

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Git & GitHub

FAISAL ASLAM



Job Opportunities

In this time all the companies and employers use GitHub to search for potential candidates.

Active and well-maintained GitHub profiles can help software engineers stand out in the job market.

Contents

- Version Control
- Git, Setup git environment , Configuration
- Github, Repository/Git Repo
- Create a git repository (Add Project)
- Remote to Local
- Local To Remote
- Branches
- Fork

Version Control System

- Version control system is a **tool** that help to track changes in code.
- Track project history.
- Multiple developers/students are doing a project together.

Git

- Git is a **Version control system**.
- Created by Linus Torvalds , April 2005.
- A **command line** version control program.
- It is :
 - Popular
 - Free
 - Open source
 - Fast
 - Scalable
- To tack history
- Collaborate



GitHub

- GitHub was developed by Chris Wanstrath, P. J. Hyett, and started in February 2008.
- GitHub is a site for online storage of Git repositories.
- A Website that allows developers to store and manage their code using Git.
- <https://github.com>



Git vs GitHub

- Git is the **version control system** itself, while GitHub is a platform or **website** that uses Git for version control and provides additional tools and features to facilitate **collaboration** and development.



Question:

Why not Google drive & One drive ????

Source code management vs file management

Setting Up Git

- Visual Studio Code
- Windows (Git Bash)
- Mac Terminal

<https://git-scm.com/>

`git --version`

Configuring Git

- `git config --global user.name "your name"`
- `git config --global user.email "your email"`
- `git config --list`

Basic Commands

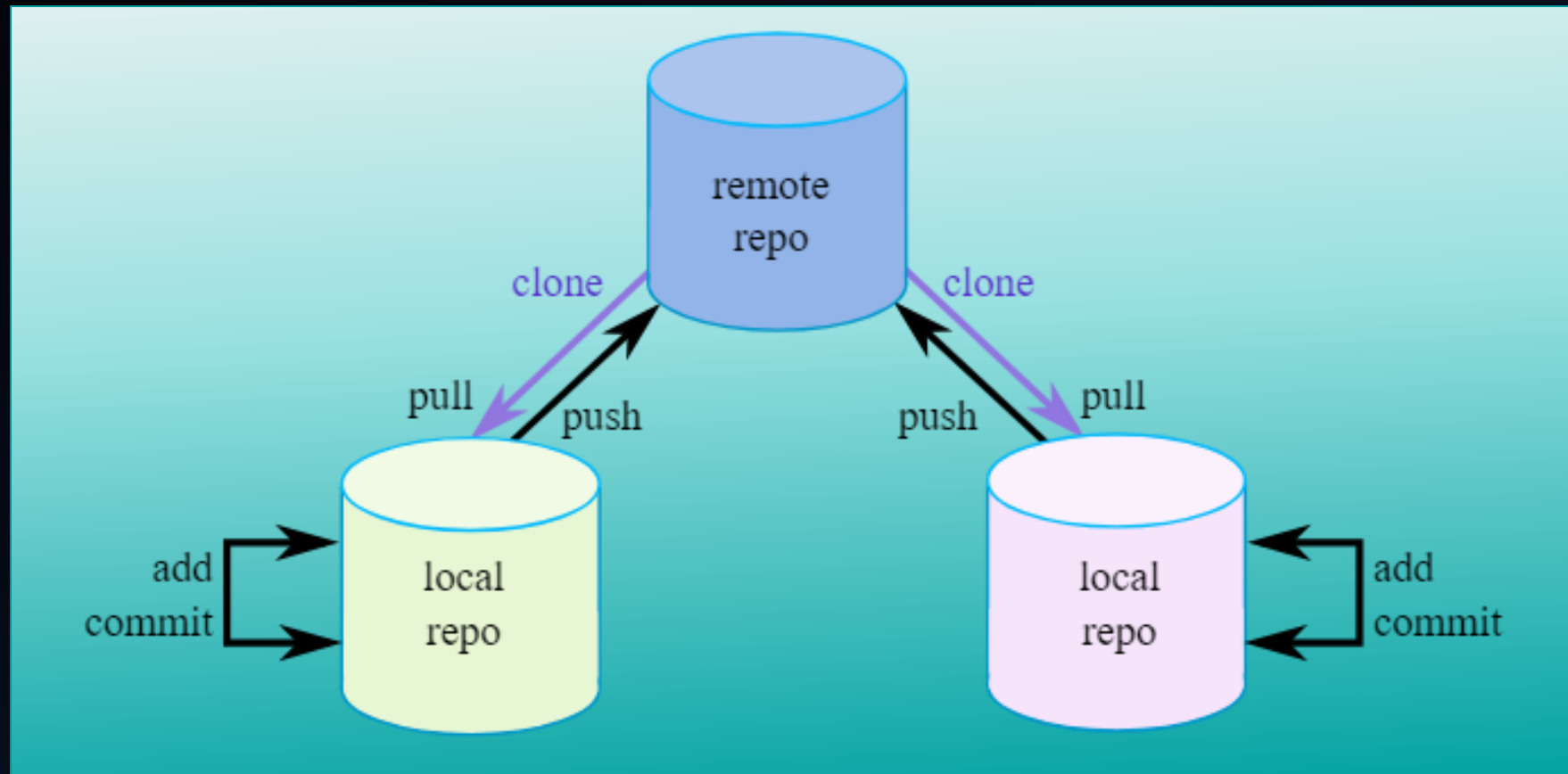
- ls
- ls -a
- cd
- pwd
- Date
- etc

Repository

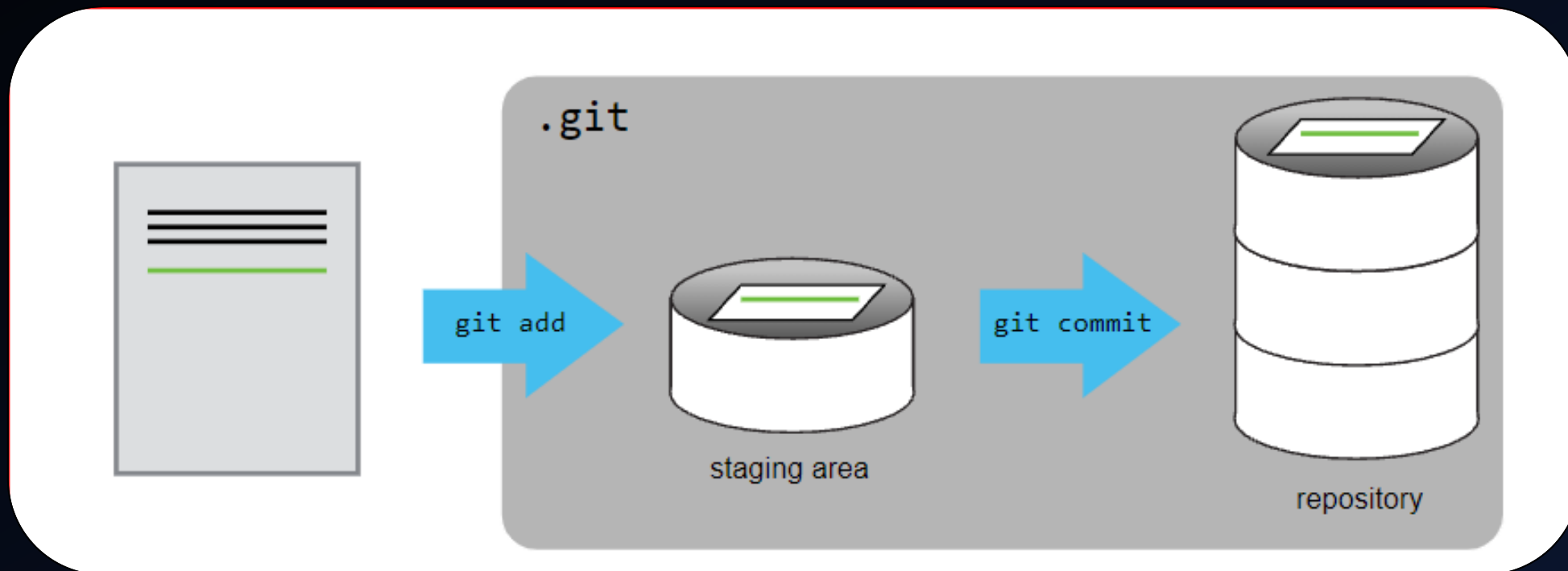
- “Repo” = repository
- Usually used to organize a single project.
- Repo can contain folders and files, images, videos, and anything you project needs.



Types of Repo



Adding file to Git Repository





Remote To Local

GitHub Account

- Create new repository
- Make our first commit

Clone and Status

- **Clone** – Cloning a repository on our local machine
git clone <project-link>
- **Status** – display the status of the code
git status

Changes

- Untracked
 - New file that git doesn't yet track
- Modified
 - changed
- Staged
 - File is ready to be committed
- Unmodified
 - Unchanged

Add & Commit

- **Add** - add new or changed file in your working directory to the git staging area.

`git add "file name"`

`git add .`

- **Commit** – it is the record of changes

`git commit -m "some message"`

Push

- **Push** – upload local repo content to remote repo
git push origin main



Local To Remote

Init

- git init
- git add
- git commit -m
- git remote add origin <link>
- git remote -v (verify remote)
- git branch (show branches)
- git branch -M main (rename the branch)
- git push origin main

Work Flow

Remote to Local

- Create repo
- Clone
- Changes
- Add
- Commit
- Push

Local to Remote

git init

changes

add

commit

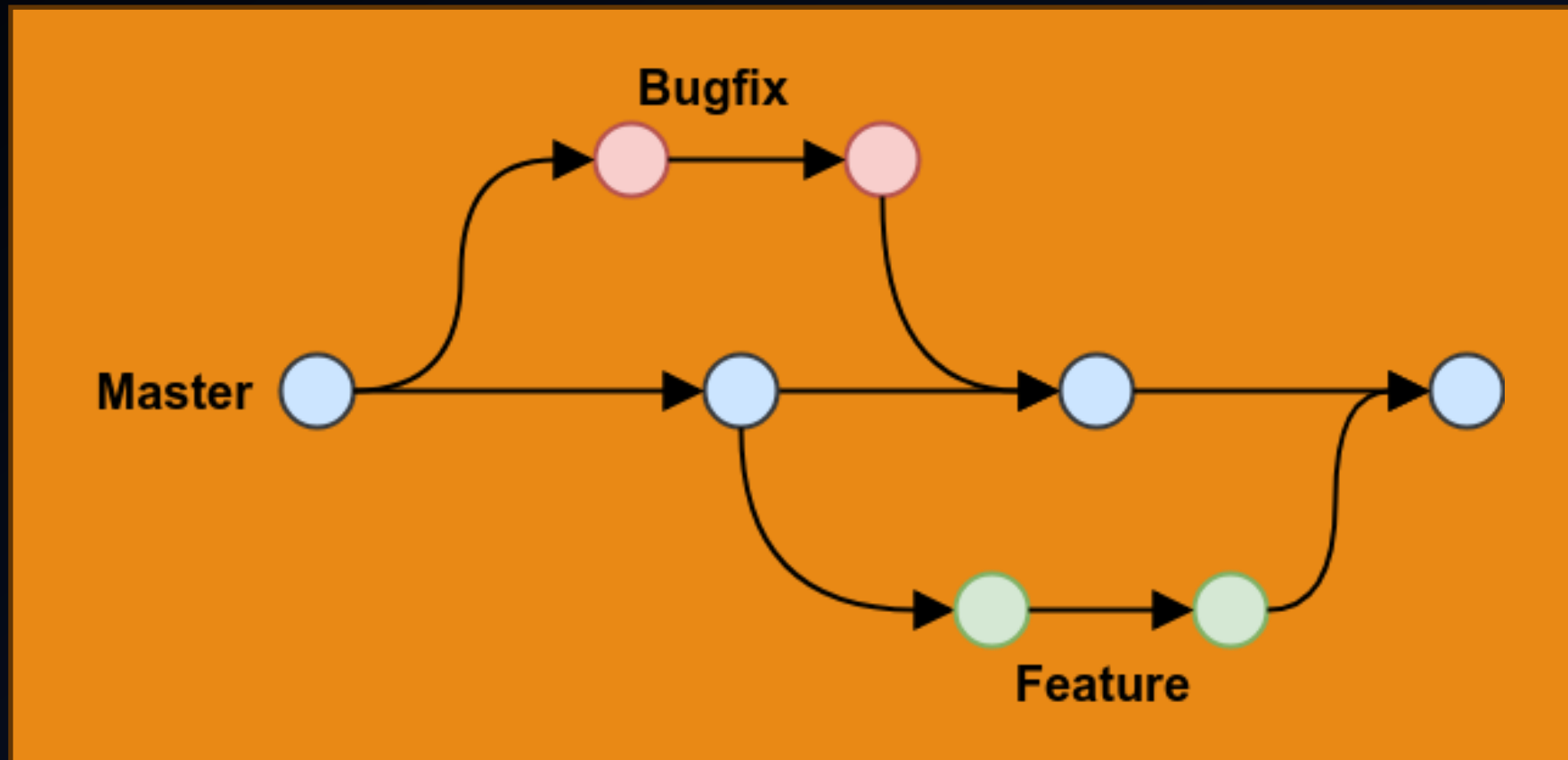
create repo

link repo

branch rename (optional)

push

Branches



Branch Commands

git branch

(show branches)

git branch -M main

(rename the branch)

git checkout -b <branch-name>

(new branch name)

git checkout <branch-name>

(to navigate)

git branch -d <branch-name>

(to delete the branch)

Merge the Branches

- Way 1
 - `git merge <branch-name>`
- Way 2
 - Create a PR

Pull Request

- It lets you tell others about changes you've pushed to a branch in a repository on GitHub.

Pull Command

- Used to fetch and download content from a remote repo and immediately update the local repo to match that content.
 - `git pull origin main`

Fork

- A fork is a new repository that shares code and visibility settings with the original "upstream" repository.
- Fork is a rough copy.



Any
Questions

