Introduction to git

Nano

nano filename : to open a file

Ctrl + o : to save the file

y - to save changes

enter - to exit nano

ctrl + x : to exit nano

Version Control with Git

- To view GIT VERSION

🎈 git —version

- To check status of files in a directory

🎈 git status

- To stage specific file or all at once

🎈 git add filename / git add

- To Commit Changes

🎈 git commit -m "message here"

- To preview changes of a file

  🎈 git diff filename

- to view most recent changes

  🎈 git diff -r HEAD filename

- in particular directory if there are multiple files with changes then to show difference between all files in staging area.

  🎈 git diff -r HEAD

Git Commit Structure
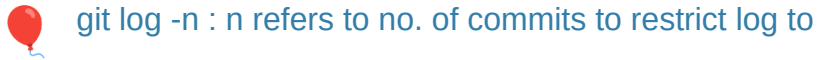
BLOB : Binary Large Object

⬇️

Tree

⬇️

Commit

Git Commands

- to view all commits

🎈 git log

(**space_bar** to view info's in LOG and **q** to return to terminal)

- to restrict no. of commits displayed using -

  🎈 git log -n : n refers to no. of commits to restrict log to

- to only look at commit history of one file

  🎈 git log -n filename : show n recent commits of file named filename

- To customize the log OUTPUT

  🎈 git log —since='Month Day Year'
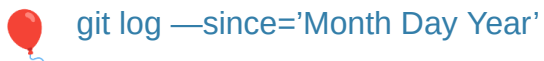
  eg:

  git log —since = 'Apr 2 2002' # restores old version of file at mentioned date

  git log —since='Apr 2 2002' —until='Apr 11 2022'

Restoring an old version of a file

```
git checkout -- filename
```

- To revert to a version from a specific commit:

```
git checkout dc9d8fac mental_health_survey.csv
```

- This was the second to last commit, so another approach is:

```
git checkout HEAD~1 mental_health_survey.csv
```

Restoring a repo to a previous state

```
git checkout dc9d8fac
```

- Alternatively:

```
git checkout HEAD~1
```

Cleaning a repository

- See what files are not being tracked:

```
git clean -n
```

- Delete those files:

```
git clean -f
```
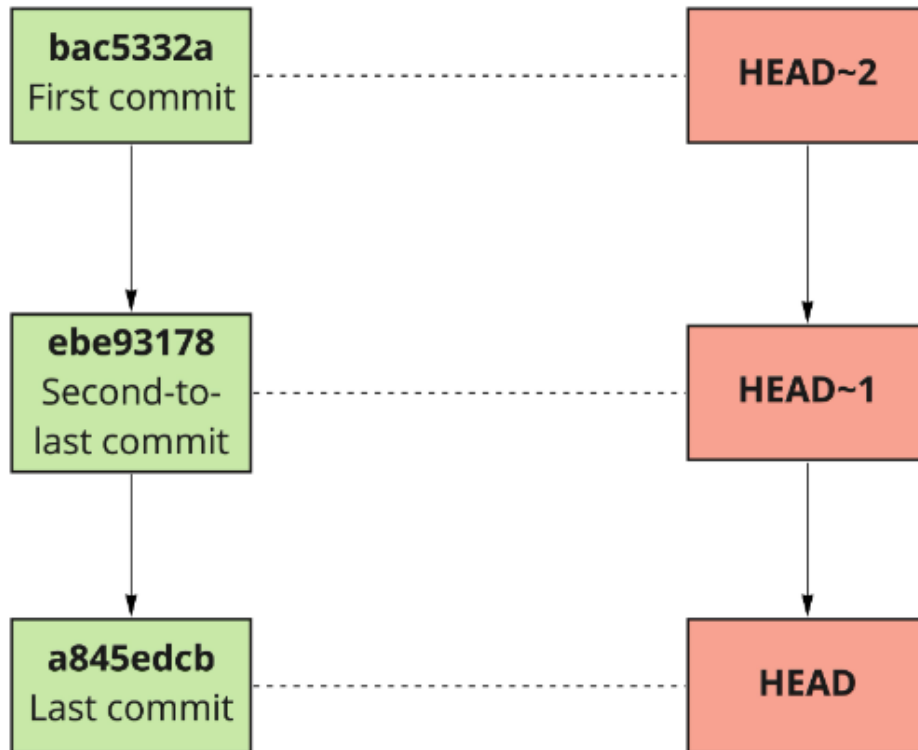
- ⚠️ `git clean -f` cannot be undone!

To Show Commit

- to view changes made in that commit

🎈 git show commit_hash

Commit   HEAD

```
┌─────────────┐                          ┌─────────────┐
│  bac5332a   │ - - - - - - - - - - - -  │   HEAD~2    │
│ First commit│                          │             │
└─────────────┘                          └─────────────┘
       │                                        │
       ▼                                        ▼
┌─────────────┐                          ┌─────────────┐
│  ebe93178   │                          │   HEAD~1    │
│ Second-to-  │ - - - - - - - - - - - -  │             │
│ last commit │                          │             │
└─────────────┘                          └─────────────┘
       │                                        │
       ▼                                        ▼
┌─────────────┐                          ┌─────────────┐
│  a845edcb   │ - - - - - - - - - - - -  │    HEAD     │
│ Last commit │                          │             │
└─────────────┘                          └─────────────┘
```

- to show last commit

  🎈 git show HEAD

- to show second last commit

  🎈 git show HEAD~1

numbers followed by space without space to view that commit in order

To View differences between commit

🎈 git diff commit_hash1 commit_hash2

or, in this way

🎈 git diff HEAD~3 HEAD~2

To show line by line changes and associated metadata

🎈 git annotate filename

To unstages changes in a file

🎈 git reset HEAD filename

To remove all files from staging area

🎈 git reset HEAD

To undo changes made to unstaged file

🎈 git checkout — filename

to undo changes made to all unstaged files

🎈 git checkout — .