

Comprehensive A-Z Git Cheat Sheet

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Setup Configuration

```
# Set global username and email
git config --global user.name "Your Name"
git config --global user.email "your.email@example.com"

# Set default editor
git config --global core.editor "vim"

# Check Git configuration
git config --list

# Set up a global .gitignore
git config --global core.excludesfile ~/.gitignore_global
```

Initializing Cloning

```
# Initialize a new Git repository
git init

# Clone an existing repository
git clone https://github.com/user/repo.git

# Clone a repo with a specific branch
git clone -b branch-name https://github.com/user/repo.git
```

Basic Workflow

```
# Check the status of the repository
git status

# Add files to staging area
git add file.txt
git add . # Add all changes

# Commit changes
git commit -m "Your commit message"

# Amend the last commit (without changing the message)
git commit --amend --no-edit

# View commit history
git log --oneline --graph --all
```

Branching Merging

```
# List branches
git branch

# Create a new branch
git branch new-branch

# Switch to a branch
git checkout new-branch

# Create and switch to a new branch
git checkout -b new-branch

# Merge a branch into the current branch
git merge branch-name

# Delete a branch (local)
git branch -d branch-name

# Delete a branch (remote)
git push origin --delete branch-name
```

Rebasing

```
# Rebase the current branch onto another
git rebase branch-name

# Abort an ongoing rebase
git rebase --abort

# Continue a rebase after resolving conflicts
git rebase --continue
```

Remote Repositories

```
# View remote repositories
git remote -v

# Add a remote repository
git remote add origin https://github.com/user/repo.git

# Change remote repository URL
git remote set-url origin https://github.com/new/repo.git

# Push changes to remote repository
git push origin main

# Pull changes from remote repository
git pull origin main
```

Tagging

```
# Create a lightweight tag
git tag v1.0.0

# Create an annotated tag
git tag -a v1.0.0 -m "Version 1.0.0"

# List all tags
git tag

# Push a tag to the remote repository
git push origin v1.0.0
```

Undoing Changes

```
# Unstage a file (remove from staging area)
git reset HEAD file.txt

# Revert to a previous commit
git checkout commit-hash file.txt

# Reset to the previous commit (keep changes unstaged)
git reset --soft HEAD~1

# Reset to the previous commit (discard changes)
git reset --hard HEAD~1

# Revert a commit (creates a new commit that undoes changes)
git revert commit-hash
```

Stashing Changes

```
# Stash uncommitted changes
git stash

# List all stashes
git stash list

# Apply the last stashed changes
git stash pop

# Apply a specific stash
git stash apply stash@{2}

# Drop a specific stash
git stash drop stash@{2}

# Clear all stashes
git stash clear
```

Cherry-Picking

```
# Apply a specific commit from another branch
git cherry-pick commit-hash
```

Git Hooks (Automation)

```
# List available hooks
ls .git/hooks

# Enable a pre-commit hook
cp pre-commit.sample .git/hooks/pre-commit
chmod +x .git/hooks/pre-commit
```

Submodules

```
# Add a submodule
git submodule add https://github.com/user/repo.git path/to/submodule

# Initialize and update submodules
git submodule update --init --recursive

# Remove a submodule
git submodule deinit -f path/to/submodule
rm -rf path/to/submodule
```

Git Aliases

```
# Set a Git alias
git config --global alias.co checkout
git config --global alias.br branch
git config --global alias.st status
```