Google Developer Group
Universitas Sriwijaya

Learning 1

Git & Github Fundamentals

Version Control & Collaboration Workflow

git

GitHub

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function filterStudies({ studies, filterByOrg
                          = studies.filter(study
```

New Web Devs
React
Git & GitHub
JavaScript
HTML/CSS

Git vs Github

Git - *Version Control System*

- Mengelola perubahan kode
- Berjalan di komputer lokal

Github - *Platform hosting repository Git*

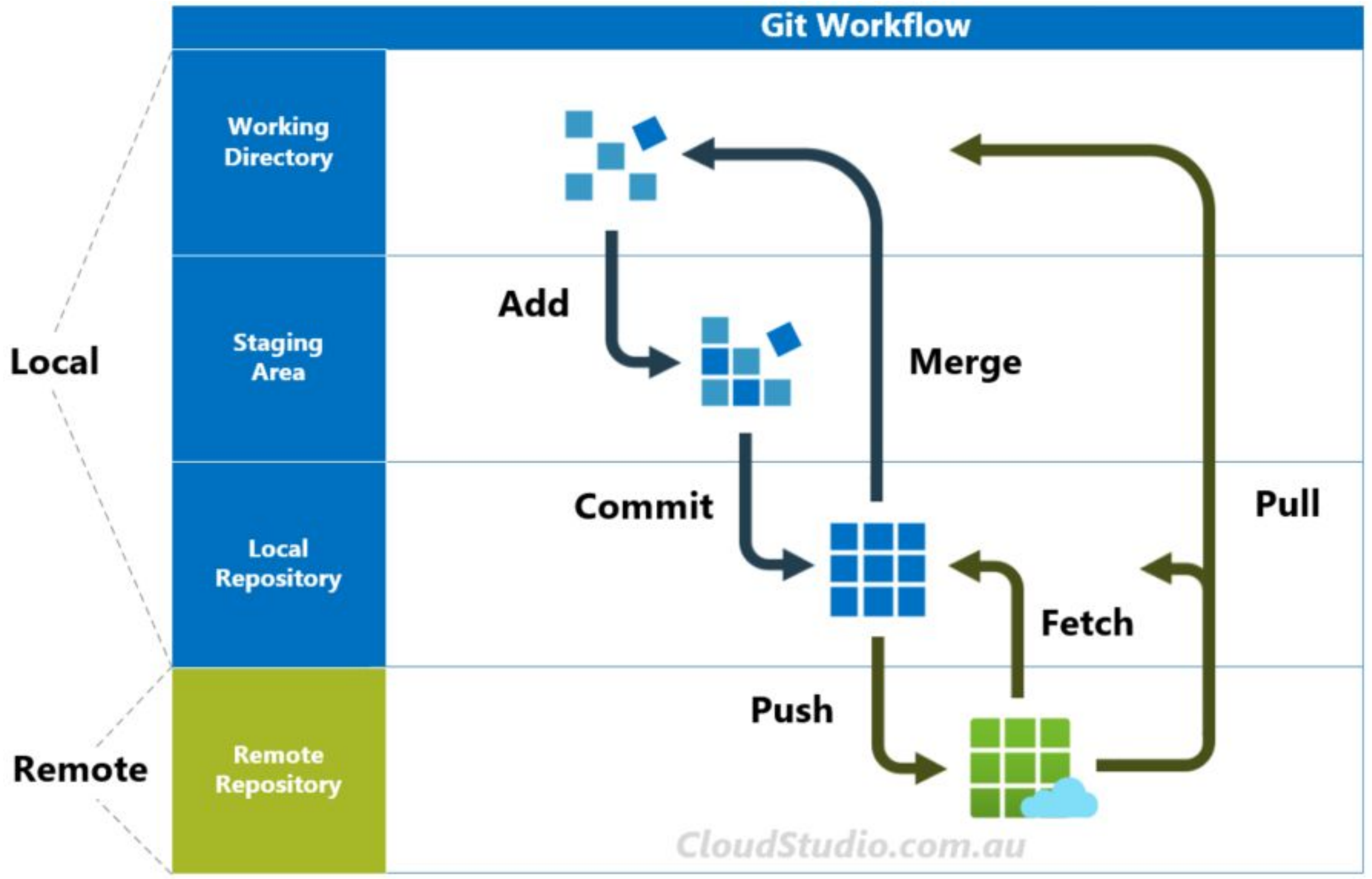
- Menyimpan repository secara online
- Mendukung kolaborasi tim

Why Git & GitHub ?

- Melacak perubahan kode
- Menghindari kehilangan progress
- Memudahkan kolaborasi tim
- Standar Industri Software *(Bare Minimum)*

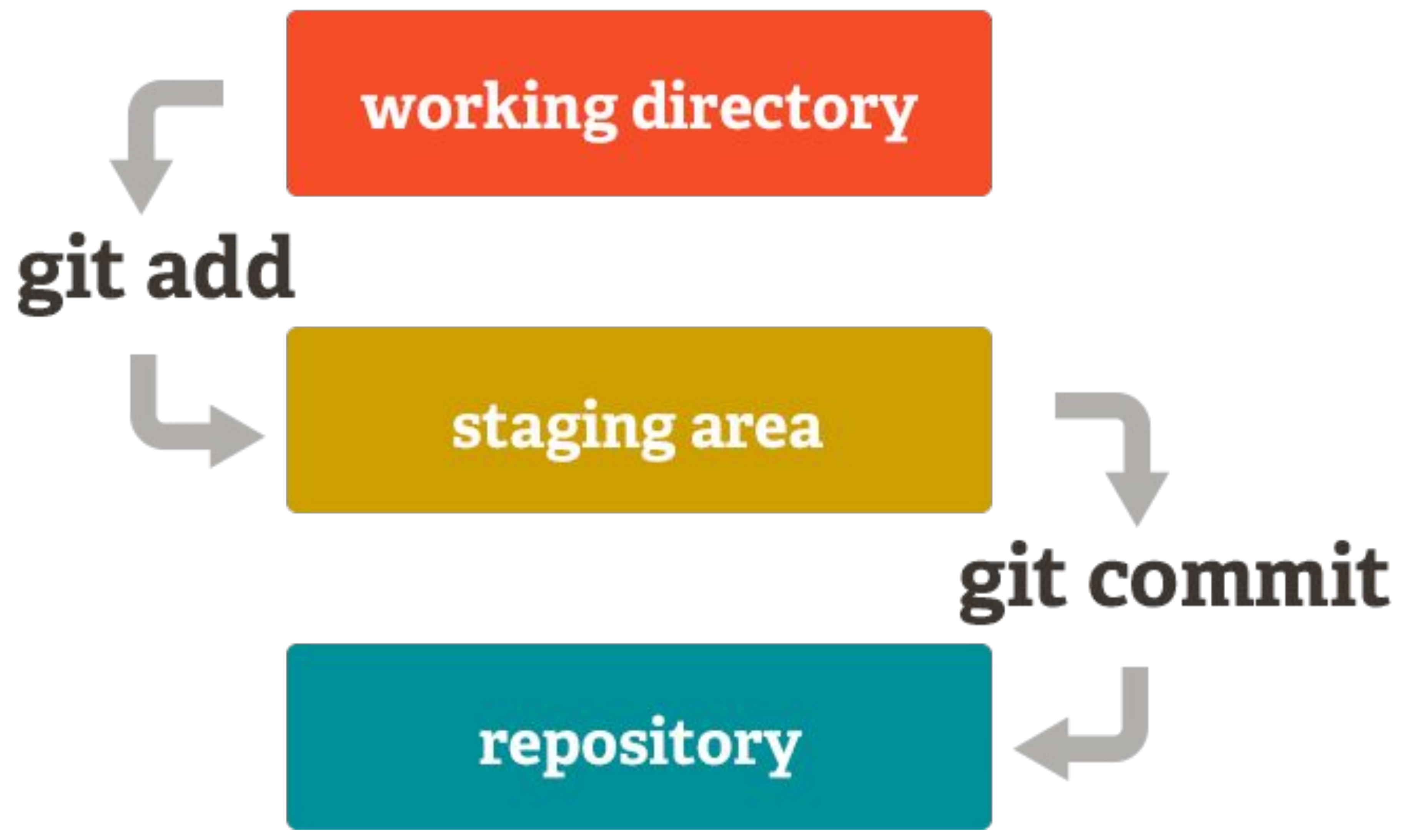
BRANCHING
MERGING
git
COMMIT HISTORY
REMOTE REPOSITORIES

Git Workflow



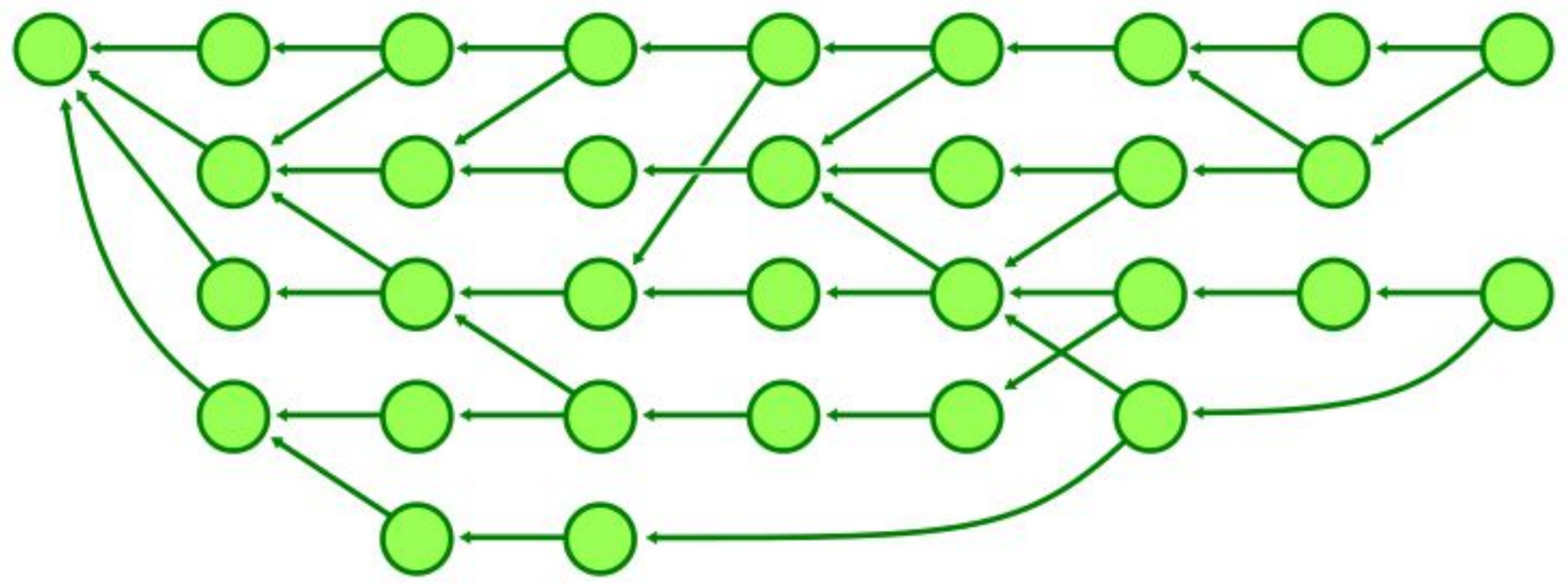
Git Basic Commands

- **git init:** membuat repository Git
- **git status:** cek kondisi repository
- **git add:** memasukkan perubahan ke staging
- **git commit:** menyimpan perubahan
- **git log:** melihat riwayat commit



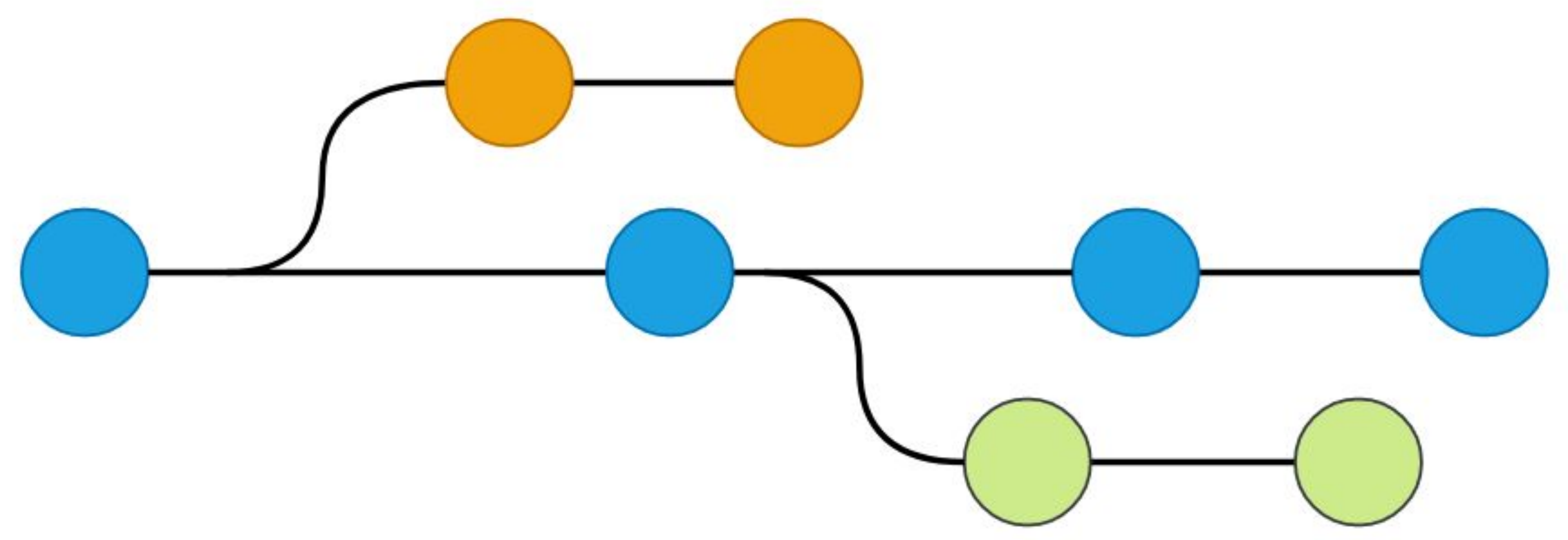
Git Branching

- Cabang dari kode utama
- Bekerja tanpa mengganggu branch lain
- Dasar dalam kolaborasi tim



Why Branching Matters ?

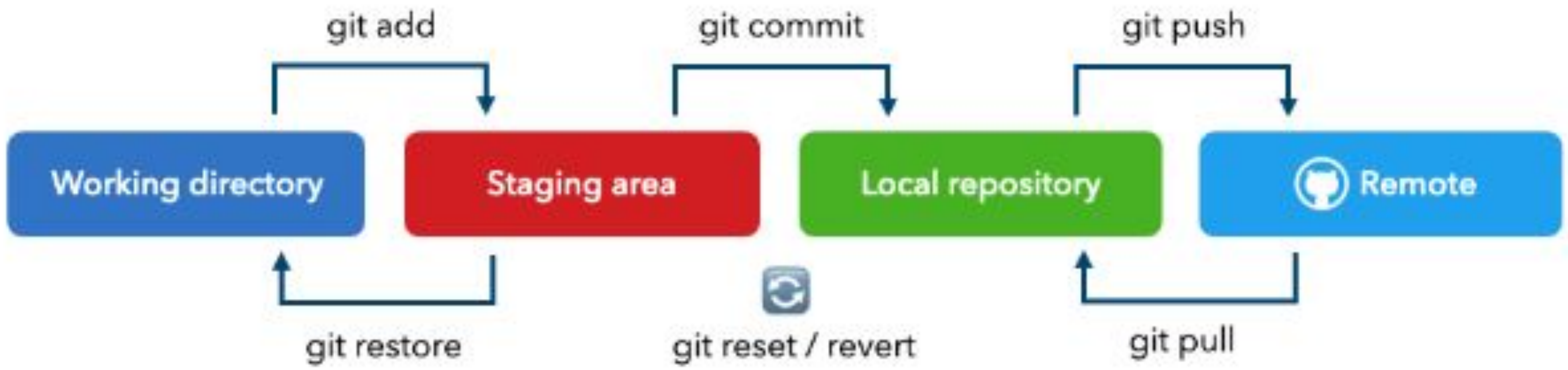
- Development lebih aman
- Menghindari konflik langsung
- Dapat bekerja secara paralel



Git Branch Commands

- **git branch:** lihat daftar branch
- **git branch nama-branch:** membuat branch
- **git checkout nama- branch:** pindah branch
- **git merge nama-branch:** menggabungkan branch

Github Personal Workflow



Github Commands

- **git remote add origin:** mendaftarkan dan memberi nama alamat GitHub
- **git push:** kirim perubahan ke GitHub
- **git fetch:** cek dan ambil update dari GitHub tanpa langsung menggabungkannya.
- **git pull:** ambil update dari GitHub
- **git clone:** ambil repo dari github ke local

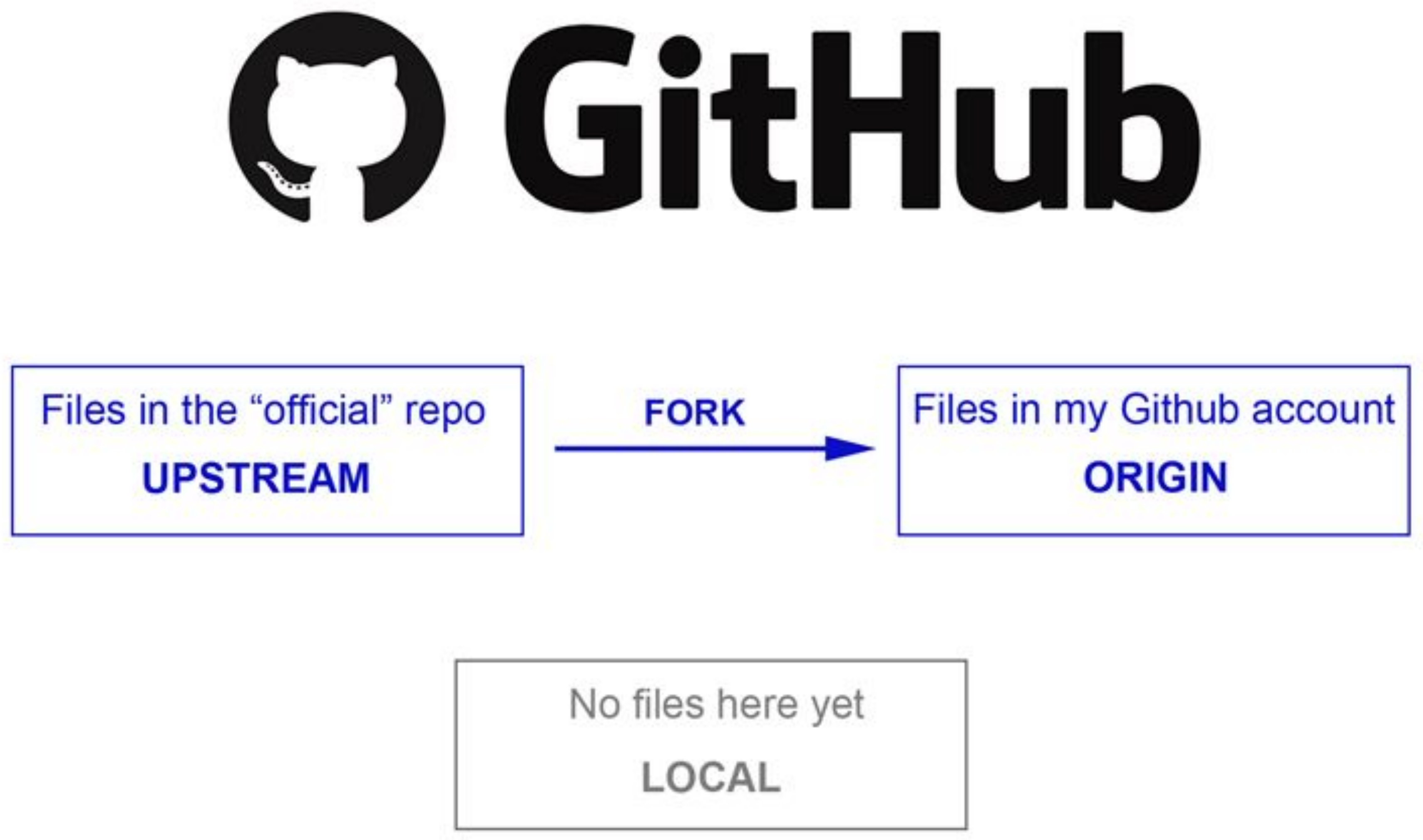
Git Fork vs **Clone**

Comparison Chart

Fork	Clone
A fork of a repository is nothing but a copy of that repository that you can work on.	A clone is basically a local copy of a remote repository that is stored on your computer.
It allows you to contribute code to the repositories where you aren't the owner or a collaborator.	It allows you to work on the projects, fix some issues or contribute changes to the code.
You do not need the owner's permission to for their repository.	You can push the changes back to the remote repo only if you have the push rights to the repo.

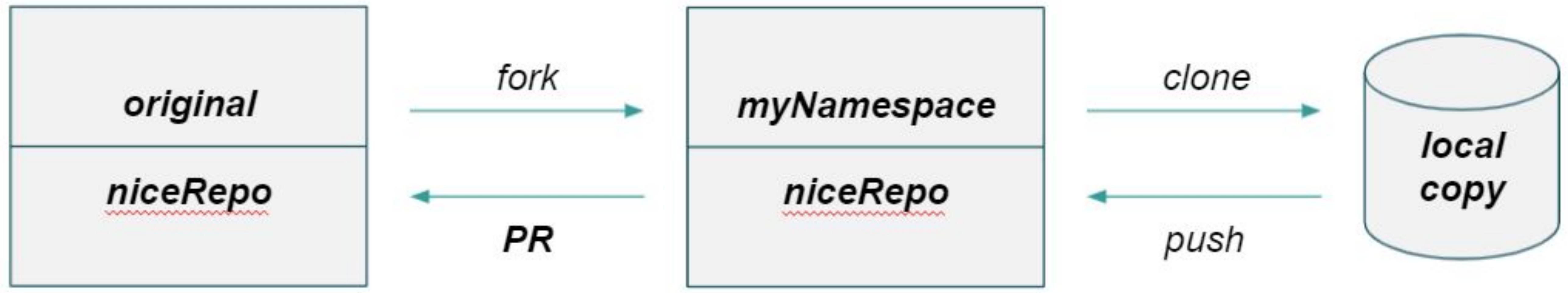
When Do We Use Fork?

- Open source project
- Repository bukan milik kita
- Tidak punya akses *push*

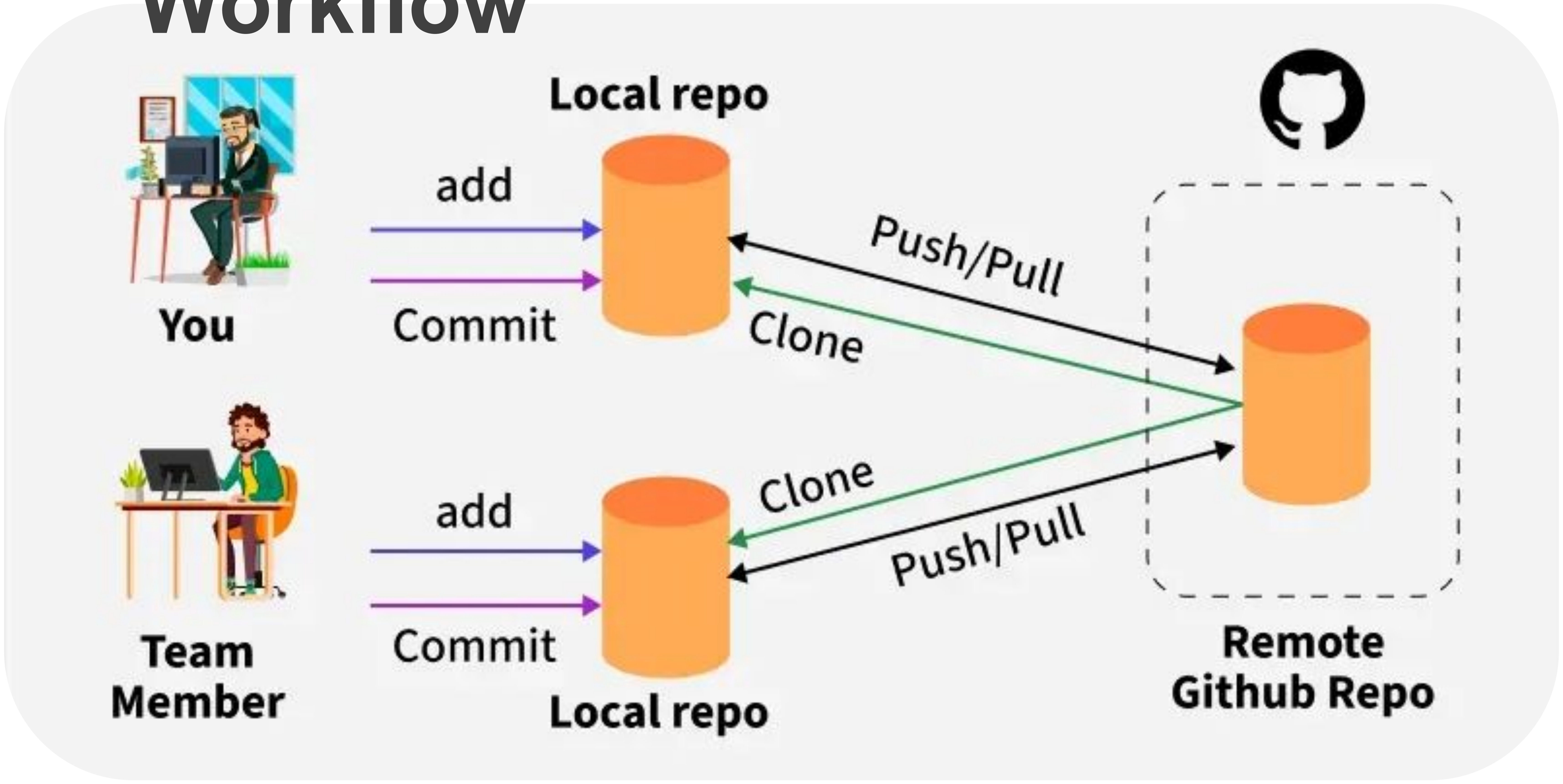


Forking Workflow

- Forking repository
- Clone repository fork ke ke local
- Set remote *upstream* ke repository Asli
- Lakukan perubahan
- Push ke repository origin/fork
- Buat pull request di github



Github Collaboration Workflow



Github Collaboration Workflow

Clone → Branch → Commit → Push → Pull Request → Review → Merge

Conventional Commit Message

Standar penulisan *(Best Practice)* untuk commit message agar perubahan kode mudah dipahami oleh tim.

Why ?

- Riwayat commit lebih jelas
- Mudah review & tracking
- Standar kerja profesional

Commit Message Structure

type(optional scope): short description

- chore: initial commit
- feat(auth): add login form
- refactor: optimized fetch logic
- fix(navbar): fix responsive issue
- style: change button to secondary color
- docs: add README.md

Conventional Commit Types

- **feat:** menambahkan fitur baru
- **fix:** memperbaiki bug atau error
- **refactor:** merapikan struktur kode tanpa mengubah fitur
- **chore:** perubahan teknis non-fitur (config, dependency, tooling)
- **style:** perubahan tampilan atau formatting kode tanpa mengubah logika
- **docs:** perubahan atau penambahan dokumentasi

Branch Naming Best Practices

- **feature/** → fitur baru → *feature/dashboard-page*
- **fix/** → perbaikan bug → fix/navbar-responsive
- **refactor/** → perapihan kode → refactor/auth-logic

Challenge! (FE Member Only*)

1. Buka repository Frontend Development GDGoC UNSRI 25/26
2. Lakukan forking repository
3. Lakukan forking workflow (*clone → set remote origin → set remote upstream)*
4. Buka folder *1-version-control- system,* cari file *members.js*
5. Buat branch member/nama-member
6. isi data-mu sebagai member ke dalam *Array Members*
7. lakukan push dan pull request ke repository *upstream*
8. pastikan mengimplementasikan *conventional commit messages*
9. pastikan tidak terdapat conflict saat pull request

Selamat Mencoba ~

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Thank You !

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