

Using Git

Git

Git is a distributed version control system that allows developers to track and manage changes to code. It supports collaboration by enabling branching and merging, allowing multiple developers to work independently and then combine their changes. Git maintains a history of changes, making it possible to revert to previous versions and review project evolution over time.

Git Providers

- GitHub - Microsoft (Hosted)
- GitLab - GitLab (Hosted + Self-Hosted)
- BitBucket - Atlassian (Hosted)

Git Clients

There are countless client apps for Git. These are the two most common cross-platform clients that are free:

- [SourceTree](#)
- [GitHub Desktop](#)

Git Commands

Here are the main Git commands that can be executed from the command line. These are good to know even when using a Git client that might abstract some of this:

- `git init` : Initialises a new Git repository in your project directory.
- `git clone [URL]` : Creates a local copy of a repository that already exists remotely.
- `git add [file]` : Stages a file, preparing it for a commit.
- `git commit -m "[message]"` : Records or snapshots the staged changes in the repository, along with a message.
- `git status` : Shows the status of changes as untracked, modified, or staged.
- `git push [alias] [branch]` : Uploads all local branch commits to the remote repository.
- `git pull [alias] [branch]` : Fetches and merges any commits from the tracking remote branch.
- `git branch` : Lists existing branches in your repository. With `-a` it shows remote branches.
- `git branch [branch_name]` : Creates a new branch.
- `git checkout [branch_name]` : Switches to another branch and updates the working directory.
- `git merge [branch]` : Merges the specified branch's history into the current branch.
- `git log` : Displays the commit history for the currently active branch.
- `git diff` : Shows the file differences not yet staged.
- `git reset [file]` : Un-stages the file, but it preserves the file contents.
- `git reset --hard [commit]` : Resets the current branch to the specified commit, discarding all changes.