Git Cheat Sheet

http://git.or.cz/

Remember: git command --help

Global Git configuration is stored in $HOME/.gitconfig (git config --help)

Create

From existing data

```
cd ~/projects/myproject
git init
git add .
```

From existing repo

```
git clone ~/existing/repo ~/new/repo
git clone git://host.org/project.git
git clone ssh://you@host.org/proj.git
```

Show

Files changed in working directory
git status

Changes to tracked files
git diff

What changed between $ID1 and $ID2
git diff $id1 $id2

History of changes
git log

History of changes for file with diffs
git log -p $file $dir/ec/tory/

Who changed what and when in a file
git blame $file

A commit identified by $ID
git show $id

A specific file from a specific $ID
git show $id:$file

All local branches
git branch
(star '*' marks the current branch)

Cheat Sheet Notation

$id : notation used in this sheet to represent either a commit id, branch or a tag name
$file : arbitrary file name
$branch : arbitrary branch name

Concepts

Git Basics

master : default development branch
origin : default upstream repository
HEAD : current branch
HEAD^ : parent of HEAD
HEAD~4 : the great-great grandparent of HEAD

Revert

Return to the last committed state
git reset --hard
⚠ you cannot undo a hard reset

Revert the last commit
git revert HEAD — Creates a new commit

Revert specific commit
git revert $id — Creates a new commit

Fix the last commit
git commit -a --amend
(after editing the broken files)

Checkout the $id version of a file
git checkout $id $file

Branch

Switch to the $id branch
git checkout $id

Merge branch1 into branch2

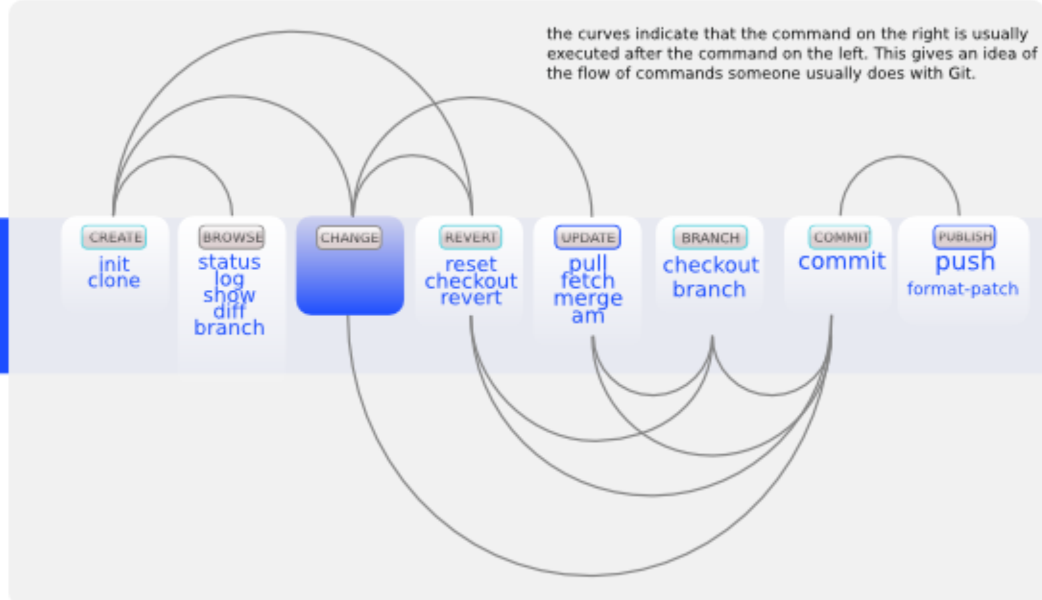
```
git checkout $branch2
git merge branch1
```

Create branch named $branch based on the HEAD
git branch $branch

Create branch $new_branch based on branch $other and switch to it
git checkout -b $new_branch $other

Delete branch $branch
git branch -d $branch

Commands Sequence



Update

Fetch latest changes from origin
git fetch
(but this does not merge them).

Pull latest changes from origin
git pull
(does a fetch followed by a merge)

Apply a patch that some sent you
git am -3 patch.mbox
(in case of a conflict, resolve and use git am --resolved)

Publish

Commit all your local changes
git commit -a

Prepare a patch for other developers
git format-patch origin

Push changes to origin
git push

Mark a version / milestone
git tag v1.0

Useful Commands

Finding regressions

```
git bisect start          (to start)
git bisect good $id       ($id is the last working version)
git bisect bad $id        ($id is a broken version)

git bisect bad/good       (to mark it as bad or good)
git bisect visualize      (to launch gitk and mark it)
git bisect reset          (once you're done)
```

Check for errors and cleanup repository

```
git fsck
git gc --prune
```

Search working directory for foo()
git grep "foo()"

Resolve Merge Conflicts

To view the merge conclicts

```
git diff                  (complete conflict diff)
git diff --base $file     (against base file)
git diff --ours $file     (against your changes)
git diff --theirs $file   (against other changes)
```

To discard conflicting patch

```
git reset --hard
git rebase --skip
```

After resolving conflicts, merge with

```
git add $conflicting_file   (do for all resolved files)
git rebase --continue
```

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