# Setup & Configuration

## Check Git version:

bash

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git --version

## Set your Git username and email:

bash

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git config --global user.name "Your Name"

git config --global user.email "your.email@example.com"

## Check current Git configuration:

bash

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git config --list

# Cloning & Initializing a Repository

## Clone an existing GitHub repository:

bash

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git clone https://github.com/your-username/repo-name.git

## Initialize a new local repository (if starting from scratch):

bash

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git init

# Branching & Switching

## Check the current branch:

bash

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git branch

## Create a new branch:

bash

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git checkout -b new-branch-name

## Switch to another branch:

bash

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git checkout branch-name

## Delete a local branch:

bash

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git branch -d branch-name

## List all branches (local and remote):

bash

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git branch -a

# Tracking & Committing Changes

## Check repository status:

bash

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git status

## Stage files for commit:

bash

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git add file-name

Or add all changed files:

bash

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git add .

## Commit staged changes with a message:

bash

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git commit -m "Your commit message"

## Amend the last commit (if needed, before pushing):

bash

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git commit --amend -m "Updated commit message"

# Pushing & Pulling Changes

## Push changes to the remote repository (default branch, typically main or master):

bash

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git push origin main

## Push a new branch to the remote repository:

bash

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git push -u origin new-branch-name

## Pull the latest changes from the remote repository:

bash

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git pull origin main

## Fetch the latest changes from remote (without merging):

bash

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git fetch origin

## Merge the fetched changes into your current branch:

bash

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git merge origin/main

# Undoing & Fixing Mistakes

## Undo local changes (reset unstaged changes):

bash

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git checkout -- file-name

## Unstage a file (remove from staging but keep local changes):

bash

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git reset file-name

## Reset commit history to a previous commit (careful with this one):

bash

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git reset --hard commit-hash

## Revert a commit (create a new commit that undoes a previous commit):

bash

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git revert commit-hash

# Working with Remote Repositories

## Add a remote repository (if not added automatically by git clone):

bash

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git remote add origin https://github.com/your-username/repo-name.git

## View remote repositories linked to the project:

bash

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git remote -v

## Change the URL of the remote repository:

bash

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git remote set-url origin https://github.com/new-username/new-repo.git

# Collaboration & Review

## Check commit history:

bash

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git log

## Show detailed commit history (one line per commit):

bash

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git log --oneline --graph --decorate --all

## View commit differences:

bash

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git diff

## Check the log of a specific file:

bash

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git log -- file-name

# Stashing Changes (Temporary Save)

## Save uncommitted changes without committing:

bash

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git stash

## List saved stashes:

bash

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git stash list

## Apply the most recent stash:

bash

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git stash apply

## Remove the most recent stash after applying:

bash

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git stash pop

# Tagging Releases

## Create a new tag:

bash

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git tag v1.0.0

## Push tags to the remote repository:

bash

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git push origin --tags