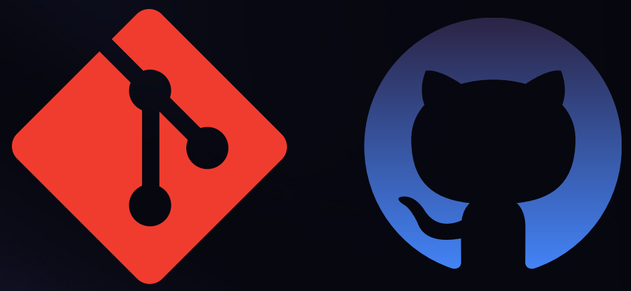
Git and Github



...

Ahmed Yacine Bouchouareb

- Pull
- Commit
- Push

Repeat

Presentaion plan

01 Understand the Problem

02 What is Git & Github

03 Install git and link it with github

04 Basics of Git

05 Collaboration workflow

01 Understand the Problem

problem 1

Version Control

How can we manage and track the state of our code during the development and the maintenace ?

TRADITIONAL SOLUTIONS

SOLUTION 01

Renaming files : main1.c , main2 ....

SOLUTION 02

Creating new directories : prjX1 , prjX2 ....

SOLUTION 03

All the other crazy solutions

01 Understand the Problem

problem 2

Collaboration

How to manage code updates from many contributers . from fetching the code to mergin it

TRADITIONAL SOLUTIONS

SOLUTION 01

Physical medias : usb drives , dvd ...

SOLUTION 02

Digital medias : emails , google drive ...

SOLUTION 03

All the other crazy solutions

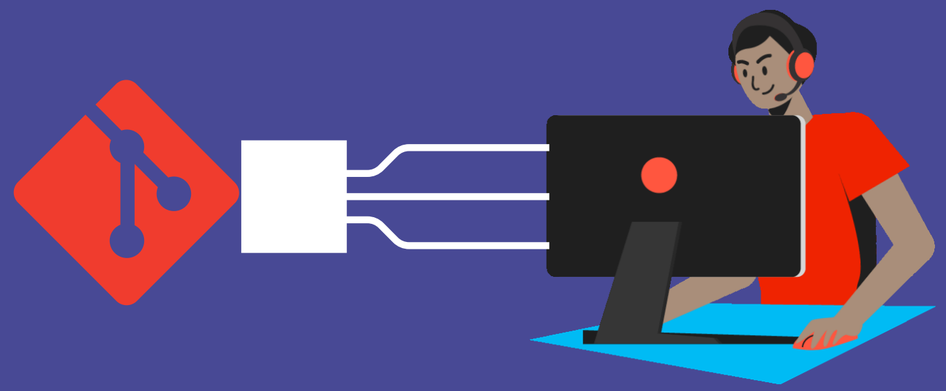
Git لديكم لا خوف عليكم

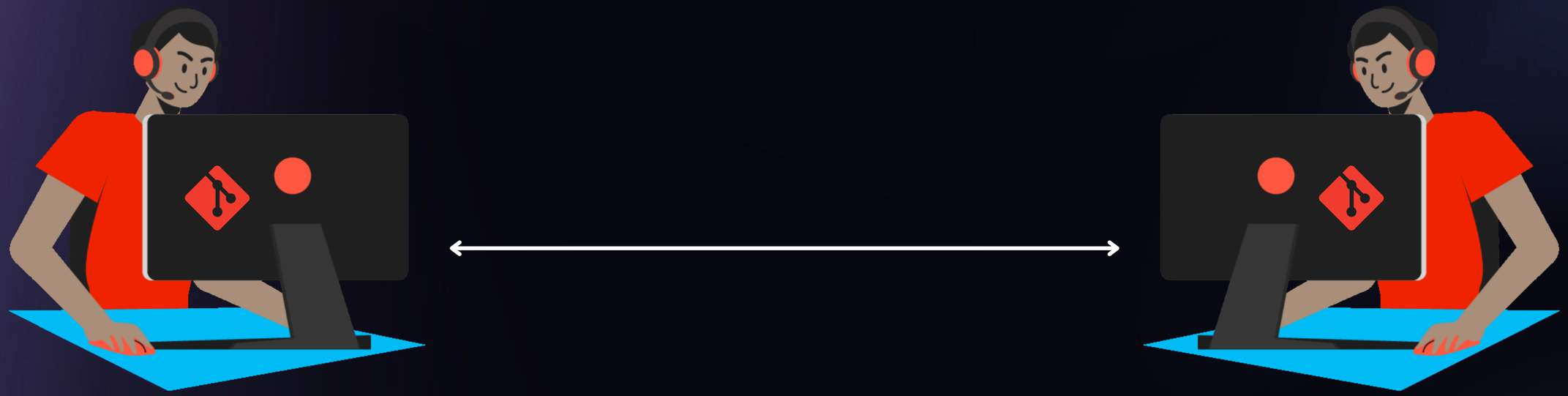
02 What is Git & Github

Get to know Git

Git is a Version Control System (VCS) designed to make it easier to have multiple versions of a code base

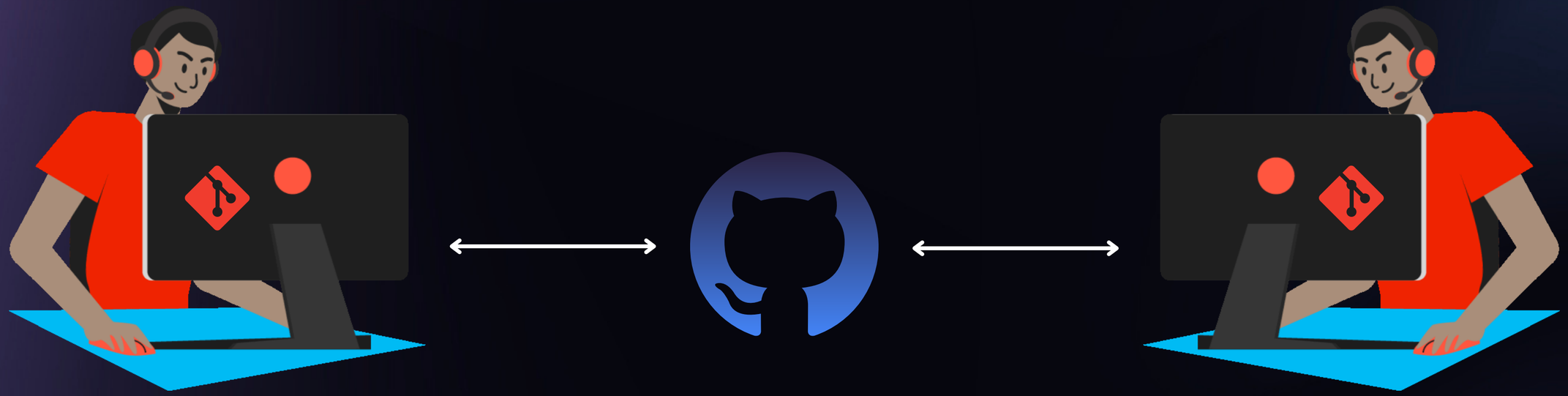
- Free and open source
- It Allows you to handle multiple versions of your code
- See changes on your code and revert them if you want
- Coordinates work between multiple developers





Won't Work

We need Github



Get to know Github

GitHub is a code hosting platform for version control and collaboration.

- Make Collaboration much easier either for personnel projects or open source projects
- Easy File Management , work from everywhere
- The Github account is a mirror of his owner
- Github is dedicated with cool programs such as github compus expert , github student pack ...

Questions

03 Install git and link it with github

Step 1

Download Git from this link https://git-scm.com/downloads

then install it on your local machine

Step 2

Create an account in Github

Step 3

Link your local local machine with your github account using those commands :

- git config --global user.name “Your Name”
- git config --global user.email “your email address”
- To show the current config : git config --list

04 Basics of Git

Repos

Commits

Branches

04 Basics of Git

What is a Repo ? ★

Repository : the folder that contains the project(source code , assets ...)

04 Basics of Git

Create a repo and establish a link ★★

From Github to local

- Create the repo (if it does not exist)
- Clone it to your local machine using ` git clone <Link> `

From local to github

- Create the repo on github
- Initialize the local repo using ` git init `
- Commit the files using ` git add . ` and ` git commit -m”init repo” `
- Configure the remote variables using ` git remote add origin <link> `
- Push using ` git push origin master `

- Clone : copy the repository from GitHub to your computer .
- Push : upload the changes from your computer to your GitHub repository.
- Pull : download the changes from your computer to your GitHub repository.

04 Basics of Git

Remote Variables ★★★

- push branches : 'git push <destination repo> <branch name to push>
- pull branches : 'git pull <source repo> <branch name to push>

link to repo is too long ? → create a variable that contain the link to the repo

- git remote add origin <link to repo>

Other concepts on git repos

01 **difference between normal folder and git folder (repos)**

A Git repository tracks and saves the history of all changes made to the files in a Git project. It saves this data in a directory called .git

02 **Gitignore file**

The . gitignore file is a text file that tells Git which files or folders to ignore in a project.

Questions

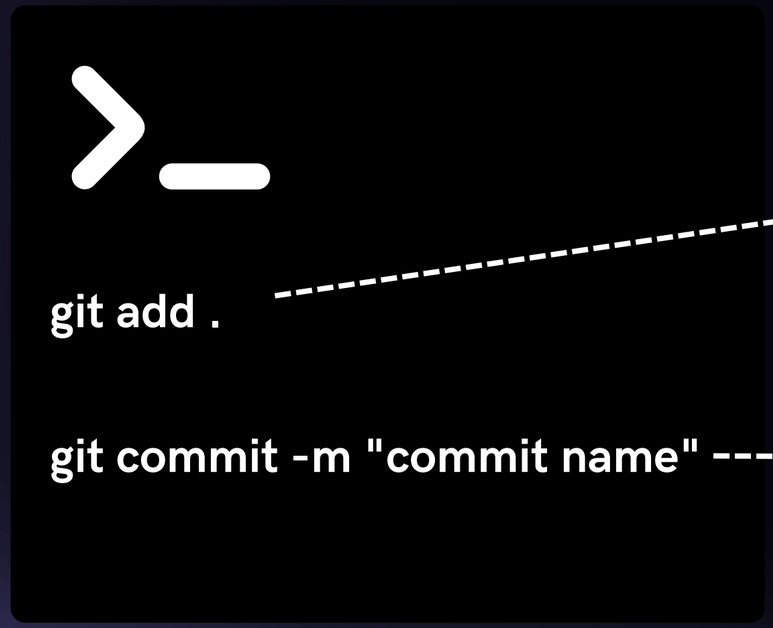
04 Basics of Git

What is a Commit ? ★

Commit : checkpoint of the state of your repository at a particular time.

04 Basics of Git

How to create a commit ? ★★



04 Basics of Git

Operations on commits ★★

To inspect the history of commits (changes): use the command 'git log –oneline '

```
a2a53a5 aded floating images
00d2380 showint feedback info on the screen and validateing form
49bd51b fixed keyboard overlay
1505647 feedback done need only to fix keyboard
```

To return back to previous state : use the command ‘ git checkout <commitId> ‘

04 Basics of Git

How do commits work ★★★

git commit

Questions

Exercice

1. Create a repo in github
2. clone it to your local machine
3. add some text files within some commits
4. display your commits and try to turn back to previous commits

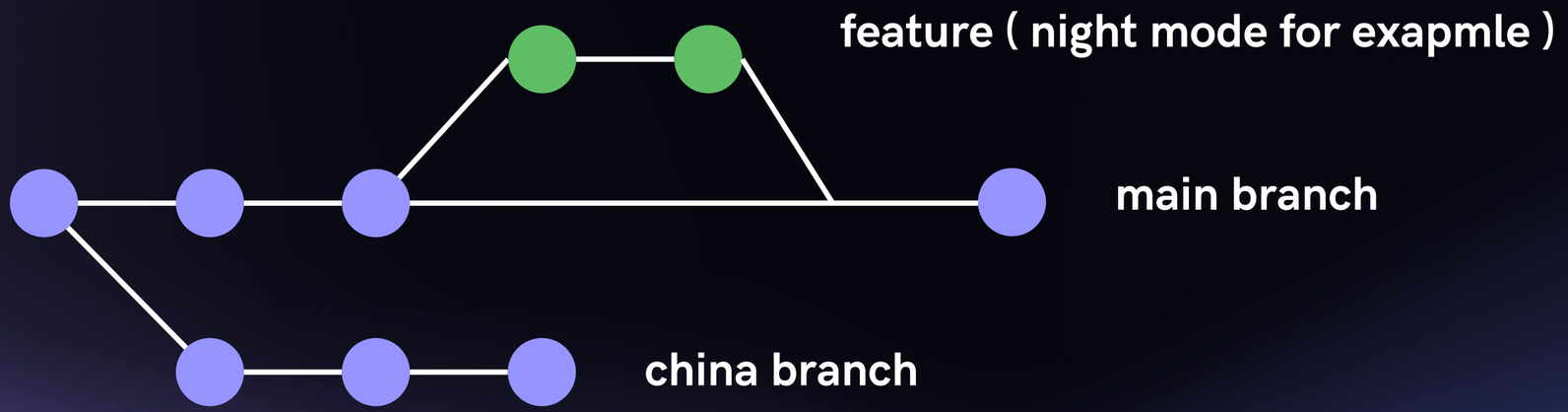
commands needed

- git clone <link to repo>
- git add .
- git commit -m"commit message"
- git status //check repo status
- git log --oneline
- git checkout <commit id>

04 Basics of Git

What is a branch ? ★

Branch: a parallel version of the main copy of a repo. Making a branch allows you to edit code without accidentally breaking a working version

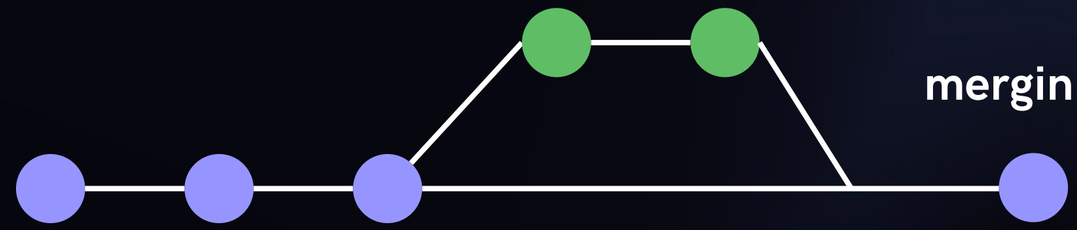


Operations on branchs ★★

- Operations on Branches :
  - List the branches : ‘git branch’
  - Create a branch : ‘ git branch <branchName> ‘
  - Delete a branch : ‘ git branch -d <branchName>
  - Rename branch : ‘ git branch -m <new branchName> ‘
  - Switch branch : ‘ git switch <branchName> ‘
  - push branches : 'git push <destination repo> <branch name to push>
  - pull branches : 'git push <source repo> <branch name to push>

04 Basics of Git

Merging branches ★★



- To merge in your local machine :
  - First switch to the desired branch you want to merge
  - Perform the following command to merge the whole branch in the active branch

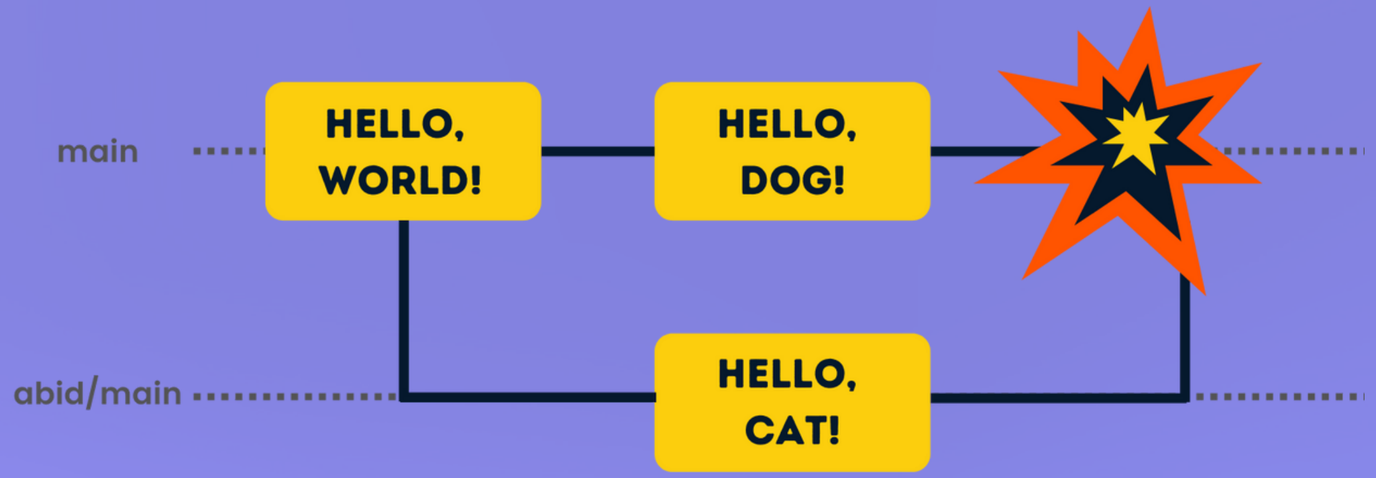
    ` git merge <branchName> `
- To merge in the github repo :
  - Push the branch to github
  - Create a pull request

04 Basics of Git

Merge conflicts ★★★

Conflict : When a file has multiple edits, it can be unclear which change should be committed. This is a conflict and must be resolved before merging.

In this case we have to resolve them manually



Questions

Exercice

1. from the previous exercice create new branch
2. add new text file with some words
3. push your branches to remote repo

commands needed

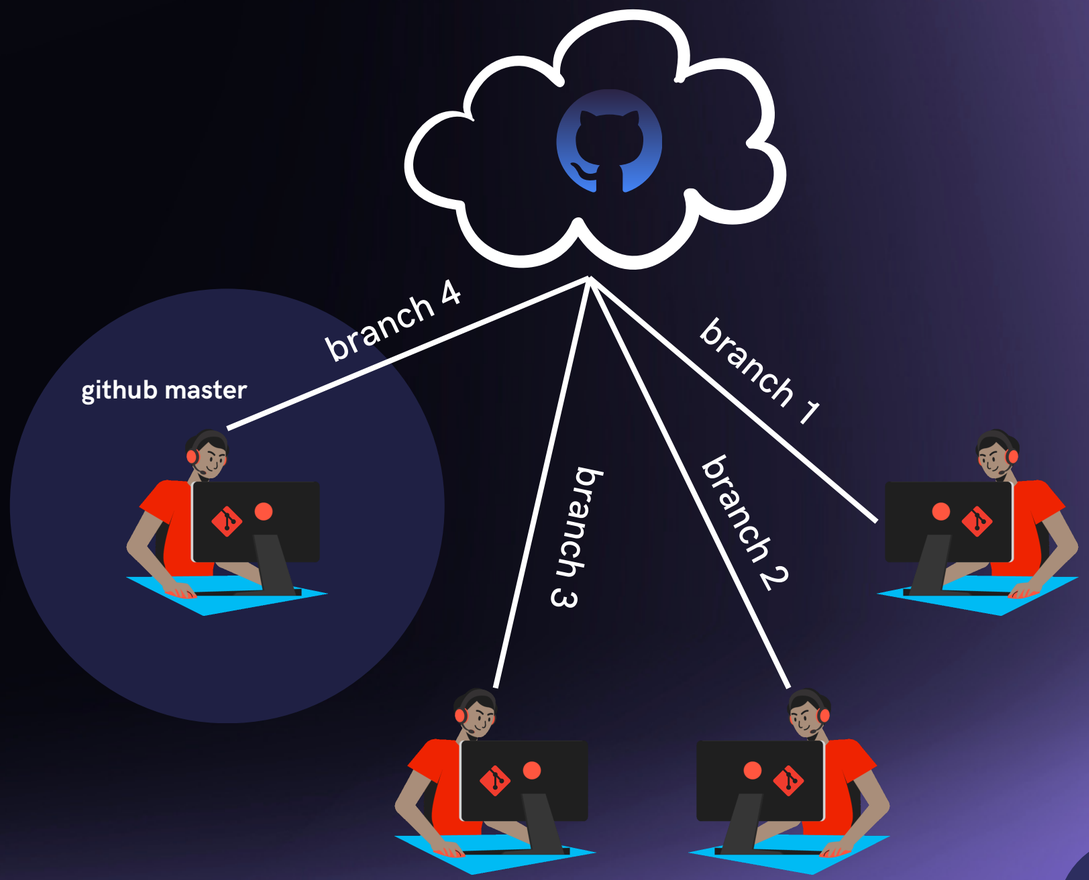
- git add .
- git commit -m"commit message"
- git branch //display your branches
- git branch <branch name>
- git switch <branch name>
- git push origin <branch name>


05
Collaboration workflow
Branches
Fork

05 Collaboration workflow

Branches

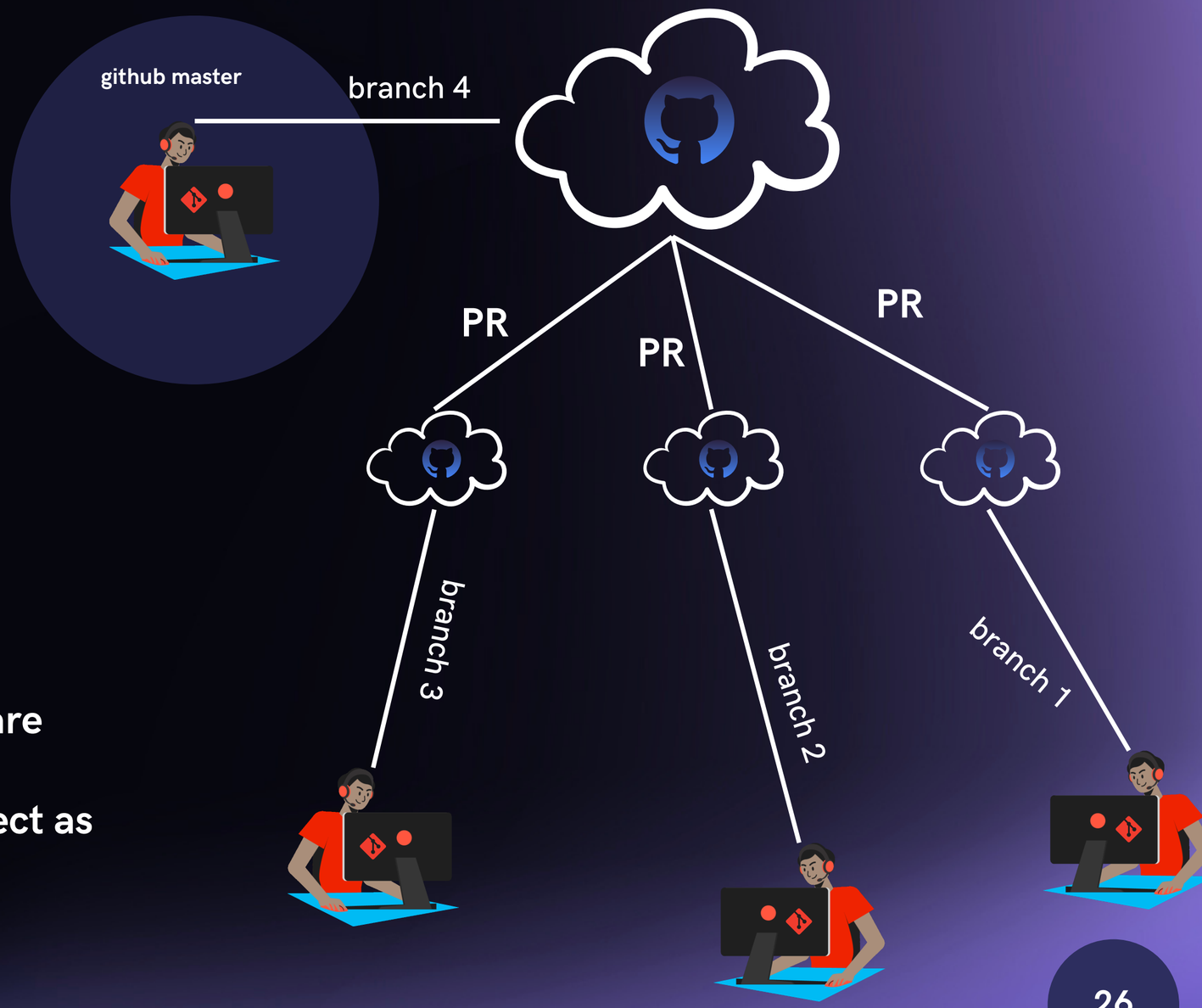
- The contributor work on his own branch (once done push and make a pull-request)
- Remote repo admin merge pull-requests



05 Collaboration workflow

Fork

- Fork : your own copy of someone else's repository
- When we use fork : Most commonly, forks are used to either propose changes to someone else's project or to use someone else's project as a starting point for your own idea.



Questions

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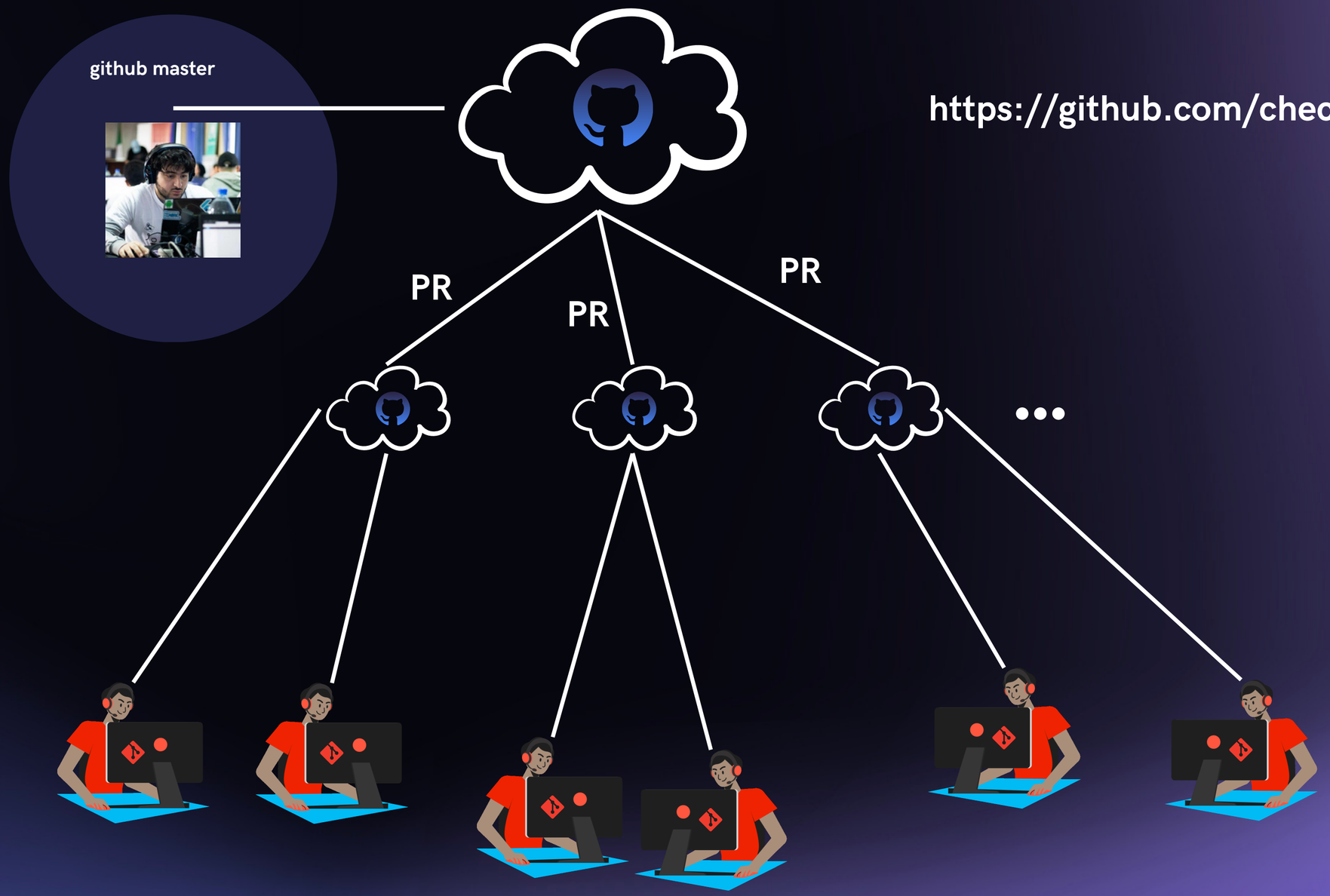
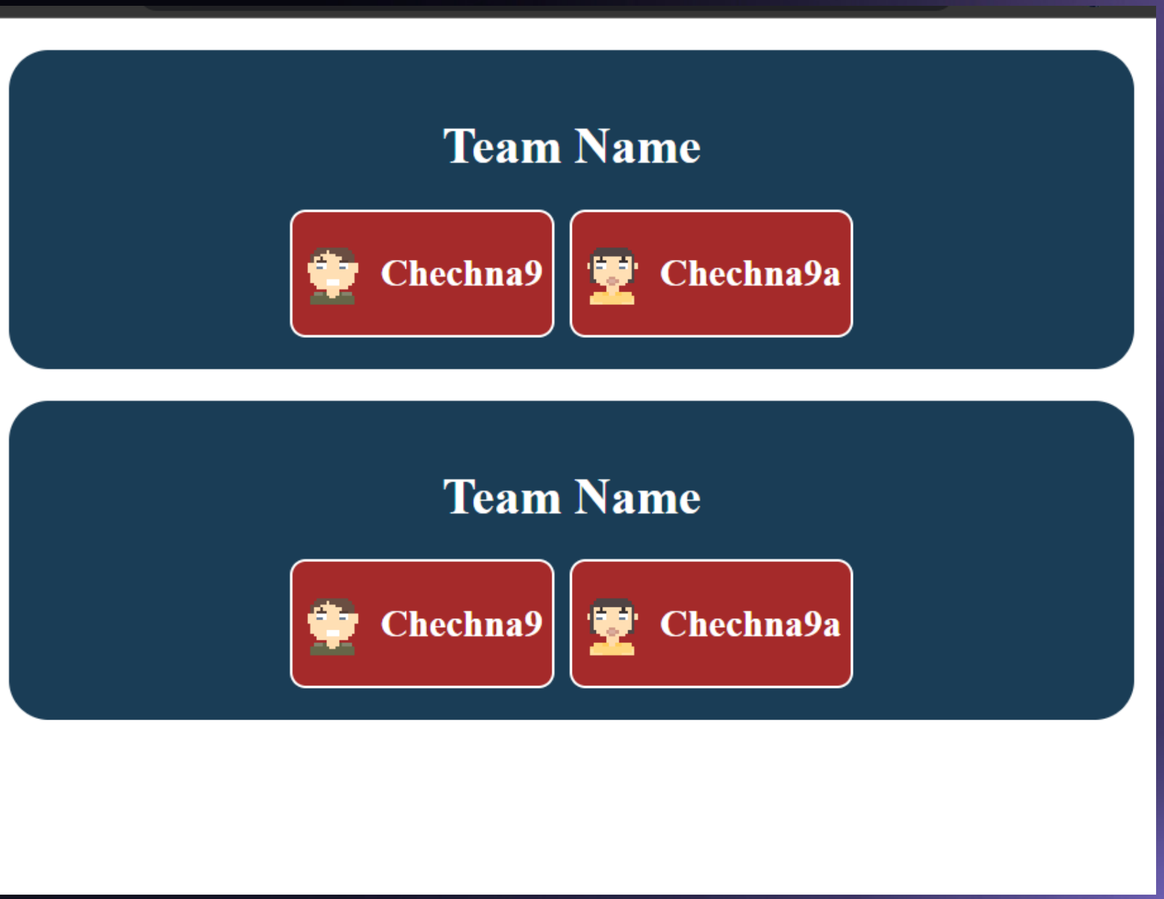


https://github.com/chechna9

index.html > html > body > div.team > div.team_members > div.member > img.avatar

```html
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta http-equiv="X-UA-Compatible" content="IE=edge" />
    <meta name="viewport" content="width=device-width,
    initial-scale=1.0" />
    <link rel="stylesheet" href="style.css" />
    <title>El Concours</title>
  </head>
  <body>
    <div class="team">
      <!-- team name -->
      <h1>Team Name</h1>
      <!-- team members -->
      <div class="team_members">
        <div class="member">
          <!-- change gender to male or female + random number.
          svg https://avatars.dicebear.com/api/female/144.svg
          -->
          <!--  -->
          <img
            src="https://avatars.dicebear.com/api/male/1235.svg
            "
            class="avatar"
```



Thank You for attending this wrokshop!

Contact Me

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https://github.com/chechna9