

Setting Up Git

```
bash
Copy code
git config --global user.name "Your Name"      # Set your name
git config --global user.email "you@example.com" # Set your email
git init                                         # Initialize a repository
git clone <url>                                  # Clone an existing
repository
```

Basic Commands

```
bash
Copy code
git status                                     # Check status of files
git add <file>                                # Stage specific file
git add .                                     # Stage all changes
git commit -m "Message"                       # Commit changes
git log                                        # View commit history
git diff                                       # Show unstaged changes
git diff --staged                             # Show staged changes
```

Branching

```
bash
Copy code
git branch                                     # List branches
git branch <branch_name>                     # Create a new branch
git checkout <branch_name>                   # Switch to a branch
git checkout -b <branch_name>                # Create and switch to a
branch
git merge <branch_name>                       # Merge a branch into the
current branch
git branch -d <branch_name>                 # Delete a branch
```

Remote Repositories

```
bash
Copy code
git remote -v                                 # View remote repositories
git remote add origin <url>                  # Link local repo to remote
git push -u origin <branch_name>            # Push to remote and set
upstream
git push                                     # Push committed changes
git pull                                     # Fetch and merge changes
from remote
git fetch                                    # Fetch changes without
merging
```

Undoing Changes

```
bash
Copy code
git checkout -- <file>                       # Discard changes in a file
git reset HEAD <file>                       # Unstage a file
```

git reset --soft HEAD~1	# Undo last commit but keep
changes staged	
git reset --hard HEAD~1	# Undo last commit and
discard changes	

Stashing

bash	
Copy code	
git stash	# Save changes temporarily
git stash list	# View stash list
git stash apply	# Apply latest stash
git stash pop	# Apply and remove latest
stash	

Tagging

bash	
Copy code	
git tag	# List tags
git tag <tag_name>	# Create a tag
git push origin <tag_name>	# Push a specific tag

Viewing Changes

bash	
Copy code	
git show <commit_hash>	# Show details of a commit
git log --oneline	# Compact commit history
git blame <file>	# Show commit info line by
line	

Git Ignore

- Add patterns to `.gitignore` to prevent tracking files (e.g., logs, temp files).
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Helpful Aliases

bash
Copy code
git config --global alias.co checkout
git config --global alias.br branch
git config --global alias.cm commit
git config --global alias.st status