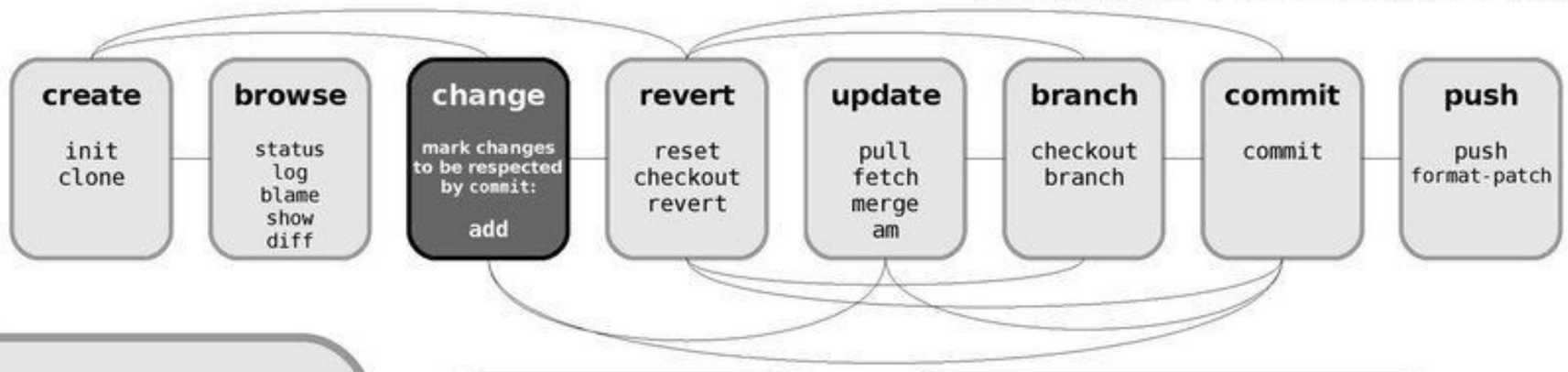
Git Cheat Sheet

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

From existing files

```
git init
git add .
```

From existing repository

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

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)

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

Tracking Files

```
git add files
git mv old new
git rm files
git rm --cached files
```
(stop tracking but keep files in working dir)

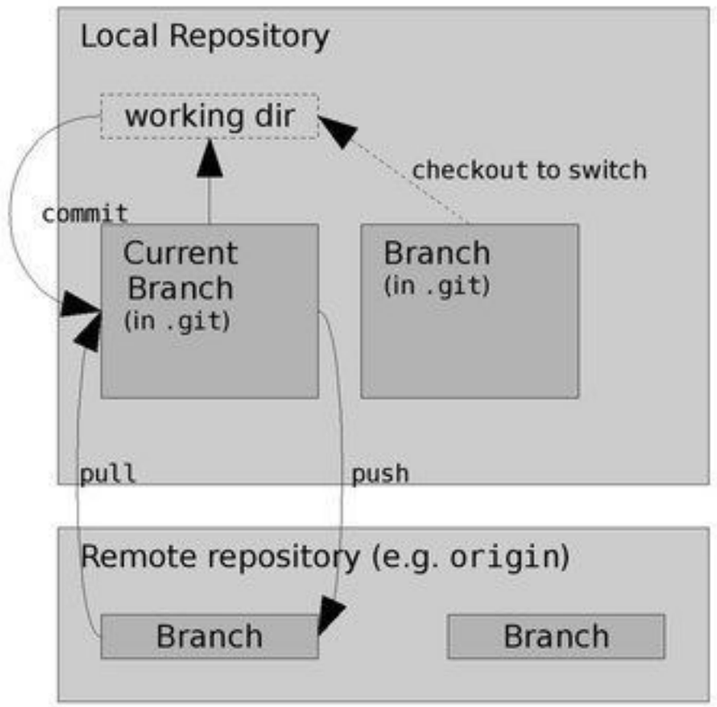
View

```
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)
```

Update

```
git fetch (from def. upstream)
git fetch remote
git pull (= fetch & merge)
git am -3 patch.mbox
git apply patch.diff
```

Structure Overview



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`*

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)

Conflicts

Use add to mark files as resolved.

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