



# Git Cheat Sheet

## Getting Started

Start a new repo:  
`git init`

Clone an existing repo:  
`git clone <url>`

## Prepare to Commit

Add untracked file or unstaged changes:  
`git add <file>`

Add all untracked files and unstaged changes:  
`git add .`

Choose which parts of a file to stage:  
`git add -p`

Move file:  
`git mv <old> <new>`

Delete file:  
`git rm <file>`

Tell Git to forget about a file without deleting it:  
`git rm --cached <file>`

Unstage one file:  
`git reset <file>`

Unstage everything:  
`git reset`

Check what you added:  
`git status`

## Make Commits

Make a commit (and open text editor to write message):  
`git commit`

Make a commit:  
`git commit -m 'message'`

Commit all unstaged changes:  
`git commit -am 'message'`

## Move Between Branches

Switch branches:  
`git switch <name>`

OR

`git checkout <name>`

Create a branch:

`git switch -c <name>`

OR

`git checkout -b <name>`

List branches:

`git branch`

List branches by most recently committed to:  
`git branch --sort=--committerdate`

Delete a branch:

`git branch -d <name>`

Force delete a branch:

`git branch -D <name>`

## Diff Staged/Unstaged Changes

Diff all staged and unstaged changes:  
`git diff HEAD`

Diff just staged changes:  
`git diff --staged`

Diff just unstaged changes:  
`git diff`

## Diff Commits

Show diff between a commit and its parent:  
`git show <commit>`

Diff two commits:  
`git diff <commit> <commit>`

Diff one file since a commit:  
`git diff <commit> <file>`

Show a summary of a diff:  
`git diff <commit> --stat`  
`git show <commit> --stat`

## Ways to refer to a commit

Every time we say `<commit>`, you can use any of these:

* a branch	main
* a tag	v0.1
* a commit ID	3e887ab
* a remote branch	origin/main
* current commit	HEAD
* 3 commits ago	HEAD^^^ or HEAD~3

## Discard Your Changes

Delete unstaged changes to one file:  
`git restore <file>`

OR  
`git checkout <file>`

Delete all staged and unstaged changes to one file:  
`git restore --staged --worktree <file>`

OR  
`git checkout HEAD <file>`

Delete all staged and unstaged changes:  
`git reset --hard`

Delete untracked files:  
`git clean`

'Stash' all staged and unstaged changes:  
`git stash`

## Edit History

"Undo" the most recent commit (keep your working directory the same):  
`git reset HEAD^`

Squash the last 5 commits into one:  
`git rebase -i HEAD~5`

Then change "pick" to "fixup" for any commit you want to combine with the previous one

Undo a failed rebase:  
`git reflog BRANCHNAME`

Then manually find the right commit ID in the reflog, then run:

`git reset --hard <commit>`

Change a commit message (or add a file you forgot):  
`git commit --amend`

## Code Archaeology

Look at a branch's history:  
`git log main`

`git log --graph main`  
`git log --oneline`

Show every commit that modified a file:  
`git log <file>`

Show every commit that modified a file, including before it was renamed:  
`git log --follow <file>`

Find every commit that added or removed some text:  
`git log -G banana`

Show who last changed each line of a file:  
`git blame <file>`

## Combine Diverged Branches

Combine with rebase:

```
git switch banana
```

```
git rebase main
```

Before:



After:

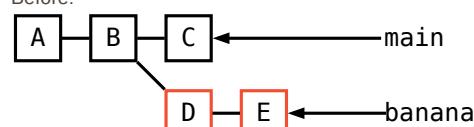


Combine with merge:

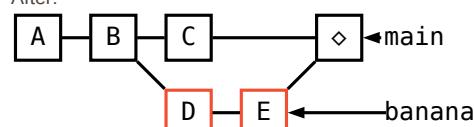
```
git switch main
```

```
git merge banana
```

Before:



After:



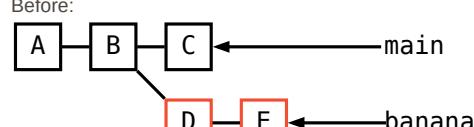
Combine with squash merge:

```
git switch main
```

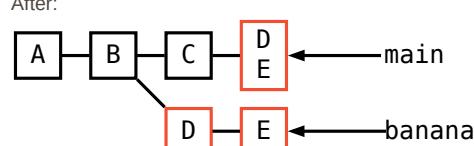
```
git merge --squash banana
```

```
git commit
```

Before:



After:

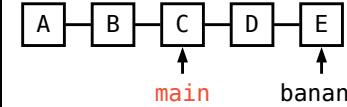


Bring a branch up to date with another branch (aka "fast-forward merge"):

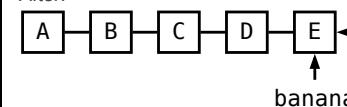
```
git switch main
```

```
git merge banana
```

Before:



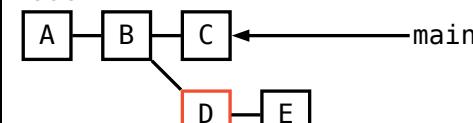
After:



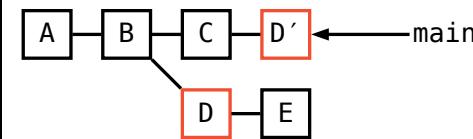
Copy one commit onto the current branch:

```
git cherry-pick <commit>
```

Before:



After:



## Push Your Changes

Push the

```
main
```

branch to the remote origin

:

```
git push origin main
```

Push the current branch to its remote "tracking branch":

```
git push
```

Push a branch that you've never pushed before:

```
git push -u origin <name>
```

Force push:

```
git push --force-with-lease
```

Push tags:

```
git push --tags
```

## Important Files

Local git config:

```
.git/config
```

Global git config:

```
~/.gitconfig
```

List of files to ignore:

```
.gitignore
```

## Pull Changes

Fetch changes (but don't change any of your local branches):

```
git fetch origin main
```

Fetch changes and then rebase your current branch:

```
git pull --rebase
```

Fetch changes and then merge them into your current branch:

```
git pull origin main
```

OR

```
git pull
```

## Restore an Old File

Get the version of a file from another commit:

```
git checkout <commit> <file>
```

OR

```
git restore <file> --source <commit>
```

## Add a Remote

```
git remote add <name> <url>
```

## Configure Git

Set a config option:

```
git config user.name 'Your Name'
```

Set option globally:

```
git config --global ...
```

Add an alias:

```
git config alias.st status
```

See all possible config options:

```
man git-config
```