IT FESTIVAL 2026

Mastering the Code Multiverse

A pixel-perfect journey into Git & GitHub for the next generation of engineers.

Part I: The Why

Overcoming Versioning Chaos

The ”Final_Final” Nightmare

The Student Reality

Messy folders like `project_v1.zip` and `v2_working.zip` are recipes for disaster. One accidental delete and weeks of work vanish.

Git is your **Ultimate Time Machine.** It ensures that every single character you write is tracked, protected, and recoverable.

Mental Model: Saving 2.0

The Save Point

Git creates ”Quick Saves.” If your code crashes, you just reload the last checkpoint in seconds.

The Cloud Sync

GitHub is the ”Multiplayer Server” where your local saves are backed up and shared with the team.

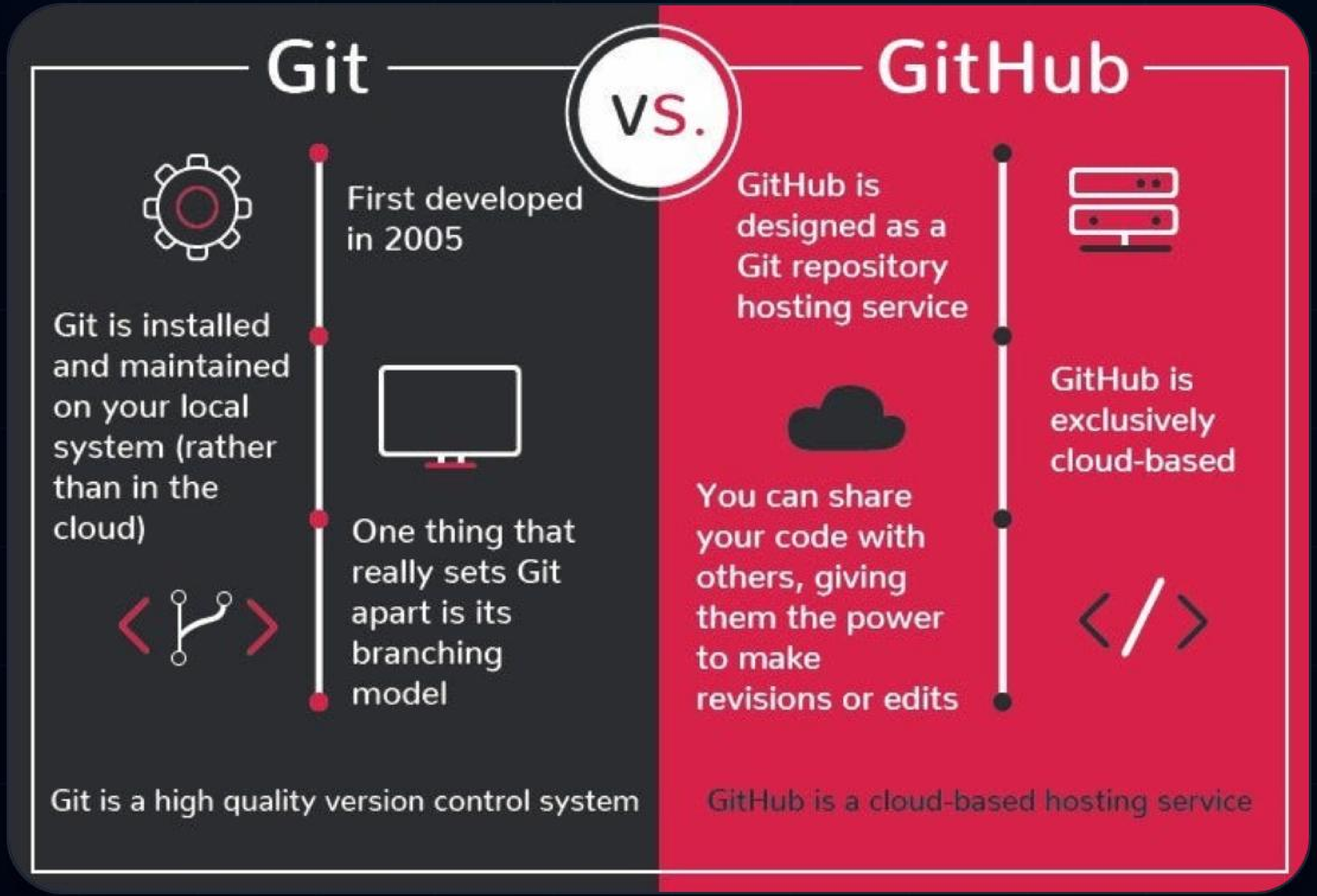
Git vs. GitHub: The Analogy

Local vs. Remote

Git: Your personal notebook. You write notes, erase errors, and organize pages. It lives on your computer.

GitHub: The Library. You put your finished notebooks on a shelf so others can read, copy, and help you improve them.

Important: You can use Git without GitHub, but you can't use GitHub without Git.



First developed in 2005

Git is installed and maintained on your local system (rather than in the cloud)

One thing that really sets Git apart is its branching model

Git is a high quality version control system

GitHub is designed as a Git repository hosting service

GitHub is exclusively cloud-based

You can share your code with others, giving them the power to make revisions or edits

GitHub is a cloud-based hosting service

Part II: The Setup

Gearing up for professional development

The Essential Checklist

Git Engine

Download from `git-scm.com`. This is the command-line engine that does the heavy lifting.

Git Bash

The ”Talker.” Your primary way to give Git commands and see immediate project status.

GitHub Account

Your ”ID.” Create a professional username (e.g., your real name) to use as your developer portfolio.

Digital Identity

Configure Your Signature

Before committing, Git needs your credentials. This ensures every line of code has an author assigned.

```
git config --global user.name "John Doe"
```

```
git config --global user.email "john@edu.ph"
```

Tip: Use the same email as your GitHub account to sync your contribution graph.

GitHub UI

The Command Center

Repositories: Where project files and history are stored.
Issues: A dynamic to-do list for tracking bugs and features.
Actions: Automation magic for testing and deployment.

COMPANIES	MEMBERS	BUDGET	COMPLETION
Chakra Soft UI Version		$14,000	60%
Add Progress Track		$3,000	10%

Part III: Architecture

Understanding the Internal Flow

The Three Pillars

1. Working Dir

Your messy desk. Where you are currently editing files. Changes here are ”Untracked.”

2. Staging Area

The ”Outbox.” You pick which specific changes are ready to be boxed up and sent.

3. Repository

The Vault. Once committed, your snapshots are safely stored in history forever.

The ”Holy Trinity” Loop

git add .

Moves all modified files from your desk to the Staging Area loading dock.

git commit -m ”msg”

Permanently snapshots your changes into the local Repository vault with a note.

git push

Transports your local Repository vault to the GitHub library for the team.

Part IV: The Multiverse

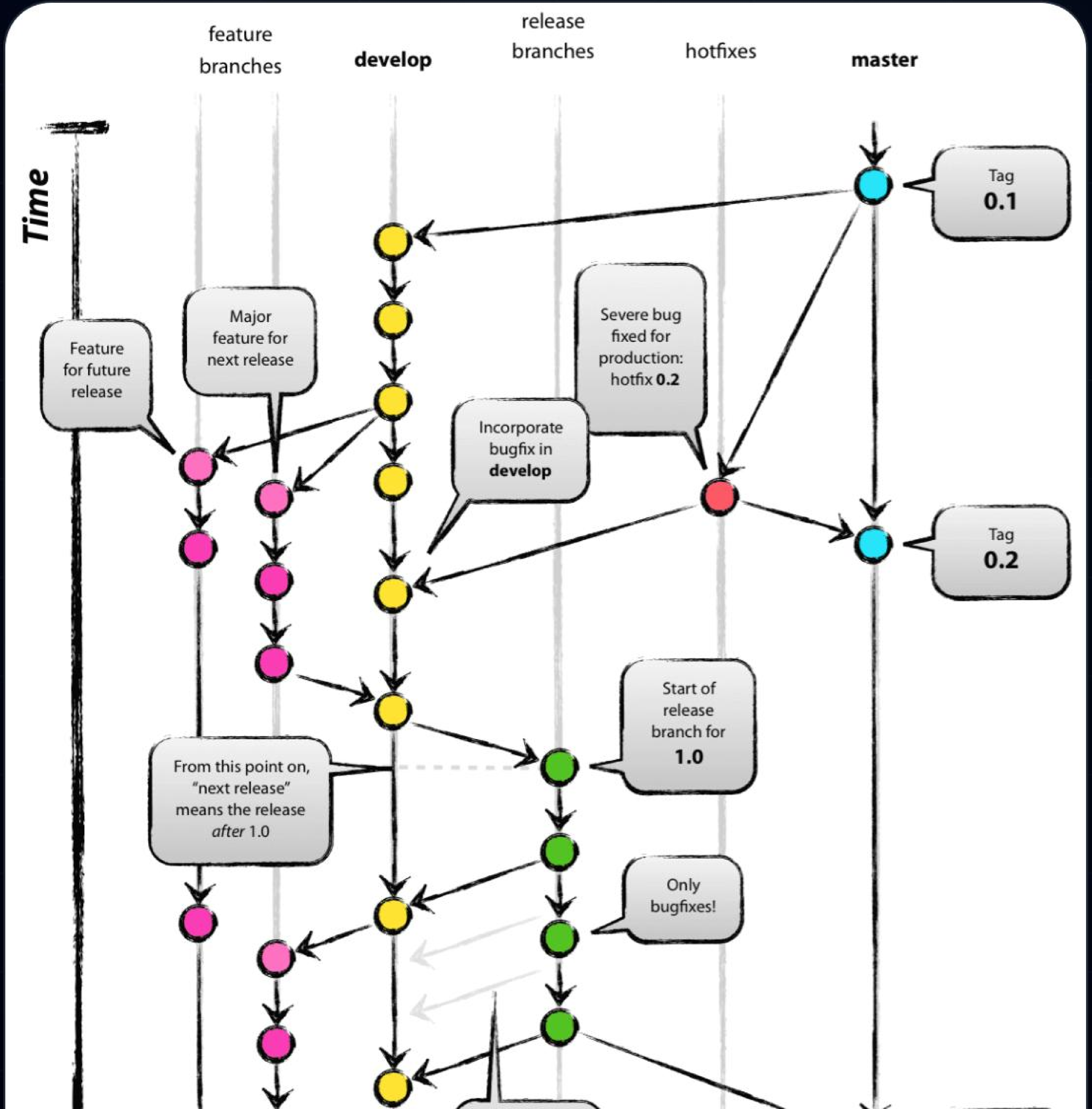
Mastering Parallel Timelines

Branching Parallel Reality

The Feature Sandbox

Never break the ”Main” code! Create a branch for every feature you build. This is a parallel reality where you can experiment without fear.

One dev builds `dark-mode`, another builds `login-api`. They never clash until they are ready to merge.


feature branches
develop
release branches
hotfixes
master
Time
Tag 0.1
Severe bug fixed for production: hotfix 0.2
Major feature for next release
Feature for future release
Incorporate bugfix in develop
Tag 0.2
Start of release branch for 1.0
From this point on, "next release" means the release after 1.0
Only bugfixes!

When Realities Clash

The Merge Conflict

Two people edit the same line of code. Git doesn’t know who is right, so it stops the world to prevent overwriting.

The Solution

Open VS Code, pick the winning line, delete the Git markers, and commit. It’s how teams preserve code integrity.

Part V: Collaboration

How Teams Build Big Software

Forking vs. Cloning

The Fork

Copying a massive project (like Linux) to **your own** GitHub account. It’s your playground.

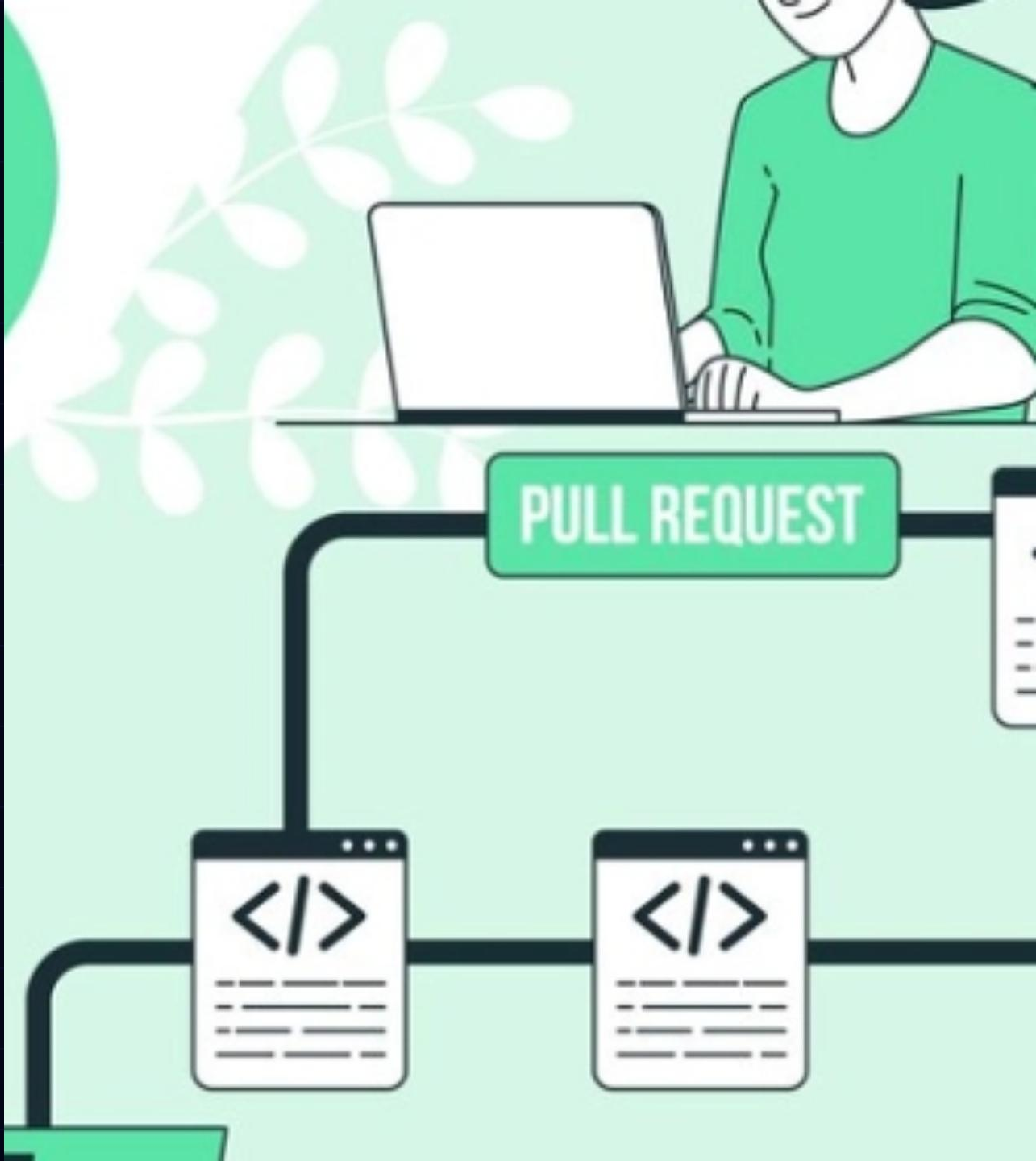
The Clone

Downloading the code from GitHub to **your laptop.** This is where you actually write code.

The Pull Request

Collaborative Review

In the real world, you never merge your own code directly. You open a **Pull Request (PR)**. Teammates look at your work, catch bugs, and suggest improvements. Only after a ”LGTM” (Looks Good To Me) is it merged.



The Career Advantage

99%

Industry Requirement

99% of top-tier software firms use Git. It is the single most critical non-coding skill for modern hiring.

A green GitHub contribution graph is a developer's strongest resume. Start committing today.

Part VI: Laboratory

Entering the Hands-on Multiverse

The 4-Hour Roadmap

Solo Mission

Initialize your first project history.

Reality Clash

Force a conflict and fix it like a pro.

Going Live

Deploy a website via GitHub Pages.

Team Raid

Fork and PR to the Global Guestbook.

Questions?

Mastering the Code Multiverse: IT Festival 2026

github.com/itfest26   ✉ talk@itfest.edu.ph

Image Sources

https://external-preview.redd.it/WnQeOGT-hfSgLvRiWNFz1esxzIW110puJJ1YjaGK5bQ.jpg?auto=webp&s=260fbaab807ab9bc99a152cd3ddad1516e5d238f

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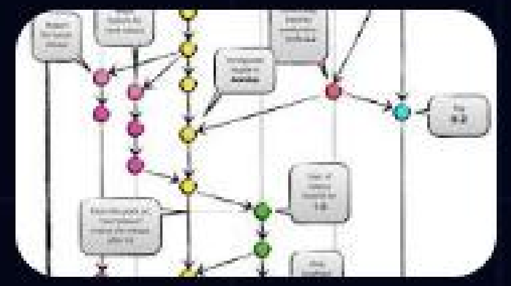
Source: github.com



http://nvie.com/img/git-model@2x.png

Source: nvie.com

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Source: dev.to