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## Setup & Configuration

| Purpose      | Command  | Description                          |
|--------------|--|--------------------------------------|
| Set username | <code>git config --global user.name "Your Name"</code>         | Sets the global username for commits |
| Set email    | <code>git config --global user.email "your@example.com"</code> | Sets the global email for commits    |
| Check config | <code>git config --list</code>                                 | Lists all config settings            |
| Set editor   | <code>git config --global core.editor "code"</code>            | Sets default editor (e.g., VS Code)  |

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## Repository Management

| Purpose         | Command                            | Description                           |
|-----------------|------------------------------------|---------------------------------------|
| Initialize repo | <code>git init</code>              | Create a new Git repository           |
| Clone repo      | <code>git clone &lt;url&gt;</code> | Clone a remote repository             |
| Check status    | <code>git status</code>            | Show changed files and current branch |
| Check logs      | <code>git log</code>               | View commit history                   |
| Short log       | <code>git log --oneline</code>     | Compact commit history                |
| Repo info       | <code>git remote -v</code>         | Show remotes linked to repo           |

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## Staging & Committing

| Purpose    | Command   | Description                       |
|------------|---|-----------------------------------|
| Stage file | <code>git add &lt;file&gt;</code>                 | Add specific file to staging area |
| Stage all  | <code>git add .</code> or <code>git add -A</code> | Add all changes                   |

| Purpose      | Command                              | Description                                    |
|--------------|--------------------------------------|--|
| Commit       | <code>git commit -m "message"</code> | Commit staged changes with message             |
| Amend commit | <code>git commit --amend</code>      | Modify last commit (message or staged changes) |
| Unstage file | <code>git reset &lt;file&gt;</code>  | Remove file from staging                       |

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## Branching & Merging

| Purpose         | Command                                     | Description                         |
|-----------------|---|-------------------------------------|
| List branches   | <code>git branch</code>                     | Show all local branches             |
| Create branch   | <code>git branch &lt;name&gt;</code>        | Create a new branch                 |
| Switch branch   | <code>git checkout &lt;name&gt;</code>      | Switch to an existing branch        |
| Create + switch | <code>git checkout -b &lt;name&gt;</code>   | Create and switch to new branch     |
| Rename branch   | <code>git branch -m &lt;new-name&gt;</code> | Rename current branch               |
| Delete branch   | <code>git branch -d &lt;name&gt;</code>     | Delete local branch                 |
| Merge branch    | <code>git merge &lt;branch&gt;</code>       | Merge specified branch into current |
| Abort merge     | <code>git merge --abort</code>              | Cancel an ongoing merge             |

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## Remote Repositories

| Purpose       | Command  | Description                            |
|---------------|--|--|
| Add remote    | <code>git remote add origin &lt;url&gt;</code> | Link local repo to remote              |
| Fetch changes | <code>git fetch</code>                         | Download from remote (but don't merge) |
| Pull changes  | <code>git pull</code>                          | Fetch and merge changes from remote    |
| Push changes  | <code>git push</code>                          | Push committed changes to remote       |

| Purpose       | Command  | Description                |
|---------------|--|----------------------------|
| Push branch   | <code>git push -u origin &lt;branch&gt;</code> | Push and set upstream      |
| Remove remote | <code>git remote remove &lt;name&gt;</code>    | Remove a remote repository |

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## Undo & Reset

| Purpose         | Command                                   | Description                             |
|-----------------|---|---|
| Discard changes | <code>git checkout -- &lt;file&gt;</code> | Revert file to last commit state        |
| Unstage file    | <code>git reset &lt;file&gt;</code>       | Remove from staging                     |
| Soft reset      | <code>git reset --soft HEAD~1</code>      | Undo last commit, keep changes staged   |
| Mixed reset     | <code>git reset --mixed HEAD~1</code>     | Undo last commit, keep changes unstaged |
| Hard reset      | <code>git reset --hard HEAD~1</code>      | Remove commit + all changes             |
| Clean untracked | <code>git clean -fd</code>                | Delete untracked files and folders      |

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## Viewing & Comparing

| Purpose           | Command                                | Description                         |
|-------------------|--|-------------------------------------|
| Compare files     | <code>git diff</code>                  | Show unstaged changes               |
| Compare staged    | <code>git diff --cached</code>         | Show staged vs last commit          |
| Compare branches  | <code>git diff branch1..branch2</code> | Show diff between branches          |
| Show file history | <code>git log &lt;file&gt;</code>      | Show commit history for a file      |
| Blame             | <code>git blame &lt;file&gt;</code>    | Show who edited each line of a file |

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## Stash Changes

| Purpose        | Command                      | Description                        |
|----------------|------------------------------|------------------------------------|
| Save stash     | <code>git stash</code>       | Save uncommitted changes           |
| List stashes   | <code>git stash list</code>  | Show stash list                    |
| Apply stash    | <code>git stash apply</code> | Apply most recent stash            |
| Apply and drop | <code>git stash pop</code>   | Apply and remove most recent stash |
| Drop stash     | <code>git stash drop</code>  | Delete specific stash              |
| Clear all      | <code>git stash clear</code> | Remove all stashes                 |

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## Tags & Releases

| Purpose    | Command                              | Description              |
|------------|--------------------------------------|--------------------------|
| List tags  | <code>git tag</code>                 | Show all tags            |
| Create tag | <code>git tag &lt;tagname&gt;</code> | Add tag to latest commit |

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## Creatin pull request

Gh pr create --base "name of the base branch to which changes have to be merged" --head "new feature branch" --title "tittle of pull request" --body "description"

## Understanding of Conflicts and Resolving them while merging.