

# Git Cheat Sheet

---

A quick reference for Git commands for version control and collaboration.

---

## Repository Setup

Task	Command
Initialize a new Git repo	<code>git init</code>
Clone an existing repo	<code>git clone &lt;repo_url&gt;</code>
Check remote URLs	<code>git remote -v</code>

---

## Branching

Task	Command
List local branches	<code>git branch</code>
List remote branches	<code>git branch -r</code>
Switch to branch	<code>git switch &lt;branch&gt;</code> or <code>git checkout &lt;branch&gt;</code>
Create a new branch	<code>git branch &lt;new_branch&gt;</code>
Create & switch to branch	<code>git checkout -b &lt;new_branch&gt;</code>
Delete a branch	<code>git branch -d &lt;branch&gt;</code>
Fetch all branches from remote	<code>git fetch origin</code>
Create local branch tracking remote	<code>git checkout -b &lt;branch&gt; origin/&lt;branch&gt;</code>
Shortcut: switch to remote branch directly	<code>git switch -t origin/&lt;branch&gt;</code>

---

## Making Changes

Task	Command
Check status	<code>git status</code>
Stage a file	<code>git add &lt;file&gt;</code>
Stage all changes	<code>git add .</code>
Commit staged changes	<code>git commit -m "Commit message"</code>
Amend last commit	<code>git commit --amend</code>
View commit history	<code>git log</code> or <code>git log --oneline --graph --all</code>

---

---

## Sync with Remote

Task	Command
Push branch to remote	<code>git push origin &lt;branch&gt;</code>
First-time push (set upstream)	<code>git push --set-upstream origin &lt;branch&gt;</code>
Pull latest changes	<code>git pull origin &lt;branch&gt;</code>
Fetch latest from remote	<code>git fetch</code>

---

## Undo & Revert

Task	Command
Unstage a file	<code>git restore --staged &lt;file&gt;</code>
Discard local changes	<code>git restore &lt;file&gt;</code>
Revert a commit	<code>git revert &lt;commit_hash&gt;</code>
Reset to previous commit	<code>git reset --hard &lt;commit_hash&gt;</code>

---

## Inspecting

Task	Command
Show changes	<code>git diff</code>
Show staged changes	<code>git diff --staged</code>
Show commit details	<code>git show &lt;commit_hash&gt;</code>

---

## Collaboration

Task	Command
Merge branch	<code>git merge &lt;branch&gt;</code>
Rebase branch	<code>git rebase &lt;branch&gt;</code>
Resolve merge conflicts	Edit files → <code>git add &lt;file&gt;</code> → <code>git commit</code>

---

## Tips

- Use `git log --oneline --graph --all --decorate` for a visual branch history
- Use `git status` often to avoid surprises
- Comment commits clearly for teamwork
- When a remote branch exists but not locally:

1. `git fetch origin`
2. `git checkout -b <branch> origin/<branch>`
3. Or use shortcut: `git switch -t origin/<branch>`