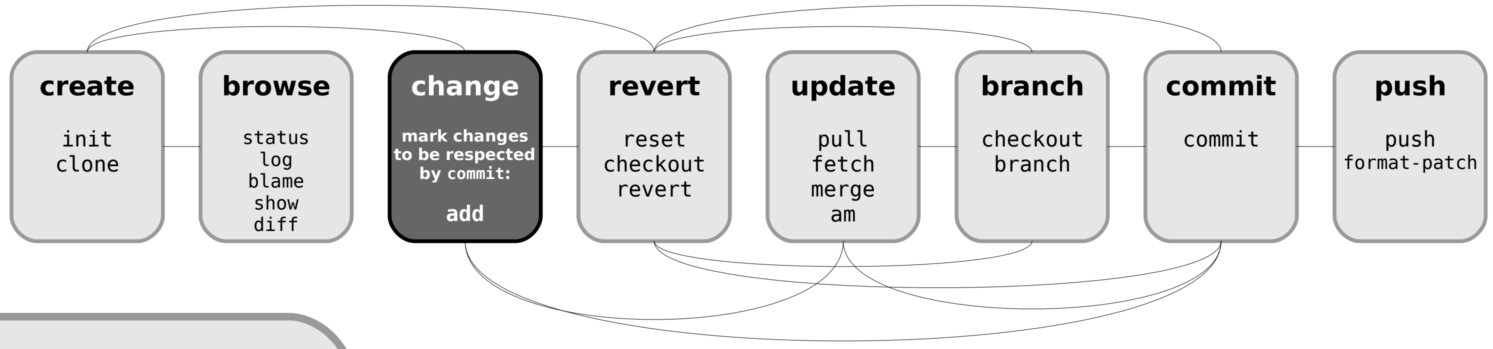
Based on work by Zack Rusin

Basics

Use git help [*command*] if you're stuck.

`master`	default devel branch
`origin`	default upstream branch
`HEAD`	current branch
`HEAD^`	parent of HEAD
`HEAD~4`	great-great grandparent of HEAD
`foo``..`*`bar`*	from branch *foo* to branch *bar*

(left to right) Command Flow



create
init
clone

browse
status
log
blame
show
diff

change
mark changes to be respected by commit:
add

revert
reset
checkout
revert

update
pull
fetch
merge
am

branch
checkout
branch

commit
commit

push
push
format-patch

Create

From existing files

```
   git init
   git add .
```

From existing repository

```
   git clone ~/old ~/new
   git clone git://...
   git clone ssh://...
```

View

git status

git diff [*oldid newid*]

git log [-p] [*file*|*dir*]

git blame *file*

git show *id* (meta data + diff)

git show *id*:*file*

git branch (shows list, * = current)

git tag -l (shows list)

Revert

In Git, `revert` usually describes a new commit that undoes previous commits.

git reset --hard **(NO UNDO)**
(**reset** to last commit)

git revert *branch*

git commit -a --amend
(**replaces** prev. commit)

git checkout *id file*

Publish

In Git, `commit` only respects changes that have been marked explicitly with `add`.

git commit [-a]
(-a: add changed files automatically)

git format-patch origin
(create set of diffs)

git push *remote*
(push to origin or *remote*)

git tag *foo*
(mark current version)

Update

git fetch (from def. upstream)

git fetch *remote*

git pull (= fetch & merge)

git am -3 patch.mbox

git apply patch.diff

Branch

git checkout *branch*
(switch working dir to *branch*)

git merge *branch*
(merge into current)

git branch *branch*
(branch current)

git checkout -b *new other*
(branch *new* from *other* and switch to it)

Useful Tools

git archive
Create release tarball

git bisect
Binary search for defects

git cherry-pick
Take single commit from elsewhere

git fsck
Check tree

git gc
Compress metadata (performance)

git rebase
Forward-port local changes to remote branch

git remote add *URL*
Register a new remote repository for this tree

git stash
Temporarily set aside changes

git tag
(there's more to it)

gitk
Tk GUI for Git

Conflicts

Use `add` to mark files as resolved.

```
git diff [--base]
git diff --ours
git diff --theirs
git log --merge
gitk --merge
```

Tracking Files

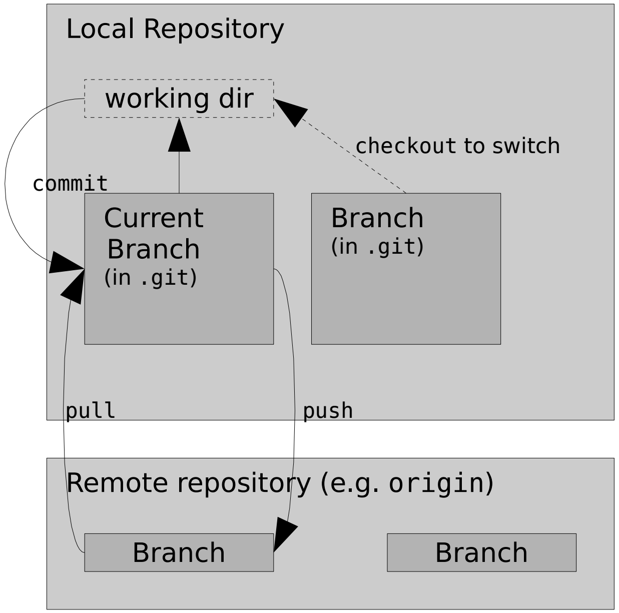
git add *files*

git mv *old new*

git rm *files*

git rm --cached *files*
(stop tracking but keep files in working dir)

Structure Overview



Local Repository

working dir

checkout to switch

commit

Current Branch (in .git)

Branch (in .git)

pull

push

Remote repository (e.g. origin)

Branch

Branch