Cheat sheet

Git

Everything you need to keep your projects in Git and on GitHub: daily commands, branches, undoing mistakes and working with others.

1 Set up once

Your name and email	`git config --global user.name "Your Name"` `git config --global user.email "you@example.com"`
Default branch name	`git config --global init.defaultBranch main`

2 Start a repository

New project	`git init`
Copy an existing one	`git clone https://github.com/user/repo.git`
Connect to GitHub	`git remote add origin https://github.com/you/repo.git` `git push -u origin main`

-u remembers where to push next time

3 Every day

What changed	`git status`
Stage changes	`git add file.c` `git add .`

git add -p lets you pick parts of a file

Commit	`git commit -m "Add UART receiver"`

Say what the change does, in a few words

Send and get	`git push` `git pull`

4 Looking at history

Short history	`git log --oneline --graph`
Unstaged changes	`git diff`
Staged changes	`git diff --staged`
One commit	`git show a1b2c3d`
Who changed a line	`git blame file.v`

5 Branches

New branch	`git switch -c add-fifo`
Change branch	`git switch main`
Merge into main	`git switch main` `git merge add-fifo`
Delete merged branch	`git branch -d add-fifo`
List branches	`git branch -a`

6 Undoing things

Discard changes to a file	`git restore file.c`

Cannot be undone

Unstage a file	`git restore --staged file.c`
Fix the last commit	`git commit --amend`

Only before you push it

Undo a pushed commit	`git revert a1b2c3d`

Adds a new commit that reverses it: safe to share

Put work aside	`git stash` `git stash pop`

7 Ignore files

.gitignore

```
build/
*.o
*.vcd
.venv/
.env
```

Never commit passwords, keys or large generated files

8 Good habits

Small commits

```
One change per commit
```

Easier to review and to undo

Pull before you start

```
git pull
```

Fewer conflicts later

README

```
What it is, how to run it, a screenshot
```

Recruiters read this first