

Git & Github

why do we need them?

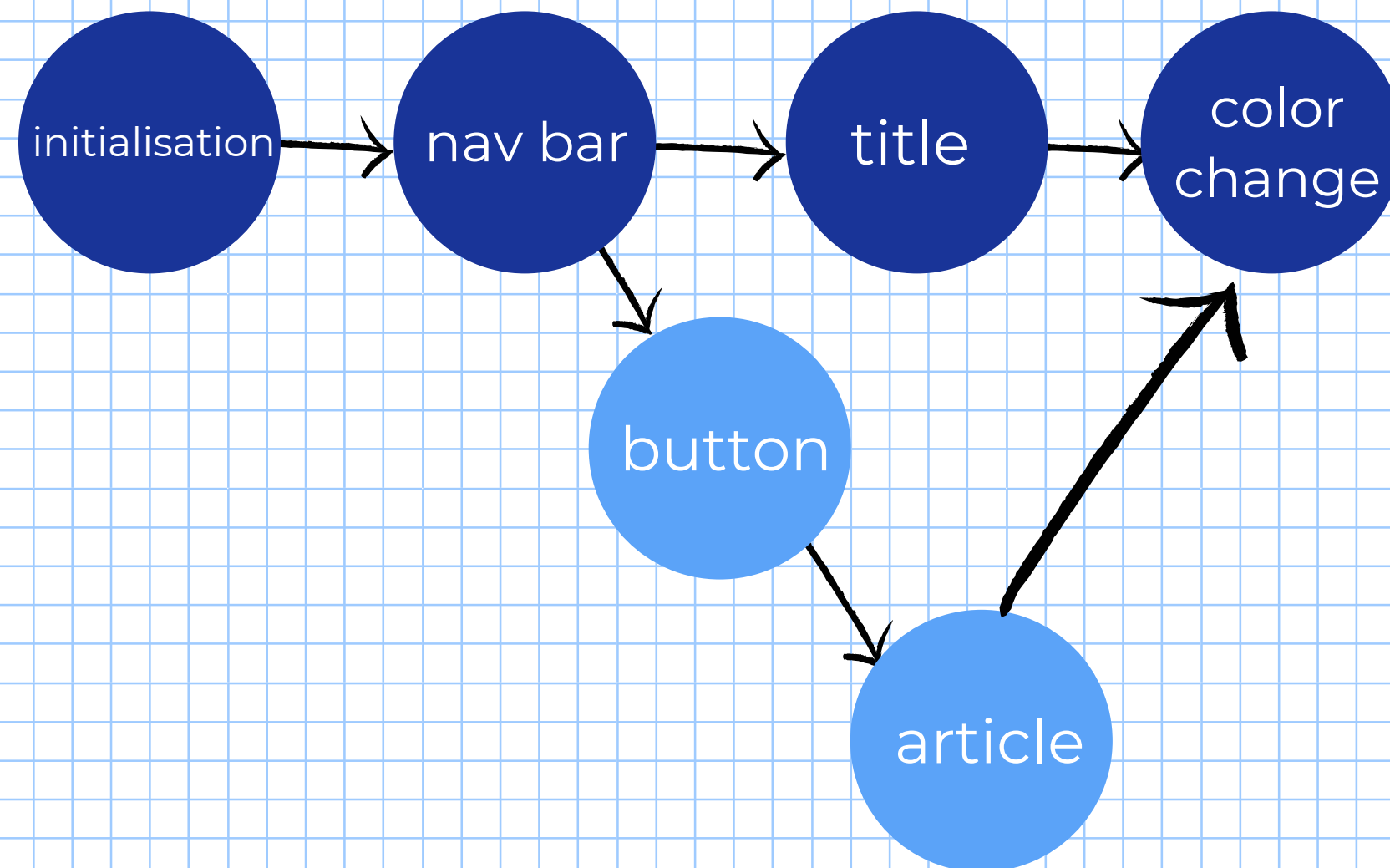
- Git & Github are not the same thing
 - Git - version control system
 - Github - cloud based service
- Git - tracking and manages different versions of files/ repositories over time
- Github - stores git repositories in cloud (you can share your code with anyone!)
 - hosts websites for free



Visualisation of Git

infpals.github.io

*go there and try to imagine how was it done



General workflow

WARNING:

Do Not initialise git in folders which is already being tracked by git.

WARNING:

Do not initialise git at the root folders of your computer

If your git is not initialized

- 1. Open Terminal**
- 2. Navigate to folder where you want to track your work**
- 3. git status (Checking if there is not already a git initialised)**
- 4. Initialise git at your folder with git init**
OPTIONAL: git status

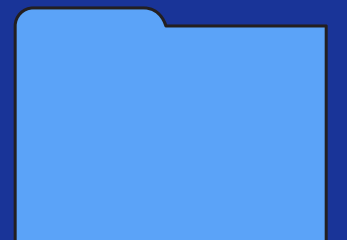
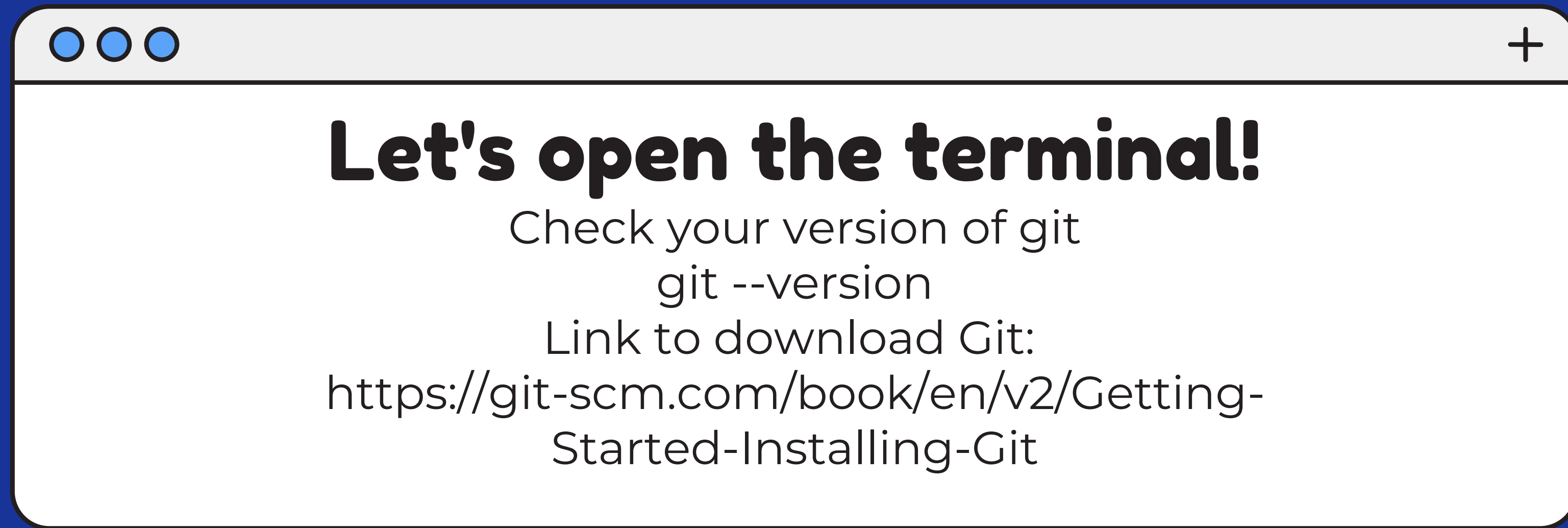
What Commands are we going to learn?



git status
git init
git add
git commit

git log
git diff
git clone
git push

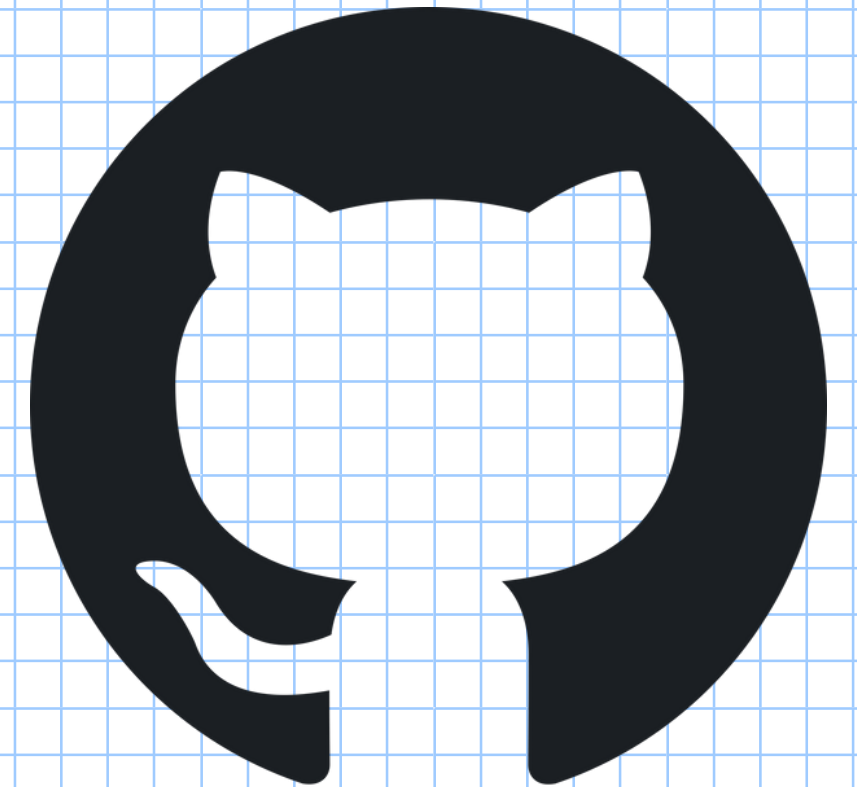
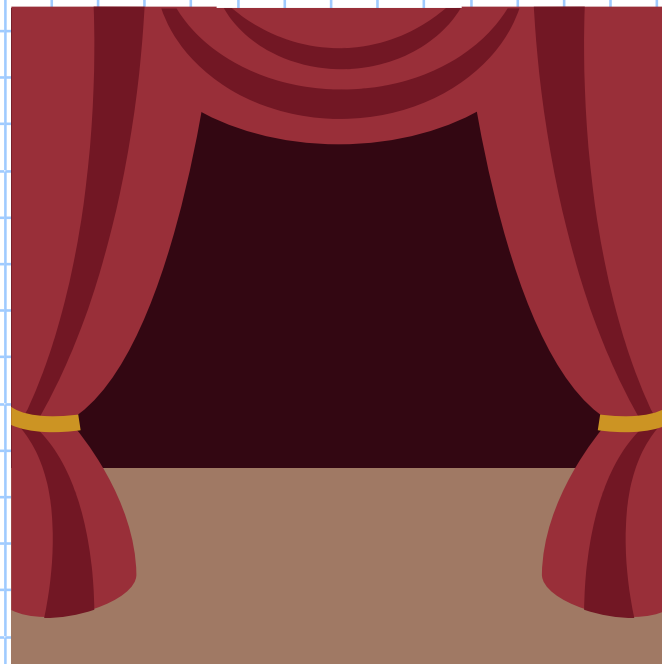
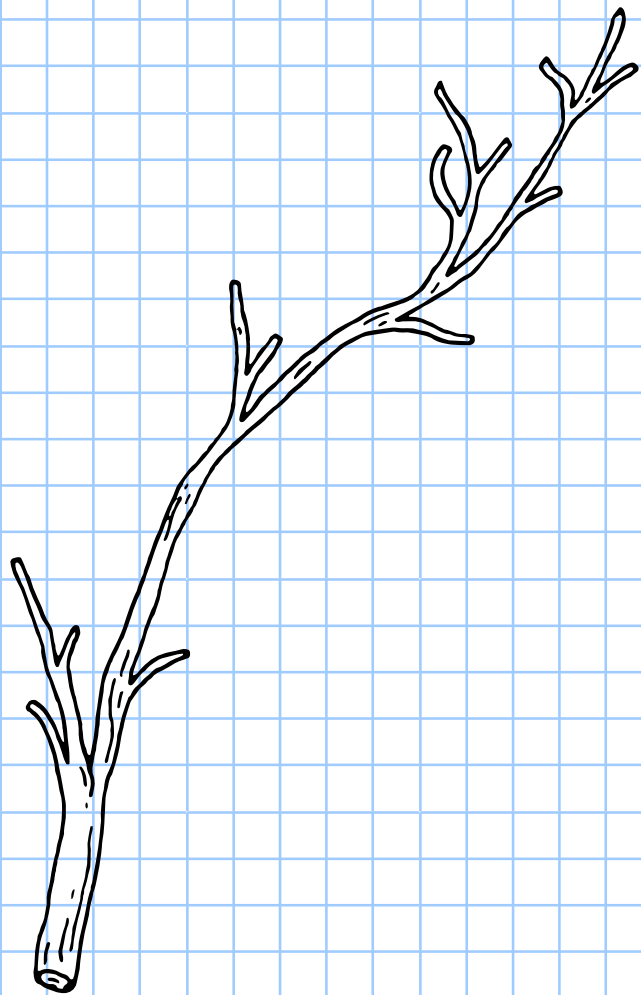
We hope you are having fun! ;)





git status

Prints the current status of repository



Files to be committed



git init

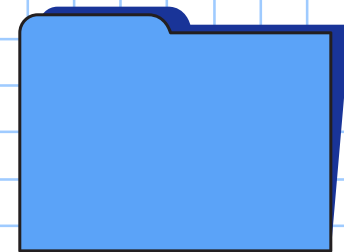
Initialises git (tracker of your changes) at a given folder



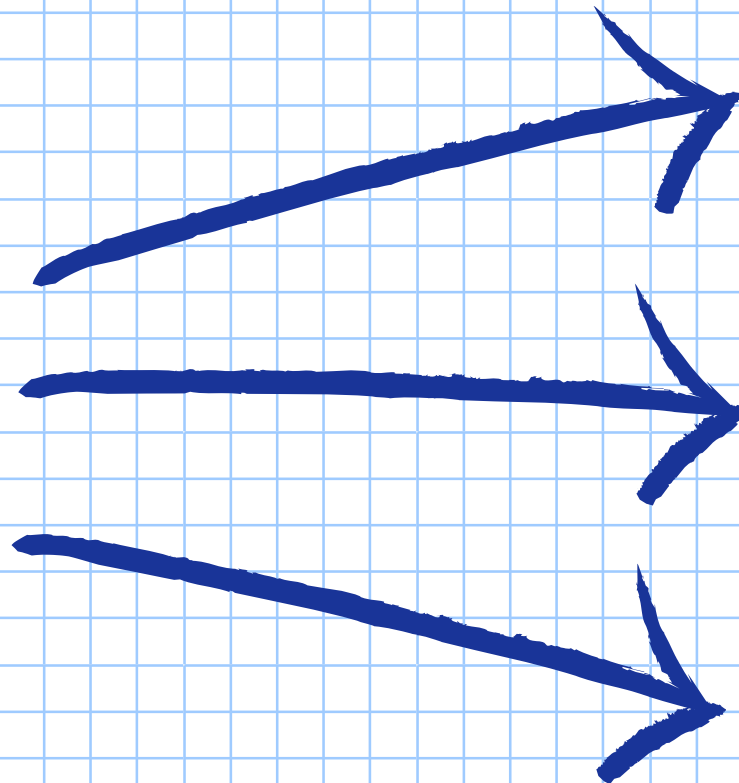


git add [[file] or .]

Stages the files with changes /
newly added



Tracked Folder



file3

feature2



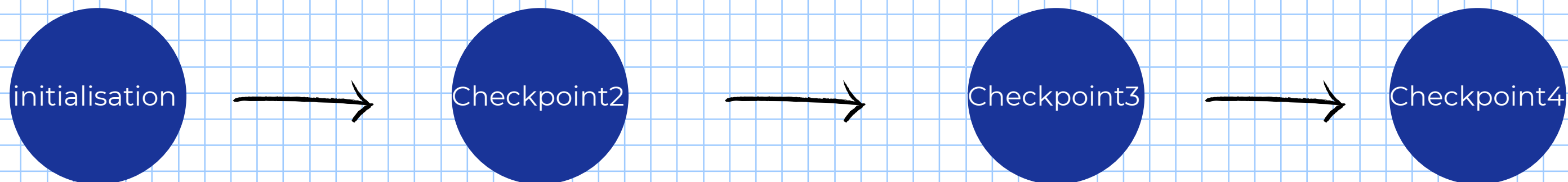
file2



file

feature1

Optional: git reset <file>

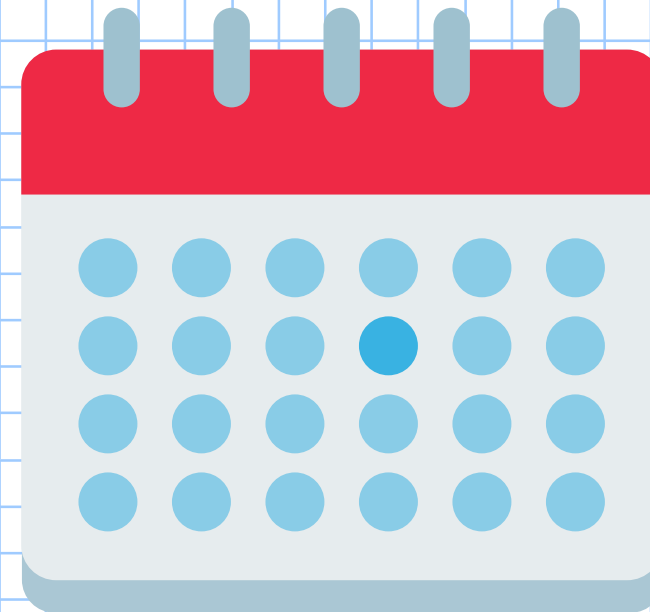


Note: If you do not use -m (do not add message) you will be directed to Vim. Here is a link to article which explains how to get out of it: <https://www.cyberciti.biz/faq/linux-unix-exit-vim-editor/>



git log

Prints ordered commits with given
message / author / date / hash



hash

(don't know how to
visualise)

Optional: `git log --oneline`

Note: Short hash can be used for git diff

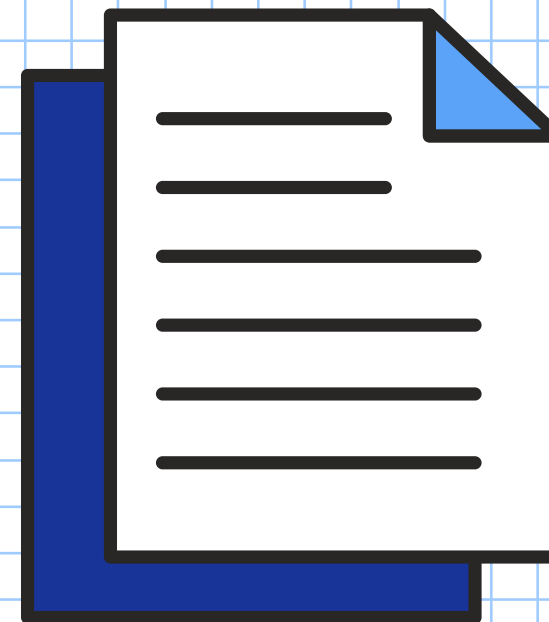
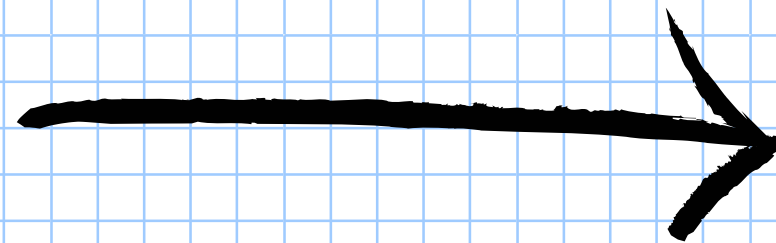


**git diff [HEAD or commit1..commit2 or
branch1..branch or nothing]**

Prints differences between commits, branches,
files ...

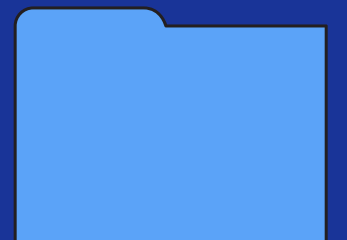
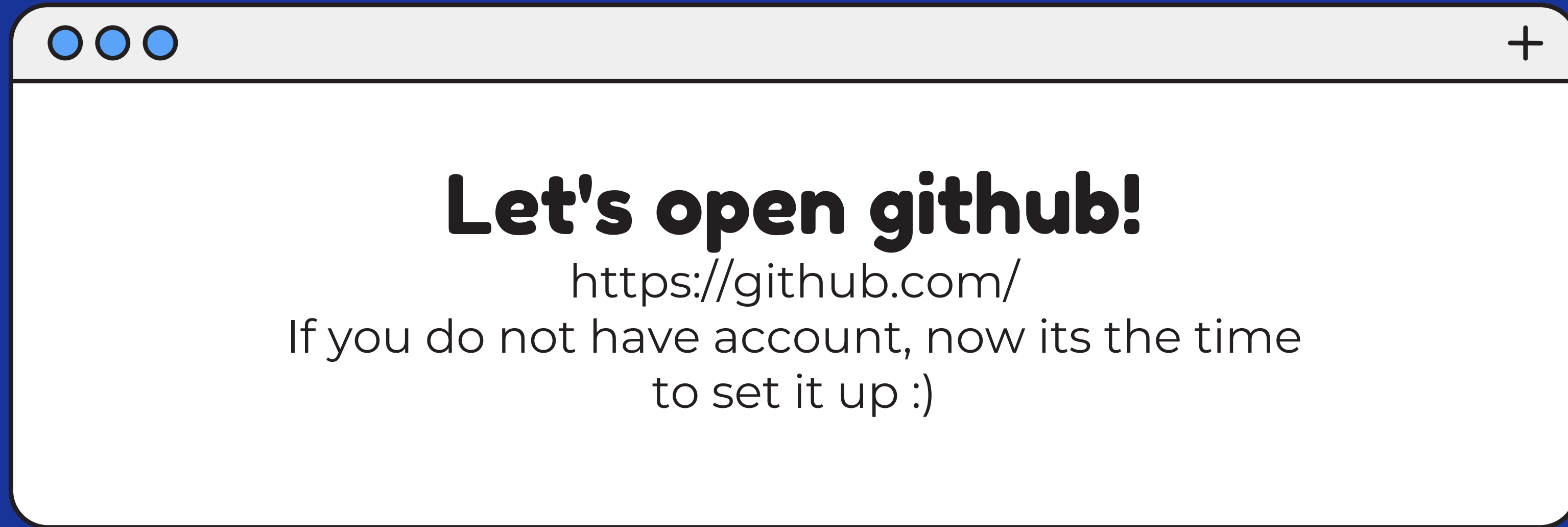


version 1.1



version 3.2

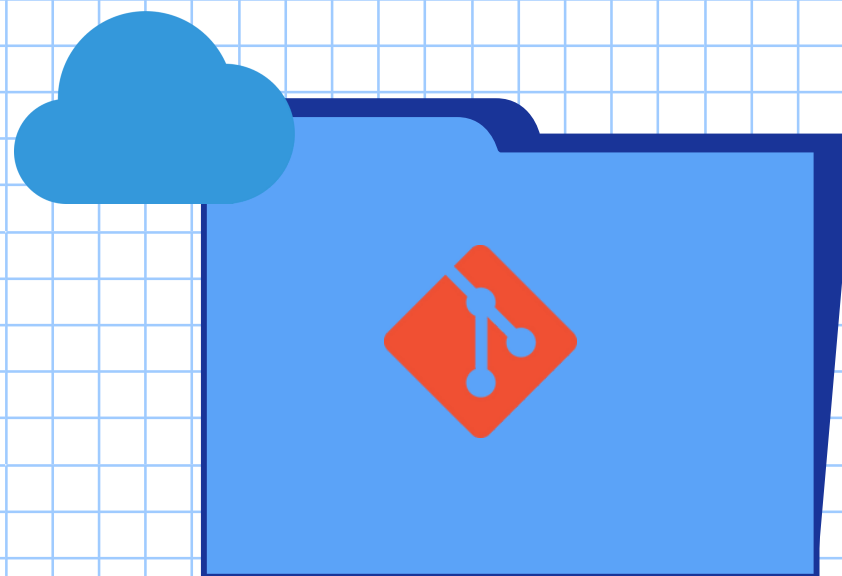
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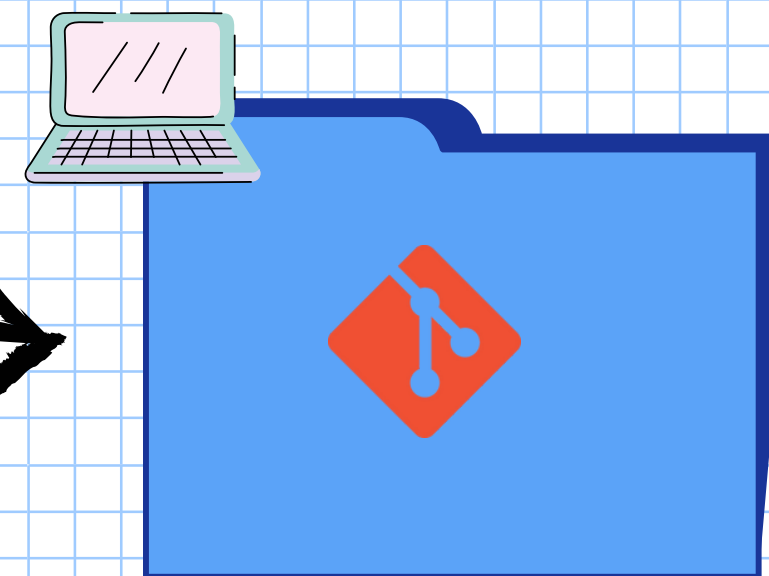
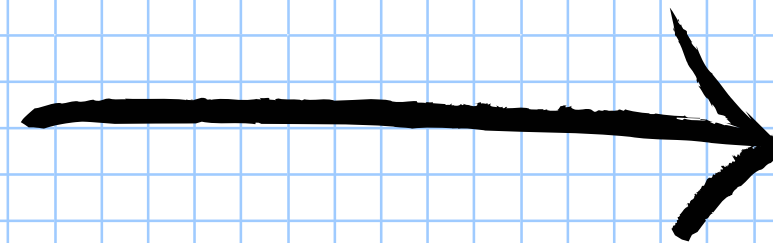


git clone [HTTPS or SSH]

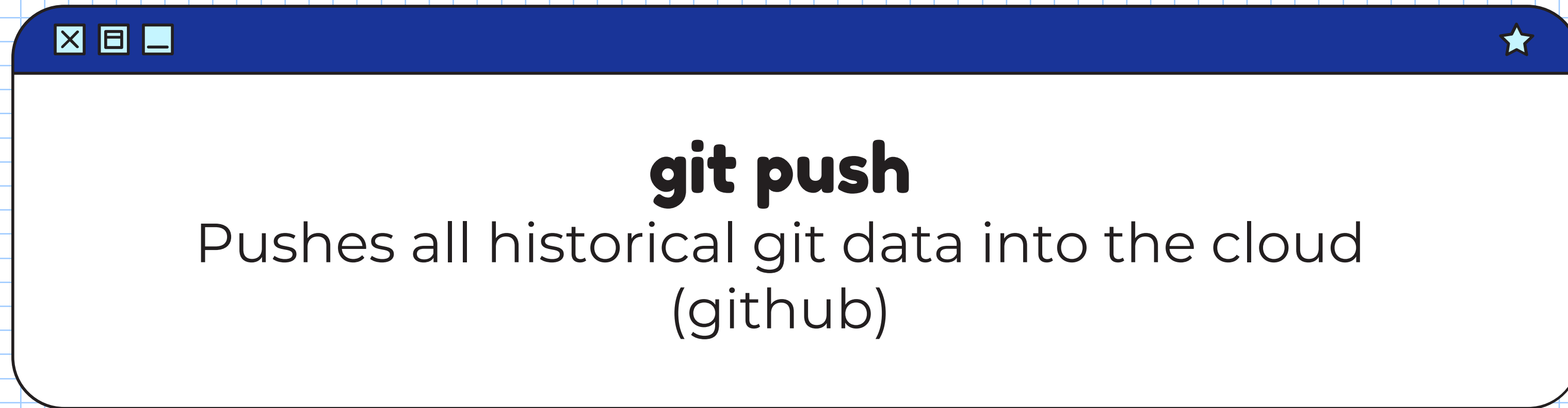
Clones a git repository (folder) into your local computer with all the historical git data



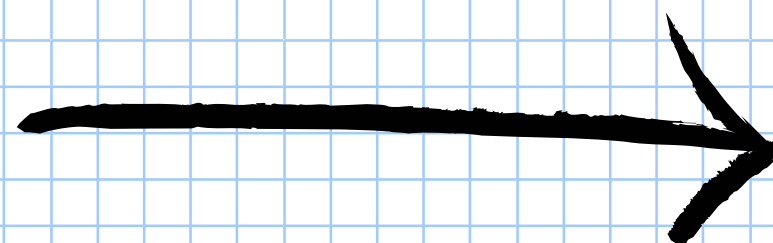
Cloud (Github)



Local (your) computer

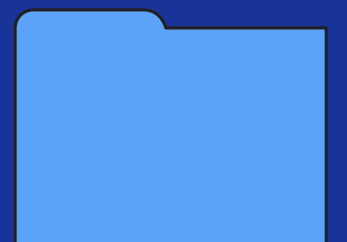


Local (your) computer



Cloud (Github)

Now it is your turn!



Try to do things listed in the window!

If you have any problems don't hesitate to raise your hand and the Leader will come and help you. :)

- 
1. **Open Terminal and navigate yourself to your Desktop**
 2. **Create Folder PracticeGit**
 3. **Check the Status of Git in PracticeGit**
 4. **Initialise Git in PracticeGit**
 5. **Create a file Me.txt and do initial commit with message 'initial commit'**
 6. **Write 'Hello! :) My name is [your name].' into the Me.txt and do another commit with message 'add my name'**
 7. **Write 'I study [name of your degree]' into the Me.txt, create Colors.txt and do another commit with message 'add my degree' where you only commit changes in Me.txt**
 8. **Do commit for Colors.txt with message 'add Colors.txt file'**
 9. **Print all commits/author/dates/hashes**
 10. **Print difference between initial commit and last commit**
 11. **Create private repository on Github Hello-World**
 12. **Establish connections between PracticeGit and Hello-World**
 13. **Write your 3 favourite colors and commit changes with message 'add my 3 favourite colors' and push changes into Github repository**
 14. **Clone Materials from : <https://github.com/infpals/ip2022-git-and-github-basic> into your local computer (somewhere where you do not have already initialised git)**
 15. **Print commits done in ip2022-git-and-github-basic**